A Complexidade da Ética em Pesquisa,

e a influência no ensino.

Jose Carlos Costa BAPTISTA Silva

Professor Titular e Livre Docente
do Departamento de Cirurgia
Escola Paulista de Medicina
2026

UNIFESP
UNIVERSIDADE FEDERAL DE SÃO PAULO
1933

Sem conflito de interesse

https://profbaptistavascular.com.br/

ESCOLA PAULISTA MEDICINA
1933

FIGURE 2. Dr. Halsted by Stocksdale from W. G. MacCallum's book, *William Stewart Halsted* (Johns Hopkins Press, 1930). (Reproduced with permission from the Johns Hopkins Archives, Johns Hopkins Press.)

William Stewart Halsted (1852-1922)

A Lecture by Dr. Peter D. Olch

- Father of modern Surgery Professor at Johns Hopkins University

- Residência Médica

Annals of Surgery • Volume 243, Number 3, March 2006

Angels and Demons:The Peculiar and Haunted Genius of Dr Halsted

https://hub.jhu.edu/magazine/2022/fall/william-halsted-breakthrou…sted—his%20full,infinite%20and%20somewhat%20untamed%20curiosity

The Founding Physicians

Every one of the "Big Four," as they are known at Johns Hopkins, was a character, a larger-than-life personality.

- Pathologist William Henry Welch was a stout bachelor who loved swimming, carnival rides and five-dessert dinners in Atlantic City.
- Surgeon William Stewart Halsted was known for being tough on students, but his severity masked an almost debilitating shyness.
- Internist William Osler was a known prankster.
- Gynecologist Howard Kelly collected snakes and was an evangelical Christian.

Each of the doctors, in his own way, had a profound and lasting influence on American medical education and research.

As Johns Hopkins' most famous medical school professors, they sat in the London studio of famed painter John Singer Sargent in 1905 for a portrait that now hangs in the Welch Medical Library. (Lore has it that much of Halsted's figure was painted in disappearing pigment, so disgusted was Sargent with Halsted's strident objection to having blue shadows painted under his eyes. Halsted does, in fact, appear a bit fuzzier than his colleagues, but curators and art experts insist that is only because Sargent painted him farther in the background, and used a thinner wash, for perspective.)

Finalidade da Pesquisa

A principal finalidade da pesquisa é a **geração de novo conhecimento** e a **descoberta e/ou confirmação de informações** sobre um determinado assunto, visando responder perguntas, resolver problemas, testar hipóteses e ampliar o entendimento da realidade em diversas áreas como ciência, academia, indústria e sociedade. Através de um processo sistemático de coleta e análise de dados, a pesquisa contribui para o avanço do conhecimento e para a tomada de decisões mais informadas

Objetivo

Melhorar a Sociedade ???

"The most important attribute that the University of Melbourne would like to see in its graduates is a profound respect for **truth**, and for the ethics of scholarship...we want our graduates to be capable of independent thought, to be able to do their own work, and to know how to acknowledge the work of others."

Professor Peter McPhee (Provost 2007-9)

Australia

https://researchinsiders.blog/2014/07/15/hyper-anxiety-4-doing-it-wrong/

Professor Emeritus Peter McPhee AM

Honorary Professorial Fellow
Melbourne CSHE

1- Publish or Perish (Publicar ou Perecer)

2- Pressão do Financiador

3- Falta de Supervisão da Instituição

4- Falta de Treinamento Adequado

5- Desvio Moral e Ético

Publish or perish

"Publicar ou perecer" é um aforismo que descreve a pressão para publicar trabalhos acadêmicos para ter sucesso na carreira acadêmica. Essa pressão institucional é geralmente mais forte nas universidades de pesquisa.

The phrase "publish or perish" is often attributed to American geographer **William Morris Davis** (1850–1934), who urged the Association of American Geographers to "publish or perish" as early as 1904. While commonly used in academia, it was often cited as a known aphorism by the 1930s, rather than having one single documented author.

Early Written Uses: Researchers have found early mentions in a 1928 journal article by Clarence Marsh Case and a 1932 book, *Archibald Cary Coolidge: Life and Letters*, by Harold Jefferson Coolidge

Responsáveis pelas condutas éticas e não éticas em pesquisa

Autores

Instituição

CEP

CONEP/SINEP

Órgãos de Fomento (público ou privado)

País ou Países

UNIFESP

COMITÊ DE ÉTICA EM PESQUISA

PARA PROJETOS ENVOLVENDO

Seres Humanos CEP/PLATAFORMA BRASIL	Uso de Animais Vertebrados CEUA	Outros Projetos que não envolvem Seres Humanos ou Animais Vertebrados
		
Área de Saúde: Estudos envolvendo seres humanos diretamente (clínicos, obtenção de amostras biológicas, etc.) ou indiretamente (uso de prontuários, revisões bibliográficas, análises documentais, etc.) **Outras áreas:** Qualquer estudo, independentemente da área, em que haja alguma interação com seres humanos (entrevistas, aplicação de questionários, estudos etnográficos)	Estudos envolvendo animais vertebrados vivos ou não, ou parte deles (tecidos, órgãos, etc.).	**Biológica e Química** Estudos de bioquímica, biologia molecular, biofísica e química, que não envolvam diretamente seres humanos ou animais vertebrados (bactérias, parasitas, plantas, outros invertebrados, células comercializadas, etc.). **Humanas** Estudos de História, Geografia, Filosofia, Letras, Artes, Educação, Administração e outras áreas afins. **Exatas** Matemática, Física, Ciências da Terra, Informática, Engenharia e outras áreas afins.

No content in response.

Localização e Contato

R. Sena Madureira, 1500 - 2º andar • Vila Clementino - São Paulo - SP - CEP: 04021-001

Horário de atendimento presencial e telefônico: Segundas a Sexta das 08:00 às 13:00hs.

E-mail: cep@unifesp.br

Telefone:(11) 3385-4343 ramal 8699/8557.

Fabricação: fabricar resultados sem tê-los
células tronco de Wang

Falsificação: manipulação de materiais de investigação, equipamentos ou processos, ou alterar ou omitir resultados de tal forma que a pesquisa não é representada com precisão no registro.
Automotivos= controles de emissão de Gases

Plágio: a apropriação de idéias de outro, processos, resultados, ou seja, sem dar o devido crédito.
Dupla hélice de DNA (Watison, Crick, 1953)
Rosalind Franklin
Nature 1953

Duplicidade: publicar o mesmo artigo em locais diferentes -revistas ou livros ou na internet como sendo coisas novas ou inéditas.

Exceção: protocolos, diretrizes (guidelines) ou artigo com autorização dos autores, da revista etc.

Fator Salame

Conflito de interesse (industria, revisor, comitê de ética)

Citação cruzada

http://www.retractiondatabase.org/RetractionSearch.aspx?

http://www.retractiondatabase.org

Journal policies and editors' opinions on peer review

Abstract

Peer review practices differ substantially between journals and disciplines. This study presents the results of a survey of 322 editors of journals in ecology, economics, medicine, physics and psychology. We found that 49% of the journals surveyed checked all manuscripts for plagiarism, that 61% allowed authors to recommend both for and against specific reviewers, and that less than 6% used a form of open peer review. Most journals did not have an official policy on altering reports from reviewers, but 91% of editors identified at least one situation in which it was appropriate for an editor to alter a report. Editors were also asked for their views on five issues related to publication ethics. A majority expressed support for co-reviewing, reviewers requesting access to data, reviewers recommending citations to their work, editors publishing in their own journals, and replication studies. Our results provide a window into what is largely an opaque aspect of the scientific process. We hope the findings will inform the debate about the role and transparency of peer review in scholarly publishing.

DANIEL G HAMILTON*, HANNAH FRASER, RINK HOEKSTRA AND FIONA FIDLER

Hamilton et al. eLife 2020;9:e62529. DOI: https://doi.org/10.7554/eLife.62529

1. Interdisciplinary Metaresearch Group, School of BioSciences, University of Melbourne, Australia; Department of Educational Sciences, University of Gronin Netherlands; School of Historical and Philosophical Studies, University of Melbourne, Australia

eLife (Max Planck e Wellcome Trust) IF=8,71

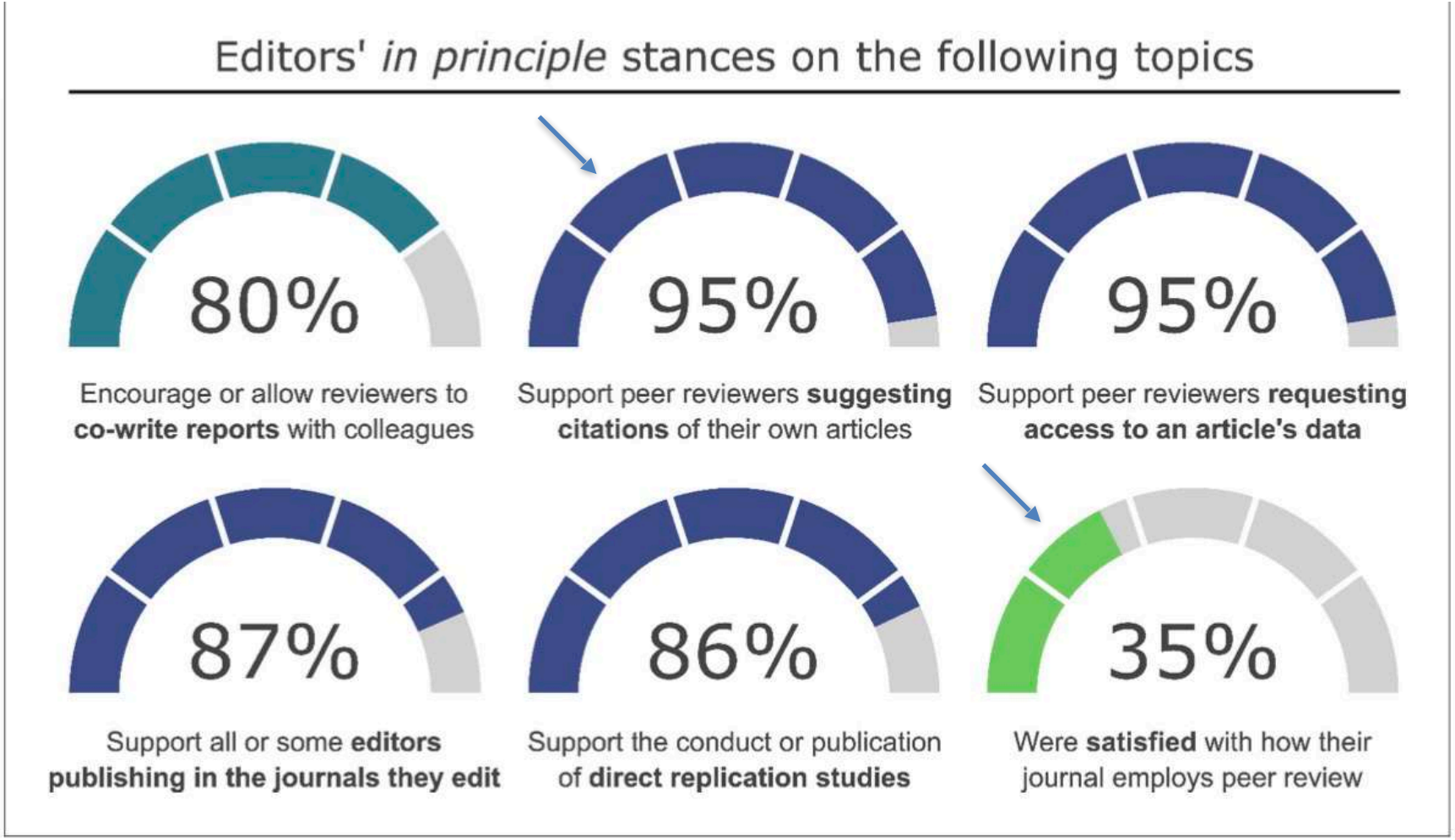


Figure 1. Participating editors' *in principle* stances on the six topics raised in Survey B. The figures presented are limited to statements that provided a clear view for or against the topic of interest. An interactive version of this figure reporting results by discipline can be viewed at https://plotly.com/~dghamilton/9/ (***Supplementary file 1***). Source data for the figure can be found at https://doi.org/10.17605/osf.io/cy2re.

The online version of this article includes the following figure supplement(s) for figure 1:

Figure supplement 1. Survey response rate by discipline.

Figure supplement 2. Distribution of impact factors among invited and participating journals by discipline.

Problems and challenges of predatory journals

DOI: 10.1111/jdv.15039. journal of the European academy of dermatology and venereology IF=9,28

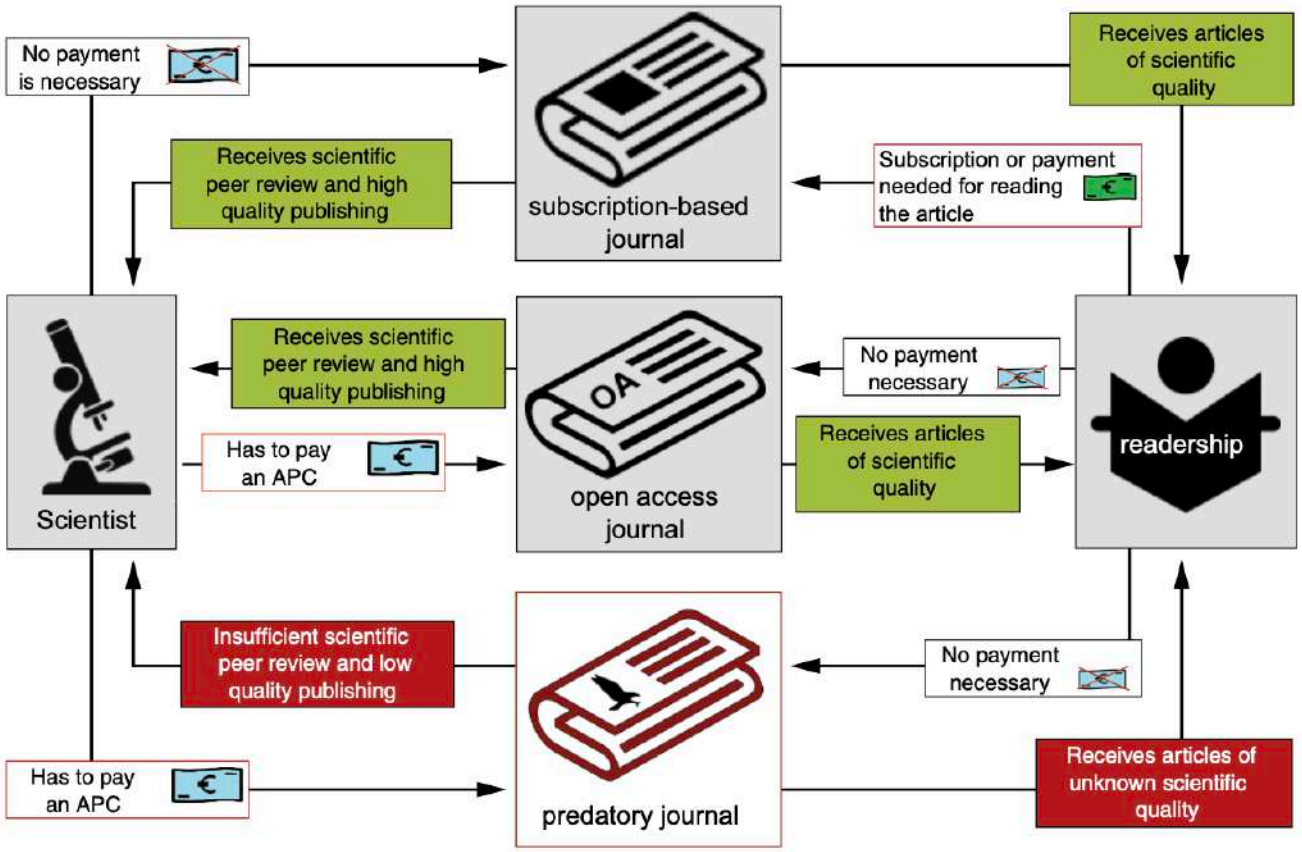


Figure 1 The relationship between researcher, journal and readership. Subscription-based journal: Scientist submits his or her work to the journal without costs, and the journal provides high-quality peer review to the authors to ensure the scientific quality of the submitted paper. Members of the readership receive peer review articles of high scientific quality, but have to pay a fee to access the journal's content. Open access journal: Same standards as a subscription-based journal, but the author has to pay an article processing charge (APC) in this model, and the content is freely available to the readership in return. Predatory journal: Copy the open access publishing model by levying APCs on authors, but do not deliver high-quality, peer reviewed articles (and other services) and do not ensure the scientific quality of submitted articles. Therefore, they are fooling the scientific system as well as members of the readership.

An exploratory analysis of 4844 withdrawn articles and their retraction notes.

Catalin Toma[1], Liliana Padureanu[2]

[1] Romedchim International S.R.L., Iasi, Romania (catalin.toma@gmail.com), [2] Emergency Clinical Hospital 'St. Spiridon': Iasi, R.O.

Abstract.

The objective of our study was to obtain an updated image of the dynamic of retractions and retraction notes, retraction reasons for questionable research and publicati[illegible]ractices, countries producing retracted articles, and the scientific impact of retractions by studying 4844 PubMe[illegible]exed retracted articles published between 2009 and 2020 and their retraction notes.

RESULTS.

Mistakes/inconsistent data account for 32% of total retractions, followed by images(22,5%), plagiarism(13,7%) and overlap(11,5%).

Thirty countries account for 94,79% of 4844 retractions. Top five are: China(32,78%), United States(18,84%), India(7,25%), Japan(4,37%) and Italy(3,75%).

The total citations number for all articles is 140810(Google Scholar), 96000(Dimensions).

Average exposure time(ET) is 28,89 months. Largest ET is for image retractions(49,3 months), lowest ET is for editorial errors(11,2 months).

The impact of retracted research is higher for Spain, Sweden, United Kingdom, United States, and other nine countries and lower for Pakistan, Turkey, Malaysia, and other six countries, including China.

CONCLUSIONS.

Mistakes and data inconsistencies represent the main retraction reason; images and ethical issues show a growing trend, while plagiarism and overlap still represent a significant problem. There is a steady increase in QRP and QPP article withdrawals. Retraction of articles seems to be a technology-dependent process.

The number of citations of retracted articles shows a high impact of papers published by authors from certain countries. The number of retracted articles per country does not always accurately reflect the scientific impact of QRP/QPP articles.

The country distribution of retraction reasons shows structural problems in the organization and quality control of scientific research, which have different images depending on geographical location, economic development, and cultural model.

KEYWORDS: questionable research practices, questionable publication practices, retracted papers, retraction notes

questionable research practices(QRP)

questionable publication practices(QPP)

Scientometrics (2021) 126:6871–6889
https://doi.org/10.1007/s11192-021-03987-y

Research ethics: a profile of retractions from world class universities

Caroline Lievore[1] · Priscila Rubbo[1] · Celso Biynkievycz dos Santos[2] · Claudia Tânia Picinin[1] · Luiz Alberto Pilatti[1]

Received: 20 November 2020 / Accepted: 1 April 2021 / Published online: 23 May 2021

Abstract
This study aims to profile the scientific retractions published in journals indexed in the Web of Science database from 2010 to 2019, from researchers at the top 20 World Class Universities according to the Times Higher Education global ranking of 2020. Descriptive statistics, Pearson's correlation coefficient, and simple linear regression were used to analyze the data. Of the 330 analyzed retractions, Harvard University had the highest number of retractions and the main reason for retraction was data results. We conclude that the universities with a higher ranking tend to have a lower rate of retraction.

Keyword Retraction · Research Anti-ethics · World Class Universities · Ranking

times higher education (THE) ranking (2020)

Introduction

Unethical research undermines confidence in researchers, universities, journals, and in science itself. In this sense, the peer review process, along with the responsible and transparent correction of articles, aims to guarantee the quality of knowledge available (Fang & Casadevall, 2011; Fennell, 2019; Lei & Zhang, 2018). However, even if research is submitted to peer review, this process may fail (Van Leeuwen & Luwel, 2014), and research with honest or dishonest errors does get published, as well as those with scientific dishonesty.

✉ Caroline Lievore
carolievore1@gmail.com

Priscila Rubbo
rubbo.priscila@gmail.com

Celso Biynkievycz dos Santos
bilynkievycz@globo.com

Claudia Tânia Picinin
claudiapicinin@utfpr.edu.br

Luiz Alberto Pilatti
lapilatti@utfpr.edu.br

[1] Federal University of Technology – Paraná (UTFPR), Ponta Grossa, Brazil

[2] State University of Ponta Grossa (UEPG), Ponta Grossa, Brazil

Table 4 Number of retractions per university in the period from 2010 to 2019. *Source*: Authors (2020)

Rank	University	Published articles	Retractions	Retraction ratio %	Distribution of retractions per University %
		times higher education (THE) ranking (2020)			
1	Oxford University	89,731	11	0.012	3.33
2	California Institute of Technology	32,736	2	0.006	0.61
3	Cambridge University	79,220	7	0.009	2.12
4	Stanford University	85,892	20	0.023	6.06
5	Massachusetts Institute of Technology	63,187	13	0.021	3.94
6	Princeton University	31,952	3	0.009	0.91
7	Harvard University	204,072	59	0.029	17.87
8	Yale University	61,340	12	0.020	3.64
9	University of Chicago	57,632	9	0.016	2.73
10	Imperial College of London	68,670	17	0.025	5.15
11	University of Pennsylvania	75,823	19	0.025	5.76
12	Johns Hopkins University	89,462	15	0.017	4.55
13	University of California, Berkeley	68,336	5	0.007	1.52
14	ETH Zurich	50,388	8	0.016	2.42
15	University College London	93,036	23	0.025	6.97
16	Columbia University	72,214	10	0.014	3.03
17	University of California, Los Angeles	78,132	14	0.018	4.24
18	University of Toronto	110,689	26	0.023	7.88
19	Cornell University	61,870	23	0.037	6.97
20	Duke University	60,884	34	0.056	10.30
	Total	1,535,266	330	0.021	100
Summary statistics	μ	76,763.30	16.50	0.020	5.00
	±	35,619.55	12.90	0.011	3.91

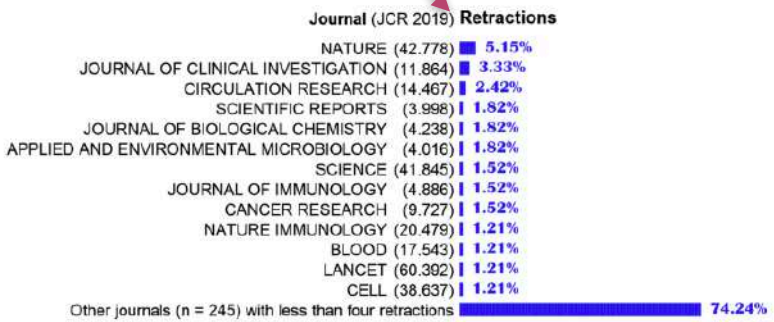
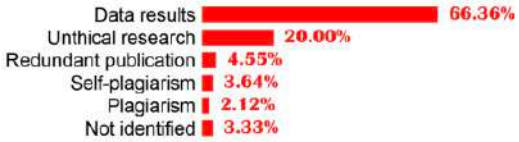


Fig. 3 Distribution of retractions per Journal. *Source*: Authors (2020)

Fig. 4 Distribution by type of retraction. *Source*: Authors (2020)



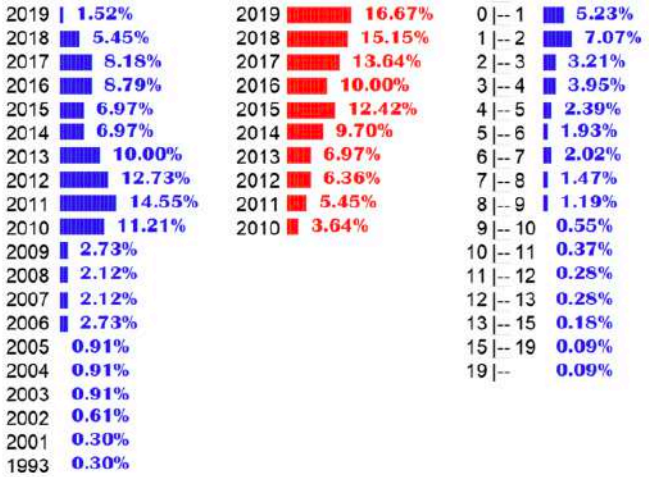


Fig. 5 Year of publication of the paper (**a**), year of retractation(**b**), and time between publication and retraction in years (**c**). *Source*: Authors (2020)

Person responsible for the retraction

Figure 7 shows the person responsible for the retractions. In almost half of the retractions (43.64% of the cases), the author was listed as responsible.

Top 10 most highly cited retracted papers

Ever curious which retracted papers have been most cited by other scientists? Below, we present the list of the 10 most highly cited retractions as of December 2020. Readers will see some familiar entries, such as the infamous *Lancet* paper by Andrew Wakefield that originally suggested a link between autism and childhood vaccines. You'll note that several papers — including the #2 most cited paper — received more citations after they were retracted, which research has shown is an ongoing problem.

https://retractionwatch.com/the-retraction-watch-leaderboard/top-10-most-highly-cited-retracted-papers/

Article	Year of retraction	Citing Articles before retraction	Citing Articles after retraction	Total cites (journals indexed by Web of Science)
1. Primary Prevention of Cardiovascular Disease with a Mediterranean Diet. N ENGL J MED; APR 2013. IF= 91,24 *Estruch R, Ros E, Salas-Salvado J, Covas MI, Corella, D, Aros F, Gomez-Gracia E, Ruiz-Gutiérrez V, Fiol M, Lapetra J, Lamuela-Raventos RM, Serra-Majem L, Pinto X, Basora J, Munoz MA, Sorli JV, Martinez JA, Martinez-Gonzalez MA, et al., for the PREDIMED Study Investigators*	2018	1919	816	2735
2. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. LANCET; FEB 28 1998. IF= 79, 32 *Wakefield AJ, Murch SH, Anthony A, Linnell J, Casson DM, Malik M*	2010	642	867	1509

Barcelona University
Navarra University, Spain

Vacinas MMR sarampo, caxumba, rubéola poderiam levar ao Autismo

Royal Free Hospital and School of Medicine, London NW3 2QG, UK

IF= Impact Factor of the Journal

CORRESPONDENCE

Article 1

Retraction and Republication: Primary Prevention of Cardiovascular Disease with a Mediterranean Diet. N Engl J Med 2013;368:1279-90.

TO THE EDITOR: Because of irregularities in the randomization procedures, we wish to retract the following article: Primary Prevention of Cardiovascular Disease with a Mediterranean Diet. N Engl J Med 2013;368:1279-90. DOI: 10.1056/NEJMoa1200303.[1] We have reanalyzed the data and have published a new report: Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts. N Engl J Med. DOI: 10.1056/NEJMoa1800389.[2]

Ramón Estruch, M.D., Ph.D.
CIBEROBN
Madrid, Spain

Emilio Ros, M.D., Ph.D.
Instituto de Investigaciones Biomédicas Augusto Pi Sunyer
Barcelona, Spain

Jordi Salas-Salvadó, M.D., Ph.D.
Rovira i Virgili University
Tarragona, Spain

Maria-Isabel Covas, D.Pharm., Ph.D.
Hospital del Mar Medical Research Institute
Barcelona, Spain

Dolores Corella, D.Pharm., Ph.D.
University of Valencia
Valencia, Spain

Fernando Arós, M.D., Ph.D.
University Hospital Araba
Vitoria, Spain

Enrique Gómez-Gracia, M.D., Ph.D.
University of Malaga
Malaga, Spain

Valentina Ruiz-Gutiérrez, Ph.D.
Instituto de la Grasa
Seville, Spain

Miquel Fiol, M.D., Ph.D.
Institute of Health Sciences
Palma de Mallorca, Spain

José Lapetra, M.D., Ph.D.
Distrito Sanitario Atención Primaria
Seville, Spain

Rosa M. Lamuela-Raventos, D.Pharm., Ph.D.
University of Barcelona
Barcelona, Spain

Lluís Serra-Majem, M.D., Ph.D.
Research Institute of Biomedical and Health Sciences
Las Palmas, Spain

Xavier Pintó, M.D., Ph.D.
Bellvitge University Hospital
Barcelona, Spain

Josep Basora, M.D., Ph.D.
Miguel A. Muñoz, M.D., Ph.D.
Instituto de Investigación en Atención Primaria J. Gol
Barcelona, Spain

THIS WEEK'S LETTERS

Early report

Article 2

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, D M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S E Davies, J A Walker-Smith

Summary

Background We investigated a consecutive series of children with chronic enterocolitis and regressive developmental disorder.

Methods 12 children (mean age 6 years [range 3–10], 11 boys) were referred to a paediatric gastroenterology unit with a history of normal development followed by loss of acquired skills, including language, together with diarrhoea and abdominal pain. Children underwent gastroenterological, neurological, and developmental assessment and review of developmental records. Ileocolonoscopy and biopsy sampling, magnetic-resonance imaging (MRI), electroencephalography (EEG), and lumbar puncture were done under sedation. Barium follow-through radiography was done where possible. Biochemical, haematological, and immunological profiles were examined.

Findings Onset of behavioural symptoms was associated by the parents, with measles, mumps, and rubella vaccination in eight of the 12 children, with measles infection in one child, and otitis media in another. All 12 children had intestinal abnormalities ranging from lymphoid nodular hyperplasia to aphthoid ulceration. Histology showed patchy chronic inflammation in 11 children and reactive ileal lymphoid hyperplasia in seven, but no granulomas. Behavioural disorders included autism (nine), disintegrative psychosis (one), and possible postviral or vaccinal encephalitis (two). There were no focal neurological abnormalities and MRI and EEG tests were normal. Abnormal laboratory results were significantly raised urinary methylmalonic acid compared with age-matched controls ($p=0.003$), low haemoglobin in four children, and a low serum IgA in four children.

Interpretation We identified associated gastrointestinal disease and developmental regression in a group of previously normal children, which was generally associated in time with possible environmental triggers.

Lancet 1998; **351**: 637–41
See Commentary page

Inflammatory Bowel Disease Study Group, University Departments of Medicine and Histopathology (A J Wakefield FRCS, A Anthony MB, J Linnell PhD, A P Dhillon MRCPath, S E Davies MRCPath) **and the University Departments of Paediatric Gastroenterology** (S H Murch MB, D M Casson MRCP, M Malik MRCP, M A Thomson FRCP, J A Walker-Smith FRCP,), **Child and Adolescent Psychiatry** (M Berelowitz FRCPsych), **Neurology** (P Harvey FRCP), **and Radiology** (A Valentine FRCR), **Royal Free Hospital and School of Medicine, London NW3 2QG, UK**

Correspondence to: Dr A J Wakefield

Introduction

We saw several children who, after a period of apparent normality, lost acquired skills, including communication. They all had gastrointestinal symptoms, including abdominal pain, diarrhoea, and bloating and, in some cases, food intolerance. We describe the clinical findings, and gastrointestinal features of these children.

Patients and methods

12 children, consecutively referred to the department of paediatric gastroenterology with a history of a pervasive developmental disorder with loss of acquired skills and intestinal symptoms (diarrhoea, abdominal pain, bloating and food intolerance), were investigated. All children were admitted to the ward for a week, accompanied by their parents.

Clinical investigations

We took histories including details of immunisations and exposure to infectious diseases, and assessed the children. In 11 cases the history was obtained by the senior clinician (JW-S). Neurological and psychiatric assessments were done by consultant staff (PH, MB) with HMS-4 criteria.[1] Developmental history included a review of prospective developmental records from parents, health visitors, and general practitioners. Four children did not undergo psychiatric assessment in hospital; all had been assessed professionally elsewhere, so these assessments were used as the basis for their behavioural diagnosis.

After bowel preparation, ileocolonoscopy was performed by SHM or MAT under sedation with midazolam and pethidine. Paired frozen and formalin-fixed mucosal biopsy samples were taken from the terminal ileum; ascending, transverse, descending, and sigmoid colons, and from the rectum. The procedure was recorded by video or still images, and were compared with images of the previous seven consecutive paediatric colonoscopies (four normal colonoscopies and three on children with ulcerative colitis), in which the physician reported normal appearances in the terminal ileum. Barium follow-through radiography was possible in some cases.

Also under sedation, cerebral magnetic-resonance imaging (MRI), electroencephalography (EEG) including visual, brain stem auditory, and sensory evoked potentials (where compliance made these possible), and lumbar puncture were done.

Laboratory investigations

Thyroid function, serum long-chain fatty acids, and cerebrospinal-fluid lactate were measured to exclude known causes of childhood neurodegenerative disease. Urinary methylmalonic acid was measured in random urine samples from eight of the 12 children and 14 age-matched and sex-matched normal controls, by a modification of a technique described previously.[2] Chromatograms were scanned digitally on computer, to analyse the methylmalonic-acid zones from cases and controls. Urinary methylmalonic-acid concentrations in patients and controls were compared by a two-sample t test. Urinary creatinine was estimated by routine spectrophotometric assay.

Children were screened for antiendomyseal antibodies and boys were screened for fragile-X if this had not been done

RETRACTED

Article 2

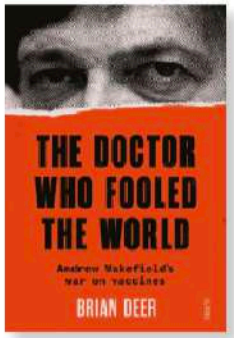
The discredited doctor hailed by the anti-vaccine movement

Riveting biography is a cautionary lesson in the legacy of hubris. **By Saad B. Omer**

Wakefield, foi cancelado o registro Médico por má conduta.

Since Edward Jenner's first scientific description of vaccination in 1798 – using cowpox pus to protect against smallpox – there has been pushback. Throughout the nineteenth century, in the United States and the United Kingdom, there were cycles of increased smallpox vaccination, rising opposition, drops in immunization coverage, outbreaks, better appreciation of vaccination, more of it, and more protests. This stand-off eased around the start of the twentieth century when, with sanitation and medical care improving, public health placed less emphasis on compulsory vaccination. Probably the last time the world waited with bated breath for a vaccine – against polio in the 1950s – it was welcomed with open arms.

The modern wave of vaccine scepticism has its origins in the 1970s. That was when concerns (later determined to be unfounded) about the safety of a whole-cell vaccine against pertussis, or whooping cough, came to the fore in many high-income countries. In the 1980s and 1990s, a few organized groups opposed to vaccines emerged in many countries, including the United Kingdom.



The Doctor Who Fooled the World: Andrew Wakefield's War on Vaccines
Brian Deer
Scribe UK (2020)

It was in this context that, in 1998, Andrew Wakefield and his colleagues published a now-infamous and retracted paper in *The Lancet*, following which, in 2010, Wakefield was struck off the UK medical register for misconduct by the country's General Medical Council. The fraudulent work on 12 children promoted a non-existent connection between autism and the MMR vaccine, used against measles, mumps and rubella. It propelled Wakefield to notoriety and turbocharged the anti-vaccine movement. He remains a headliner on the international vaccine-sceptic circuit as diseases once vanquished return because of falling rates of immunization. Many large epidemiological studies have found no difference in risk of developmental delays between children who receive the MMR vaccine and those who don't[1].

3. Visfatin: A protein secreted by visceral fat that mimics the effects of insulin. SCIENCE; JAN 2005. IF= 47, 72 *Fukuhara A, Matsuda M, Nishizawa M, Segawa K, Tanaka M, Kishimoto K, Matsuki Y, Murakami M, Ichisaka T, Murakami H, Watanabe E, Takagi T, Akiyoshi M, Ohtsubo T, Kihara S, Yamashita S, Makishima M, Funahashi T, Yamanaka S, Hiramatsu R, Matsuzawa Y, Shimomura I.*	2007	232	1192	1424
4. An enhanced transient expression system in plants based on suppression of gene silencing by the p19 protein of tomato bushy stunt virus. PLANT J; MAR 2003. IF= 6,14 *Voinnet O, Rivas S, Mestre P, Baulcombe D.*	2015	896	375	1271

Sumitomo Pharmaceutics,Kyoto, Japan

Imperial College London, 59-61 North Wharf Road, London W2 1LA, UK
Strasbourg, Cedex, France

RETRACTION

Article 3

Retraction

ATSUNORI FUKUHARA , MORIHIRO MATSUDA , MASAKO NISHIZAWA, KATSUMORI SEGAWA , MASAKI TANAKA , KAE KISHIMOTO, YASUSHI MATSUKI, MIREI MURAKAMI,

The visfatin work performed in our laboratory was recently investigated by the Committee for Research Integrity (CRI) of Osaka University Graduate School of Medicine. On the basis of the CRI report, which focused largely on our biochemical experiments examining visfatin-s interaction with the insulin receptor, the Faculty Council of Osaka University Medical School recommended that we retract the entire paper. At the suggestion of the Editor of *Science*, we have agreed to retract the paper, even though we continue to stand by our conclusions. We note that over a dozen subsequent publications have shown that plasma visfatin levels in humans correlate with various metabolic states, including obesity, visceral fat mass, and diabetes [for example, (4â€"6)]. We note also that another laboratory recently reported that visfatin has insulin mimetic effects in cultured osteoblasts (7). We acknowledge that, since publication of the *Science* Report, we have found that not all preparations of visfatin bind to and activate the insulin receptor. Thus far, we have found four different lots of purified recombinant visfatin protein that have both adipogenic and insulin mimetic activities. We still have the preparations of visfatin that show insulin mimetic activity, although the amount is limited, and we are willing to send them to other investigators for independent validation. We are continuing to investigate the significance of this molecule.

We regret any inconvenience caused by this retraction to researchers and readers. The corresponding author is responsible for the retraction.

the plant journal

SEB Society for Experimental Biology

The Plant Journal (2015) **84**, 846–846

Article 4

doi: 10.1111/tpj.13066

Retraction: 'An enhanced transient expression system in plants based on suppression of gene silencing by the p19 protein of tomato bushy stunt virus'

The above article, first published online on 28 February 2003 in Wiley Online Library (wileyonlinelibrary.com), and in volume 33, pp. 949–956, has been retracted by agreement between the authors, the journal Editor in Chief, Christoph Benning, and John Wiley & Sons Ltd.

This notice updates and replaces a recent correction notice, published on 8 June 2015.

In the above article, it has recently been noted that the original Figure 3b in this paper was assembled incorrectly and included image duplications. As the original data are no longer available for assembly of a corrected figure, the experiment was repeated, in agreement with the editors, by co-author S. Rivas. The data from the repeated experiment, presented below together with the original figure legend, lead to the same interpretation and conclusions as in the original paper.

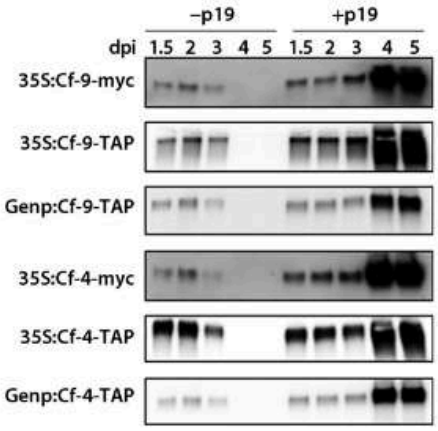


Figure 3. (b) Enhanced transient expression of tagged Cf proteins in the presence of P19. *Agrobacterium* cells carrying the indicated Cf tagged constructs were mixed together with (+p19) or without (–p19) the 35S:p19 strain and infiltrated into *Nicotiana benthamiana* leaves. At the times indicated, samples were harvested and total solubilised protein extracts were prepared. Proteins (50 μg) were separated by SDS-PAGE and analysed by immunoblot using a PAP or anti-c-myc antibody for detection of TAP- and c-myc-tagged Cf-9, respectively.

Since publication of the above notice the corresponding author has become aware of additional image duplications involving the loading control lanes of Figures 2g, 3a, 4e and 4f.

The authors accept that integrity of the scientific literature is compromised by the data manipulation and, for that reason, they wish to retract the article. However, researchers wishing to use the method described in this paper can still obtain the necessary clones from the corresponding author (dcb40@cam.ac.uk).

The authors apologise for having allowed this flawed article to be published.

REFERENCE

Voinnet, O., Rivas, S., Mestre, P. and Baulcombe, D. (2003) An enhanced transient expression system in plants based on suppression of gene silencing by the p19 protein of tomato bushy stunt virus. *The Plant J.* **33**, 949–956.

5. Lysyl oxidase is essential for hypoxia-induced metastasis. NATURE; APR 2006. IF= 49, 96 *Erler JT, Bennewith KL, Nicolau M, Dornhöfer N, Kong C, Le QT, Chi JT, Jeffrey SS, Giaccia AJ.*	2020	977	81	1058
	Stanford, California 94305, USA. University of Leipzig, Leipzig 04103, Germany. Duke University, Durham, North Carolina, USA.			
6. TREEFINDER: a powerful graphical analysis environment for molecular phylogenetics. BMC EVOL BIOL; JUN 2004. IF= 3,14 *Jobb G, von Haeseler A, Strimmer K.*	2015	836	158	994
	Dusseldorf University, Germany			

nature

Article 5

Vol 440|27 April 2006|doi:10.1038/nature04695

LETTERS

Lysyl oxidase is essential for hypoxia-induced metastasis

Janine T. Erler[1], Kevin L. Bennewith[1], Monica Nicolau[2], Nadja Dornhöfer[4], Christina Kong[3], Quynh-Thu Le[1], Jen-Tsan Ashley Chi[5], Stefanie S. Jeffrey[2] & Amato J. Giaccia[1]

Metastasis is a multistep process responsible for most cancer deaths, and it can be influenced by both the immediate microenvironment (cell–cell or cell–matrix interactions) and the extended tumour microenvironment (for example vascularization)[1]. Hypoxia (low oxygen) is clinically associated with metastasis and poor patient outcome, although the underlying processes remain unclear[2]. Microarray studies have shown the expression of lysyl oxidase (LOX) to be elevated in hypoxic human tumour cells[3]. Paradoxically, LOX expression is associated with both tumour suppression and tumour progression, and its role in tumorigenesis seems dependent on cellular location, cell type and transformation status[4–9]. Here we show that LOX expression is regulated by hypoxia-inducible factor (HIF) and is associated with hypoxia in human breast and head and neck tumours. Patients with high LOX-expressing tumours have poor distant metastasis-free and overall survivals. Inhibition of LOX eliminates metastasis in mice with orthotopically grown breast cancer tumours. Mechanistically, secreted LOX is responsible for the invasive properties of hypoxic human cancer cells through focal adhesion kinase activity and cell to matrix adhesion. Furthermore, LOX may be required to create a niche permissive for metastatic growth. Our findings indicate that LOX is essential for hypoxia-induced metastasis and is a good therapeutic target for preventing and treating metastases.

