

Librarians as members of mental disorders systematic review project teams

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Systematic Reviews with Mental Health Focus

- ▶ What are Systematic Reviews? And variations?
- ▶ Librarian involvement
- ▶ Nuts & bolts
- ▶ Apply to mental health field



Cochrane

What is a Systematic Review?

“ A systematic review attempts to collate all empirical evidence that fits pre-specified eligibility criteria to answer a specific research question. **It uses explicit, systematic methods** that are selected with a view to minimizing bias, thus providing reliable findings from which conclusions can be drawn and decisions made.”

Liberati A, et al. PLoS Med. 2009 Jul 21; 6(7)

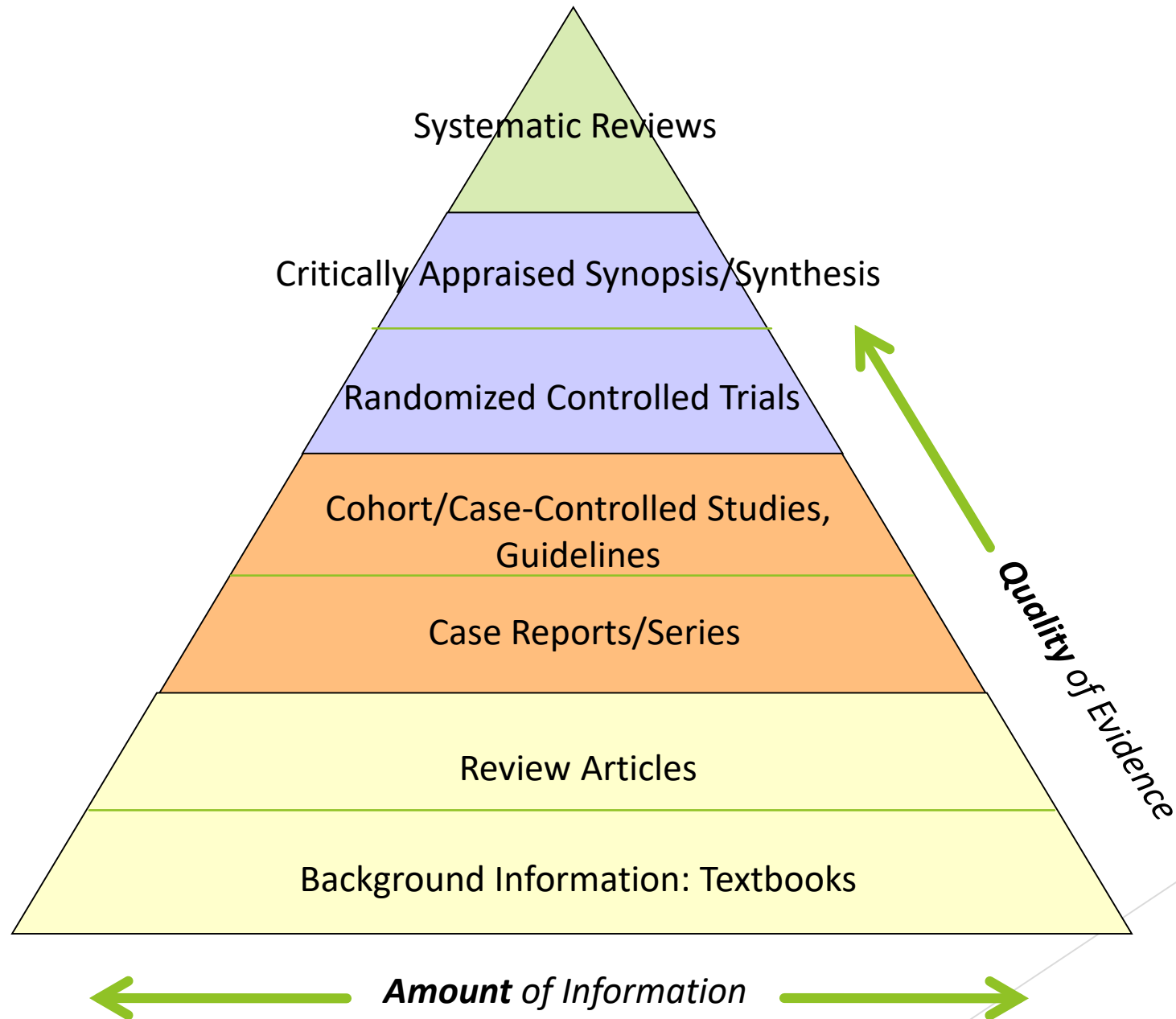
And in other words

Systematic reviews are review articles that use rigorous pre-specified methods to minimize bias found in traditional reviews.

