



Visual Evidence

Increasing Usability of Systematic Reviews in Health Systems Guidelines Development

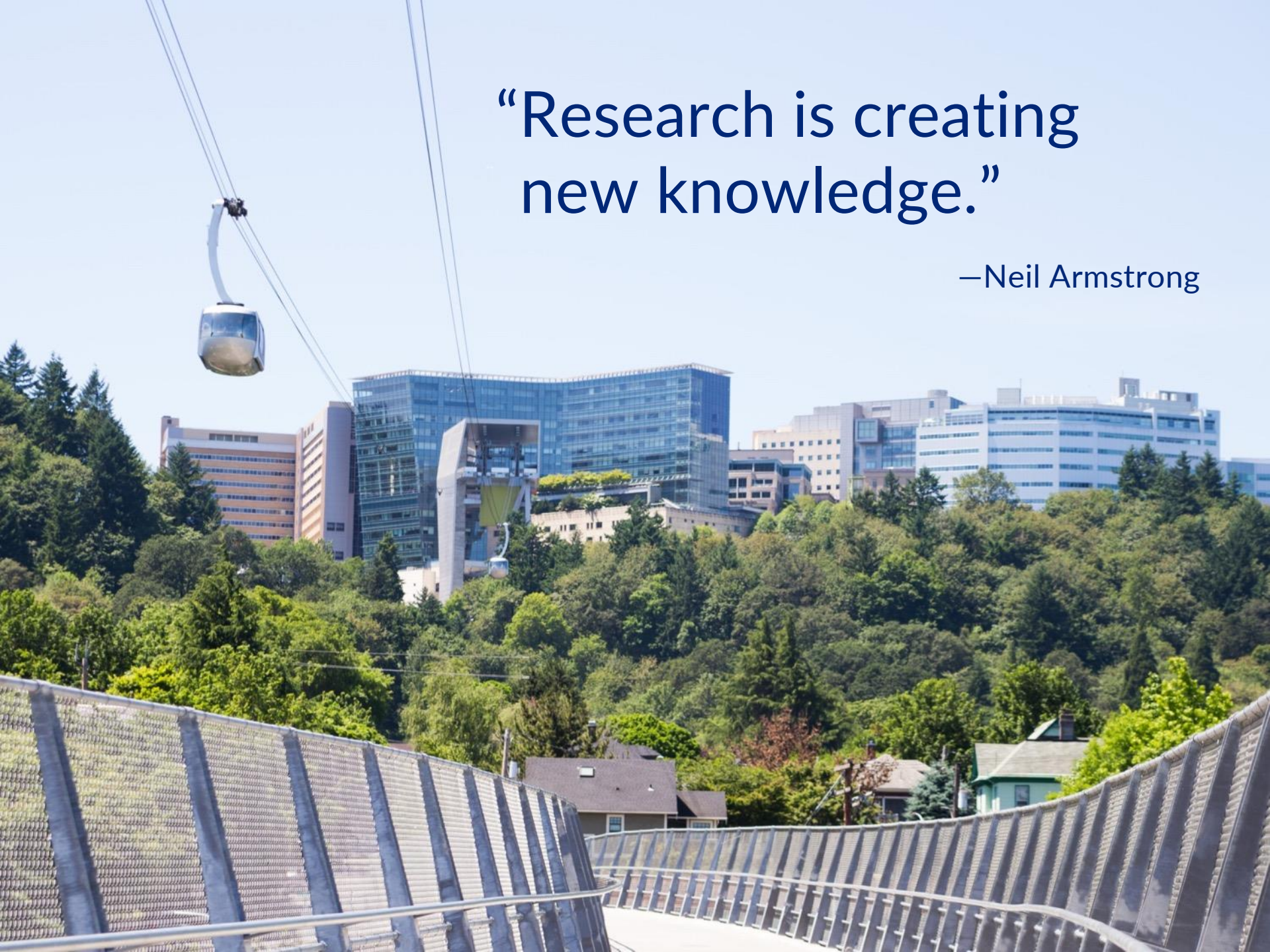
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Disclaimer

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We do not have any conflicts to disclose.

A scenic view of a cable car system over a forested hillside. In the foreground, a metal railing with a mesh pattern runs across the frame. A cable car is suspended from cables, moving across the sky. In the background, a large, modern building with a glass facade and other structures are visible on a hillside covered in dense green trees. The sky is clear and blue.

“Research is creating
new knowledge.”

