



European Cooperation in
Occupational Therapy Research (OTR)
and Occupational Science (OS)

ECOTROS overview of occupational therapy outcome studies

Abstracts of Reviews of the recent Decade

November 2012

In this ECOTROS overview, you will find abstracts of review articles on outcome studies in occupational therapy research (OTR). This information is not comprehensive, but interactively increasing by the contributions of the ECOTROS members. If you are missing an abstract of a current review paper on OTR outcome studies, please send the abstract to sebastian.voigt@uniklinik-freiburg.de. It will be included in the ECOTROS overview.

Criteria for judging the quality of the systematic reviews can be found at <http://www.equator-network.org/resource-centre/library-of-health-research-reporting/reporting-guidelines/systematic-reviews-and-meta-analysis/>

Criteria to conclude recommendations for practice can be found at http://www.gradeworkinggroup.org/publications/JCE_series.htm

ECOTROS overview

Poulin V, Korner-Bitensky N, Dawson DR, Bherer L. Efficacy of executive function interventions after stroke: a systematic review. *Top Stroke Rehabil.* 2012 Mar-Apr;19(2):158-71.

PURPOSE: Disorders in executive functions are common post stroke and play a critical role in predicting functional recovery. To establish best practice recommendations, it is necessary to appraise the evidence regarding specific executive function interventions post stroke. This systematic review aims to determine whether executive function intervention is more effective than no or alternative intervention in improving executive functions and functional abilities in the acute, subacute, and chronic stages post stroke. **METHOD:** A systematic review was performed up to January 2011 of MEDLINE, CINAHL, PsychINFO, OTseeker, and Cochrane databases. Eligible studies needed to include a cognitive intervention to remediate executive function impairments post stroke or to improve functional tasks compromised by these impairments. Methodological quality of randomized trials was rated by 2 authors. The level of evidence for each intervention, according to stage of recovery, was determined. **RESULTS:** Ten studies met inclusion criteria - 1 evaluating treatment in the subacute and 9 in the chronic stage. Limited evidence from the 1 study in the subacute stage (level 2b) and 9 studies (including 3 randomized controlled trials) in the chronic stage (level 2a) support using remedial (eg, computerized working memory training) and compensatory interventions (eg, problem-solving strategies, paging system) for improving executive functioning and, possibly, functional abilities. **CONCLUSION:** These findings suggest that persons with stroke may possibly benefit from specific executive function training and learn compensatory strategies to reduce the consequences of executive impairments. Further research is needed in acute and subacute stroke, when the impact of treatment is potentially great and where few studies have been undertaken.

D'Amico M. Update on productive aging in the American journal of occupational therapy 2011. *Am J Occup Ther.* 2012 Jul-Aug;66(4):e61-72.

A review of the productive aging articles published in the American Journal of Occupational Therapy during 2011 was conducted and discussed in light of meeting the Centennial Vision charge of supporting practice through evidence. Twelve articles that specifically addressed productive aging were published in AJOT in 2011. The review of these 12 articles found seven Level I studies. Six of the articles were systematic reviews identifying effective interventions for people with Alzheimer's disease and related dementias and their caregivers, and 1 was a randomized controlled trial of fall prevention in community-dwelling older adults. Five were basic research studies. Two of the 5 studies researched professional issues, and 3 addressed client-based issues. The quantity of productive aging research published in 2011 was consistent with the quantity reported in 2009 and 2010. More studies building the body of evidence about the effectiveness of occupational therapy with older adults are needed.

Orellano E, Colón WI, Arbesman M. Effect of occupation- and activity-based interventions on instrumental activities of daily living performance among community-dwelling older adults: a systematic review. *Am J Occup Ther.* 2012 May-Jun;66(3):292-300.

This systematic review examines the effectiveness of occupation- and activity-based interventions on community-dwelling older adults' performance of instrumental activities of daily living (IADLs). It was conducted as part of the American Occupational Therapy Association's Evidence-Based Practice Project. Forty studies met the inclusion criteria and were critically appraised and synthesized. Within occupation-based and client-centered interventions, the evidence that multicomponent interventions improve and maintain IADL performance in community-dwelling older adults is strong. The results also indicate that client-centered, occupation-based interventions can be effective in improving and maintaining IADL performance. The evidence is moderate for functional task exercise programs and limited for simulated IADL interventions to improve IADL performance. In the area of performance skills, the evidence related to physical activity and cognitive skills training is mixed, and the evidence that vision rehabilitation interventions improve IADL performance in older adults with low vision is moderate. Implications for practice, education, and research are also discussed.

Arbesman M, Mosley LJ. Systematic review of occupation- and activity-based health management and maintenance interventions for community-dwelling older adults. *Am J Occup Ther.* 2012 May-Jun;66(3):277-83.

We describe the results of a systematic review of the literature on occupation- and activity-based health management and maintenance interventions for productive aging. We found moderate to strong evidence that client-centered occupational therapy improved physical functioning and occupational performance related to health management in community-dwelling older adults, as well as in adults with osteoarthritis and macular degeneration. We found moderate evidence that health education programs reduce pain and increase physical activity and that individualized health action plans improve activities of daily living function and participation in physical activities. The evidence that self-management programs result in a decrease in pain and disability and that incorporating cognitive-behavioral principles into physical activity improves long-term participation in exercise was also moderate. Although the evidence for skill-specific training in isolation is limited, effectiveness increases when skill-specific training is combined with health management programs. The implications for practice, education, and research are discussed.

