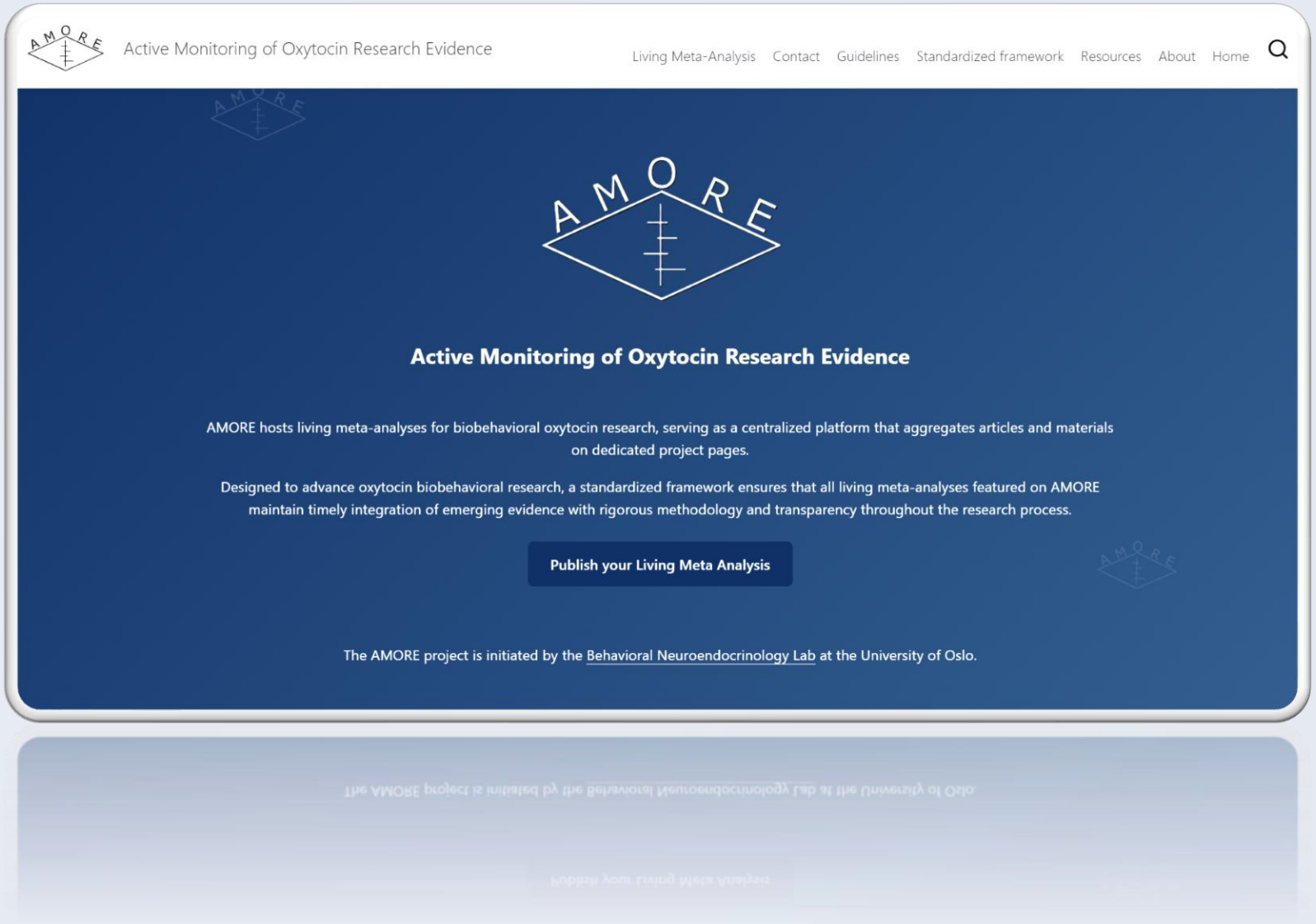
UNIVERSITY OF OSLO

Active monitoring of oxytocin research evidence (AMORE) platform

https://amore-project.org/



Ingebjørg A. Iversen

Research assistant

Behavioral Neuroendocrinology Laboratory

Background

Clinical potential

- Oxytocin is extensively investigated as individualized support or treatment for various psychiatric conditions

  Rigney et al., (2022). *Endocrinology*, https://doi.org/10.1210/endocr/bqac111

Inconsistent findings

- Despite its promise, oxytocin research has been marked by inconsistent results concerning its therapeutic applications and underlying mechanisms

  Leng, G., & Ludwig, M. (2016. *Biological Psychiatry*, *79*, 243–250.

