Registering a Systematic Review

Systematic Review Training

Center for Knowledge Management

VANDERBILT UNIVERSITY MEDICAL CENTER

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Objectives:

- ✓ ***Compare features of common databases for registering a systematic review protocol***

Why are systematic review protocols registered?

- Provides researchers an opportunity to “stake a claim” in the research and methodology
- Reduce resource and financial waste in research by preventing duplicate studies
- Decrease research bias
- Transparency in methods and outcomes selection

Photo by Marc Schulte on Unsplash

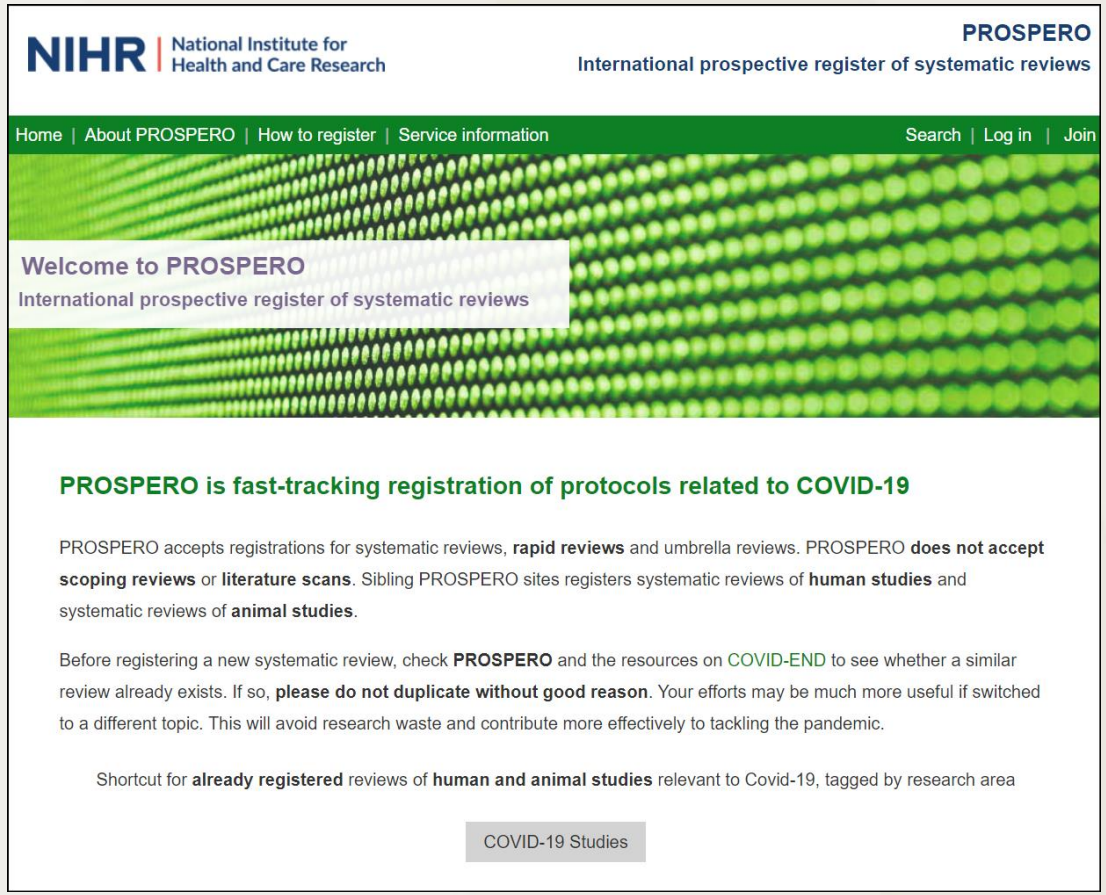
Pieper D, Rombey T. Where to prospectively register a systematic review. Syst Rev. 2022 Jan 8;11(1):8. doi: 10.1186/s13643-021-01877-1. PMID: 34998432; PMCID: PMC8742923

Straus S, Moher D. Registering systematic reviews. CMAJ. 2010 Jan 12;182(1):13-4. doi: 10.1503/cmaj.081849. Epub 2009 Jul 20. PMID: 19620270; PMCID: PMC2802597.

Dos Santos MBF, Agostini BA, Bassani R, Pereira GKR, Sarkis-Onofre R. Protocol registration improves reporting quality of systematic reviews in dentistry. BMC Med Res Methodol. 2020 Mar 11;20(1):57. doi: 10.1186/s12874-020-00939-7. PMID: 32160871; PMCID: PMC7065343.

Sahni V. Early Career Professionals Network: Registering Protocols of Systematic Reviews [Internet]. London (UK): Cochrane Community; 2023 [cited 2023 Oct 2]. Available from: https://community.cochrane.org/news/early-career-professionals-network-registering-protocols-systematic-reviews

