



[www.re-check.ch](http://www.re-check.ch)  
#EIJC18 – May 24th 2018  
@RecheckHealth  
@CatherineRiva @serenatinari



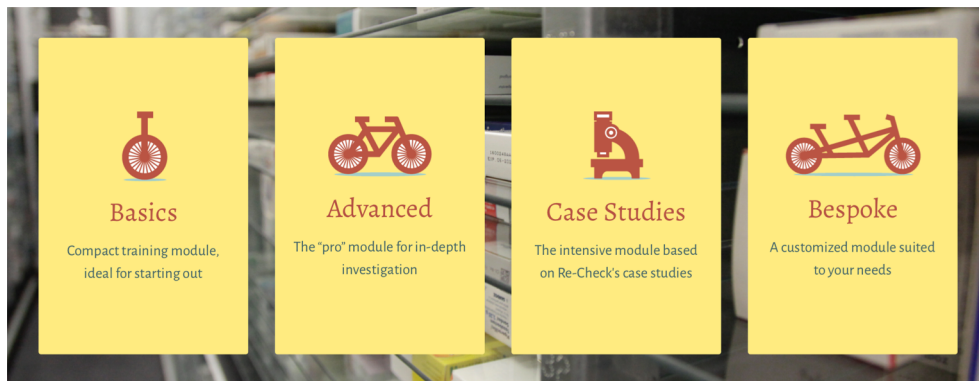
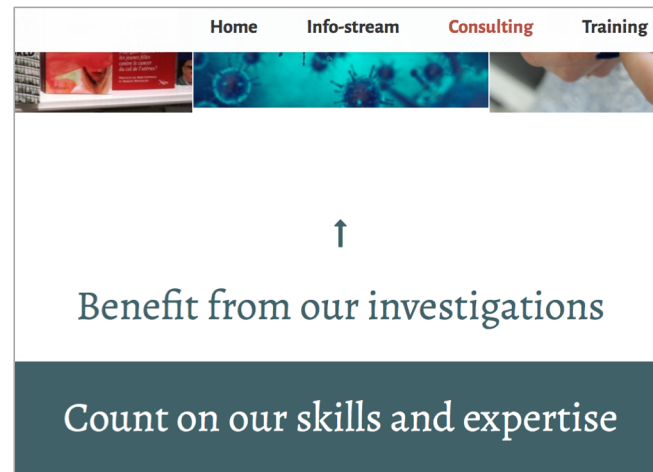
# We work with

methods, tools and ethics  
at the crossroads between

Investigative Journalism  
and  
**Evidence-Based Medicine (EBM)**

# Re-Check is..

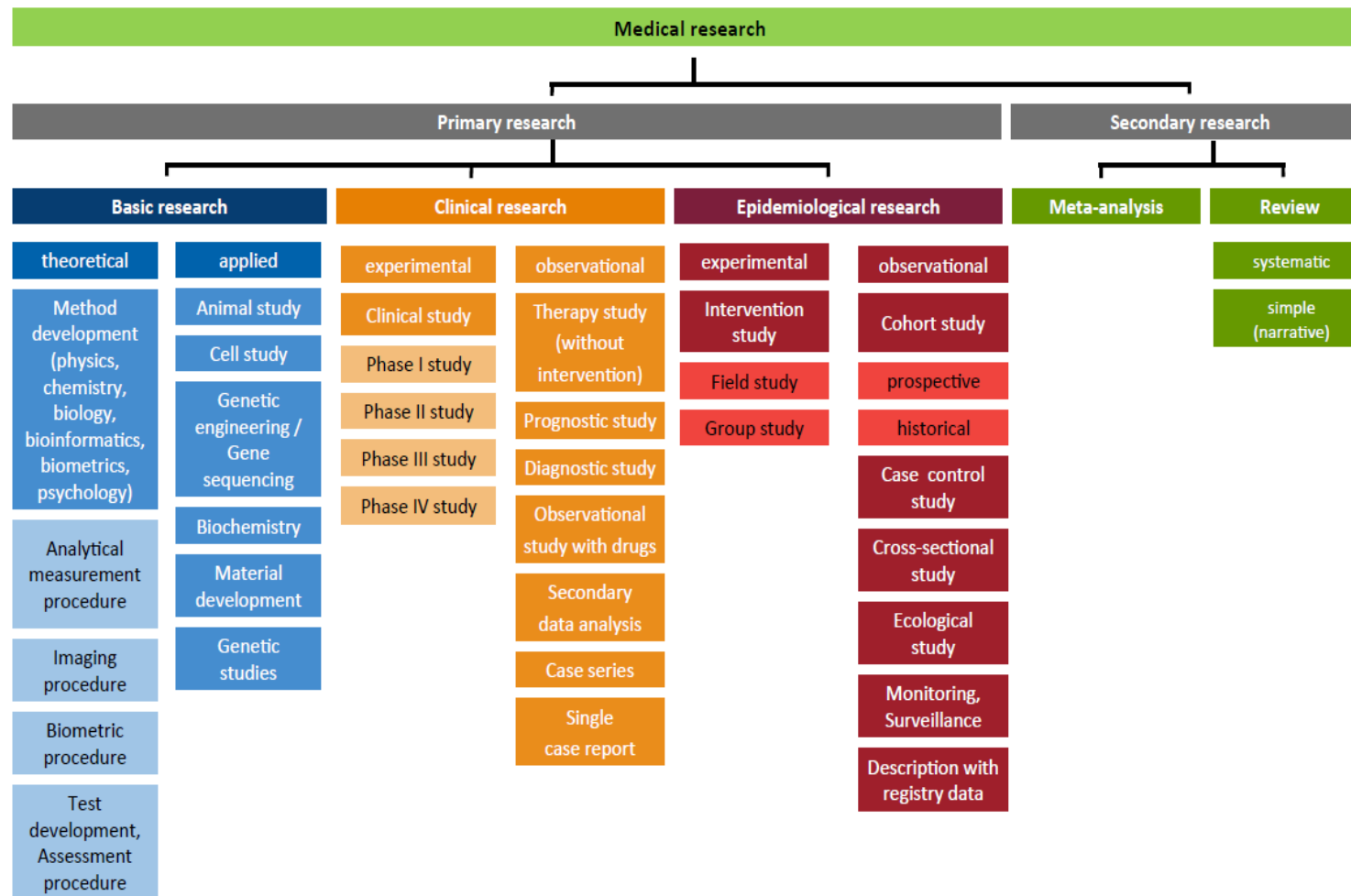
- Investigations
- Training
- Consultancy

