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# EJPRM systematic continuous update on Cochrane reviews in rehabilitation: news from the first issue 2009

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**The aim of the present paper is to systematically review all the new rehabilitation papers published in the first issue of 2009 by the Cochrane Library in order to provide to physicians involved in the field a summary of the best evidence nowadays available. The author systematically searched all the new papers of rehabilitative interest from the 1st issue 2009 of the Cochrane Library. The retrieved papers have been then divided in subgroups on the base of the topic. The number of included papers was five, three dealing with neurological rehabilitation, one about respiratory and one about geriatric rehabilitation. Numerous studies are available on neurological rehabilitation, with new evidence and indications, but more studies are needed. Pulmonary and geriatric topics confirmed to be relevant in the rehabilitation field. The Cochrane Collaboration and its product, the Cochrane Library, are really relevant instruments to improve evidence based medicine in medical practice and thus, also in the rehabilitation field. The present paper can help rehabilitation specialists to easily retrieve the conclusions of the most relevant and updated reviews in order to update their clinical practice in a more rapid and effective way.**

**KEY WORDS:** Reviews - Rehabilitation - Treatment, outcome.

The EJPRM is a clinical journal of Physical and Rehabilitation Medicine, as clearly stated: its aim is to improve the diffusion of high quality update in this field.<sup>1</sup> Because of this reason, the Cochrane Collaboration and the current status of Cochrane reviews in the rehabilitation field were first introduced.<sup>2</sup>

In 2008 the journal first attempted to diffuse excel-

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lent quality rehabilitation reviews and indications among its readers. A continue update about the general availability of new comprehensive data was started and three articles have, since then, been published.<sup>3-5</sup> Furthermore, the authors of the most interesting Cochrane reviews were invited to publish for the EJPRM in order to present their papers in a special section of the journal called "The Cochrane Corner".

This article presents to the readers a list of papers of rehabilitative interest systematically researched and reviewed from the first issue of 2009.

### Methods

The authors have systematically searched all the new reviews of rehabilitative interest from the first issue 2009 of the Cochrane Library. The papers are divided in subgroups on the base of the topic.

### Results

The number of included papers was five, three dealing with neurological rehabilitation, one about respiratory and one about geriatric rehabilitation.

### Neurological rehabilitation

#### EFFECTIVENESS OF VOCATIONAL REHABILITATION INTERVENTION ON THE RETURN TO WORK AND EMPLOYMENT OF PERSONS WITH MULTIPLE SCLEROSIS<sup>6</sup>

Two trials (one randomized control trial and one controlled clinical trial (total 80 participants) met the review criteria. Both trials scored poorly on the methodological quality assessment. There was “insufficient evidence” for vocational rehabilitation (VR) programs for (a) “competitive employment”, in altering rates of job retention, changes in employment, improvement in rates of re-entry into the labour force; (b) for altering “work ability” by improving participants’ confidence in the accommodation request process, or employability maturity or job seeking activity. There is no evidence neither for changes in persons with supported employment or on disability pensions, nor for cost-effectiveness.

Evidence to support VR for persons with multiple sclerosis (MS) was insufficient. However, the review highlights some of the challenges in providing VR for persons with MS. Clinicians need to be aware of vocational issues, and to understand and manage barriers for maintaining employment. Proactive and timely VR programs should incorporate practical solutions to deal with work disability, workplace accommodation and educated employers, and the wider community. Liaison with policy makers is imperative for government initiatives that encourage work-focused VR programs. Future research in VR should focus on improving methodological and scientific rigour of clinical trials; on the development of appropriate and valid outcome measures; and on cost effectiveness of VR programs.

#### VERY EARLY *VERSUS* DELAYED MOBILISATION AFTER STROKE<sup>7</sup>

One study, involving 71 participants, was included. In this study the experimental group had experienced earlier and more frequent mobilisation than the control group (median 18.1 hours post-stroke for experimental group *versus* 30.8 hours control; 167 minutes of mobilisation [interquartile range, IQR, 62 to 305] during admission for experimental group *versus* 69 [IQR 31 to 115] minutes for controls). A small number of patients who received early and frequent mobilisation died or were disabled at three months, but this was not statistically significant and the confidence intervals were wide (odds ratio 0.67, 95% confidence

interval 0.25 to 1.79,  $P=0.42$ ). No significant difference on any secondary outcomes of interest were found.

The author found insufficient evidence to support or refute the efficacy of routine very early mobilisation after stroke, compared with conventional care. Further research is required to determine the benefits and harms of very early mobilisation after stroke.