First we validated LOX as a hypoxia-responsive gene and found it to be regulated at the messenger RNA level by hypoxia-inducible factor-1 (HIF-1) through a functional hypoxia-responsive element identified and tested in the LOX promoter (Supplementary Fig. 1). To examine the clinical relevance of hypoxia-induced LOX, we performed a retrospective breast cancer and a prospective head and neck cancer study[10,11]. There was significant correlation between the LOX expression level and hypoxia in patients (Fig. 1a, d). LOX expression was statistically associated with oestrogen receptor (ER) status (Supplementary Table 1), consistent with the finding that highly hypoxic tumours are most likely to be ER-negative[12]. This is of clinical importance because ER-negative breast cancer patients generally have a worse prognosis[13]. LOX expression was associated with lower distant metastasis-free survival and overall survival in breast cancer patients with ER-negative tumours, and in head and neck cancer patients (Fig. 1b–f).

To study the way in which hypoxia-induced LOX could influence metastasis and survival, we generated *LOX* short hairpin RNA (shRNA) expressing human MDA231 breast and SiHa cervical cancer cells. These cells expressed significantly less *LOX* mRNA and protein than cells expressing a scrambled control sequence, but grew at similar rates *in vitro* and *in vivo* (Supplementary Fig. 4). MDA231 cells were grown as orthotopic tumours in nude mice. Hypoxic regulation of LOX was confirmed in tumours by staining for LOX and pimonidazole (Fig. 2a). Mice bearing shRNA-expressing tumours had significantly fewer lung metastases and no liver metastases, in contrast with wild-type tumours (Fig. 2b, c).

To evaluate the therapeutic usefulness of inhibiting LOX, mice

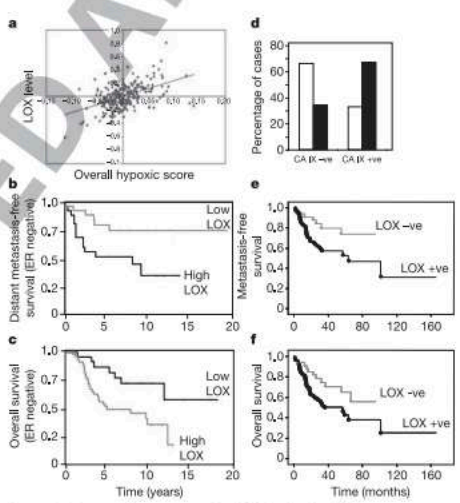


Figure 1 | Cancer patients expressing high levels of LOX have poor outcome. a, Correlation between the LOX expression level (*y* axis) and average hypoxia score (*x* axis) among breast cancer patients ($n = 295$)[10]. $P < 0.0001$. **b**, **c**, Kaplan–Meyer plots showing that patients with ER-negative breast tumours with high LOX expression levels had statistically significant reduced metastasis-free survival (**b**; $P = 0.009$) and overall survival (**c**; $P = 0.015$) than patients with low LOX expression levels. **d**, Comparison of LOX protein expression levels with those of CA-IX in a tissue array study from head and neck cancer patients ($n = 91$)[11]. Filled bars, LOX positive; open bars, LOX negative. $P = 0.006$. **e**, **f**, Kaplan–Meyer plots showing that head and neck cancer patients whose tumours stained positive for LOX had statistically significant reduced metastasis-free survival (**e**; $P = 0.02$) and overall survival (**f**; $P = 0.046$) than patients whose tumours stained negative for LOX.

[1]Department of Radiation Oncology, [2]Department of Surgery, [3]Department of Pathology, Stanford University School of Medicine, Stanford, California 94305, USA. [4]Department of Obstetrics and Gynecology, University of Leipzig, Leipzig 04103, Germany. [5]Department of Molecular Genetics and Microbiology, Duke University, Durham, North Carolina 27708, USA.

Article 6

BMC Evolutionary Biology

BioMed Central

Software

Open Access

TREEFINDER: a powerful graphical analysis environment for molecular phylogenetics

Gangolf Jobb*[1], Arndt von Haeseler[2,3] and Korbinian Strimmer[1]

Address: [1]Department of Statistics, University of Munich, Ludwigstr. 33, D-80539 Munich, Germany, [2]Department of Computer Science, University of Düsseldorf, Universitätsstr. 1, D-40225 Düsseldorf, Germany and [3]John von Neumann Institute for Computing, Forschungszentrum Jülich, D-52425 Jülich, Germany

Email: Gangolf Jobb* - gangolf@treefinder.de; Arndt von Haeseler - haeseler@cs.uni-duesseldorf.de; Korbinian Strimmer - strimmer@stat.uni-muenchen.de

* Corresponding author

Published: 28 June 2004

BMC Evolutionary Biology 2004, **4**:18 doi:10.1186/1471-2148-4-18

Received: 16 March 2004
Accepted: 28 June 2004

This article is available from: http://www.biomedcentral.com/1471-2148/4/18

Abstract

Background: Most analysis programs for inferring molecular phylogenies are difficult to use, in particular for researchers with little programming experience.

Results: TREEFINDER is an easy-to-use integrative platform-independent analysis environment for molecular phylogenetics. In this paper the main features of TREEFINDER (version of April 2004) are described. TREEFINDER is written in ANSI C and Java and implements powerful statistical approaches for inferring gene tree and related analyzes. In addition, it provides a user-friendly graphical interface and a phylogenetic programming language.

Conclusions: TREEFINDER is a versatile framework for analyzing phylogenetic data across different platforms that is suited both for exploratory as well as advanced studies.

Background

Computational inference of molecular phylogenies has a wide spectrum of applications in the analysis of DNA sequences, ranging from systematic biology to population genetics and comparative genomics [1].

As a result, a large body of theoretical methodology has developed [2], along with numerous specialist software packages. However, often the most advanced of these computer programs typically provide only a very Spartan user interface and hence are too difficult to use without additional training, especially for novices in phylogeny. One notable exception is the popular commercially distributed PAUP* software [3] that implements both powerful probabilistic methods for modeling and inferring gene trees and at the same time offers a friendly graphical user interface (GUI). Unfortunately, this GUI is currently available only on the Macintosh platform.

On the other hand, a more experienced user will quickly outgrow the limits of a graphical user interface. Consequently, to facilitate complex sequence analysis corresponding scripting languages have been developed. For example, in PAUP* all elements of its GUI can also be invoked on the command line. However, for the rapid deployment of specialized phylogenetic analysis tools one still needs the additional flexibility of a *programming* rather than scripting language.

Therefore, in an integrative general-purpose phylogenetic analysis environment ideally several complementary objectives are taken into account:

Article 6

Jobb et al. BMC Evolutionary Biology (2015) 15:243
DOI 10.1186/s12862-015-0513-z

BMC Evolutionary Biology

RETRACTION NOTE

Open Access

Retraction Note: TREEFINDER: a powerful graphical analysis environment for molecular phylogenetics

Gangolf Jobb[1*], Arndt von Haeseler[2,3] and Korbinian Strimmer[1]

Retraction

The editors of *BMC Evolutionary Biology* retract this article [1] due to the decision by the corresponding author, Gangolf Jobb, to change the license to the software described in the article. The software is no longer available to all scientists wishing to use it in certain territories. This breaches the journal's editorial policy on software availability [2] which has been in effect since the time of publication. The other authors of the article, Arndt von Haeseler and Korbinian Strimmer, have no control over the licensing of the software and support the retraction of this article.

Author details
[1]Department of Statistics, University of Munich, Ludwigstr. 33, D-80539 Munich, Germany. [2]Department of Computer Science, University of Düsseldorf, Universitätsstr. 1, D-40225 Düsseldorf, Germany. [3]John von Neumann Institute for Computing, Forschungszentrum Jülich, D-52425 Jülich, Germany.

Received: 19 October 2015 Accepted: 20 October 2015
Published online: 05 November 2015

References

1. Jobb G, von Haeseler A, Strimmer K. TREEFINDER: a powerful graphical analysis environment for molecular phylogenetics. BMC Evol Biol. 2004;4:18.
2. BMC Evolutionary Biology's Instructions for Authors of Software Articles: http://www.biomedcentral.com/bmcevolbiol/authors/instructions/software. Accessed 15 October 2015.

* Correspondence: gangolf@treefinder.de
The online version of the original article can be found under doi:10.1186/1471-2148-4-18.
[1]Department of Statistics, University of Munich, Ludwigstr. 33, D-80539 Munich, Germany

7. **Cardiac stem cells in patients with ischaemic cardiomyopathy (SCIPIO): initial results of a randomised phase 1 trial. LANCET, NOV 2011.** IF= 79, 32 *Bolli R, Chugh AR, D'Amario D, Loughran JH, Stoddard MF, Ikram S, Beache GM, Wagner SG, Leri A, Hosoda T, Sanada F, Elmore JB, Goichberg P, Cappetta D, Solankhi NK, Fahsah I, Rokosh DG, Slaughter MS, Kajstura J, Anversa P.*	2019	917	71	988
8. **Purification and ex vivo expansion of postnatal human marrow mesodermal progenitor cells. BLOOD: NOV 2001.** IF= 25,47 *Reyes M, Lund T, Lenvik T, Aguiar D, Koodie L, Verfaillie CM.*	2009	596	315	911

University of Louisville, Louisville, KY, USA; and Departments of Anesthesia and Medicine and Division of Cardiovascular Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA

University of Minnesota Medical School, Minneapolis.

Article 7

been implemented at national and global levels, and have sparked national dialogue on the Global Strategy and challenges of moving toward UHC in multiple countries.

3 years into the SDGs, clear and shared understandings of accountability are needed. The IAP is a small panel, with an enormous mandate. The replication of accountability mechanisms will fragment and dilute meaningful oversight. UHC should be the umbrella for all these bodies that should agree on principles and priorities so that promises made in the SDGs will be delivered.

*Alicia Ely Yamin, Elizabeth Mason, on behalf of the IAP†
Petrie-Flom Center for Health Law Policy, Biotechnology and Bioethics at Harvard Law School, and Global Health Education and Learning Incubator at Harvard University, Boston, MA 02138, USA (AEY); and Faculty of Epidemiology and Population Health, Department of Infectious Disease Epidemiology, London School of Hygiene & Tropical Medicine, London, UK (EM)
ayamin@hsph.harvard.edu

†The members of the Independent Accountability Panel (IAP) are: Alicia Ely Yamin (USA); Elizabeth Mason (UK); co-chairs Joy Phumaphi (Botswana) and Kul Gautam (Nepal); Brenda Killen (Ireland), Giorgi Pkhakadze (Georgia), Nicolas Kojo Alipuri (Ghana); Dame Carol Kidu (Papua New Guinea), Gita Sen (India); and Jovana Ríos (Panama).

We declare no competing interests.

1 UN Secretary-General. Global Strategy for Women's and Children's Health. 2010. http://www.who.int/pmnch/topics/maternal/20100914_gswch_en.pdf?ua=1 (accessed Feb 12, 2019).
2 WHO. Commission on Information and Accountability for Women and Children's Health. Final report. 2011. http://www.who.int/woman_child_accountability/about/coia/en/ (accessed Feb 12, 2019).
3 UN Secretary-General. The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030). 2015. http://who.int/life-course/partners/global-strategy/globalstrategyreport2016-2030-lowres.pdf (accessed Feb 12, 2019).
4 Independent Accountability Panel. Old challenges, new hopes: accountability for the Global Strategy for Women's, Children's and Adolescents' Health. 2016. http://www.iapreport.org/downloads/IAP_Report_September2016.pdf (accessed Feb 12, 2019).
5 Independent Accountability Panel. Transformative accountability for adolescents: accountability for the health and human rights of women, children and adolescents. 2017. http://iapreport.org/files/IAP%20Annual%20Report%202017-online-final-web_with%20endnotes.pdf. (accessed Feb 12, 2019).
6 Independent Accountability Panel. Who is accountable?: private sector accountability for the Global Strategy for Women's, Children's and Adolescents' Health. 2018. https://iapewec.org/reports/2018report/ (accessed Feb 12, 2019).
7 Hunt P. The importance of formal independent review: an opportunity for health to lead the way. *Health and Human Rights Blog*, Sept 2, 2015. http://www.hhrjournal.org/2015/09/sdg-series-sdgs-and-the-importance-of-formal-independent-review-an-opportunity-for-health-to-lead-the-way/ (accessed Feb 12, 2019).
8 WHO, Office of the High Commissioner for Human Rights. Leading the realization of human rights to health and through health: report of the High-Level Working Group on the Health and Human Rights of Women, Children and Adolescents. 2017. https://www.who.int/life-course/publications/hhr-of-women-children-adolescents-report/en/ (accessed Feb 12, 2019).
9 WHO. International Code of Marketing of Breast-milk Substitutes. https://www.who.int/nutrition/publications/code_english.pdf (accessed Feb 12, 2019).

Retraction—Cardiac stem cells in patients with ischaemic cardiomyopathy (SCIPIO): initial results of a randomised phase 1 trial

Following a communication from Harvard Medical School in 2014, we published an Expression of Concern[1] about the above-referenced SCIPIO trial.[2] We promised to inform readers when further investigations were complete.[1] The results of these investigations persuade us that the laboratory work undertaken by Piero Anversa and colleagues at Harvard cannot be held to be reliable. Specifically, there are issues with the data presented in figures 2 and 3 and in supplemental figures 2 and 3. SCIPIO was a collaboration between Anversa's laboratory in Boston, MA, USA, and Roberto Bolli's team in Louisville, KY, USA. Anversa's laboratory isolated, expanded, and characterised the c-kit positive cells, which were then shipped to Louisville, where they were administered to patients and all the clinical work was done. The Louisville team was not involved with the manufacturing and characterisation of c-kit positive cells. Although we do not have any reservations about the clinical work in Louisville that used the preparations from Anversa's laboratory in good faith, the lack of reliability regarding the laboratory work at Harvard means that we are now retracting this paper.

The Lancet Editors
The Lancet, London EC2Y 5AS, UK

1 The Lancet Editors. Expression of concern: the SCIPIO trial. *Lancet* 2014; **383:** 1279.
2 Bolli R, Chugh AR, D'Amario D, et al. Cardiac stem cells in patients with ischaemic cardiomyopathy (SCIPIO): initial results of a randomised phase 1 trial. *Lancet* 2011; **378:** 1847–57.

Article 8

Plenary paper

Purification and ex vivo expansion of postnatal human marrow mesodermal progenitor cells

Morayma Reyes, Troy Lund, Todd Lenvik, Dean Aguiar, Lisa Koodie, and Catherine M. Verfaillie

It is here reported that mesenchymal stem cells known to give rise to limb-bud mesoderm can, at the single-cell level, also differentiate into cells of visceral mesoderm and can be expanded extensively by means of clinically applicable methods. These cells were named mesodermal progenitor cells (MPCs). MPCs were selected by depleting bone marrow mononuclear cells from more than 30 healthy human donors of CD45$^+$/glycophorin-A (GlyA)$^+$ cells. Cells were cultured on fibronectin with epidermal growth factor and platelet-derived growth factor BB and 2% or less fetal calf serum. It was found that 1/5 × 10^3 CD45$^-$GlyA$^-$ cells, or 1/10^6 bone marrow mononuclear cells, gave rise to clusters of small adherent cells. Cell-doubling time was 48 to 72 hours, and cells have been expanded in culture for more than 60 cell doublings. MPCs are CD34$^-$, CD44^{low}, CD45$^-$, CD117 (cKit)$^-$, class I–HLA$^-$, and HLA-DR$^-$. MPCs differentiated into cells of limb-bud mesoderm (osteoblasts, chondrocytes, adipocytes, stroma cells, and skeletal myoblasts) as well as visceral mesoderm (endothelial cells). Retroviral marking was used to definitively prove that single MPCs can differentiate into cells of limb bud and visceral mesoderm. Thus, MPCs that proliferate without obvious senescence under clinically applicable conditions and differentiate at the single-cell level not only into mesenchymal cells but also cells of visceral mesoderm may be an ideal source of stem cells for treatment of genetic or degenerative disorders affecting cells of mesodermal origin. (Blood. 2001;98:2615-2625)

Introduction

Embryonic stem (ES) cells are pluripotent cells derived from blastocysts that can be propagated indefinitely undifferentiated in vitro, can differentiate to all cell lineages in vivo, and can be induced to differentiate to most cell types in vitro.[1-4] Although ES cells have been isolated from humans,[2,3] their use in research as well as therapeutics is encumbered by ethical considerations.[5] The ability to purify, culture, and manipulate multipotent stem cells from nonembryonic origin would provide investigators with an invaluable cell source to study cell and organ development. In addition, such cells could serve to develop replacement tissues for congenital or degenerative disorders. Stem cells have been identified in most organ tissues, including hematopoietic,[6] neural,[7] gastrointestinal,[8] epidermal,[9] hepatic,[10] and mesenchymal stem cells (MSCs).[11-14]

MSCs were first identified by Friedenstein,[11] who demonstrated that when bone marrow (BM) is plated in fetal calf serum (FCS)–containing medium, colonies of adherent fibroblastlike cells develop that differentiate into bone and adipocytes. Since then, several investigators have shown that these cells can also differentiate into chondrocytes, adipocytes, and, at least in rodents, skeletal myocytes.[13-15] MSCs can be purified on the basis of their ability to adhere to plastic or by monoclonal antibodies (SH2 and SH4, or Stro1).[13,14] Here, we describe for the first time the isolation and ex vivo expansion of cells from postnatal BM that can differentiate at the single-cell level not only into MSCs, but also into cells of visceral mesodermal origin, such as endothelium, which we termed mesodermal progenitor cells (MPCs).

Materials and methods

Bone marrow

BM was obtained from 30 healthy donors (ages 2 to 50 years) following informed consent according to guidelines from the University of Minnesota Committee on the Use of Human Subjects in Research. BM mononuclear cells (BMMNCs), obtained by Ficoll-Paque density gradient centrifugation (Sigma Chemical, St Louis, MO), were depleted of CD45$^+$ and glycophorin-A–positive (GlyA$^+$) cells by means of micromagnetic beads (Miltenyi Biotec, Sunnyvale, CA). The eluted cells were 99.5% CD45p$^-$GlyA$^-$.

Cytokines

Epidermal growth factor (EGF) was from Sigma and platelet-derived growth factor BB (PDGF-BB), insulinlike growth factor (IGF), transforming growth factor β (TGF-β1), basic fibroblast growth factor (bFGF), acidic FGF (aFGF), bone morphogenetic protein 4 (BMP-4), interleukin-1α (IL-1α), IL-3, and IL-6 were from R&D Systems (Minneapolis, MN). Fetal liver tyrosine kinase 3 (Flt3) and granulocyte-macrophage colony-stimulating factor (GM-CSF) were from Immunex (Seattle, WA), and stem cell factor (SCF), granulocyte CSF (G-CSF), erythropoietin, and thrombopoietin were from Amgen (Thousand Oaks, CA). Vascular endothelial growth factor B (VEGF-B) was a gift from Dr S. Ramakrishnan, University of Minnesota.

Antibodies

Antibodies against fast-twitch skeletal myosin, sarcomeric actin, β-actin, fibroblast surface antigen (1B10), and control mouse immunoglobulin G (IgG) were from Sigma. Antibodies against Tie, Tek, Flt1, fms-related

From the Stem Cell Institute, Department of Medicine, and Cancer Center, University of Minnesota Medical School, Minneapolis.

Submitted April 9, 2001; accepted June 25, 2001.

Supported by National Institutes of Health grants PO1-CA-65493-1 (C.M.V.) and 1F31AI/GM10291 (M.R.); Children's Cancer Research Fund; and the University of Minnesota Bone Marrow Transplant Research Fund; C.M.V. is a Scholar of the Leukemia Society of America.

Reprints: Catherine M. Verfaillie, Professor of Medicine, University of Minnesota, MMC 716, 420 Delaware St SE, Minneapolis, MN 55455; e-mail: verfa001@umn.edu.

The publication costs of this article were defrayed in part by page charge payment. Therefore, and solely to indicate this fact, this article is hereby marked "advertisement" in accordance with 18 U.S.C. section 1734.

9. Viral pathogenicity determinants are suppressors of transgene silencing in Nicotiana benthamiana. EMBO J; NOV 1998.	2015	788	67	855
Brigneti G, Voinnet O, Li WX, Ji LH, Ding SW, Baulcombe DC				

EMBO= The European Molecular Biology Organization

IF= 11,5

The Sainsbury Laboratory, John Innes Centre, Colney Lane, Norwich NR4 7UH, UK and 1Molecular Virology Laboratory, Institute of Molecular Agrobiology, National University of Singapore, 1 Research Link, Singapore 117604

10. Selective killing of cancer cells by a small molecule targeting the stress response to ROS. NATURE: JUL 2011.	2018	617	172	789
Raj L, Ide T, Gurkar AU, Foley M, Schenone M, Li X, Tolliday NJ, Golub TR, Carr SA, Shamji AF, Stern AM,				

ROS= Reactive oxygen species

IF= 49, 96

Harvard University
M.I.T. (Massachussetts Institute of Technology)

Article 9

The EMBO Journal Vol.17 No.22 pp.6739–6746, 1998

Viral pathogenicity determinants are suppressors of transgene silencing in *Nicotiana benthamiana*

Gianinna Brigneti, Olivier Voinnet, Wan-Xiang Li[1], Liang-Hui Ji[1], Shou-Wei Ding[1] and David C.Baulcombe[2]

The Sainsbury Laboratory, John Innes Centre, Colney Lane, Norwich NR4 7UH, UK and [1]Molecular Virology Laboratory, Institute of Molecular Agrobiology, National University of Singapore, 1 Research Link, Singapore 117604

[2]Corresponding author
e-mail: david.baulcombe@bbsrc.ac.uk

G.Brigneti and O.Voinnet contributed equally to this work

Post-transcriptional gene silencing (PTGS) of a green fluorescent protein (GFP) transgene is suppressed in *Nicotiana benthamiana* plants infected with potato virus Y (PVY) or with cucumber mosaic virus (CMV), but not in plants infected with potato virus X (PVX). By expressing PVY and CMV-encoded proteins in a PVX vector we have shown that the viral suppressors of gene silencing are the HCPro of PVY and the 2b protein of CMV. The HCPro acts by blocking the maintenance of PTGS in tissues where silencing had already been set, whereas the 2b protein prevents initiation of gene silencing at the growing points of the plants. Combined with previous findings that viruses are both activators and targets of PTGS, these data provide compelling evidence that PTGS represents a natural mechanism for plant protection against viruses.

Keywords: cucumber mosaic virus/gene silencing/potato virus X/potato virus Y/virus resistance

Introduction

Post-transcriptional gene silencing (PTGS) in transgenic plants involves sequence-specific degradation of RNA. The targeted RNA species are similar to the transcribed part of a silencer transgene and, in plants exhibiting PTGS, there is only a low level of the transgene RNA even if transcription is at a high level (Depicker and Van Montagu, 1997). In addition, if the silencer transgene is similar to an endogenous gene, there is only a low level of the corresponding endogenous gene RNAs (Matzke and Matzke, 1995). PTGS can also be targeted against viral RNA, (Lindbo *et al.*, 1993; Smith *et al.*, 1994; Guo and Garcia, 1997) and extrapolating from this finding, it has been proposed that PTGS is a manifestation of a natural virus resistance mechanism in plants (Baulcombe, 1996; Pruss *et al.*, 1997). According to this idea, PTGS is activated in plants when the transgene, or its RNA, is perceived as a virus (Ratcliff *et al.*, 1997).

In support of the proposed relationship between PTGS and natural virus resistance, it has been shown that tobamo-, potex- and geminiviruses are activators as well as targets of gene silencing, provided they share sequence homology with a nuclear gene (Kumagai *et al.*, 1995; English *et al.*, 1996; Kjemtrup *et al.*, 1998; M.T.Ruiz *et al.*, 1998). Furthermore, caulimo- and nepoviruses induce a PTGS-like resistance mechanism even if there is no sequence similarity between the virus and nuclear genes (Covey *et al.*, 1997; Ratcliff *et al.*, 1997). This mechanism causes the systemically infected leaves to be symptom-free, to have only low levels of the virus and to have RNA sequence-specific resistance against challenge virus infection (Ratcliff *et al.*, 1997).

If there is a natural PTGS-like virus resistance in plants, it is likely that viruses would evolve strategies to avoid or suppress this mechanism. This idea was first developed based on the analysis of plants infected with two viruses in which the disease symptoms were more severe than in plants infected with either of the two viruses alone (Pruss *et al.*, 1997). In plants infected with a potyvirus this synergism was due to suppression of a host defense mechanism by the P1-HC-protease (P1-HCPro) (Pruss *et al.*, 1997). Following from this discovery, it was suggested that P1-HCPro is targeted against a PTGS-like resistance mechanism.

A second candidate suppressor of a PTGS-like resistance mechanism is the 2b protein encoded in cucumber mosaic virus (CMV) (Ding *et al.*, 1995). This protein is required for long distance transport of CMV (Ding *et al.*, 1995) and is now thought to act by suppressing a host resistance mechanism (L.H.Ji, W.X.Li and S.W.Ding, in preparation). In the absence of this suppressor, the resistance mechanism would prevent entry, translocation or exit of CMV from the phloem of infected plants. It is conceivable that this resistance could rely on a PTGS-like mechanism.

Here, we test the hypothesis that the P1-HCPro and 2b proteins are suppressors of PTGS. Plants exhibiting PTGS of a green fluorescent protein (GFP) transgene were infected with a potyvirus (potato virus Y, PVY) or with CMV. We also infected silenced plants with potato virus X (PVX) and with chimeric constructs carrying coding sequences from PVY and CMV in a PVX vector. If PVY or CMV produce suppressors of a PTGS-like resistance mechanism we predicted that infection by PVY, CMV or the PVX vectors would interfere with PTGS. The outcome of these experiments was consistent with this prediction and reveals that HCPro and the 2b protein suppress different stages of PTGS. The results implicate a PTGS-like mechanism as a limiting factor in the accumulation and spread of PVY, PVX and CMV. Moreover, as these are unrelated viruses, it is likely that this mechanism is a generalized anti-viral defense in plants.

Results

Reversion of GFP silencing by wild-type PVY

From the analysis of plants infected with a potyvirus and a second virus, it had been shown that potyviruses encode

Article 10

LETTER

doi:10.1038/nature10167

Selective killing of cancer cells by a small molecule targeting the stress response to ROS

Lakshmi Raj[1], Takao Ide[1], Aditi U. Gurkar[1], Michael Foley[2], Monica Schenone[2], Xiaoyu Li[2], Nicola J. Tolliday[2], Todd R. Golub[2], Steven A. Carr[2], Alykhan F. Shamji[2], Andrew M. Stern[2], Anna Mandinova[1,2], Stuart L. Schreiber[2] & Sam W. Lee[1,2]

Malignant transformation, driven by gain-of-function mutations in oncogenes and loss-of-function mutations in tumour suppressor genes, results in cell deregulation that is frequently associated with enhanced cellular stress (for example, oxidative, replicative, metabolic and proteotoxic stress, and DNA damage)[1]. Adaptation to this stress phenotype is required for cancer cells to survive, and consequently cancer cells may become dependent upon non-oncogenes that do not ordinarily perform such a vital function in normal cells. Thus, targeting these non-oncogene dependencies in the context of a transformed genotype may result in a synthetic lethal interaction and the selective death of cancer cells[2]. Here we used a cell-based small-molecule screening and quantitative proteomics approach that resulted in the unbiased identification of a small molecule that selectively kills cancer cells but not normal cells. Piperlongumine increases the level of reactive oxygen species (ROS) and apoptotic cell death in both cancer cells and normal cells engineered to have a cancer genotype, irrespective of p53 status, but it has little effect on either rapidly or slowly dividing primary normal cells. Significant antitumour effects are observed in piperlongumine-treated mouse xenograft tumour models, with no apparent toxicity in normal mice. Moreover, piperlongumine potently inhibits the growth of spontaneously formed malignant breast tumours and their associated metastases in mice. Our results demonstrate the ability of a small molecule to induce apoptosis selectively in cells that have a cancer genotype, by targeting a non-oncogene co-dependency acquired through the expression of the cancer genotype in response to transformation-induced oxidative stress[3–5].

Using a luciferase reporter gene fused with the *CDIP* (cell death involved p53 target, also known as 5730403B10Rik) promoter[6], we performed a small-molecule screen (Supplementary Fig. 1) to identify compounds acting through novel pro-apoptotic mechanisms. The compound with the highest composite *Z* value was piperlongumine (Supplementary Fig. 2a), which increased luciferase activity from the reporter gene at levels comparable to the positive control, etoposide (Supplementary Figs 2b and 3). Piperlongumine is a natural product isolated from the plant species *Piper longum* L. (Fig. 1a) and it was previously shown to have cytotoxic effects[7]. We examined the effects of piperlongumine on the viability of cultured cancer cells and normal cells (Fig. 1b and Supplementary Figs 4 and 6). Piperlongumine treatment markedly induced cell death in cancer cells with both wild-type p53 and mutant p53. When primary normal cells and non-transformed immortalized cells with diverse proliferative capacities were incubated with highly purified piperlongumine (Supplementary Fig. 5) for 24 h (under the indicated conditions, which avoid spontaneous transformation and minimize stress), there was little apparent reduction in cell viability, even at the highest concentration tested (15 μM, a concentration of piperlongumine that approaches its solubility limit). This indicated that piperlongumine may have a cancer-cell-selective killing property, and that sensitivity to piperlongumine may result from the process of malignant transformation. To test this hypothesis, we used a defined model[8] of oncogenic conversion of normal cells through ectopic expression of the telomerase catalytic subunit (*hTERT*) in combination with small T antigen and an oncogenic allele of *HRAS* (Fig. 1c), and

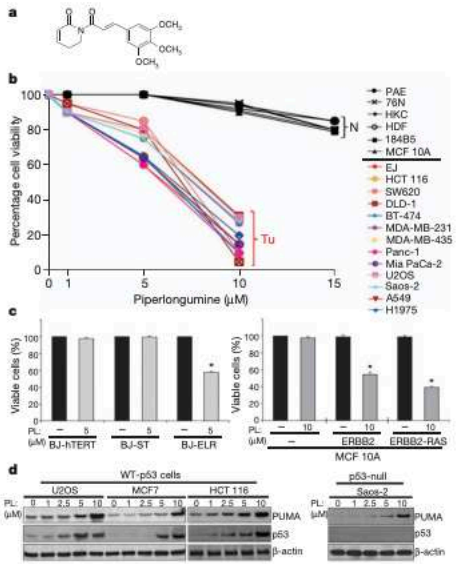


Figure 1 | Selective killing effect of piperlongumine in cancer cells. **a**, Structure of piperlongumine. **b**, Piperlongumine treatment induces cell death in cancer cells but not in normal cells. Normal human cells (N), including aortic endothelial cells (PAE), breast epithelial cells (76N), keratinocytes (HKC) and skin fibroblasts (HDF), as well as two immortalized breast epithelial cell lines (184B5 and MCF 10A), were grown in 12-well or 24-well plates and treated with piperlongumine at 1–15 μM for 24 h. A variety of human cancer cell lines (Tu) were also treated with piperlongumine or DMSO (control) for 24 h. Cytotoxicity was measured by trypan blue exclusion staining (average of three independent experiments). Piperlongumine was HPLC-purified (~99% purity) before the treatment. **c**, Selective cell death caused by piperlongumine (PL) in oncogenically transformed human BJ skin fibroblasts (left panel) and MCF 10A cell lines (right panel). A representative graph for cell viability is shown (mean ± s.d. of three independent experiments; *, $P < 0.0001$). **d**, The effects of piperlongumine on p53 and its target PUMA were measured by western blot analyses in several cancer cell lines. β-actin expression was used as a loading control.

[1]Cutaneous Biology Research Center, Massachusetts General Hospital and Harvard Medical School, Building 149 13th Street, Charlestown, Massachusetts 02129, USA. [2]Broad Institute of Harvard and MIT, 7 Cambridge Center, Massachusetts 02142, USA.

EWS CAREERS COMMENTARY JOURNALS | COVID-19 Science LOG IN BECOME A MEMBER

CHECKOUT

Retratado em 2007

Article 3

Log In

EMAIL*

Enter your email

☐ I HAVE READ AND AGREE TO THE TERMS AND CONDITIONS AND PRIVACY POLICY *

RETURNING USER If you are a new user please, click here to register.

Fields with (*) are required.

Order Summary

Base Price	$30.00
Discount	$0.00
Subtotal	$30.00

Shopping Cart

Visfatin: A Protein Secreted by Visceral Fat That Mimics the Effects of Insulin

USD **$30.00**

Science
Vol. 307 • No. 5708 • pp. 426 - 430

Remove

Subtotal: USD $30.00

Initial price: USD $30.00

Pesquisa: 87% dos alunos chegam à universidade sem saber o que é plágio.

Terça-Feira, 30 Outubro 2018. Por Rinaldo José Gimenes

Levantamento da Unicamp consultou 958 estudantes; com base nos dados, instituição vai estabelecer política contra má-conduta nos trabalhos acadêmicos.

A preocupação com a ocorrência de plágio em trabalhos acadêmicos é universal, especialmente nos tempos atuais em que o acesso à informação é muito mais fácil.

Leia mais em: https://veja.abril.com.br/educacao/pesquisa-87-dos-alunos-chegam-a-unive...

Fonte: Veja
Imagem: Veja

Turnitin

A plataforma tem o intuito de ser um apoio à escrita e melhorar as práticas de integridade dos trabalhos acadêmicos. É uma ferramenta de apoio à detecção e prevenção de plágio, que aponta para as semelhanças entre o texto apresentado relacionando com documentos existentes na base do sistema e páginas da internet.

O Turnitin mudou. Agora a UNIFESP conta com o recurso Turnitin Originality. Esse módulo permite maior facilidade e praticidade para emissão de relatórios de similaridade.

Todos os(as) docentes da instituição devem verificar um e-mail enviado com a mensagem "Bem-vindo ao Turnitin!" do seguinte remetente noreply@turnitin.com. Ao receber, clique em "Configurar minha conta", informe nome de usuário e cadastre uma senha. Dessa forma, é possível enviar um documento para verificação de similaridade ou configurar uma pasta para que os alunos enviem seus trabalhos através de um link.

Caso não tenha recebido o e-mail, ou para mais informações sobre o cadastro de docentes, entre em contato com crbu@unifesp.br

Para depósito da monografia, TCC, Tese ou Dissertação no Repositório Institucional Unifesp é obrigatório emitir o relatório de similaridade do trabalho. Em caso de dificuldade entre em contato para solicitar esse serviço à biblioteca. A avaliação dos resultados deve ser feita pelo(a) professor(a)/orientador(a).

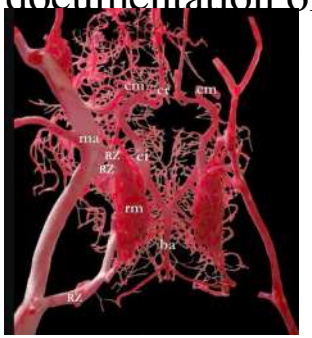
Evolution of the myth of the human *rete mirabile* traced through text and illustrations in printed books: The case of Vesalius and his plagiarists

Douglas J. Lanska https://doi.org/10.1080/0964704X.2021.2024406
Published online: 07 Mar 2022

Andreas Vesalius initially accepted Galen's ideas concerning the *rete mirabile* in humans. In 1538, Vesalius drew a diagram of the human *rete mirabile* as a plexiform termination of the carotid arteries, where the vital spirit is transformed into the animal spirit, before being distributed from the brain along the nerves to the body. In 1540, Vesalius demonstrated the *rete mirabile* at a public anatomy, using a sheep's head (due to his nascent realization that he could not demonstrate this adequately in a human cadaver, potentially eliciting ridicule). By 1543, Vesalius had fully reversed himself, denied the existence of the *rete mirabile* in humans, and castigated himself for his prior failure to recognize this error in Galen's works. Vesalius nevertheless illustrated both the Galenic conception of the *rete mirabile* in humans and a schematic of the *rete mirabile* in ungulates. He intended the 1543 diagram of the human *rete mirabile* as an example of a *mistake* that resulted from Galen's overreliance on animals as models of human anatomy. However, in spite of Vesalius's intentions, for more than a century afterward, his figure was repeatedly and perversely plagiarized by advocates *for* Galenic doctrine, who misused it as a purportedly realistic representation of human anatomy and generally omitted the contrary opinions of Berengario da Carpi and Vesalius. The protracted use of stereotyped representations of the *rete mirabile* in extant printed illustrations provides tangible documentation of the stagnation in anatomical thought in the sixteenth and seventeenth centuries.

Galeno (129-199 d.C)

Vesalius (1514 -1564 d.C).



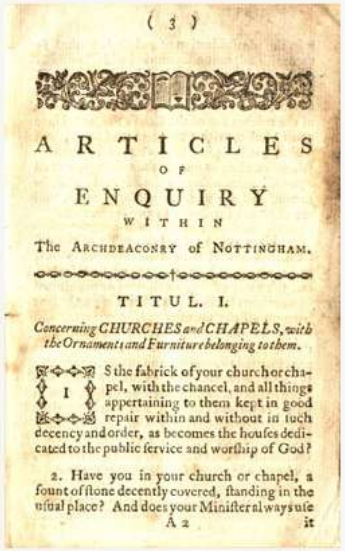
Rete mirabile – Wikipédia, a enciclopédia livre
https://pt.wikipedia.org › wiki › Rete_mirabile

On this page can be found conjectured articles asked of the churchwardens of the Archdeaconry of Nottingha
Easter 1596 and Easter 1663; and an abridged version of original articles issued by the Archdeacon of
Nottingham at Easter 1775, which are now part of the Drury-Lowe collection. Answers to numbered articles a
also given in the East and West Leake presentment bills submitted at Easter 1733 (AN/PB 323/114 and AN/P
323/148).

First page of articles issued by Archdeacon John Lowth in 1585 [AN/V 376/1]

Abridged 'Articles to be enquired in the Visitation of the Worshipful Hugh Thomas DD, Archdeacon of Nottingham'

Printed 1775 (De X 3)



(3)

ARTICLES
OF
ENQUIRY
WITHIN
The ARCHDEACONRY of NOTTINGHAM.

TITUL. I.

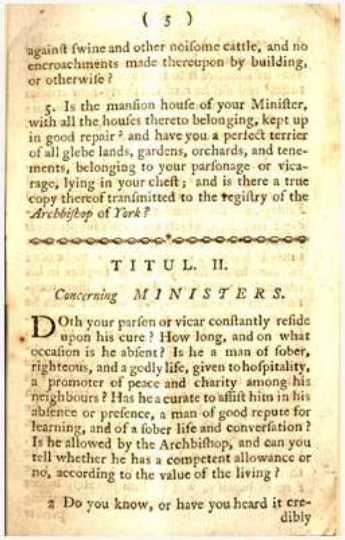
Concerning CHURCHES and CHAPELS, with the Ornaments and Furniture belonging to them.

I S the fabrick of your church or chapel, with the chancel, and all things appertaining to them kept in good repair within and without in such decency and order, as becomes the houses dedicated to the public service and worship of God?

2. Have you in your church or chapel, a fount of ſtone decently covered, ſtanding in the uſual place? And does your Miniſter always uſe it

A 2

First section - concerning churches and chapels, ornaments and furniture



(5)

againſt ſwine and other noiſome cattle, and no encroachments made thereupon by building, or otherwiſe?

5. Is the manſion houſe of your Miniſter, with all the houſes thereto belonging, kept up in good repair? and have you a perfect terrier of all glebe lands, gardens, orchards, and tenements, belonging to your parſonage or vicarage, lying in your cheſt; and is there a true copy thereof tranſmitted to the regiſtry of the *Archbiſhop of York?*

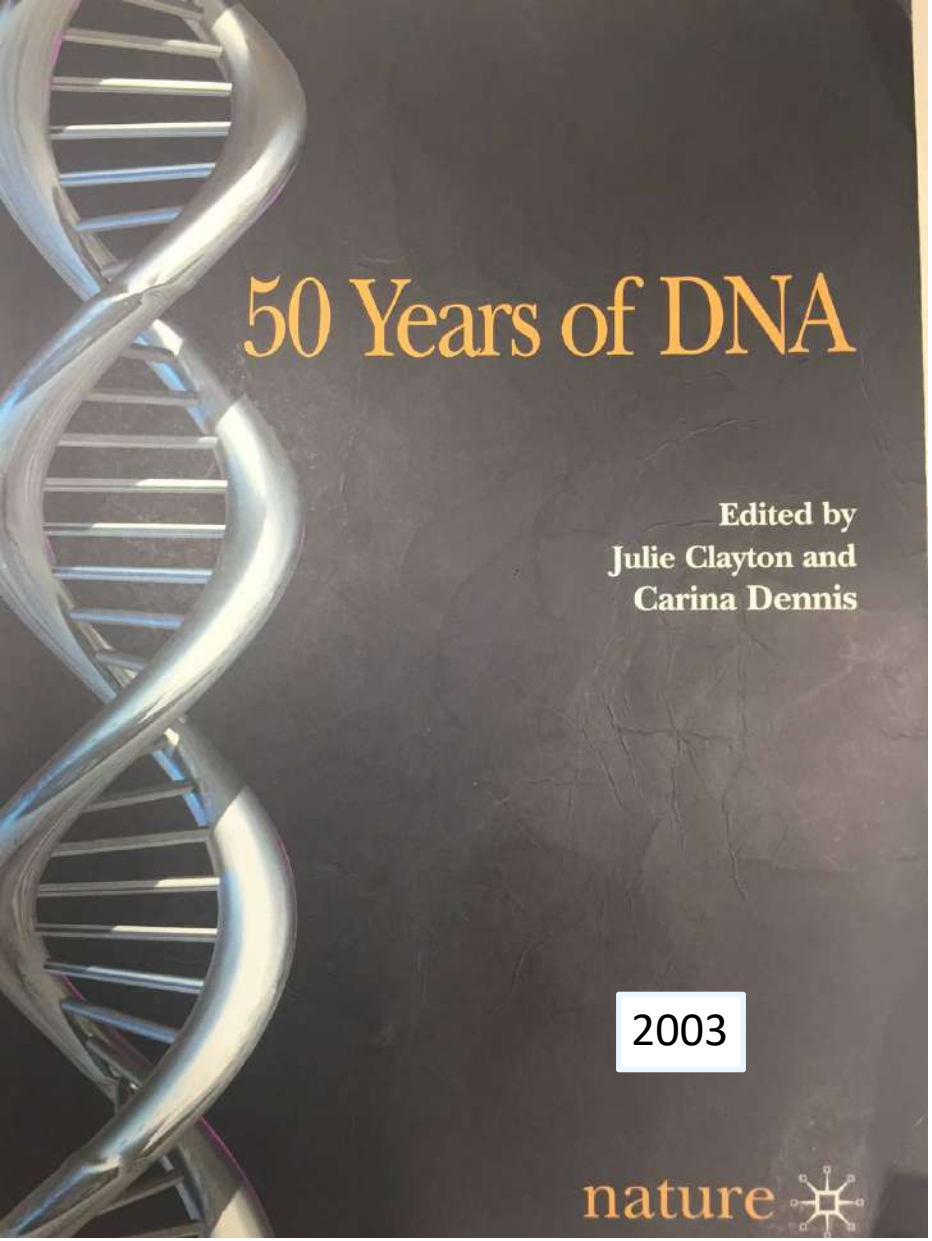
TITUL. II.