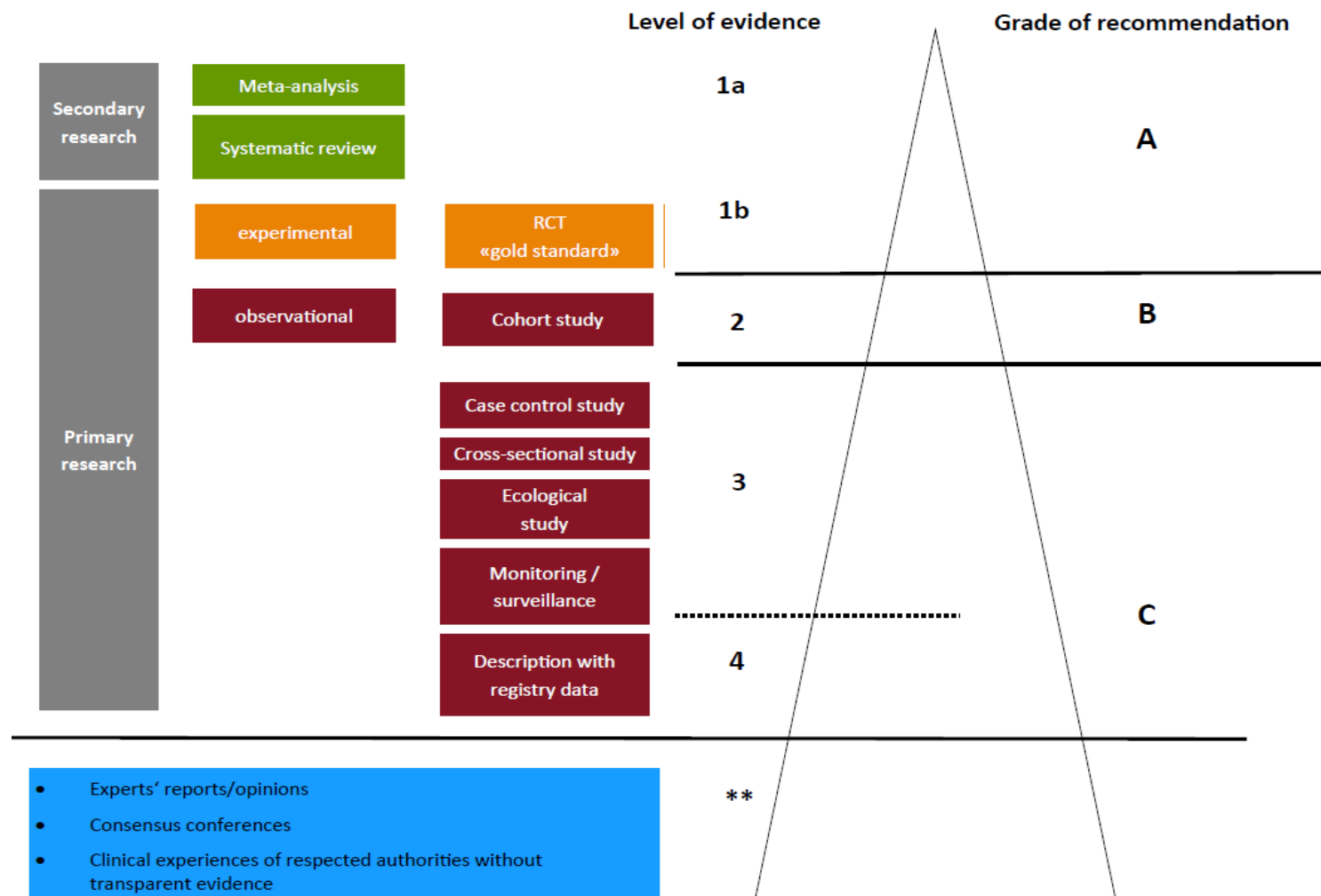


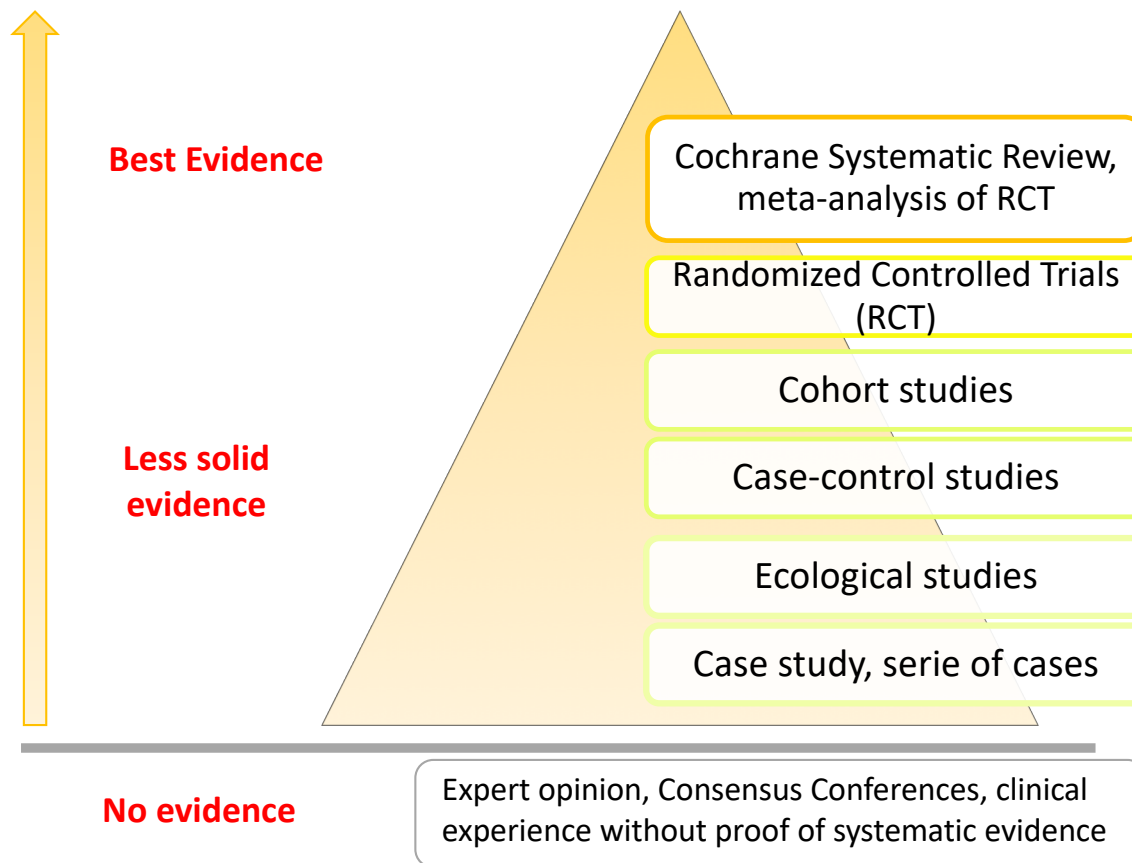


- Question every information and every source, regardless of their reputation
- **Assess the quality of the available evidence**
- Research and map the big picture
- Avoid focusing on the 'usual suspects' only
- Beware of the hype