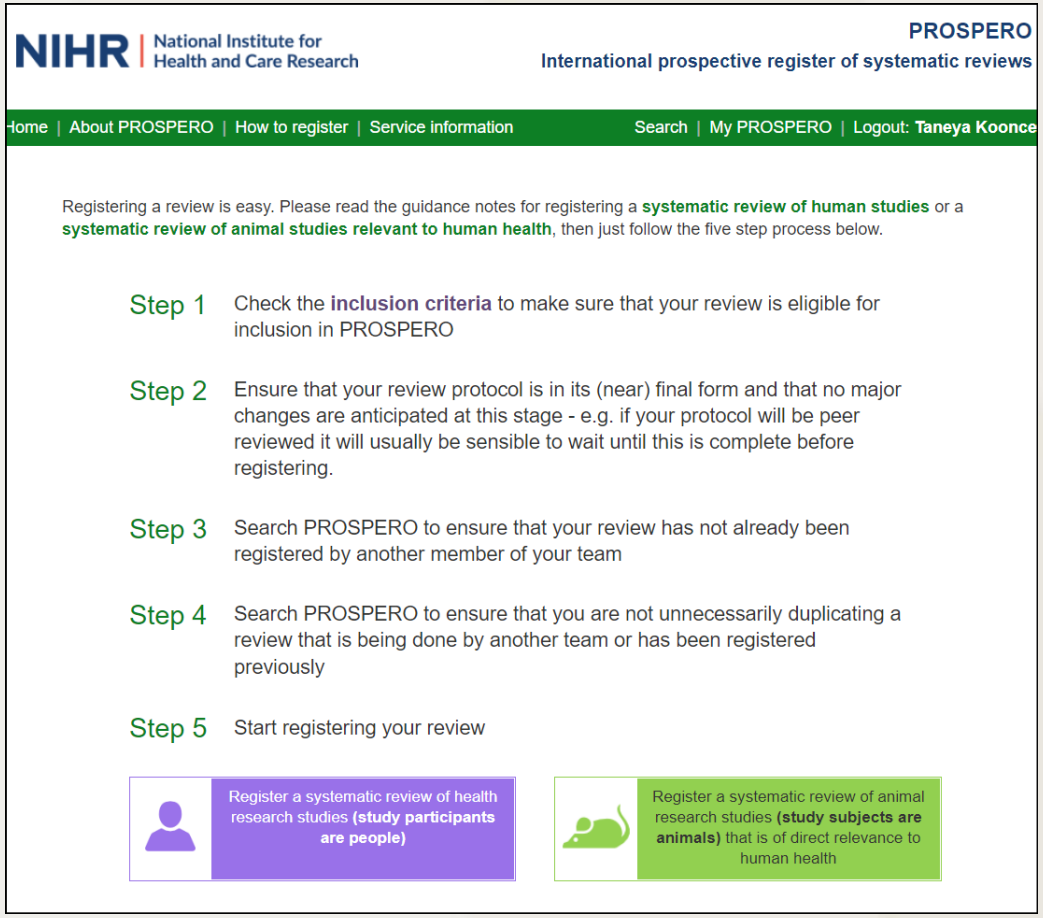
International Prospective Register of Systematic Reviews (PROSPERO)



- Created in 2011
- Funded by the National Institute of Health and Care Research
- No cost to register
- Accepts rapid and umbrella reviews with a health-related outcome
- Submissions undergo quality review; processing can take 3-6 months
- The *largest* and *longest-running* database for systematic review protocol registration (more than 100,000 protocols)

PROSPERO (International Prospective Register of Systematic Reviews). Centre for Reviews and Dissemination, University of York (UK). [cited 2023 Sept 5]; Available from: https://www.crd.york.ac.uk/prospero/.

PROSPERO provides researchers with detailed instructions for protocol structure.



NIHR | National Institute for Health and Care Research

PROSPERO
International prospective register of systematic reviews

Home | About PROSPERO | How to register | Service information Search | My PROSPERO | Logout: **Taneya Koonce**

Registering a review is easy. Please read the guidance notes for registering a **systematic review of human studies** or a **systematic review of animal studies relevant to human health**, then just follow the five step process below.

Step 1 Check the **inclusion criteria** to make sure that your review is eligible for inclusion in PROSPERO

Step 2 Ensure that your review protocol is in its (near) final form and that no major changes are anticipated at this stage - e.g. if your protocol will be peer reviewed it will usually be sensible to wait until this is complete before registering.