Concerning MINISTERS.

DOth your parſon or vicar conſtantly reſide upon his cure? How long, and on what occaſion is he abſent? Is he a man of ſober, righteous, and a godly life, given to hoſpitality, a promoter of peace and charity among his neighbours? Has he a curate to aſſiſt him in his abſence or preſence, a man of good repute for learning, and of a ſober life and converſation? Is he allowed by the Archbiſhop, and can you tell whether he has a competent allowance or no, according to the value of the living?

2 Do you know, or have you heard it credibly

Second section - concerning Ministers



Acknowledgements

At the journal Nature I would like to thank Maxine Clarke and Christopher Surridge for their enthusiastic support and scientific input, Barbara Izdebska for her thoroughness and high standards in picture research, and Simon Gribben for his assistance with the reproduction of the previously published papers. I am also extremely grateful to Professor Sir Aaron Klug at the Laboratory for Molecular Biology, Cambridge, for in-depth discussion about Rosalind Franklin's X-ray diffraction studies, and to the staff of the Cold Spring Harbor Laboratory, Long Island, for their hospitality and assistance during the research of this book. Enormous thanks also go to the editorial production team that have kept the project on the rails: at Palgrave Macmillan, Josie Dixon; and at Book Production Consultants in Cambridge, project manager Sue Gray, copy editor Jenny Knight, production assistant Emma Forster and graphic designer Tim McPhee.

Julie Clayton

First published 2003 by
PALGRAVE MACMILLAN
Houndmills, Basingstoke, Hampshire RG21 6XS and
175 Fifth Avenue, New York, N.Y. 10010
Companies and representatives throughout the world

PALGRAVE MACMILLAN is the global academic imprint of the Palgrave Macmillan division of St. Martin's Press, LLC and of Palgrave Macmillan Ltd. Macmillan® is a registered trademark in the United States, United Kingdom and other countries. Palgrave is a registered trademark in the European Union and other countries.

ISBN 1-4039-1479-6 hardback
ISBN 1-4039-1480-X paperback

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources.

A catalogue record for this book is available from the British Library.

A catalog record for this book is available from the Library of Congress.

10 9 8 7 6 5 4 3 2 1
12 11 10 09 08 07 06 05 04 03

Produced in association with
Book Production Consultants plc, Cambridge, UK
Printed and bound in Italy

equipment, and to Dr. G. E. R. Deacon and the captain and officers of R.R.S. *Discovery II* for their part in making the observations.

[1] Young, F. B., Gerrard, H., and Jevons, W., *Phil. Mag.*, **40**, 149 (1920).
[2] Longuet-Higgins, M. S., *Mon. Not. Roy. Astro. Soc., Geophys. Supp.*, **5**, 285 (1949).
[3] Von Arx, W. S., Woods Hole Papers in Phys. Oceanog. Meteor., **11** (3) (1950).
[4] Ekman, V. W., *Arkiv. Mat. Astron. Fysik. (Stockholm)*, **2** (11) (1905).

MOLECULAR STRUCTURE OF NUCLEIC ACIDS

A Structure for Deoxyribose Nucleic Acid

WE wish to suggest a structure for the salt of deoxyribose nucleic acid (D.N.A.). This structure has novel features which are of considerable biological interest.

A structure for nucleic acid has already been proposed by Pauling and Corey[1]. They kindly made their manuscript available to us in advance of publication. Their model consists of three intertwined chains, with the phosphates near the fibre axis, and the bases on the outside. In our opinion, this structure is unsatisfactory for two reasons: (1) We believe that the material which gives the X-ray diagrams is the salt, not the free acid. Without the acidic hydrogen atoms it is not clear what forces would hold the structure together, especially as the negatively charged phosphates near the axis will repel each other. (2) Some of the van der Waals distances appear to be too small.

Another three-chain structure has also been suggested by Fraser (in the press). In his model the phosphates are on the outside and the bases on the inside, linked together by hydrogen bonds. This structure as described is rather ill-defined, and for this reason we shall not comment on it.

This figure is purely diagrammatic. The two ribbons symbolize the two phosphate–sugar chains, and the horizontal rods the pairs of bases holding the chains together. The vertical line marks the fibre axis

We wish to put forward a radically different structure for the salt of deoxyribose nucleic acid. This structure has two helical chains each coiled round the same axis (see diagram). We have made the usual chemical assumptions, namely, that each chain consists of phosphate diester groups joining 3-D-deoxyribofuranose residues with 3′,5′ linkages. The two chains (but not their bases) are related by a dyad perpendicular to the fibre axis. Both chains follow right-handed helices, but owing to the dyad the sequences of the atoms in the two chains run in opposite directions. Each chain loosely resembles Furberg's[2] model No. 1; that is, the bases are on the inside of the helix and the phosphates on the outside. The configuration of the sugar and the atoms near it is close to Furberg's 'standard configuration', the sugar being roughly perpendicular to the attached base. There is a residue on each chain every 3·4 A. in the *z*-direction. We have assumed an angle of 36° between adjacent residues in the same chain, so that the structure repeats after 10 residues on each chain, that is, after 34 A. The distance of a phosphorus atom from the fibre axis is 10 A. As the phosphates are on the outside, cations have easy access to them.

The structure is an open one, and its water content is rather high. At lower water contents we would expect the bases to tilt so that the structure could become more compact.

The novel feature of the structure is the manner in which the two chains are held together by the purine and pyrimidine bases. The planes of the bases are perpendicular to the fibre axis. They are joined together in pairs, a single base from one chain being hydrogen-bonded to a single base from the other chain, so that the two lie side by side with identical *z*-co-ordinates. One of the pair must be a purine and the other a pyrimidine for bonding to occur. The hydrogen bonds are made as follows: purine position 1 to pyrimidine position 1; purine position 6 to pyrimidine position 6.

If it is assumed that the bases only occur in the structure in the most plausible tautomeric forms (that is, with the keto rather than the enol configurations) it is found that only specific pairs of bases can bond together. These pairs are: adenine (purine) with thymine (pyrimidine), and guanine (purine) with cytosine (pyrimidine).

In other words, if an adenine forms one member of a pair, on either chain, then on these assumptions the other member must be thymine; similarly for guanine and cytosine. The sequence of bases on a single chain does not appear to be restricted in any way. However, if only specific pairs of bases can be formed, it follows that if the sequence of bases on one chain is given, then the sequence on the other chain is automatically determined.

It has been found experimentally[3,4] that the ratio of the amounts of adenine to thymine, and the ratio of guanine to cytosine, are always very close to unity for deoxyribose nucleic acid.

It is probably impossible to build this structure with a ribose sugar in place of the deoxyribose, as the extra oxygen atom would make too close a van der Waals contact.

The previously published X-ray data[5,6] on deoxyribose nucleic acid are insufficient for a rigorous test of our structure. So far as we can tell, it is roughly compatible with the experimental data, but it must be regarded as unproved until it has been checked against more exact results. Some of these are given in the following communications. We were not aware of the details of the results presented there when we devised our structure, which rests mainly though not entirely on published experimental data and stereochemical arguments.

It has not escaped our notice that the specific pairing we have postulated immediately suggests a possible copying mechanism for the genetic material.

Full details of the structure, including the conditions assumed in building it, together with a set of co-ordinates for the atoms, will be published elsewhere.

We are much indebted to Dr. Jerry Donohue for constant advice and criticism, especially on interatomic distances. We have also been stimulated by a knowledge of the general nature of the unpublished experimental results and ideas of Dr. M. H. F. Wilkins, Dr. R. E. Franklin and their co-workers at King's College, London. One of us (J. D. W.) has been aided by a fellowship from the National Foundation for Infantile Paralysis.

J. D. WATSON
F. H. C. CRICK

Medical Research Council Unit for the Study of the Molecular Structure of Biological Systems,
Cavendish Laboratory, Cambridge.
April 2.

[1] Pauling, L., and Corey, R. B., *Nature*, **171**, 346 (1953); *Proc. U.S. Nat. Acad. Sci.*, **39**, 84 (1953).
[2] Furberg, S., *Acta Chem. Scand.*, **6**, 634 (1952).
[3] Chargaff, E., for references see Zamenhof, S., Brawerman, G., and Chargaff, E., *Biochim. et Biophys. Acta*, **9**, 402 (1952).
[4] Wyatt, G. R., *J. Gen. Physiol.*, **36**, 201 (1952).
[5] Astbury, W. T., Symp. Soc. Exp. Biol. 1, Nucleic Acid, 66 (Camb. Univ. Press, 1947).
[6] Wilkins, M. H. F., and Randall, J. T., *Biochim. et Biophys. Acta*, **10**, 192 (1953).

Molecular Structure of Deoxypentose Nucleic Acids

WHILE the biological properties of deoxypentose nucleic acid suggest a molecular structure containing great complexity, X-ray diffraction studies described here (cf. Astbury[1]) show the basic molecular configuration has great simplicity. The purpose of this communication is to describe, in a preliminary way, some of the experimental evidence for the polynucleotide chain configuration being helical, and existing in this form when in the natural state. A fuller account of the work will be published shortly.

The structure of deoxypentose nucleic acid is the same in all species (although the nitrogen base ratios alter considerably) in nucleoprotein, extracted or in cells, and in purified nucleate. The same linear group of polynucleotide chains may pack together parallel in different ways to give crystalline[1–3], semi-crystalline or paracrystalline material. In all cases the X-ray diffraction photograph consists of two regions, one determined largely by the regular spacing of nucleotides along the chain, and the other by the longer spacings of the chain configuration. The sequence of different nitrogen bases along the chain is not made visible.

Oriented paracrystalline deoxypentose nucleic acid ('structure *B*' in the following communication by Franklin and Gosling) gives a fibre diagram as shown in Fig. 1 (cf. ref. 4). Astbury suggested that the strong 3·4-A. reflexion corresponded to the internucleotide repeat along the fibre axis. The ~ 34 A. layer lines, however, are not due to a repeat of a polynucleotide composition, but to the chain configuration repeat, which causes strong diffraction as the nucleotide chains have higher density than the interstitial water. The absence of reflexions on or near the meridian immediately suggests a helical structure with axis parallel to fibre length.

Diffraction by Helices

It may be shown[4] (also Stokes, unpublished) that the intensity distribution in the diffraction pattern of a series of points equally spaced along a helix is given by the squares of Bessel functions. A uniform continuous helix gives a series of layer lines of spacing corresponding to the helix pitch, the intensity distribution along the *n*th layer line being proportional to the square of J_n, the *n*th order Bessel function. A straight line may be drawn approximately through

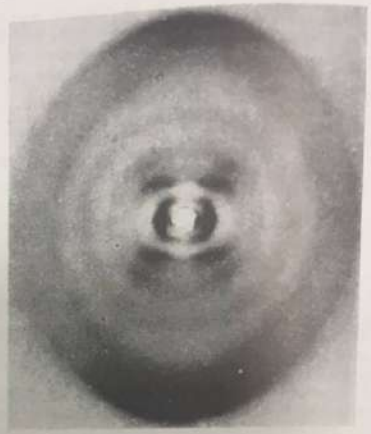


Fig. 1. Fibre diagram of deoxypentose nucleic acid from *B. coli*. Fibre axis vertical

the innermost maxima of each Bessel function and the origin. The angle this line makes with the equator is roughly equal to the angle between an element of the helix and the helix axis. If a unit repeats *n* times along the helix there will be a meridional reflexion (J_n^2) on the *n*th layer line. The helical configuration produces side-bands on this fundamental frequency, the effect[5] being to reproduce the intensity distribution about the origin around the new origin, on the *n*th layer line, corresponding to *C* in Fig. 2.

We will now briefly analyse in physical terms some of the effects of the shape and size of the repeat unit or nucleotide on the diffraction pattern. First, if the nucleotide consists of a unit having circular symmetry about an axis parallel to the helix axis, the whole diffraction pattern is modified by the form factor of the nucleotide. Second, if the nucleotide consists of a series of points on a radius at right-angles to the helix axis, the phases of radiation scattered by the helices of different diameter passing through each point are the same. Summation of the corresponding Bessel functions gives reinforcement for the inner-

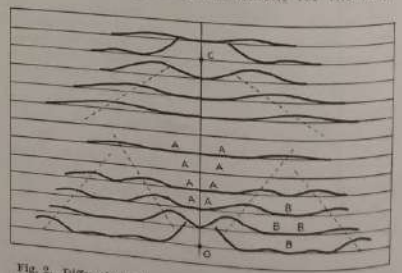


Fig. 2. Diffraction pattern of system of helices corresponding to structure of deoxypentose nucleic acid. The squares of Bessel functions are plotted about O on the equator and on the first, second, third and fifth layer lines for half of the nucleotide mass at 20 A. diameter and remainder distributed along a radius, the mass at a given radius being proportional to the radius. About *C* on the tenth layer line similar functions are plotted for an outer

most maxima and, in general, owing to phase difference, cancellation of all other maxima. Such a system of helices (corresponding to a spiral staircase with the core removed) diffracts mainly over a limited angular range, behaving, in fact, like a periodic arrangement of flat plates inclined at a fixed angle to the axis. Third, if the nucleotide is extended as an arc of a circle in a plane at right-angles to the helix axis, and with centre at the axis, the intensity of the system of Bessel function layer-line streaks emanating from the origin is modified owing to the phase differences of radiation from the helices drawn through each point on the nucleotide. The form factor is that of the series of points in which the helices intersect a plane drawn through the helix axis. This part of the diffraction pattern is then repeated as a whole with origin at *C* (Fig. 2). Hence this aspect of nucleotide shape affects the central and peripheral regions of each layer line differently.

Interpretation of the X-Ray Photograph

It must first be decided whether the structure consists of essentially one helix giving an intensity distribution along the layer lines corresponding to $J_1, J_2, J_3 \ldots$, or two similar co-axial helices of twice the above size and relatively displaced along the axis a distance equal to half the pitch giving $J_2, J_4, J_6 \ldots$, or three helices, etc. Examination of the width of the layer-line streaks suggests the intensities correspond more closely to J_1^2, J_2^2, J_3^2 than to $J_2^2, J_4^2, J_6^2 \ldots$. Hence the dominant helix has a pitch of ~ 34 A., and, from the angle of the helix, its diameter is found to be ~ 20 A. The strong equatorial reflexion at ~ 17 A. suggests that the helices have a maximum diameter of ~ 20 A. and are hexagonally packed with little interpenetration. Apart from the width of the Bessel function streaks, the possibility of the helices having twice the above dimensions is also made unlikely by the absence of an equatorial reflexion at ~ 34 A. To obtain a reasonable number of nucleotides per unit volume in the fibre, two or three intertwined coaxial helices are required, there being ten nucleotides on one turn of each helix.

The absence of reflexions on or near the meridian (an empty region *AAA* on Fig. 2) is a direct consequence of the helical structure. On the photograph there is also a relatively empty region on and near the equator, corresponding to region *BBB* on Fig. 2. As discussed above, this absence of secondary Bessel function maxima can be produced by a radial distribution of the nucleotide shape. To make the layer-line streaks sufficiently narrow, it is necessary to place a large fraction of the nucleotide mass at ~ 20 A. diameter. In Fig. 2 the squares of Bessel functions are plotted for half the mass at 20 A. diameter, and the rest distributed along a radius, the mass at a given radius being proportional to the radius.

On the zero layer line there appears to be a marked J_{10}^2, and on the first, second and third layer lines, $J_9^2 + J_{11}^2$, $J_8^2 + J_{12}^2$, etc., respectively. This means that, in projection on a plane at right-angles to the fibre axis, the outer part of the nucleotide is relatively concentrated, giving rise to high-density regions spaced *c*. 6 A. apart around the circumference of a circle of 20 A. diameter. On the fifth layer line two J_8 functions overlap and produce a strong reflexion. On the sixth, seventh and eighth layer lines the maxima correspond to a helix of diameter ~ 12 A. Apparently it is only the central region of the helix structure which is well divided by the 3·4-A. spacing, the outer parts of the nucleotide overlapping to form a continuous helix. This suggests the presence of nitrogen bases arranged like a pile of pennies[1] in the central regions of the helical system.

There is a marked absence of reflexions on layer lines beyond the tenth. Disorientation in the specimen will cause more extension along the layer lines of the Bessel function streaks on the eleventh, twelfth and thirteenth layer lines than on the ninth, eighth and seventh. For this reason the reflexions on the higher-order layer lines will be less readily visible. The form factor of the nucleotide is also probably causing diminution of intensity in this region. Tilting of the nitrogen bases could have such an effect.

Reflexions on the equator are rather inadequate for determination of the radial distribution of density in the helical system. There are, however, indications that a high-density shell, as suggested above, occurs at diameter ~ 20 A.

The material is apparently not completely paracrystalline, as sharp spots appear in the central region of the second layer line, indicating a partial degree of order of the helical units relative to one another in the direction of the helix axis. Photographs similar to Fig. 1 have been obtained from sodium nucleate from calf and pig thymus, wheat germ, herring sperm, human tissue and T_2 bacteriophage. The most marked correspondence with Fig. 2 is shown by the exceptional photograph obtained by our colleagues, R. E. Franklin and R. G. Gosling, from calf thymus deoxypentose nucleate (see following communication).

It must be stressed that some of the above discussion is not without ambiguity, but in general there appears to be reasonable agreement between the experimental data and the kind of model described by Watson and Crick (see also preceding communication).

It is interesting to note that if there are ten phosphate groups arranged on each helix of diameter 20 A. and pitch 34 A., the phosphate ester backbone chain is in an almost fully extended state. Hence, when sodium nucleate fibres are stretched[3], the helix is evidently extended in length like a spiral spring in tension.

Structure *in vivo*

The biological significance of a two-chain nucleic acid unit has been noted (see preceding communication). The evidence that the helical structure discussed above does, in fact, exist in intact biological systems is briefly as follows:

Sperm heads. It may be shown that the intensity of the X-ray spectra from crystalline sperm heads is determined by the helical form-function in Fig. 2. Centrifuged trout semen give the same pattern as the dried and rehydrated or washed sperm heads used previously[4]. The sperm head fibre diagram is also given by extracted or synthetic[1] nucleoprotamine or extracted calf thymus nucleohistone.

Bacteriophage. Centrifuged wet pellets of T_2 phage photographed with X-rays while sealed in a cell with mica windows give a diffraction pattern containing the main features of paracrystalline sodium nucleate as distinct from that of crystalline nucleoprotein. This confirms current ideas of phage structure.

Transforming principle (in collaboration with H. Ephrussi-Taylor). Active deoxypentose nucleate allowed to dry at ~ 60 per cent humidity has the same crystalline structure as certain samples[5] of sodium thymonucleate.

We wish to thank Prof. J. T. Randall for encouragement; Profs. E. Chargaff, R. Signer, J. A. V. Butler and Drs. J. D. Watson, J. D. Smith, L. Hamilton, J. C. White and G. R. Wyatt for supplying material without which this work would have been impossible; also Drs. J. D. Watson and Mr. F. H. C. Crick for stimulation, and our colleagues R. E. Franklin, R. G. Gosling, G. L. Brown and W. E. Seeds for discussion. One of us (H. R. W.) wishes to acknowledge the award of a University of Wales Fellowship.

M. H. F. Wilkins
Medical Research Council Biophysics Research Unit,
A. R. Stokes
H. R. Wilson
Wheatstone Physics Laboratory,
King's College, London.
April 2.

[1] Astbury, W. T., Symp. Soc. Exp. Biol., 1, Nucleic Acid (Cambridge Univ. Press, 1947).
[2] Riley, D. P., and Oster, G., *Biochim. et Biophys. Acta*, 7, 526 (1951).
[3] Wilkins, M. H. F., Gosling, R. G., and Seeds, W. E., *Nature*, **167**, 759 (1951).
[4] Astbury, W. T., and Bell, F. O., Cold Spring Harb. Symp. Quant. Biol., **6**, 109 (1938).
[5] Cochran, W., Crick, F. H. C., and Vand, V., *Acta Cryst.*, **5**, 581 (1952).
[6] Wilkins, M. H. F., and Randall, J. T., *Biochim. et Biophys. Acta*, 10, 192 (1953).

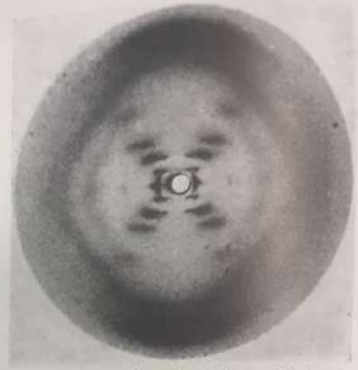
Molecular Configuration in Sodium Thymonucleate

Sodium thymonucleate fibres give two distinct types of X-ray diagram. The first corresponds to a crystalline form, structure *A*, obtained at about 75 per cent relative humidity; a study of this is described in detail elsewhere[1]. At higher humidities a different structure, structure *B*, showing a lower degree of order, appears and persists over a wide range of ambient humidity. The change from *A* to *B* is reversible. The water content of structure *B* fibres which undergo this reversible change may vary from 40–50 per cent to several hundred per cent of the dry weight. Moreover, some fibres never show structure *A*, and in these structure *B* can be obtained with an even lower water content.

The X-ray diagram of structure *B* (see photograph) shows in striking manner the features characteristic of helical structures, first worked out in this laboratory by Stokes (unpublished) and by Crick, Cochran and Vand[2]. Stokes and Wilkins were the first to propose such structures for nucleic acid as a result of direct studies of nucleic acid fibres, although a helical structure had been previously suggested by Furberg (thesis, London, 1949) on the basis of X-ray studies of nucleosides and nucleotides.

While the X-ray evidence cannot, at present, be taken as direct proof that the structure is helical, other considerations discussed below make the existence of a helical structure highly probable.

Structure *B* is derived from the crystalline structure *A* when the sodium thymonucleate fibres take up quantities of water in excess of about 40 per cent of their weight. The change is accompanied by an increase of about 30 per cent in the length of the fibre, and by a substantial re-arrangement of the molecule. It therefore seems reasonable to suppose that in structure *B* the structural units of sodium thymonucleate (molecules or groups of molecules) are relatively free from the influence of neighbouring



Sodium deoxyribose nucleate from calf thymus. Structure *B*

molecules, each unit being shielded by a sheath of water. Each unit is then free to take up its least-energy configuration independently of its neighbours and, in view of the nature of the long-chain molecules involved, it is highly likely that the general form will be helical[3]. If we adopt the hypothesis of a helical structure, it is immediately possible, from the X-ray diagram of structure *B*, to make certain deductions as to the nature and dimensions of the helix.

The innermost maxima on the first, second, third and fifth layer lines lie approximately on straight lines radiating from the origin. For a smooth single-strand helix the structure factor on the *n*th layer line is given by:

$$F_n = J_n(2\pi rR) \exp i\, n(\psi + \tfrac{1}{2}\pi),$$

where $J_n(u)$ is the *n*th-order Bessel function of u, r is the radius of the helix, and R and ψ are the radial and azimuthal co-ordinates in reciprocal space[2]; this expression leads to an approximately linear array of intensity maxima of the type observed, corresponding to the first maxima in the functions J_1, J_2, J_3, etc.

If, instead of a smooth helix, we consider a series of residues equally spaced along the helix, the transform in the general case treated by Crick, Cochran and Vand is more complicated. But if there is a whole number, m, of residues per turn, the form of the transform is as for a smooth helix with the addition, only, of the same pattern repeated with its origin at heights mc^*, $2mc^*$ . . . etc. (c is the fibre-axis period).

In the present case the fibre-axis period is 34 A. and the very strong reflexion at 3·4 A. lies on the tenth layer line. Moreover, lines of maxima radiating from the 3·4-A. reflexion as from the origin are visible on the fifth and lower layer lines, having a J_8 maximum coincident with that of the origin series on the fifth layer line. (The strong outer streaks which apparently radiate from the 3·4-A. maximum are not, however, so easily explained.) This suggests strongly that there are exactly 10 residues per turn of the helix. If this is so, then from a measurement of R_n the position of the first maximum on the *n*th layer line (for n 5-ℵ), the radius of the helix, can be obtained. In the present instance, measurements of R_1, R_2, R_3 and R_4 all lead to values of r of about 10 A.

No. 4356 April 25, 1953

Since this linear array of maxima is one of the strongest features of the X-ray diagram, we must conclude that a crystallographically important part of the molecule lies on a helix of this diameter. This can only be the phosphate groups or phosphorus atoms.

If ten phosphorus atoms lie on one turn of a helix of radius 10 A., the distance between neighbouring phosphorus atoms in a molecule is 7·1 A. This corresponds to the P . . . P distance in a fully extended molecule, and therefore provides a further indication that the phosphates lie on the outside of the structural unit.

Thus, our conclusions differ from those of Pauling and Corey[4], who proposed for the nucleic acids a helical structure in which the phosphate groups form a dense core.

We must now consider briefly the equatorial reflexions. For a single helix the series of equatorial maxima should correspond to the maxima in $J_0(2\pi rR)$. The maxima on our photograph do not, however, fit this function for the value of r deduced above. There is a very strong reflexion at about 24 A. and then only a faint sharp reflexion at 9·0 A. and two diffuse bands around 5·5 A. and 4·0 A. This lack of agreement is, however, to be expected, for we know that the helix so far considered can only be the most important member of a series of coaxial helices of different radii; the non-phosphate parts of the molecule will lie on inner co-axial helices, and it can be shown that, whereas these will not appreciably influence the innermost maxima on the layer lines, they may have the effect of destroying or shifting both the equatorial maxima and the outer maxima on other layer lines.

Thus, if the structure is helical, we find that the phosphate groups or phosphorus atoms lie on a helix of diameter about 20 A., and the sugar and base groups must accordingly be turned inwards towards the helical axis.

Considerations of density show, however, that a cylindrical repeat unit of height 34 A. and diameter 20 A. must contain many more than ten nucleotides.

Since structure B often exists in fibres with low water content, it seems that the density of the helical unit cannot differ greatly from that of dry sodium thymonucleate, 1·63 gm./cm.[3] [1,3], the water in fibres of high water-content being situated outside the structural unit. On this basis we find that a cylinder of radius 10 A. and height 34 A. would contain thirty-two nucleotides. However, there might possibly be some slight inter-penetration of the cylindrical units in the dry state making their effective radius rather less. It is therefore difficult to decide, on the basis of density measurements alone, whether one repeating unit contains ten nucleotides on each of two or on each of three co-axial molecules. (If the effective radius were 8 A. the cylinder would contain twenty nucleotides.) Two other arguments, however, make it highly probable that there are only two co-axial molecules.

First, a study of the Patterson function of structure A, using superposition methods, has indicated[4] that there are only two chains passing through a primitive unit cell in this structure. Since the $A \rightleftharpoons B$ transformation is readily reversible, it seems very unlikely that the molecules would be grouped in threes in structure B. Secondly, from measurements on the X-ray diagram of structure B it can readily be shown that, whether the number of chains per unit is two or three, the chains are not equally spaced along the fibre axis. For example, three equally spaced chains would mean that the nth layer line depended on J_{3n}, and would lead to a helix of diameter about 60 A. This is many times larger than the primitive unit cell in structure A, and absurdly large in relation to the dimensions of nucleotides. Three unequally spaced chains, on the other hand, would be crystallographically non-equivalent, and this, again, seems unlikely. It therefore seems probable that there are only two co-axial molecules and that these are unequally spaced along the fibre axis.

Thus, while we do not attempt to offer a complete interpretation of the fibre-diagram of structure B, we may state the following conclusions. The structure is probably helical. The phosphate groups lie on the outside of the structural unit, on a helix of diameter about 20 A. The structural unit probably consists of two co-axial molecules which are not equally spaced along the fibre axis, their mutual displacement being such as to account for the variation of observed intensities of the innermost maxima on the layer lines; if one molecule is displaced from the other by about three-eighths of the fibre-axis period, this would account for the absence of the fourth layer line maxima and the weakness of the sixth. Thus our general ideas are not inconsistent with the model proposed by Watson and Crick in the preceding communication.

The conclusion that the phosphate groups lie on the outside of the structural unit has been reached previously by quite other reasoning[1]. Two principal lines of argument were invoked. The first derives from the work of Gulland and his collaborators[7], who showed that even in aqueous solution the —CO and —NH_2 groups of the bases are inaccessible and cannot be titrated, whereas the phosphate groups are fully accessible. The second is based on our own observations[1] on the way in which the structural units in structures A and B are progressively separated by an excess of water, the process being a continuous one which leads to the formation first of a gel and ultimately to a solution. The hygroscopic part of the molecule may be presumed to lie in the phosphate groups $((C_5H_9O)_2PO_2Na$ and $(C_5H_7O)_2PO_2Na$ are highly hygroscopic[8]), and the simplest explanation of the above process is that these groups lie on the outside of the structural units. Moreover, the ready availability of the phosphate groups for interaction with proteins can most easily be explained in this way.

We are grateful to Prof. J. T. Randall for his interest and to Drs. F. H. C. Crick, A. R. Stokes and M. H. F. Wilkins for discussion. One of us (R. E. F.) acknowledges the award of a Turner and Newall Fellowship.

ROSALIND E. FRANKLIN*
R. G. GOSLING

Wheatstone Physics Laboratory,
King's College, London.
April 2.

* Now at Birkbeck College Research Laboratories, 21 Torrington Square, London, W.C.1.

[1] Franklin, R. E., and Gosling, R. G. (In the press).
[2] Cochran, W., Crick, F. H. C., and Vand, V., *Acta Cryst.*, **5**, 581 (1952).
[3] Pauling, L., Corey, R. B., and Branson, H. R., *Proc. U.S. Nat. Acad. Sci.*, **37**, 205 (1951).
[4] Pauling, L., and Corey, R. B., *Proc. U.S. Nat. Acad. Sci.*, **39**, 84 (1953).
[5] Astbury, W. T., Cold Spring Harbor Symp. on Quant. Biol., **12**, 56 (1947).
[6] Franklin, R. E., and Gosling, R. G. (to be published).
[7] Gulland, J. M., and Jordan, D. O., Cold Spring Harbor Symp. on Quant. Biol., **12**, 5 (1947).
[8] Drushel, W. A., and Felty, A. R., *Chem. Zent.*, **89**, 1016 (1918).

The double helix and the 'wronged heroine'

Brenda Maddox

9 Pitt Street, London W8 4NX, UK (e-mail: bmaddox@pitt.demon.co.uk)

In 1962, James Watson, Francis Crick and Maurice Wilkins received the Nobel prize for the discovery of the structure of DNA. Notably absent from the podium was Rosalind Franklin, whose X-ray photographs of DNA contributed directly to the discovery of the double helix. Franklin's premature death, combined with misogynist treatment by the male scientific establishment, cast her as a feminist icon. This myth overshadowed her intellectual strength and independence both as a scientist and as an individual.

"Science and everyday life cannot and should not be separated. Science, for me, gives a partial explanation of life. In so far as it goes, it is based on fact, experience and experiment." Rosalind Franklin, in a letter to her father, summer 1940.

In late February 1953, Rosalind Franklin, a 33-year-old physical chemist working in the biophysics unit of King's College in London, wrote in her notebooks that the structure of DNA had two chains. She had already worked out that the molecule had its phosphate groups on the outside and that DNA existed in two forms.

Two weeks later James Watson and Francis Crick, at the Cavendish Laboratory at Cambridge, built their now celebrated model of DNA as a double helix. They did it not only through brilliant intuition and a meeting of compatible minds, but also on the basis of Franklin's unpublished experimental evidence, which had reached them through irregular routes. She did not know that they had seen either her X-ray photograph (Fig. 1), showing unmistakable evidence of a helical structure, or her precise measurements of the unit cell (the smallest repeating unit), and the crystalline symmetry, of the DNA fibres.

As Watson was to write candidly, "Rosy, of course, did not directly give us her data. For that matter, no one at King's realized they were in our hands." When this admission appeared in Watson's best-selling, much-acclaimed book of the discovery, *The Double Helix*, published in 1968 (ref. 1), he was a Harvard professor and Nobel laureate (he had shared the prize for medicine and physiology in 1962, with Crick and Maurice Wilkins of King's College.) By then Franklin had died — in 1958, at the age of 37, from ovarian cancer.

Other comments dismissive of "Rosy" in Watson's book caught the attention of the emerging women's movement in the late 1960s. "Clearly Rosy had to go or be put in her place [....] Unfortunately Maurice could not see any decent way to give Rosy the boot". And, "Certainly a bad way to go out into the foulness of a [...] November night was to be told by a woman to refrain from venturing an opinion about a subject for which you were not trained."

A feminist icon

Such flamboyantly chauvinist phrases were sufficient to launch the legend of Franklin, the wronged heroine. So too was Watson's insistence on judging Franklin by her appearance rather than by her performance as a scientist. (She was, when she came to King's from the French government laboratory where she had worked from 1947 to the end of 1950, a recognized expert on the structure of coals, carbons and disordered crystals, with many publications to her credit.)

The Franklin myth has continued to grow, abetted by the fact of her tragically early death. Franklin has become a feminist icon — the Sylvia Plath of molecular biology — seen as a genius whose gifts were sacrificed to the greater glory of the male. Her failure to win the Nobel prize has been given as a prime example

A dupla Hélice e a heroína injustiçada

Francis Harry Compton Crick

British

1953

James Dewey Watson
American

Cavendish Laboratory,
Cambridge University,
Cambridge
England

James Watson, seen here in 2009, apologised in 2007 after making similar remarks

Nobel Prize-winning American scientist James Watson has been stripped of his honorary titles after repeating comments about race and intelligence.

Nobel Prize-winning American scientist James Watson has been stripped of his honorary titles after repeating comments about race and intelligence.

In a TV programme, the pioneer in DNA studies made a reference to a view that genes cause a difference on average between blacks and whites on IQ tests.

Cold Spring Harbor Laboratory said the 90-year-old scientist's remarks were “unsubstantiated and reckless”. Dr Watson had made similar claims in 2007 and subsequently apologized.

He shared the Nobel in 1962 with Maurice Wilkins and Francis Crick for their 1953 discovery of the DNA's double helix structure.

Dr Watson sold his gold medal in 2014, saying he had been ostracized by the scientific community after his remarks about race.

https://www.bbc.com/news/world-us-canada-46856779 em 05/06/2022

Luc Montagnier accuses **Robert Gallo** misappropriating an **HIV strain**. Gallo is found innocent of misconduct. Gallo and Montagnier also have a dispute about who should be credited with discovering HIV and who can patent a test for the virus. **The U.S. and French governments reach an agreement to settle the controversy. 1984 - 1993.**

https://www.niehs.nih.gov/research/resources/bioethics/timeline/index.cfm

https://www.nytimes.com/1990/10/06/us/possible-misconduct-is-seen-in-discovery-of-aids-virus.html

https://www.washingtonpost.com/archive/politics/1994/07/12/us-concession-settles-hiv-dispute/cc8feec0-2727-46c9-93d6-88c134811f88/

https://www.nbcnews.com/id/wbna27049812

Book Reviews

SCIENCE FICTIONS: A SCIENTIFIC MYSTERY, A MASSIVE COVER-UP, AND THE DARK LEGACY OF ROBERT GALLO

By John Crewdson. 670 pp., illustrated. Boston, Little, Brown, 2002. $27.95. ISBN 0-316-13476-7.

A NOBEL prize has yet to be awarded for the discovery of the human immunodeficiency virus (HIV) or for the blood test to detect antibodies to the virus. Although the actual reasons are not known, it is widely speculated that the Nobel committee for medicine wants to stay away from the harsh battle over credit for the discovery between Robert Gallo of the National Cancer Institute and Luc Montagnier of the Institut Pasteur in Paris.

Gallo is one of the most famous scientists in the world, although he is in the spotlight less frequently now than a decade ago. John Crewdson is an investigative reporter who works for the *Chicago Tribune*. Crewdson has written a very critical book about Gallo's role in the discovery of HIV. In November 1989, the *Tribune* published a detailed account of the discovery written by Crewdson. He has continued to pursue the story, and this book is the result.

According to Crewdson, Gallo not only falsely claimed that he was the first to isolate HIV and to develop the HIV-antibody test, but also denigrated and obfuscated the role of Montagnier and his colleagues at the Institut Pasteur. Gallo's "discovery" was based on a sample of HIV supplied by Montagnier. (At the time, the French virus was known as lymphadenopathy-associated virus, or LAV.) Either Gallo's laboratory deliberately used the LAV sample without crediting the French investigators, or the French sample accidentally contaminated other viral cultures in Gallo's laboratory. manufactured with the French virus. In March 1987, after considerable controversy and negotiations, President Ronald Reagan and French Prime Minister Jacques Chirac signed an agreement that the Department of Health and Human Services and the Institut Pasteur would share the patent rights to the blood test for AIDS. The dispute, however, was far from settled.

In the preface to his book, Crewdson states, "This is not a book about AIDS. Nor is it really about science. It is a book about how scientists behave when the stakes are high, and the stakes were never higher than the search for the cause of AIDS." The account, however, is about both Crewdson and Gallo. Although Crewdson writes about himself and the *Tribune* in the third person, much of the information in his book would never have become public if he had instead devoted more than 10 years of his life to something else.

In January 1990, soon after the *Tribune* article was published, the Office of Scientific Integrity at the National Institutes of Health opened an inquiry into Gallo's AIDS research. Gallo's actions were tentatively found to "warrant significant censure," but the office's findings were then substantially revised. Subsequently, the Office of Research Integrity in the Department of Health and Human Services replaced the Office of Scientific Integrity. In February 1992, the Office of Research Integrity found Gallo guilty of scientific misconduct for "falsely reporting that LAV had not been transmitted to a permanently growing cell line."

In November 1993, a review board reversed a related finding of misconduct against Mikulas Popovic, a virologist working in Gallo's laboratory, because it concluded that the burden of proof had not been met. Days later, the Office of Research Integrity withdrew its determination that Gallo had committed scientific misconduct. In July 1994, the Department of Health and Human Services agreed to provide the French with additional millions of dollars in patent royalties and acknowledged that "a virus provided by Institut Pasteur was used by National Institutes of Health scientists

Science

Current Issue | First release papers | Archive | About | Submit manuscript | GET OUR E-ALERT

HOME > SCIENCE > VOL. 308, NO. 5729 > PATIENT-SPECIFIC EMBRYONIC STEM CELLS DERIVED FROM HUMAN SCNT BLASTOCYSTS

REPORTS

Patient-Specific Embryonic Stem Cells Derived from Human SCNT Blastocysts

WOO SUK HWANG, SUNG IL ROH, BYEONG CHUN LEE, SUNG KEUN KANG, DAE KEE KWON, SUE KIM, SUN JONG KIM, SUN WOO PARK, HEE SUN KWON, [...] GERALD SCHATTEN

+16 authors | Authors Info & Affiliations

SCIENCE • 17 Jun 2005 • Vol 308, Issue 5729 • pp. 1777-1783 • DOI: 10.1126/science.1112286

526 312 | CHECK ACCESS

Metrics

Total Downloads 526
Last 6 Months 271
Last 12 Months 526

Total Citations 312
Last 6 Months 0
Last 12 Months 0

View all metrics

somatic cell nuclear transfer (SCNT)

mune-matched human embryonic stem cells (hESCs) are antic-
biomedical importance for studies of disease and develop-
e clinical deliberations regarding stem cell transplantation.
ere established by somatic cell nuclear transfer (SCNT) of skin
cells from patients with disease or injury into donated oocytes. These lines, nu-
clear transfer (NT)â€“hESCs, grown on human feeders from the same NT donor or
from genetically unrelated individuals, were established at high rates, regardless of

CURRENT ISSUE

Immune boosting by B.1.1.529 (Omicron) depends on previous SARS-CoV-2 exposure

BY CATHERINE J. REYNOLDS, CORINNA PADE, ET AL.

IF= 47, 72

SCNT= somatic cell nuclear transfer

Hwang- University of South Korea

Schatten - Pittsburgh University

SOUTH KOREA Sentenced for fraud Hwang Wo...

https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.asianews.it%2Ffiles%2Fimg%2Fsize3%2FCOREA_DEL_SUD_-_hwang-woo-sukok.jpg&imgrefurl=https%3A%2F%2Fwww.asianews.it%2Fnews-en%2FSentenced-for-fraud-Hwang-Woo-suk%2C-pioneer-of-(false)-human-cloning-16683.html&tbnid=H2zIePAl__vZyM&vet=12ahUKEwi479nRi4_4AhXvOLkGHYonDk0QMygCegUIARCcAQ..i&docid=ynK55y0LRCkbtM&w=800&h=532&q=Hwang%20Woo%20Suk%20science&ved=2ahUKEwi479nRi4_4AhXvOLkGHYonDk0QMygCegUIARCcAQ

2 **Hwang WS**, Lee BC, Lee CK, Kang SK.

Cite Stem Cell Rev. 2005;1(2):99-109. doi: 10.1385/SCR:1:2:099.

PMID: 17142844 Review.

Share IF= 5.316

☐ Dogs cloned from adult somatic cells.

3 Lee BC, Kim MK, Jang G, Oh HJ, Yuda F, Kim HJ, Hossein MS, Kim JJ, Kang SK, Schatten G, **Hwang WS.**

Cite Nature. 2005 Aug 4;436(7051):641. doi: 10.1038/436641a.

Share PMID: 16079832 IF= 49, 96

☐ Endangered wolves cloned from adult somatic cells.

4 Kim MK, Jang G, Oh HJ, Yuda F, Kim HJ, **Hwang WS**, Hossein MS, Kim JJ, Shin NS, Kang SK, Lee BC.

Cite Cloning Stem Cells. 2007 Spring;9(1):130-7. doi: 10.1089/clo.2006.0034.