Arbesman M, Lieberman D. Methodology for the systematic reviews on occupation- and activity-based intervention related to productive aging. *Am J Occup Ther.* 2012 May-Jun;66(3):271-6.

Systematic reviews of the literature relevant to community-dwelling older adults are important to the practice of occupational therapy. We describe the four questions that served as the focus for the systematic reviews of the effectiveness of occupational therapy interventions for older adults living in the community. This article includes the background for the reviews; the process followed for each question, including search terms and search strategy; the databases searched; and the methods used to summarize and critically appraise the literature. The final number of articles included in each systematic review; a summary of the results; the strengths and limitations of the findings; and implications for practice, education, and research are presented.

Letts L, Minezes J, Edwards M, Berenyi J, Moros K, O'Neill C, O'Toole C. Effectiveness of interventions designed to modify and maintain perceptual abilities in people with Alzheimer's disease and related dementias. *Am J Occup Ther.* 2011 Sep-Oct;65(5):505-13.

An evidence-based review was undertaken to answer the question, "What is the evidence for the effect of interventions designed to modify and maintain perceptual abilities on the occupational performance of people with Alzheimer's disease and related dementias?" A systematic search of electronic databases and application of inclusion and exclusion criteria guided the selection of 31 articles. Each article was critically appraised, and the evidence was synthesized. Some interventions use remaining perceptual abilities to enable people to find their way in a facility and decrease attempts at exiting. Preliminary evidence has supported use of visual stimulation and barriers. We found some evidence for the use of auditory stimuli and group therapy that aim to change perceptual abilities. Research with high-level evidence is required to validate these findings. Evidence on the benefits of Snoezelen is not conclusive for occupational performance outcomes; further research to justify its use as an occupational therapy intervention may be warranted.

Letts L, Edwards M, Berenyi J, Moros K, O'Neill C, O'Toole C, McGrath C. Using occupations to improve quality of life, health and wellness, and client and caregiver satisfaction for people with Alzheimer's disease and related dementias. *Am J Occup Ther.* 2011 Sep-Oct;65(5):497-504.

An evidence-based review was undertaken to answer the question, "What is the evidence for the effect of interventions designed to establish, modify, and maintain activities of daily living (ADLs), instrumental activities of daily living (IADLs), leisure, and social participation on quality of life (QOL), health and wellness, and client and caregiver satisfaction for people with Alzheimer's disease and related dementias?" A systematic search of electronic databases and application of inclusion and exclusion criteria guided the selection of 26 articles. Limited high-level evidence on ADL interventions was identified. IADL interventions for people living in the community showed promise. Tailored and activity-based leisure interventions were common and seemed to have positive impacts on caregiver satisfaction, and some interventions had positive results for client well-being and QOL. Social participation interventions focused on people with dementia still able to engage in verbal social interactions; these interventions had at least short-term positive effects.

Padilla R. Effectiveness of environment-based interventions for people with Alzheimer's disease and related dementias. *Am J Occup Ther.* 2011 Sep-Oct;65(5):514-22.

A systematic review of evidence for the efficacy of environment-based interventions on the affect, behavior, and performance of people with Alzheimer's disease and related dementias was conducted as part of the American Occupational Therapy Association's Evidence-Based Literature Review Project. Thirty-three reports met inclusion criteria. Results suggest that ambient music, aromatherapy, and Snoezelen are modestly effective in reducing agitation but do not consistently have long-term effects. Visually complex environments that give the illusion of barriers deter people from wandering to unsafe places but do not reduce the urge to wander. Evidence that bright light therapy can aid in regulating mood and the sleep-wake cycle and thus help people remain awake during the day is preliminary. Montessori-based programming can be useful in matching activities to the person's remaining skills. Further research is needed to evaluate the long-term effect, contraindications, and best dosages of these interventions.

Padilla R. Effectiveness of interventions designed to modify the activity demands of the occupations of self-care and leisure for people with Alzheimer's disease and related dementias. *Am J Occup Ther.* 2011 Sep-Oct;65(5):523-31.

A systematic review of evidence for the effectiveness of modification of activity demands in the care of people with Alzheimer's disease (AD) was conducted as part of the American Occupational Therapy Association's Evidence-Based Literature Review Project. The review included 10 articles addressing occupations of self-care and leisure. No reports related to work and social participation were located.

Results suggest that evidence for this intervention's effectiveness is strong. Four practice principles were derived from this appraisal: (1) Occupational therapy programs should be individualized to elicit the person's highest level of retained skill and interest, (2) cues used while assisting people with AD to complete tasks should be short and provide clear direction, (3) compensatory strategies in the form of environmental modifications and simple adaptive equipment should be specifically implemented on the basis of the unique needs of the person, and (4) caregiver training and involvement are essential in implementing individualized programs.

Jensen LE, Padilla R. Effectiveness of interventions to prevent falls in people with Alzheimer's disease and related dementias. *Am J Occup Ther.* 2011 Sep-Oct;65(5):532-40.