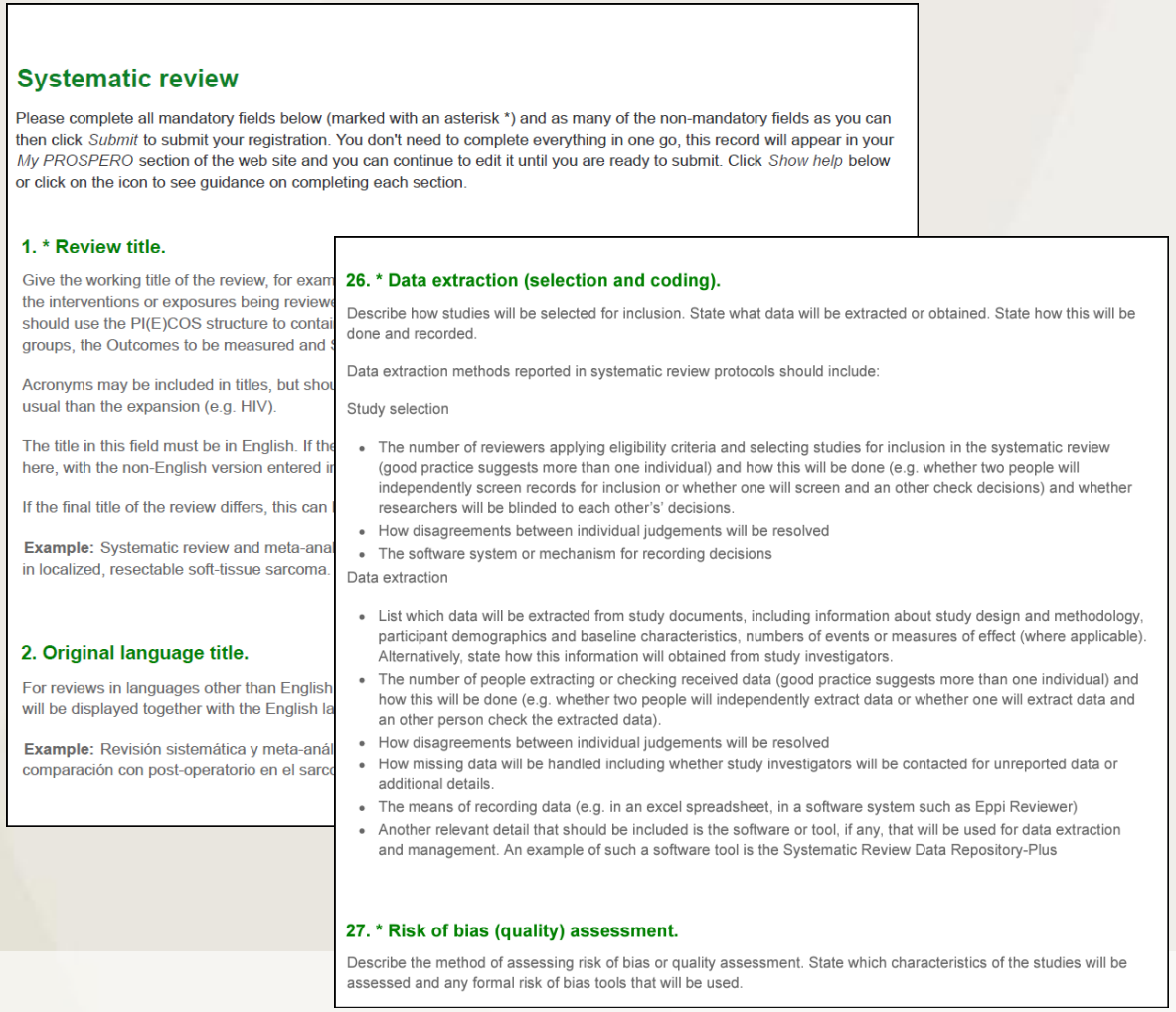
Step 3 Search PROSPERO to ensure that your review has not already been registered by another member of your team

Step 4 Search PROSPERO to ensure that you are not unnecessarily duplicating a review that is being done by another team or has been registered previously

Step 5 Start registering your review

Register a systematic review of health research studies **(study participants are people)**

Register a systematic review of animal research studies **(study subjects are animals)** that is of direct relevance to human health



Systematic review

Please complete all mandatory fields below (marked with an asterisk *) and as many of the non-mandatory fields as you can then click *Submit* to submit your registration. You don't need to complete everything in one go, this record will appear in your *My PROSPERO* section of the web site and you can continue to edit it until you are ready to submit. Click *Show help* below or click on the icon to see guidance on completing each section.

1. * Review title.

Give the working title of the review, for exam
the interventions or exposures being reviewe
should use the PI(E)COS structure to contai
groups, the Outcomes to be measured and

Acronyms may be included in titles, but shou
usual than the expansion (e.g. HIV).

The title in this field must be in English. If the
here, with the non-English version entered ir

If the final title of the review differs, this can

Example: Systematic review and meta-anal
in localized, resectable soft-tissue sarcoma.

2. Original language title.

For reviews in languages other than English
will be displayed together with the English la

Example: Revisión sistemática y meta-anál
comparación con post-operatorio en el sarco

26. * Data extraction (selection and coding).

Describe how studies will be selected for inclusion. State what data will be extracted or obtained. State how this will be done and recorded.

Data extraction methods reported in systematic review protocols should include:

Study selection

- The number of reviewers applying eligibility criteria and selecting studies for inclusion in the systematic review (good practice suggests more than one individual) and how this will be done (e.g. whether two people will independently screen records for inclusion or whether one will screen and an other check decisions) and whether researchers will be blinded to each other's' decisions.
- How disagreements between individual judgements will be resolved
- The software system or mechanism for recording decisions

