

# Evidence Insider

Research Databases for Allied Health Evidence

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## Acknowledging our financial support from the Motor Accident Authority

The Motor Accident Authority (MAA) has generously provided the financial assistance needed to fund the development and maintenance of all four research databases for allied health evidence: PEDro, PsycBITE, SpeechBITE & OTseeker. This is because they fund projects associated with disabilities that have occurred as a result of a motor vehicle accident. The two common disability groups are those with a brain or spinal cord injury. All 4 research databases contain RCT's and systematic reviews which examine the efficacy of allied health interventions with these population groups. For more information go to <http://www.maa.nsw.gov.au>



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## Project Funding Updates

1. 'Assisting Allied Health Professional to Implement Evidence: An OTseeker Initiative' funded by the MAA (1/4/08-31/3/11) -see page 4 for more details
2. Introducing PEDro to China (2/2/09-31/10/09). This project is funded by the Australia-China Council. The project involves translating the PEDro web-site into Chinese, rating Chinese-language trials for methodological quality, and promoting PEDro to rehabilitation professionals in China. For more information contact Anne Moseley (pedro@george.org.au)"

Interested in learning more about an OTseeker project investigating what influences practitioners' implementation of evidence ?

See project review on page 4.



## CHANGE YOUR COMPUTER BOOKMARKS.....

**PEDro** has recently changed its web address to:

[www.pedro.org.au](http://www.pedro.org.au) OR [www.physiotherapychoices.com.au](http://www.physiotherapychoices.com.au)



# Overview of 4 databases relevant to allied health

**PEDro** [www.pedro.org.au](http://www.pedro.org.au) or  
[www.physiotherapychoices.com.au](http://www.physiotherapychoices.com.au)

**PEDro** was developed in 1999 to give rapid access to bibliographic details and abstracts of RCTs, systematic reviews and evidence-based clinical practice guidelines in physiotherapy.

PEDro also provides a searchable database for consumers including patients, their friends and families, health service managers, and insurers. Called "Physiotherapy Choices", it is an initiative of the Centre for Evidence-Based Physiotherapy (CEBP). The database provides a catalogue of the best research evidence of the effectiveness of physiotherapy interventions, namely, RCTs, systematic and evidence-based clinical practice guidelines. Physiotherapy Choices catalogues trials, reviews and guidelines with plain English summaries.

As of April 2009 PEDro contained :

- ◆ 14 433 records
- ◆ 11906 randomised controlled trials
- ◆ 1 978 systematic reviews
- ◆ 549 evidence-based clinical practice guidelines

**PsycBITE**

[www.psycBITE.com](http://www.psycBITE.com)

**PsycBITE™** is a database that catalogues studies of cognitive, behavioural and other treatments for psychological problems and issues occurring as a consequence of acquired brain impairment (ABI). The types of studies contained on this database are systematic reviews, randomised controlled trials, non-randomised controlled trials, case series and single subject design.

Examples of recent systematic

**OTseeker**

[www.otseeker.com](http://www.otseeker.com)

**OTseeker** commenced in 2003 and provides access to systematic reviews and randomized controlled trials relevant to occupational therapy. Articles indexed in OTseeker have been sourced from over 900 journals.

As of April 2009 OTseeker contained:

- ◆ 5863 records
- ◆ 4492 randomized controlled trials and
- ◆ 1371 systematic reviews

OTseeker also includes an new **Injury Management Resource**. This resource indexes research about assessments, prognosis or recovery and qualitative research in addition to systematic reviews and RCTs. OTseeker also has free resources for learning about evidence-based practice.



**speechBITE**

[www.speechBITE.com](http://www.speechBITE.com)

**SpeechBITE™** is a database that provides open access to a catalogue of **Best Interventions and Treatment Efficacy** across the scope of Speech Pathology practice. Established in 2008, SpeechBITE is an evidence based practice initiative between and The University of Sydney and Speech Pathology Australia. The database recently received endorsement from the American Speech-Language-Hearing Association (ASHA) and has subscribers from 20 different countries. A First Rater's Training workshop was recently held in Sydney.

As of March 2009 SpeechBITE contained:

- ◆ 1211 records
- ◆ 78 systematic reviews
- ◆ 153 randomised controlled trials
- ◆ 123 non-randomized controlled trials
- ◆ 231 case series
- ◆ 626 single subject design studies



reviews include:

Nonpharmacological interventions for wandering of people with dementia in the domestic setting.

The effects of mental practice in stroke rehabilitation

Cognitive training in Alzheimer's disease: A meta-analysis of the literature.

As of April 2009 PsycBITE contained 2334 records relevant to brain injury including

- \* 170 systematic reviews
- \* 691 randomised controlled trials
- \* 236 non-randomized controlled trials
- \* 447 case series
- \* 790 single subject design studies



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# Exercise programs can improve mobility

In this issue, we showcase two randomised controlled trials, one that studies the effects of progressive resistance training for adults with Down's syndrome and another that investigates whether group exercise improves mobility in an outpatient rehabilitation setting. Both studies scored highly on the PEDro rating scale indicating good methodological quality and internal validity. Both studies can be found on the OTseeker and PEDro databases.