They attempt to identify, appraise, and synthesize all literature that meets inclusion criteria.

Why?

- ▶ “Gold Standard” of Evidence-based Literature
- ▶ Reliable source of evidence to guide clinical practice
- ▶ Can be quantitative or qualitative
- ▶ Provides an unbiased review

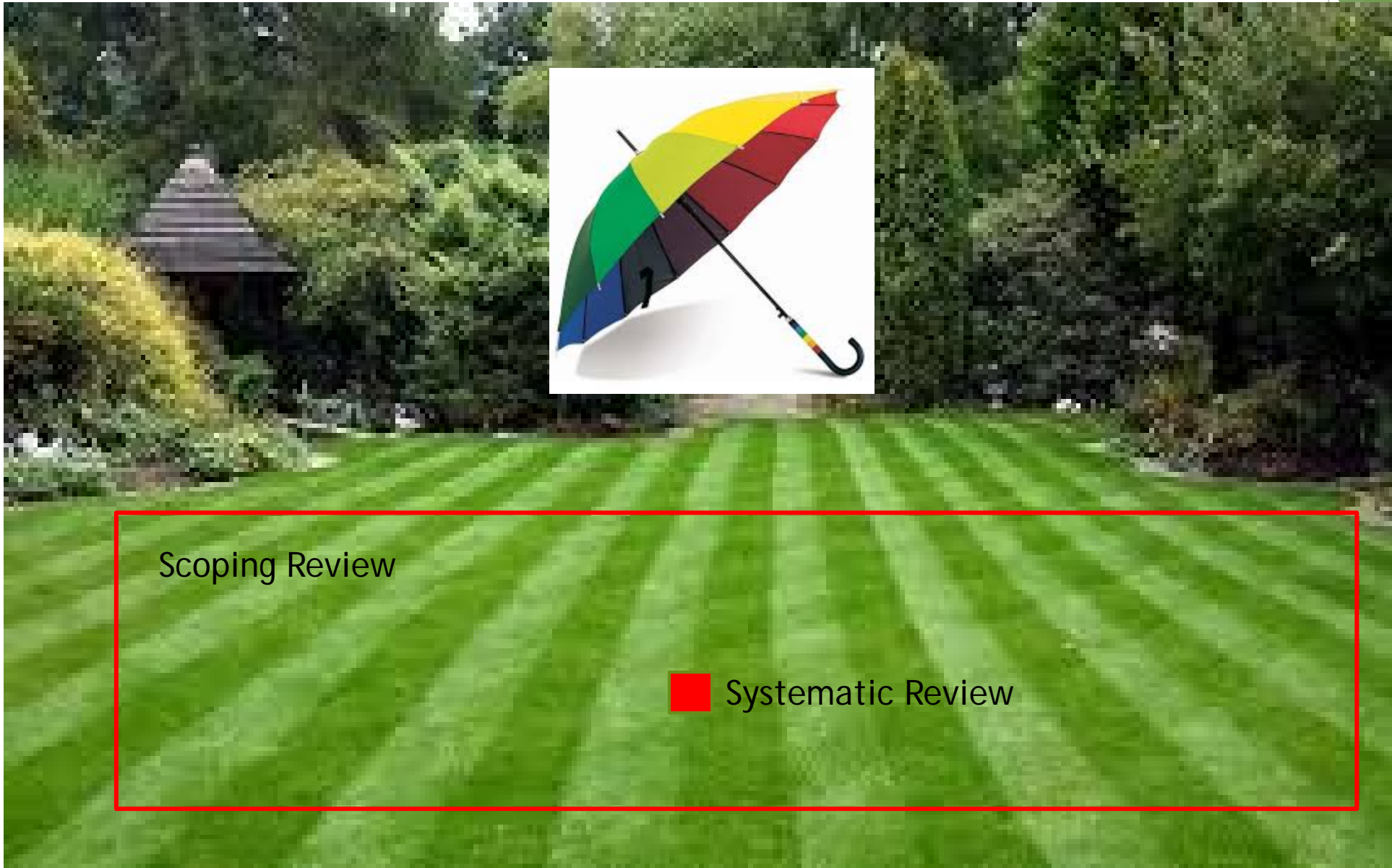


Key Features

- ▶ A clear question with explicit inclusion and exclusion criteria
- ▶ A search that rigorously and systematically attempts to identify all relevant studies in published and unpublished literature
- ▶ Transparent methods: Reproducible and updateable
- ▶ Critical appraisal of all included studies
- ▶ Presentation of characteristics and findings of the included studies

Variations of Reviews

- ▶ Systematic Reviews
- ▶ Meta-Analyses/Meta-Syntheses
- ▶ Mixed Methods
- ▶ Narrative Reviews
- ▶ Scoping/Mapping Reviews
- ▶ Realist Reviews & Evaluations
- ▶ Integrative Reviews
- ▶ Rapid Reviews
- ▶ Umbrella Reviews
- ▶ Practice Guidelines



Scoping Review

 Systematic Review

Which Review Type?

- ▶ FUNCTION - What problem does it solve?
- ▶ CHARACTERISTICS - What is the methodology or process?
 - Currently popular among researchers
 - Primary or secondary research?



What impact can we as information professionals make in the systematic review process?

How are Librarians Involved?

Institute of Medicine (IOM) STANDARD 3.1

Conduct a comprehensive systematic search for evidence

3.1.1 Work with a **librarian or other information specialist** trained in performing systematic reviews to plan the search strategy

3.1.2 Design the search strategy to address each key research question

3.1.3 Use an independent **librarian or other information specialist** to peer review the search strategy

<http://www.nationalacademies.org/hmd/Reports/2011/Finding-What-Works-in-Health-Care-Standards-for-Systematic-Reviews/Standards.aspx?page=2>

How are Librarians Involved?

- ▶ Provide Expertise, Support

- ▶ We *can* be here

- ▶ Author and Team Member

- ▶ We **WANT** to be here

- ▶ **WHY?**

Librarians Can

- ✓ Design and manage complex searches in multiple databases
- ✓ Use citation management software to organize search results
- ✓ Set up and manage review process using Systematic Review software/apps
- ✓ Report the search process according to current standards and guidelines
- ✓ Write a narrative of the search methodology
- ✓ Offer support and answer questions
- ✓ Embed in Systematic Review classes

