



# Evidently Cochrane

**Tianjing Li, MD, MHS, PhD**

Associate Professor  
Department of Ophthalmology  
School of Medicine  
University of Colorado Denver

Department of Epidemiology  
Johns Hopkins Bloomberg School of Public Health

Prince Mahidol Award Youth Program Conference  
Mentor Session  
Bangkok, Thailand  
January 29, 2020



## Conflict of Interest Disclosure

- Funding:  
Grant UG1EY020522 (PI: Tianjing Li),  
the National Eye Institute, National  
Institutes of Health, USA.
- I do not have any other potential conflicts  
of interest to disclose.

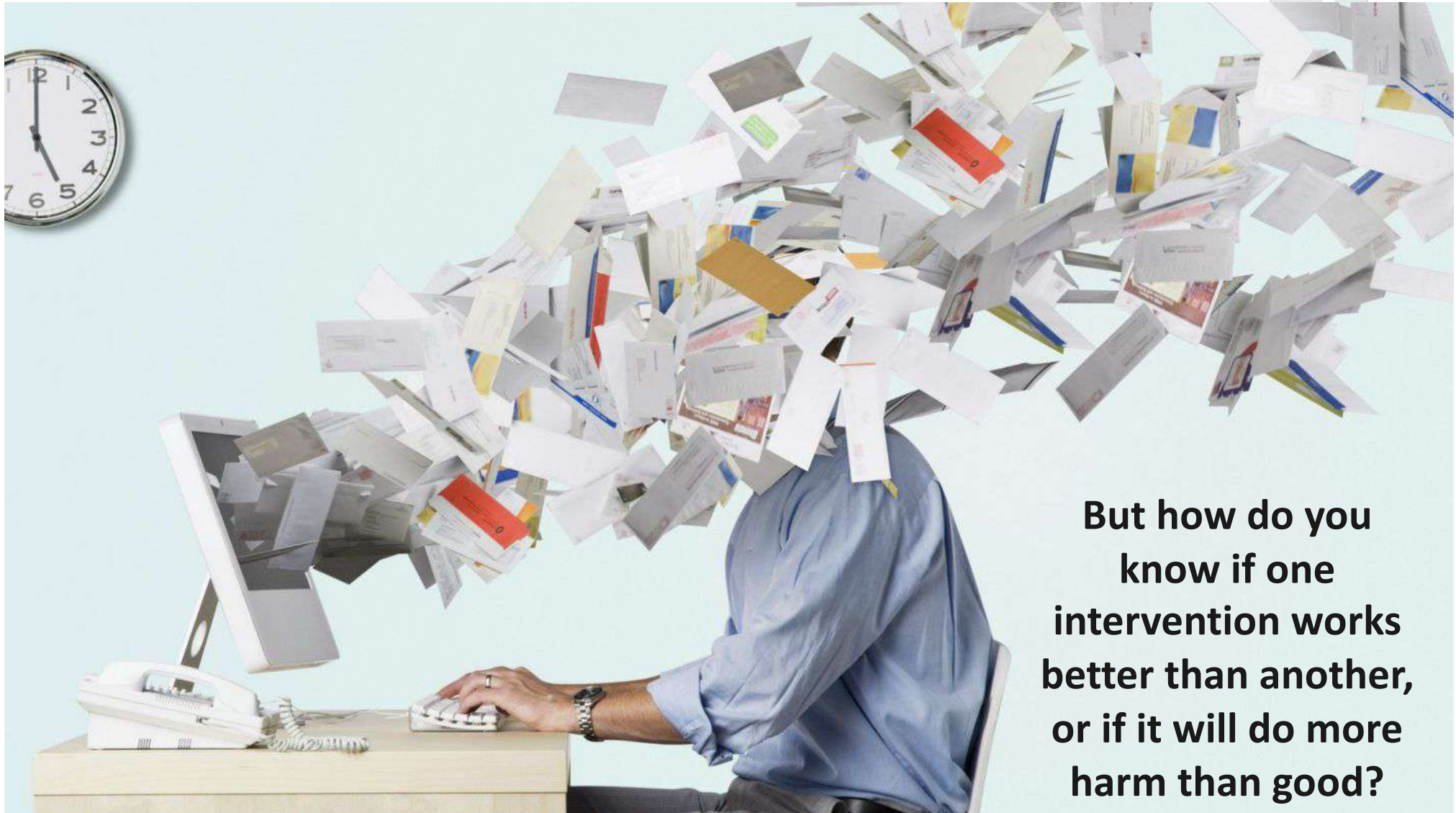


# Why Evidence is Important



Trusted evidence.  
Informed decisions.  
Better health.

## Information About Health and Healthcare is Everywhere



**But how do you  
know if one  
intervention works  
better than another,  
or if it will do more  
harm than good?**

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## Alcohol

This article is more than 8 months old

# No healthy level of alcohol consumption, says major study

**Governments should consider advising people to abstain entirely, say authors**

**Sarah Boseley** Health editor

Thu 23 Aug 2018 18.30 EDT



8,544



▲ The study contradicts most national guidelines which say there may be health benefits to one or two glasses of wine. Photograph: Inti St Clair/Getty Images/Blend Images

Even the occasional drink is harmful to health, according to the largest and

groups, and federal agencies, including the National Institutes of Health (NIH), has just issued new clinical guidelines aimed at preventing peanut allergy [1]. The guidelines suggest that parents should introduce most babies to peanut-containing foods around the time they begin eating other solid foods, typically 4 to 6 months of age. While early introduction is especially important for kids at particular risk for developing allergies, it is also recommended that high-risk infants—those with a history of severe eczema and/or egg allergy—undergo a blood