Data extraction

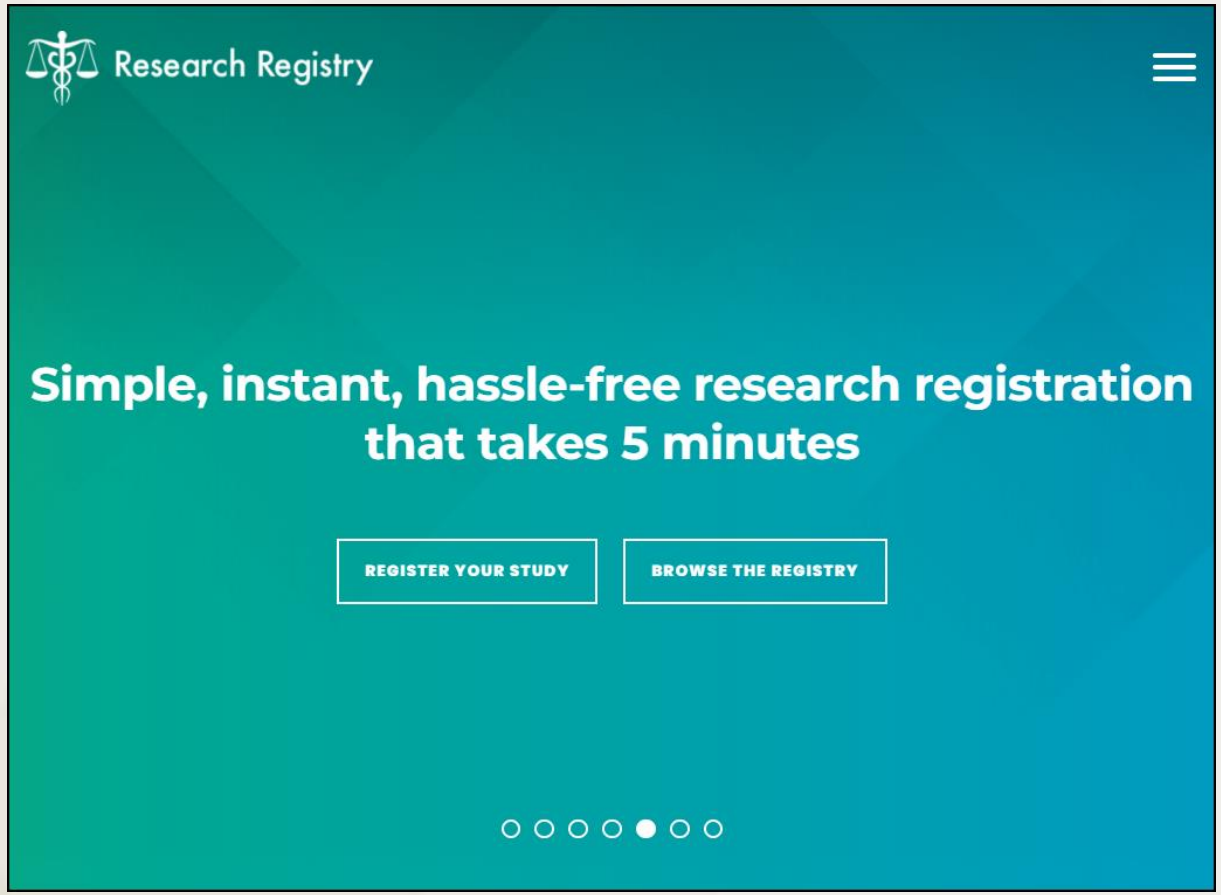
- List which data will be extracted from study documents, including information about study design and methodology, participant demographics and baseline characteristics, numbers of events or measures of effect (where applicable). Alternatively, state how this information will obtained from study investigators.
- The number of people extracting or checking received data (good practice suggests more than one individual) and how this will be done (e.g. whether two people will independently extract data or whether one will extract data and an other person check the extracted data).
- How disagreements between individual judgements will be resolved
- How missing data will be handled including whether study investigators will be contacted for unreported data or additional details.
- The means of recording data (e.g. in an excel spreadsheet, in a software system such as Eppi Reviewer)
- Another relevant detail that should be included is the software or tool, if any, that will be used for data extraction and management. An example of such a software tool is the Systematic Review Data Repository-Plus

27. * Risk of bias (quality) assessment.

Describe the method of assessing risk of bias or quality assessment. State which characteristics of the studies will be assessed and any formal risk of bias tools that will be used.

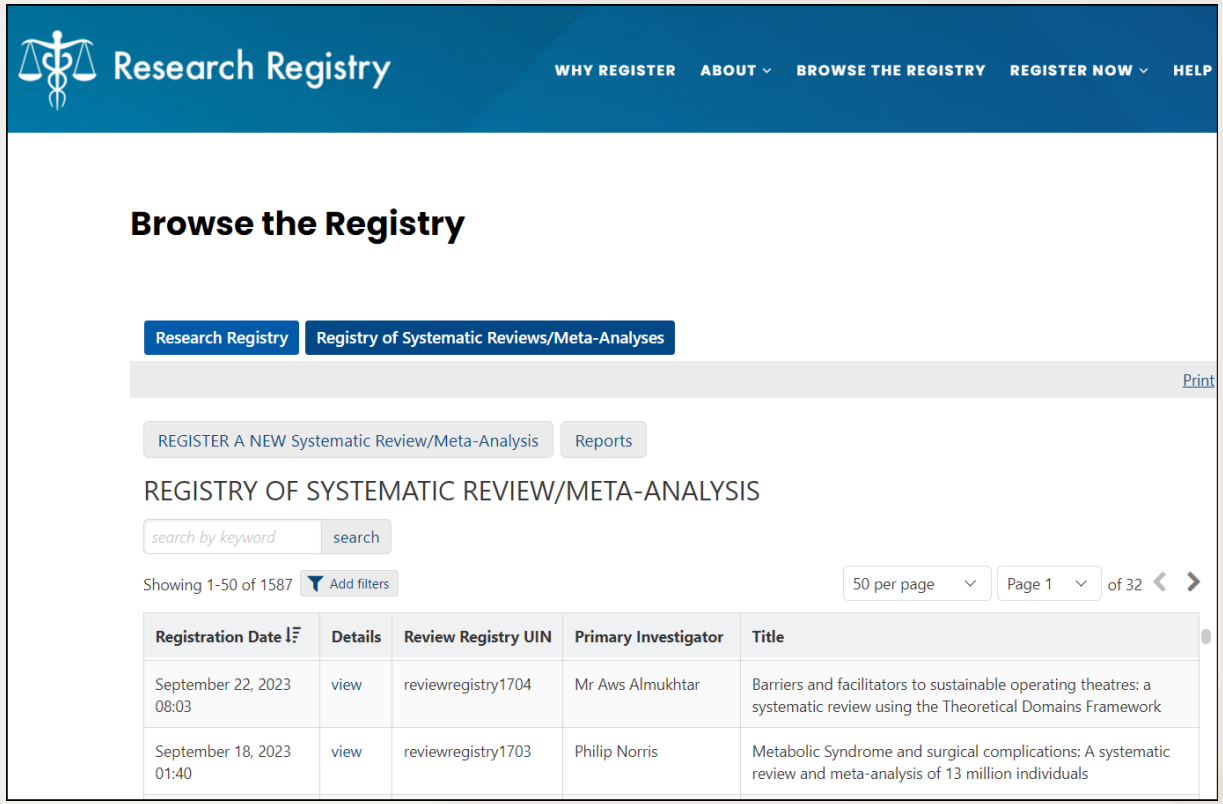
Research Registry – Registry of Systematic Reviews/Meta Analyses