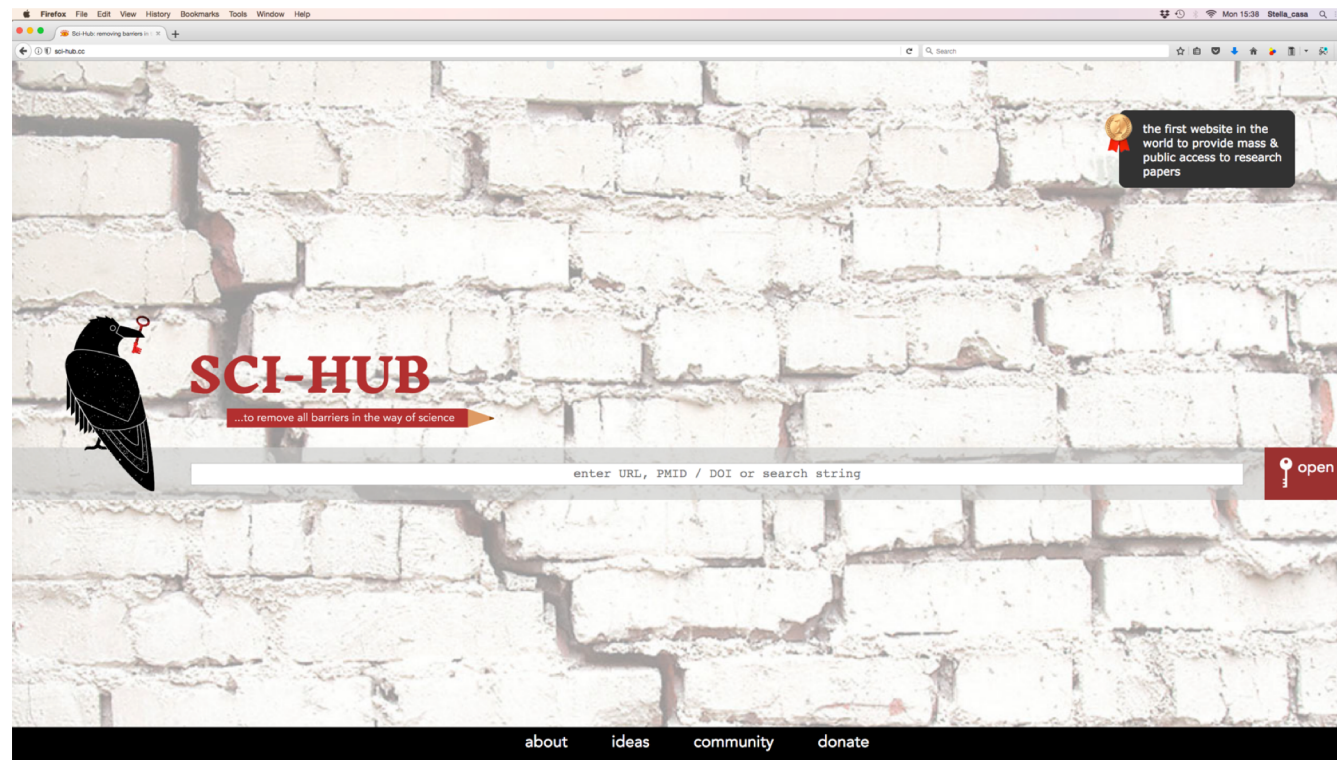




# Free Access to biomedical literature

## www.sci-hub.tw

thanks to Alexandra Elbakyan (Kazakhstan) – make a donation!!!



# MD Fiona Godlee

## director of the British Medical Journal (BMJ)

**LSTM**  
LIVERPOOL SCHOOL  
OF TROPICAL MEDICINE

ResearchStudyFundraisingServicesAboutNews & events

Home > News & events > Why you shouldn't believe what you read in medical journals

### Why you shouldn't believe what you read in medical journals



A seminar by Fiona Godlee, Editor in Chief of the British Medical Journal (BMJ).