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### most viewed in US



I thought 'Secret Daddy' was bad enough. Now I've discovered something worse



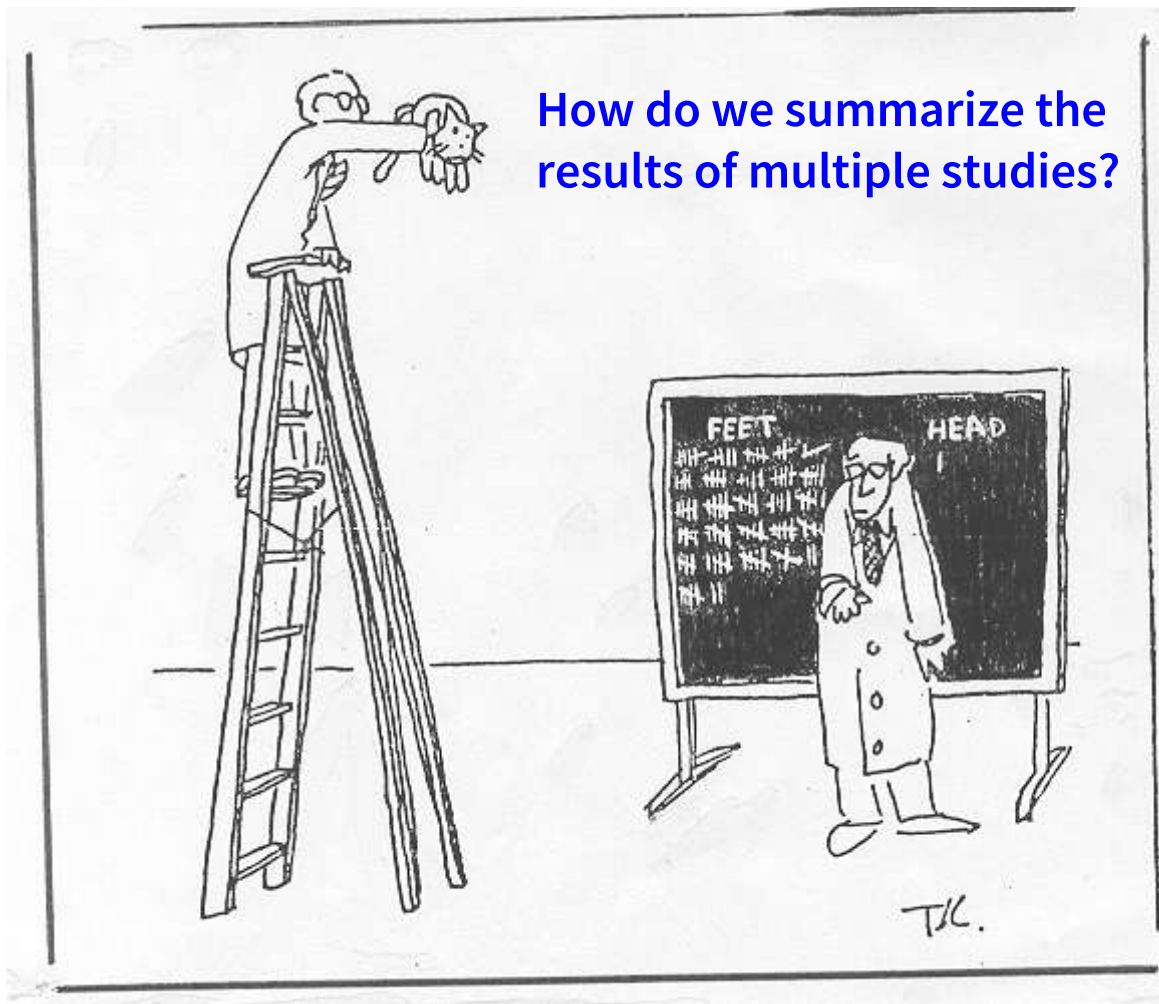
William Barr: is his defence of Trump paving the road to tyranny?



Passengers escape after plane skids off runway into river in Jacksonville, Florida



Blind date: 'He asked if I wanted "a little prick"'



How do we summarize the results of multiple studies?

“The hundreds of hours spent conducting a scientific study ultimately contribute only a piece of an enormous puzzle. **The value of any single study is derived from how it fits with and expands previous work, as well as from the study's intrinsic properties.** Through systematic review the puzzle's intricacies may be disentangled.”

- Cynthia D Mulrow, Senior Deputy Editor of Annals of Internal Medicine

- Is yoga effective for improving health-related quality of life, mental health, and cancer-related symptoms in women diagnosed with breast cancer?
- Is “early” epidural as effective and safe as “late” epidural for women in labor?
- Does IVF increase the risk of breast cancer?
- Does formaldehyde exposure increase the risk of leukemia?

## **Cochrane** Typical Questions Outside of Medicine

- Does spending more money on schools improve educational outcomes?
- Do women or men make better leaders?
- Does sexual orientation of the parent matter?
- Are fathers more likely than mothers to treat their sons and daughters differently?
- Is job absenteeism an indicator of job dissatisfaction?





## **Yoga for women diagnosed with breast cancer**

### **What did we find?**

We found 24 studies that involved 2166 women. Our evidence is current to January 2016...

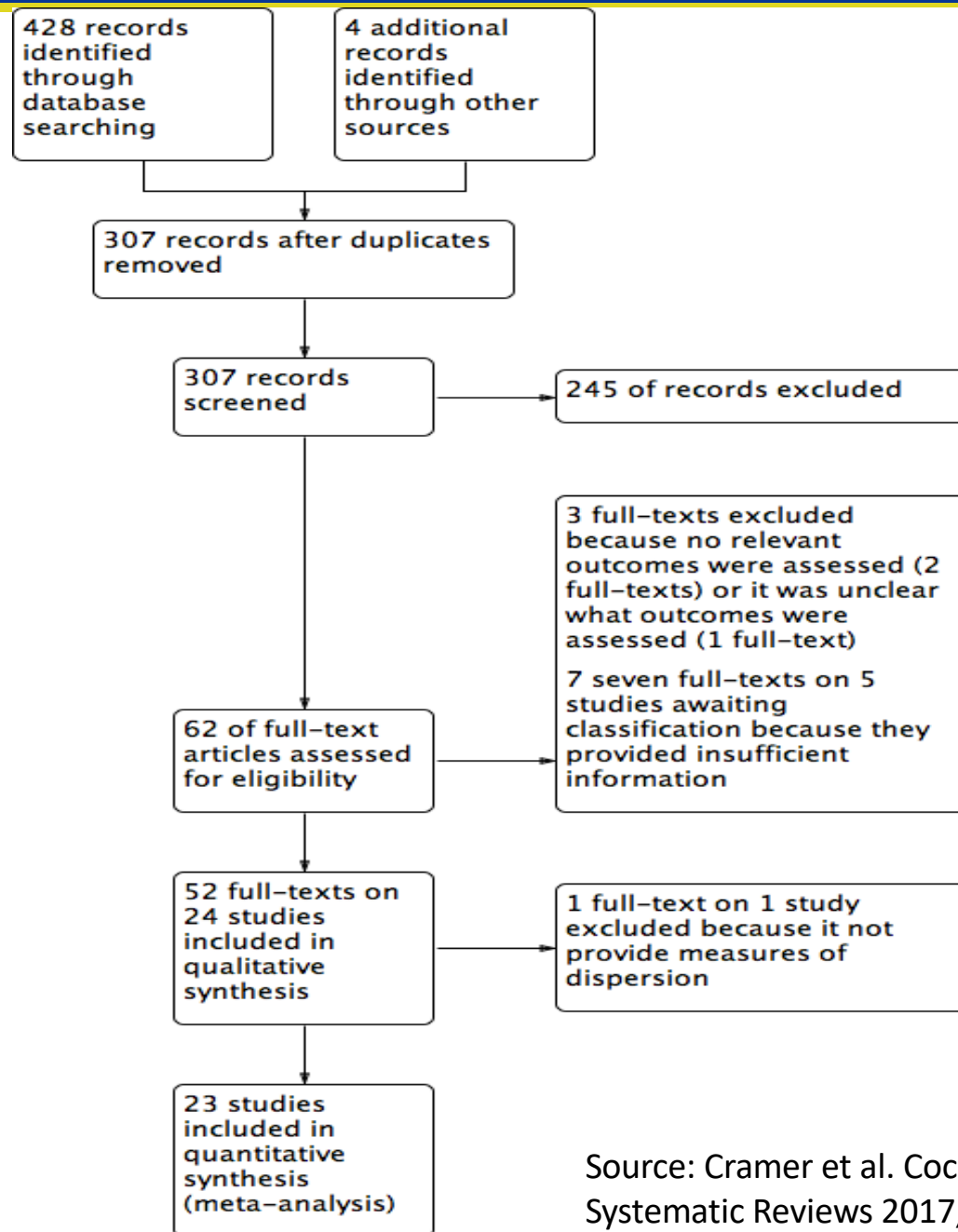
We found that yoga was more effective than no therapy in improving quality of life and reducing fatigue and sleep disturbances. We also found that yoga was better for reducing depression, anxiety and fatigue in women when compared with psychosocial or educational interventions such as counselling...Studies have poorly reported risks of yoga. However, we found no evidence of serious risks of yoga among women with a diagnosis of breast cancer.