- Started in 2015
- Operated by the International Journal of Surgery Publishing Group and the IDEAL consortium
- Current registration cost: 99£
- Accepts any kind of research protocol; special section for systematic reviews and meta-analyses
- Data curators perform basic submission criteria checks (e.g., check for duplicates, eliminate animal studies); protocols are published immediately
- Contains around 9,000 protocols; of which approximately 1,600 are systematic reviews (as of October 2023)

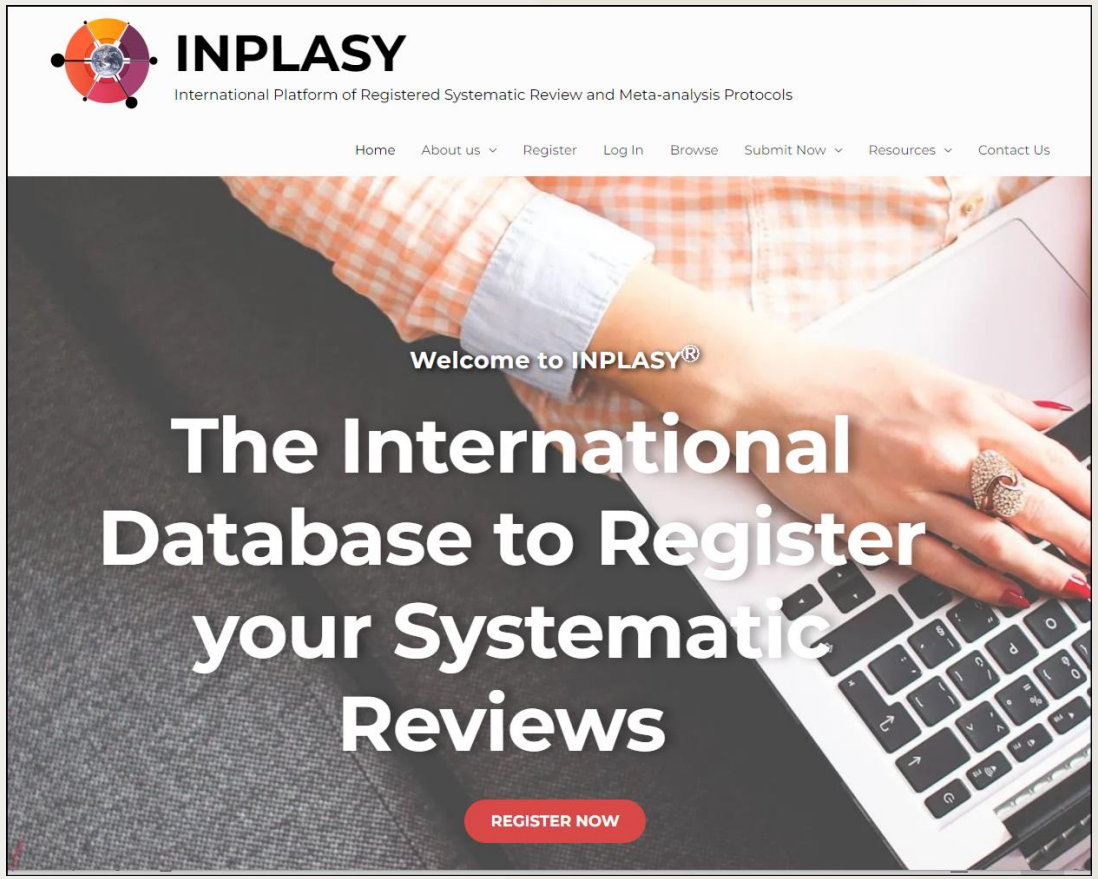


Research Registry [Internet]. London(UK): IJS Publishing Group. [cited 2023 Oct 2]. Available from: https://www.researchregistry.com/

Registration is structured, though no field-by-field guide is provided.