A systematic review was conducted to determine the effectiveness of interventions to prevent falls in people with Alzheimer's disease (AD) and related dementias. Twelve research reports met inclusion criteria. Studies reported on three types of intervention: (1) exercise- and motor-based interventions, (2) nursing staff-directed interventions, and (3) multidisciplinary interventions. Strategies were offered as single or multifaceted intervention programs. All types of intervention resulted in benefit, although the evidence for effectiveness is tentative because of the studies' limitations. More research is needed to better understand appropriate dosages of intervention. No evidence was found for the effectiveness of prevention programs accessed as part of occasional respite care. Occupational therapy was seldom involved in the interventions researched. Because effective fall prevention programs are embedded in people's daily routines and encouraged participation in occupation, the contribution occupational therapy practitioners can make to the care of people with AD has yet to be fully realized.

Thinnes A, Padilla R. Effect of educational and supportive strategies on the ability of caregivers of people with dementia to maintain participation in that role. *Am J Occup Ther.* 2011 Sep-Oct;65(5):541-9.

A systematic review of evidence of the effectiveness of educational and supportive strategies for enabling caregivers of people with Alzheimer's disease (AD) or related dementias to maintain participation in that role was conducted as part of the American Occupational Therapy Association's Evidence-Based Literature Review Project. Forty-three articles met inclusion criteria. Results suggest that interventions that jointly engage people with AD and their caregivers in education and training in the home setting are more successful than strategies that focus solely on people with AD. Greater carryover is noted when education and training are implemented at the time that the caregiver identifies concerns. Interventions should provide caregivers with problem solving, technical skills, support, simple home modification strategies, and referral to community resources. Interventions mediated by technology have a positive effect on the caregiver and are especially important for those who live in rural areas.

Arbesman M, Lieberman D. Methodology for the systematic reviews on occupational therapy for adults with Alzheimer's disease and related dementias. *Am J Occup Ther.* 2011 Sep-Oct;65(5):490-6.

Systematic reviews of literature relevant to adults with Alzheimer's disease and their families are important to the practice of occupational therapy. We describe the seven questions that served as the focus for systematic reviews of the effectiveness of occupational therapy interventions for adults with Alzheimer's disease and their families. We include the background for the reviews; the process followed for each question, including search terms and search strategy; the databases searched; and the methods used to summarize and critically appraise the literature. The final number of articles included in each systematic review; a summary of the results; the strengths and limitations of the findings; and implications for practice, education, and research are presented for the six questions addressing interventions in the areas of occupation, perception, environment, activity demands, fall prevention, and caregiver strategies.

Hand C, Law M, McColl MA. Occupational therapy interventions for chronic diseases: a scoping review. *Am J Occup Ther.* 2011 Jul-Aug;65(4):428-36.

OBJECTIVE: We reviewed the evidence regarding the effectiveness of community occupational therapy interventions, delivered alone or within a multidisciplinary team, in improving occupational outcomes for adults with selected chronic diseases. **METHOD:** We completed a scoping review of randomized controlled trials published from 1988 through 2008. Studies included participants with heart disease, depression, rheumatoid arthritis, osteoarthritis, chronic obstructive pulmonary disorder, or diabetes. **RESULTS:** Sixteen studies met the inclusion criteria. Ten studies found significant differences between intervention and control groups for at least one outcome of function in activities of daily living, functional self-efficacy, social or work function, psychological health, general health, or quality of life. Conflicting evidence exists regarding the impact of intervention on physical function and health. **CONCLUSION:** Occupational therapy can improve occupational outcomes in adults with chronic diseases. Using and building on this evidence, occupational therapists can continue to promote their role in helping to meet this population's needs.

Bullock A, Bannigan K. Effectiveness of activity-based group work in community mental health: a systematic review. *Am J Occup Ther.* 2011 May-Jun;65(3):257-66.

Activity-based group work is widely used by occupational therapists in mental health settings (Lloyd, King, & Bassett, 2002), but the evidence to support this intervention is unclear. We therefore conducted a systematic review focused on the question, "Is activity-based group work effective in helping people with severe and enduring mental illness in community settings improve their functional ability and/or reduce their mental health symptoms?" We used a wide-ranging search strategy, including electronic searching, hand searching, citation searching, and use of gray literature, and identified 136 potentially relevant papers. After assessment of relevance and quality, only 3 articles met the minimum criteria. Heterogeneity and flaws in quality meant it was not possible to make specific inferences for practice from the studies. Large-scale rigorous research, in the form of randomized controlled trials, is urgently needed to identify whether activity-based group work is effective.

Gibson RW, D'Amico M, Jaffe L, Arbesman M. Occupational therapy interventions for recovery in the areas of community integration and normative life roles for adults with serious mental illness: a systematic review. *Am J Occup Ther.* 2011 May-Jun;65(3):247-56.