### **What does this mean?**

Our findings indicate that women with a diagnosis of breast cancer can use yoga as supportive therapy for improving their quality of life and mental health, in addition to standard cancer treatments.

Source: Cramer et al. Cochrane Database of Systematic Reviews 2017, Issue 1.

# Yoga for Women Diagnosed With Breast Cancer



Source: Cramer et al. Cochrane Database of Systematic Reviews 2017, Issue 1.

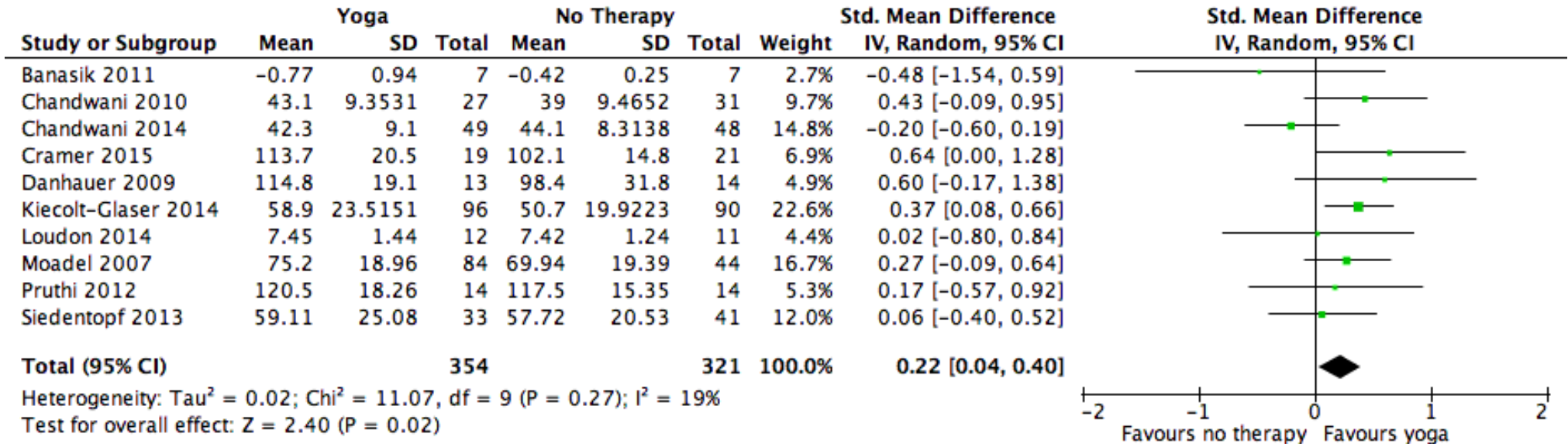
# Yoga for Women Diagnosed With Breast Cancer

Author (Year)	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Banasik 2011	?	?	?	?	+	+	-
Banerjee 2007	+	+	?	?	-	+	+
Bernardi 2013	+	?	?	?	?	+	+
Bower 2012	+	+	+	?	+	+	+
Carson 2009	+	+	?	+	+	+	+
Chakrabarty 2015	+	+	?	?	+	?	?
Chandwani 2010	+	?	?	?	?	+	+
Chandwani 2014	+	?	?	?	+	+	+
Cramer 2015	+	+	-	?	+	+	+
Danhauer 2009	?	?	?	?	+	+	+
Kiecolt-Glaser 2014	+	+	-	+	+	?	+
Kovacic 2013	+	+	-	+	?	-	+
Litman 2012	+	?	?	-	+	+	+
Lötzke 2016	?	?	?	?	?	+	?
Loudon 2014	+	+	?	+	+	-	-
Moadel 2007	?	?	?	?	+	+	+
Mustian 2013	+	+	-	+	+	-	+
Pruthi 2012	?	?	?	?	+	+	+
Raghavendra 2007	+	+	?	?	-	+	-
Siedentopf 2013	+	+	?	?	-	+	+
Taso 2014	+	+	?	?	+	+	+
Vadhiraja 2009	+	+	-	?	-	-	+
Vardar Yagil 2015	?	+	?	?	-	+	+
Wang 2014	?	-	?	?	+	+	-

Source: Cramer et al. Cochrane Database of Systematic Reviews 2017, Issue 1.

# Yoga for Women Diagnosed With Breast Cancer

Forest plot of comparison: yoga versus no therapy, outcome: health-related quality of life short-term



# Yoga for Women Diagnosed With Breast Cancer

## Yoga versus no therapy for women with diagnosed breast cancer

**Patient or population:** women with diagnosed breast cancer

**Settings:** inpatient and outpatient facilities

**Intervention:** yoga

**Comparison:** no therapy

Outcomes	Illustrative comparative risks* (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
	Corresponding risk			
	Yoga vs no therapy			
<b>Health-related quality of life (short-term)</b> Self-assessed questionnaires Follow-up: 5-12 weeks	Mean health-related quality of life in intervention groups was <b>0.22 standard deviations higher</b> (0.06 to 0.38 higher)	675 (10 studies)	⊕⊕⊕⊕ <b>Moderate<sup>a</sup></b>	SMD 0.22 (95% CI 0.04 to 0.40)
<b>Health-related quality of life (medium-term)</b> Self-assessed questionnaires Follow-up: 30-48 weeks	Mean health-related quality of life in intervention groups was <b>0.10 standard deviations higher</b> (0.23 lower to 0.42 higher)	146 (2 studies)	⊕⊕⊕⊕ <b>Low<sup>b,c</sup></b>	SMD 0.10 (95% CI -0.23 to 0.42)
<b>Depression (short-term)</b> Self-assessed questionnaires Follow-up: 6-12 weeks	Mean depression in intervention groups was <b>0.13 standard deviations lower</b> (0.31 lower to 0.05 higher)	496 (7 studies)	⊕⊕⊕⊕ <b>Low<sup>b</sup></b>	SMD -0.13 (95% CI -0.31 to 0.05)
<b>Anxiety (short-term)</b>	Mean anxiety in intervention groups was	346	⊕⊕⊕⊕	SMD -0.53 (95% CI -1.10 to

Summary of findings for the main comparison. Yoga versus no therapy for women with diagnosed breast cancer



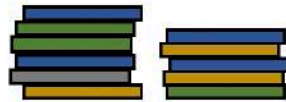
## PREPARE TOPIC

- Formulate research question(s)
- Develop analytic framework



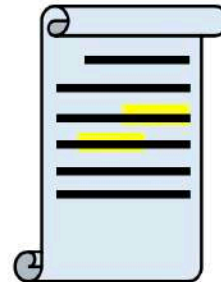
## SEARCH FOR STUDIES

- Define eligibility criteria
- Search for relevant studies



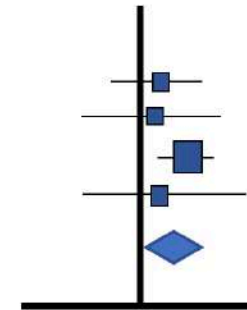
## SCREEN STUDIES

- Screen studies for inclusion



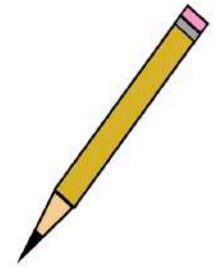
## ABSTRACT DATA

- Abstract data from included studies
- Assess risk of bias
- Construct evidence tables



## ANALYZE AND SYNTHESIZE DATA

- Conduct qualitative synthesis
- Conduct quantitative synthesis (ie, meta-analysis) if appropriate
- Assess the strength of evidence



## REPORT FINDINGS

A **systematic review** attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a specific research question.