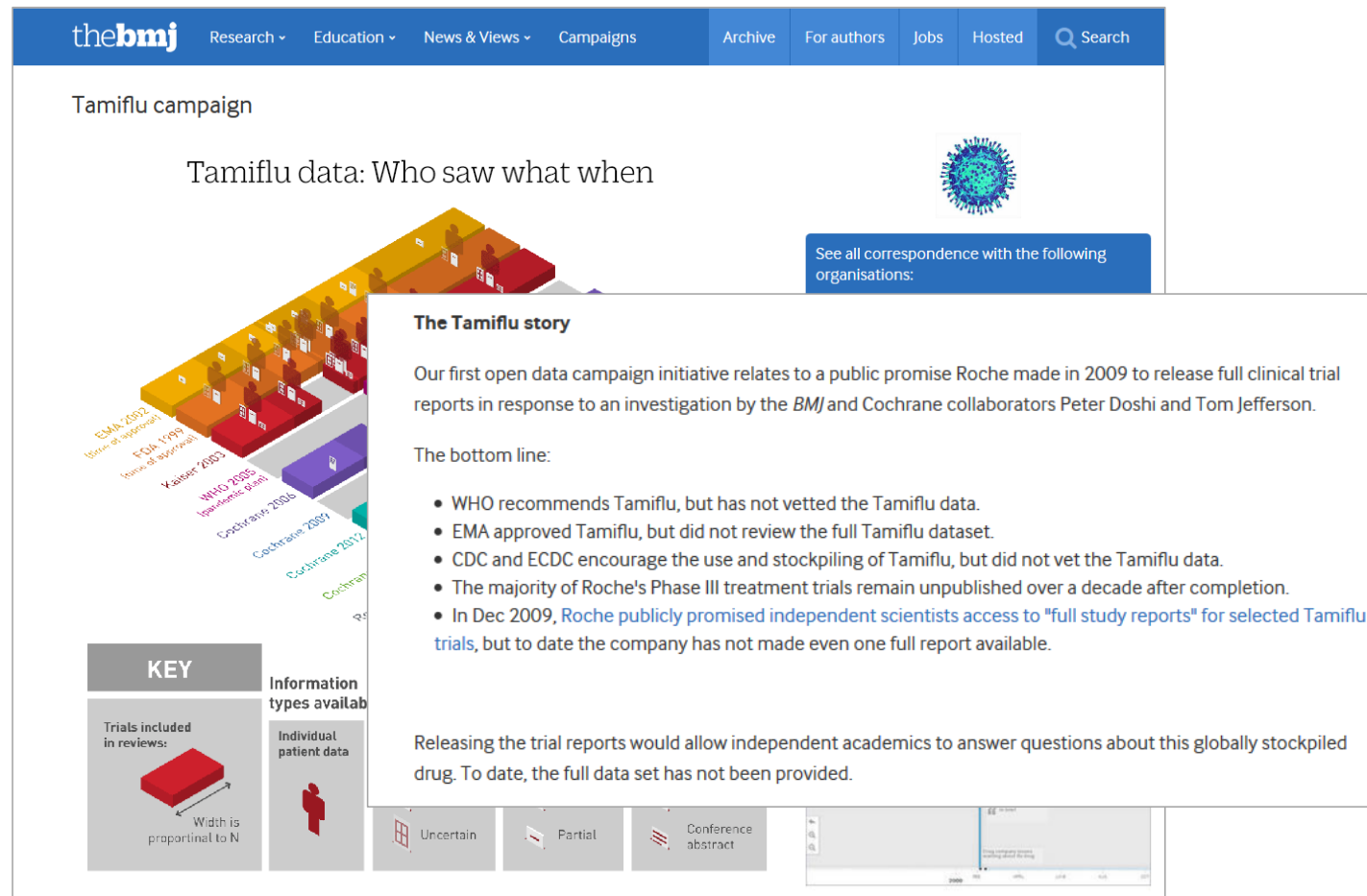
Dr Godlee qualified as a doctor in 1985, trained as a general physician in Cambridge and London, and is a fellow of the Royal College of Physicians. Since joining *The BMJ* in 1990 she has written on a broad range of issues, including the impact of environmental degradation on health, the future of the World Health Organization, the ethics of academic publication, and the problems of editorial peer review. In 1994 she spent a year at Harvard University as a Harkness fellow, evaluating efforts to bridge the gap between medical research and practice.

