

**Example search history**

Taken from a PhD student in the Institute of Psychological Sciences who was undertaking a systematic review.

<b>The information I need is:</b>	Q: What behaviour change techniques are associated with successful and unsuccessful physical activity interventions? No limits initially on dates, narrow populations to university students and workplace employees				
<b>Places to search for information:</b>	Web of Science, PsychInfo, Medline, citation searches (ascendancy and descendancy searches)				
<b>Database searched</b>	<b>Search terms used &amp; limits applied</b>	<b>Number of results</b>	<b>Comments on results</b>	<b>Date of search</b>	<b>Next Search Date</b>
Web of Science	Physical activity OR exercise (and) Intervention (and) Behaviour change (and) University students OR employees	6 (under topic)	Search found 6 relevant articles but search is too narrow	18/10/07	18/10/07
Web of Science	Physical activity OR exercise (and) Psychological intervention (and) Behaviour change (and) University students OR employees	0 (under topic)	1 word change and no results found. Need to widen further	18/10/07	18/10/07
Web of Science	Physical activity OR exercise (and) Psychological intervention (and) University students OR employees	0 (under topic)	1 word change and no results found. Need to widen further	18/10/07	18/10/07



Web of Science	Physical activity OR exercise (and) Intervention (and) Technique University students OR employees	0 (under topic)		18/10/07	18/10/07
Web of Science	Physical activity OR exercise (and) Intervention (and) University students OR employees	126 (under topic)	103 relevant for full abstract assessment. Change search terms slightly again tomorrow	18/10/07	19/10/07
Web of Science	Physical activity OR exercise (and) Behaviour (and) University students OR employees	41 (under topic)	25 relevant for full abstract assessment. Marked items and disregarded items by title saved in SSR folder	19/10/07	
Web of Science	Physical activity OR exercise (and) Behaviour change (and) University students OR employees	7 (under topic)	7 relevant for full abstract assessment – most are duplicates	19/10/07	
Web of Science	Physical activity OR exercise (and) Behaviour change (and) University students OR staff	3 (under topic)	2 relevant for full abstract assessment	19/10/07	
Web of Science	Physical activity OR exercise (and) Behaviour change (and) College students (for USA studies) OR staff	9 (under topic)	9 relevant for full abstract assessment – most are duplicates	19/10/07	
Web of Science	Physical activity OR exercise (and) Intervention (and) College (for USA studies) students ( <i>no employees as already used this search term with the other 2 search terms</i> )	47 (under topic)	25 relevant for full abstract assessment – a small percentage are duplicates	19/10/07	
Web of Science	Physical activity OR exercise (and) Intervention (and) Behaviour College students	4	3 relevant for full abstract assessment – all duplicates	19/10/07	

Web of Science	Physical activity OR exercise (and) Behaviour change College students	4	2 relevant for full abstract assessment – both duplicates	19/10/07	
Web of Science	Physical activity OR exercise Psychological OR psychology “University students” OR staff OR “college students” Intervention	16	8 relevant for full abstract assessment – some duplicates		
Web of Science	Physical activity OR exercise Behaviour change technique “University students” OR staff OR “college students”	0			
Web of Science	“Physical fitness” OR “leisure activities” OR recreation Intervention “University students” OR staff OR “college students”	16	2 relevant for full abstract assessment – 1 duplicate		
Web of Science	“Physical fitness” OR “leisure activities” OR recreation Intervention “University students” OR employees OR “college students	18	14 relevant for abstract assessment – a number of duplicates		
Web of Science	“Physical fitness” OR “leisure activities” OR recreation Intervention “University students” OR worksite OR “college students	15	13 relevant for full abstract assessment – half duplicates		
Web of Science	Health promotion Intervention “University students” OR worksite OR “college students	142	67 relevant for full abstract assessment – ¼ duplicates		