# Why Systematic Reviews Important?

- Aim to capture all the relevant high quality evidence (comprehensive search)
- May provide a pooled estimate of effect from all studies (increase power and precision)
- Analyse the risk of bias of included studies and the certainty of the evidence
- The basis for most credible guidelines



The Concept of a Systematic Review





## About Cochrane

Trusted evidence.  
Informed decisions.  
Better health.





**Archibald Leman Cochrane  
(1909-1988)**

**British physician &  
epidemiologist**

## Why “Cochrane”?

**"It is surely a great criticism of our profession that we have not organised a **critical summary**, by specialty or subspecialty, adapted periodically, **of all relevant randomised controlled trials.**"**

- His challenge led to the establishment during the 1980s of an international collaboration to develop the *Oxford Database of Perinatal Trials*.



Our evidence

**Cochrane's vision:** a world of improved health where decisions about health and health care are informed by high-quality, relevant, and up-to-date synthesized research evidence

**Cochrane's mission:** to promote evidence informed health decision-making by producing high-quality, relevant, accessible systematic reviews and other synthesized research evidence



- Cochrane is a **not-for-profit** international network of **36,000** contributors from over **130 countries**.  
Over **70%** of these people are **authors** of Cochrane Reviews.
- Cochrane.org web visits increased from 5.7 million in 2015 to over **15 million in 2017**.
- Cochrane Reviews were cited in close to **90% of all WHO guidelines**.

(<http://www.community.Cochrane.org>, accessed February 2019)



## World map showing locations of all Review Groups, Geographic Groups, and Fields

(<http://www.community.Cochrane.org>, accessed February 2019)



## Structure

Since key persons for proposed objectives are scattered across many institutes around Thailand, the most practical initial structure to provide the support needed would seem to be a network. At least for the initial three years, the Co-ordinating Office will be at the Faculty of Medicine, Khon Kaen University.

## Nodes

Faculty of Medicine, **Khon Kaen University**

Faculty of Medicine, **Chiang Mai University**

Clinical Epidemiology Unit, Faculty of Medicine, **Chulalongkorn University**

Clinical Epidemiology Unit, Faculty of Medicine, Siriraj Hospital,

**Mahidol University**

Faculty of Medicine, **Prince of Songkla University**

**Department of Medical Services, Ministry of Public Health**

**BMA Medical College and Vajira Hospital**

**Lamphun Hospital**

**Kalasin Hospital**

**Khon Kaen Hospital**

## Objectives

- To disseminate the concept and importance of research synthesis in health care, health education, and health research.
- To provide information about Cochrane.
- To organize training workshops for preparing Cochrane reviews and how to use the Cochrane software (RevMan).
- To promote use of and contributions to the Cochrane Library and the WHO Reproductive Health Library (RHL).
- To identify reports of controlled trials published in Thai medical and healthcare journals.



## ***About The Cochrane Library***

A large image showing a globe made of interlocking puzzle pieces. The globe is rendered in shades of blue and white, with the puzzle pieces creating a textured, three-dimensional effect. The globe is positioned on the left side of the slide, and the right side is dominated by a large, stylized graphic of a purple cross or plus sign.

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Trusted evidence.  
Informed decisions.  
Better health.

Title Abstract Keyword

Browse Advanced search

Cochrane Reviews

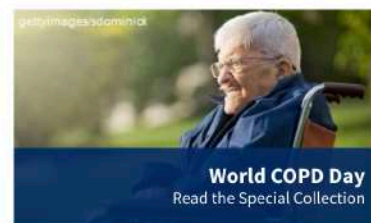
Trials

Clinical Answers

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Highlighted Reviews

Editorials

Special Collections

**Interventions to slow progression of myopia in children**

Jeffrey J Walline, Kristina B Lindsley, S. Swaroop Vedula, Susan A Cotter, Donald O Mutti, Sueko M Ng, J. Daniel Twelker

13 January 2020

**Antibiotics versus topical antiseptics for chronic suppurative otitis media**

Karen Head, Lee-Yee Chong, Mahmood F Bhutta, Peter S Morris, Shyan Vijayasekaran, Martin J Burton, Anne GM Schilder, Christopher G Brennan-Jones

6 January 2020

**Caregiver involvement in interventions for improving children's dietary intake and physical activity behaviors**

Emily H Morgan, Anel Schoonees, Urshila Sriram, Marlyn Faure, Rebecca A Seguin-Fowler

5 January 2020

**Decompressive craniectomy for the treatment of high intracranial pressure in closed traumatic brain injury**

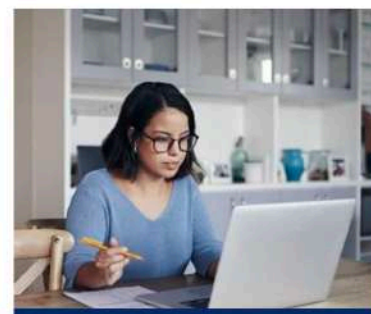
Juan Sahuquillo, Jane A Dennis

31 December 2019

**Transcatheter aortic valve implantation versus surgical aortic valve replacement for severe aortic stenosis in people with low surgical risk**

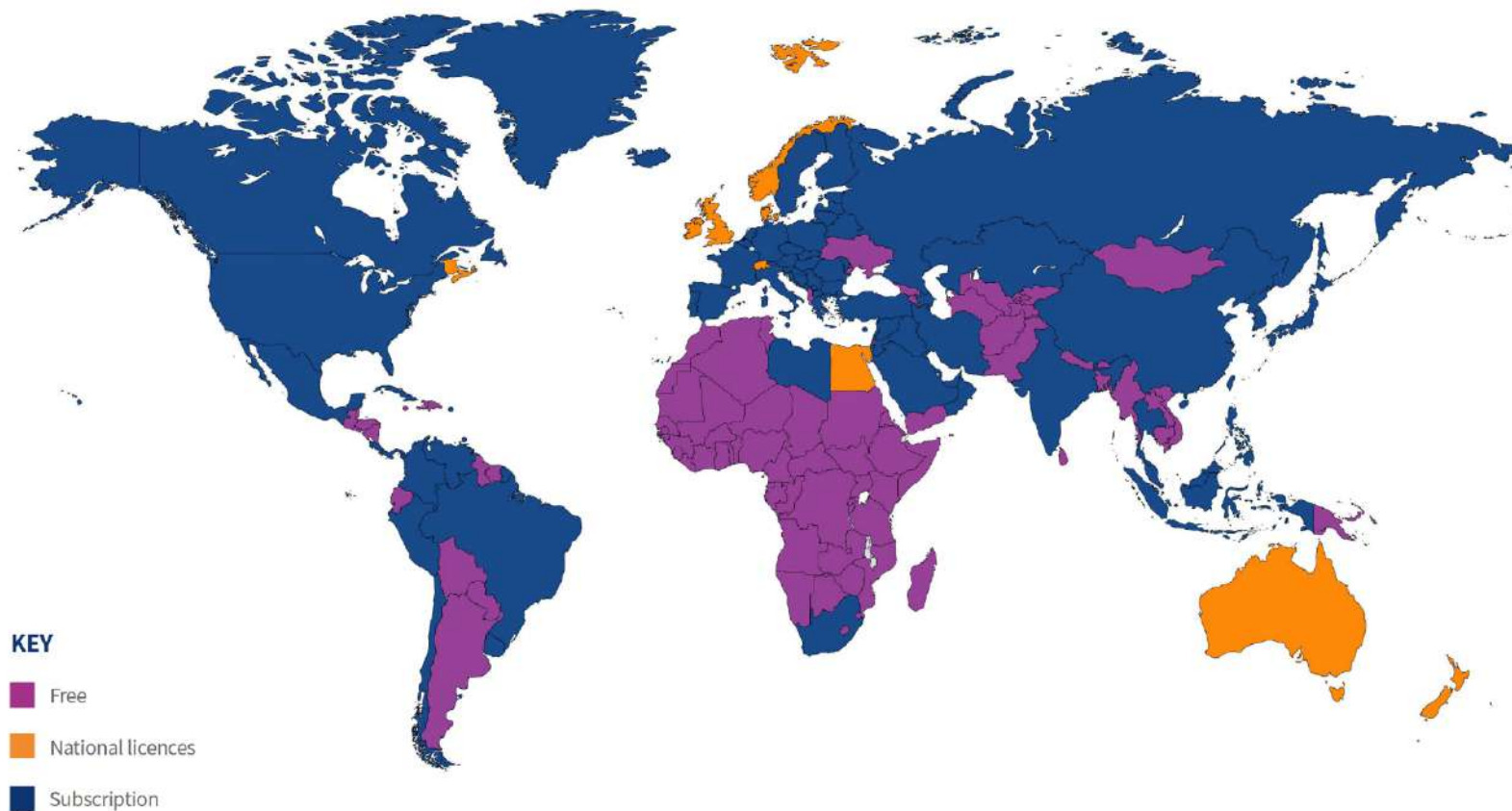
Ahmed A Kolkailah, Rami Doukky, Marc P Pelletier, Annabelle S Volgman, Tsuyoshi Kaneko, Ashraf F Nabhan