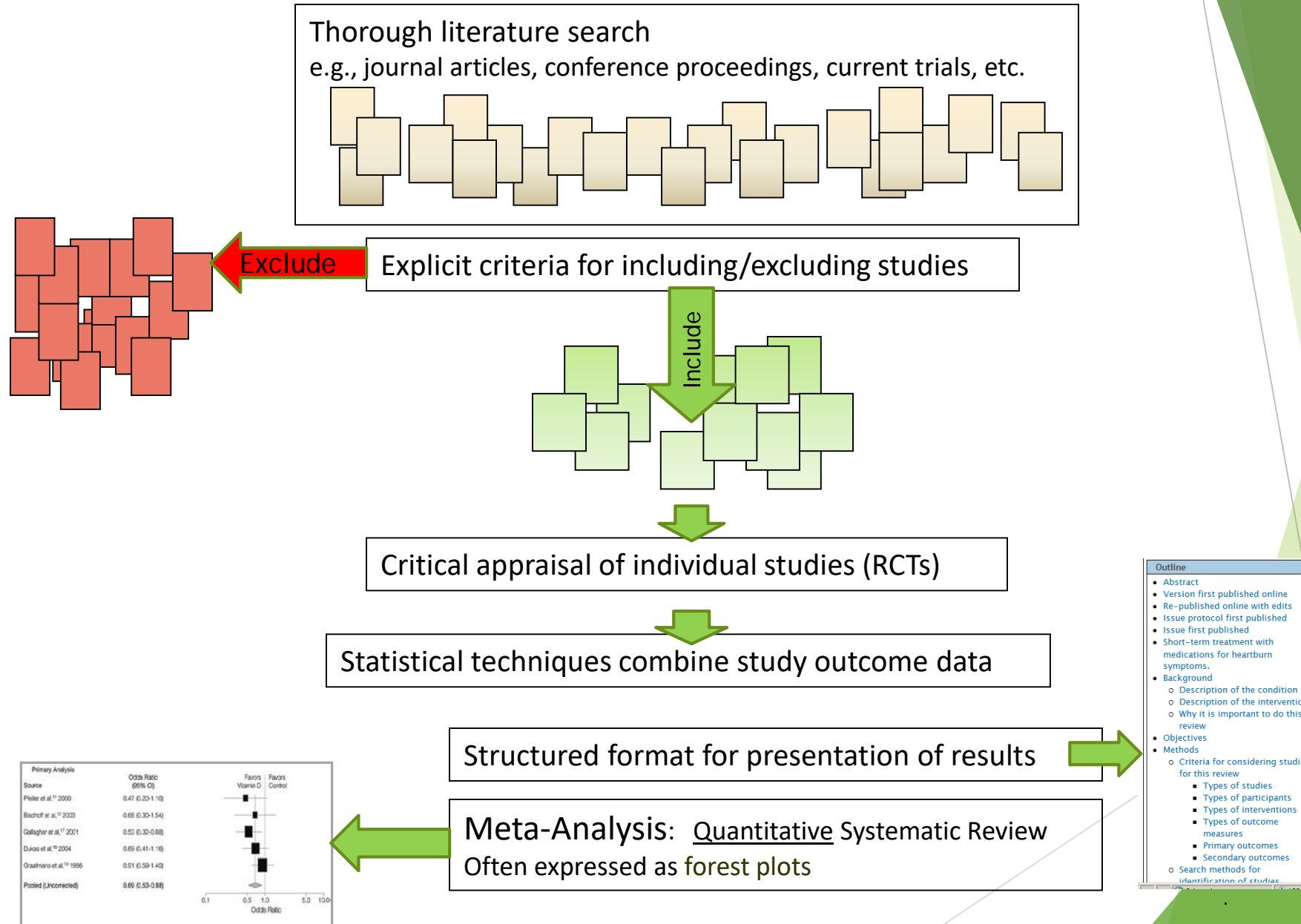
The “Nuts & Bolts” of a Systematic Review



Steps to creating a Systematic Review

1. Make sure you are asking the right question
2. Develop a protocol
3. Build the search
4. Review search results
5. Write the review
6. Submit the review
7. Celebrate when it gets published!