Psychinfo and SportDiscus	Physical activity OR exercise (and) Intervention (and) Behaviour change (and) University students OR employees	3	2 relevant for full abstract assessment		
Psychinfo and SportDiscus	Physical activity OR exercise (and) Psychological intervention (and) Behaviour change (and) University students OR employees	0			
Psychinfo and SportDiscus	Physical activity OR exercise (and) Psychological intervention (and) University students OR employees	0			
Psychinfo and SportDiscus	Physical activity OR exercise (and) Intervention (and) Technique (and) University students OR employees	1			
Psychinfo and SportDiscus	Physical activity (and) Intervention (and) University students OR employees	59	52 relevant, 3 duplicates (thus 49 left)		
Psychinfo and SportDiscus	Physical activity OR exercise (and) Intervention (and) University students OR employees	109	86 relevant, 53 duplicates (thus 33 left)		
Psychinfo and SportDiscus	Physical activity (and) Behaviour (and) University students OR employees	34	26 relevant, 9 duplicates (thus 17 left)		
Psychinfo and SportDiscus	Physical activity OR exercise (and) Behaviour (and) University students OR employees	64	43 relevant, 27 duplicates (thus 16 left)		
Psychinfo and SportDiscus	Physical activity OR exercise (and) Behaviour change (and) College students (for USA studies) OR staff	12	11 relevant, 0 duplicates (leaving 11)		
Psychinfo and SportDiscus	Physical activity OR exercise (and) Intervention (and) College (for USA studies) students and staff	191	53 relevant, 7 duplicates (leaving 50)		

Psychinfo and SportDiscus	Physical activity OR exercise (and) Intervention (and) Behaviour College students	5	4 relevant, 4 duplicates (leaving 0)		
Psychinfo and SportDiscus	Physical activity OR exercise (and) Behaviour change College students	11	11 relevant, 11 duplicates (leaving 0)		
Psychinfo and SportDiscus	Physical activity OR exercise Psycholog\$ Intervention "University students" OR staff OR "college students"	43	19 relevant, 15 duplicates (leaving 4)		
Psychinfo and SportDiscus	Physical activity OR exercise Behaviour change technique "University students" OR staff OR "college students"	0			
Psychinfo and SportDiscus	"Physical fitness" OR "leisure activities" OR recreation Intervention "University students" OR staff OR "college students"	88	22 relevant, 22 duplicates (leaving 0)		
Psychinfo and SportDiscus	"Physical fitness" OR "leisure activities" OR recreation Intervention Employees	65	53 relevant, 22 duplicates (leaving 31)		
Psychinfo and SportDiscus	Physical activity OR exercise Intervention Worksite OR workplace OR corporate	99	82 relevant, 62 duplicates (leaving 20)		

## Notes on Procedures

18/10/07 (scoping the literature)

- Started entering search terms into advanced version of Web of Science: -
  - Advanced version
  - Citation databases
    - Science Citation Index Expanded (SCI-EXPANDED) 1900-present
    - Social Sciences Citation Index (SSCI) 1956-present
    - Arts and Humanities Citation Index (A&HCI) 1975-present
- Mainly selecting relevant articles by title – with those I was unsure about (e.g. worksite interventions relating to back pain, cancer, cardiovascular disease etc.), I have included them in the initial scoping search and will skim abstracts, then make a decision
- Using 3-4 fields, with inverted commas for terms with more than one word. Also using 'AND' and 'OR' terms
- Exported articles from Web of Science into Endnote library
- When different search terms bring up duplicate articles, I am classing them as relevant (thus including them in the number) and will discard them using a duplicate removal process when initial search is complete. However, I will also make a note of which articles are duplicated and how many times, as this is likely to reflect a higher relevance if they have been identified by a number of the different search terms I have chosen to use
- All articles are marked (as well as being exported into Endnote) and saved in my personal Web of Knowledge account. Articles disregarded in the scoping stage by title are identifiable on the same document by not being 'marked' as such
- **Idea!?! Split endnote library into university student interventions and staff interventions?**
- Search history saved on server (18/10/07)

19/10/07 (scoping the literature)