20 December 2019



View Current Issue

## Geographical Reach and Access to *The Cochrane Library*



As of 2019, 2.1 billion people in 133 countries had ‘one-click’ access to more than 10,000 full text Cochrane systematic reviews and protocols.

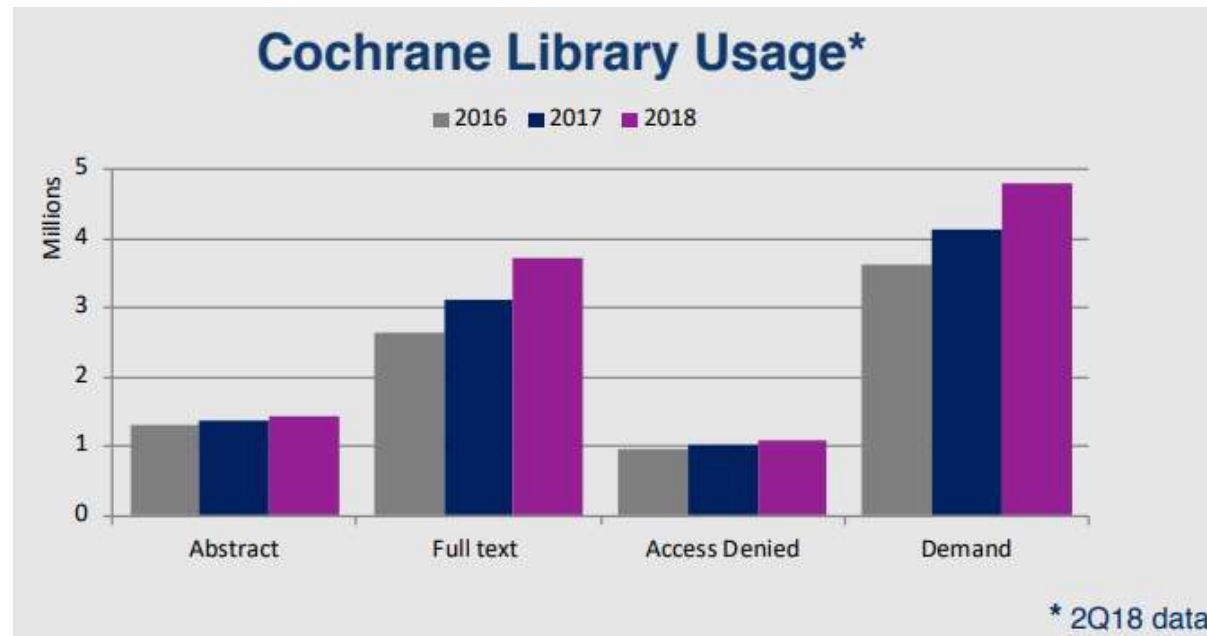


# Cochrane **Why Publish a Cochrane Review?**

## *Cochrane Library Usage*

- **12.5 million** Review downloads were made from the Cochrane Library in 2017 (up 28% from 2016)
- Free access in **over 100 low and middle-income countries** (LMIC) including approximately 2.1 billion people
- **70% of Cochrane.org usage** is viewing **non-English** content

**The Cochrane Library Impact factor was 7.755 in 2018**



# Resources to assist with review production

← → ↻ 🏠 <https://community.cochrane.org/review-production/production-resources>

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Review production

Organizational info

Help

News and events

## Production resources

Home > Review production > Production resources

From start to finish and all the steps in between – learn about the many resources available to help with producing Cochrane Reviews.

- [Enhanced Cochrane Library project](#)
- [Cochrane Review Ecosystem](#)
- [Production resources](#)
  - [Proposing and registering new Cochrane Reviews](#)
  - [Editorial and Publishing Policy Resource \(EPPR\)](#)
  - [Fast-Track Service](#)
  - [Living systematic reviews](#)
  - [MECIR](#)
  - [Prioritization work by Cochrane Review Groups](#)
  - [Plain Language Summaries](#)
  - [Cochrane Priority Reviews List](#)
  - [Style Manual](#)
  - [Targeted Updates project](#)
  - [Training](#)
- [Knowledge Translation](#)

Proposing and registering new Cochrane Reviews



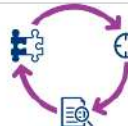
Editorial and Publishing Policy Resource (EPPR)