Meta-analysis tool

- Meta-analysis is a popular approach to shed light on mixed findings in a body of literature

  Borenstein et al., (2009). *Introduction to Meta-Analysis* (pp. 21–32). https://doi.org/10.1002/9780470743386.ch4

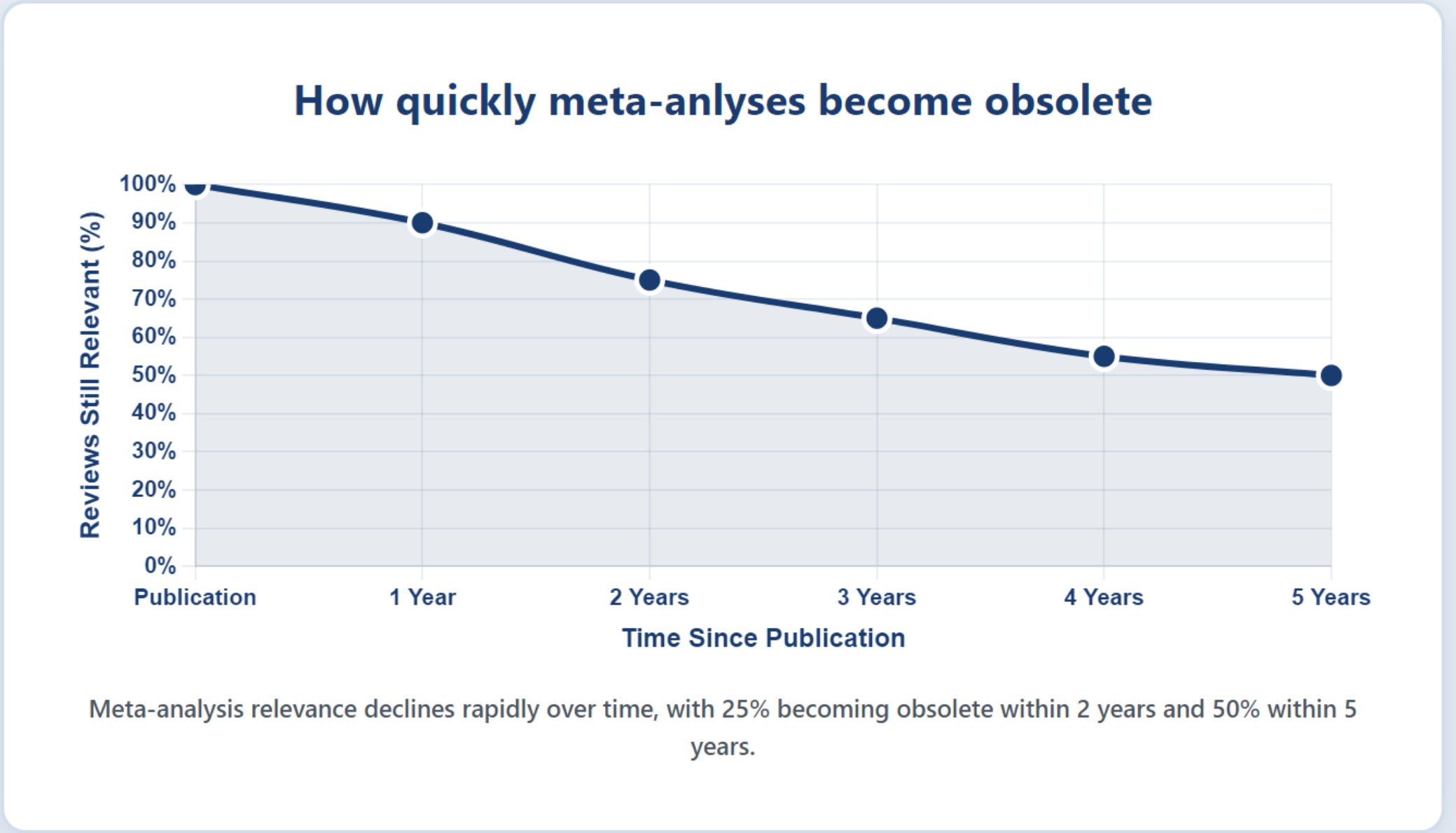


Figure. 2. How Quickly Meta-Analyses Become Obsolete. This figure is based on article from Winters et al., 2021 to illustrate their reports, and is not based on analysis of own data. Winters et al., (2021). *British Journal of Sports Medicine,* https://doi.org/10.1136/bjsports-2020-103490