—Neil Armstrong

Integrating research and practice



Large volume of complex data



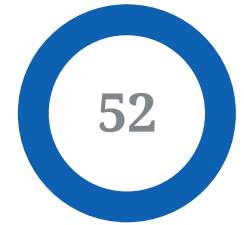
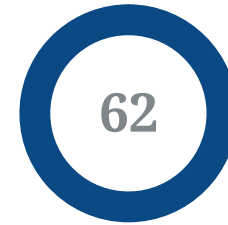
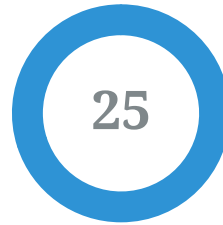
1,398 pages



300+ pages



1,000+ pages



Extensive executive summary

25 pages



Complex evidence tables

62 tables

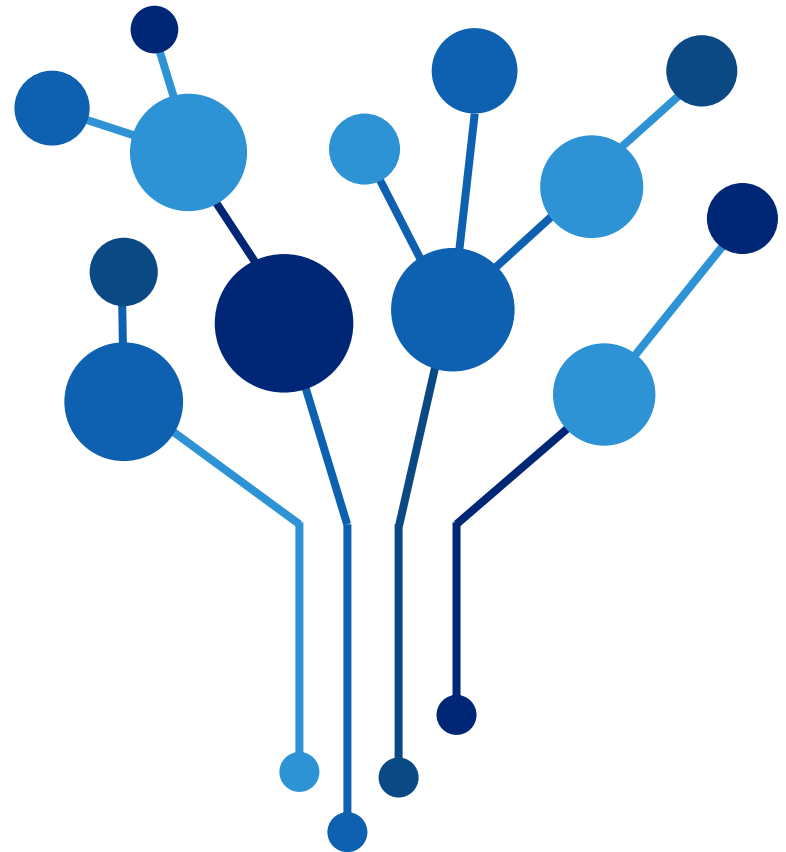


Detailed figures

52 figures

Dissemination challenges

- Increasing dimensionality
 - 5 types of pain
 - 8 interventions
 - 6 outcomes
- Rigid structure
 - Defined scope
 - Set template
 - Research questions



Chronic pain report

- Condition → intervention → outcome

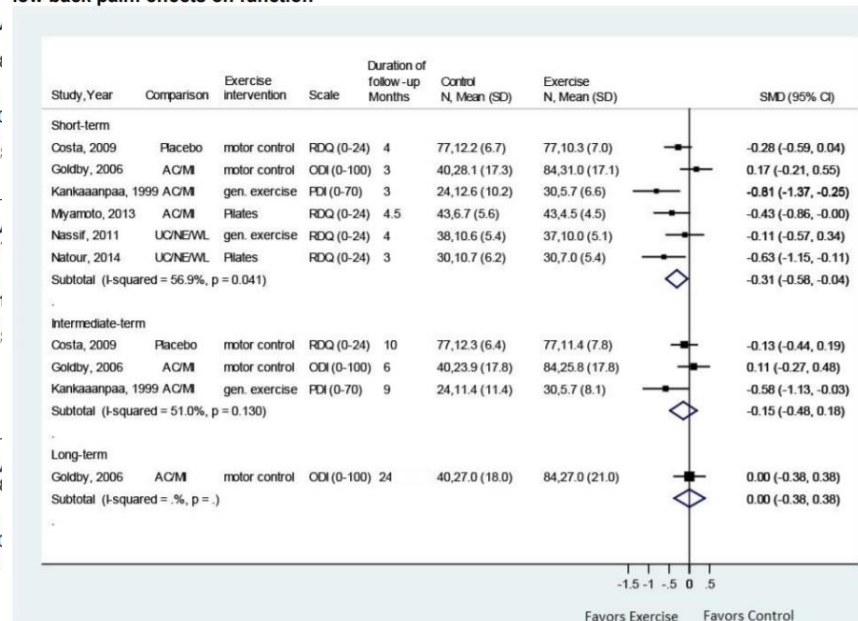
Key Question 1: Chronic Exercise for Chronic