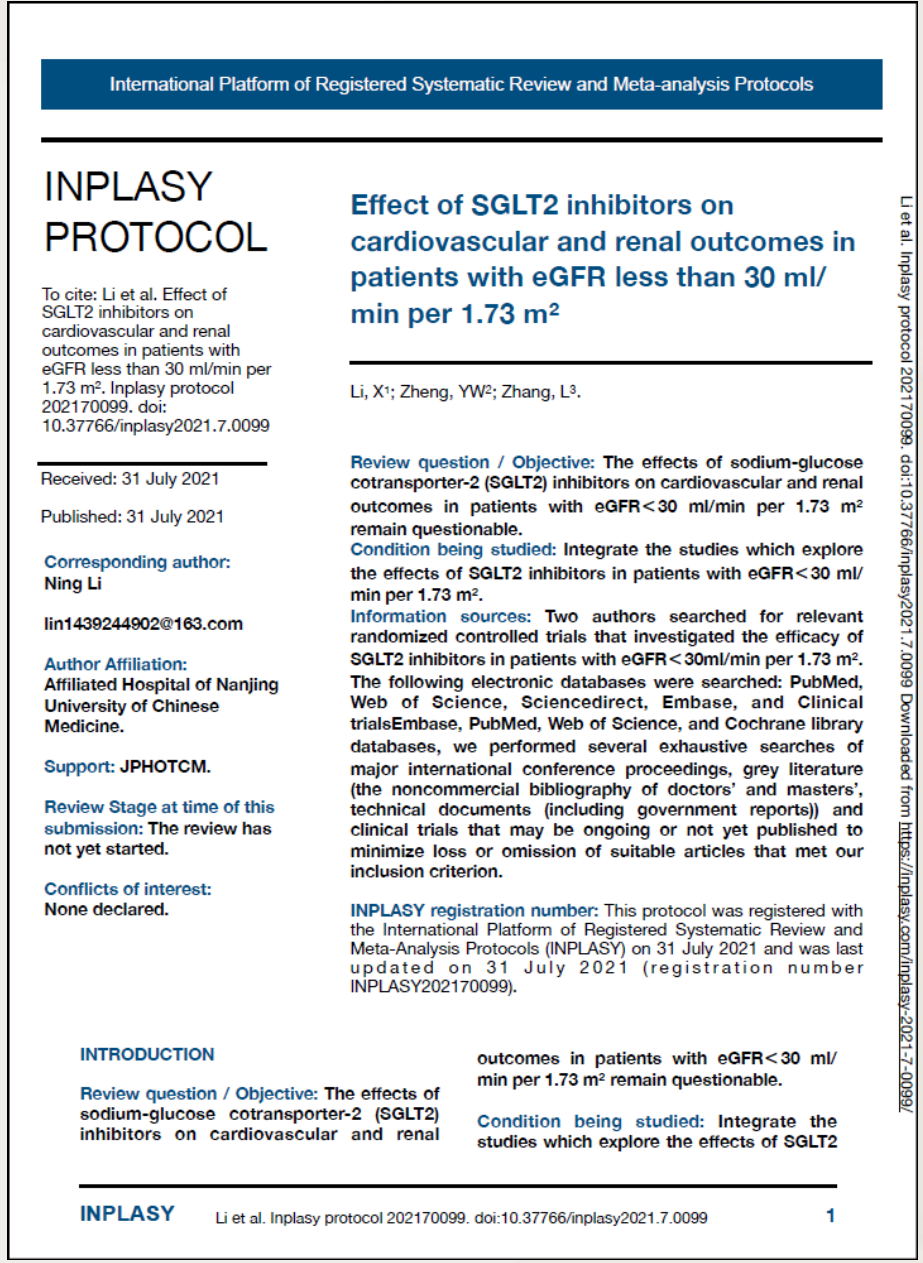


International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY)



- Launched in 2020; site operated by author submission fees
- Registration cost: $20 with fees for protocol updates ($9)
- Accepts systematic, rapid, scoping, and mapping reviews
- Submissions undergo basic quality review; protocols are published within 48 hours.
- Unique digital object identifiers (DOIs) are assigned to each protocol
- Crossref integration with ORCID for updating author research profiles
- Site contains ~5,500 systematic review protocols (as of October 2023)

INPLASY [Internet]. Middletown (DE): INPLASY, Inc. - International Platform of Registered Systematic Review and Meta-analysis Protocols. [cited 2023 Oct 2]. Available from: https://inplasy.com/



International Platform of Registered Systematic Review and Meta-analysis Protocols

INPLASY PROTOCOL

To cite: Li et al. Effect of SGLT2 inhibitors on cardiovascular and renal outcomes in patients with eGFR less than 30 ml/min per 1.73 m². Inplasy protocol 202170099. doi: 10.37766/inplasy2021.7.0099

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Support: JPHOTCM.

Review Stage at time of this submission: The review has not yet started.

Conflicts of interest:
None declared.

Effect of SGLT2 inhibitors on cardiovascular and renal outcomes in patients with eGFR less than 30 ml/ min per 1.73 m²

Li, X[1]; Zheng, YW[2]; Zhang, L[3].