#### ORTHOTIC DEVICES AFTER STROKE AND OTHER NON-PROGRESSIVE BRAIN LESIONS<sup>8</sup>

Fourteen trials with 429 participants were analyzed. The overall effect of lower limb orthoses on walking disability (speed), walking impairment (step/stride length) and balance impairment (weight distribution in standing) was significant and beneficial. There was no significant effect on postural sway (balance impairment) or mobility disability but the numbers of studies and participants were low. However, these cross-over trials looked at the immediate effect of orthosis wearing; they did not assess the effects of wearing an orthosis over the long-term. Upper limb orthoses showed no effect on upper limb function, range of movement at the wrist, fingers or thumb, nor pain. However, these data concern only three trials.

### Respiratory rehabilitation

#### PULMONARY REHABILITATION FOLLOWING EXACERBATIONS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE<sup>9</sup>

Six trials including 219 patients were identified. Pulmonary rehabilitation significantly reduced hospital admissions (pooled odds ratio 0.13 [95% CI 0.04 to 0.35], number needed to treat (NNT) 3 [95% CI 2 to 4], over 34 weeks) and mortality (pooled odds ratio 0.29 [95% CI 0.10 to 0.84], NNT 6 [95% CI 5 to 30] over 107 weeks). Effects of pulmonary rehabilitation on health-related quality of life were well above the minimal statistical significance difference (weighted mean differences for dyspnoea, fatigue, emotional function and mastery domains of the Chronic Respiratory Questionnaire between 1.15 [95% CI: 0.94, 1.36] and 1.88 [95% CI: 1.67, 2.09] and between -9.9 [95% CI: -18.05, -1.73] and -17.1 [95% CI: -23.55, -10.68] for total, impact and activity limitation domains of the St. Georges Respiratory Questionnaire). In all trials, pulmonary rehabilitation improved exercise capacity (60-215 meters in six-minute or shuttle walk tests). No adverse events were reported (two studies). Evidence from small stud-

ies of moderate methodological quality suggests that pulmonary rehabilitation is a highly effective and safe intervention to reduce hospitalization and mortality and to improve health-related quality of life in chronic obstructive pulmonary disease patients after suffering an exacerbation.

### *Geriatric rehabilitation*

#### REHABILITATION FOR OLDER PEOPLE IN LONG-TERM CARE<sup>10</sup>

Forty-nine trials involving 3 611 participants were included. On average, 74 (range 12 to 468) participants were randomised into trials at baseline. Among the studies which reported population age, the overall mean age was 82 years (range of 69 to 89). Most interventions lasted less than 20 weeks, and comprised approximately three 30 to 45-minute group sessions per week. Twelve trials conducted postintervention follow-ups (maximum one year). Most often a "usual care" control group was used, but social activity and alternative interventions also featured. The primary outcome, daily activity restriction, was reported by 38 trials. A range of secondary outcomes are also reported.

Provision of physical rehabilitation interventions to long-term care residents is worthwhile and safe, reducing disability with few adverse events. Most trials reported improvement in physical condition. However, there is insufficient evidence to make recommendations about the best intervention, improvement sustainability and cost effectiveness.

### **Discussion**

Even in the first issue 2009 of the Cochrane Library, the interest in neurological rehabilitation was really high. Three out of five new reviews of rehabilitation interest where about this topic. The paper by Khan showed the lack of evidence about the efficacy of vocational therapy to provide a faster return to work in persons with MS.<sup>6</sup> The paper by Bernhardt, about stroke treatment, found no difference between usual care and very early mobilisation,<sup>7</sup> while the paper by Tyson showed the immediate effect of orthoses on walk.<sup>8</sup>

Puhan found evidence that pulmonary rehabilitation is a highly effective and safe intervention to reduce hospital admissions and mortality and to improve health-related quality of life in chronic obstructive

pulmonary disease patients after suffering an exacerbation.<sup>9</sup>

About geriatric rehabilitation, Forster found that provision of physical rehabilitation interventions to long-term care residents is worthwhile and safe, reducing disability with few adverse events, and improving the physical condition.<sup>10</sup>

### **Conclusions**

New evidence and indications are now available especially in neurological rehabilitation, even if more studies are needed. Pulmonary and geriatric topics confirmed to be relevant in the rehabilitation field.

The Cochrane Collaboration and its product, the Cochrane Library, are really relevant instruments to improve evidence based medicine in medical practice and thus also in the rehabilitation field. The present paper can help rehabilitation specialists to easily retrieve the conclusions of the most relevant and updated reviews in order to change their clinical practice in a more rapid and effective way.

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