On returning to the UK, she led the development of *BMJ Clinical Evidence*, which evaluates the best available evidence on the benefits and harms of treatments and is now provided in 9 languages worldwide to over a million clinicians. In 2000 she moved to Current Science Group to establish the open access online publisher BioMed Central as editorial director

for medicine.

<https://tinyurl.com/y86jok9d>

## 2009-2015: bmj.com/tamiflu



# Correlation is not = Causation

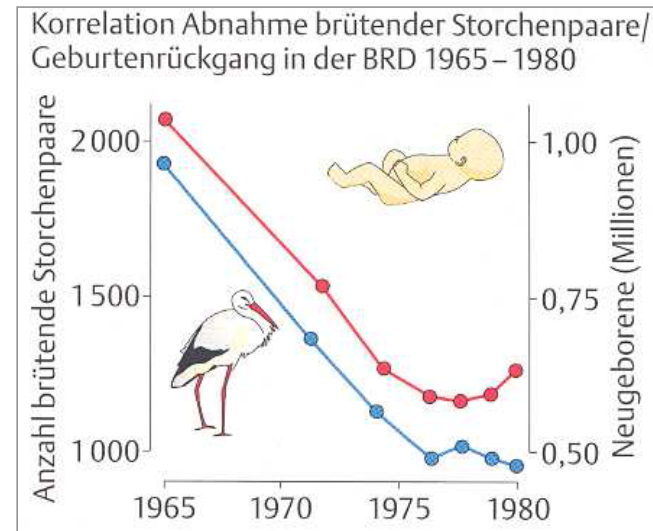
## Der Storch bringt die Babys zur Welt ( $p = 0.008$ )<sup>1</sup>

ROBERT MATTHEWS, BIRMINGHAM

Übersetzung: JOACHIM ENGEL, LUDWIGSBURG

**Zusammenfassung:** Dieser Aufsatz zeigt, dass eine statistisch hoch signifikante Korrelation zwischen der Anzahl der Störche und der Geburtenrate in den Ländern Europas besteht. Während Störche aber keine Babys zur Welt bringen können, kann eine unbeachtete Interpretation von Korrelation und  $p$ -Werten sehr wohl zu unzulässigen Schlüssen führen.

gen, wie man de  
hier begründet. C  
andere Zusamme  
Diäten und Krebs  
aus dafür entschei  
zuführen, um zu  
hung zwischen d  
Land und der G



# Risk literacy

HEALTHNEWSREVIEW.ORG PODCAST


**"In the 21st century, and in a democracy, health care should not systematically mislead the public about benefits and about harms."**

Gerd Gigerenzer  
Director of the Harding Center for Risk Literacy in Berlin,  
in a podcast interview with HealthNewsReview.org



Try it out...