This systematic review investigated research literature evaluating the effectiveness of occupational therapy interventions focusing on recovery in the areas of community integration and normative life roles for people with serious mental illness. The review included occupation- and activity-based interventions and interventions addressing performance skills and performance patterns, aspects of context and environment, activity demands, and client factors. The results indicated that the evidence of the effectiveness of social skills training is moderate to strong. The evidence for the effectiveness of life skills and instrumental activities of daily living (IADLs) training to improve performance is moderate, as is the evidence for neurocognitive training paired with skills training in the areas of work, social participation, and IADLs. The evidence for client-centered intervention and increased intensity and duration of treatment is limited but positive, and the evidence that providing intervention in the natural context is more beneficial than in the clinic setting is inconclusive.

Arbesman M, Logsdon DW. Occupational therapy interventions for employment and education for adults with serious mental illness: a systematic review. *Am J Occup Ther.* 2011 May-Jun;65(3):238-46.

In this systematic review, we investigated research literature evaluating the effectiveness of occupational therapy interventions focusing on participation and performance in occupations related to paid and

unpaid employment and education for people with serious mental illness. The review included occupation- and activity-based interventions and interventions addressing performance skills, aspects of the environment, activity demands, and client factors. The results indicate that strong evidence exists for the effectiveness of supported employment using individual placement and support to result in competitive employment. These outcomes are stronger when combined with cognitive or social skills training. Supported education programs emphasizing goal setting, skill development, and cognitive training result in increased participation in educational pursuits. The evidence for instrumental activities of daily living interventions that targeted specific homemaking occupations and supported parenting was limited but positive. Environmental cognitive supports, such as signs, and other compensatory strategies are useful in managing maladaptive behavior.

Snodgrass J. Effective occupational therapy interventions in the rehabilitation of individuals with work-related low back injuries and illnesses: a systematic review. *Am J Occup Ther.* 2011 Jan-Feb;65(1):37-43.

A systematic review of the literature related to effective occupational therapy interventions in rehabilitation of individuals with work-related low back injuries and illnesses was carried out as part of the Evidence-Based Literature Review Project of the American Occupational Therapy Association. This review evaluated research on a broad range of occupational therapy-related intervention procedures and approaches. Findings from the review indicate that the evidence is insufficient to support or refute the effectiveness of exercise therapy and other conservative treatments for subacute and chronic low back injuries. The research reviewed strongly suggests that for interventions to be effective, occupational therapy practitioners should use a holistic, client-centered approach. The research supports the need for occupational therapy practitioners to consider multiple strategies for addressing clients' needs. Specifically, interventions for individuals with low back injuries and illnesses should incorporate a biopsychosocial, client-centered approach that includes actively involving the client in the rehabilitation process at the beginning of the intervention process and addressing the client's psychosocial needs in addition to his or her physical impairments. The implications for occupational therapy practice, research, and education are also discussed.

Amini D. Occupational therapy interventions for work-related injuries and conditions of the forearm, wrist, and hand: a systematic review. *Am J Occup Ther.* 2011 Jan-Feb;65(1):29-36.

A systematic review of the literature related to effective occupational therapy interventions in rehabilitation of individuals with work-related forearm, wrist, and hand injuries and illnesses was conducted as part of the Evidence-Based Literature Review Project of the American Occupational Therapy Association. This review provides a comprehensive overview and analysis of 36 studies that addressed many of the interventions commonly used in hand rehabilitation. Findings reveal that the use of occupation-based activities has reasonable yet limited evidence to support its effectiveness. This review supports the premise that many client factors can be positively affected through the use of several commonly used occupational therapy-related modalities and methods. The implications for occupational therapy practice, research, and education and limitations of reviewed studies are also discussed.

Arbesman M, Lieberman D, Thomas VJ. Methodology for the systematic reviews on occupational therapy for individuals with work-related injuries and illnesses. *Am J Occup Ther.* 2011 Jan-Feb;65(1):10-5.

Systematic reviews of literature relevant to individuals with work-related injuries and illnesses are important to the practice of occupational therapy. This article describes the four questions that served as the focus for the systematic reviews of the effectiveness of occupational therapy interventions for individuals with work-related injuries and illnesses of the low back; hand, wrist, and forearm; elbow; and shoulder. The article includes the background for the reviews; the process followed for each question,

including search terms and search strategy; the databases searched; and the methods used to summarize and critically appraise the literature. The final number of articles included in each systematic review; a summary of the results; the strengths and limitations of the findings; and the implications for practice, education, and research are presented.

Kim H, Colantonio A. Effectiveness of rehabilitation in enhancing community integration after acute traumatic brain injury: a systematic review. *Am J Occup Ther.* 2010 Sep-Oct;64(5):709-19.

OBJECTIVE: We assessed evidence for post-acute traumatic brain injury (TBI) rehabilitation interventions used to enhance community integration (CI) relevant to occupational therapy. **METHOD:** We conducted a systematic review of intervention studies on TBI rehabilitation from 1990 to 2007. **RESULTS:** We analyzed and summarized 10 studies that met the inclusion criteria. Of 10 studies, 7 found that post-acute TBI rehabilitation benefits CI; all effective studies involved occupational therapy or involved interventions occupational therapists can do. **CONCLUSION:** Many CI programs show positive results and should be studied more rigorously. Such promising programs should also be considered when decisions about post-acute TBI rehabilitation services for clients are being made. To further establish that post-acute TBI rehabilitation interventions improve CI, future studies should include intervention strategies based on injury severity, a control group, and longer term follow-up. The role of occupational therapy in these effective programs should be further explored.