Fast-Track Service



Living systematic reviews



MECIR



Prioritization work by Cochrane Review Groups



Plain Language Summaries



Cochrane Priority Reviews List



Style Manual



Targeted Updates project



Training



## Cochrane Handbook for

# Systematic Reviews of Interventions

SECOND EDITION



Edited by

**Julian P. T. Higgins**

**James Thomas**

Associate Editors

**Jacqueline Chandler · Miranda Cumpston**

**Tianjing Li · Matthew J. Page · Vivian A. Welch**

**WILEY** Blackwell



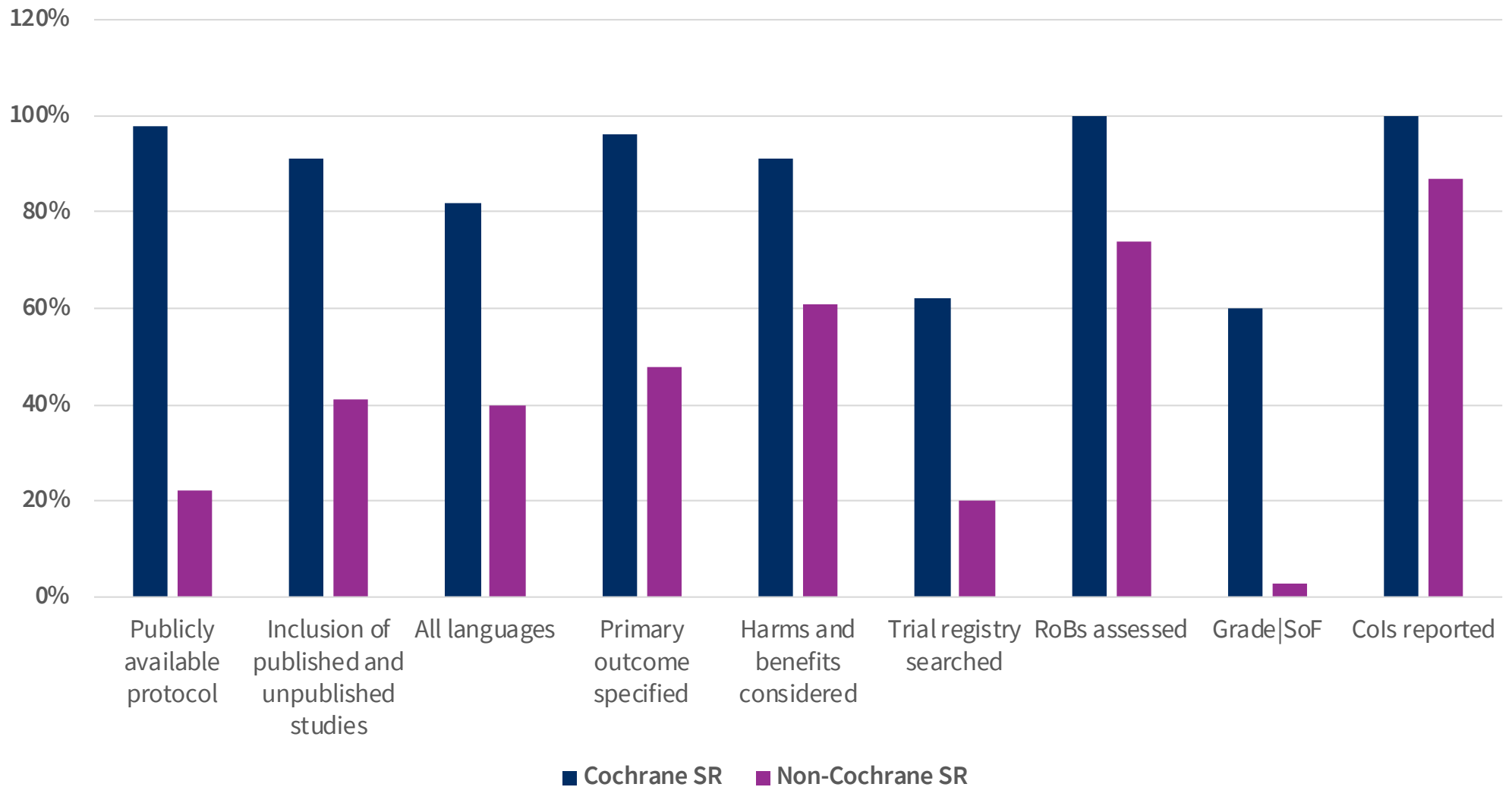
# Cochrane Exists So That Health Care Decisions Get Better



## What are the Hallmarks of Quality of Systematic Reviews?

- Protocol published
  - Peer review to ensure relevance
- Focus on the right question: PICO
- Minimize conflicts of interest
- Consistent, rigorous and transparent processes and methods
- Comprehensive search
- Responsible reporting of results:
  - No spin
  - Absolute and relative effect estimates
  - Harms
  - Use of GRADE







# How Cochrane Reviews Can Improve Decisions



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Informed decisions.  
Better health.

# Systematic Reviews and Guidelines



- American Academy of Ophthalmology (AAO) publishes 23 preferred practice patterns (PPPs) on specialty topics; PPPs updated every 5 years
- Cochrane Eyes and Vision US Project
  - Identify potentially relevant systematic reviews
  - Assess reliability of relevant systematic reviews
  - Share reliable relevant systematic reviews with AAO to inform guideline recommendations





# Systematic Reviews and Guidelines (cont'd)

## Select Types

- Clinical Statements
- Compendium
- Complementary Therapy Assessments
- Ophthalmic Technology Assessments
- Patient Safety Statements
- Preferred Practice Patterns
- Guidelines
- Clinical Questions

### Dry Eye Syndrome PPP - 2018

NOV 2018 from AAO PPP Cornea/External Disease Committee, Hoskins Center for Quality Eye Care

Evidence-based update using **Cochrane Eyes and Vision Group** identified systematic reviews detailing recommendations for the initial evaluation and treatment of a patient with dry eye and a detailed discussion of diagnostic tests.

Preferred Practice Pattern Guideline

Comments 0  
Views 2181

### Blepharitis PPP-2018

NOV 2018 from AAO PPP Cornea/External Disease Committee, Hoskins Center for Quality Eye Care

Evidence-based update using **Cochrane Eyes and Vision Group** identified systematic reviews detailing recommendations for the initial evaluation of a patient with presumed blepharitis, and for diagnostic tests and treatment.

Comments 0  
Views 2098

Altogether, Cochrane Eyes and Vision US Project has supported the update of 18/23 PPPs since 2015.

initial evaluation, diagnosis, and management of post-LASIK and other corneal ectasias, including a discussion of existing and emerging surgical treatments.

Preferred Practice Pattern Guideline

## Most Commented

1. Can You Guess January's Mystery Condition?
2. Pressure-Based Method to Move Vitreous
3. Displacing a Large Submacular Hemorrhage

### Conjunctivitis PPP - 2018

NOV 2018 from AAO PPP Cornea/External Disease Committee, Hoskins Center for Quality Eye Care

Evidence-based update using **Cochrane Eyes and Vision Group** identified systematic reviews for the initial evaluation and diagnosis of conjunctivitis patients and discussion of associated or predisposing factors, the natural history of each type of conjunctivitis and treatment recommendatio...

Preferred Practice Pattern Guideline

Comments 0  
Views 1653

## Most Viewed

1. FDA approves Rocklatan for open-angle glaucoma, ocular hypertension
2. Displacing a Large Submacular Hemorrhage
3. Steroids for NAION

### Corneal Edema and Opacification PPP - 2018

NOV 2018 from AAO PPP Cornea/External Disease Committee, Hoskins Center for Quality Eye Care

Evidence-based update using **Cochrane Eyes and Vision Group** identified systematic reviews for the initial evaluation and diagnosis of corneal edema and corneal opacification. Management approaches for edema and opacification, including surgical approaches, are discussed separ...

Preferred Practice Pattern Guideline

Comments 0  
Views 1278

### Bacterial Keratitis PPP - 2018

NOV 2018 from AAO PPP Cornea/External Disease Committee, Hoskins Center for Quality Eye Care

Evidence-based update using **Cochrane Eyes and Vision Group** identified systematic reviews on the diagnosis and management of bacterial keratitis. It contains detailed recommendations for the initial evaluation of a patient with presumed bacterial keratitis, and for diagnostic...