Traditional vs. living meta-analysis: evidence integration over time

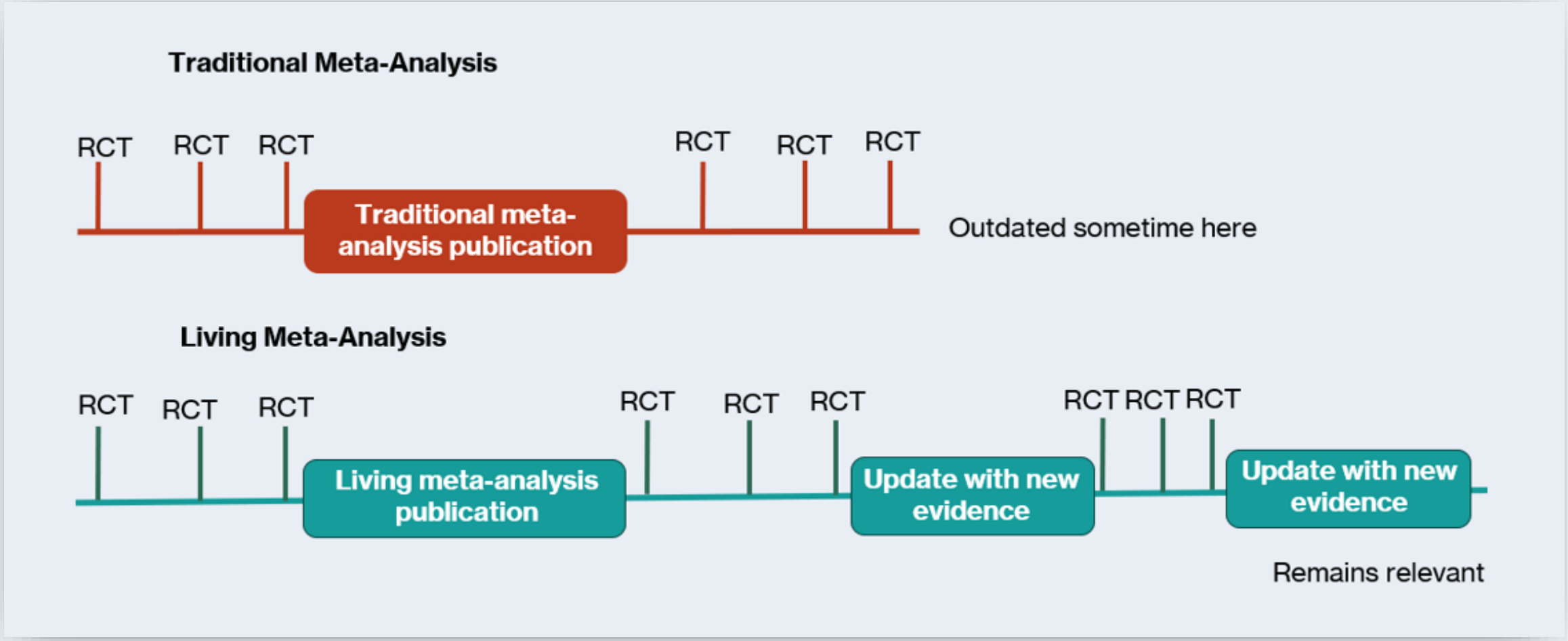
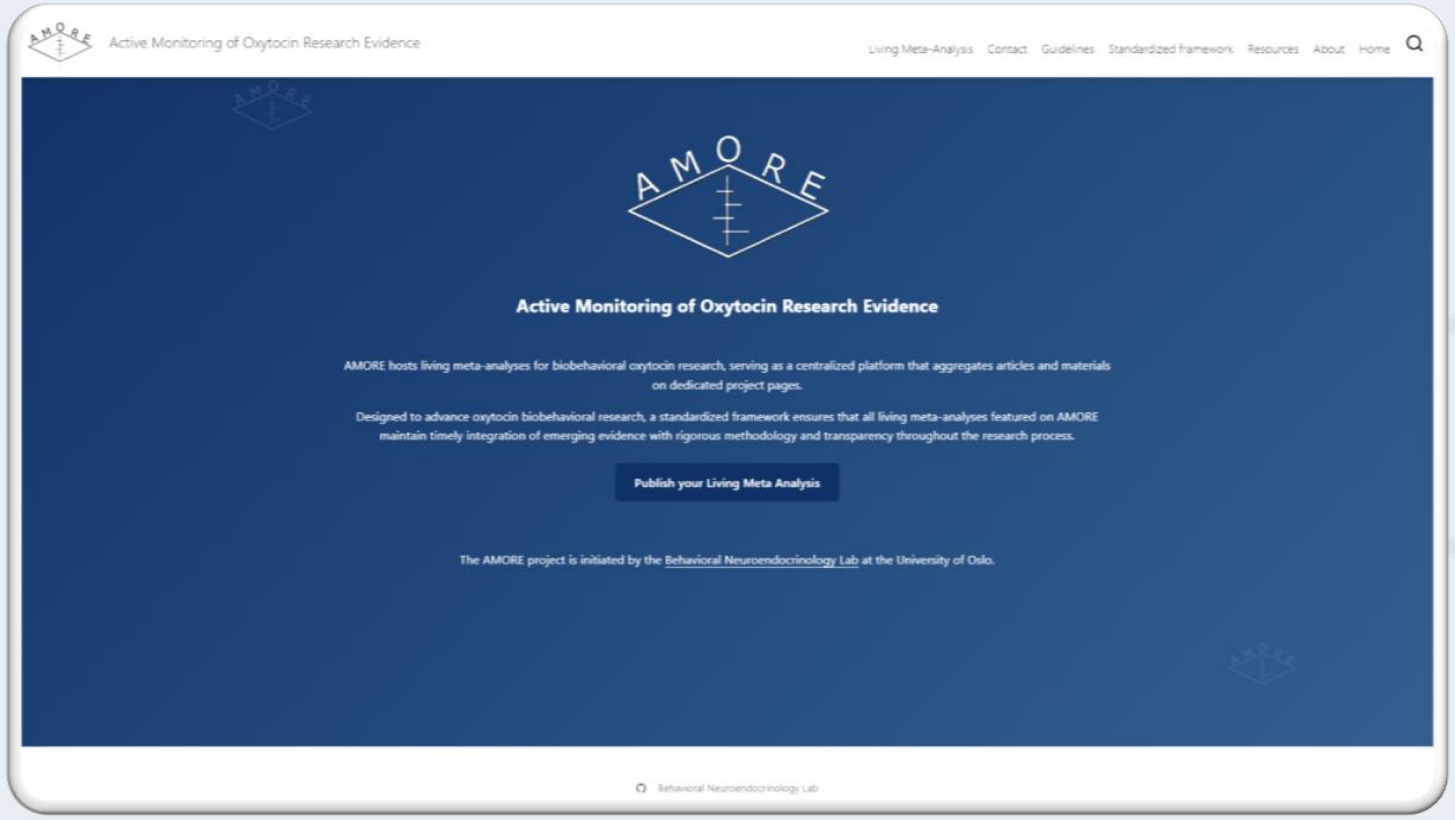