Components of a Systematic Review / Meta-Analysis



$$\begin{aligned}
& \log \frac{1}{L_D} = 4 \log \frac{T_{rel}}{K} + 2 \log \frac{A}{T} - 4 \log \frac{T_{rel}}{T} \\
& K = \sqrt{\frac{3AT}{M_n}} = \sqrt{\frac{3ATM_n}{M_n}} = \sqrt{\frac{3AT}{M_n}} \quad \rho = \frac{E}{L} = \frac{h}{\lambda} \quad V = K(1 + \beta \omega \epsilon) \quad U_{eq} = \frac{U}{\sqrt{2}} \quad f_c = \frac{1}{2\pi RC} \quad Z = \frac{L}{R + j\omega L} \\
& I_m^2 = U_m^2 \left[\frac{1}{R^2} + \left(\frac{1}{\omega L} - \frac{1}{\omega C} \right)^2 \right] \quad X_L = \omega L = 2\pi f L \quad R = \frac{V}{I} = \frac{U_m}{I_m} \quad \rho = \frac{E}{L} = \frac{h}{\lambda} \quad V = K(1 + \beta \omega \epsilon) \quad U_{eq} = \frac{U}{\sqrt{2}} \quad f_c = \frac{1}{2\pi RC} \quad Z = \frac{L}{R + j\omega L} \\
& M_0 = \frac{4\pi^2 \rho^2}{\omega^2 L^2} \quad \rho = \frac{h}{\lambda} = \frac{h}{2\pi r} \quad \phi_0 = \frac{L}{4\pi r^2} \quad U_m = \frac{E_m}{\sqrt{2}} = \frac{E_0}{\sqrt{2}} \quad \frac{\Delta I_m}{I_m} = \frac{\Delta E_m}{E_m} = \frac{\Delta \rho}{\rho} = \frac{\Delta h}{h} \\
& K = \sqrt{\frac{M_n}{R_n}} \quad F_n = \frac{1}{2} C_{op} \rho \int_{-\pi}^{\pi} \nabla \times \left(-\frac{\partial \vec{B}}{\partial t} \right) = -\frac{\partial}{\partial t} (\rho \vec{B}) = -\rho \frac{\partial \vec{B}}{\partial t} = -\rho \frac{\partial}{\partial t} \left(\frac{\partial \vec{A}}{\partial t} \right) = -\rho \frac{\partial^2 \vec{A}}{\partial t^2} \quad f_c = \frac{1}{2\pi RC} \\
& E = \frac{1}{R} \int_{-\pi}^{\pi} \sin(\omega t + \phi) dt \int_0^R \vec{H} d\vec{r} = \int_0^R \left(J + \frac{\partial \vec{D}}{\partial t} \right) \cdot d\vec{s} \quad Z = \frac{R}{\sqrt{2}} \quad L = 10 \log \frac{1}{f} \\
& \omega = \omega_0 \sin(\omega t - \pi) = \omega_0 \sin 2\pi \left(\frac{t}{T} - \frac{\pi}{2} \right) \quad E_m = \frac{1}{2} \rho \omega^2 \delta = \frac{1}{2} \rho \frac{\partial^2 \delta}{\partial t^2} \quad \left(\frac{E_0}{E_0} \right)_B = \frac{2 \cos^2 \theta_0 \cos 2\theta_0}{\cos(\theta_0 - \theta_0') \sin(\theta_0' + \theta_0)} \\
& \int_0^R E_0 d\vec{r} = -\int_0^R \frac{\partial \vec{B}}{\partial t} \cdot d\vec{s} \quad E = -\frac{1}{R} \frac{\partial \vec{A}}{\partial t} \quad \vec{P} = \int \vec{J} d\vec{s} = A\vec{D} \quad \left(\frac{E_0}{E_0} \right)_B = \frac{2 \cos^2 \theta_0 \cos 2\theta_0}{\cos(\theta_0 - \theta_0') \sin(\theta_0' + \theta_0)} \\
& E = \frac{E_0}{R} = \frac{1}{R} \frac{\partial \vec{A}}{\partial t} \quad \int \vec{B} d\vec{r} = \mu_0 \int \vec{J} d\vec{s} \quad \vec{f} = \frac{\rho \vec{A}}{(\omega^2 - k_0^2 - \mu_0)} \quad \frac{\rho \vec{A}}{(\omega^2 - k_0^2 - \mu_0)} + \frac{\rho \vec{A}}{\omega^2} = \frac{\rho \vec{A}}{\omega^2} \quad \vec{f} = \frac{1}{\mu_0} (\vec{E} \times \vec{B}) \\
& E_y = E_0 \sin(k_0 z - \omega t) \quad \vec{P} = \frac{\partial \vec{D}}{\partial t} (\omega \vec{A}) + \vec{J} \phi = \frac{2\pi \rho \sin^2 \theta}{\lambda} \quad R_0 = \sqrt{\epsilon_0 \mu_0} \quad E_0 \sin(k_0 z - \omega t)
\end{aligned}$$

Meta Analysis: Vitamin D on Falls 400-800 IU per day

And what is different
about systematic reviews
within the discipline of
mental health?

And who says I can't
smoke my cigar in the
Berkeley City Club??!!