Preferred Practice Pattern Guideline

Comments 0  
Views 1597

# Identification and Description of Reliable Evidence for 2016 American Academy of Ophthalmology Preferred Practice Pattern Guidelines for Cataract in the Adult Eye

Mayo-Wilson et al. *BMC Ophthalmology*. (2017) 17:164  
DOI 10.1186/s12886-017-0561-9

## Evaluation of Systematic Reviews of Interventions for Retina and Vitreous Conditions

Jimmy T. Le, MA, ScD; Riaz Qureshi, MSc; Claire Twose, MLIS; Lori Rosman, MLS; Genie Han, MS; Kolade Fapohunda, BS; Ian J. Saldanha, MBBS, MPH, PhD; Roberta W. Scherer, PhD; Flora Lum, MD; Ali Al-Rajhi, PhD, MPH; David C. Musch, PhD, MPH; Barbara S. Hawkins, PhD; Kay Dickersin, MA, PhD; Tianjing Li, MD, MHS, PhD

**IMPORTANCE** Patient care and clinical practice guidelines should be informed by evidence from reliable systematic reviews. The reliability of systematic reviews related to forthcoming guidelines for retina and vitreous conditions is unknown.

**OBJECTIVES** To summarize the reliability of systematic reviews on interventions for 7 retina and vitreous conditions, describe characteristics of reliable and unreliable systematic reviews, and examine the primary area in which they appeared to be lacking.

**DESIGN, SETTING, AND PARTICIPANTS** A cross-sectional study of systematic reviews was conducted. Systematic reviews of interventions for retina- and vitreous-related conditions in a database maintained by the Cochrane Eyes and Vision United States Satellite were identified. Databases that the reviewers searched, whether any date or language restrictions were applied, and bibliographic information, such as year and journal of publication, were documented. The initial search was conducted in March 2007, and the final update was performed in July 2018. The conditions of interest were age-related macular degeneration; diabetic retinopathy; idiopathic epiretinal membrane and vitreomacular traction; idiopathic macular hole; posterior vitreous detachment; retinal breaks; and lattice degeneration; retinal

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as searched for systematic  
/ corneal disease, combining eyes  
validated search filter.

+ Suppl

# How Evidence is Changing



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## Evidence at a Crossroads...