Polatajko HJ, Cantin N. Exploring the effectiveness of occupational therapy interventions, other than the sensory integration approach, with children and adolescents experiencing difficulty processing and integrating sensory information. *Am J Occup Ther.* 2010 May-Jun;64(3):415-29.

This literature review was completed as part of the Evidence-Based Literature Review Project of the American Occupational Therapy Association to explore the effectiveness of occupational therapy interventions with children and adolescents experiencing difficulty processing and integrating sensory information. This part of the review focused on interventions other than the sensory integration approach. Twenty articles (reporting on 21 studies) met the inclusion criteria. This systematic review found that children with difficulty processing and integrating sensory information and difficulties with the performance of daily occupations can benefit from intervention. However, the great variability that characterizes this literature in terms of populations, interventions, and study quality precludes the formation of any firm conclusions regarding specific approaches. There is an urgent need for well-controlled studies examining the effectiveness of frequently used pediatric occupational therapy interventions with well-defined, homogeneous populations on outcomes that target participation in everyday life.

Schaafsma F, Schonstein E, Whelan KM, Ulvestad E, Kenny DT, Verbeek JH. Physical conditioning programs for improving work outcomes in workers with back pain. *Cochrane Database Syst Rev.* 2010 Jan 20;(1):CD001822. Update of *Cochrane Database Syst Rev.* 2003;(1):CD001822.

BACKGROUND: Physical conditioning programs aim to improve work status for workers on sick leave. This is an update of a Cochrane Review (Work conditioning, work hardening and functional restoration for workers with back and neck pain) first published in 2003. **OBJECTIVES:** To compare the effectiveness of physical conditioning programs in reducing time lost from work for workers with back pain. **SEARCH STRATEGY:** We searched the following databases to June/July 2008: CENTRAL (The Cochrane Library 2008, issue 3), MEDLINE from 1966, EMBASE from 1980, CINAHL from 1982, PsycINFO from 1967, and PEDro. **SELECTION CRITERIA:** Randomized controlled trials (RCTs) and cluster RCTs that studied workers with work disability related to back pain and who were included in physical conditioning programs. **DATA COLLECTION AND ANALYSIS:** Two review authors independently extracted data and assessed risk of bias. **MAIN RESULTS:** Thirty-seven references, reporting on 23 RCTs (3676 workers) were included, 13 of which had a low risk of bias. In 14 studies, physical conditioning programs were compared to usual care. In workers with acute back pain, there was no

effect on sickness absence. For workers with subacute back pain, we found conflicting results, but subgroup analysis showed a positive effect of interventions with workplace involvement. In workers with chronic back pain, pooled results of five studies showed a small effect on sickness absence at long-term follow-up (SMD: -0.18 (95% CI: -0.37 to 0.00)). In workers with chronic back pain, physical conditioning programs were compared to other exercise therapy in six studies, with conflicting results. The addition of cognitive behavioural therapy to physical conditioning programs was not more effective than the physical conditioning alone. **AUTHORS' CONCLUSIONS:** The effectiveness of physical conditioning programs in reducing sick leave when compared to usual care or than other exercises in workers with back pain remains uncertain. In workers with acute back pain, these programs probably have no effect on sick leave, but there may be a positive effect on sick leave for workers with subacute and chronic back pain. Workplace involvement might improve the outcome. Better understanding of the mechanism behind physical conditioning programs and return-to-work is needed to be able to develop more effective interventions.

Hoffmann T, Bennett S, Koh CL, McKenna KT. Occupational therapy for cognitive impairment in stroke patients. *Cochrane Database Syst Rev.* 2010 Sep 8;(9):CD006430.

BACKGROUND: Cognitive impairment is a frequent consequence of stroke and can impact on a person's ability to perform everyday activities. There are a number of different intervention strategies that occupational therapists may use when working with people who have cognitive impairment post-stroke. **OBJECTIVES:** To determine whether occupational therapy improves functional performance of basic activities of daily living (ADL) and specific cognitive abilities in people who have cognitive impairment following a stroke. **SEARCH STRATEGY:** We searched the Cochrane Stroke Group Trials Register (last searched May 2009), the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library Issue 1, 2009), MEDLINE (1966 to April 2009), EMBASE (1980 to April 2009), CINAHL (1982 to April 2009), PsycINFO (1840 to April 2009), PsycBITE, OTseeker and Dissertation Abstracts (the latest three were searched up to April 2009). In an effort to identify further published, unpublished, and ongoing trials, we also tracked relevant references through the cited reference search in Science Citation Index (SCI) and Social Science Citation Index (SSCI), reviewed the reference lists of relevant studies and reviews, handsearched relevant occupational therapy journals, and contacted key researchers in the area. **SELECTION CRITERIA:** Randomised and quasi-randomised controlled trials that evaluated an intervention focused on providing cognitive retraining to adults with clinically defined stroke and confirmed cognitive impairment. The intervention needed either to be provided by an occupational therapist or given under the supervision of an occupational therapist. **DATA COLLECTION AND ANALYSIS:** Two review authors independently examined the abstracts that might meet the inclusion criteria, assessed the quality and extracted data. We have presented results using mean differences. **MAIN RESULTS:** We included one trial with 33 participants in this review. We found no difference between groups for the two relevant outcomes that were measured: improvement in time judgement skills and improvement in basic ADLs on the Barthel Index. **AUTHORS' CONCLUSIONS:** The effectiveness of occupational therapy for cognitive impairment post-stroke remains unclear. The potential benefits of cognitive retraining delivered as part of occupational therapy on improving basic daily activity function or specific cognitive abilities, or both, of people who have had a stroke cannot be supported or refuted by the evidence included in this review. More research is required.