Figure. 3. Traditional vs. Living Meta-Analysis: Evidence Integration Over Time. Elliott, et al., (2017). Journal of Clinical Epidemiology, https://doi.org/10.1016/j.jclinepi.2017.08.010

AMORE: advancing biobehavioral oxytocin research



Delphi process for establishing standardized framework

Expert committee formation

Established committee resulting in 24 members

1

First questionnaire

Initial assessment of perspectives on suggested framework items

2

Second questionnaire

yes-no questions assessing the endorsement of standardized framework items

Standardized framework

Standardized framework established from second questionnaire responses

Shift from moderate to high endorsement on suggested standardized framework items

Figure 4. Shift from moderate to high endorsement on suggested standardized framework items. The figure illustrates the shift in the percent who endorsed “Yes” for the suggested items regarding transparent science and methodological requirements. Three demographic questions and three methodological questions with multiple response options are not included in this visualization

Check out the standardized framework on https://amore-project.org/standardization

Active Monitoring of Oxytocin Research Evidence

AMORE hosts living meta-analyses for biobehavioral oxytocin research, serving as a centralized platform that aggregates articles and materials on dedicated project pages.

Designed to advance oxytocin biobehavioral research, a standardized framework ensures that all living meta-analyses featured on AMORE maintain timely integration of emerging evidence with rigorous methodology and transparency throughout the research process.

Publish your Living Meta Analysis

The AMORE project is initiated by the Behavioral Neuroendocrinology Lab at the University of Oslo.

Checklist for creating AMORE project proposal

When creating a project proposal for a Living Meta-Analysis in AMORE, it is essential to include all necessary information to ensure a smooth review and approval process. The following checklist outlines the key components that should be included in your project proposal.

Access the Protocol Checklist Tool

Additional Resources

PRISMA for Living Systematic Reviews

PRISMA for Living Systematic Reviews (LSR) is an extension of the PRISMA statement that provides guidance on reporting living systematic reviews and meta-analyses. It includes a checklist and flow diagram to help researchers ensure they are following best practices in their reporting.

Visit PRISMA-Statement.org Website

Connect With Us

We have three form options for you to choose from. By clicking the contact button, you will be redirected to our three forms.

Propose your project: If you have a new living meta-analysis project that you would like to publish on AMORE, please select this option.

Update an existing living meta-analysis: If you have an existing living meta-analysis that you would like to update, please select this option.

General inquiry: If you have any other questions or inquiries, please select this option.

We will get back to you as soon as possible to discuss the details and answer any questions you may have.

Contact Form

NETTSKJEMA

The form contains questions that can be personally identifying. Show more

Contact form AMORE

How can the AMORE team assist you?

Your response option will redirect you to the correct contact form for your need

- ◯ I would like to propose a project
- ◯ I would like assistance with methodological inquiries or questions
- ◯ I would like to update my project page information

Send

Living Meta-Analysis Directory

Search across all fields...