- Further searches, saves and exports into endnote
- Initial search saturated (18 searches using different combinations of 15 different search terms) – will assess the abstracts so far and decide which articles to keep. During this time I will start to make a note of what I think should be inclusion and exclusion criteria, especially as the last search brought up a number of 'well being' and 'health promotion' interventions that may or may not have physical activity or exercise components
- Initial search has identified 346 references

- Duplicates and singular references can be found in the 'initial search duplicates and singular references' document (SSR folder in PhD folder on desktop)
- There were 161 duplicates altogether from the 346 references, leaving 185 abstracts to assess from the initial search

22/10/07

- Start reading abstracts
- See if can figure out how to move references from one endnote library to another
- SSR rejections library set up – rejected abstracts will be sent here
- Notes to be made on reasons for keeping and rejecting abstracts...
- **Read notes on systematic review guide and it suggests a minimum of 2 database searches. Therefore, I have started a new search in PsychInfo and SportDiscus and will use the same search terms as I used for the Web of Science searches to see what it will identify**
- PsychInfo and SportDiscus search undertaken:
  - PsycINFO – 1806 to October week 3 2007
  - SPORTdiscus – 1830 to May 2007
- There was a total of 17 searches using combinations of 17 different search terms (may want to look on Web of Science using 'workplace' or 'corporate' as these brought up a number of different items than before)
- Towards the end, the search became saturated as most items being identified were duplicates.
- Have now searched on both the above websites and have updated numbers:
  - Duplicates from PsychInfo and SportDiscus = 215
  - Total references after duplicates from PsychInfo and SportDiscus = 231
  - **Total number of references with Web of Science, PsychInfo and SportDiscus = 231+185 = 416 (there are actually 438 abstracts to assess, so 22 slipped through the net)**

23/10/07 – 31/10/07

- Sifting through abstracts and sectioning by topic...

Reason for Exclusion	Number of times applied
Unidentified duplicate	84
Not an intervention <ul style="list-style-type: none"> <li>• Determinants of exercise/lack of exercise</li> <li>• Relationship between PA and psychological correlates</li> <li>• Relationship between PA attitude/intentions and/or behaviour</li> <li>• Assessment of leisure time &amp;/ PA &amp;/ Job performance / working conditions</li> <li>• PA differences between 2 populations</li> <li>• Relationship between PA and alcohol consumption</li> <li>• Pre-intervention/preliminary investigation to discover how to develop / recommendations for a successful intervention</li> <li>• Coping and resiliency</li> <li>• Survey</li> <li>• Development/validation of questionnaires/scales/health assessment materials</li> <li>• Testing a model</li> <li>• Socioeconomic differences and exercise</li> <li>• Recommendations for adherence to PA</li> <li>• PA only part of follow up</li> <li>• Screening</li> <li>• Relationship between PA and other correlates</li> <li>• Follow up after an intervention</li> <li>• Health problems of students</li> </ul>	18 11 16 8 1 2 16 1 4 3 1 1 1 1 1 1 1 1 1
No PA-related measure within the intervention	39
Interventions using PA solely as a therapeutic intervention <ul style="list-style-type: none"> <li>• PA to combat shoulder, neck, back pain, muscular problems</li> <li>• PA to combat stress</li> </ul>	15 6
Intervention for ageing adults	4
Interventions that address a population group because members share a clinical condition	27
Interventions to prevent disease (e.g. cancer, osteoperosis)	6
Cost-effectiveness of intervention	1



## Exclusion Criteria??

- Interventions that use PA solely as a therapeutic intervention?
- Interventions that address a population group because members share a clinical condition?

## WHY?

- Because we want to focus on interventions that can apply to the general workplace and student populations
- Because populations with clinical conditions/receiving therapy would have special motivating factors that might positively influence the apparent effectiveness of a given strategy

See Khan et al (2002) – Effectiveness of interventions to increase PA

## Inclusion Criteria??

- Include role and/or gender specific interventions? E.g. women who work in manufacturing – this study solely focuses on a specific gendered population – is that OK?
- Measure of aerobic capacity/physical fitness...etc?
- Sole PA intervention? Or can it be part of a wider intervention, e.g. dietary, lifestyle etc?