Share PMID: 17386020

The first cloned wolf was delivered by cesarean section on October 18, **2005**, 60 days after embryo transfer. The second cloned wolf was delivered on October 26, **2005**, at 61 days postembryo transfer. ...

somatic cell nuclear transfer

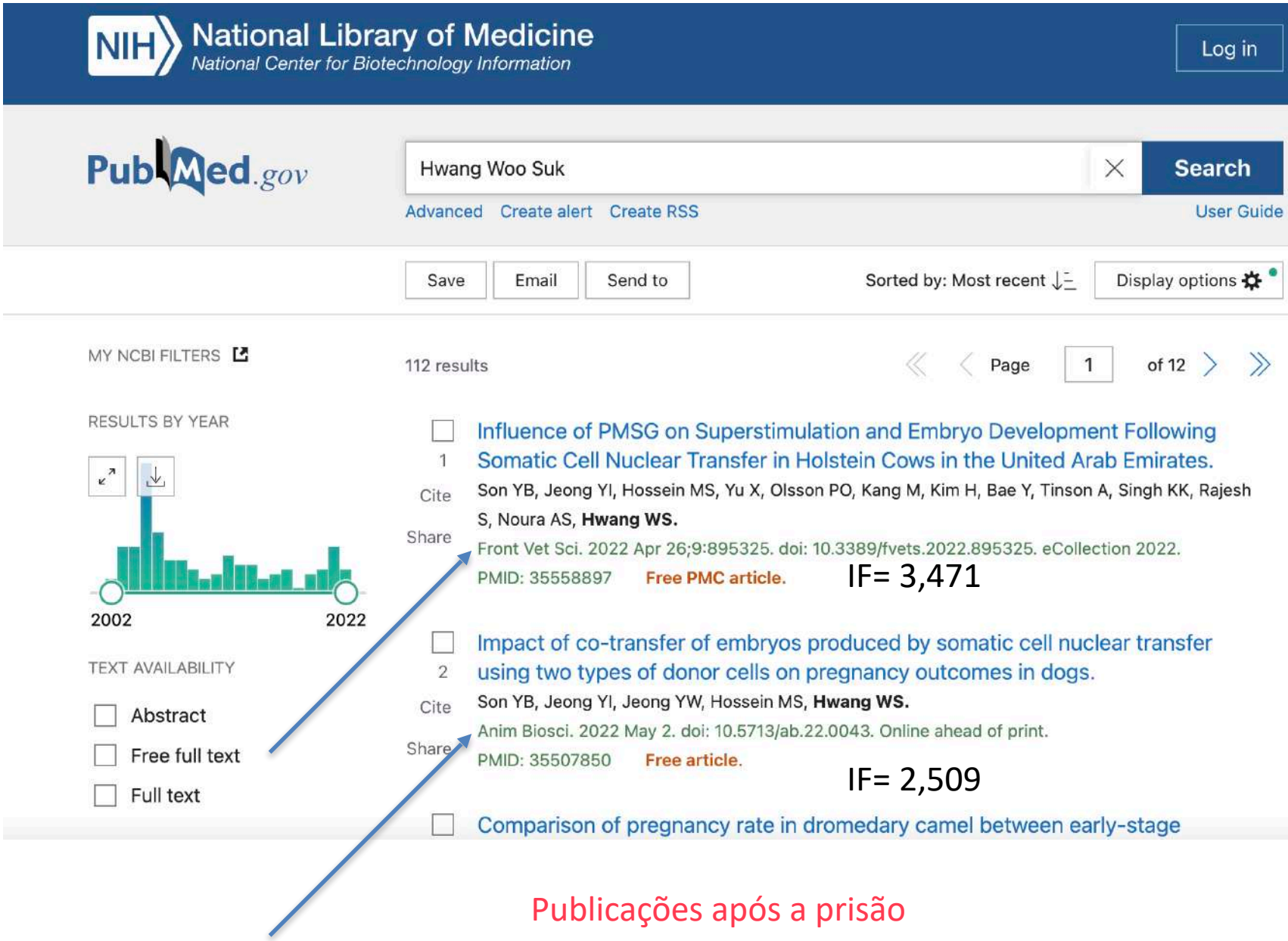
☐ Patient-specific embryonic stem cells derived from human SCNT blastocysts.

5 **Hwang WS**, Roh SI, Lee BC, Kang SK, Kwon DK, Kim S, Kim SJ, Park SW, Kwon HS, Lee CK, Lee JB, Kim JM, Ahn C, Paek SH, Chang SS, Koo JJ, Yoon HS, Hwang JH, Hwang YY, Park YS, Oh SK, Kim HS, Park JH, Moon SY, Schatten G.

Cite

Share Science. 2005 Jun 17;308(5729):1777-83. doi: 10.1126/science.1112286. Epub 2005 May 19.

PMID: 15905366 **Retracted.** IF= 47, 72


National Library of Medicine
National Center for Biotechnology Information
Log in
PubMed.gov
Hwang Woo Suk
Search
Advanced
Create alert
Create RSS
User Guide
Save
Email
Send to
Sorted by: Most recent
Display options
MY NCBI FILTERS
112 results
Page 1 of 12
RESULTS BY YEAR
2002
2022
TEXT AVAILABILITY
Abstract
Free full text
Full text
1
Cite
Share
Influence of PMSG on Superstimulation and Embryo Development Following Somatic Cell Nuclear Transfer in Holstein Cows in the United Arab Emirates.
Son YB, Jeong YI, Hossein MS, Yu X, Olsson PO, Kang M, Kim H, Bae Y, Tinson A, Singh KK, Rajesh S, Noura AS, Hwang WS.
Front Vet Sci. 2022 Apr 26;9:895325. doi: 10.3389/fvets.2022.895325. eCollection 2022.
PMID: 35558897 Free PMC article.
IF= 3,471
2
Cite
Share
Impact of co-transfer of embryos produced by somatic cell nuclear transfer using two types of donor cells on pregnancy outcomes in dogs.
Son YB, Jeong YI, Jeong YW, Hossein MS, Hwang WS.
Anim Biosci. 2022 May 2. doi: 10.5713/ab.22.0043. Online ahead of print.
PMID: 35507850 Free article.
IF= 2,509
Comparison of pregnancy rate in dromedary camel between early-stage
Publicações após a prisão

University clears scientist of misconduct but says his conduct was misbehaviour

Jane Parry

Additional article information

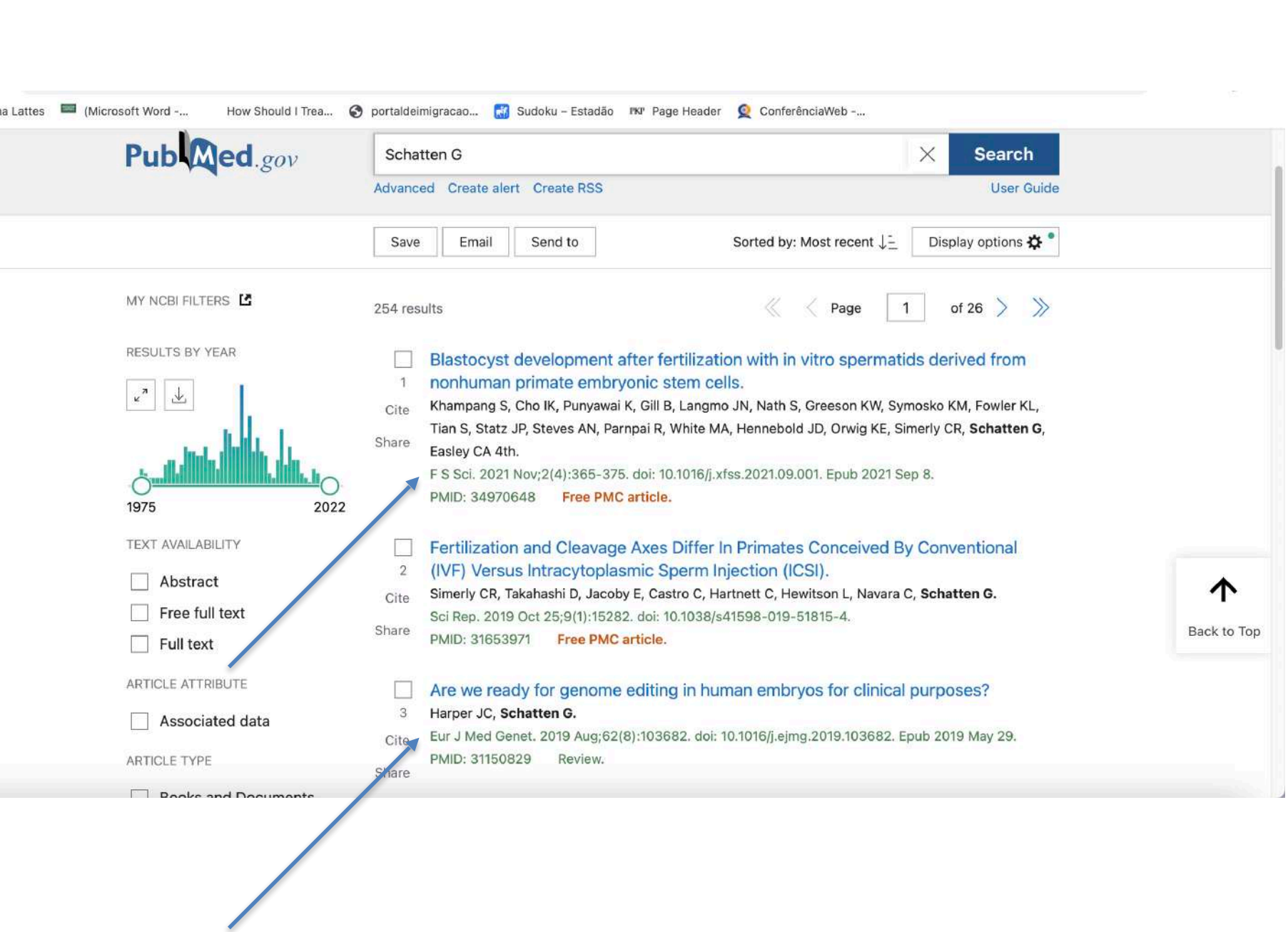
The University of Pittsburgh has cleared Gerald Schatten, director of its department of obstetrics, gynaecology, and reproductive sciences, of any scientific misconduct in his collaboration with the disgraced Korean stem cell researcher Hwang Woo-suk. The university's research integrity panel has investigated Dr Schatten's role in a paper published in Science (2005;308:1777-83), which was one of two withdrawn by the journal in January after revelations that they were based on falsified data.

Although the panel concluded that Dr Schatten was not involved in the falsification of data and that he was not aware of the misconduct that led to Professor Hwang's resignation from Seoul National University, it accused him of shirking his responsibilities as co-author of the paper.

Its criticism of Dr Schatten centred on why he did not take greater steps to ensure the veracity of the data supporting the paper's claims. During the course of the investigation, Dr Schatten also sought to downplay his role as senior author of the paper, but his attempts to deny that he was not strictly speaking a senior author were dismissed by the panel as disingenuous.

"Taken together with written comments to the committee, this appears to be part of a concerted and deliberate effort on the part of Dr Schatten to further distance himself from Dr Hwang and their joint publications. This is in sharp contrast to the full participation of Dr Schatten in the media spotlight following publication of the paper," the panel wrote in its investigative report summary.

"Regardless of the adjective used to describe Dr Schatten's co-authorship, whether senior or not, he did invest a tremendous amount of time and energy in working over the several drafts of the manuscript, more than in many papers of his own students, according to his testimony. We feel that he did not


a Lattes
(Microsoft Word -...
How Should I Trea...
portaldeimigracao...
Sudoku – Estadão
Page Header
ConferênciaWeb -...
PubMed.gov
Schatten G
Search
Advanced
Create alert
Create RSS
User Guide
Save
Email
Send to
Sorted by: Most recent
Display options
MY NCBI FILTERS
254 results
Page 1 of 26
RESULTS BY YEAR
1975
2022
TEXT AVAILABILITY
Abstract
Free full text
Full text
ARTICLE ATTRIBUTE
Associated data
ARTICLE TYPE
1
Cite
Share
Blastocyst development after fertilization with in vitro spermatids derived from nonhuman primate embryonic stem cells.
Khampang S, Cho IK, Punyawai K, Gill B, Langmo JN, Nath S, Greeson KW, Symosko KM, Fowler KL, Tian S, Statz JP, Steves AN, Parnpai R, White MA, Hennebold JD, Orwig KE, Simerly CR, Schatten G, Easley CA 4th.
F S Sci. 2021 Nov;2(4):365-375. doi: 10.1016/j.xfss.2021.09.001. Epub 2021 Sep 8.
PMID: 34970648 Free PMC article.
2
Cite
Share
Fertilization and Cleavage Axes Differ In Primates Conceived By Conventional (IVF) Versus Intracytoplasmic Sperm Injection (ICSI).
Simerly CR, Takahashi D, Jacoby E, Castro C, Hartnett C, Hewitson L, Navara C, Schatten G.
Sci Rep. 2019 Oct 25;9(1):15282. doi: 10.1038/s41598-019-51815-4.
PMID: 31653971 Free PMC article.
3
Cite
Share
Are we ready for genome editing in human embryos for clinical purposes?
Harper JC, Schatten G.
Eur J Med Genet. 2019 Aug;62(8):103682. doi: 10.1016/j.ejmg.2019.103682. Epub 2019 May 29.
PMID: 31150829 Review.
Back to Top

Published in final edited form as:

F S Sci. 2021 November ; 2(4): 365–375. doi:10.1016/j.xfss.2021.09.001.

Blastocyst development after fertilization with in vitro spermatids derived from nonhuman primate embryonic stem cells

Sujittra Khampang, Ph.D.[a,b], **In Ki Cho, Ph.D.**[a,c,d], **Kanchana Punyawai, Ph.D.**[a], **Brittany Gill, B.S.**[c,d], **Jacqueline N. Langmo, B.S.**[c,d], **Shivangi Nath, Ph.D.**[g], **Katherine W. Greeson, B.S.**[c,d], **Krista M. Symosko, B.S.**[c,d], **Kristen L. Fowler, M.S.**[c,d], **Siran Tian, B.S.**[a], **John P. Statz, B.S.**[f,h], **Alyse N. Steves, Ph.D.**[a,d], **Rangsun Parnpai, Ph.D.**[b], **Michael A. White, Ph.D.**[g], **Jon D. Hennebold, Ph.D.**[f,h], **Kyle E. Orwig, Ph.D.**[e], **Calvin R. Simerly, Ph.D.**[e], **Gerald Schatten, Ph.D.**[e], **Charles A. Easley IV, Ph.D.**[a,c,d]

[a]Division of Neuropharmacology and Neurologic Diseases; Yerkes National Primate Research Center; Atlanta, Georgia;

[b]Embryo Technology and Stem Cell Research Center, School of Biotechnology, Suranaree University of Technology, Nakhon Ratchasima, Thailand;

[c]Department of Environmental Health Science, College of Public Health, University of Georgia; Athens, Georgia;

[d]Regenerative Bioscience Center; University of Georgia; Athens, Georgia;

[e]Magee-Womens Research Institute and Departments of Obstetrics, Gynecology, and Reproductive Sciences, Cell Biology and Bioengineering; University of Pittsburgh; Pittsburgh, Pennsylvania;

Gerald P. Schatten, PhD

Professor Gerald Schatten is Director of the Pittsburgh Development Center, Professor of Obstetrics, Gynecology and Reproductive Sciences, Cell Biology, Bioengineering and Director of the Division of Developmental and Regenerative Medicine. Dr. Schatten has directly trained >50 doctoral and postdoctoral fellows, along with several MD, MD-PhD, and DVM trainees. He is active in advanced research training and was the founding director of the FRONTIERS IN REPRODUCTION, the premier reproduction training vehicle for MD and PhDs.

He is currently President of UNESCO's International Cell Research Organization. With extensive funding from the National Institutes of Health, Dr. Schatten is the recipient of an NIH MERIT, and earlier a Research Career Development, Award, was honored by the Czech Academy of Sciences with their Purkinje Medal of Science, elected as a Delegate of the American Association for the Advancement of Sciences, a Mentor Awardee of the American Society for Cell Biology, Elected Australian Society for Reproductive Biology President's Lecturer, awarded the Daniel Mazia Award from Stanford University and a Doctor Honoris Causa (Honorary Doctorate) from the University of Nova Gorica, presented by the President of the Republic of Slovenia

1 Retraction: Stimulus-triggered fate conversion of somatic cells into pluripotency

Obokata H, Wakayama T, Sasai Y, Kojima K, Vacanti MP, Niwa H, Yamato M, Vacanti CA.

Nature. 2014 Jul 3;511(7507):112. doi: 10.1038/nature13598.

PMID: 24990753 No abstract available.

2 Retraction: Bidirectional developmental potential in reprogrammed cells with acquired pluripotency.

Obokata H, Sasai Y, Niwa H, Kadota M, Andrabi M, Takata N, Tokoro M, Terashita Y, Yonemura S, Vacanti CA, Wakayama T.

Nature. 2014 Jul 3;511(7507):112. doi: 10.1038/nature13599.

PMID: 24990752 No abstract available.

3 Bidirectional developmental potential in reprogrammed cells with acquired pluripotency.

Obokata H, Sasai Y, Niwa H, Kadota M, Andrabi M, Takata N, Tokoro M, Terashita Y, Yonemura S, Vacanti CA, Wakayama T.

Nature. 2014 Jan 30;505(7485):676-80. doi: 10.1038/nature12969.

PMID: 24476891 **Retracted.**

4 Stimulus-triggered fate conversion of somatic cells into pluripotency.

Obokata H, Wakayama T, Sasai Y, Kojima K, Vacanti MP, Niwa H, Yamato M, Vacanti CA.

Nature. 2014 Jan 30;505(7485):641-7. doi: 10.1038/nature12968.

PMID: 24476887 **Retracted.**

Stem cells

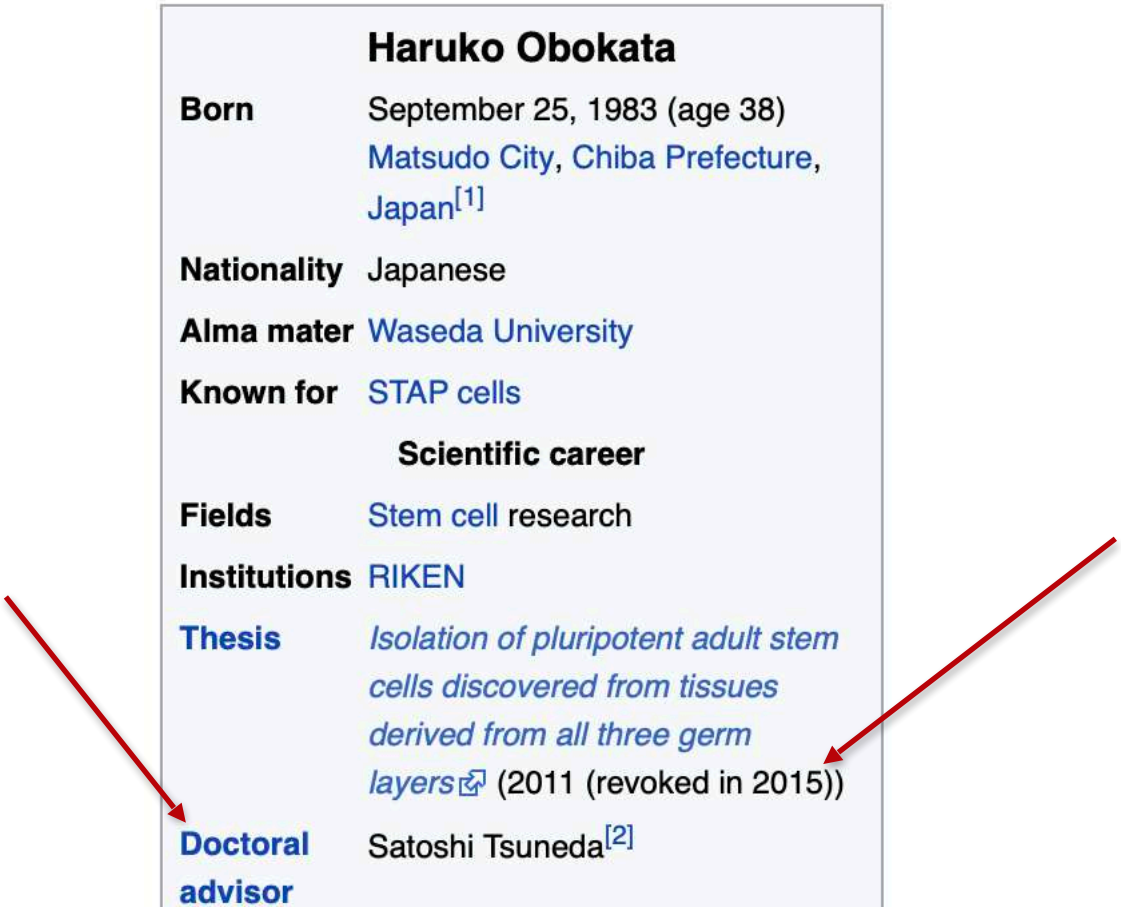
What pushes scientists to lie? The disturbing but familiar story of Haruko Obokata

The spectacular fall of the Japanese scientist who claimed to have triggered stem cell abilities in regular body cells is not uncommon in the scientific community. The culprit: carelessness and hubris in the drive to make a historic discovery

John Rasko *and* Carl Power

Wed 18 Feb 2015 13.30 GMT

Riken researcher Haruko Obokata working at her laboratory in Kobe. Photograph: Jiji



[1]Laboratory for Cellular Reprogramming, RIKEN Center for Developmental Biology, Kobe 650-0047, Japan. [2]Laboratory for Genomic Reprogramming, RIKEN Center for Developmental Biology, Kobe 650-0047, Japan. [3]Laboratory for Tissue Engineering and Regenerative Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts 02115, USA. [4]Laboratory for Organogenesis and Neurogenesis, RIKEN Center for Developmental Biology, Kobe 650-0047, Japan. [5]Laboratory for Pluripotent Stem Cell Studies, RIKEN Center for Developmental Biology, Kobe 650-0047, Japan. [6]Genome Resource and Analysis Unit, RIKEN Center for Developmental Biology, Kobe 650-0047, Japan. [7]Electron Microscopy Laboratory, RIKEN Center for Developmental Biology, Kobe 650-0047, Japan. [8]Faculty of Life and Environmental Sciences, University of Yamanashi, Yamanashi 400-8510, Japan.

claimed that a simple procedure of low pH treatment would do the trick to get to pluripotency. They called the resulting cells "STAP cells" or "STAP stem cells".

STAP= Stimulus-Triggered Acquisition of Pluripotency (cells)

Vacanti and Obokata in happier days before STAP crashed and burned.

Actually, the whole STAP claim was bogus and never able to be replicated. Science did a good job of addressing this situation, but many wondered how the two faulty papers could have been published in the first place in *Nature*. This blog The Niche played some role in trying to elucidate the facts about STAP cells. **I posted a review** of the papers here the day they came out and registered growing skepticism about them within just days and weeks.

Over time it became clear, amongst much cloudiness, that Obokata had committed some research misconduct. Embryonic stem cells were likely mixed with the cells supposedly undergoing reprogramming by stress.

The complete facts of the case were never quite resolved, but STAP cells remain one of the most troubling stem cell-related scandals of all time.

https://ipscell.com/2015/01/stapanniversary/

https://www.statnews.com/2015/09/23/stem-cell-claim-involving-brigham-research-debunked-once-more/

HARVARD CATALYST

Harvard Catalyst Profiles

Contact, publication, and social network information about Harvard faculty and fellows.

Home | About | Help | History (1) | Search Profiles (people, publications, concepts, etc.)

Login to edit your profile (add a photo, education, awards, etc.), search **student opportunities**, and **create reports**.

Charles Alfred Vacanti, M.D.

Title	Vandam/Covino Professor of Anaesthesia, Emeritus
Institution	Brigham and Women's Hospital
Department	Emeritus
Address	Brigham and Women's Hospital Anaesthesia 75 Francis St Boston MA 02115
Phone	617/732-8211
Fax	617/730-9534
Email	cvacanti@partners.org
vCard	Download vCard (login for email)

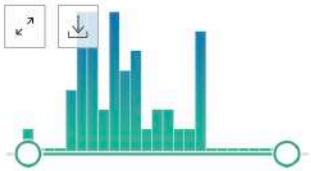
Vacanti's Networks

Click the **Explore** buttons for more information and interactive visualizations!

Concepts (441)

Chondrocytes
Cartilage
Cell Transplantation
Tissue Engineering
Biocompatible Materials

https://connects.catalyst.harvard.edu/Profiles/display/Person/66461



TEXT AVAILABILITY

- [ ] Abstract
- [ ] Free full text
- [ ] Full text

ARTICLE ATTRIBUTE

- [ ] Associated data

ARTICLE TYPE

- [ ] Books and Documents
- [ ] Clinical Trial
- [ ] Meta-Analysis
- [ ] Randomized Controlled Trial
- [ ] Review
- [ ] Systematic Review

PUBLICATION DATE

1 Cite Share
Peccora CD, Gimlich R, Cornell RP, **Vacanti CA**, Ehrenfeld JM, Urman RD.
J Med Syst. 2014 Sep;38(9):105. doi: 10.1007/s10916-014-0105-2. Epub 2014 Jul 20.
PMID: 25038890

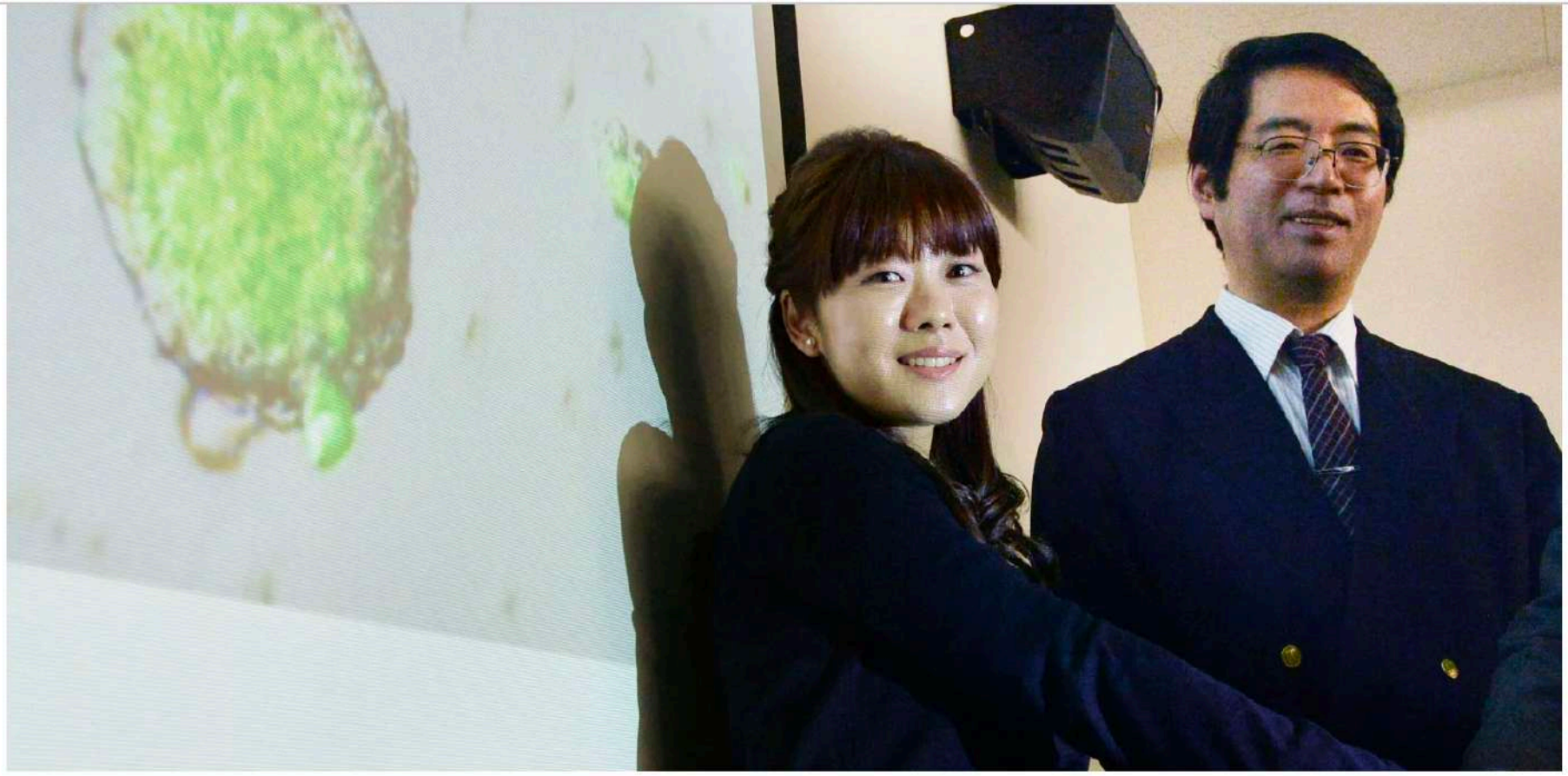
2 Cite Share
Retraction: Stimulus-triggered fate conversion of somatic cells into pluripotency.
Obokata H, Wakayama T, Sasai Y, Kojima K, Vacanti MP, Niwa H, Yamato M, **Vacanti CA.**
Nature. 2014 Jul 3;511(7507):112. doi: 10.1038/nature13598.
PMID: 24990753 No abstract available.

3 Cite Share
Retraction: Bidirectional developmental potential in reprogrammed cells with acquired pluripotency.
Obokata H, Sasai Y, Niwa H, Kadota M, Andrabi M, Takata N, Tokoro M, Terashita Y, Yonemura S, **Vacanti CA**, Wakayama T.
Nature. 2014 Jul 3;511(7507):112. doi: 10.1038/nature13599.
PMID: 24990752 No abstract available.

4 Cite Share
Bidirectional developmental potential in reprogrammed cells with acquired pluripotency.
Obokata H, Sasai Y, Niwa H, Kadota M, Andrabi M, Takata N, Tokoro M, Terashita Y, Yonemura S, **Vacanti CA**, Wakayama T.
Nature. 2014 Jan 30;505(7485):676-80. doi: 10.1038/nature12969.
PMID: 24476891 **Retracted.**

5 Cite Share
Stimulus-triggered fate conversion of somatic cells into pluripotency.
Obokata H, Wakayama T, Sasai Y, Kojima K, Vacanti MP, Niwa H, Yamato M, **Vacanti CA.**
Nature. 2014 Jan 30;505(7485):641-7. doi: 10.1038/nature12968.
PMID: 24476887 **Retracted.**

Back to Top



Yoshiki Sasai, right, deputy director of the Riken's Center for Developmental Biology, poses for a photo with Haruko Obokata on Jan. 28, 2014. Kyodo/Reuters

Stem cell scientist found dead in apparent suicide

By Jonathan Webb
Science reporter, BBC News

The effect of bisoprolol on perioperative mortality and myocardial infarction in high-risk patients undergoing vascular surgery. Dutch Echocardiographic Cardiac Risk Evaluation Applying Stress Echocardiography Study Group

D Poldermans 1, E Boersma, J J Bax, I R Thomson, L L van de Ven, J D Blankensteijn, H F Baars, T I Yo, G Trocino, C Vigna, J R Roelandt, H van Urk

DOI: 10.1056/NEJM199912093412402

Don Poldermans is a Dutch former cardiovascular medicine researcher who was fired **for scientific misconduct and ethics concerns over informed consent**. He was employed by Erasmus Medical Center in Rotterdam, Netherlands, where he was the head of the perioperative cardiac care unit.

Don Poldermans - Wikipedia
https://en.wikipedia.org › wiki › Don_Poldermans

Breaking news: Prolific Dutch heart researcher fired over ...
https://retractionwatch.com › breaki...

Traduzir esta página
17 de nov. de 2011 — **Don Poldermans**, a leading heart specialist, has been **fired** over concerns that he committed research misconduct. According to a report on the .

THE EFFECT OF BISOPROLOL ON PERIOPERATIVE MORTALITY AND MYOCARDIAL INFARCTION IN HIGH-RISK PATIENTS UNDERGOING VASCULAR SURGERY

DON POLDERMANS, PH.D., ERIC BOERSMA, PH.D., JEROEN J. BAX, PH.D., IAN R. THOMSON, PH.D., LOUIS L.M. VAN DE VEN, PH.D., JAN D. BLANKENSTEIJN, PH.D., HUBERT F. BAARS, M.D., TIK-IEN YO, PH.D., GIUSEPPE TROCINO, M.D., CARLO VIGNA, M.D., JOS R.T.C. ROELANDT, PH.D., AND HERO VAN URK, PH.D., FOR THE DUTCH ECHOCARDIOGRAPHIC CARDIAC RISK EVALUATION APPLYING STRESS ECHOCARDIOGRAPHY STUDY GROUP*

ABSTRACT

Background Cardiovascular complications are the most important causes of perioperative morbidity and mortality among patients undergoing major vascular surgery.

Methods We performed a randomized, multicenter trial to assess the effect of perioperative blockade of beta-adrenergic receptors on the incidence of death from cardiac causes and nonfatal myocardial infarc-

Conclusions Bisoprolol reduces the perioperative incidence of death from cardiac causes and nonfatal myocardial infarction in high-risk patients who are undergoing major vascular surgery. (N Engl J Med 1999;341:1789-94.)

PATIENTS undergoing major vascular surgery are at risk for serious perioperative cardiac complications, such as nonfatal myocardial infarction and death.[1] A combination of clinical assessment and noninvasive cardiac testing can be used to identify patients at high risk.[2] Various interventions have been proposed to reduce the risk of cardiac complications in such patients after noncardiac surgery, but none have been found to be efficacious

From Erasmus Medical Center, Rotterdam, the Netherlands (D.P., E.B., J.J.B., L.L.M.V., J.R.T.C.R., H.U.); the University of Manitoba, Winnipeg, Canada (I.R.T.); University Hospital, Utrecht, the Netherlands (J.D.B.); Twee Steden Ziekenhuis, Tilburg, the Netherlands (H.F.B.); Sint Clara Ziekenhuis, Rotterdam, the Netherlands (T.-I.Y.); San Gerardo Hospital, Monza, Italy (G.T.); and Istituto di Ricovero e Cura a Carattere Scientifico Hospital, San Giovanni Rotondo, Italy (C.V.). Address reprint requests to Dr. Poldermans at the Department of Vascular Surgery, Erasmus University Medical Center, Dr. Molewaterplein 40, 3015 GD Rotterdam, the Netherlands, or at poldermans@hlkd.azr.nl.

Other authors were Paolo M. Fioretti, Ph.D., Istituto di Cardiologia, Azienda Ospedaliera, Santa Maria della Misericordia, Udine, Italy; and Bernard Paelinck, M.D., Ziekenhuis Middelheim, Antwerp, Belgium.

*The members of the study group are listed in the Appendix.

Journal of the American College of Cardiology
© 2006 by the American College of Cardiology Foundation
Published by Elsevier Inc.

Vol. 48, No. 5, 2006
ISSN 0735-1097/06/$32.00
doi:10.1016/j.jacc.2006.03.059

Should Major Vascular Surgery Be Delayed Because of Preoperative Cardiac Testing in Intermediate-Risk Patients Receiving Beta-Blocker Therapy With Tight Heart Rate Control?

Don Poldermans, MD, PHD,* Jeroen J. Bax, MD, PHD,† Olaf Schouten, MD,‡ Aleksandar N. Neskovic, MD, PHD,§ Bernard Paelinck, MD, PHD,‖ Guido Rocci, MD, PHD,¶ Laura van Dortmont, MD, PHD,# Anai E. S. Durazzo, MD, PHD,** Louis L. M. van de Ven, MD, PHD,†† Marc R. H. M. van Sambeek, MD, PHD,‡ Miklos D. Kertai, MD, PHD,* Eric Boersma, PHD,‡‡ for the Dutch Echocardiographic Cardiac Risk Evaluation Applying Stress Echo Study Group

Rotterdam, Leiden, Schiedam, and Amsterdam, the Netherlands; Belgrade, Serbia and Montenegro; Antwerp, Belgium; Bologna, Italy; and São Paulo, Brazil

OBJECTIVES The purpose of this study was to assess the value of preoperative cardiac testing in intermediate-risk patients receiving beta-blocker therapy with tight heart rate (HR) control scheduled for major vascular surgery.

BACKGROUND Treatment guidelines of the American College of Cardiology/American Heart Association recommend cardiac testing in these patients to identify subjects at increased risk. This policy delays surgery, even though test results might be redundant and beta-blockers with tight HR control provide sufficient myocardial protection. Furthermore, the benefit of revascularization in high-risk patients is ill-defined.

METHODS All 1,476 screened patients were stratified into low-risk (0 risk factors), intermediate-risk (1 to 2 risk factors), and high-risk (≥3 risk factors). All patients received beta-blockers. The 770 intermediate-risk patients were randomly assigned to cardiac stress-testing (n = 386) or no testing. Test results influenced management. In patients with ischemia, physicians aimed to control HR below the ischemic threshold. Those with extensive stress-induced ischemia were

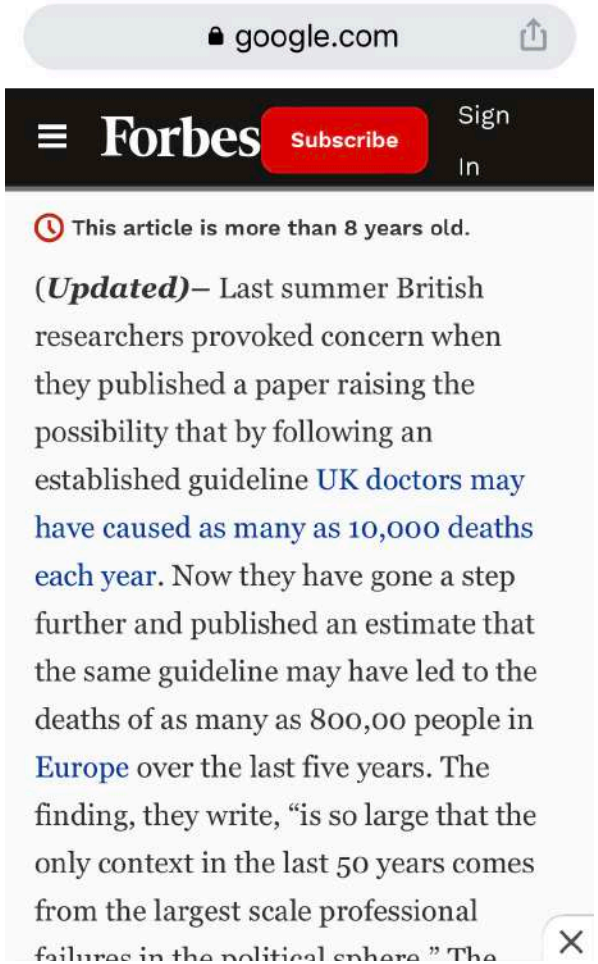
CONCLUSIONS Cardiac testing can safely be omitted in intermediate-risk patients, provided that beta-blockers aiming at tight HR control are prescribed. (J Am Coll Cardiol 2006;48:964–9)

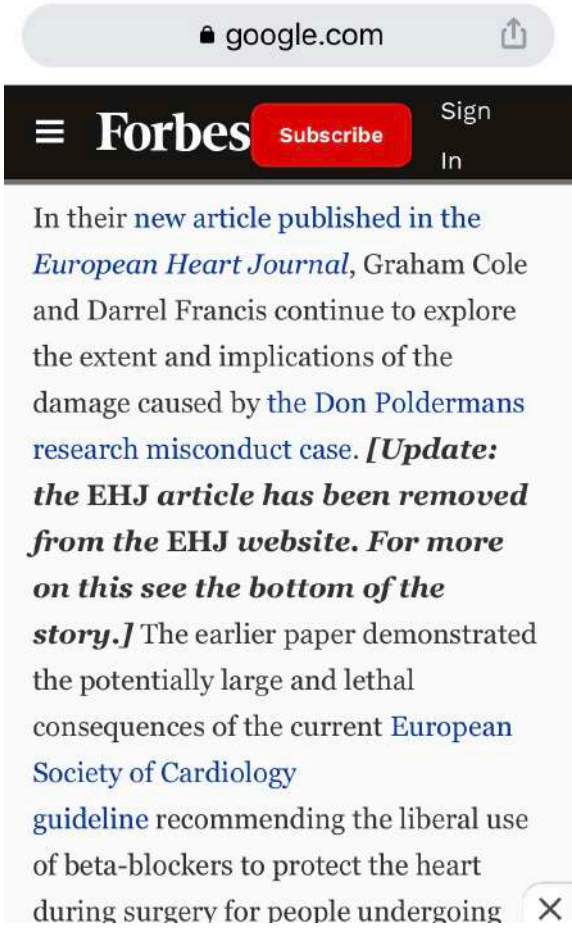
European Heart Journal (2009) **30**, 2769–2812
doi:10.1093/eurheartj/ehp337

Guidelines for pre-operative cardiac risk assessment and perioperative cardiac management in non-cardiac surgery

The Task Force for Preoperative Cardiac Risk Assessment and Perioperative Cardiac Management in Non-cardiac Surgery of the European Society of Cardiology (ESC) and endorsed by the European Society of Anaesthesiology (ESA)

Authors/Task Force Members: Don Poldermans; (Chairperson) (The Netherlands)*; Jeroen J. Bax (The Netherlands); Eric Boersma (The Netherlands); Stefan De Hert (The Netherlands); Erik Eeckhout (Switzerland); Gerry Fowkes (UK); Bulent Gorenek (Turkey); Michael G. Hennerici (Germany); Bernard Iung (France); Malte Kelm (Germany); Keld Per Kjeldsen (Denmark); Steen Dalby Kristensen (Denmark); Jose Lopez-Sendon (Spain); Paolo Pelosi (Italy); François Philippe (France); Luc Pierard (Belgium); Piotr Ponikowski (Poland); Jean-Paul Schmid (Switzerland); Olav F.M. Sellevold (Norway); Rosa Sicari (Italy); Greet Van den Berghe (Belgium); Frank Vermassen (Belgium)





Jan 15, 2014,12:37pm

Suspect Drug Research Blamed for Massive Death Toll

Research misconduct can ruin everything from scientific careers to institutional reputations and public confidence in science. But in a paper published 2 weeks ago, two British cardiologists claimed that misconduct in their field may have had a far greater toll. Tainted research by Don Poldermans, a disgraced cardiologist who was at Erasmus MC in the Netherlands, may have led to the deaths of 800,000 people in Europe, Darrel Francis and Graham Cole of Imperial College London wrote in a provocative article that appeared briefly in the *European Heart Journal* (*EHJ*) and was then withdrawn.

Poldermans, a prominent researcher who published more than 300 papers, was fired in November 2011 after a university investigation concluded that he had engaged in misconduct, including data fabrication. He was the lead author on two influential trials examining whether β-blocker drugs can protect patients undergoing surgery that doesn't directly involve the heart; those studies helped shape guidelines adopted in 2009 by the European Society of Cardiology (ESC) that recommended using the drugs. (U.S. guidelines are more cautious.) When Poldermans's studies are omitted, Francis and Cole say, the evidence shows that the recommendations don't save lives but endanger them.