Biological Outcomes | Psychological and Behavioral | Clinical Outcomes | Oxytocin Assessment | Study Population | Study Details

Showing 1 - 2 of 2 results

← Previous Page 1 of 1 Next →

Effects of Oxytocin Administration on Non-Social Executive Functions in Humans: A Preregistered Systematic Review and Meta-Analysis

Publication Status: Published Analytical Framework: Mixed Methods Oxytocin Intervention: Intranasal oxytocin administration Oxytocin Assessment: Behavioral assessment
Oxytocin Route: Central Oxytocin Dosage: 24 IU Biological Outcomes: NA
Psychological and Behavioral Outcomes: Executive Function, Working Memory, Cognitive Flexibility, Inhibitory Control Clinical Outcomes: NA Population Status: Mixed Population Age: Adults
Clinical Type: Various clinical conditions

This preregistered systematic review and meta-analysis investigates the effects of oxytocin administration on non-social executive functions in humans. While oxytocin has received considerable attention for its role in social behaviors, emerging evidence suggests broader cognitive effects beyond social contexts. The analysis employed both frequentist and Bayesian approaches, synthesizing 20 effect estimates from 13 eligible studies (729 total participants). The project addresses whether oxytocin administration influences executive functions when measured using non-social stimuli and tasks. A multilevel random-effects meta-analysis was conducted to account for multiple outcomes within studies.

Assessing the Likelihood of Neurodevelopmental Conditions After Birth with Oxytocin: A Living Systematic Review and Meta-Analysis

Publication Status: Preregistered Analytical Framework: Mixed Methods, Frequentist, Bayesian Oxytocin Intervention: Perinatal oxytocin exposure
Oxytocin Assessment: Biological sample collection Oxytocin Route: Administration method unspecified, Central, Peripheral, Various administration routes
Oxytocin Dosage: Variable dosage, 8 IU, 16 IU, 24 IU, 32 IU, 40 IU Biological Outcomes: Neurological Psychological and Behavioral Outcomes: Cognition & Memory
Clinical Outcomes: Neurodevelopmental Population Status: Mixed, Healthy, Clinical Population Age: Children

This living meta-analysis investigates the relationship between perinatal exposure to exogenous oxytocin and the likelihood of neurodevelopmental conditions such as attention-deficit/hyperactivity disorder (ADHD) and autism in children. Oxytocin is commonly used to induce and augment labor, with up to 50% of births in developed countries and varying rates (0.7% to 97.0%) in low- and lower-middle-income countries associated with synthetic oxytocin use. The analysis employs a frequentist approach, utilizing random effects models with the Paule-Mandel estimator to synthesize findings across the literature. The project addresses whether perinatal exposure to exogenous oxytocin increases the likelihood of neurodevelopmental conditions in children. This living meta-analysis will be updated every 24 months, ensuring the incorporation of emerging evidence.

← Previous Page 1 of 1 Next →

Effects of Oxytocin Administration on Non-Social Executive Functions in Humans: A Preregistered Systematic Review and Meta-Analysis

Authors

Heemin Kang (University of Oslo)
Bernt D. Glaser (University of Oslo)
Alina I. Sartorius (University of Oslo)

Show more authors

Timeline

Pre-registered: July 29, 2022
Published: January 18, 2025
Next update: Transforming meta-analysis protocol into living meta-analysis protocol in progress

Identifiers

DOI: 10.1038/s41380-024-02871-4

Keywords: oxytocin, executive function, meta-analysis, cognitive flexibility, working memory, inhibitory control

Contact

Principal Investigator: Daniel S. Quintana
Email: daniel.quintana@psykologi.uio.no

Abstract

This preregistered systematic review and meta-analysis investigates the effects of oxytocin administration on non-social executive functions in humans. While oxytocin has received considerable attention for its role in social behaviors, emerging evidence suggests broader cognitive effects beyond social contexts.

The analysis employed both frequentist and Bayesian approaches, synthesizing 20 effect estimates from 13 eligible studies

Acknowledgements

Co-authors and expert steering committee members

Kaat Alaerts

Jessica J. Connelly

Nicole Nadine Lønfeldt

Leehe Peled-Avron

Constantina Theofanopoulou

Marian Bakermans-Kranenburg

Beate Ditzen

Matthijs Moerkerke

Tanya L. Procyshyn

Hidenori Yamasue

Benjamin Becker

Natalie C. Ebner

Christian Montag

Alina I. Sartorius

Daniel S. Quintana

Robert James Blair

Heemin Kang

Anna-Rosa Cecilie Mora-Jensen

Dirk Scheele

Ingebjørg A. Iversen

Jennifer A. Bartz

Elizabeth A. Lawson

Marilyn Horta

Ekaterina Schneider

Funding

This work was supported by the Research Council of Norway (DSQ: 301767; 324783), South-Eastern Norway Regional Health Authority (2022059) and the Kavli Trust (DSQ). The funders had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.

