

Enhancing Systematic Reviews in Health Science Using Integrated Search Interfaces, Discovery Layers and Federated Searching

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Introduction

- Integrated search interfaces (ISI) allow researchers to interrogate many databases and repositories simultaneously using one search-interface.
- Examples of integrated search interfaces include; Aquabrowser, Axiella Arena, Bibilio, Blacklight, Chamo, EBSCO Discovery Service, Encore, SirsiDynix Enterprise, Infor Lguana, Primo, Summon, Vufind and WorldCat (1).
- Current advice about the use of ISI in systematic reviews is variable and limited.

Planning a systematic review

- Scope is important, use of ISI can refine the review scope and adjust expectations. (3)
- ISI can rapidly test and review the sensitivity and precision of search strategies across many databases (4, 5).
- ISI can rapidly expand a search scope to cover many novel databases. (2, 5).
- ISI 'text-mines' for words in a subject field, rather than search as a hierarchical taxonomy (6).
- Limiting ISI to specific databases may take time, but not limiting the search may yield too many results (5).
- Many ISI are commercially available not freely available for search reproducibility (1).

Updating a review

- ISI can help researchers to set up comprehensive alerts to monitor new publications (2).
- Identify retractions and errata with ISI, even if they are not published using conventional protocol.

Summary Table

ISI Pitfalls	ISI Pearls
Limited guidelines.	Rapidly identify if a search scope, or search strategy is too sensitive or too specific.
Limited to text-mining controlled subject classifications, no easy-extensibility (exploding).	Able to powerfully text-mine across multiple databases.
Limiting search to specific databases integrated into ISI adds effort and time.	Rapidly expand search to novel databases, registers and grey literature.
Not freely available.	Assists to identify retractions and errata.
Changes to integrated databases not always made transparent to researchers.	Establish unified literature surveillance and alerts.
Workforce skills deficits in use of ISI.	Potential for novel integration of AI to improve searches.



Conclusion

- ISI can benefit researchers by rapidly and comprehensively assessing a number of databases including novel databases, registers, and grey literature.
- ISI is limited to text-mining controlled subject classifications; therefore, it cannot easily expand searches to subject sub-headings.

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