Review question / Objective: The effects of sodium-glucose cotransporter-2 (SGLT2) inhibitors on cardiovascular and renal outcomes in patients with eGFR<30 ml/min per 1.73 m² remain questionable.
Condition being studied: Integrate the studies which explore the effects of SGLT2 inhibitors in patients with eGFR<30 ml/ min per 1.73 m².
Information sources: Two authors searched for relevant randomized controlled trials that investigated the efficacy of SGLT2 inhibitors in patients with eGFR<30ml/min per 1.73 m². The following electronic databases were searched: PubMed, Web of Science, Sciencedirect, Embase, and Clinical trialsEmbase, PubMed, Web of Science, and Cochrane library databases, we performed several exhaustive searches of major international conference proceedings, grey literature (the noncommercial bibliography of doctors' and masters', technical documents (including government reports)) and clinical trials that may be ongoing or not yet published to minimize loss or omission of suitable articles that met our inclusion criterion.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 July 2021 and was last updated on 31 July 2021 (registration number INPLASY202170099).

INTRODUCTION

Review question / Objective: The effects of sodium-glucose cotransporter-2 (SGLT2) inhibitors on cardiovascular and renal outcomes in patients with eGFR<30 ml/ min per 1.73 m² remain questionable.

Condition being studied: Integrate the studies which explore the effects of SGLT2

INPLASY Li et al. Inplasy protocol 202170099. doi:10.37766/inplasy2021.7.0099 1

Li et al. Inplasy protocol 202170099. doi:10.37766/inplasy2021.7.0099 Downloaded from https://inplasy.com/inplasy-2021-7-0099/

Protocols are formatted as PDF documents, and each follows PRISMA-P recommendations.

INPLASY protocol includes recommended items

PRISMA-P recommendations

25	15	17
Section/topics	Items	Potential benefits

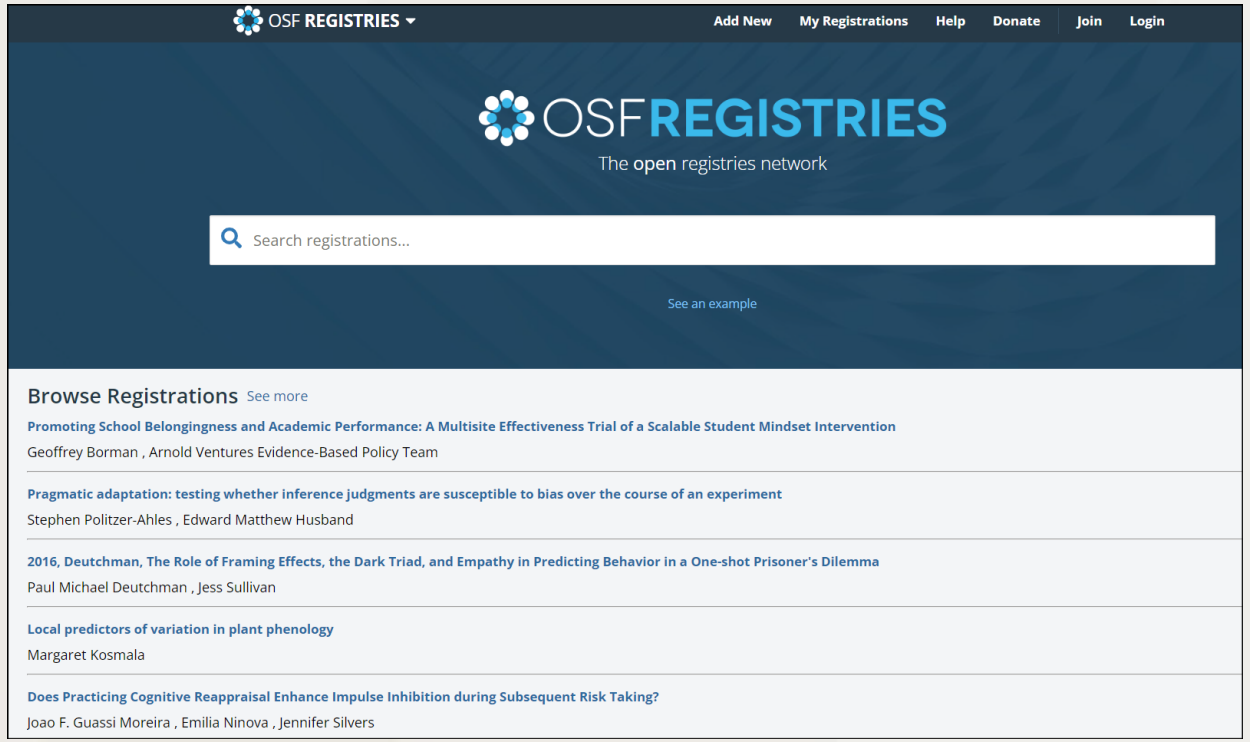
The International Platform of Registered Systematic Review and Meta-analysis Protocols (INPLASY®) at two years: an analysis of 3,082 registered protocols on inplasy.com, platform features, and website statistics (2023 preprint)

- Submissions from 45 countries
- 80% of registrations were systematic reviews or meta-analyses
- 21.2% of registrations subsequently published in scientific journals

Canellas JVDS, Ritto FG, Rodolico A, Aguglia E, Fernandes GVO, Figueredo CMDS, Vettore MV. The international platform of registered systematic review and meta-analysis protocols (INPLASY) at 3 years: an analysis of 4,658 registered protocols on inplasy.com, platform features, and website statistics. Front Res Metr Anal. 2023 Jul 31;8:1135853. doi: 10.3389/frma.2023.1135853. PMID: 37588882; PMCID: PMC10426905.