Sakzewski L, Ziviani J, Boyd R. Systematic review and meta-analysis of therapeutic management of upper-limb dysfunction in children with congenital hemiplegia. *Pediatrics.* 2009 Jun;123(6):e1111-22.

CONTEXT: Rehabilitation for children with congenital hemiplegia to improve function in the impaired upper limb and enhance participation may be time-consuming and costly. **OBJECTIVES:** To systematically review the efficacy of nonsurgical upper-limb therapeutic interventions for children with congenital hemiplegia. **METHODS:** The Cochrane Central Register of Controlled Trials, Medline, CINAHL (Cumulative

lative Index to Nursing and Allied Health Literature), AMED (Allied and Complementary Medicine), Embase, PsycINFO, and Web of Science were searched up to July 2008. Data sources were randomized or quasi-randomized trials and systematic reviews. **RESULTS:** Twelve studies and 7 systematic reviews met our criteria. Trials had strong methodologic quality (Physiotherapy Evidence Database [PEDro] scale ≥ 5), and systematic reviews rated strongly (AMSTAR [Assessment of Multiple Systematic Reviews] score ≥ 6). Four interventions were identified: intramuscular botulinum toxin A combined with upper-limb training; constraint-induced movement therapy; hand-arm bimanual intensive training; and neurodevelopmental therapy. Data were pooled for upper-limb, self-care, and individualized outcomes. There were small-to-medium treatment effects favoring intramuscular botulinum toxin A and occupational therapy, neurodevelopmental therapy and casting, constraint-induced movement therapy, and hand-arm bimanual intensive training on upper-limb outcomes. There were large treatment effects favoring intramuscular botulinum toxin A and upper-limb training for individualized outcomes. No studies reported participation outcomes. **CONCLUSIONS:** No one treatment approach seems to be superior; however, injections of botulinum toxin A provide a supplementary benefit to a variety of upper-limb-training approaches. Additional research is needed to justify more-intensive approaches such as constraint-induced movement therapy and hand-arm bimanual intensive training.

Tungpunkom P, Nicol M. Life skills programmes for chronic mental illnesses. *Cochrane Database of Systematic Reviews* 2008, Issue 2. Art. No.: CD000381. DOI: 10.1002/14651858.CD000381.pub2.

Background: Most people with schizophrenia have a cyclical pattern of illness characterised by remission and relapses. The illness can reduce the ability of self-care and functioning and can lead to the illness becoming chronic and disabling. Rehabilitation is one of the important parts of treatments. Life skills programmes, emphasising the needs associated with independent functioning, are often a part of the rehabilitation process. These programmes, therefore, have been developed to enhance independent living and the quality of life for people with schizophrenia living in the community. **Objectives:** To review the effectiveness of life skills programmes with standard care or other comparable therapies for people with chronic mental health problems. **Search strategy:** We searched the Cochrane Schizophrenia Group Trials Register (May 2007) which is based on regular searches of BIOSIS, CENTRAL, CINAHL, EMBASE, MEDLINE and PsycINFO. Hand searches and scrutiny of references supplemented this process. We inspected references of all identified studies for further trials. **Selection criteria:** We included all relevant randomised or quasi-randomised controlled trials for life skills programmes versus other comparable therapies or standard care involving people with serious mental illnesses. **Data collection and analysis:** We extracted data independently. For dichotomous data we calculated relative risks (RR) and their 95% confidence intervals (CI) on an intention-to-treat basis, based on a random effects model. We calculated numbers needed to treat/harm (NNT/NNH) where appropriate. For continuous data, we calculated weighted mean differences (WMD) again based on a random effects model. **Main results:** We included four randomised controlled trials with a total of 318 participants. These evaluated life skills programmes versus standard care, or support group. We found no significant difference in life skills performance between people given life skills training and standard care (Patterson 2003, n=32, WMD -1.10 CI -7.8 to 5.6). Life skills training did not improve or worsen study retention (n=60, 2 RCTs, RR 1.16 CI 0.4 to 3.4). We found no significant difference in PANSS positive, negative or total scores between life skills intervention and standard care. Depression scores (HAM-D) did not reveal any significant difference between groups (Patterson 2003, n=32, WMD -0.70 CI -4.1 to 2.7). We found quality of life scores to be equivocal between participants given life skills training (Patterson 2003, n=32, WMD -0.02 CI -0.1 to 0.03) and standard care. Life skills compared with support groups also did not reveal any significant differences in PANSS scores, quality of life, or social performance skills (Patterson 2006, n=158, WMD -0.90 CI -3.4 to 1.6). **Authors' conclusions:** Currently there is no good evidence to suggest life skills programmes are effective for people with chronic mental illnesses. More robust data are needed from studies that are adequately powered to determine whether life skills training is beneficial for people with chronic mental health problems.