[www.riskliteracy.org/try-it](http://www.riskliteracy.org/try-it)



The screenshot shows the RiskLiteracy.org website. The header is blue with the logo "RiskLiteracy.org" and the tagline "Science for Informed Decision Making". Below the header is a navigation bar with links: Home, Try It, Learn, About, For Researchers, and Contact. The main content area has two columns. The left column is titled "Test Your Risk Literacy" and contains a paragraph about the Berlin Numeracy Test, a validated research tool used to predict risk literacy in educated people. It mentions that participation is anonymous and that users can improve the test by clicking "next". The right column is titled "Learn about Risk Literacy" and contains a paragraph stating that risk is everywhere and that many people, including doctors, financial consultants, judges, and journalists, struggle to accurately perceive, evaluate, and communicate risks. It also includes a link to "LEARN". At the bottom of the page, there is a "WELCOME" message and a "next" button.



***Overdiagnosis is the biggest threat to the sustainability of the healthcare system***

Dr Paul Glasziou, Professor of Evidence-Based Medicine at Bond University



*Finding cases of cancer with a screening test (such as a mammogram or PSA test) that will never cause any symptoms. These cancers may just stop growing or go away on their own. Some of the harms caused by overdiagnosis are anxiety and having treatments that are not needed.*

Source: National Cancer Institute NCI - [www.cancer.gov](http://www.cancer.gov)

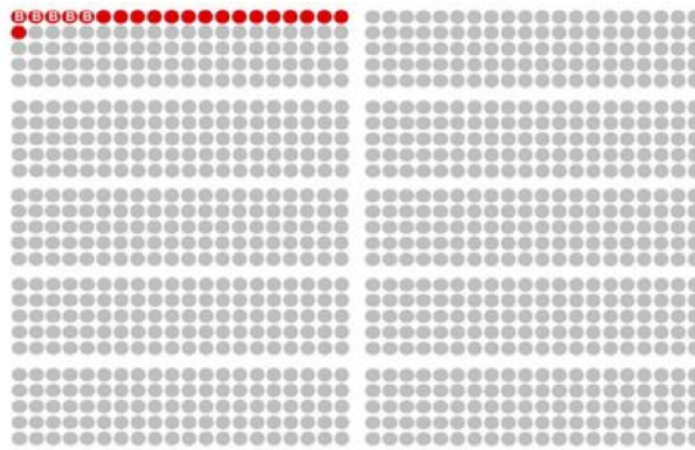
# Breast Cancer Early Detection



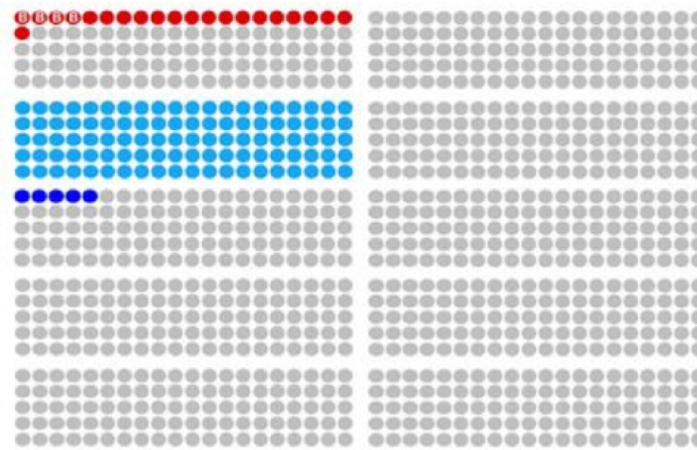
by mammography screening

Numbers for women aged 50 years or older who participated in screening for 10 years or more

1000 women without screening:



1000 women with screening:



④ Women who died from breast cancer:	5	4
● Women who died from all types of cancer:	21	21
● Women who learned after a biopsy that their diagnosis was a false-positive:	—	100
● Women who were diagnosed and treated for breast cancer unnecessarily:	—	5
● Remaining women:	979	874

**Source:**

Gøtzsche, PC, Jørgensen, KJ (2013). *Cochrane Database of Systematic Reviews* (6): CD001877

Numbers in the facts box are rounded. Where no data for women above 50 years of age are available, numbers refer to women above 40 years of age.

[www.harding-center.mpg.de](http://www.harding-center.mpg.de)