Shields, N., Taylor, NF., & Dodd, KJ. (2008). Effects of a community-based progressive resistance training program on muscle performance and physical function in adults with Down syndrome: A randomised controlled trial. *Archives of Physical Medicine and Rehabilitation*, 89(7), 1215-1220.

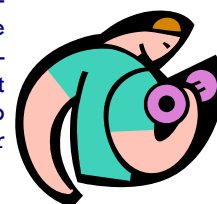
**\*\*PEDro Rating**

**Internal Validity 6/8**

**Statistical Reporting 2/2**

This study by Shields et al. used a single blinded RCT to investigate whether progressive resistance training improved muscle strength, endurance and physical function in adults with Down's syndrome (DS). Twenty adults with a mean age of 26.8 years were randomly allocated. Those in the intervention group participated in 6 exercises using weight machines twice a week for 10 weeks. The control group continued their usual activities.

The intervention group showed significant improvement in upper limb muscle endurance compared with the control group (mean difference in the number of repetitions of chest press @50% of 1 repetition max was 16.7, 95% CI 7.1 to 26.2). There was also a trend toward an improvement in upper limb muscle strength and function. This form of muscle training is a safe and feasible fitness option that can improve upper limb muscle endurance for adults with DS.



Sherrington, C., Pamphlett, PI., Jacka, JA., Olivetti, LM., Nugent, JA., Hall, JM., Dorsch, S., Kwan, MMS., & Lord, SR. (2008). Group exercise can improve participants' mobility in an outpatient rehabilitation setting: A randomised controlled trial. *Clinical Rehabilitation*, 22(6), 493-502.

**\*\*PEDro Rating**

**Internal Validity 5/8**

**Statistical Reporting 2/2**

This study by Sherrington et al. investigated the effects of group exercise on mobility and strength in two public hospital outpatient rehabilitation services.

One hundred and seventy three older adults with a mean age of 74.9 years and with impaired mobility were randomly allocated into an intervention or waiting list group. Three aspects of mobility were



measured. At retest, exercise participants improved significantly more than the wait list group on measures of balance while stepping, sit to stand and gait. They averaged 1.6 more steps on the 15 second step test (95% CI 0.5 to 2.8,  $p=0.005$ ), walked an average of 0.12m/s faster (95% CI 0.05 to 0.2,  $p=0.002$ ) and took 2.5 fewer steps in 6 metre (95% CI -4.2 to -0.8,  $p=0.004$ ). This short duration circuit class programme improved the mobility of older adults in outpatient rehabilitation.



## \*\* What do the PEDro ratings mean?

Randomised clinical trial papers indexed in each of the databases are rated for their internal validity and their statistical reporting using the PEDro Scale. When we rate the **internal validity** of a paper we are assessing the methodological quality of the study by examining the amount of bias that could have influenced the results. For example inadequate random allocation or dissimilar baseline control and intervention group characteristics may all influence the study findings. The higher the rating, the greater confidence there is that the intervention alone contributed to the outcomes of the study.

**Statistical reporting** refers to how well the paper reported on the analysis of data between the intervention and control groups. It does not matter if the study does not achieve significant results, only that actual data is available.

For more information on the PEDro rating scale go to [http://www.pedro.org.au/scale\\_item.html](http://www.pedro.org.au/scale_item.html)

Many ratings for the databases are done by interested health professionals on a volunteer basis. PEDro, PsycBITE OTseeker and SpeechBITE would like to sincerely thank the volunteers who rate articles for the databases.



## Critically Appraised Papers

### What is a Critically Appraised Paper?

A CAP is a succinct appraisal of a single research study. Their purpose is to provide a clear and concise overview of the methods, results and clinical utility of a particular research paper. They are written by researchers or clinical experts and undergo rigorous peer review before they are published. They ultimately help the busy clinician with decision-making regarding the appropriate interventions for their clients.

### TO SPLINT OR NOT TO SPLINT....

Silvia,A.C.,Jones, A.,Silva,P.G.,& Natour,J.(2008). Effectiveness of night-time hand positioning splint in rheumatoid arthritis: A randomised controlled trial. *Journal of Rehabilitation Medicine*, 40(9), 749-54.

#### \*\*PEDro Rating

Internal Validity 6/8  
Statistical Reporting 2/2

Adams,J., Burridge,J.,Mullee,M., Hammond,A.,&Cooper,C.(2008). The clinical effectiveness of static resting splints in early rheumatoid arthritis:A randomised controlled trial. *Rheumatology*, 47, 1548-1553.