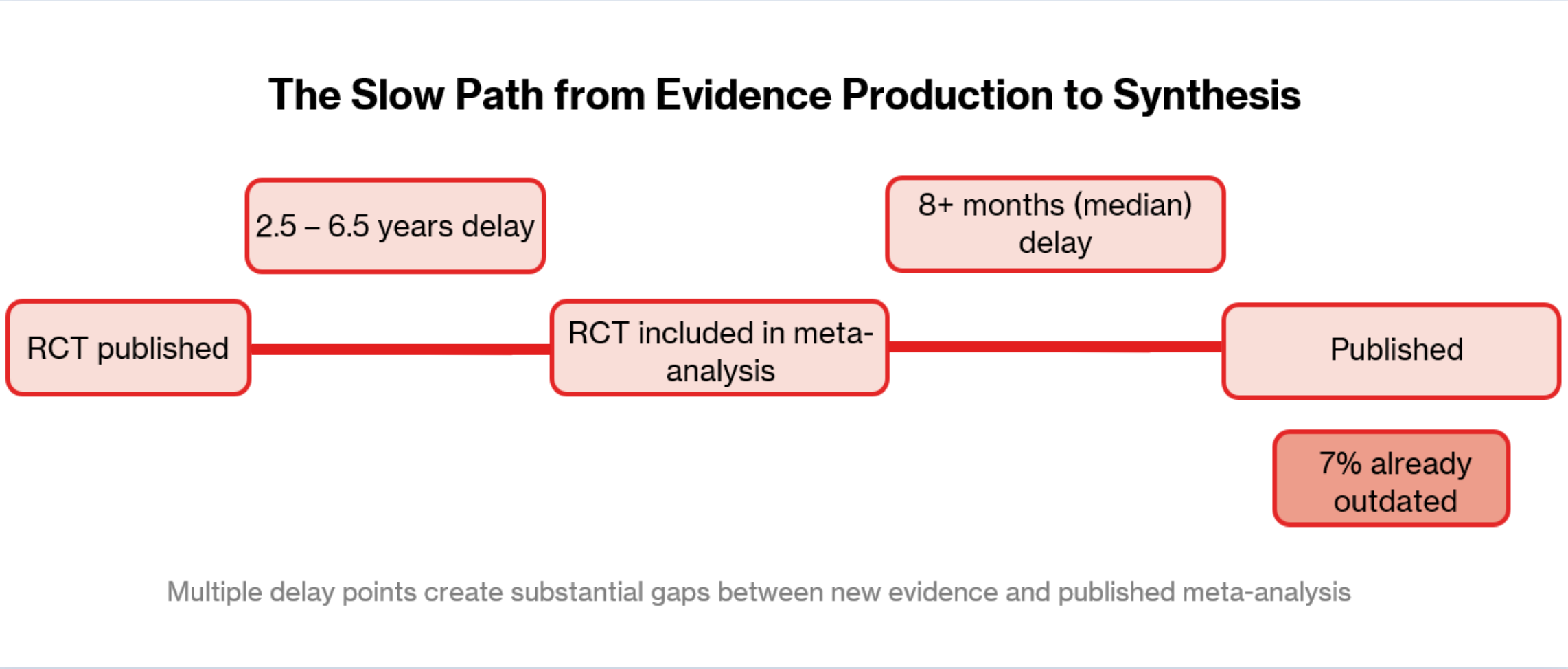


Figure. 1. The Slow Path from Evidence Production to Synthesis. This figure is based on reports from Shojana et al., 2007 and Elliot et al., 2014 to illustrate their findings, and is not based on analysis of own data. Elliott et al., (2014). *PLoS Medicine*, https://doi.org/10.1371/journal.pmed.1001603. Shojania et al., 2007). *Medicine*, *147*(4), 224–233. https://doi.org/10.7326/0003-4819-147-4-200708210-00179

Living meta-analysis is resource demanding

Elliott et al. (2017) suggested three criteria for when living systematic reviews are appropriate:

1. high priority for clinical decision-making
2. low certainty in existing evidence due to mixed findings
3. rapidly emerging new research evidence.