Dixon L, Duncan D, Johnson P, Kirkby L, O'Connell H, Taylor H, KHO Deane. Occupational therapy for patients with Parkinson's disease. *Cochrane Database of Systematic Reviews* 2007, Issue 3. Art. No.: CD002813. DOI: 10.1002/14651858.CD002813.pub2.

Background: Despite drug and surgical therapies for Parkinson's disease, patients develop progressive disability. It has both motor and non-motor symptomatology, and their interaction with their environment can be very complex. The role of the occupational therapist is to support the patient and help them maintain their usual level of self-care, work and leisure activities for as long as possible. When it is no longer possible to maintain their usual activities, occupational therapists support individuals in changing and adapting their relationship with their physical and social environment to develop new valued activities and roles. **Objectives:** To compare the efficacy and effectiveness of occupational therapy with placebo or no interventions (control group) in patients with Parkinson's disease. **Search strategy:** Relevant trials were identified by electronic searches of MEDLINE (1966-April 2007), EMBASE (1974-2000), CINAHL (1982-April 2007), Psycinfo (1806-April 2007), Ovid OLDMEDLINE (1950-1965), ISI Web of Knowledge (1981-April 2007), National Library for Health (NLH) (April 2007), Nursing, Midwifery and Allied Health (NMAP) (April 2007), Intute: Medicine (December 2005), Proquest Nursing Journals (PNJ, 1986 - April 2007); rehabilitation databases: AMED (1985-April 2007), MANTIS (1880-2000), REHABDATA (1956-2000), REHADAT (2000), GEROLIT (1979-2000); English language databases of foreign language research and third world publications: Pascal (1984-2000), LILACS (1982- April 2007), Med-Carib (17th Century-April 2007), JICST-EPlus (1985-2000), AIM (1993-April 2007), IMEMR (1984-April 2007), grey literature databases: SIGLE (1980-2000), ISI-ISTP (1982-April 2007), DISSABS (1999-2000), Conference Papers Index (CPI, 1982-2000) and Aslib Index to Theses (AIT, 1716- April 2006), The Cochrane Controlled Trials Register (Issue 2, 2007), the CenterWatch Clinical Trials listing service (April 2007), the metaRegister of Controlled Trials (mRCT, April 2007), Current controlled trials (CCT) (April 2007), ClinicalTrials.gov (April 2007), CRISP (1972-April 2007), PEDro (April 2007), NIDRR (April 2007) and NRR (April 2007) and the reference lists of identified studies and other reviews were examined. **Selection criteria:** Only randomised controlled trials (RCT) were included, however those trials that allowed quasi-random methods of allocation were allowed. **Data collection and analysis:** Data was abstracted independently by two authors and differences were settled by discussion. **Main results:** Two trials were identified with 84 patients in total. Although both trials reported a positive effect from occupational therapy, all of the improvements were small. The trials did not have adequate placebo treatments, used small numbers of patients and the method of randomisation and concealment of allocation was not specified in one trial. These methodological problems could potentially lead to bias from a number of sources reducing the strength of the studies further. **Authors' conclusions:** Considering the significant methodological flaws in the studies, the small number of patients examined, and the possibility of publication bias, there is insufficient evidence to support or refute the efficacy of occupational therapy in Parkinson's disease. There is now a consensus as to UK current and best practice in occupational therapy when treating people with Parkinson's disease. We now require large well designed placebo-controlled RCTs to demonstrate occupational therapy's effectiveness in Parkinson's disease. Outcome measures with particular relevance to patients, carers, occupational therapists and physicians should be chosen and the patients monitored for at least six months to determine the duration of benefit. The trials should be reported using CONSORT guidelines.

West C, Bowen A, Hesketh A, Vail A. Interventions for motor apraxia following stroke. *Cochrane Database of Systematic Reviews* 2008, Issue 1. Art. No.: CD004132. DOI: 10.1002/14651858.CD004132.pub2.

Background: Apraxia is a cognitive disorder that can occur after stroke. It prevents a person from carrying out a learned movement. Various interventions are used to treat apraxia but evidence of their benefit has been lacking. **Objectives:** To determine which therapeutic interventions targeted at motor apraxia

reduce disability. **Search strategy:** We searched the Cochrane Stroke Group Trials Register (last searched November 2006). In addition, we searched the following databases: the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* Issue 3, 2006), MEDLINE (1966 to November 2007), EMBASE (1980 to November 2006), CINAHL (1982 to November 2006), PsycINFO (1974 to November 2006), the Research Index of the Occupational Therapy Journal (searched November 2006), REHABDATA (1956 to November 2006), the National Research Register (searched November 2006) and Current Controlled Trials Register (searched November 2006). We reviewed the reference lists of all articles that we identified as relevant. We made efforts to find both published and unpublished trials by writing to key authors and journals. **Selection criteria:** Randomised controlled trials of therapeutic intervention for motor apraxia in stroke. **Data collection and analysis:** One review author searched the titles, abstracts and keywords. Four review authors extracted data and analysed trial quality. We contacted investigators for further details of trials if necessary. **Main results:** Three trials including a total of 132 participants were included in the review. There was evidence of a small and short-lived therapeutic effect in the two studies that reported change in activities of daily living (102 participants) but this was not considered clinically significant and did not persist at the longer-term follow up. **Authors' conclusions:** There is insufficient evidence to support or refute the effectiveness of specific therapeutic interventions for motor apraxia after stroke. Further research of higher quality is required. As we did not review whether patients with apraxia benefit from rehabilitation input in general, they should continue to receive general stroke rehabilitation services.