Open Science Framework Registry

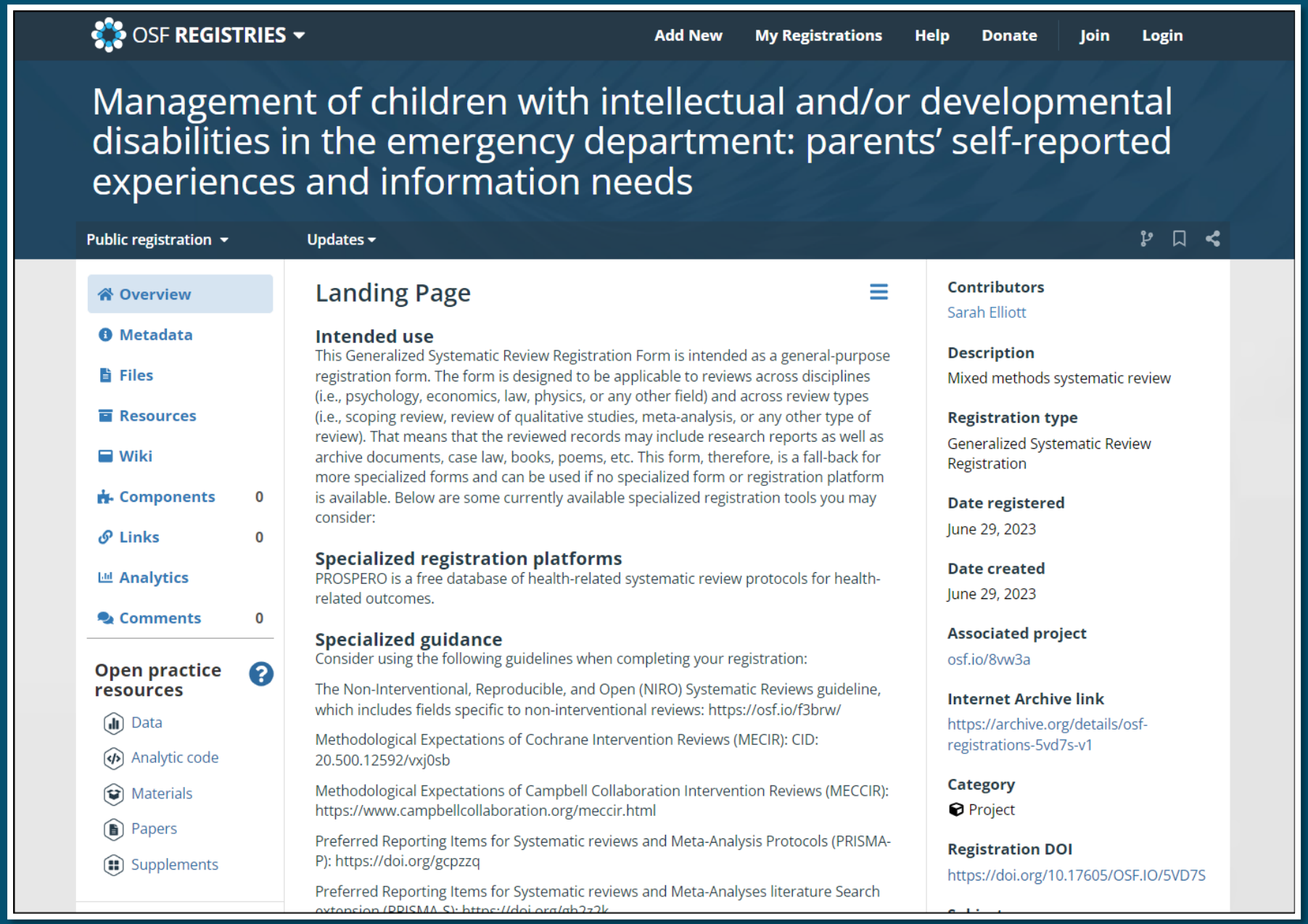
- Started in 2013
- OSFRegistries is part of open science network (i.e,. OSF, OSF Preprints, OSF Meetings, OSF Institutions)
- No cost to register protocols
- Accepts any kind of protocol submission
- Submissions published within a few days; no quality review provided
- Approximately 15,000 systematic and scoping reviews (as of October 2023)



OSF Registries [Internet]. Open Science Framework. [cited 2023 Oct 2]. Available from: https://osf.io/registries

***Registered protocols are*:**

- Well-structured
- Contain multiple metadata fields
- Links can be made with data files, associated study materials, published articles



van den Akker OR, Peters GY, Bakker CJ, Carlsson R, Coles NA, Corker KS, Feldman G, Moreau D, Nordström T, Pickering JS, Riegelman A, Topor MK, van Veggel N, Yeung SK, Call M, Mellor DT, Pfeiffer N. Increasing the transparency of systematic reviews: presenting a generalized registration form. Syst Rev. 2023 Sep 22;12(1):170. doi: 10.1186/s13643-023-02281-7. PMID: 37736736; PMCID: PMC10514995.

Selecting a protocol registration platform depends on your study team's goals and needs.

- **PROSPERO -** is largest and most established registry; not all types of reviews accepted; time delays are significant

- **Open Science Framework -** is second largest repository; provides structured registration form, quick publication turnaround time

- **INPLASY & Research Registry** – both have fees; smaller repositories

Image by Arek Socha from Pixabay

Objectives:

- ✓ ***Compare features of common databases for registering a systematic review protocol***

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