Elliott et al.,. (2017*Journal of Clinical Epidemiology*, https://doi.org/10.1016/j.jclinepi.2017.08.010

Oxytocin biobehavioral research is a good candidate for living meta-analysis

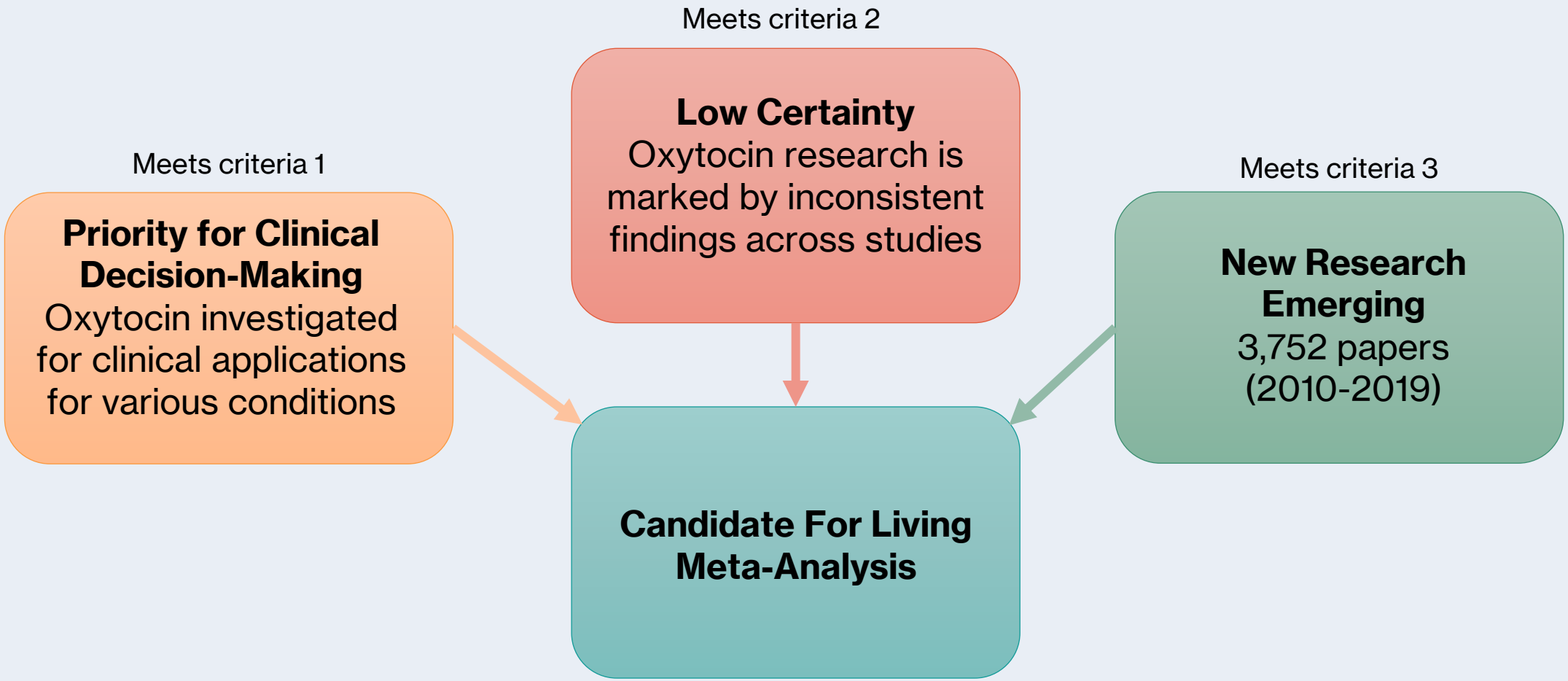


Figure 3. Oxytocin biobehavioral research is a good candidate for living meta-analysis. Leng, G., & Leng, R. I. (2021). *Journal of Neuroendocrinology*, *33*(11), e13014. https://doi.org/10.1111/jne.13014. Leng, G., & Ludwig, M. (2016). *Biological Psychiatry*, *79*, 243–250. Elliott et al.,. (2017*Journal of Clinical Epidemiology*, https://doi.org/10.1016/j.jclinepi.2017.08.010

Acknowledgements: Co-authors and expert steering committee members

Kaat Alaerts

Jessica J. Connelly

Nicole Nadine Lønfeldt

Leehe Peled-Avron

Constantina Theofanopoulou

Marian Bakermans-Kranenburg

Beate Ditzen

Matthijs Moerkerke

Tanya L. Procyshyn

Hidenori Yamasue

Benjamin Becker

Natalie C. Ebner

Christian Montag

Alina I. Sartorius

Daniel S. Quintana

Robert James Blair

Heemin Kang

Anna-Rosa Cecilie Mora-Jensen

Dirk Scheele

Ingebjørg A. Iversen

Jennifer A. Bartz

Elizabeth A. Lawson

Marilyn Horta

Ekaterina Schneider

Delphi process for establishing standardized framework

1

Expert committee formation

Established committee resulting in 24 members

2

First questionnaire

Initial assessment of perspectives on suggested framework items

3

Analysis and refinement

Responses analysed, second questionnaire designed based on the results and comments