**‘There is a problem  
with the E in EBM’**

**The Evidence-Based Medicine Manifesto for Better  
Healthcare**

BMJ 2017; 357 doi: <https://doi.org/10.1136/bmj.j2973>



**Professor Carl Heneghan  
Director, Center for  
Evidence Based Medicine @  
University of Oxford**

## A Crisis of 'Realism'

**Influence  
of Pharma**

**Don't involve  
end users  
enough**

**RCTs too  
limited**

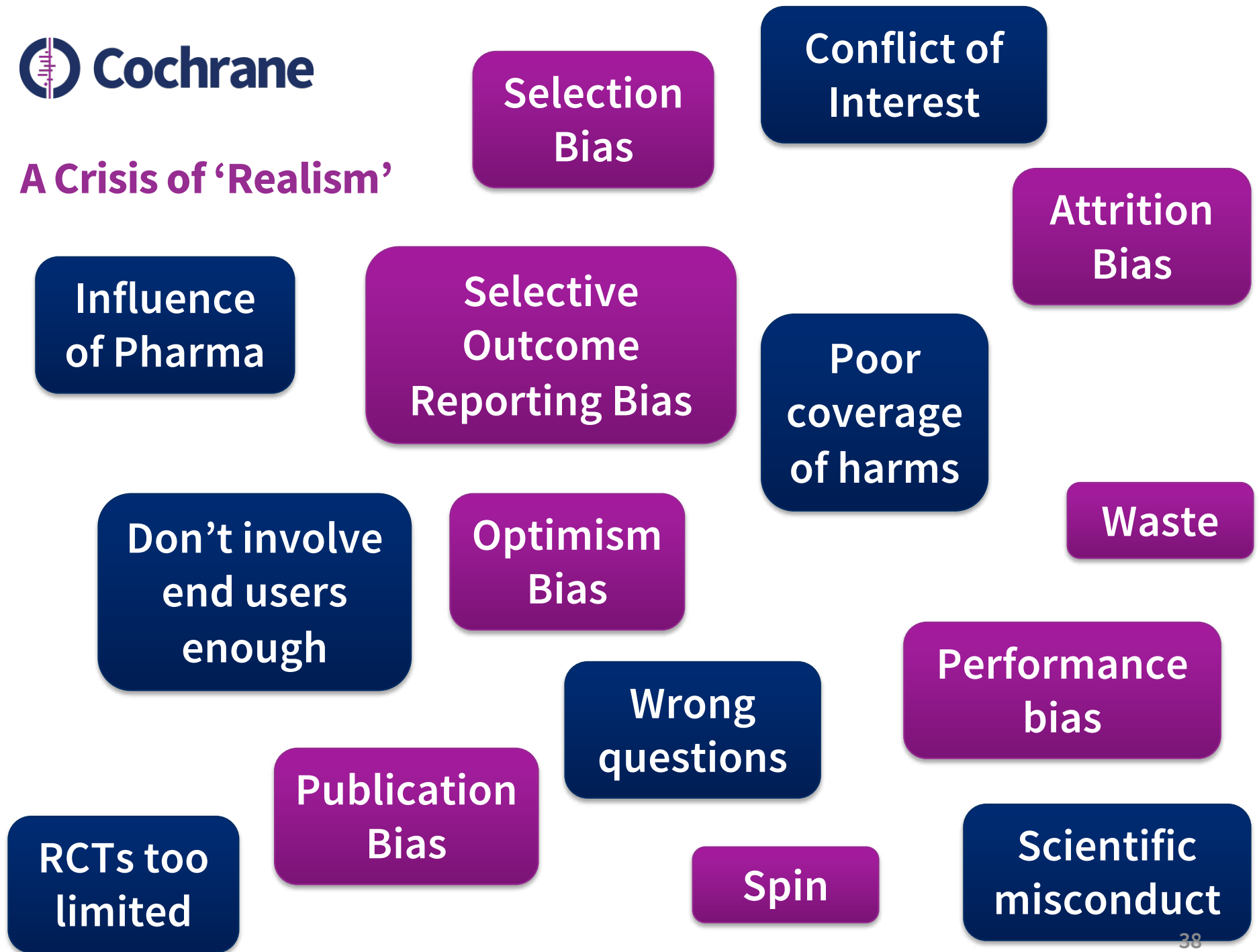
**Conflict of  
Interest**

**Poor  
coverage  
of harms**

**Wrong  
questions**

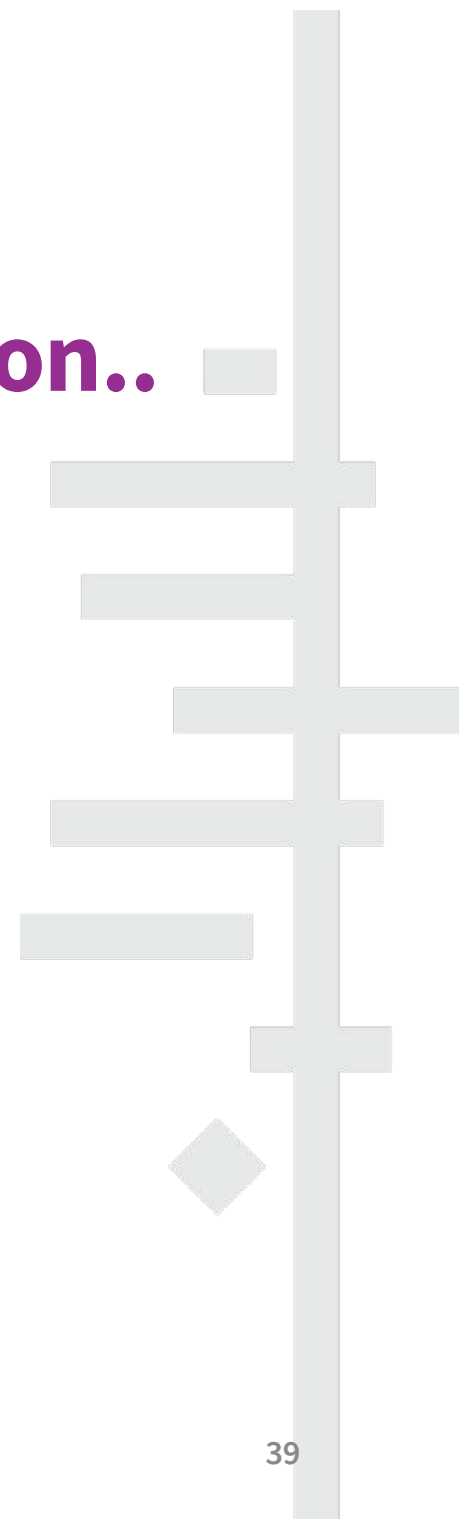
**Scientific  
misconduct**

## A Crisis of 'Realism'



## And Meanwhile, the World Moves on..

- Need answers much more quickly
- Growing interest in ‘real world data’
- More complex / versatile evidence
- Moves towards individualised health care: ‘personalised’ or ‘precision’ medicine





# A New Content Strategy: the Reviews of the Future

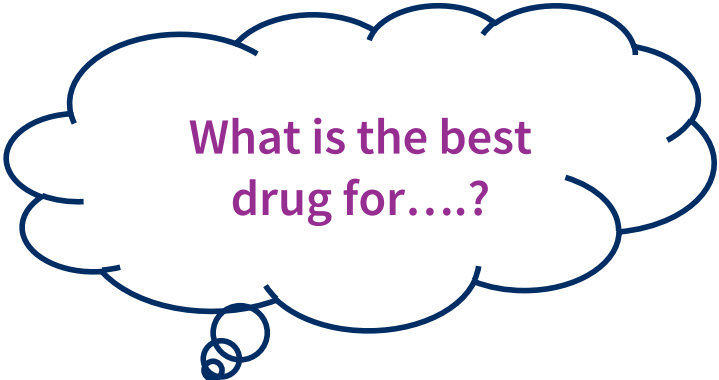


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# Goals

## 1. Ask the right questions



What is the best drug for....?



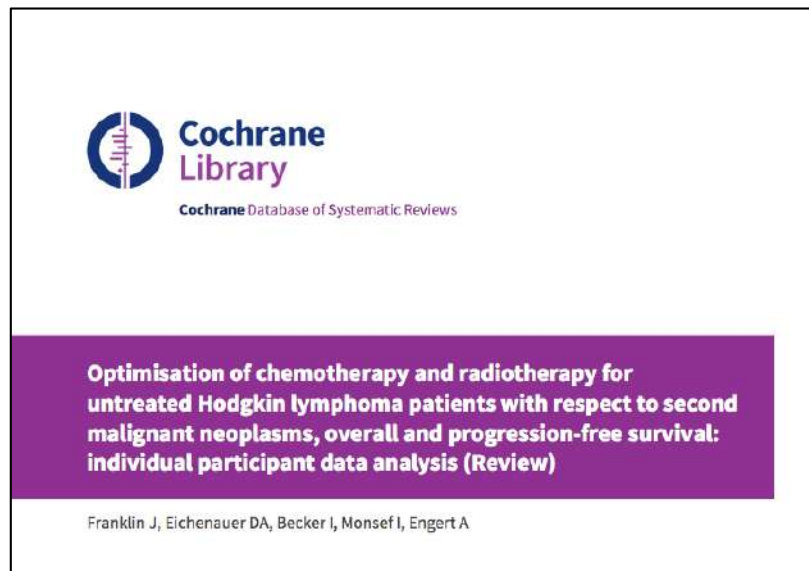
How can we improve the health of indigenous people?



How can we make sure this treatment is effective?

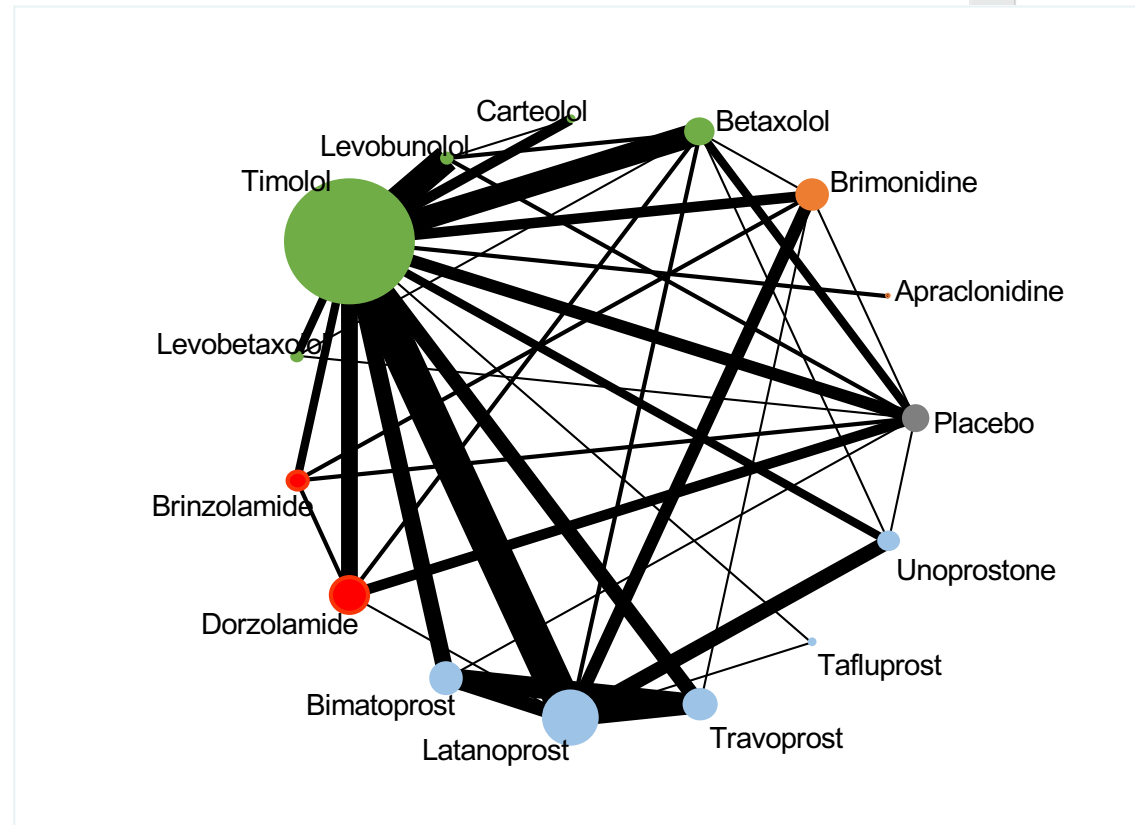
# Goals

1. Ask the right questions
2. Use the right data



## Goals

1. Ask the right questions
2. Use the right data
3. Use the right methods



Li et al. *Ophthalmology*. 2016;123(1):129-40.



# How You Can be Part of Cochrane

## Connect

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## Participate

- **Offer your skills** , including language skills
- Becoming an **author** or **peer reviewer** on a Cochrane Review

## Learn

- **Explore** Cochrane's work and systematic review methods through our **e-learning collections**
- **Attend webinars** delivered by world experts from our flagship **Learning Live** program

<https://www.cochrane.org/join-cochrane>