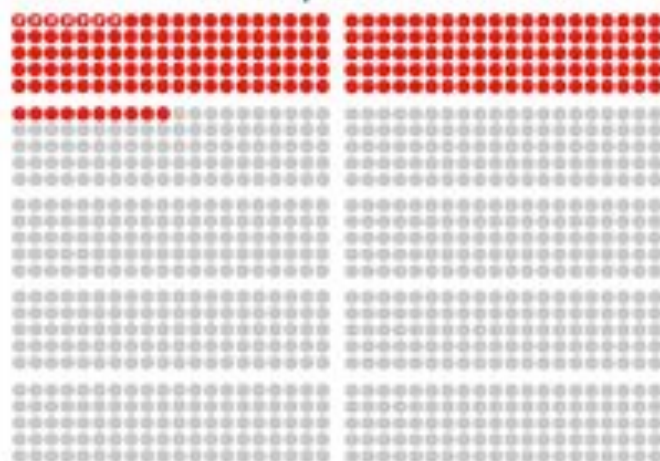
# Prostate Cancer Early Detection

by PSA testing and palpation of the prostate gland

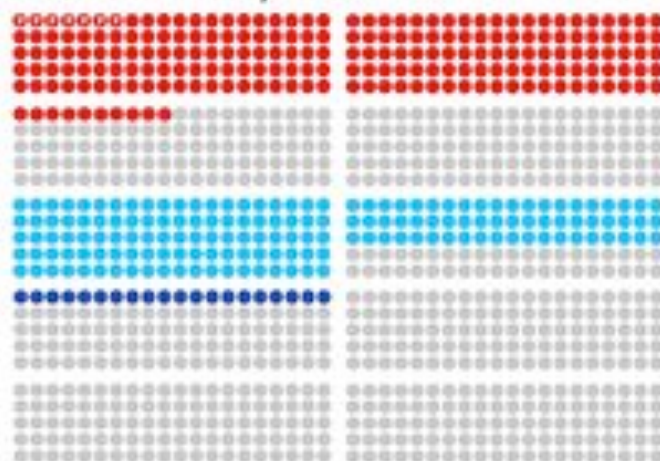
Numbers are for men aged 50 years and older, not participating vs. participating in early detection for 11 years



## 1000 men without early detection:



## 1000 men with early detection:



Men who died from prostate cancer:	7	7
Men who died from any cause:	210	210
Men who experienced a biopsy and a false alarm:	–	160
Men who were diagnosed and treated for prostate cancer unnecessarily:	–	20
Remaining men:	790	610

Source:  
Ilic et al. (2013) *Cochrane Database of Systematic Reviews*, Art. No.: CD004720.

<https://tinyurl.com/ybctctnr>



## Winding back the harms of too much medicine: Re-Check joined the 5th Preventing Overdiagnosis Conference in Québec City

By admin | September 4th, 2017 | Categories: Adverse effects - Effets indésirables, Approvals - Homologations, Breast cancer screening - Dépistage du cancer du sein, Clinical trials - Essais cliniques, Endometriosis - Endométriose, HPV - HPV/VPH, HPV vaccine - Vaccination anti-HPV, Overdiagnosis - Surdiagnostic | 0 Comments

**This post on our website contains a trove of links and presentations from the overdiagnosis academic conference**

Catherine Riva of Re-Check was selected by the organizers of the Conference to present the results



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<https://tinyurl.com/yb2e58jk>

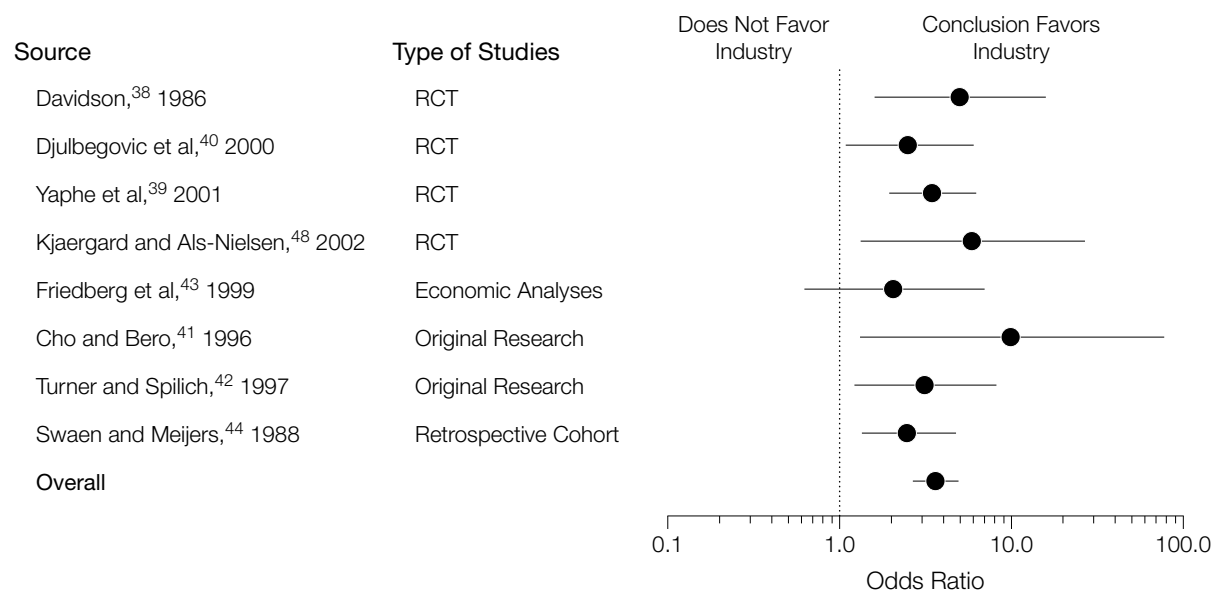
# Conflicts of Interest (COIs)

Why is that so important?