Since starting to read abstracts, the following points are being noticed and noted:

1. For those interventions where a psychological construct is measured on volunteers who have not been clinically diagnosed with anything before initial measurements take place, abstracts will be included (as the initial sample was taken from the general population)
2. It seems as though there are lots of interventions for the workplace, and few for university students. The articles relating to students are, however, often related to intentions to exercise/ attitudes towards exercise/ self-esteem/-efficacy. There are then implications for the design of interventions for students
3. the 'community guide' suggests 'informational', 'environmental' and 'behavioural' approaches – should I try to split my abstracts this way (unless they are multi-faceted). Where would a magazine intervention fit – informational?

Aim to sift through choices and rejections to double check I have been applying the same rules throughout (haven't included some and excluded others with similar features – e.g. stress prevention studies etc.

Try to develop coding sheet for chosen studies to make the organisation more specific

GO BACK THROUGH REJECTIONS TO DOUBLE CHECK

**02/11/07**

- Went through Endnote library, typing key words for inclusion (physical activity or exercise) and exclusion criteria (stress), and sifting through related abstracts within these groups to reassess. NB when stress was used as a pre-requisite of the population, it was excluded, but if it was assessed as an affected factor as a result of a PA intervention, it was included.
  - After these words typed in and sifting complete, 20 more studies excluded
- Taken reviews out of included studies (phd endnote lib) – now in separate ‘review’ endnote library
  - Reviews excluded = 22
- Total studies after extra exclusions = 166

**05/11/07**

- Gone through all studies with no abstracts
  - Found abstracts for 26 out of 35
  - 9 left without abstracts (still not found)
  - 10 abstracts irrelevant and excluded
  - 16 abstracts relevant and included
- Total studies identified after abstract sifting = 156

FIND ARTICLES AROUND THE AREA THAT MAY BE USEFUL TO READ, E.G: -

Buckworth, J. W. L. S. (2003). "Longitudinal shifts in exercise stages of change in college students. Etude des comportements par rapport a l'activite physique chez des etudiants." Journal of Sports Medicine & Physical Fitness **43**(2): 209-212.

Aim. The protective health benefits of regular physical activity are well established. To date, few studies have assessed the prevalence of exercise behavior and factors influencing exercise adoption and maintenance among college students. The purpose of this study was to examine the relationship of exercise self-efficacy, social support, and sedentary behavior and longitudinal shifts in stage of exercise behavior change among a sample of college students without intervention. Methods. A cross-sectional design was used to examine demographic characteristics, stage of exercise behavior change, exercise self-efficacy, social support (family and friend) and sedentary behavior. One hundred and sixty-one students at a large Midwestern university completed a valid and reliable written mailed questionnaire during baseline assessment and again 6 months later (follow-up). Results. Changes in exercise self-efficacy, social support, and sedentary behavior were not observed among students who maintained their stage of exercise behavior change from baseline to follow-up. Exercise relapsers experienced significant decreases in exercise self-efficacy and peer social support from baseline to follow-up. Conclusion. These findings have important implications for further research on exercise adoption and maintenance among college students. From an applied perspective, it would be valuable for the practitioner to understand that different predictors are likely to influence exercise adoption and relapse.

20/11/2007

- More book-journal duplicates identified and rejected. SRR rejections = 270, SRR accepted library = 140
- Table to illustrate reasons for exclusion for studies that have been rejected upon having had access to the whole article

<b>Reason for Exclusion</b>	<b>Number of times applied</b>
Study protocol only (no study actually undertaken as yet)	4
Sample not relevant	
Pilot study or less than 100 participants (and quantitative)	2
No outcome measure of PA	3
Review	2
Supplements only	2

21/11/2007

- ✓ 270 SRR rejections
- ✓ 13 SRR rejections after having had access to the whole article
- ✓ 121 remain
  - 52 accessed, printed, files saved in folder and attached in Endnote
  - 69 not found
    - 11 articles available to print at LMU
    - 3 articles available to print at EB/HS library
    - 3 sources unknown
    - 49 articles (with 19 different sources) have an unknown location