The accusatory paper was removed from the *EHJ*'s website less than 48 hours after it appeared. It hadn't undergone peer review, as it should have, says Thomas Lüscher of the University of Zurich in Switzerland, the journal's editor; an official retraction was posted on 23 January, and the paper is now under review. But Cole and Francis say the staggering number of deaths they calculated was based on published data, and their claim has reignited a debate about giving β blockers to patients about to undergo surgery that might stress the heart. It is also a reminder, some scientists say, of the huge effects that a few uncertain and potentially flawed studies can have on clinical practice. "This is unfortunately what happens when you write a guideline that affects large numbers of people in a relatively common situation," Francis says.

Defenders of the guidelines counter that the estimate of 800,000 deaths is wildly inflated. It disregards explicit cautions in

CREDIT: STEPHEN P. YANOVIAK

Published by AAAS

Foi expulso da Universidade

PubMed.gov

poldermans D

Search

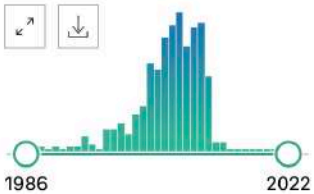
Advanced Create alert Create RSS User Guide

Save Email Send to Sorted by: Most recent Display options

MY NCBI FILTERS

500 results

RESULTS BY YEAR



TEXT AVAILABILITY

- [ ] Abstract
- [ ] Free full text
- [ ] Full text

ARTICLE ATTRIBUTE

- [ ] Associated data

ARTICLE TYPE

1 Cite Share

Diet and kidney disease in high-risk individuals with type 2 diabetes mellitus.

Dunkler D, Dehghan M, Teo KK, Heinze G, Gao P, Kohl M, Clase CM, Mann JF, Yusuf S, Oberbauer R; ONTARGET Investigators.

JAMA Intern Med. 2013 Oct 14;173(18):1682-92. doi: 10.1001/jamainternmed.2013.9051.

PMID: 23939297 Clinical Trial.

2 Cite Share

Don Poldermans MD PhD, replies to European heart journal editorial.

Poldermans D.

Eur Heart J. 2013 Jun;34(23):1698.

PMID: 23926606 No abstract available.

3 Cite Share

Scientific fraud or a rush to judgment?

Poldermans D.

Am J Med. 2013 Apr;126(4):e5-6. doi: 10.1016/j.amjmed.2012.10.018.

PMID: 23507217 No abstract available.

[ESC guidelines for treatment of cardiovascular disease in pregnancy].

3ª Diretriz de Avaliação Cardiovascular Perioperatória da Sociedade Brasileira de Cardiologia 2017

1. Definição do Problema

A) Objetivo desta Diretriz

O objetivo principal desta diretriz é atualizar os conceitos difundidos por suas duas antecessoras, as diretrizes I e II, de avaliação perioperatória, da Sociedade Brasileira de Cardiologia (SBC), publicadas, respectivamente, em 2007 e 2011.[1] Ao realizar uma revisão sistemática das evidências acumuladas no período de 5 anos, ou seja, desde a última publicação, percebemos o notável crescimento do conhecimento do assunto, em especial na Cardiologia.

Em um ambiente perioperatório, o médico precisa reunir, a um só tempo, conceitos de diversas especialidades, para compreender facetas diferentes de um mesmo problema e otimizar a linguagem entre clínicos, cirurgiões, anestesiologistas e intensivistas. Por outro lado, ainda que problemas mais relacionados com outras disciplinas sejam tratados nesta III diretriz, decidimos que o ponto de vista adotado no texto é o do cardiologista. Para ser fiel a esta decisão, esta diretriz incorporou o termo 'cardiovascular', passando a se denominar *Diretriz de Avaliação Cardiovascular Perioperatória*.

Ainda, algumas novidades foram incluídas em função de novas evidências, como os Novos Anticoagulantes Orais (NOAC) e a situação de intervenções cirúrgicas em pacientes com Dupla Antiagregação Plaquetária (DAP) em portadores de stents de última geração. A questão dos anticoagulantes e dos antiagregantes foi discutida com detalhe no caso de procedimentos cirúrgicos específicos, como odontológicos, dermatológicos, endoscópicos e oftalmológicos.

B) Metodologia e Evidências

A revisão sistemática realizada para a elaboração desta diretriz considerou os aspectos relacionados às graves denúncias de fraude envolvendo um grupo de trabalhos do pesquisador Don Poldermans, do *Erasmus Medical Center*, na Holanda. Conhecidos sob o nome de DECREASE trials, estes estudos analisaram, em grupos significativos de pacientes, aspectos importantes no meio perioperatório, como o uso de betabloqueadores, a estratificação invasiva e o uso de biomarcadores.

O relatório divulgado pelo *Erasmus Medical Center* descreve diversos problemas, incluindo negligência e incorreções científicas nestes estudos, em especial no DECREASE IV.[2] Outros estudos do mesmo grupo, como o DECREASE V e VI, apresentaram problemas semelhantes, embora em menor quantidade.[3,4]

As conclusões do relatório levaram à demissão de Don Poldermans da instituição e à notificação das revistas as quais estes trabalhos foram publicados. Até a data da publicação desta diretriz, entretanto, os trabalhos publicados permaneciam nos sites das revistas.

Os membros do comitê redator desta diretriz discutiram o assunto e decidiram (não por unanimidade) que as recomendações da III diretriz **não** deveriam levar em conta as evidências provenientes dos estudos DECREASE IV, V e VI, e que tal decisão deveria ser informada aos leitores.

A metodologia e os níveis de evidência adotados para a *Diretriz de Avaliação Cardiovascular Perioperatória* foram os seguintes:

J Appl Physiol 99: 779, 2005;
doi:10.1152/japplphysiol.00519.2005.

Retraction of Poehlman et al. Journal of Applied Physiology 76: 2281–2287, 1994

RE: Poehlman, Eric T., Andrew W. Gardner, Paul J. Arciero, Michael I. Goran, and Jorges Calles-Escandon. Effects of endurance training on total fat oxidation in elderly persons. *J Appl Physiol* 76: 2281–2287, 1994.

To the Editor: In the above referenced paper, we presented data purportedly showing the influence of endurance training (ET) on in vivo changes in total fat oxidation and its relationship to changes in sympathetic nervous system activity (SNSA) and resting metabolic rate (RMR) in elderly persons. We concluded that ET may be of benefit in regulation of energy balance via its impact on RMR and substrate oxidation.

This study was purported to be an extension of two earlier studies (1, 2). I have requested retraction of the 1992 *Metabolism* paper (2) because I intentionally omitted a material data point from the norepinephrine results for one of the seven subjects in that paper.

I now wish to report that I also intentionally omitted norepinephrine data from Table 3, Figure 1, Figure 2, and associated text of the above referenced *Journal of Applied Physiology* paper in order to make the association between increased sympathetic nervous system activity and endurance training, resting metabolic rate, and change in fat oxidation appear significant when the actual data did not show significance. My coauthors were unaware of my actions and I now publicly exonerate them. I take sole responsibility for the intentional omission and request that you publish this letter of retraction.

Since both the 1992 and 1994 papers relied upon results where data were intentionally omitted, it is evident that we did not replicate the results reported in the 1991 paper.

REFERENCES

1. **Poehlman E and Danforth E Jr.** Endurance training increases metabolic rate and norepinephrine appearance rate in older individuals. *Am J Physiol Endocrinol Metab* 261: E233–E239, 1991.
2. **Poehlman E, Gardner A, and Goran M.** Influence of endurance training on energy intake, norepinephrine kinetics, and metabolic rate in older individuals. *Metabolism* 41: 941–948, 1992.

Eric T. Poehlman
(formerly)Professor of Medicine
University of Vermont
College of Medicine
Burlington, Vermont

http://www.sciencemag.org/news/2006/06/poehlman-sentenced-1-year-prison

Poehlman Sentenced to 1 Year of Prison

Researcher Eric Poehlman was sentenced to prison today for **fabricating** research. UNIVERSITY OF VERMONT

Researcher Eric Poehlman was sentenced to a year and a day in federal prison today for making a false statement on a federal grant application in 1999. The action by U.S. District Judge William Sessions in Burlington, Vermont, ends the most extensive case of scientific misconduct in the history of the National Institutes of Health (NIH). Experts say the case marks the first time a U.S. scientist will serve jail time for research misconduct not linked to fatalities.

Poehlman admitted in a plea agreement last year to falsifying 15 federal grant applications in addition to as many as 10 articles beginning in 1992 and spanning a decade (***Science***, 25 March 2005, p. 1851) while he was a scientist at the University of Vermont College of Medicine in Burlington and, before then, the University of Maryland, Baltimore. The work involved obesity, metabolism, and menopause. Eight journals have run retractions of his papers, including the *Annals of Internal Medicine*. More than 200 other articles he authored remain in the literature. Prosecutors said that Poehlman made what a clerk called "factual misstatements" in an earlier federal hearing; that offense worsened the sentence.

In a letter to the judge earlier this month, Poehlman explained that he was "motivated by my own desire to advance as a respected scientist“ and added that he was "ashamed of myself for falsifying and fabricating data. ... I believed that because the research questions I had framed were legitimate and worthy of study, it was okay to misrepresent 'minor' pieces of data to increase the odds that the grant would be awarded."

Poehlman faced up to 5 years in jail and has already paid a $180,000 fine. He has also been barred for life from receiving federal research funding.

The first questions about Poehlman's conduct were raised by a 24-year-old research assistant in Poehlman's lab at the University of Vermont . The university found falsifications in three papers, and a 2-year probe by NIH uncovered the rest of the crimes. A university review of Poehlman’s scientific work at the University of Montreal, which he joined in 2001, found no wrongdoing in work he'd done there.

A number of scientists joined his friends in appealing to the judge for leniency. "I do believe he still has a great deal to offer the scientific community," wrote Ross Andersen, an obesity expert at Johns Hopkins University School of Medicine in Baltimore, Maryland.

Retraction of Publication > Ann Intern Med. 2003 Oct 21;139(8):702.

doi: 10.7326/0003-4819-139-8-200310210-00017.

Notice of retraction

Harold C Sox

PMID: 14568863 DOI: 10.7326/0003-4819-139-8-200310210-00017

Free article

No abstract available

Retraction of

Changes in energy balance and body composition at menopause: a controlled longitudinal study.

Poehlman ET, Toth MJ, Gardner AW.

Ann Intern Med. 1995 Nov 1;123(9):673-5. doi: 10.7326/0003-4819-123-9-199511010-00005.

PMID: 7574222 **Retracted.**

Menopause, energy expenditure, and body composition.

20

Poehlman ET.

Acta Obstet Gynecol Scand. 2002 Jul;81(7):603-11. doi: 10.1034/j.1600-0412.2002.810705.x.

PMID: 12190834 **Retracted.** Review.

> Ann Intern Med. 2006 Apr 18;144(8):609-13.
doi: 10.7326/0003-4819-144-8-200604180-00123. Epub 2006 Mar 6.

Research misconduct, retraction, and cleansing the medical literature: lessons from the Poehlman case

Harold C Sox [1], Drummond Rennie

Affiliations + expand

PMID: 16522625 DOI: 10.7326/0003-4819-144-8-200604180-00123

Free article

Abstract

The scientific literature is a record of the search for truth. Publication of faked data diverts this search. The scientific community has a duty to warn people to ignore an article containing faked data and must try to prevent inadvertent citation of it. The scientific community accomplishes these tasks by publishing a retraction and linking it to the fraudulent article's citation in electronic indexes of the medical literature, such as PubMed. This mechanism is far from perfect, as shown by a case history of scientific fraud perpetrated by Eric Poehlman, PhD. His institution notified 3 journals that they had published tainted articles. Two journals failed to retract. The third journal retracted immediately, but other authors continued to cite the retracted article. Another duty of the scientific community is to verify the integrity of other articles published by the author of a fraudulent article. This task falls to the author's institution and requires coauthors to vouch for their article's integrity by convincing institutional investigators that the suspect author could not have altered the raw scientific data from their study. Two universities are currently investigating Poehlman's published research. Maintaining the integrity of the scientific literature requires governmental institutions that have the authority to investigate and punish guilty scientists and

Misconduct Policies in High-Impact Biomedical Journals

Xavier Bosch1*, Cristina Herna´ndez1, Juan M. Pericas1, Pamela Doti1, Ana Marus˘ic´2
1Department of Internal Medicine, Institut d'Investigacions Biome`diques August Pi i Sunyer, Hospital Cl´ınic, University of Barcelona, Barcelona, Spain, 2Department of

Abstract

Background: It is not clear which research misconduct policies are adopted by biomedical journals. This study assessed the prevalence and content policies of the most influential biomedical journals on misconduct and procedures for handling and responding to allegations of misconduct.

Methods: We conducted a cross-sectional study of misconduct policies of 399 high-impact biomedical journals in 27 biomedical categories of the Journal Citation Reports in December 2011. Journal websites were reviewed for information relevant to misconduct policies.

Results: Of 399 journals, 140 (35.1%) provided explicit definitions of misconduct. Falsification was explicitly mentioned by 113 (28.3%) journals, fabrication by 104 (26.1%), plagiarism by 224 (56.1%), duplication by 242 (60.7%) and image manipulation by 154 (38.6%). Procedures for responding to misconduct were described in 179 (44.9%) websites, including retraction, (30.8%) and expression of concern (16.3%). Plagiarism-checking services were used by 112 (28.1%) journals. The prevalences of all types of misconduct policies were higher in journals that endorsed any policy from editors' associations, Office of Research Integrity or professional societies compared to those that did not state adherence to these policy-producing bodies. Elsevier and Wiley-Blackwell had the most journals included (22.6% and 14.8%, respectively), with Wiley journals having greater a prevalence of misconduct definition and policies on falsification, fabrication and expression of concern and Elsevier of plagiarism-checking services.

Conclusions: Only a third of top-ranking peer-reviewed journals had publicly-available definitions of misconduct and less than a half described procedures for handling allegations of misconduct. As endorsement of international policies from policy-producing bodies was positively associated with implementation of policies and procedures, journals and their publishers should standardize their policies globally in order to increase public trust in the integrity of the published record in biomedicine.

Citation: Bosch X, Hernández C, Pericas JM, Doti P, Marušić A (2012) Misconduct Policies in High-Impact Biomedical Journals. PLoS ONE 7(12): e51928. doi:10.1371/journal.pone.0051928

Editor: Lamberto Manzoli, University of Chieti, Italy

- 10.1371/journal.pone.0051928

J Med Ethics. 2011 Feb;37(2):113-7. doi: 10.1136/jme.2010.038125. Epub 2010 Nov 15.

Retractions in the scientific literature: do authors deliberately commit research fraud?

R Grant Steen [1]

Affiliations + expand

PMID: 21081306 DOI: 10.1136/jme.2010.038125

Steen RG. J Med Ethics. 2011. PMID: 21081306

IF= 2.21

Retractions in the scientific literature: do authors deliberately commit research fraud?

Abstract

Background: Papers retracted for fraud (data fabrication or data falsification) may represent a deliberate effort to deceive, a motivation fundamentally different from papers retracted for error. It is hypothesised that fraudulent authors target journals with a high impact factor (IF), have other fraudulent publications, diffuse responsibility across many co-authors, delay retracting fraudulent papers and publish from countries with a weak research infrastructure.

Methods: All 788 English language research papers retracted from the PubMed database between 2000 and 2010 were evaluated. Data pertinent to each retracted paper were abstracted from the paper and the reasons for retraction were derived from the retraction notice and dichotomised as fraud or error. Data for each retracted article were entered in an Excel spreadsheet for analysis.

Results: Journal IF was higher for fraudulent papers ($p<0.001$). Roughly 53% of fraudulent papers were written by a first author who had written other retracted papers ('repeat offender'), whereas only 18% of erroneous papers were written by a repeat offender ($\chi=88.40$; $p<0.0001$). Fraudulent papers had more authors ($p<0.001$) and were retracted more slowly than erroneous papers ($p<0.005$). Surprisingly, there was significantly more fraud than error among retracted papers from the USA ($\chi(2)=8.71$; $p<0.05$) compared with the rest of the world.

Conclusions: This study reports evidence consistent with the 'deliberate fraud' hypothesis. The results suggest that papers retracted because of data fabrication or falsification represent a calculated effort to deceive. It is inferred that such behaviour is neither naïve, feckless nor inadvertent.

Interest in research misconduct has not only continued but, as Figure 1 shows, has escalated. The increase in absolute numbers is still striking, while the annual rate of increase in the later years is even faster than it was earlier. It rose 5.89 times from 2012 to 2019 and 1.61 times from 2006 to 2011. Without putting a great deal of emphasis on the precise numbers shown here, it is fair to conclude that the phenomenon of scientific misconduct has clearly captured a good deal of scholarly attention.

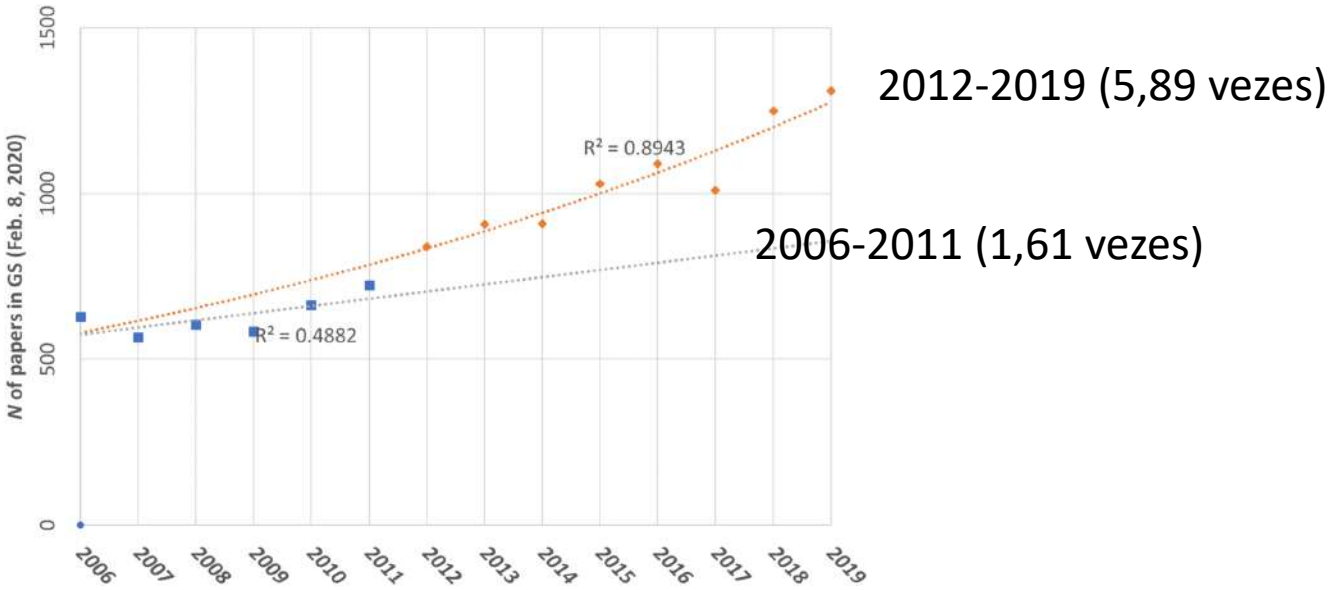
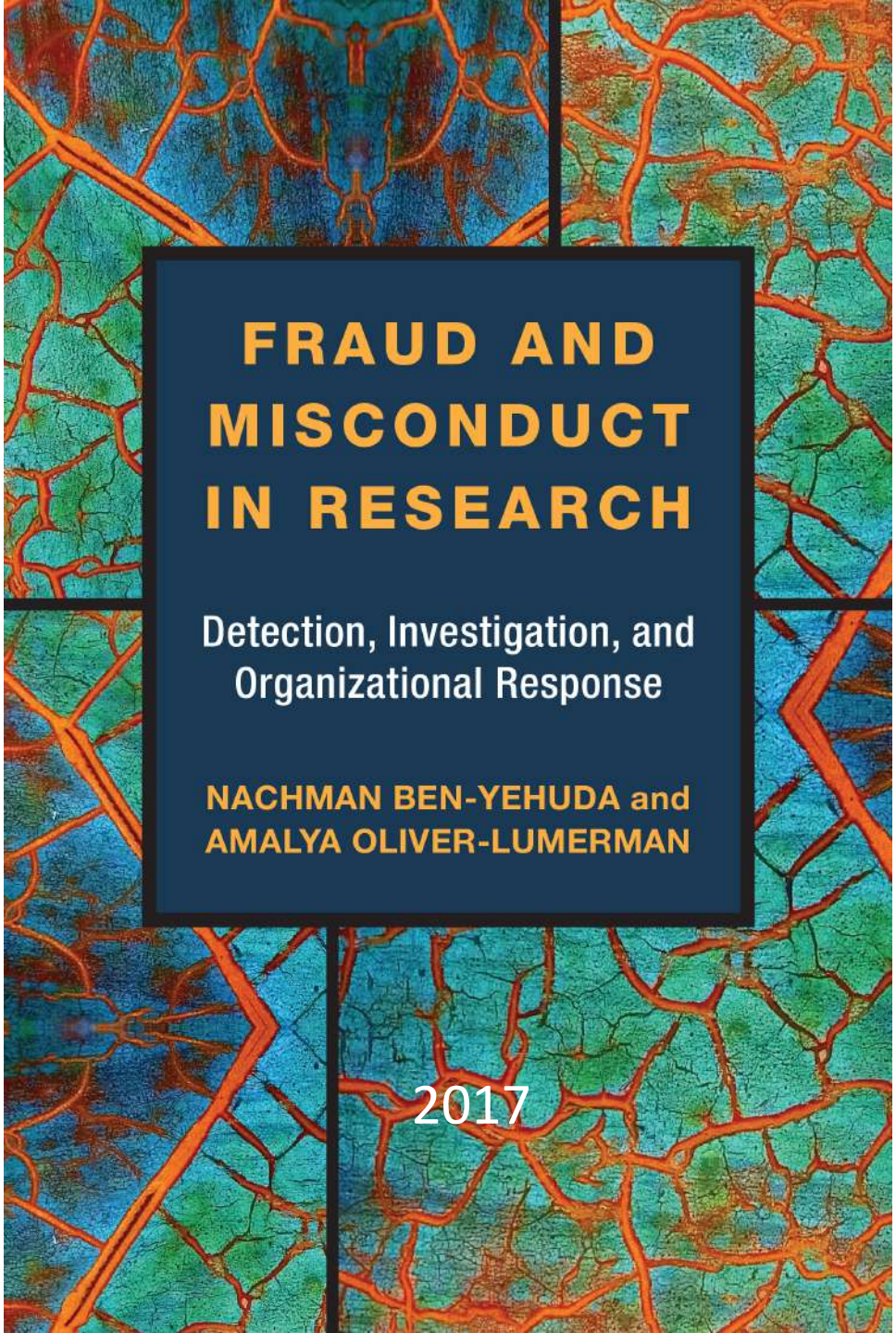


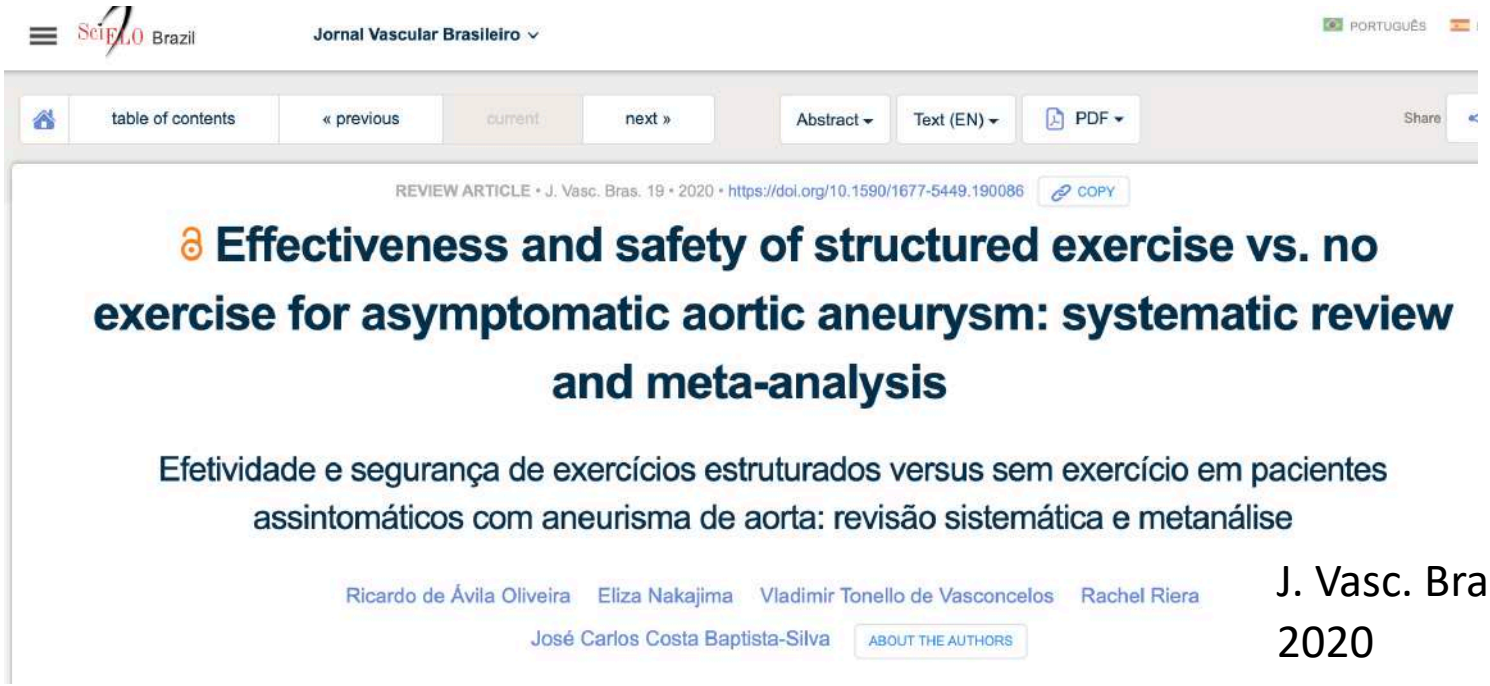
Figure 1.

Figure Legend:

Listings in Google Scholar of scientific misconduct 2006–2020. Source: The figure is based on Ben-Yehuda and Oliver-Lumerman (2017, Figure 4.1, p. 96), but was amended and redesigned for this paper by Loet Leydesdorff, February 8, 2020.

Citation: Zuckerman, H. (2020). Is “the time ripe” for quantitative research on misconduct in science? Quantitative Science Studies, 1(3), 945–958 https:// doi.org/10.1162/qss_a_00065


FRAUD AND MISCONDUCT IN RESEARCH
Detection, Investigation, and Organizational Response
NACHMAN BEN-YEHUDA and AMALYA OLIVER-LUMERMAN
2017



J. Vasc. Bras
2020

2021

Eur J Vasc Endovasc Surg (2011) 41, S1–S58

Management of Abdominal Aortic Aneurysms Clinical Practice Guidelines of the European Society for Vascular Surgery

F.L. Moll [a,*], J.T. Powell [b], G. Fraedrich [c], F. Verzini [d], S. Haulon [e], M. Waltham [f], J.A. van Herwaarden [a], P.J.E. Holt [g], J.W. van Keulen [a,h], B. Rantner [c], F.J.V. Schlösser [h], F. Setacci [i], J.-B. Ricco [j]

[a] Department of Vascular Surgery, University Medical Center Utrecht, Utrecht, The Netherlands

angiography will have to be obtained after the placement of a stent graft, to investigate the stent graft position, the patency of sidebranches and the presence of endoleaks.

Iodinated contrast agents are the medium of choice for angiography, but they carry the risk of nephrotoxicity or anaphylaxis.[226] Low-osmolality iodinated contrast agents are generally preferred since they reduce the incidence of such adverse events, when compared to high-osmolality agents. Carbon dioxide arteriography is a non-nephrotoxic alternative, but the obtained images are frequently inadequate.[227] Gadolinium is another non-nephrotoxic contrast medium, and is considered to be an alternative for iodinated contrast agents in patients with renal insufficiency.[226] *

An alternative for perprocedural angiography is IVUS, allowing for perioperative real-time diameter and length measurements. Perioperatively, IVUS can be a useful tool in patients without, or with an indecisive, pre-operative CTA or MRA. IVUS can help in reducing the amount of peri-operative contrast used. However, as discussed earlier, this technique is not widely available, difficult to perform, and adds time to the procedure.

Quite recently, a newer imaging technique, the on-table angiographic CT modality has been introduced. This imaging technique acquires CT-like images and might help in the detection of complications which are possibly missed by unipolar angiography. Currently, the field of view of these techniques is still limited and the acquired images have a lower resolution, compared to CTA. Nevertheless, the on-table angiographic CT is still evolving and is a promising technique for the near future.[228,229]

Body temperature should be kept at a physiological level (>36 °C) during AAA repair to avoid perioperative complications. Level 3b, Recommendation B.

Intraoperative fluid resuscitation and blood conservation

Loss of fluid during aortic surgery is on one hand due to blood loss, and on the other hand extracellular loss, due to the development of tissue edema, typically 1 L per hour during surgery and continuing into the immediate post-operative period. Especially before 'declamping' an adequate volume regimen is important to avoid the declamping shock with the blood release into a vasodilated ischaemic periphery. Although there are 38 randomised trials following the question of the best fluid management during aortic surgery, there is not enough evidence on the benefits of any particular individual or combination fluid therapy. Crystalloid solutions and colloids are commonly used with few differences in important outcomes, such as the need for allogenic blood transfusion, complications of organ failure, and length of post-operative hospital stay.[235]

Intraoperative blood salvage during aortic aneurysm repair either with red-blood-cell processors or haemofiltration devices is widely used. Although the centrifugation product of the cell processors is pure and efficient, platelets and clotting factors are lost. A review of the available literature shows that cell salvage techniques are not able to reduce the need of transfusion and do not help to reduce costs[236] in AAA repair. The use of cell salvage and ultrafiltration devices might nevertheless be recommended if large blood loss is likely, and if the risk of transfusion-related complications or disease transmission from banked blood is considered high. Transfusions of red blood cells should be considered if blood loss is ongoing and if the haematocrit is lower than 30%.[237]

Herwaarden JA. Validation of a new standardized method to measure proximal aneurysm neck angulation. *J Vasc Surg* 2010;**51**(4):821–8.

226 Ailawadi G, Stanley JC, Williams DM, Dimick JB, Henke PK, Upchurch Jr GR. Gadolinium as a nonnephrotoxic contrast agent for catheter-based arteriographic evaluation of renal arteries in patients with azotemia. *J Vasc Surg* 2003;**37**(2):346–52. *

227 Diaz LP, Pabon IP, Garcia JA, de la Cal Lopez MA. Assessment of CO_2 arteriography in arterial occlusive disease of the lower extremities. *J Vasc Interv Radiol* 2000;**11**(2 Pt 1):163–9.

228 Nordon IM, Hinchliffe RJ, Malkawi AH, Taylor J, Holt PJ, Morgan R, et al. Validation of DynaCT in the morphological assessment of abdominal aortic aneurysm for endovascular repair. *J Endovasc Ther* 2010;**17**(2):183–9.

229 van Keulen JW, Moll FL, Verhagen HJ, van Herwaarden JA. Commentary: DynaCT and its use in patients with ruptured abdominal aortic aneurysm. *J Endovasc Ther* 2010;**17**(2):190–1.

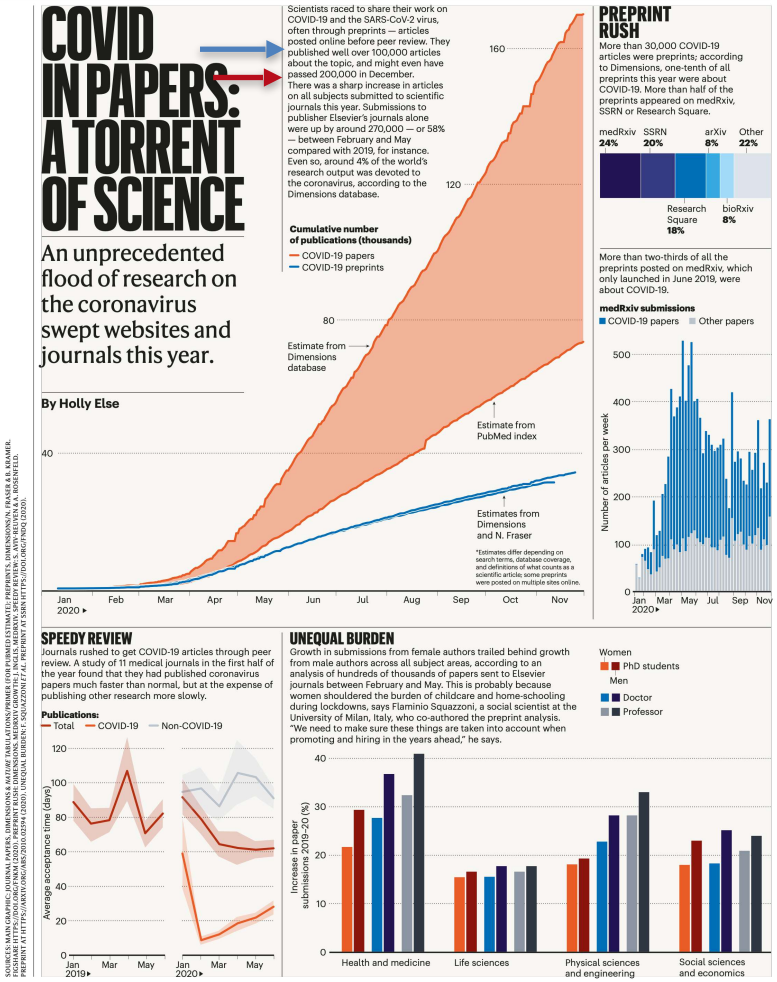
230 Stewart A, Eyers PS, Earnshaw JJ. Prevention of infection in arterial reconstruction. *Cochrane Database Syst Rev* 2006;**3** [CD003073].

231 Stewart AH, Eyers PS, Earnshaw JJ. Prevention of infection in peripheral arterial reconstruction: a systematic review and meta-analysis. *J Vasc Surg* 2007;**46**:148–55.

* Risco de nephrogenic systemic fibrosis

Scientists raced to share their work on COVID-19 and the SARS-CoV-2 virus, often through preprints — articles posted online before peer review. They published well over 100,000 articles about the topic, and might even have passed 200,000 in December. There was a sharp increase in articles on all subjects submitted to scientific journals this year. Submissions to publisher Elsevier's journals alone were up by around 270,000 — or 58% — between February and May compared with 2019, for instance. Even so, around 4% of the world's research output was devoted to the coronavirus, according to the Dimensions database.

120 ···



Nature | Vol 588 | 24/31 December 2020 | 553

nature index

Home News Current Index Annual tables Supplements Client services About

Home > News > COVID-19 research update: How many pandemic papers have been published?

NEWS · 28 AUGUST 2020

Alguns links sobre retratação ou retiradas de artigos sobre COVID-19 (19/07/2022)

https://retractionwatch.com/retracted-coronavirus-covid-19-papers/ ← Mais de 250 artigos COVID-19 Retratados 25/07/2022

https://www.science.org/content/article/mysterious-company-s-coronavirus-papers-top-medical-journals-may-be-unraveling?adobe_mc=MCMID%3D62452948724624662362245129327316184070%7CMCORGID%3D242B6472541199F70A4C98A6%2540AdobeOrg%7CTS%3D1658403973&_ga=2.162377983.2138212402.1658357768-1066406710.1655229479

https://www.science.org/content/article/two-elite-medical-journals-retract-coronavirus-papers-over-data-integrity-questions

Obesity Research & Clinical Practice 14 (2020) 295–300

Contents lists available at ScienceDirect

Obesity Research & Clinical Practice

journal homepage: www.elsevier.com/locate/orcp

IF= 4.192

Review

Obesity and mortality of COVID-19. Meta-analysis

Abdulzahra Hussain[a,*], Kamal Mahawar[b], Zefeng Xia[c], Wah Yang[d], Shamsi EL-Hasani[e]

[a] Doncaster and Bassetlaw Teaching Hospitals, Doncaster, UK,Honorary Lecturer at Sheffield University.Sheffield.UK
[b] Bariatric Unit, Department of General Surgery, Sunderland Royal Hospital, Sunderland, UK
[c] Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, 1277 Jiefang Avenue, Wuhan, Hubei Provi[illegible]hina
[d] The First Affiliated Hospital of Jinan University, 613 Huangpu Avenue West, Guangzhou, Guangdong Province, China
[e] Bariatric Unit, Princess Royal University Hospital, King's College Hospitals NHS Foundation Trust, London, UK

ARTICLE INFO

Article history:
Received 28 June 2020
Accepted 2 July 2020

Keywords:
Obesity
COVID-19
World Health Organization
Mortality
Intensive care unit
Body mass index
Total body weight

ABSTRACT

Background: Obesity is a global disease wi[illegible]t 2.8 millio[illegible]ple dying each year as a result of being overweight or obese according to the w[illegible]d he[illegible]organization figures. This paper aims to explore the links between obesity and mortality in COVID-19.
Methods: Electronic search was [illegible] the papers s[illegible]ing obesity as a risk factor for mortality following COVID-19 infection. Three [illegible]hors independently selected the papers and agreed for final inclusion. The outcomes were the age, [illegible]nder, body[illegible]ss index, severe comorbidities, respiratory support and the critical illness related mo[illegible]y in COVI[illegible]9. 572 publications were identified and 42 studies were selected including one unpubli[illegible]study [illegible]. Only 14 studies were selected for quantitative analysis.
Results: All the pri[illegible]points but [illegible]r are significantly associated with COVID-19 mortality. The age >70, [odd ratio[illegible], [illegible]CI: 95%, P-value: <0.00001], gender [OR: 0.89; CI: 95%, P-value: 0.32], BMI > 25 kg/m^2 [OR: 3.68, [illegible]95%, [illegible]0.003], severe comorbidities [OR: 1.84, CI:95%, P-value: <0.00001], advanced respiratory [illegible] [OR: 6.98, CI: 95%, P-value: <0.00001], and critical illness [OR: 2.03, CI: 95%, P-valu[illegible]01].
Conc[illegible]ns: [illegible]ents wi[illegible]besity are at high risk of mortality from COVID-19 infection.

RETRACTED

Contents

* Corresponding author.
E-mail address: abdulzahra.hussain@nhs.net (A. Hussain).

https://doi.org/10.1016/j.orcp.2020.07.002
1871-403X/

scientific reports

OPEN

GraphCovidNet: A graph neural network based model for detecting COVID-19 from CT scans and X-rays of chest

Pritam Saha[1,7], Debadyuti Mukherjee[2,7], Pawan Kumar Singh[3], Ali Ahmadian[4,5✉], Massimiliano Ferrara[6] & Ram Sarkar[2]

COVID-19, a viral infection originated from Wuhan, China has spread across the world and it has currently affected over 115 million people. Although vaccination process has already started, reaching sufficient availability will take time. Considering the impact of this widespread disease, many research attempts have been made by the computer scientists to screen the COVID-19 from Chest X-Rays (CXRs) or Computed Tomography (CT) scans. To this end, we have proposed GraphCovidNet, a Graph Isomorphic Network (GIN) based model which is used to detect COVID-19 from CT-scans and CXRs of the affected patients. Our proposed model only accepts input data in the form of graph as we follow a GIN based architecture. Initially, the pre-processing is performed to convert an image data into an undirected graph to consider only the edges instead of the whole image. Our proposed GraphCovidNet model is evaluated on four standard datasets: SARS-COV-2 Ct-Scan dataset, COVID-CT dataset, combination of covid-chest X-ray dataset, Chest X-Ray Images (Pneumonia) dataset and CMSC-678-ML-Project dataset. The model shows an impressive accuracy of 99% for all the datasets and its prediction capability becomes 100% accurate for the binary classification problem of detecting COVID-19 scans. Source code of this work can be found at GitHub-link.

Recently, Coronavirus (COVID-19) disease has created an unprecedented situation across the world. Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2), a novel virus enveloped with large single stranded RNA genome[1] is the root cause for this disease[2]. Although this virus is originated from Wuhan in China, in December 2019, Latter America and several other countries of Europe have severely affected in early days of the year 2020[3]. According to recent statistics, both America and India have more number of confirmed cases than other affected countries. World Health Organization (WHO)[4] announced COVID-19 as a global health emergency on January 30, 2020 considering the adverse effects of this situation.

To diagnose the SARS-CoV-2, it has been observed that both CXRs as well as CT-scans are found to be beneficial[5,6]. CXR images are more appreciated by the medical practitioners, since it can be obtained easily from the radiology departments. According to radiologists, CXR images help to understand the chest pathology clearly[1]. However, CT scans provide high sensitivity, for example, 97% of the positive CT scans are confirmed in a case study in Wuhan[7]. Due to the exponential growth in cases, it is required to develop a automated and fast paced system which can identify COVID-19 from chest CT-scans or CXR images. Figure 1 shows some samples of these CT-scan and CXR images.

SARS-CoV-2 generally affects the lungs and turbid formation of cough around lungs can be detected from CT-scans and CXRs. The usual symptoms of COVID-19 are related to fever, dry cough and tiredness. The severity of COVID-19 symptoms can range from very mild to critical. Some people may show only a few symptoms, and sometimes no symptoms can be observed at all. In some cases, symptoms start worsen mere after a week and

[1]Department of Electrical Engineering, Jadavpur University, Kolkata 700032, India. [2]Department of Computer Science and Engineering, Jadavpur University, Kolkata 700032, India. [3]Department of Information Technology, Jadavpur University, Kolkata 700106, India. [4]Institute of IR 4.0, The National University of Malaysia, Bangi 43600 UKM, Selangor, Malaysia. [5]School of Mathematical Sciences, College of Science and Technology, Wenzhou-Kean University, Wenzhou, China. [6]ICRIOS-The Invernizzi Centre for Research in Innovation, Organization, Strategy and Entrepreneurship, Department of Management and Technology, Bocconi University, Via Sarfatti, 25, 20136 Milan (MI), Italy. [7]These authors contributed equally: Pritam Saha and Debadyuti Mukherjee. ✉email: ahmadian.hosseini@gmail.com

This article has been retracted: N Engl J Med. DOI: 10.1056/NEJMc2021225.

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19

Mandeep R. Mehra, M.D., Sapan S. Desai, M.D., Ph.D., SreyRam Kuy, M.D., M.H.S., Timothy D. Henry, M.D., and Amit N. Patel, M.D.