- Reciprocity
- Cognitive bias: framing, wish bias, self-serving bias, confirmation bias
- We are not capable of self-evaluating if and how far we are influenced
- Influence impact doesn't directly depend on the weight or importance of the perceived advantage

# What is COIs impact on studies outcome ?

**Figure.** Relation Between Industry Sponsorship and Study Outcome in Original Research Studies



RCT indicates randomized controlled trial. Error bars indicate 95% confidence intervals.



# Cognitive Bias

***“We are pattern seekers, believers in a coherent world”***

Daniel Kahnemann

Conclusion: fits to my expectations and wishes



confirming elements

invalidating elements.

The stronger expectation, advantage or threat to lose something is strong, the stronger this mechanism. Still: we feel objective = a wonderfully unconscious bias.

Source: Felser and Klemperer 2011

# Every actor in the health system tries to have an influence on our reporting

- Pharmaceutical, medical device industry
- Private and semi-public insurances
- University hospitals
- Key Opinion Leaders (KOLs), doctors and their organizations
- Patients' organizations
- NGOs
- Public health authorities

Easily labeled as  
“the bad guy”

**But what about the others?**

## Doctors and researchers aware of the problem

- Formindep ([www.formindep.org](http://www.formindep.org))
- MEZIS ([www.mezis.de](http://www.mezis.de))
- No grazie , pago io ([www.nograziepagoio.it](http://www.nograziepagoio.it))
- No Free Lunch ([www.nofreelunch.org](http://www.nofreelunch.org))
- No gracias ([www.nogracias.eu](http://www.nogracias.eu))
- Cochrane Collaboration
- Independent Drug Bulletins

# Tools



- PubMed ([www.pubmed.gov](http://www.pubmed.gov))
- Sci-Hub ([sci-hub.tw](http://sci-hub.tw))
- FDA ([www.fda.gov](http://www.fda.gov)), EMA ([www.ema.europa.eu](http://www.ema.europa.eu)), Swissmedic ([www.swissmedic.ch](http://www.swissmedic.ch))
- Disclosures (journals, medical associations)
- Patents: Patent Justia ([patents.justia.com](http://patents.justia.com))
- IQWiG ([www.iqwig.de](http://www.iqwig.de), [www.gesundheitsinformation.de](http://www.gesundheitsinformation.de))
- Cochrane Collaboration ([www.cochrane.org](http://www.cochrane.org)), Cochrane Suisse ([swiss.cochrane.org](http://swiss.cochrane.org)), Cochrane Library (<http://www.cochranelibrary.com>)
- Swiss Medical Board ([www.medical-board.ch](http://www.medical-board.ch))
- Prescrire/F, Minerva/B + other ISDB drug bulletins ([www.isdbweb.org](http://www.isdbweb.org)) (Infomed, pharma-kritik, Arznei-Telegramm)
- HealthNewsReview.org ([www.healthnewsreview.org](http://www.healthnewsreview.org))
- FOIA (request letters generator [www.ifoia.org](http://www.ifoia.org))
- Catalogue of bias ([catalogofbias.org](http://catalogofbias.org))
- If you are lost: professors emeritus who are familiar with methodology and biostatistics

## Pilule d'Or 1981-2017

Depuis 1981, la "**Pilule d'Or**" est attribuée aux médicaments qui constituent un progrès thérapeutique décisif dans un domaine où patients et soignants étaient totalement démunis.



2017 (n° 412)	(non attribuée)
2014 (n° 376)	ORPHACOL° (acide cholique)
2007 (n° 292)	CARBAGLU° (acide carglumique) (ré-analyse avec recul)
2006 (n° 280)	ORFADIN° (nitisinone)
1998 (n° 192)	CRIXIVAN° (indinavir)
1996 (n° 169)	DIGIDOT° (anticorps antidigitaliques) (1)
1992 (n° 125)	SURFEXO° (surfactant pulmonaire) (1)
1989 (n° 92)	EPREX° (époétine alfa) • MECTIZAN° (ivermectine)
1988 (n° 81)	LARIAM° (méfloquine) • RETROVIR° (zidovudine)
1987 (n° 71)	LUTRELEF° (gonadoréline) • DÉCAPEPTYL° (triptoréline)
1986 (n° 61)	ZOVIRAX° intraveineux et comprimés (aciclovir)
1983 (n° 31)	LOPRIL° (captopril)
1981 (n° 10)	VACCIN HEVAC B° (vaccin hépatite B)

Aucune Pilule d'Or n'a été attribuée en 1982, 1984, 1985, 1990, 1991, de 1993 à 1995, en 1997, de 1999 à 2005, de 2008 à 2013, et en 2015 et 2016.

1- Spécialité qui n'est plus commercialisée en France.

The award for an innovative drug could'nt be assigned to ANY DRUG

- 1982
- 1984
- 1985
- 1990
- 1991
- 1993-1995
- 1997
- 1999-2005
- 2008-2013
- 2015
- 2016

# Beware of the hype

Life-saving drug

Promising treatment

Personalized medicine

Hope

**Revolutionary treatment**

Game-changer

Spectacular discovery

Prestigious medical journal

Miracle



## 3 principles

1. Read the paper!
2. Background check on facts and persons, regardless of their reputation
3. Ask the question: cui bono?



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