4

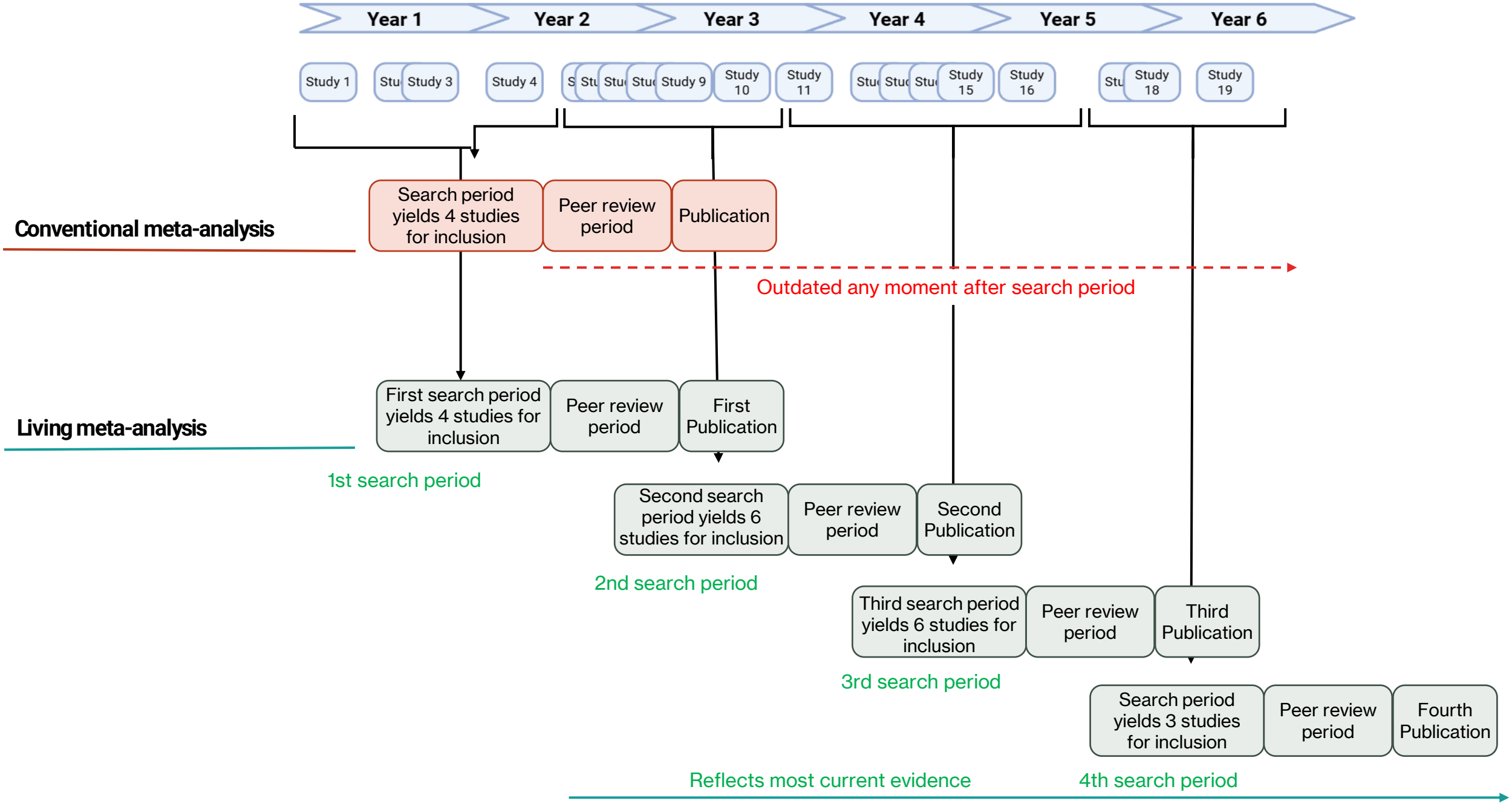
Second questionnaire

Members responded to the second questionnaire with yes-no questions about endorsement of standardized framework

5

Analysis and establishment

Standardized framework established from second questionnaire responses


Year 1
Year 2
Year 3
Year 4
Year 5
Year 6
Study 1
Study 3
Study 4
Study 9
Study 10
Study 11
Study 15
Study 16
Study 18
Study 19
Conventional meta-analysis
Search period yields 4 studies for inclusion
Peer review period
Publication
Outdated any moment after search period
Living meta-analysis
First search period yields 4 studies for inclusion
Peer review period
First Publication
1st search period
Second search period yields 6 studies for inclusion
Peer review period
Second Publication
2nd search period
Third search period yields 6 studies for inclusion
Peer review period
Third Publication
3rd search period
Search period yields 3 studies for inclusion
Peer review period
Fourth Publication
4th search period
Reflects most current evidence