Explicação Retratação
Deste Artigo
Próximo Slide

ABSTRACT

BACKGROUND

Coronavirus disease 2019 (Covid-19) may disproportionately affect people with cardiovascular disease. Concern has been aroused regarding a potential harmful effect of angiotensin-converting–enzyme (ACE) inhibitors and angiotensin-receptor blockers (ARBs) in this clinical context.

METHODS

Using an observational database from 169 hospitals in Asia, Europe, and North America, we evaluated the relationship of cardiovascular disease and drug therapy with in-hospital death among hospitalized patients with Covid-19 who were admitted between December 20, 2019, and March 15, 2020, and were recorded in the Surgical Outcomes Collaborative registry as having either died in the hospital or survived to discharge as of March 28, 2020.

RESULTS

Of the 8910 patients with Covid-19 for whom discharge status was available at the time of the analysis, a total of 515 died in the hospital (5.8%) and 8395 survived to discharge. The factors we found to be independently associated with an increased risk of in-hospital death were an age greater than 65 years (mortality of

From Brigham and Women's Hospital Heart and Vascular Center and Harvard Medical School, Boston (M.R.M.); Surgisphere, Chicago (S.S.D.); Baylor College of Medicine and Department of Veterans Affairs, Houston (S.K.); Christ Hospital, Cincinnati (T.D.H.); the Department of Biomedical Engineering, University of Utah, Salt Lake City (A.N.P.); and HCA Research Institute, Nashville (A.N.P.). Address reprint requests to Dr. Mehra at Brigham and Women's Hospital, 75 Francis St., Boston, MA 02115, or at mrmehra@bwh.harvard.edu.

This article was published on May 1, 2020, and updated on May 8, 2020, at NEJM.org.

N Engl J Med 2020;382:e102.
DOI: 10.1056/NEJMoa2007621

Retraction: Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19. N Engl J Med. DOI: 10.1056/NEJMoa2007621.

TO THE EDITOR: Because all the authors were not granted access to the raw data and the raw data could not be made available to a third-party auditor, we are unable to validate the primary data sources underlying our article, "Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19."[1] We therefore request that the article be retracted. We apologize to the editors and to readers of the *Journal* for the difficulties that this has caused.

Mandeep R. Mehra, M.D.

Brigham and Women's Hospital Heart and Vascular Center
Boston, MA
mmehra@bwh.harvard.edu

Sapan S. Desai, M.D., Ph.D.

Surgisphere
Chicago, IL

SreyRam Kuy, M.D., M.H.S.

Baylor College of Medicine
Houston, TX

Timothy D. Henry, M.D.

Christ Hospital
Cincinnati, OH

Amit N. Patel, M.D.

University of Utah
Salt Lake City, UT

Retratação do Artigo Anterior

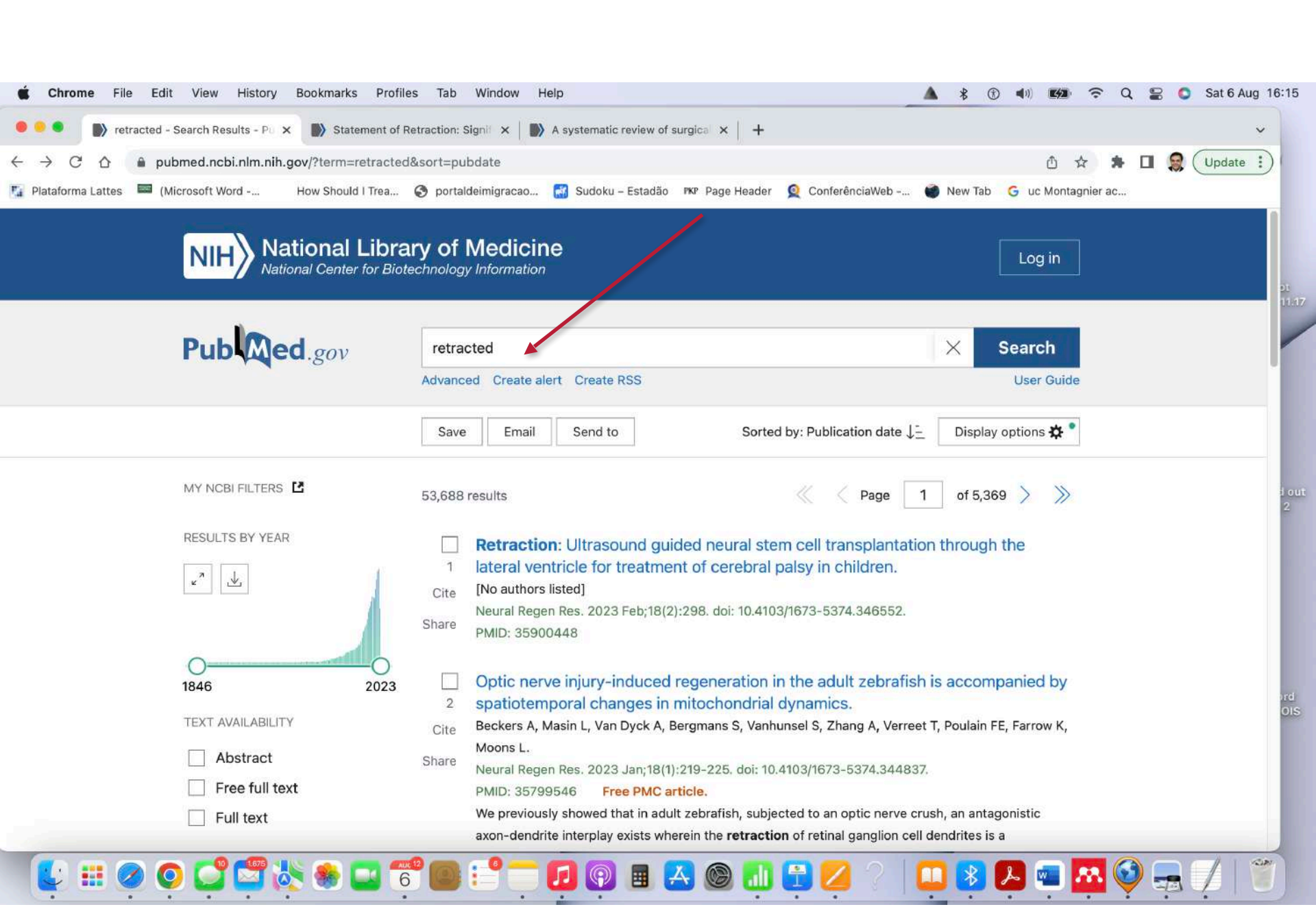
This letter was published on June 4, 2020, at NEJM.org.

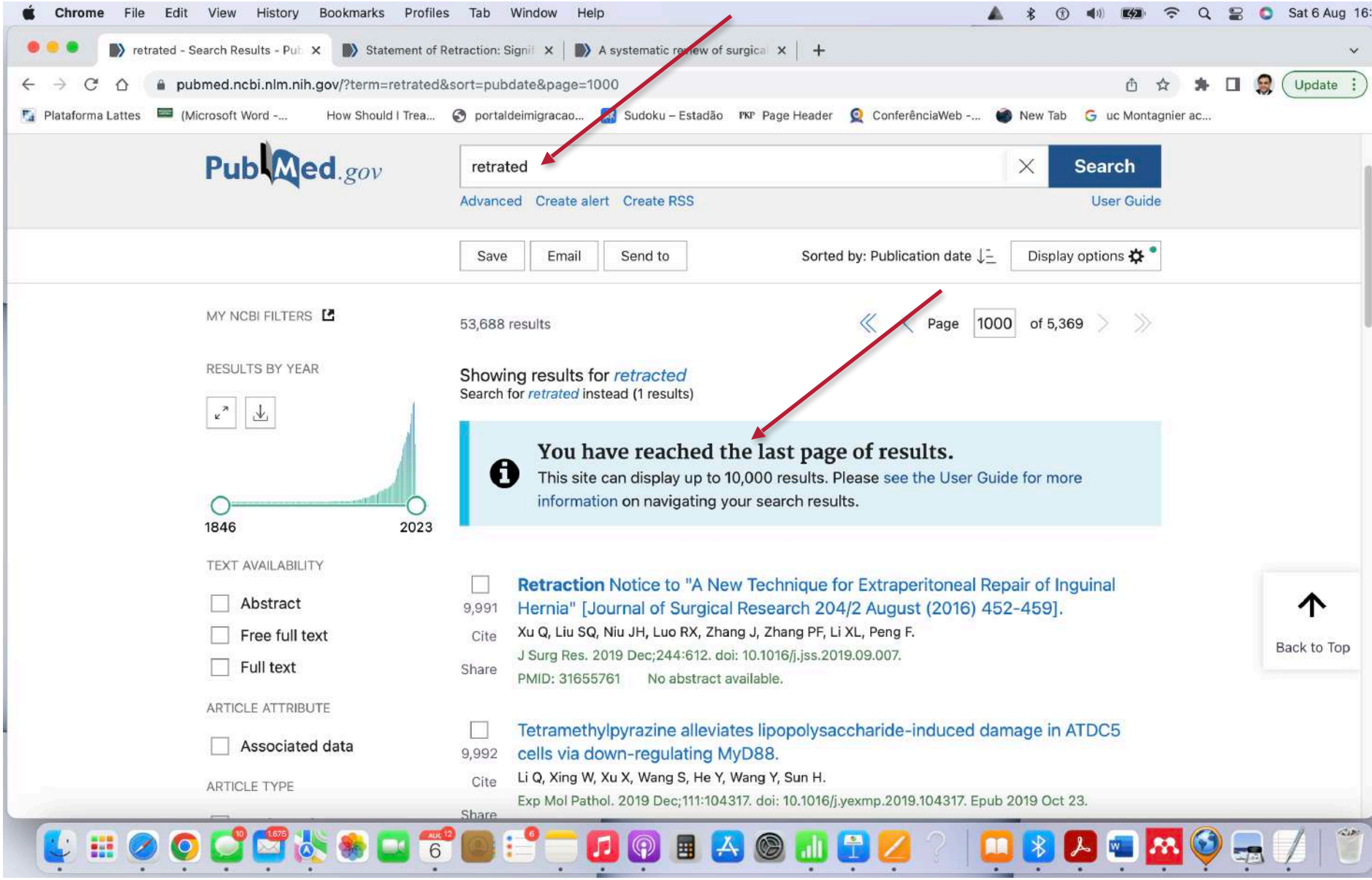
1. Mehra MR, Desai SS, Kuy S, Henry TD, Patel AN. Cardiovascular disease, drug therapy, and mortality in Covid-19. N Engl J Med 2020;382:e102.

DOI: 10.1056/NEJMc2021225

CORRECTION

Prevention of Early Ventilator-Associated Pneumonia (N Engl J Med 2020;382:1671-1674). In the third letter in the Correspondence regarding the article by François et al. (page 1672), the first author's surname should have been Llitjos, rather than Llithos. The letter is correct at NEJM.org.


Chrome File Edit View History Bookmarks Profiles Tab Window Help
Sat 6 Aug 16:15
retracted - Search Results - Pu
Statement of Retraction: Signif
A systematic review of surgica
pubmed.ncbi.nlm.nih.gov/?term=retracted&sort=pubdate
Update
Plataforma Lattes
(Microsoft Word -...
How Should I Trea...
portaldeimigracao...
Sudoku – Estadão
Page Header
ConferênciaWeb -...
New Tab
uc Montagnier ac...
NIH National Library of Medicine
National Center for Biotechnology Information
Log in
PubMed.gov
retracted
Search
Advanced
Create alert
Create RSS
User Guide
Save
Email
Send to
Sorted by: Publication date
Display options
MY NCBI FILTERS
53,688 results
Page 1 of 5,369
RESULTS BY YEAR
1846
2023
TEXT AVAILABILITY
Abstract
Free full text
Full text
1
Cite
Share
Retraction: Ultrasound guided neural stem cell transplantation through the lateral ventricle for treatment of cerebral palsy in children.
[No authors listed]
Neural Regen Res. 2023 Feb;18(2):298. doi: 10.4103/1673-5374.346552.
PMID: 35900448
2
Cite
Share
Optic nerve injury-induced regeneration in the adult zebrafish is accompanied by spatiotemporal changes in mitochondrial dynamics.
Beckers A, Masin L, Van Dyck A, Bergmans S, Vanhunsel S, Zhang A, Verreet T, Poulain FE, Farrow K, Moons L.
Neural Regen Res. 2023 Jan;18(1):219-225. doi: 10.4103/1673-5374.344837.
PMID: 35799546 Free PMC article.
We previously showed that in adult zebrafish, subjected to an optic nerve crush, an antagonistic axon-dendrite interplay exists wherein the retraction of retinal ganglion cell dendrites is a


Chrome File Edit View History Bookmarks Profiles Tab Window Help
Sat 6 Aug 16:
retrated - Search Results - Pub
Statement of Retraction: Signif
A systematic review of surgical
pubmed.ncbi.nlm.nih.gov/?term=retrated&sort=pubdate&page=1000
Update
Plataforma Lattes
(Microsoft Word -...
How Should I Trea...
portaldeimigracao...
Sudoku – Estadão
Page Header
ConferênciaWeb -...
New Tab
uc Montagnier ac...
PubMed.gov
retrated
Search
Advanced
Create alert
Create RSS
User Guide
Save
Email
Send to
Sorted by: Publication date
Display options
MY NCBI FILTERS
53,688 results
Page 1000 of 5,369
RESULTS BY YEAR
1846
2023
Showing results for retracted
Search for retrated instead (1 results)
You have reached the last page of results.
This site can display up to 10,000 results. Please see the User Guide for more information on navigating your search results.
TEXT AVAILABILITY
Abstract
Free full text
Full text
ARTICLE ATTRIBUTE
Associated data
ARTICLE TYPE
9,991
Cite
Share
Retraction Notice to "A New Technique for Extraperitoneal Repair of Inguinal Hernia" [Journal of Surgical Research 204/2 August (2016) 452-459].
Xu Q, Liu SQ, Niu JH, Luo RX, Zhang J, Zhang PF, Li XL, Peng F.
J Surg Res. 2019 Dec;244:612. doi: 10.1016/j.jss.2019.09.007.
PMID: 31655761
No abstract available.
9,992
Cite
Share
Tetramethylpyrazine alleviates lipopolysaccharide-induced damage in ATDC5 cells via down-regulating MyD88.
Li Q, Xing W, Xu X, Wang S, He Y, Wang Y, Sun H.
Exp Mol Pathol. 2019 Dec;111:104317. doi: 10.1016/j.yexmp.2019.104317. Epub 2019 Oct 23.
Back to Top

Chrome File Edit View History Bookmarks Profiles Tab Window Help Sat 6 Aug 16:19

retracted - Search Results - Pu | Statement of Retraction: Signif | A systematic review of surgica

pubmed.ncbi.nlm.nih.gov/?term=retracted&sort=pubdate&page=1000

Update

Plataforma Lattes | (Microsoft Word -... | How Should I Trea... | portaldeimigracao... | Sudoku – Estadão | Page Header | ConferênciaWeb -... | New Tab | uc Montagnier ac...

Page 1,000

9,999 Cite Share

RETRACTED: Residual pomegranate affecting the nonspecific immunity o juvenile Darkbarbel catfish.

Wu P, Gu Y, Zhao R, Liu Y, Wang Y, Lv G, Li Z, Bao Y.

Fish Shellfish Immunol. 2019 Dec;95:190-194. doi: 10.1016/j.fsi.2019.10.020. Epub 2019 Oct 16.

PMID: 31626920 **Retracted.**

This article has been **retracted**: please see Elsevier Policy on Article Withdrawal (https://www.elsevier.com/about/our-business/policies/article-withdrawal). This article has been **retracted** at the request of Editors-in-Chief and first Author. The article duplicates s ...

10,000 Cite Share

Nanoscale drug delivery strategies for therapy of ovarian cancer: conventional vs targeted.

Gupta S, Pathak Y, Gupta MK, Vyas SP.

Artif Cells Nanomed Biotechnol. 2019 Dec;47(1):4066-4088. doi: 10.1080/21691401.2019.1677680.

PMID: 31625408 **Retracted.** Review.

53,688 results

You have reached the last available page of results. Please see the User Guide for more information.

First Prev Page 1000 of 5,369 Next Last

Searches related to "retracted"

retracted article
retracted articles
retracted publications
retracted research

One in 277 PubMed-indexed papers in 2026 shows fabricated references, says analysis

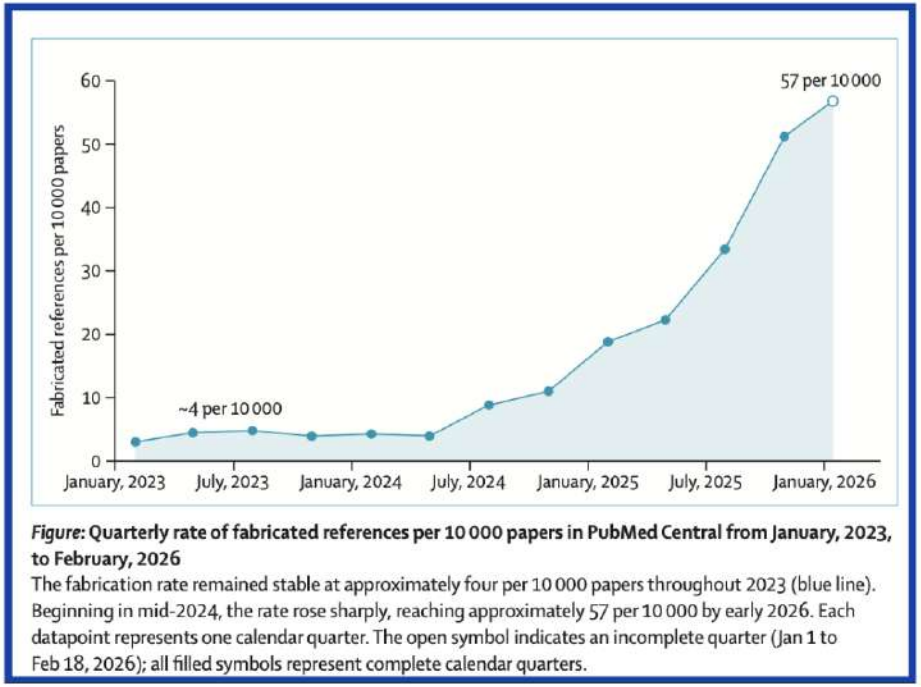


Figure: **Quarterly rate of fabricated references per 10 000 papers in PubMed Central from January, 2023, to February, 2026**
The fabrication rate remained stable at approximately four per 10 000 papers throughout 2023 (blue line). Beginning in mid-2024, the rate rose sharply, reaching approximately 57 per 10 000 by early 2026. Each datapoint represents one calendar quarter. The open symbol indicates an incomplete quarter (Jan 1 to Feb 18, 2026); all filled symbols represent complete calendar quarters.

Figure from correspondence to The Lancet *by Maxim Topaz and colleagues.*

Fabricated citations in the biomedical literature have increased 12-fold in two years, according to an audit of nearly 2.5 million papers published as a letter to *The Lancet* today.

The analysis of articles indexed in PubMed found that about one in 277 papers published in the first seven weeks of 2026 referenced a paper that didn't exist. That was a jump from 2025's rate of one in 458 and 2023's one in 2,828. The researchers, led by Maxim Topaz of Columbia

RESEARCH ARTICLE

Mapping retracted articles and exploring regional differences in China, 2012–2023

Liping Shi[1☯], Xue Zhang[1☯], Xiaojun Ma[1], Xian Sun[1,2], Jiangping Li[1,2*], Shulan He[1,2*]

1 Department of Epidemiology and Health Statistics, School of Public Health, Ningxia Medical University, Yinchuan, Ningxia, China, **2** Key Laboratory of Environmental Factors and Chronic Disease Control, Ningxia Medical University, Yinchuan, Ningxia, China

☯ These authors contributed equally to this work.
* lijp@nxmu.edu.cn (JL); heshulan0954@163.com (SH)

Citation: Shi L, Zhang X, Ma X, Sun X, Li J, He S (2024) Mapping retracted articles and exploring regional differences in China, 2012–2023. PLoS ONE 19(12): e0314622. https://doi.org/10.1371/journal.pone.0314622

Editor: Robin Haunschild, Max Planck Institute for Solid State Research, GERMANY

Received: July 2, 2024

Accepted: November 13, 2024

Published: December 2, 2024

Peer Review History: PLOS recognizes the benefits of transparency in the peer review process; therefore, we enable the publication of all of the content of peer review and author responses alongside final, published articles. The editorial history of this article is available here: https://doi.org/10.1371/journal.pone.0314622

Data Availability Statement: The original dataset can be downloaded from the Figshare public repository (https://doi.org/10.6084/m9.figshare.27044899).

Abstract

Background

China is one of the top countries with the most significant number or proportion of retracted publications, which has garnered significant attention.

Methods

Using the Retraction Watch Database, we collected retracted articles written by Chinese authors from 31 provinces in mainland China, spanning the period between January 1, 2012, and December 31, 2023. We used Geographical Information Science to analyze spatial distribution characteristics of retracted articles by Chinese authors and identify high-risk clusters of retracted areas.

Results

A total of 14,445 retracted articles authored by researchers from 31 provinces in China between 2012 and 2023 were analyzed. The Spatial trend surface analysis and Gravity center movement indicated a gradual increase in the number of retracted articles from the west to the east. The spatial autocorrelation analysis showed that revealed significant spatial clustering in the distribution of retracted articles across the 31 provinces. The results of the spatial-temporal clustering analysis showed that the hotspots were primarily concentrated in Shandong, Jiangsu, Shanghai, Henan, and Anhui.

Conclusion

There is a discernible spatial clustering among these retractions, with a gradual increase in the number of retracted articles from west to east. Shandong, Jiangsu, Shanghai, Henan, and Anhui are the hotspots for retractions.

Marc Tessier-Lavigne announced his resignation as president of Stanford University on July 19, 2023, effective August 31, 2023.

abc NEWS

The forces behind Harvard President Claudine Gay's resignation

Gay will continue to work as a professor at the university.

By **Kiara Alfonseca**
January 5, 2024, 6:01 AM ET • 12 min read

Harvard president resigns over plagiarism allegationsClaudine Gay announced her resignation on Tuesday amid accusations of plagiarism and controversy over her testimony before Congress last month.Steven Senne/AP

nytimes.com/2025/04/18/us/harvard-morgue-stolen-body-parts-guilty.html#:~:text=One%20of%20them%20was%20...trina,Michael%...on%20contributed%20r...

The New York Times

SUBSCRIBE FOR $0.

Ex-Harvard Medical School Morgue Chief to Plead Guilty in Sale of Body Parts

Cedric Lodge stole organs from cadavers that had been donated for medical research, prosecutors said. The university fired him in 2023.

CNN US Crime & Justice

Watch Listen

Harvard morgue manager who sold body parts like 'baubles' gets 8-year prison term

DEC 17, 2025

By Associated Press

"bugigangas"

The Harvard Crimson

Former HMS Morgue Manager Sentenced to 8 Years in Prison for Selling Human Remains

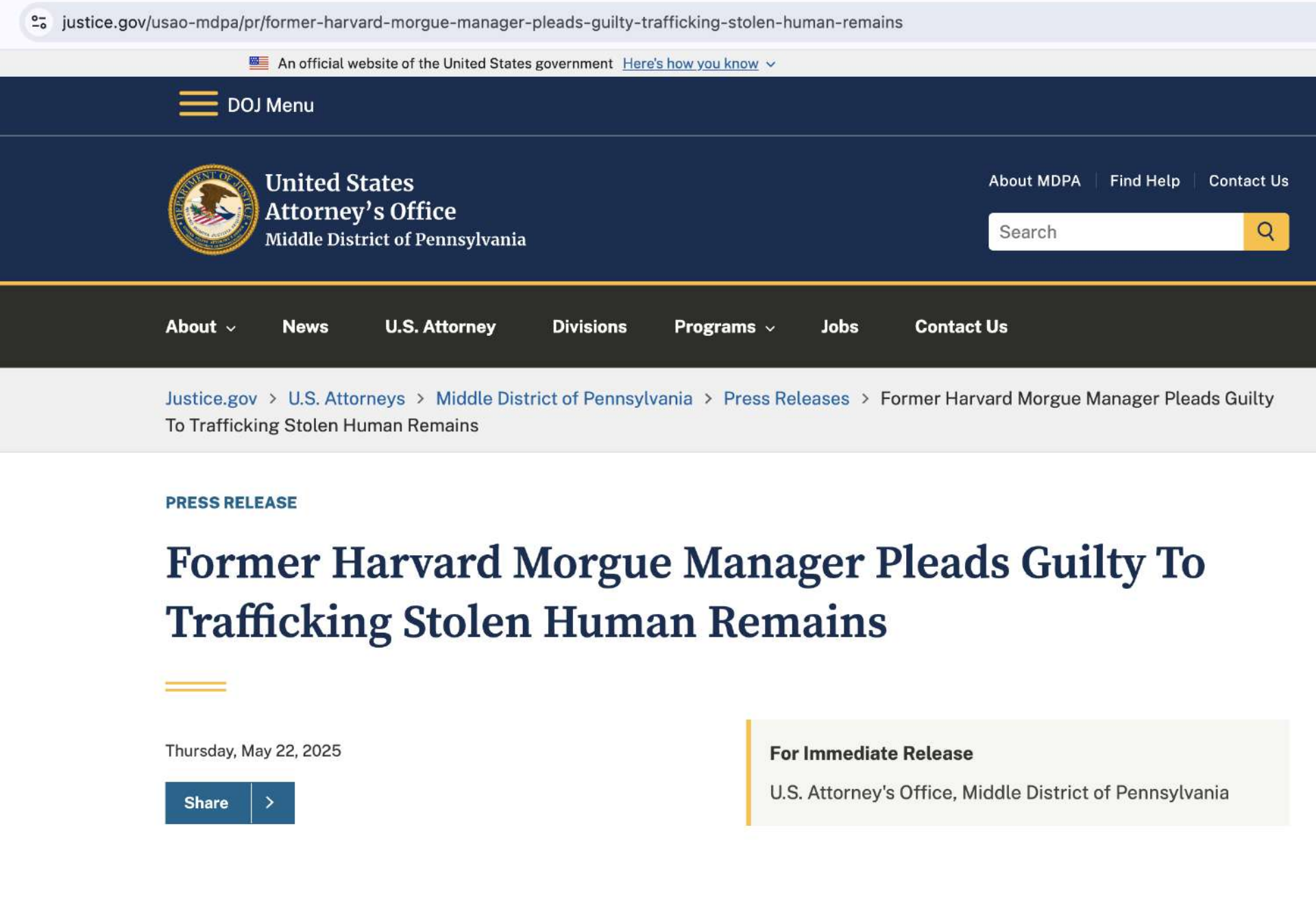
Former Harvard Medical School morgue manager Cedric Lodge was sentenced to eight years in prison for stealing and selling human remains donated for medical research. | By Jonathan G. Yuan

By Juliana L. Yao, Crimson Staff Writer

December 18, 2025

Former Harvard Medical School morgue manager Cedric Lodge was sentenced to eight years in prison for the interstate sale and transport of human body

In mid-2023, a major scandal was uncovered involving the **theft and sale of human body**



Errors Today and Errors Tomorrow

Donald M. Berwick, M.D.

If the Institute of Medicine is right, then at the very least, 100 patients will die in hospitals in the United States today because of injuries from their care, not from their diseases. How many will die tomorrow?

Tom Nolan, one of the leading quality-improvement scholars of our time, identifies three essential preconditions for improvement: will, ideas, and execution.[1] Improvement requires will, because durable improvement is not an accident; it takes effort. Left alone, systems tend to deteriorate. Roads decay until someone decides to repair them. Patients will suffer injuries from care until someone decides otherwise.

that may take 90,000 lives per year[3]; the report by Gandhi and her colleagues showing that adverse drug events are more common, though less severe, in outpatient settings than in inpatient settings[4]; and the disturbing findings by Blendon and his colleagues on the relative blindness of physicians to the frequency and severity of medical errors, even though they often notice errors in their own care or that of family members.[5] Ideas for change also abound in the series, both in terms of technical changes (such as minimizing the occurrence of retained instruments and sponges after surgery[6] and exploiting the power of innovations in information technology to reduce the rate of patient injuries[7])

N ENGL J MED 348;25 WWW.NEJM.ORG JUNE 19, 2003

News and Publications

Overview
Articles from Johns Hopkins
E-Newsletters
Newsroom

Home > News and Publications > For the Media > News Release Archive

Study Suggests Medical Errors Now Third Leading Cause of Death in the U.S.

Physicians advocate for changes in how deaths are reported to better reflect reality

Release Date: May 3, 2016

SHARE FAST FACTS

10 percent of all U.S. deaths are now due to medical error. - Click to Tweet

Third highest cause of death in the U.S. is medical error.- Click to Tweet

FOR THE MEDIA

Contacts:

Vanessa McMains
410-502-9410
vmcmain1@jhmi.edu

Lauren Nelson
410-955-8725
laurennelson@jhmi.edu

A New, Evidence-based Estimate of Patient Harms Associated with Hospital Care

John T. James, PhD

Dr. **John T. James** is the Chief Toxicologist for the National Aeronautics & Space Administration NASA. He leads the Space Toxicology Office located at Lyndon B. Houston, Tx.

Objectives: Based on 1984 data developed from reviews of medical records of patients treated in New York hospitals, the Institute of Medicine estimated that up to 98,000 Americans die each year from medical errors. The basis of this estimate is nearly 3 decades old; herein, an updated estimate is developed from modern studies published from 2008 to 2011.

Methods: A literature review identified 4 limited studies that used primarily the Global Trigger Tool to flag specific evidence in medical records, such as medication stop orders or abnormal laboratory results, which point to an adverse event that may have harmed a patient. Ultimately, a physician must concur on the findings of an adverse event and then classify the severity of patient harm.

Results: Using a weighted average of the 4 studies, a lower limit of 210,000 deaths per year was associated with preventable harm in hospitals. Given limitations in the search capability of the Global Trigger Tool and the incompleteness of medical records on which the Tool depends, the true number of premature deaths associated with preventable harm to patients was estimated at more than 400,000 per year. Serious harm seems to be 10- to 20-fold more common than lethal harm.

Conclusions: The epidemic of patient harm in hospitals must be taken more seriously if it is to be curtailed. Fully engaging patients and their advocates during hospital care, systematically seeking the patients' voice in identifying harms, transparent accountability for harm, and intentional correction of root causes of harm will be necessary to accomplish this goal.

Key Words: patient harm, preventable adverse events, transparency, patient-centered care, Global Trigger Tool, medical errors

(*J Patient Saf* 2013;9: 122–128)

IF= 2,84

the national level. The amount of new knowledge generated each year by clinical research that applies directly to patient care can easily overwhelm the individual physician trying to optimize the care of his patients.[1] Furthermore, the lack of a well-integrated and comprehensive continuing education system in the health professions is a major contributing factor to knowledge and performance deficiencies at the individual and system level.[2] Guidelines for physicians to optimize patient care are quickly out of date and can be biased by those who write the guidelines.[3–5] At the system level, hospitals struggle with staffing issues, making suitable technology available for patient care, and executing effective handoffs between shifts and also between inpatient and outpatient care.[6] Increased production demands in cost-driven institutions may increase the risk of preventable adverse events (PAEs). The United States trails behind other developed nations in implementing electronic medical records for its citizens.[7] Hence, the information a physician needs to optimize care of a patient is often unavailable.

At the national level, our country is distinguished for its patchwork of medical care subsystems that can require patients to bounce around in a complex maze of providers as they seek effective and affordable care. Because of increased production demands, providers may be expected to give care in suboptimal working conditions, with decreased staff, and a shortage of physicians, which leads to fatigue and burnout. It should be no surprise that PAEs that harm patients are frighteningly common in this highly technical, rapidly changing, and poorly integrated industry. The picture is further complicated by a lack of transparency and limited accountability for errors that harm patients.[8,9]

There are at least 3 time-based categories of PAEs recognized in patients that are or have been hospitalized. The broadest

Estimating deaths due to medical error: the ongoing controversy and why it matters

Kaveh G Shojania,[1] Mary Dixon-Woods[2]

[1]Department of Medicine, Centre for Quality Improvement and Patient Safety, University of Toronto, Toronto, Ontario, Canada
[2]Cambridge Centre for Health Services Research, University of Cambridge, Institute of Public Health, Cambridge, UK

Correspondence to
Dr Kaveh G Shojania, Sunnybrook Health Sciences Centre, Room H468, 2075 Bayview Avenue, Toronto, Ontario, Canada M4N 3M5; kaveh.shojania@sunnybrook.ca

Accepted 26 September 2016
Published Online First 12 October 2016

One important reason for the widespread attention given to the 1999 US Institute of Medicine (IOM) report *To Err Is Human*[1] lie in its estimate that medical error was to blame for 44 000–98 000 deaths each year in the US hospitals. This striking claim established patient safety as a public concern, strengthened the case for improving the science underlying safety and motivated providers, policymakers, payers and regulators to take safety seriously. Some did express disquiet about the validity of the figures cited,[2] including one of the principal investigators of the two studies that provided the data for these estimates.[3]

A decade and a half later, Makary and Daniel[4] attribute an even higher toll to medical error: 251 454 deaths in US hospitals per year, making, they say, medical error the third-leading cause of death in the USA. Unsurprisingly, this claim generated widespread coverage in multiple media channels. It also ignited scientific controversy about the basis of the estimates, including a letter to the Inspector General (OIG)[6] and two peer-reviewed articles (table 1).[7 8] The paper did not apply any established methodology for quantitative synthesis nor did it include a discussion either of the intrinsic limitations of the studies used or of the errors associated with the extrapolation process. To bolster their claims, Makary and Daniel did highlight the agreement between their estimates and that of a similar analysis published a few years ago by James.[9] The apparent consensus is not, however, surprising, since they use mostly the same studies (listed in table 1, together with a more recent analysis commissioned by the Leapfrog group[10]).

ISSUES WITH THE STUDIES ON WHICH ESTIMATES OF DEATHS DUE TO MEDICAL ERROR ARE BASED

Some of the widely quoted estimates of deaths due to medical error, including the IOM estimates,[1] Makary and Daniel[4]

> Stud Health Technol Inform. 2017;234:13-17.

Your Health Care May Kill You: Medical Errors

James G Anderson [1], Kathleen Abrahamson [1]

Affiliations + expand

PMID: 28186008

Abstract

Recent studies of medical errors have estimated errors may account for as many as 251,000 deaths annually in the United States (U.S)., making medical errors the third leading cause of death. Error rates are significantly higher in the U.S. than in other developed countries such as Canada, Australia, New Zealand, Germany and the United Kingdom (U.K). At the same time less than 10 percent of medical errors are reported. This study describes the results of an investigation of the effectiveness of the implementation of the MEDMARX Medication Error Reporting system in 25 hospitals in Pennsylvania. Data were collected on 17,000 errors reported by participating hospitals over a 12-month period. Latent growth curve analysis revealed that reporting of errors by health care providers increased significantly over the four quarters. At the same time, the proportion of corrective actions taken by the hospitals remained relatively constant over the 12 months. A simulation model was constructed to examine the effect of potential organizational changes resulting from error reporting. Four interventions were simulated. The results suggest that improving patient safety requires more than voluntary reporting. Organizational changes need to be implemented and institutionalized as well.

compensation brackets that correspond with different mental and physical injuries.

Below, you can find some examples of these guidelines. Please be aware that the first entry has not been taken from the JCG.

Injury	Severity	Guideline Compensation Amount
Multiple Severe Injuries & Special Damages	Very Severe	Up to £1,000,000+
Brain or Head Injury	Very Severe (a)	£344,150 to £493,000
	Moderately Severe (b)	£267,340 to £344,150
	Less Severe (d)	£18,700 to £52,550
Kidney	Permanent Damage To Both Kidneys	£206,730 to £256,780
	Loss of One Kidney	£37,550 to £54,760
Chest	Severe	£122,850 to £183,190
Bladder	Serious Impairment	£78,080 to £97,540
Bowels	Faecal Urgency and Passive Incontinence	In the region of £97,530

fieldfisher

Wrong site surgery: the most common NHS "Never Event"

Arti Shah
28/01/2026

In medicine, the term "Never Event" refers to a patient safety incident so serious and preventable that it should never happen. These are shocking errors that go far beyond rare mishaps.

NHS England has just released provisional data for Never Events between April and

This article is more than **2 months old**

NHS medical negligence persisting in England 'despite 24 years of warnings'

MPs on influential committee excoriate health department and NHS England for errors costing £3.6bn a year

Denis Campbell *Health policy editor*

Fri 30 Jan 2026 00.01 GMT

Most viewed


Gianni Infantino's attempt at Israel-Palestine handshake backfires


Live
Trump threatens to withdraw US troops from Italy and Spain – Europe live


'When I watched the girls loving this man, I felt sick': the woman who exposed a polygamous paedophile

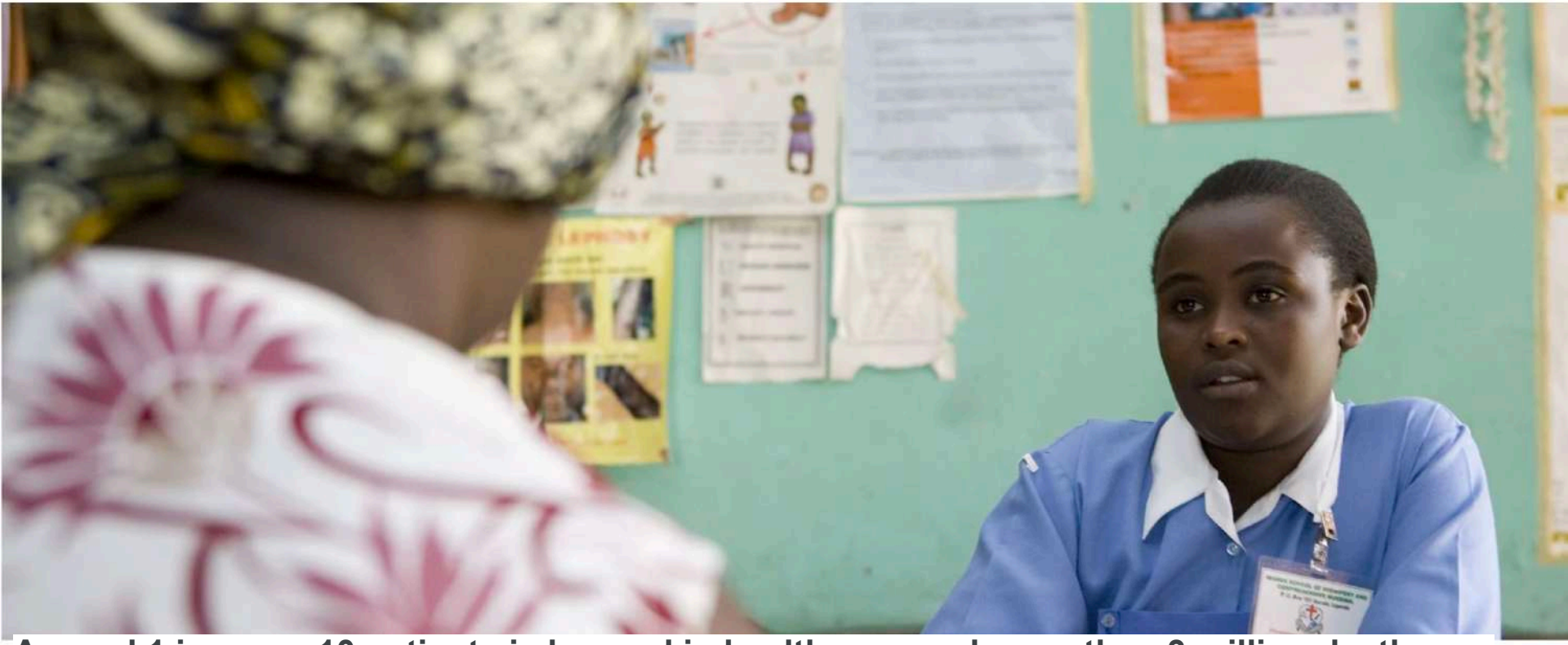

Pakistan acts as backchannel to help US and Iran inch towards deal, experts say

Cases of wrong-site surgery in England have risen from 69 in 2020 to 101 last year, with 7% involving serious harm to patients.

Between 2020 and last year, 661 cases of surgery performed on the wrong patient or body part were reported in English hospitals, according to new data from Medical Negligence Assist.

The phenomenon, known as wrong-site surgery, is a medical error where an invasive procedure is performed on the wrong patient, the wrong body part or the wrong site on the body – such as operating on the left limb instead of the right. Many of these incidents are classified as “never events” by the NHS, meaning they are considered entirely preventable.

Obtained via Freedom of Information requests, 117 NHS Trusts were contacted. Of the 72 that responded, 661 cases were reported in total over the five-year period. While 69 incidents were recorded in 2020, that had jumped to 101 last year, marking a 46% increase in cases during that time.



Around 1 in every 10 patients is harmed in health care and more than 3 million deaths occur annually due to unsafe care. In low-to-middle income countries, as many as 4 in 100 people die from unsafe care (1).

Above 50% of harm (1 in every 20 patients) is preventable; half of this harm is attributed to medications (2,3).

Some estimates suggest that as many as 4 in 10 patients are harmed in primary and ambulatory settings, while up to 80% (23.6–85%) of this harm can be avoided (4).

Why Most Published Research Findings Are False

John P. A. Ioannidis

Summary

There is increasing concern that most current published research findings are false. The probability that a research claim is true may depend on study power and bias, the number of other studies on the same question, and, importantly, the ratio of true to no relationships among the relationships probed in each scientific field. In this framework, a research finding is less likely to be true when the studies conducted in a field are smaller; when effect sizes are smaller; when there is a greater number and lesser preselection of tested relationships; where there is greater flexibility in designs, definitions, outcomes, and analytical modes; when there is greater financial and other interest and prejudice; and when more teams are involved in a scientific field in chase of statistical significance. Simulations show that for most study designs and settings, it is more likely for a research claim to be false than true. Moreover, for many current scientific fields, claimed research findings may often be simply accurate measures of the prevailing bias. In this essay, I discuss the implications of these problems for the conduct and interpretation of research.

Published research findings are factors that influence this problem and some corollaries thereof.