Key Points

- Exercise was associated with an attention control difference [SMD] -0.3 were no effects on intermediate -0.48 to 0.18, I²=51% Disability Index [ODI].
- Exercise was associated with an attention control -0.81 on a 0 to 10 scale pooled MD -1.37, 95% 95% CI -2.38 to -0.32 term and long-term).
- No trial evaluated exercise
- Comparisons involving exercise in the sections for the other therapies.

Author, Year, Followup, ^a Pain Duration, Study Quality	Intervention	Population
Miyamoto, 2013 ³² 4.5 months Duration of pain: Mean 5 to 6 years <i>Fair</i>	A. Muscle performance (Pilates) (n=43), 12 sessions over 6 weeks B. Attention control (n=43) (education)	A vs. B Age: 41 vs. 41 years Female: 100% vs. 79% Baseline 9.7 vs. 10.1 Baseline (0-10 VAS) vs. 6.5
Nassif, 2011 ³¹ 4 months Duration of pain: NR <i>Poor</i>	A. Combined exercise (n=37) (stretching, stability, coordination, and muscle strengthening exercises), 24 sessions over 8 weeks B. Usual care (n=38)	A vs. B Age: 45 vs. 45 years Female: 21% vs. 21% Baseline 13.9 vs. 13.9 Baseline (0-10 VAS) vs. 4.9
Natour, 2014 ³³ 3 months Duration of pain: >1 year <i>Fair</i>	A. Exercise (Pilates) (n=30), 24 sessions over 12 weeks B. Usual care (n=30) (no exercise)	A vs. B Age: 48 vs. 48 years Female: 100% vs. 77% Baseline 1.1 vs. 1.1 Baseline

Figure 4. Exercise versus usual care, an attention control, or a placebo intervention for chronic low back pain: effects on function



Comparing evidence

Drill down

I have a patient with chronic low back and neck pain. What is an effective treatment to help with short and intermediate-term pain?

Slice and dice

I have a patient who wants to try acupuncture to relieve chronic low back and neck pain. Will this be effective in the short and intermediate term?

Current approach

- Condition → intervention → outcome

	Chronic low back pain	Chronic neck pain
Exercise	Pages 19-25 Table 5 Figures 4-5	Pages 97-106 Table 18 Figures 26-27
Acupuncture	Appendix D: 883 pages Appendix E: 18 pages	Pages 120-128 Table 23 Figures 30-31
Summary	Tables A-B	Tables C-D
Individual Studies	Appendices D-E	Appendices D-E

AHRQ EPC pilot projects

- **Problem:** AHRQ wants to improve accessibility and usability of evidence from systematic reviews
- **Solution:** Engage EPCs to develop and pilot test potential tools to enhance evidence uptake
- **Purpose:** Identify and test interactive methods to make the large amount of data included in an EPC systematic review more accessible for developers of clinical practice guidelines

EPC project plan

- Use published systematic review on chronic pain
- Software selection criteria
 - Existing, off the shelf product
 - No or minimal need for informatics training
- Gather feedback from guideline developers (stakeholders)

Unscrambling the eggs

- Data extracted from PDF, organized into relational structure
 - 356 rows of data, 202 different studies
 - 80% of work
- Developed report for a Guidelines Committee

DEMONSTRATION

Live Demo

Reception of Design

- Interviews with six OHSU guideline development and implementation stakeholders

Formulate specific questions based on local needs



Access data simultaneously across disparate geographies



Share templates across EPCs



Less robust level of detail



Varying levels of clinician expertise



Dashboard will be project-dependent

Caveats/Limitations

- Supplement, not replace
- Quantitatively focused
- Aggregation cannot be changed
- Heavy reliance on data structure

Next Steps/Call to Action

- Integration of informatics professionals
- A step towards improving dissemination
 - New ways to present data
 - Integrate pilot project into future reviews
 - Accessibility
 - Feedback from additional stakeholders



Thank You

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To learn more about the Pacific Northwest Evidence-based Practice Center, visit www.ohsu.edu/epc

To learn more about the Department of Medical Informatics and Clinical Epidemiology, visit www.ohsu.edu/dmice