#### \*\*PEDro Rating

Internal Validity 6/8  
Statistical Reporting 2/2

Two CAP's to be published in the upcoming June issue of *Australian Journal of Occupational Therapy* report on the findings of two studies that investigated the use of resting hand splints. This is of particular interest to occupational therapists because while the prescription of splints is common, the evidence to support their efficacy is limited. Furthermore, while both papers scored highly on the PEDro scale, suggesting good methodological quality and strong internal validity, one paper reports no effect of splinting while the other concludes that splinting is effective for several outcomes. The findings of Silvia et al. suggest that the use of a night-time hand positioning splint reduced pain, improved grip and pinch strength, upper limb function and function in patients with rheumatoid arthritis (RA).

In contrast, Adams et al. concluded that static resting splints used with people with early RA had no advantage over standard occupational therapy. How can two good quality clinical trials have such differences in outcomes and how can clinicians use this information to inform practice? In this *AJOT* issue the editor identifies a number of issues requiring careful consideration when applying such findings to practice. These include an understanding of the nature of rheumatoid arthritis, the characteristics of the sample, the splints that were used, the intervention regimen and the outcome measures used. The CAPs highlight a number of important factors regarding the implementation of this evidence. For more information refer to the CAP's and Editorial in *AJOT*, Volume 56, Issue 3.

### Assisting allied health professionals to implement evidence:



A new project on implementation of evidence has recently been funded by the Motor Accident Authority for 3 years and aims to support allied health professionals and managers who wish to implement high level evidence from OTseeker, PEDro or PscybITE.

Through training workshops and web-based resources, the project aims to teach these groups how to transfer knowledge from systematic reviews and RCTs to individual clients by identifying and addressing local barriers to implementation, and conduct file audits to examine practice. Additional training in critical appraisal and the PEDro rating system will be provided alongside implementation training.



Specific enquiries about the project can be directed to Dr Annie McCluskey on (02) 9351 9834.

# The Quality of Physiotherapy Evidence

Moseley AM, Elkins MR, Herbert RD, Maher CG, Sherrington C. (in press). Cochrane reviews used more rigorous methods than non-Cochrane reviews: Survey of systematic reviews in physiotherapy. *Journal of Clinical Epidemiology*. [Epub ahead of print]

**OBJECTIVE:** To describe the quality and methods of systematic reviews of physiotherapy interventions, compare Cochrane and non-Cochrane reviews, and establish the interrater reliability of the Overview Quality Assessment Questionnaire (OQAQ) quality assessment tool.

**STUDY DESIGN AND SETTING:** A survey of 200 published systematic reviews was done. Two independent raters assessed the search strategy, assessment of trial quality, outcomes, pooling, conclusions, and overall quality (OQAQ). The study was carried out in the University research center.

**RESULTS:** In these reviews, the five most common databases searched were MEDLINE, EMBASE, Cochrane Library, CINAHL, and Cochrane Review Group Registers. The Cochrane allocation concealment system and Jadad Scale were most frequently used to assess trial quality. Cochrane reviews searched more databases and were more likely to assess trial quality, report dichotomous outcomes for individual trials, and conduct a meta-analysis than non-Cochrane reviews. Non-Cochrane reviews were more likely to conclude that there was a beneficial effect of treatment. Cochrane reviews were of higher quality than non-Cochrane reviews. There has been an increase in the quality of systematic reviews over time. The OQAQ has fair to good interrater reliability.

**CONCLUSION:** The quality of systematic reviews in physiotherapy is improving, and the use of Cochrane Collaboration procedures appears to improve the methods and quality.

## Two publications of interest to physiotherapists



**OBJECTIVE:** To compare the comprehensiveness of indexing the reports of RCTs of physiotherapy interventions by eight bibliographic databases (AMED, CENTRAL, CINAHL, EMBASE, Hooked on Evidence, PEDro, PsycINFO and PubMed).

**DESIGN:** Audit of bibliographic databases.

**METHOD:** Two hundred and eighty-one reports of RCTs of physiotherapy interventions were identified by screening the reference lists of 30 relevant systematic reviews published in four consecutive issues of the *Cochrane Database of Systematic Reviews* (Issue 3, 2007 to Issue 2, 2008). AMED, CENTRAL, CINAHL, EMBASE, Hooked on Evidence, PEDro, PsycINFO and PubMed were used to search for the trial reports. The number of trials indexed in each database was calculated.

**RESULTS:** PEDro indexed 99% of the trial reports, CENTRAL indexed 98%, PubMed indexed 91%, EMBASE indexed 82%, CINAHL indexed 61%, Hooked on Evidence indexed 40%, AMED indexed 36% and PsycINFO indexed 17%. Most records (92%) were indexed on four or more of the databases. One record was indexed on a single database (PEDro).

**CONCLUSIONS:** Of the eight bibliographic databases examined, PEDro and CENTRAL provide the most comprehensive indexing of reports of randomised trials of physiotherapy interventions.

Moseley AM, Sherrington C, Elkins MR, Herbert RD, Maher CG. (2009). Indexing of randomised controlled trials of physiotherapy interventions: A comparison of AMED, CENTRAL, CINAHL, EMBASE, Hooked on Evidence, PEDro, PsycINFO and PubMed. *Physiotherapy* .[in press]