Modeling the Framework for False Positive Findings

Several methodologists have pointed out [9–11] that the high rate of nonreplication (lack of confirmation) of research discoveries is a consequence of the convenient, yet ill-founded strategy of claiming conclusive research findings solely on the basis of a single study assessed by formal statistical significance, typically for a *p*-value less than 0.05. Research is not most appropriately represented and summarized by *p*-values, but, unfortunately, there is a widespread notion that medical research articles

It can be proven that most claimed research findings are false.

should be interpreted based only on *p*-values. Research findings are defined here as any relationship reaching formal statistical significance, e.g., effective interventions, informative predictors, risk factors, or associations. "Negative" research is also very useful. "Negative" is actually a misnomer, and the misinterpretation is widespread.

is characteristic of the field and can vary a lot depending on whether the field targets highly likely relationships or searches for only one or a few true relationships among thousands and millions of hypotheses that may be postulated. Let us also consider, for computational simplicity, circumscribed fields where either there is only one true relationship (among many that can be hypothesized) or the power is similar to find any of the several existing true relationships. The pre-study probability of a relationship being true is $R/(R + 1)$. The probability of a study finding a true relationship reflects the power $1 - \beta$ (one minus the Type II error rate). The probability of claiming a relationship when none truly exists reflects the Type I error rate, α. Assuming that c relationships are being probed in the field, the expected values of the 2×2 table are given in Table 1. After a research finding has been claimed based on achieving formal statistical significance, the post-study probability that it is true is the positive predictive value, PPV. The PPV is also the complementary probability of what Wacholder et al. have called the false positive report probability [10]. According to the 2×2 table, one gets $\text{PPV} = (1 - \beta)R/(R - \beta R + \alpha)$. A research finding is thus

John Ioannidis's 2005 paper, "Why Most Published Research Findings Are False," argues that most claimed research findings—especially in medicine and psychology—are likely false positive results. This occurs because many studies are small, have low power, have high bias, and engage in multiple hypothesis testing and data manipulation to reach a statistical significance of $p < 0{,}05$. PubMed Central (PMC) (.gov)

Fisher, R. A. (1925). Statistical methods for research workers. Edinburgh: Oliver and Boyd.

John Ioannidis's 2005 paper

Key Reasons Research Findings Are Often False:

- **Small Sample Sizes & Low Power:** Small studies have lower power to detect real effects, making it more likely that significant findings are just noise.
- **Small Effect Sizes:** If a field has a low ratio of true relationships to non-true relationships, many "discoveries" are false positives.
- **Flexibility in Design and Analysis:** Known as "p-hacking," Researchers may alter definitions, outcomes, or analysis methods to make findings look more significant than they are.
- **Bias and Financial Interest:** Greater financial, political, or professional interest in a topic leads to higher bias, which produces false findings.
- **"Hot" Fields:** As more teams work on the same topic, the race to publish means findings are less likely to be true.
- PubMed Central (PMC) (.gov)

John P. A. Ioannidis is in the Department of Hygiene and Epidemiology, University of Ioannina School of Medicine, Ioannina, Greece, and Institute for Clinical Research and Health Policy Studies, Department of Medicine, Tufts-New England Medical Center, Tufts University School of Medicine, Boston, Massachusetts, United States of America. E-mail: jioan nid@cc.uoi.gr C

Stanford MEDICINE | CAP Profiles

John P.A. Ioannidis

PROFESSOR OF MEDICINE (STANFORD PREVENTION RESEARCH CENTER), OF EPIDEMIOLOGY AND POPULATION HEALTH AND, BY COURTESY, OF BIOMEDICAL DATA SCIENCE

JAMA Network Open

Original Investigation | Medical Journals and Publishing

Retracted Randomized Clinical Trials From Superretractors and Top-Cited Scientists With Multiple Retractions

Published Online: April 15, 2026
2026;9;(4):e267424.
doi:10.1001/jamanetworkopen.2026.7424

Chunwei Lyu, MSc; Minoo Matbouriahi, MSc; Florian Naudet, MD, PhD; John P. A. Ioannidis, MD, DSc; Ioana Alina Cristea, PhD

Abstract

IMPORTANCE Multiple retractions from the same author often uncover issues affecting their entire work, such as having systematically altered or fabricated data.

OBJECTIVES To evaluate the contribution of authors with the most retractions (ie, superretractors) and top-cited scientists with multiple retractions to the retracted randomized clinical trial (RCT) literature.

DESIGN, SETTING, AND PARTICIPANTS This retrospective cohort study linked an openly available cohort of retracted RCTs (VITALITY) to 3 lists of scientists: (1) superretractors, totaling most retractions in the Retraction Watch Leaderboard; (2) scientists in the top 100 000 or 2% of their subfield in terms of citations (ie, top-cited scientists) over their entire careers who accumulated 10 or more retractions not due to editor or publisher errors; and (3) top-cited scientists in the most recent year (ie, 2024) who accumulated 10 or more retractions not due to editor or publisher errors. The VITALITY cohort was updated up to November 2024. The 3 author lists were updated in August 2025.

MAIN OUTCOMES AND MEASURES The main outcomes were authorship and the characteristics of retracted RCTs (publication and retraction year, time between publication and retraction, number of citations).

RESULTS A total of 30 superretractors, 163 career-long top-cited scientists with 10 or more retractions, and 174 recent-year top-cited scientists with 10 or more retractions were included; 1330 retracted RCTs were included. Overall, 6 superretractors (20%), representing anesthesiology as well as endocrinology and metabolism, coauthored 290 retracted RCTs (22%); 18 career-long top-cited scientists with at least 10 retractions, representing 10 fields, coauthored 327 trials (25%), 275 (84%) of which were also coauthored by a superretractor; 7 single-year top-cited scientists with at least 10 retractions coauthored 50 retracted RCTs (4%), all of which were also included in the list of articles authored by career-long top-cited scientists with at least 10 retractions. Articles with superretractor

Key Points

Question How many retractions have authors with the most retractions (ie, superretractors) and top-cited authors with multiple retractions contributed to the retracted randomized clinical trial literature?

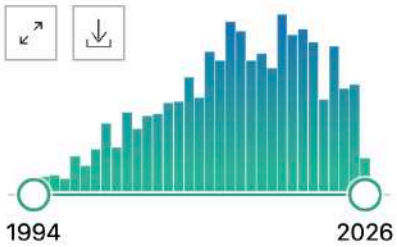
Findings In this cohort study of 367 authors and 1330 retracted randomized clinical trials, 6 superretractors, from anesthesiology as well as endocrinology and metabolism, coauthored one-fifth of all retracted trials, while 18 top-cited scientists with more than 10 retractions coauthored one-quarter of them. Articles coauthored by superretractors or by top-cited scientists with multiple retractions were published and retracted earlier, took longer to retract, and accumulated more citations.

Meaning This study found that retracted randomized clinical trials were disproportionately associated with a small number of influential authors, often coauthors, and concentrated across few subfields of medicine.

MY CUSTOM FILTERS

Edit custom filters

RESULTS BY YEAR



PUBLICATION DATE

- 1 year
- 5 years
- 10 years
- Custom Range

1,449 results

Page 1 of 145

1 Cite

Retracted Randomized Clinical Trials From Superretractors and Top-Cited Scientists With Multiple Retractions.

Lyu C, Matbouriahi M, Naudet F, **Ioannidis JPA**, Cristea IA.

JAMA Netw Open. 2026 Apr 1;9(4):e267424. doi: [illegible] 2026.7424.

PMID: 41984475 **Free PMC article.**

2 Cite

The Food and Drug Administration approval and clearance process for orthodontic devices.

Seehra J, Pandis N, **Ioannidis J.**

Am J Orthod Dentofacial Orthop. 2026 Apr;169(4):544-548. doi: 10.1016/j.ajodo.2026.01.008.

PMID: 41887817 No abstract available.

3 Cite

An atlas of exposome-phenome associations in health and disease risk.

Patel CJ, **Ioannidis JPA**, Manrai AK.

Nat Med. 2026 Apr;32(4):1501-1510. doi: 10.1038/s41591-026-04266-0. Epub 2026 Mar 18.

Books and Documents
Clinical Trial
Meta-Analysis
Randomized Controlled Trial
Review
Systematic Review
See all article type filters

Additional filters +

Clear applied filters

Reset filters menu

1,446 Cite
Human leukocyte antigen associations of epidemic Kaposi's sarcoma.
Ioannidis JP, Skolnik PR, Chalmers TC, Lau J.
AIDS. 1995 Jun;9(6):649-51. doi: 10.1097/00002030-199506000-00019.
PMID: 7662207 No abstract available.

1,447 Cite
Aspergillus fumigatus infection of a biloma.
Ioannidis JP, Snydman DR, Rohrer RJ, Freeman RB, Haug CE.
Clin Infect Dis. 1995 May;20(5):1427-8. doi: 10.1093/clinids/20.5.1427.
PMID: 7620038 No abstract available.

1,448 Cite
Insulin-dependent diabetes in AIDS.
Ioannidis JP, Iacoviello VR, Samore MH.
AIDS. 1994 Apr;8(4):556-7. doi: 10.1097/00002030-199404000-00022.
PMID: 8011263 No abstract available.

1,449 Cite
Risk of gastrointestinal bleeding from dexamethasone in children with bacterial meningitis.
Ioannidis JP, Samarel MD, Lau J, Drapkin MS.
Lancet. 1994 Mar 26;343(8900):792. doi: 10.1016/s0140-6736(94)91867-8.
PMID: 7907747 No abstract available.

1,449 results

John P.A. Ioannidis

h-index, 286, 189. i10-**index**, 1465, 1105. 0. 77000. 38500. 19250. 57750. 200520062007 ... **John P.A. Ioannidis**. Professor of Medicine/Health Research & Policy ...

Visão geral criada por IA +3

John P.A. Ioannidis is one of the most highly cited scientists globally, with an h-index of approximately **278–286** on Google Scholar as of early 2026. He is a professor at Stanford University, recognized for his work in meta-research, medicine, and epidemiology, with over 500,000 citations. Google Scholar +3

Key Citation Metrics (approximate):

- **Google Scholar:** ~286 h-index
- **Scopus:** ~205 h-index
- **Exaly:** ~177 h-index Google Scholar +2

John P.A. Ioannidis

FOLLOW

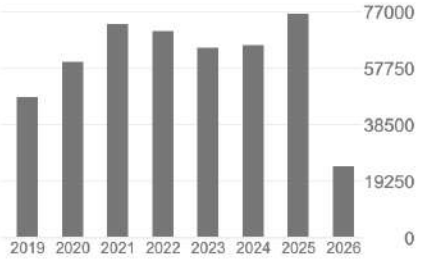
Professor of Medicine/Health Research & Policy/Biomedical Data Science/Statistics, Stanford Univ
Verified email at stanford.edu - Homepage

meta-research clinical epidemiology evidence-based medicine research methods meta-analysis

TITLE	CITED BY	YEAR
Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement D Moher, A Liberati, J Tetzlaff, DG Altman, P Group PLoS med 6 (7), e1000097	142957	2009
The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies E Von Elm, DG Altman, M Egger, SJ Pocock, PC Gøtzsche, ... The lancet 370 (9596), 1453-1457	74043	2007
The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration A Liberati, DG Altman, J Tetzlaff, C Mulrow, PC Gøtzsche, JPA Ioannidis, ... Bmj 339	59778	2009
CONSORT 2010 statement: updated guidelines for reporting parallel group randomised trials KF Schulz, DG Altman, D Moher BMC medicine 8 (1), 18	23852	2010
Why most published research findings are false JPA Ioannidis PLoS medicine 2 (8), e124	15673	2005
Strengthening the Reporting of explanation and elaboration		

Cited by VIEW ALL

	All	Since 2021
Citations	705480	374970
h-index	286	189
i10-index	1464	1106

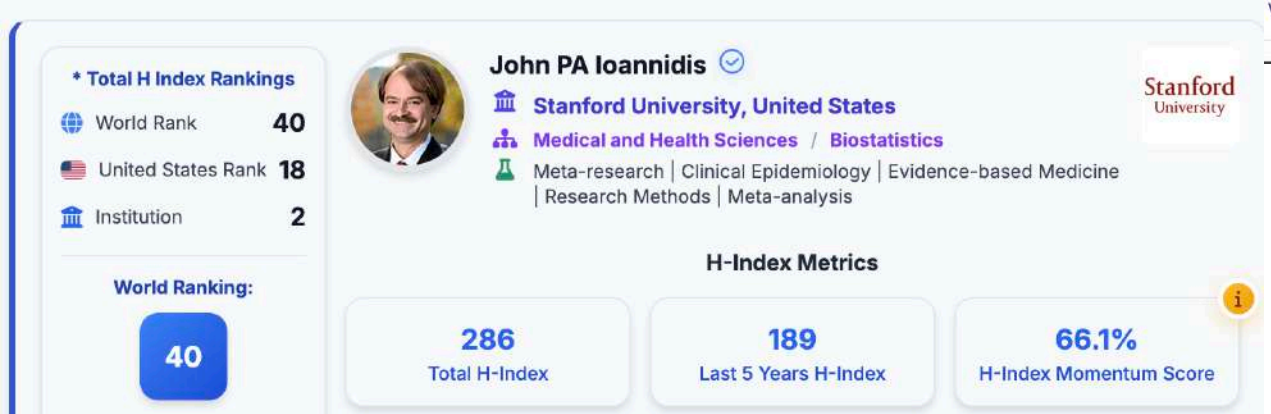


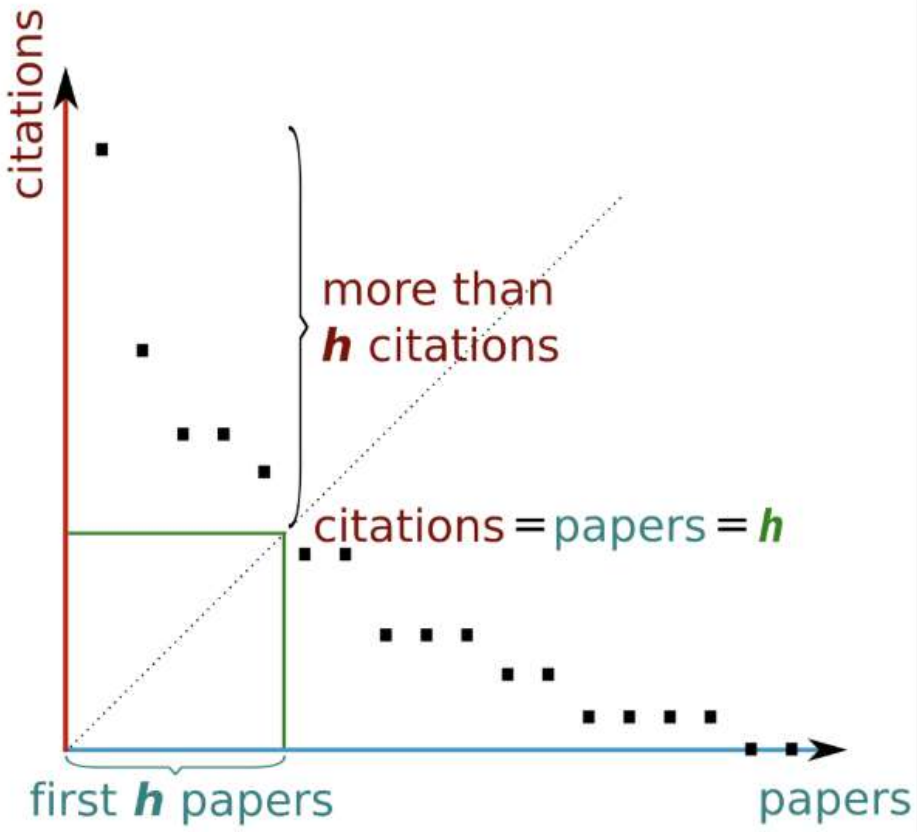
Public access VIEW ALL

24 articles not available
570 articles available

Based on funding mandates

VIEW ALL





h-index from a plot of numbers of citations for an author's numbered papers (arranged in decreasing order)

Hirsh Index, 2005
Jorge E. Hirsh

Google Top of Hirsh Index

Exibindo resultados para Top of ***Hirsch*** Index

Em vez disso, pesquisar por Top of Hirsh Index

Visão geral criada por IA

The top of the Hirsch index (h-index) **identifies the most impactful researchers based on citation metrics**, with leading figures often reaching h-index values over 300. As of 2026, top-ranked scientists include **Francisco Matorras** ($h = 382$), **Alberto Ruiz Jimeno** ($h = 365$), and **HJ Kim** ($h = 364$). AD Scientific Index +1

- **Top Scientist Rankings:** According to the AD Scientific Index, Francisco Matorras (Universidad de Cantabria, Spain) holds a leading global ranking with a total h-index of 382. AD Scientific Index +1
- **Other Highly Cited Researchers:** Other top researchers often cited for high h-indexes include Frank B. Hu (Harvard University, h=309), Michael Grätzel (EPFL, h=292), and Bert Vogelstein (Johns Hopkins, h=290). Research.com

← **Tweet**

Mayana Zatz
@Mayanazatz

O absurdo de se pagar 11.000 dólares para publicar um artigo na revista Nature

Protocolos de Pesquisa

1 - Seres Humanos

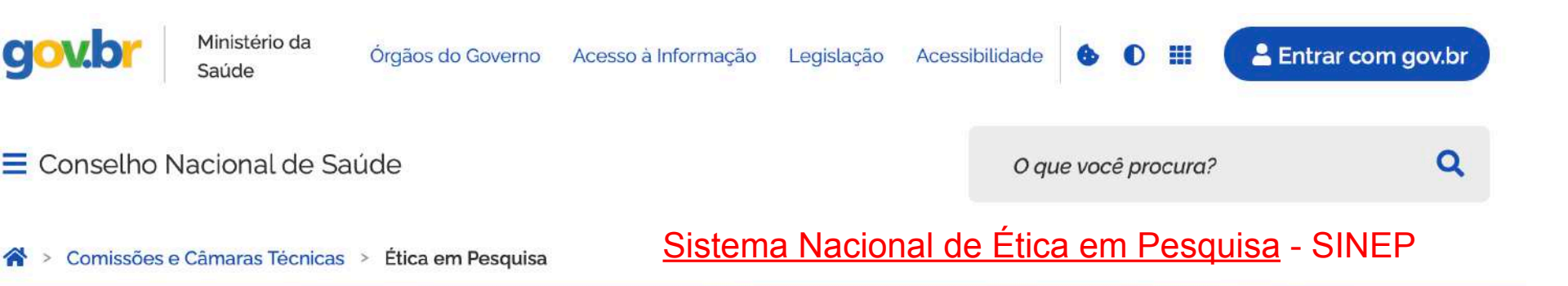
2- Animais

4- Vegetais

3- Indústria

4- Meio Ambiente

Sempre - medir o risco e o Benefício a curto e longo prazo



Sistema Nacional de Ética em Pesquisa - SINEP

A **Comissão Nacional de Ética em Pesquisa - CONEP** está diretamente ligada ao Conselho Nacional de Saúde - CNS. A composição multi e transdisciplinar reúne representantes de diferentes áreas do conhecimento para cumprir sua principal atribuição, que é a avaliação dos aspectos éticos das pesquisas que envolvem seres humanos no Brasil. Em cumprimento à sua missão, a Comissão elabora e atualiza as diretrizes e normas para a proteção dos participantes de pesquisa e coordena o Sistema CEP/CONEP.

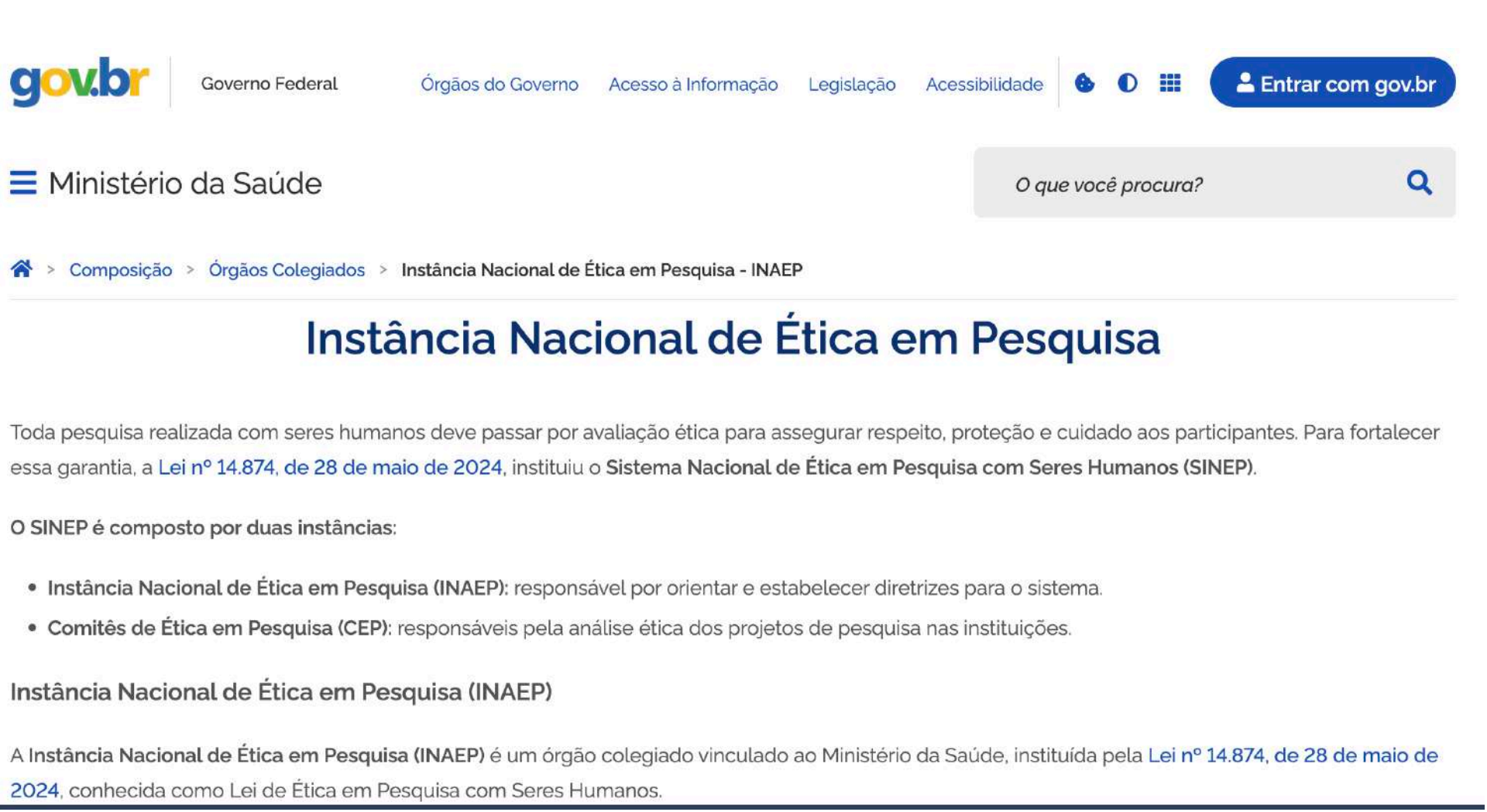
O Sistema CEP/CONEP é formado pela CONEP (instância máxima de avaliação ética em protocolos de pesquisa envolvendo seres humanos) e pelos CEP (Comitês de Ética em Pesquisa), instâncias regionais dispostas em todo território brasileiro. O Sistema também envolve pesquisadores, assistentes de pesquisa, professores e universitários em iniciação científica, instituições de ensino, centros de pesquisa, fomentadores de pesquisa e

https://www.gov.br/saude/pt-br/composicao/orgaos-colegiados/inaep

https://www.gov.br/conselho-nacional-de-saude/pt-br/camaras-tecnicas-e-comissoes/conep

Documentos regulatórios no Brasil

- **Nota Técnica 01/2026: Orientações acerca da tramitação de protocolos de pesquisa com seres humanos, da definição de competências no âmbito do Sistema Nacional de Ética em Pesquisa com Seres Humanos, da análise ética de protocolos com o Ministério da Saúde como instituição proponente, da prorrogação excepcional do credenciamento dos Comitês de Ética em Pesquisa e dos procedimentos aplicáveis a biobancos, no contexto da implementação da Instância Nacional de Ética em Pesquisa.**
- **Decreto 12.651/2025: Regulamenta a Lei nº 14.874, de 28 de maio de 2024, que dispõe sobre a pesquisa com seres humanos e institui o Sistema Nacional de Ética em Pesquisa com Seres Humanos.**
- **Lei 14.874/2024: Dispõe sobre a pesquisa com seres humanos e institui o Sistema Nacional de Ética em Pesquisa com Seres Humanos**
- **Resolução 580/2018: Regulamenta o disposto no item XIII.4 da Resolução CNS nº 466, de 12 de dezembro de 2012, que estabelece que as especificidades éticas das pesquisas de interesse estratégico para o Sistema Único de Saúde (SUS) serão contempladas em Resolução específica, e dá outras providências.**
- **Resolução 510/2016: Esta Resolução dispõe sobre as normas aplicáveis a pesquisas em Ciências Humanas e Sociais cujos procedimentos metodológicos envolvam a utilização de dados diretamente obtidos com os participantes ou de informações identificáveis ou que possam acarretar riscos maiores do que os existentes na vida cotidiana, na forma definida nesta Resolução.**
- **Norma Operacional CNS 01/2013: Aprova as normas regulamentadoras de pesquisas envolvendo seres humanos**
- **Resolução 466/2012: Aprova as normas regulamentadoras de pesquisas envolvendo seres humanos**



gov.br Governo Federal Órgãos do Governo Acesso à Informação Legislação Acessibilidade Entrar com gov.br

Ministério da Saúde

O que você procura?

> Composição > Órgãos Colegiados > Instância Nacional de Ética em Pesquisa - INAEP

Instância Nacional de Ética em Pesquisa

Toda pesquisa realizada com seres humanos deve passar por avaliação ética para assegurar respeito, proteção e cuidado aos participantes. Para fortalecer essa garantia, a Lei nº 14.874, de 28 de maio de 2024, instituiu o **Sistema Nacional de Ética em Pesquisa com Seres Humanos (SINEP)**.

O SINEP é composto por duas instâncias:

- **Instância Nacional de Ética em Pesquisa (INAEP):** responsável por orientar e estabelecer diretrizes para o sistema.
- **Comitês de Ética em Pesquisa (CEP):** responsáveis pela análise ética dos projetos de pesquisa nas instituições.

Instância Nacional de Ética em Pesquisa (INAEP)

A **Instância Nacional de Ética em Pesquisa (INAEP)** é um órgão colegiado vinculado ao Ministério da Saúde, instituída pela Lei nº 14.874, de 28 de maio de 2024, conhecida como Lei de Ética em Pesquisa com Seres Humanos.

a Comissão Nacional de Ética em Pesquisa (Conep) foi substituída pelo novo Sistema Nacional de Ética em Pesquisa (Sinep) e pela nova Instância Nacional de Ética em Pesquisa (Inaep). A mudança decorre da Lei nº 14.874/2024, que moderniza a pesquisa clínica, com regulamentação em 2025. [1, 2, 3, 4]

UNIFESP

COMITÊ DE ÉTICA EM PESQUISA

HOME SOBRE LINKS ÚTEIS MODELOS ORIENTAÇÕES DOCUMENTOS

No content in response.

O Comitê de Ética em Pesquisa não analisa projetos já iniciados (NORMA OPERACIONAL CNS No. 001/2013).

Localização e Contato

R. Sena Madureira, 1500 - 2º andar • Vila Clementino - São Paulo - SP - CEP: 04021-001

Horário de atendimento presencial e telefônico: Segundas a Sexta das 08:00 às 13:00hs.

E-mail: cep@unifesp.br

Telefone:(11) 3385-4343 ramal 8699/8557.

https://site.unifesp.br/cep/

Passo a Passo

Plataforma Brasil

Para realizar a submissão da pesquisa na Plataforma Brasil, siga os passos abaixo:

ETAPA 1 - Acesse a Plataforma Brasil: **http://plataformabrasil.saude.gov.br/login.jsf**

O cadastro do projeto na Plataforma Brasil deve ser feito no login do(a) Professor(a) Orientador(a), o aluno deve ser incluído na Plataforma Brasil como equipe de pesquisa.

- Caso você ainda não tenha um cadastro, clique em "Cadastre-se" (maiores informações sobre como se cadastrar na Plataforma, acessar a página 6 do **Manual do Pesquisador da Plataforma Brasil** ou **assista ao vídeo "Cadastro de Usuário" publicado pela Conep**).

- **Atenção**: durante o seu cadastro, na página 4, no campo: "Instituição" deverá ser selecionada a Unifesp. Realize a busca da instituição pelo **CNPJ 60.453.032/0001-74**.

- No campo "Perfil, selecione a opção "Pesquisador"

- Ao término do seu cadastro como pesquisador, você receberá por e-mail uma senha de acesso à Plataforma Brasil.

Acreditação de CEPs

A Resolução nº 506 de 2016, publicada pelo Conselho Nacional de Saúde, versa sobre o processo de acreditação de Comitês de Ética em Pesquisa (CEP) que compõem o Sistema CEP/Conep. Tal processo visa estimular a descentralização do Sistema, mantendo-se a uniformidade dos critérios de análise ética estabelecidos pelo CNS.

A ***acreditação de CEPs***, uma ação inédita para o Sistema, promove maior eficiência na gestão da análise ética dos protocolos de pesquisa. Para isso, haverá um processo de avaliação de conformidades, com vistas à certificação concedida pela Comissão Nacional de Ética em Pesquisa (Conep) aos CEPs, que realizarão a análise ética dos protocolos envolvendo seres humanos. Destaca-se ainda que, além de estar prevista nas normas do Conselho Nacional de Saúde, a acreditação de CEPs também está definida na Lei nº 14.874, de 28 de maio de 2024.

Lista de CEPs Acreditados

0082 – Centro Universitário FMABC. UF: SP. Município: Santo André.
5432 – Fundação Antônio Prudente - A.C. Camargo Cancer Center. UF: SP. Município: São Paulo.
5462 – Instituto Dante Pazzanese de Cardiologia (IDPC). UF: SP. Município: São Paulo.
0071 – Hospital Israelita Albert Einstein (HIAE). UF: SP. Município: São Paulo.
0068 – Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HCFMUSP). UF: SP. Município: São Paulo.
5415 – Faculdade de Medicina de São José do Rio Preto – FAMERP. UF: SP. Município: São José do Rio Preto.
8083 – Faculdade Ceres - FACERES. UF: SP. Município: São José do Rio Preto.
CEP 5411 - Faculdade de Medicina de Botucatu (FMB). UF: SP. Município: Botucatu.

Sistema Nacional de Ética em Pesquisa _SINEP

Sistema Nacional de Ética em Pesquisa com Seres Humanos (SINEP).

COMITÊS DE ÉTICA EM PESQUISA

CEP credenciado

Comitê autorizado pela INAEP a analisar pesquisas de **baixo risco**, aquelas em que quase não há chances de causar desconforto ou danos aos participantes; e **médio risco**, que envolvem procedimentos um pouco mais complexos, como o uso de novos exames, medicamentos já conhecidos em novas doses ou estudos que exigem acompanhamento mais próximo dos participantes.

CEP acreditado

Comitê reconhecido pela INAEP por sua excelência técnica e estrutura operacional, habilitado a avaliar pesquisas de **alto risco**, que são aquelas que testam novos medicamentos, vacinas ou procedimentos ainda não utilizados em pessoas, podendo causar efeitos desconhecidos. Por isso, precisam de uma avaliação ética mais detalhada e rigorosa. Também analisar pesquisas de risco médio e baixo.

https://www.gov.br/saude/pt-br/composicao/orgaos-colegiados/inaep

https://sites.google.com/huhsp.org.br/ensino-pesquisa-hsp/p%C3%A1gina-inicial?authuser=0

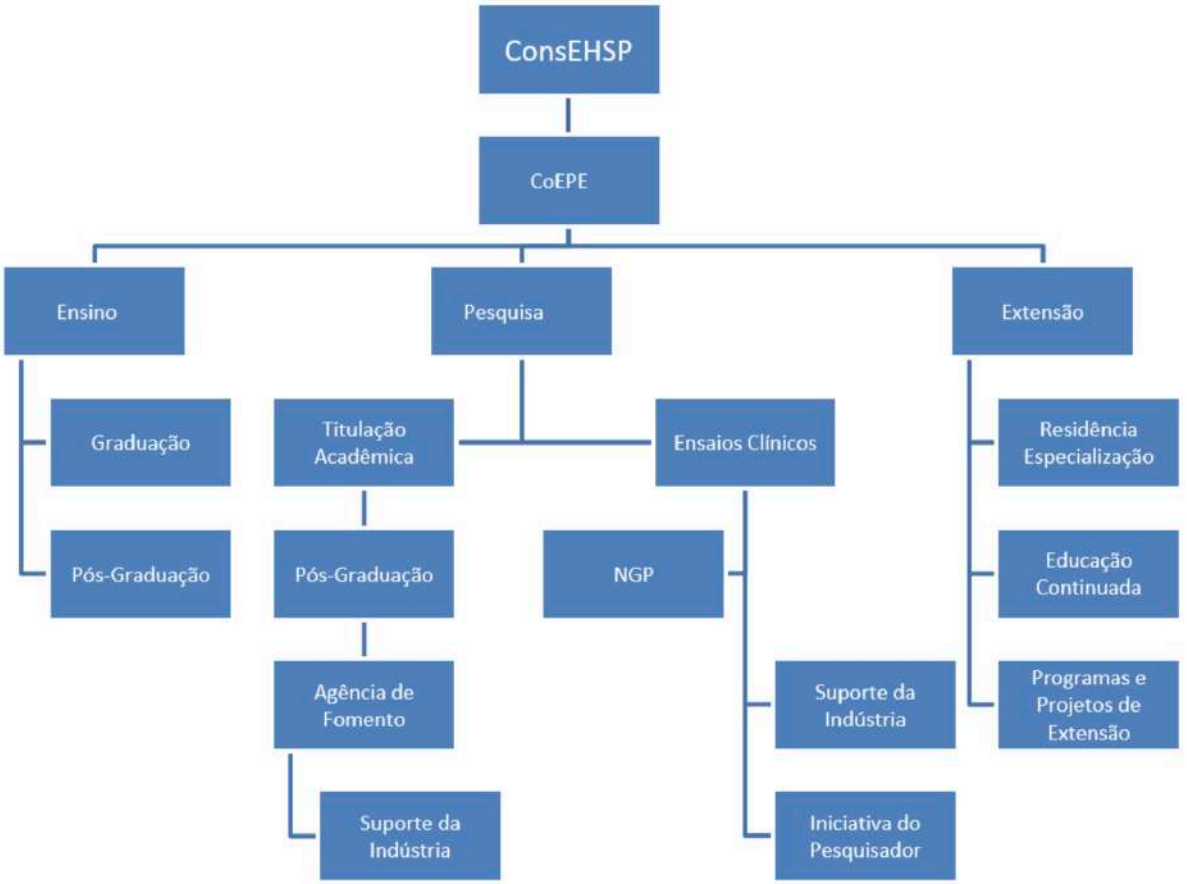
Acordo UNIFESP - SPDM

https://drive.google.com/file/d/1epyoFHLeTpGXQFUMMSNRe60edJILzyiU/view

REGULAMENTO INTERNO DO COMITÊ DE ENSINO, PESQUISA E EXTENSÃO do HOSPITAL SÃO PAULO – HOSPITAL UNIVERSITÁRIO.

https://drive.google.com/file/d/1mDlx6UKOLM3uuzTaGSS9oEL7Zp_qilZ2/view

Ensino, Pesquisa e Extensão



Comitê de Ensino, Pesquisa e Extensão (CoEPE)
(11) 5576-4848 ramal 7253
coep@huhsp.org.br
Horário de Funcionamento: De segunda à sexta das 08 às 17h

Núcleo de Gestão em Pesquisa Clínica (NGP)
(11) 5576-4848 ramal 8030 / 8031
nucleodepesquisa@huhsp.org.br
Horário de Funcionamento: De segunda à sexta das 07 às 16h

Hospital São Paulo - Hospital Universitário - Unifesp
Rua Napoleão de Barros, 737 – Vila Clementino – São Paulo – SP – CEP 04024-002

Parte 1: Elaboração do Protocolo Ético

O protocolo não é apenas burocracia; é o mapa que garante que ninguém sairá ferido (física ou moralmente) do seu estudo.

A. Pesquisa Clínica (Envolvendo Seres Humanos)

Aqui, o foco é a proteção do participante. O protocolo deve detalhar:

- **Riscos e Benefícios:** Descrição honesta do que pode dar errado e como isso será mitigado.
- **TCLE (Termo de Consentimento Livre e Esclarecido):** O documento mais importante. Deve ser escrito em linguagem acessível (nada de "juridiquês" ou termos médicos densos).
- **Critérios de Inclusão/Exclusão:** Justificativa ética de quem participa para para evitar discriminação ou exploração de vulneráveis.
- **Privacidade:** Como os dados serão anonimizados? Onde serão guardados?

Parte 3: Conclusão e Debate

Recapitulação: A ética deve ser pensada antes da coleta de dados. Uma vez que o erro ético acontece, ele é quase impossível de consertar sem invalidar todo o trabalho.

Nota de Rodapé: No Brasil, o sistema que rege isso é a plataforma **CEP/ CONEP/SINEP**. **Todo protocolo clínico deve ser submetido antes de começar qualquer contato com participantes**. Sempre via CEP local.

Protocolo Nacional CEP/ **CONEP/SINEP**

Protocolo Internacional **CONEP/SINEP**

Protocolo - menor de idade - < 18 anos **CONEP/SINEP**

Protocolo - Incapazes < 16 anos **CONEP/SINEP**

Protocolo - Portador de necessidades especiais (física e mental) **CONEP/SINEP**

Protocolo Genoma - total ou partes - **CONEP/SINEP**

População indígena, Novos Fármacos- **CONEP/SINEP**

Anexo III. Nota Técnica n. º 42/2026-CGRAR/DAET/SAES/MS.

1. Modelo Estruturado de TCLE (Padrão 2026)

O **Termo de Consentimento Livre e Esclarecido (TCLE)** evoluiu de um simples formulário para um documento de proteção jurídica e ética mútua. Em 2026, a ênfase está na **literacia em saúde** (garantir que o paciente realmente entendeu) e na **segurança de dados (LGPD)**.

Seções Obrigatórias do Modelo:

1. **Convite e Justificativa:** Texto direto explicando por que aquele indivíduo foi escolhido.
2. **Procedimentos:** Descrição passo a passo do que será feito. *Dica: Use fluxogramas se for complexo*.
3. **Riscos e Desconfortos:** Devem ser detalhados por ordem de probabilidade e gravidade, incluindo o que será feito para remediá-los.
4. **Benefícios:** Devem ser reais. Se não houver benefício direto ao participante, deve-se declarar o benefício para a ciência.

Anexo III. Nota Técnica n. º 42/2026-CGRAR/DAET/SAES/MS.

Termo de Consentimento Livre e Esclarecido (TCLE) para tratamento com Onasemnogeno Abeparvoveque - Onasemnogeno Abeparvoveque (Zolgensma®)

Eu, _____ (nome completo do paciente ou responsável legal), responsável legal paciente), portador (a) do CPF _____, fui informado(a) e esclarecido(a) pelo(a) Dr(a). _____ (nome do médico responsável), CRM _____, sobre a necessidade e os riscos do tratamento com Onasemnogeno Abeparvoveque (Zolgensma®) para Atrofia Muscular Espinhal (AME) tipo 1.

1. Esclarecimento e objetivos da terapia

- A terapia gênica é um tipo de tratamento feito com um produto biológico que

B. Revisão da Literatura

Muitos acham que revisões não precisam de ética, mas precisam!

- **Transparência e Reprodutibilidade:** No protocolo de uma Revisão Sistemática (como o PRISMA), a ética reside em não "escolher a dedo" apenas os artigos que confirmam sua tese (viés de seleção).
- **Uso de Dados Secundários:** Se a revisão utiliza bases de dados de acesso restrito, é necessário citar a conformidade com a LGPD (Lei Geral de Proteção de Dados).

Parte 2: Integridade Acadêmica e Prevenção de Má Conduta

Pesquisa ética também trata da **honestidade do pesquisador** perante a comunidade científica.

- **Plágio e Autoplágio:** A apropriação de ideias ou a "reciclagem" de textos próprios sem citação.
- **Fabricação e Falsificação:** Inventar dados ou alterar resultados para que a hipótese pareça verdadeira.
- **Conflito de Interesses:** Declarar quem financiou a pesquisa. Se uma farmacêutica paga um estudo sobre seu próprio remédio, o leitor precisa saber disso.
- **Critérios de Autoria:** Só deve assinar quem realmente contribuiu intelectualmente. "Cortesias" em autoria são consideradas má conduta ética.

Para verificar a ética de artigos e protocolos em 2026, a conferência mudou: saímos da simples conferência manual para o uso de **ecossistemas de integridade digital**.

Aqui estão as ferramentas e diretrizes mais atualizadas, divididas por categoria:

1. Plataformas de Diretrizes de Relato (Checklists Gold Standard)

Antes de submeter a qualquer comitê, o protocolo deve seguir roteiros internacionais que garantem a transparência ética. A rede **EQUATOR Network** continua sendo o hub principal, mas com ferramentas mais dinâmicas:

- **SPIRIT (para Protocolos Clínicos):** Checklist essencial para montar o desenho do estudo.
- **PRISMA 2020/2026 (Revisões Sistemáticas):** Agora inclui extensões específicas para revisões que utilizam IA e busca automatizada.
- **CONSORT:** Para o relato de ensaios clínicos randomizados.

5. Assistência e Indenização: Declaração explícita de que o pesquisador e a instituição se responsabilizam por danos decorrentes da pesquisa, **pelo tempo que for necessário**.

6.Contatos: Telefone 24h do pesquisador principal e o contato do **CEP**

Comitê de Ética em Pesquisa) da instituição.

Regra de Ouro do TCLE: Nunca use termos como "eu entendo que não há riscos". O correto é "fui informado sobre os riscos de…".

O ônus da informação é sempre do pesquisador.

Resumo das Penalidades em 2026

Se você usar IA (como ChatGPT, Claude ou Gemini) para escrever partes do seu protocolo ou artigo e **não declarar**, estas são as consequências prováveis:

Nível de Falha	Ação Tomada pela Editora/Instituição
Omissão Leve (ajuste de gramática não declarado)	Advertência e exigência de correção (*Corrigendum*).
Omissão Grave (texto de discussão/ metodologia gerado)	**Retratação do artigo** e notificação ao empregador.
Falsificação de Dados (IA criando resultados ou imagens)	**Banimento permanente** da editora e processo administrativo disciplinar.
Fraude em Revisão por Pares (usar IA para fingir ser revisor)	Exclusão do nome de todas as bases de dados científicas e perda de financiamentos (CNPq/FAPESP).

Como evitar isso na sua aula ou pesquisa?

