

Appendix 2. Search Strategies

Detailed Three-Step Search strategy

Step 1: an initial limited search

An initial limited search for review articles was performed on SPORTDiscus and Google Scholar searching all fields with a combination of the keywords rugby AND health AND review (April 2019). The reference lists of relevant studies were examined to identify further pertinent studies.

Step 2: identify key words and index terms

Relevant studies identified in the initial limited search informed the selection of keywords and index terms. To maximise inclusivity it was decided that 'rugby*' (searched in title and abstract fields) and any rugby-specific index terms (not football) would be the only terms used on health databases (MEDLINE, PsycINFO, Embase and CINAHL). Secondary search terms (health*, illness*, injur*, fitness, mortalit*, morbidit*, well-being, well-being, function) were combined with the Boolean operator OR and then combined with the rugby terms using AND to facilitate the retrieval of relevant studies on SPORTDiscus and Web of Science. Filters such as publication type were used to aid the exclusion of irrelevant search results.

A similar approach was adopted for searching grey literature. 'Rugby*' was the sole search term used on the WHO International Clinical Trials Registry Platform. The same search terms used for SPORTDiscus and Web of Science was applied in the title and abstract fields of ProQuest Dissertations and Theses Global, while for pragmatic reasons, these terms were searched in the title field only on Google Scholar. As detailed in the protocol, the advanced Google search operator 'site:' was to be used to search for other relevant literature on World Rugby (<https://www.world.rugby>). The preliminary results showed no additional material of value however, so this source of information was omitted.

Step 3: further searching of references and citations

Reference lists of key publications were searched to identify further pertinent studies.

Summary of Searches

Data Sources	Number of records
Medline	2871
Embase	3591
PsycINFO	688
SPORTDiscus	1746
Web of Science Core Collection	2445
Google Scholar	640
ProQuest Dissertations & Theses Global	118
WHO - International Clinical Trials Registry Platform	34
Total pre-duplication	13193
Duplicates	6535
Final total	6658

Database Search Strategies

Medline (Ovid MEDLINE® Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE® Daily and Ovid MEDLINE®) 1946 to present

From 1946, all languages

1. rugby*.ti,ab

Hits: 2871 (searched on 15.04.19)

Embase 1974 to present (OVID)

From 1974, all languages

1. rugby/
2. rugby*.ti,ab
3. 1 OR 2

Hits: 3591 (searched on 15.04.19)

PsycINFO 1806 to present (OVID)

From 1806, all languages

1. rugby*.ti,ab

Hits: 688 (searched on 15.04.19)

CINAHL (EBSCO)

From 1985, all languages

1. (MH "Rugby")
2. TI rugby* OR AB rugby*
3. S1 OR S2

Hits: 1060 (searched on 15.04.19)

SPORTDiscus (EBSCO)

From 1889, excluding Magazines, all languages

1. TI rugby* OR AB rugby*
2. (TI health* OR illness* OR injur* OR fitness OR mortalit* OR morbidit* OR wellbeing OR well-being OR function) OR (AB health* OR illness* OR injur* OR fitness OR mortalit* OR morbidit* OR wellbeing OR well-being OR function)

3. S1 AND S2

Hits: 1746 (searched on 15.04.19)

Web of Science Core Collection

From 1945, all languages

1. rugby*
2. (health* OR illness* OR injur* OR fitness OR mortalit* OR morbidit* OR wellbeing OR well-being OR function)
4. 1 AND 2

Hits: 2445 (searched on 15.04.19)

Grey Literature Search Strategies

GoogleScholar

allintitle: rugby AND (health OR illness OR illnesses OR injury OR injuries OR fitness OR mortality OR mortalities OR morbidity OR morbidities OR wellbeing OR well-being OR function)

Hits: 640 (searched on 15.04.19)

ProQuest Dissertations & Theses Global

1. ti(rugby* AND (health* OR illness* OR injur* OR fitness OR mortalit* OR morbidit* OR wellbeing OR well-being OR function)) OR ab(rugby* AND (health* OR illness* OR injur* OR fitness OR mortalit* OR morbidit* OR wellbeing OR well-being OR function))

Hits: 118 (searched on 16.04.19)

World Health Organisation- International Clinical Trials Registry Platform

1. rugby*

Hits: 34 (searched on 16.04.19)