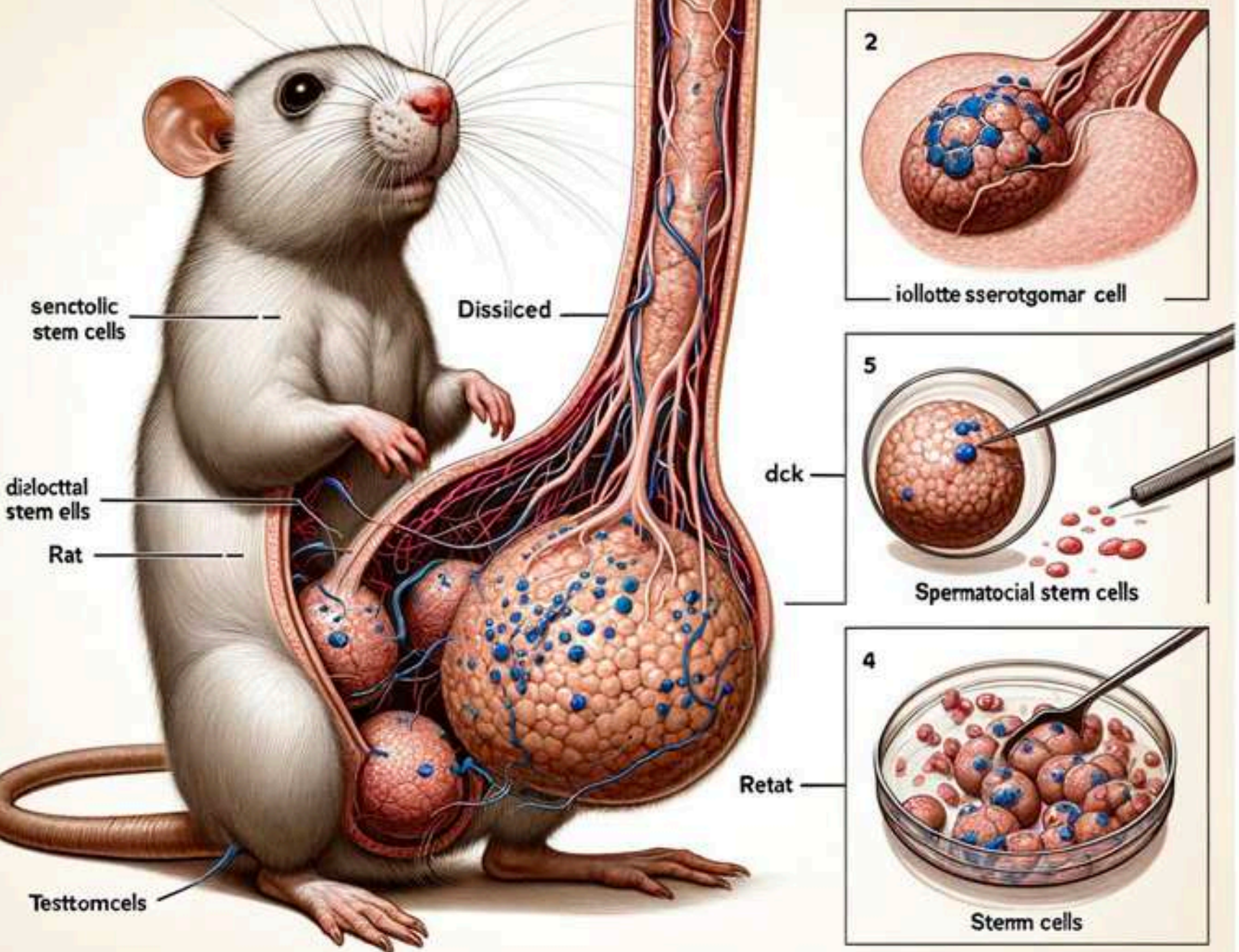
A regra atual (Portaria 2664/2026 do CNPq) é clara: **Transparência Total**. Se usou IA para estruturar os slides, para traduzir o abstract ou para revisar o texto, coloque uma seção de "Agradecimentos" ou "Declaração de Uso de IA" detalhando exatamente qual ferramenta foi usada e para quê.

O crime ético não é usar a IA, é esconder o uso dela.

1. O Caso da "Rata Gigante" (Revista *Frontiers in Cell and Developmental Biology*, 2024)

Este é talvez o caso mais famoso de uso "ilegal" (contra as normas editoriais) de IA generativa de imagens (Midjourney/DALL-E).

- **O erro:** O artigo continha um diagrama de uma rata com órgãos genitais gigantescos e desconexos, além de textos sem sentido como "*dck dck*" e "*sterm cells*".
- **A falha:** Os autores usaram IA para gerar as figuras, não declararam e, pior, não revisaram. Os revisores por pares e editores também falharam no controle de qualidade.
- **Resultado:** O artigo foi **retratado** em poucos dias após viralizar nas redes sociais, e a revista sofreu um enorme dano de reputação.



The paper by Xinyu Guo et al., Cellular functions of spermatogonial stem cells inrelation to JAK/STAT signaling pathway, Frontiers in Cell and DevelopmentalBiology 2024, DOI 10.3389/fcell.2023.1339390 [link to PDF, in case the publisherremoves it], easily passed editorial and peer review.

2. O Caso "As an AI language model..." (Várias revistas da Elsevier, 2024-2025)

Vários artigos foram identificados e retratados porque os autores deram "copiar e colar" diretamente do ChatGPT, esquecendo-se de apagar as frases de sistema da IA.

- **Exemplos:** Artigos publicados em revistas de engenharia e medicina que continham frases como: "*Certainly, here is a possible introduction for your paper...*" ou "*As an AI language model, I don't have access to real-time data*
- **O problema ético:** Isso configura **falsidade ideológica acadêmica**, pois o autor assina um trabalho que ele sequer leu com atenção suficiente para notar que a IA estava "falando" com ele.

3. Retratação Massiva na *Neurosurgical Review* (Janeiro de 2026)

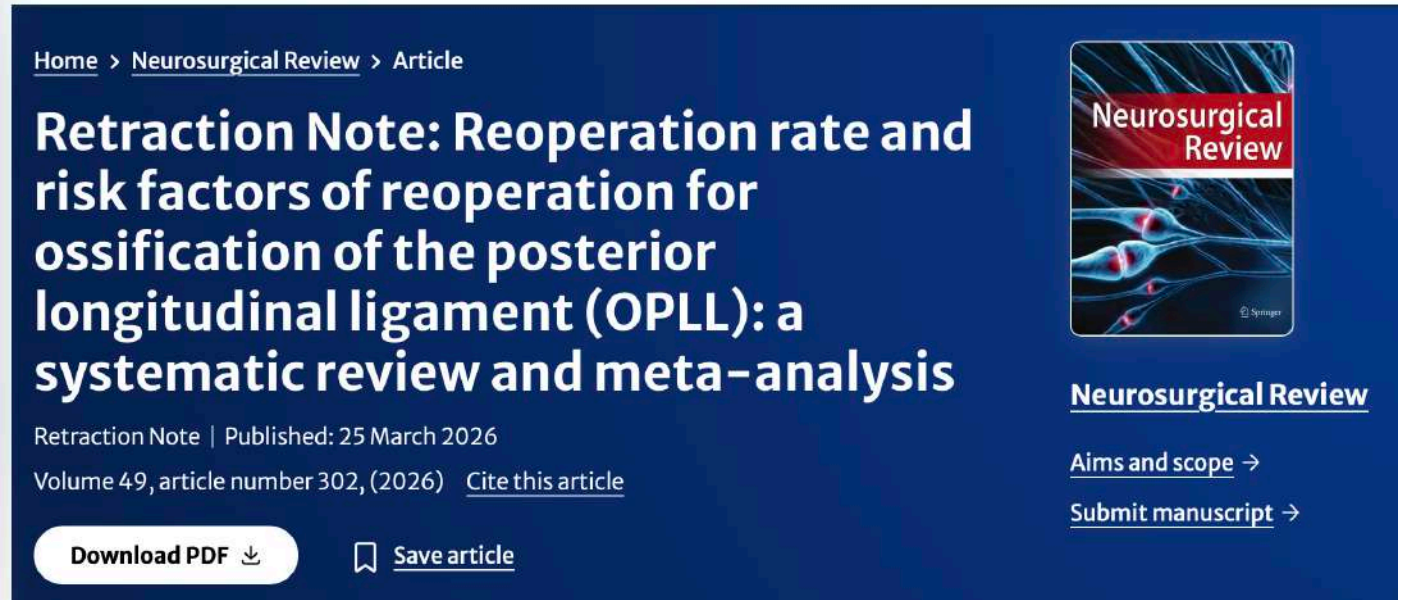
Como mencionei anteriormente, este caso é um marco recente.

- **O fato:** Mais de 120 artigos foram retratados de uma só vez.

  A "ilegalidade": Descobriu-se que eram produtos de **Paper Mills** (

- fábricas de artigos) que usavam IA para criar estudos fictícios e burlar o siste de revisão.

- **Penalidade:** Banimento dos autores e investigação institucional profunda em universidades na Índia e China.



Estatísticas de 2026 (O "Raio-X" do Problema)

De acordo com dados recentes de plataformas como o ***Retraction Watch*** **e o** ***Problematic Paper Screener*****:**

- **Volume:** Em 2024 e 2025, houve um aumento de **45% nas retratações** ligadas "erros de integridade", onde a IA não declarada foi o principal motor.
- **Áreas mais afetadas:** Engenharia (30%), Medicina Clínica (22%) e Ciências Ambientais (15%).
- **As "Marcas da IA":** Ferramentas de detecção identificaram que cerca de **1 a cada 500 artigos** publicados atualmente contém "frases torturadas" (sinônimos estranhos usados por IAs para evitar detectores de plágio comuns).

Por que esses casos são considerados "ilegais" na academia?

Não existe uma "lei" penal comum para isso (a menos que envolva verba pública, o que pode ser considerado estelionato), mas viola os **Contratos de Publicação**:

1. **Quebra de Autoria:** IAs não podem ser autores porque não têm responsabilidade jurídica.
2. **Violação de Originalidade:** Copiar da IA sem citar é considerado uma forma de plágio (apropriação de produção não original).
3. **Falsificação de Dados:** Se a IA inventa uma referência bibliográfica (alucinação) e o autor a mantém, isso é **falsificação**.

o caso da "Rata da Frontiers" como quebra-gelo. Ele ilustra perfeitamente como a falta de ética (omissão do uso de IA) caminha de mãos dadas com a falta de rigor científico.

Normas para protocolo de pesquisa para revisões Sistemáticas

Para as revisões sistemáticas, as normas são focadas em **transparência e reprodutibilidade**. A grande dúvida sobre a necessidade de aprovação ética (CEP/CONEP) é um dos pontos mais debatidos em bancas de pós-graduação.

Aqui estão as diretrizes atualizadas para 2026:

Resolução CNS nº 510/2016, Portaria 2664/2026 do CNPq

1. Precisa de aprovação no sistema CEP/CONEP? Revisão Sistemática

A resposta curta é: **Geralmente, NÃO.** De acordo com a **Resolução CNS nº 510/2016** (ainda a base legal no Brasil), pesquisas que utilizam apenas informações de **acesso público** ou de **domínio público** não precisam de registro ou avaliação pelo sistema CEP/CONEP.

Quando NÃO precisa:

- **Revisão de Literatura Comum:** Uso de artigos já publicados em bases de dados (PubMed, Scielo, Cochrane).
- **Dados Secundários Públicos:** Uso de dados do DATASUS ou IBGE sem identificação dos indivíduos.

Quando PRECISA (As Exceções):

- **Revisão de prontuários não publicados:** Se você vai coletar dados de prontuários no arquivo de um hospital para fazer sua própria análise antes de comparar com a literatura, isso é pesquisa com seres humanos.
- **Dados Secundários Identificados:** Se os dados que você está revisando permitem identificar quem são as pessoas (violação da LGPD).
- **Revisões Sistemáticas de Dados de Pacientes Individuais (IPD Meta-analysis):** Quando os autores originais enviam os dados brutos de cada paciente para você.

2. Normas de Protocolo para Revisões Sistemáticas

Mesmo que não passe pelo comitê de ética, uma revisão sistemática exige um **protocolo ético-metodológico** rigoroso para ser aceita por revistas de alto impacto.

A. Registro no PROSPERO

O **PROSPERO** (International Prospective Register of Systematic Reviews) é o "comitê de ética" virtual das revisões.

- Você deve registrar seu protocolo **antes** de começar a extração de dados.
- Isso evita o "viés de publicação" e impede que outros pesquisadores publiquem exatamente a mesma pergunta que você está trabalhando.

Cuidado: Revisão Sistemática - Artigo publicado e que está com **restrição conhecida/ retratação** - Não pode ser usado na revisão / Pesquisa Clínica.

B. Diretriz PRISMA 2020 (e atualizações 2026)

O **PRISMA** (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*) é o checklist obrigatório. Ele dita como o protocolo deve ser escrito:

- **Estratégia de Busca:** Deve ser descrita de forma que qualquer pessoa possa repetir e achar os mesmos resultados.
- **Critérios de Elegibilidade (PICO):** Definição clara de População, Intervenção, Comparação e *Outcomes* (Desfechos).
- **Avaliação de Risco de Viés:** Você deve declarar como verificou se os artigos incluídos são confiáveis (usando ferramentas como a da Cochrane ou Newcastle-Ottawa).

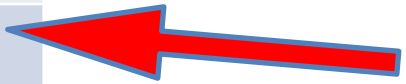
3. A Ética na Revisão da Literatura

Se não há pacientes "vivos" sendo testados, onde está a ética? Em 2026, a ética na revisão foca na **Integridade dos Dados**:

1. **Viés de Seleção:** É antiético excluir um artigo apenas porque o resultado dele contradiz a sua hipótese.
2. **Transparência na IA:** Se você usou ferramentas de IA (como Rayyan, Covidence ou modelos de linguagem) para triar os artigos, isso **deve** ser declarado no protocolo.
3. **Plágio de Ideias:** Respeitar a autoria dos artigos revisados, garantindo que a síntese seja original e não uma colcha de retalhos de frases alheias.

Ética em Pesquisa: Protocolos e Integridade

Tipo de Estudo	Registro Obrigatório	Aprovação CEP/CONEP
Pesquisa Clínica	Registro de Ensaio Clínico	**Sim**
Revisão Sistemática	PROSPERO	**Não** (em regra)
Revisão Narrativa	Opcional	**Não**



Artigos selecionados
Já avaliados p/ CEP

Dica Prática: Muitas revistas agora exigem o número do registro no PROSPERO logo na submissão. Se você terminar a revisão e não tiver o registro, pode ter o artigo recusado por "falha ética de protocolo".

Faz sentido para a estrutura da sua aula ou quer que eu detalhe como funciona o fluxo do PROSPERO?

O **PROSPERO** (*International Prospective Register of Systematic Reviews*) funciona como o "cartório" da sua revisão. O objetivo central é evitar a duplicidade de esforços e o **viés de relato** (quando o autor muda o desfecho planejado porque os resultados não foram os esperados).

Fluxo de Registro no PROSPERO

1. Preparação (O que ter em mãos antes de abrir o site)

Não se abre o formulário do PROSPERO sem o protocolo metodológico pronto. Você precisará de:

- **Pergunta PICO** clara.
- **Estratégia de busca** definida para pelo menos uma base de dados principal (ex: PubMed).
- **Critérios de inclusão e exclusão** bem delimitados.
- **Método de extração de dados** e avaliação de qualidade (Risco de Viés).

2. Verificação de Duplicidade (O "Search")

Antes de registrar, você deve pesquisar no próprio PROSPERO se já não existe uma revisão em andamento sobre o mesmo tema.

- **Regra Ética:** Se houver um registro idêntico recente, você deve justificar por que a sua revisão é necessária (ex: atualização de dados ou subpopulação diferente).

3. Submissão do Registro

O registro deve ser feito **antes de iniciar a extração de dados**.

- **O "Ponto sem Retorno":** O PROSPERO geralmente não aceita registros de revisões que já foram concluídas ou que já iniciaram a análise de dados.
- **Campos Obrigatórios:** Em 2026, houve um aumento no rigor sobre a descrição dos desfechos (*outcomes*) primários e secundários.

4. Revisão e Publicação do Registro

A equipe do PROSPERO revisa o formulário (isso pode levar de alguns dias a algumas semanas).

- Uma vez aprovado, você recebe um **Número de Registro** (ex: CRD42026XXXXX).
- **Este número deve constar no Abstract e na Metodologia do seu artigo final.**

Regras de Ouro e Ética no Fluxo

Fase do Fluxo	Ação Ética Necessária
Durante a Pesquisa	Se você precisar mudar o método (ex: mudar a ferramenta de risco de viés), você **deve atualizar** o registro no PROSPERO. O histórico de alterações fica visível para os editores.
Uso de IA	Em 2026, o PROSPERO exige que você declare se usará ferramentas de IA (como o *Rayyan* ou *ASReview*) para a triagem de títulos e resumos.
Finaliza-ção	Após publicar o artigo, você deve voltar ao PROSPERO e adicionar o link da publicação final para encerrar o ciclo do registro.

Por que isso é vital para o pesquisador?

1. **Proteção de Propriedade:** O registro prova que você teve a ideia e iniciou o trabalho naquela data.
2. **Facilitação da Publicação:** Revistas de alto impacto (Q1 e Q2) raramente aceitam revisões sistemáticas sem o número do PROSPERO.
3. **Transparência:** Demonstra que você não manipulou os critérios de inclusão para "forçar" um resultado estatístico após ver os dados.

O registro no PROSPERO é para a Revisão Sistemática, já a aprovação do CEP/CONEP é para a Pesquisa Clínica: uma salvaguarda contra a má conduta e um selo de qualidade científica.

Checklist de Pré-Submissão: PROSPERO (Versão 2026)

Antes de acessar o portal, garanta que todos os itens abaixo estejam definidos. O PROSPERO rejeitará registros incompletos ou feitos após o início da extração de dados.

1. Etapa de Planejamento (Pré-requisitos)

- [ ] **Busca de Duplicidade:** Realizei uma busca no PROSPERO e na *Cochrane Database* para garantir que não há uma revisão idêntica publicada ou em andamento nos últimos 2 anos.
- [ ] **Equipe Definida:** Tenho pelo menos dois revisores independentes (obrigatório para garantir a isenção na triagem).
- [ ] **Status da Revisão:** Confirmo que a extração de dados **ainda não começou**.

2. Definição Metodológica (O Coração do Registro)

- [ ] **Pergunta PICO/PECO:** * **P**opulação (quem?), **I**ntervenção (o quê?), **C**omparação (contra o quê?) e **O**utcome (qual desfecho?).
- [ ] **Estratégia de Busca:** Tenho a linha de busca completa para pelo menos uma base principal (ex: *PubMed*/*Medline*), incluindo os termos MeSH e operadores booleanos (AND/OR).
- [ ] **Bases de Dados:** Listei todas as bases que serão consultadas (ex: Embase, Cochrane, Scielo, LILACS).
- [ ] **Critérios de Elegibilidade:** Defini claramente quais tipos de estudo serão incluídos (ex: apenas Ensaio Clínico Randomizado) e quais serão excluídos (ex: relatos de caso, estudos em animais).

3. Procedimentos de Triagem e Extração

- [ ] **Triagem:** Especifiquei que dois revisores olharão títulos e resumos de forma independente.
- [ ] **Resolução de Conflitos:** Defini se haverá um terceiro revisor sênior ou se o consenso será por discussão.
- [ ] **Uso de IA (Novo 2026):** Se for usar ferramentas como *Rayyan* ou *Covidence* com funções de automação, descrever como a IA será utilizada (ex: "apenas para ordenação de relevância").

4. Análise e Qualidade

- [ ] **Risco de Viés:** Escolhi a ferramenta de avaliação (ex: RoB 2 para ensaios clínicos ou ROBINS-I para não-randomizados).
- [ ] **Síntese de Dados:** Descrevi se farei Metanálise (síntese quantitativa) ou apenas uma síntese narrativa.

5. Transparência e Financiamento

- [ ] **Fontes de Financiamento:** Identifiquei se há bolsas (CNPq/FAPESP) ou conflitos de interesse comerciais.
- [ ] **Idioma:** Definido em qual idioma o artigo final será redigido.

Muitos alunos esquecem de **salvar o PDF do registro aprovado**. Oriente-os a guardar esse documento, pois muitos periódicos exigem o PDF do protocolo original anexado como "Material Suplementar" para conferir se os autores não mudaram as regras do jogo no meio do caminho.

1. A Sequência de Nomes (Hierarquia da Autoria)

Diferente de outras áreas, na medicina e ciências biológicas, a posição do nome no artigo conta uma história sobre a função de cada um:

- **Primeiro Autor (First Author):** É quem mais trabalhou. Geralmente o pesquisador que executou a maior parte da coleta de dados, análise e escreveu rascunho principal. É o nome mais valorizado para fins de currículo.
- **Co-autores Intermediários:** São listados por ordem decrescente de contribuição. Se as contribuições forem iguais, utiliza-se a ordem alfabética (embora isso deva ser declarado nas notas de rodapé).
- **Último Autor (Senior/Corresponding Author):** Geralmente é o orientador, o chefe do laboratório ou o pesquisador sênior que concebeu a ideia, garantiu financiamento e supervisionou todo o projeto. É uma posição de grande prestígio.
- **Autor Correspondente (Corresponding Author):** É quem assume a responsabilidade administrativa (submissão, resposta aos revisores). Pode ser primeiro ou o último autor.

Os 4 Critérios de Autoria (Norma ICMJE)

Para ser considerado autor, não basta ser o "chefe do departamento". É preciso cumprir **TODOS** os quatro requisitos:

1. Contribuição substancial na concepção/design **OU** na coleta/análise de dados.
2. Redação do artigo ou revisão crítica de conteúdo intelectual importante.
3. Aprovação final da versão a ser publicada.
4. Compromisso de ser responsável por todos os aspectos do trabalho (integridade).

2. Como são colocados os Agradecimentos (Acknowledgements)

A seção de agradecimentos serve para dar crédito a quem ajudou, mas **não cumpre** os 4 critérios de autoria acima. Em 2026, a transparência aqui é rigorosa.

Quem incluir nos Agradecimentos?

- **Apoio Técnico:** Técnicos de laboratório, enfermeiros ou estatísticos que apenas rodaram os dados sem participar do desenho do estudo.
- **Apoio Administrativo:** Chefes de departamento que apenas forneceram o espaço físico.
- **Revisores de Texto/Tradutores:** Pessoas que corrigiram o inglês ou a gramática.
- **Financiadores:** Agências de fomento (CNPq, FAPESP, CAPES) e o número do processo/bolsa. **Isso é obrigatório.**
- **Participantes da Pesquisa:** Um agradecimento geral aos pacientes ou voluntários (sem citar nomes para preservar o sigilo).

Regras de Ouro:

1. **Consentimento:** Você deve ter permissão por escrito das pessoas que cita nos agradecimentos (algumas revistas exigem isso), pois ser citado ali pode implicar endosso aos resultados.
2. **Uso de IA:** Em 2026, é aqui que você deve declarar: "*Os autores agradecem o suporte do modelo de linguagem [Nome da IA] para a revisão gramatical e estruturação do manuscrito*".

Tive a colaboração da IA - Gemini

Tabela Comparativa: Autor vs. Agradecimento

Atividade	Autor	Agradecimento
Idealizou a pergunta da pesquisa	✅	❌
Coletou dados clínicos	✅	❌
Apenas revisou a gramática	❌	✅
Emprestou o laboratório	❌	✅
Escreveu a primeira versão do texto	✅	❌
Analisou estatisticamente os dados	✅	❌*

Tabela Comparativa: Autor vs. Agradecimento

**Se o estatístico apenas rodou o teste solicitado, vai nos agradecimentos. Se ele ajudou a escolher o teste e interpretar o sentido biológico dos dados, deve ser coautor.*

Dica para os alunos: Conflitos de autoria são a maior causa de brigas em grupos de pesquisa. Defina a ordem dos nomes **antes** de começar a escrever o artigo, baseando-se no esforço estimado de cada um.

Tive a colaboração da IA - Gemini

Regras Internacionais de Publicação

Recommendations for the Conduct, Reporting, Editing, and Publication

Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journal

PROSPERO (*International Prospective Register of Systematic Reviews*)

How to Publish a Research Paper in a Journal: A Beginner's Guide

Best Scientific Documentation Tools in 2026

1. Literature Search and Journal Selection Tools

Before writing, you need to identify the right journal and ensure your research is novel.

- **Google Scholar:** A global search engine for literature search, citation tracking, and journal metrics.
- **Elsevier Journal Finder / Springer Journal Suggester:** Tools that. use your manuscript title and abstract to suggest suitable journals within their portfolios.
- **Directory of Open Access Journals (DOAJ):** A database of trusted open-access journals, useful for ensuring compliance with international open-access mandates.
- **Jane (Journal/Author Name Estimator):** A free web-based tool that compares your abstract against PubMed data to find relevant journals.
- **Scopus/Web of Science:** Databases for identifying high-impact, reputable journals.

2. Manuscript Writing and Preparation Tools

- **Overleaf:** An online collaborative LaTeX editor that allows you to use pre-built templates for many international journals.
- **Microsoft Word / Google Docs:** Common word processors used to draft manuscripts, increasingly utilizing collaborative features.
- **Scrivener:** A tool tailored for writing long-form, complex papers.
- **Manchester Academic Phrasebank:** A resource for academic phrases and terminology, especially useful for non-native English speakers.

3. Citation and Reference Management

- **Mendeley:** A free reference manager and academic social network that automatically formats citations and bibliographies.
- **Zotero:** A powerful, free tool for collecting, organizing, and citing sources.
- **EndNote:** A robust, paid reference management software often used by experienced researchers.
- ResearchGate +3

4. Language, Paraphrasing, and Editing Tools

- **Grammarly:** A cloud-based typing assistant that checks grammar, spelling, and style.
- **Paperpal:** AI-based editing software tailored for academic writing, assisting with grammar, word choice, and sentence structure.
- **Quillbot:** A paraphrasing tool that helps rewrite sentences to avoid plagiarism.
- **Hemingway Editor:** Improves readability by highlighting complex sentences, passive voice, and unnecessary adverbs.

5. Ethical Standards and Specialized Tools

- **EQUATOR Network:** Provides reporting guidelines (e.g., CONSORT, STROBE, PRISMA) to ensure high-quality, transparent reporting in research papers.
- **ORCID:** A persistent digital identifier (iD) that distinguishes you from other researchers, required by most international journals.
- **Turnitin/iThenticate:** Professional tools used by journals to check for plagiarism before publication.
- **Zenodo/Figshare:** Repositories for storing and sharing research data, providing a citable Digital Object Identifier (DOI).

Summary Checklist for Submitting

1. **Draft:** Use Overleaf (LaTeX) or Word.
2. **Cite:** Manage with Zotero or Mendeley.
3. **Polish:** Check with Grammarly/Paperpal.
4. **Find Journal:** Use DOAJ or Journal Finders.
5. **Check Ethics:** Use EQUATOR Network guidelines.
6. **Submit:** Via journal portals (e.g., Editorial Manager, ScholarOne).

Home | ClinicalTrials.gov

ClinicalTrials.gov
https://clinicaltrials.gov

ClinicalTrials.gov
https://clinicaltrials.gov

A structured online system, such as the **ClinicalTrials.gov** results database, that provides the public with access to registration and summary results ...

International Clinical Trials Registry Platform (ICTRP)

World Health Organization (WHO)
https://www.who.int › Tools and toolkits

World Health Organization (WHO)
https://www.who.int › Tools and toolkits

In order to register a trial, please **contact one of the Primary registries**. What is a clinical trial? For the purposes of registration, a clinical trial is any ...Read more

EU Clinical Trials Register - Update

EU Clinical Trials Register
https://www.clinicaltrialsregister.eu

EU Clinical Trials Register
https://www.clinicaltrialsregister.eu

The EU Clinical Trials Register **provides a free and accurate search of clinical trials** in European Union member states and the European Economic Area.

Brazilian Registry of Clinical Trials (ReBEC)

Brazilian Registry of Clinical Trials
https://ensaiosclinicos.gov.br

Brazilian Registry of Clinical Trials
https://ensaiosclinicos.gov.br

The Brazilian Registry of **Clinical Trials** (ReBEC) is a free access virtual platform for recording experimental and **non**-experimental studies.Read more

ReBec (Registro Brasileiro de Ensaios Clinicos)

World Health Organization (WHO)
https://www.who.int › ... › Primary registries

World Health Organization (WHO)
https://www.who.int › ... › Primary registries

Brazilian **Clinical Trials** Registry. Registry Profile. General Information. Address: Av. Brasil, 4.365 - Pavilhão Haity Moussatché sala 214 Manguinhos, Rio **de** ...Read more

REBEC

Brazilian Registry of Clinical Trials
https://ensaiosclinicos.gov.br › faq

Brazilian Registry of Clinical Trials
https://ensaiosclinicos.gov.br › faq

AI Overview

Registering your clinical trial is mandatory to meet ethical, legal, and publication requirements. It ensures transparency, reduces publication bias by preventing the suppression of negative results, and helps avoid unnecessary duplication of research. Registration makes studies searchable, aids participant recruitment, and strengthens scientific integrity.

World Health Organization (WHO)
+4

Key reasons for registration include:

- Ethical Obligation & Accountability: It is often a condition of ethical approval and ensures accountability for research involving human subjects.
- Publishing Requirements: Most medical journals, adhering to ICMJE guidelines, require prior registration for a trial to be considered for publication.
- Transparency and Trust: It ensures that study protocols, including pre-specified outcome measures, are public, preventing researchers from changing them later to produce more favorab results.
- Reduced Research Waste: It allows other researchers to see what is already being studied, reducing duplication and identifying research gaps.
- Participant Recruitment: Public registries, such as ClinicalTrials.gov and WHO registries, help potential participants find relevant trials.
- World Health Organization (WHO)
+5

Nova Lei do CNPq sobre IA

Portaria CNPq nº 2.664, de 6 de março de 2026

Institui a Política de Integridade na Atividade Científica do CNPq, incluindo regras específicas para o uso de Inteligência Artificial (IA) na pesquisa.

FOCO NA INTEGRIDADE

Estabelece regras de educação, prevenção, apuração e sanção para garantir a integridade científica apoiada pelo CNPq.

MÁ CONDUTA

Define e combate:

- Fabricação
- Falsificação
- Plágio (FFP)
- Autoplágio
- "Salami Science" (fragmentação indevida de publicações).

REGULAMENTAÇÃO DA IA GENERATIVA

Torna obrigatória a declaração do uso de ferramentas de IA em qualquer etapa da pesquisa, especificando a ferramenta e a finalidade.

EXEMPLOS DE USO:

- Geração de texto
- Análise de dados
- Tradução
- Revisão de literatura
- Outros...

ABRANGÊNCIA

Aplica-se a bolsistas, pesquisadores e todos os envolvidos no fomento do órgão.

RESPONSABILIDADE

O pesquisador é totalmente responsável pela integridade dos dados, análises e resultados, mesmo quando utiliza IA.

TRANSPARÊNCIA É CIÊNCIA!

Cite a IA que você usa.
Valorize sua pesquisa.
Fortaleça a ciência.

Onde encontrar?

O texto integral está disponível na seção de "Notícias" ou "Legislação" no portal do CNPq:

gov.br/cnpq

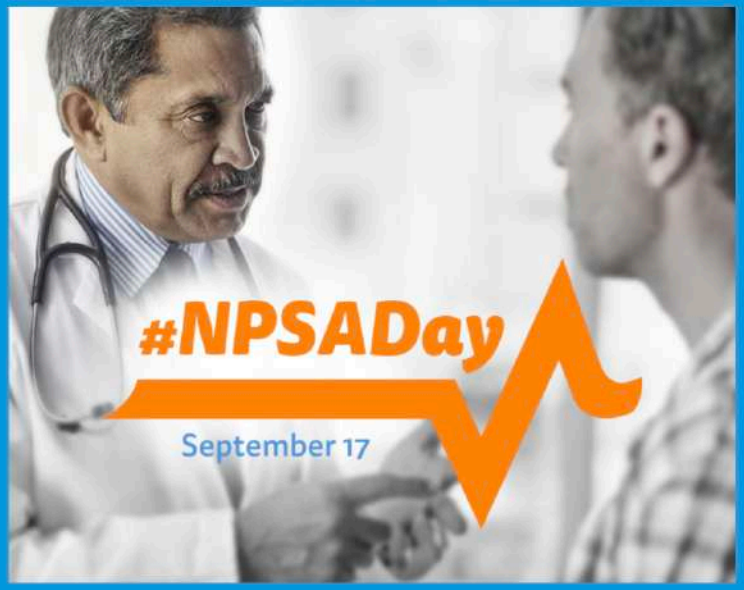
LEMBRE-SE:

Usou IA? Declare!

É obrigatório.

Vital Signs National Physician Suicide Awareness Day September 17

BECOME A SUPPORTING ORGANIZATION | SUPPORTING ORGANIZATIONS | TOOLKIT



ACT NOW

While physician suicide was a crisis long before COVID-19, the demands of the pandemic have created a sense of urgency to better support physicians' mental health and wellbeing.

National Physician Suicide Awareness Day (#NPSADay) is a reminder and call to action. In 2021, #NPSADay reached 1.2 million people and received sign-on support from 54 organizations that resulted in a total of 26,000 actions taken to prevent suicide. But it doesn't have to stop there – with your help, everyday we can make time to talk – and to act – so physicians' struggles don't become mental health emergencies. We can all help prevent physician suicide by learning the signs, starting the conversations, understanding the underlying barriers and sharing the resources that can help those in distress seek mental health care.

Doctors' Suicide Rate Highest of Any Profession

By Pauline Anderson

FROM THE WEBMD ARCHIVES

May 8, 2018 -- One doctor commits suicide in the U.S. every day -- the highest suicide rate of any profession. And the number of doctor suicides -- 28 to 40 per 100,000 -- is more than twice that of the general population, new research shows. The rate in the general population is 12.3 per 100,000.

Doctors who die by suicide often have untreated or undertreated depression or other mental illnesses, a fact that underscores the need for early diagnosis and treatment, says study researcher Deepika Tanwar, MD, of the psychiatric program at Harlem Hospital Center in New York.

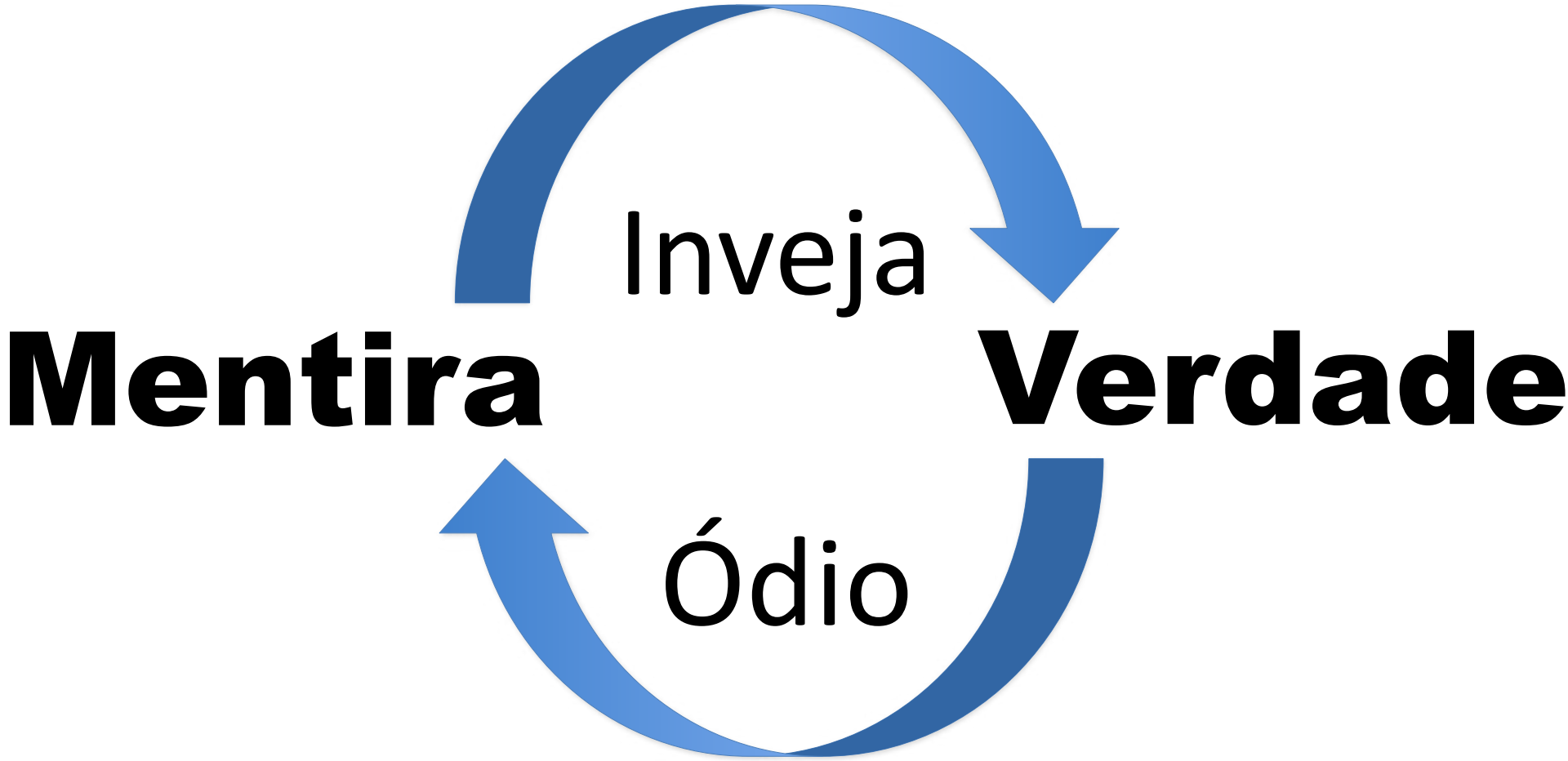
"It's very surprising" that the suicide rate among physicians is higher than among those in the military, which is considered a very stressful occupation, Tanwar says.

Practice Management
Surprise Billing and Patient Notice
Telehealth and Virtual Care
Legal and Regulatory
Employed Physicians
Physician Wellness
Personal and Financial Resources

Physician Suicide Awareness

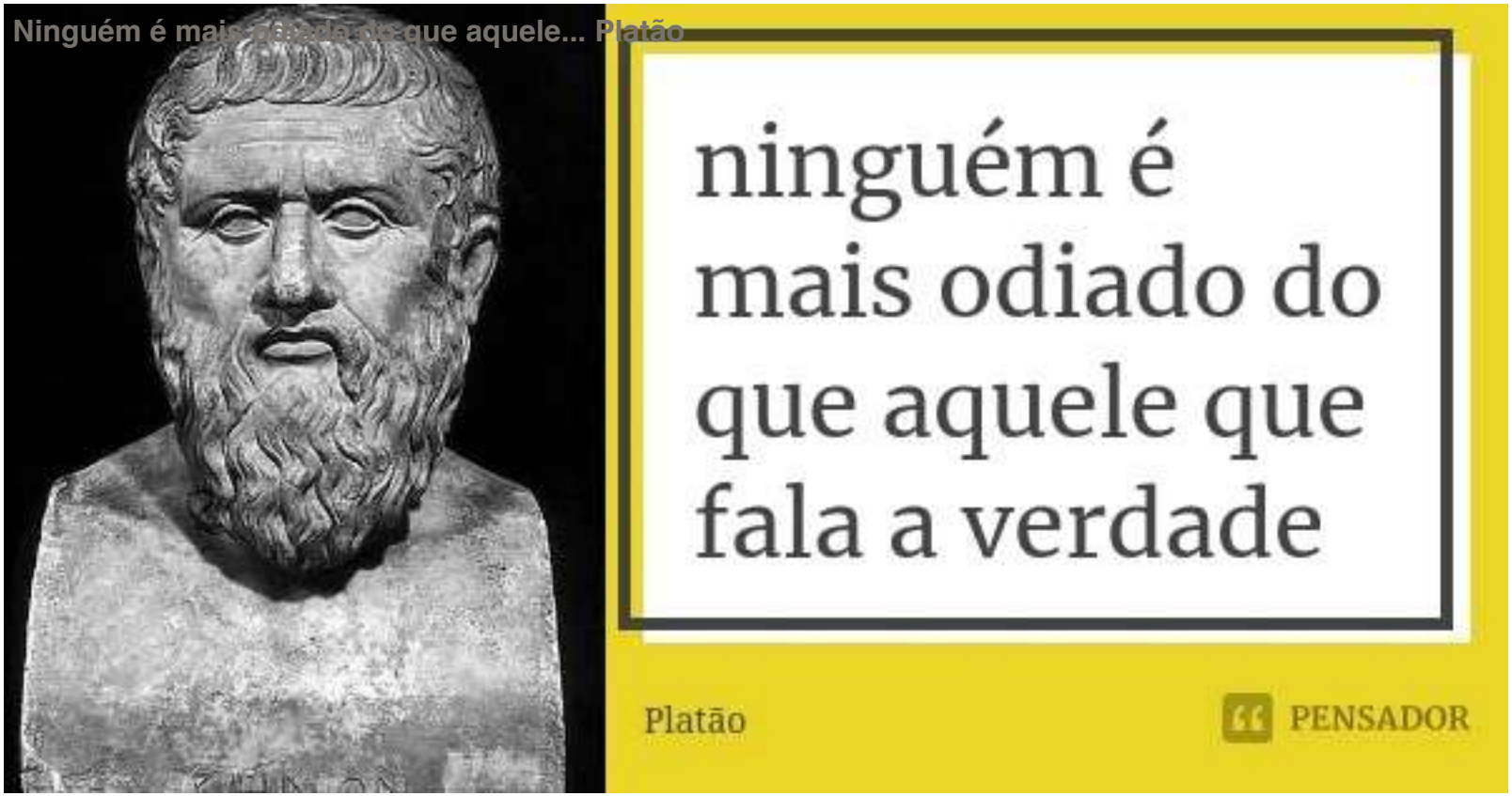
National Physician Suicide Awareness Day (#NPSADay), taking place on September 17, 2022, is a call to action to prevent physician suicide.

The rising rates of physician burnout, depression, and suicide have



Cuidado para não chamar de inteligentes apenas aqueles que pensam como você.
Ugo Ojetti (1871-946) escritor Italiano

Palavras que circulam a vida


Ninguém é mais odiado do que aquele... Platão
ninguém é
mais odiado do
que aquele que
fala a verdade
Platão
PENSADOR

428 a.C.-347 a.C.

Departamento de Cirurgia

https://sp.unifesp.br/epm/cirurgia/

https://sp.unifesp.br/epm/cirurgia/acontece/historia-da-fundacao-epm-documentada