Stultjens, EMJ; Dekker, J; Bouter, LM; Cardol, M; Van de Nes, JCM; Van den Ende, CHM Occupational therapy for multiple sclerosis. *Cochrane Database of Systematic Reviews*. 4, 2006.

Background: Multiple sclerosis (MS) patients are referred to occupational therapy with complaints about fatigue, limb weakness, alteration of upper extremity fine motor coordination, loss of sensation and spasticity that causes limitations in performance of activities of daily living and social participation. The primary purpose of occupational therapy is to enable individuals to participate in self-care, work and leisure activities that they want or need to perform. **Objectives:** To determine whether occupational therapy interventions in MS patients improve outcome on functional ability, social participation and/or health related quality of life. **Search strategy:** We searched the Cochrane MS Group trials register (January 2003), the Cochrane Central Register of Controlled Trials (*The Cochrane Library* Issue 4, 2002), MEDLINE (January 2003), EMBASE (December 2002), CINAHL (December 2002), AMED (December 2002), SciSearch (December 2002) and reference lists of articles. **Selection criteria:** Controlled (randomized and non-randomized) and other than controlled studies addressing occupational therapy for MS patients were eligible for inclusion. **Data collection and analysis:** Two reviewers independently assessed the methodological quality of the included trials. Disagreements were resolved by discussion. A list proposed by Van Tulder 1997 was used to assess the methodological quality. For outcome measures, we calculated standardized mean differences. We analysed the results using a best-evidence synthesis based on type of design, methodological quality and the significant findings of outcome and/or process measures. **Main results:** One randomized clinical trial was identified and two other included studies were a controlled clinical trial and a study with a pre-post test design. The three studies involved 271 people in total. Two studies evaluated an energy-conservation course for groups of patients and one study evaluated a counseling intervention. The results of the energy conservation studies could be biased because of the designs used, the poor methodological quality and the small number of included patients. The high quality RCT on counseling reported non-significant results. **Authors' conclusions:** On basis of this review no conclusions can be stated whether or not occupational therapy improves outcomes in MS patients. The lack of (randomized controlled) efficacy studies in most intervention categories of occupational therapy demonstrates an urgent need for future research in occupational therapy for multiple sclerosis. Initially, a survey of occupational therapy practice for MS patients, including the characteristics and needs of these patients, is necessary to develop a research agenda for efficacy studies.

Deane KHO, Ellis-Hill C, Playford ED, Ben-Shlomo Y, Clarke CE. Occupational therapy for Parkinson's disease. Cochrane Database of Systematic Reviews. 4, 2006.

Background: Despite drug and surgical therapies for Parkinson's disease, patients develop progressive disability. The role of the occupational therapist is to support the patient and help them maintain their usual level of self-care, work and leisure activities for as long as possible. When it is no longer possible to maintain their usual activities, occupational therapists support individuals in changing and adapting their relationship with their physical and social environment to develop new valued activities and roles.

Objectives: To compare the efficacy and effectiveness of occupational therapy with placebo or no interventions (control group) in patients with Parkinson's disease. **Search strategy:** Relevant trials were identified by electronic searches of MEDLINE, EMBASE, CINAHL, ISI-SCI, AMED, MANTIS, REHAB-DATA, REHADAT, GEROLIT, Pascal, LILACS, MedCarib, JICST-EPlus, AIM, IMEMR, SIGLE, ISI-ISTP, DISSABS, Conference Papers Index, Aslib Index to Theses, the Cochrane Controlled Trials Register, the CentreWatch Clinical Trials listing service, the metaRegister of Controlled Trials, , CRISP, PEDro, NIDRR and NRR; and the reference lists of identified studies and other reviews were examined. **Selection criteria:** Only randomised controlled trials (RCT) were included, however those trials that allowed quasi-random methods of allocation were allowed. Data collection and analysis: Data was abstracted independently by two authors and differences were settled by discussion. **Main results:** Two trials were identified with 84 patients in total. Although both trials reported a positive effect from occupational therapy, all of the improvements were small. The trials did not have adequate placebo treatments, used small numbers of patients and the method of randomisation and concealment of allocation was not specified in one trial. These methodological problems could potentially lead to bias from a number of sources reducing the strength of the studies further. **Authors' conclusions:** Considering the significant methodological flaws in the studies, the small number of patients examined, and the possibility of publication bias, there is insufficient evidence to support or refute the efficacy of occupational therapy in Parkinson's disease. There does not appear to be a consensus as to the best practice in occupational therapy when treating people with Parkinson's disease. A survey of therapists is needed to determine what methods of occupational therapy are currently being used by therapists to treat Parkinson's disease, and whether there is a consensus as to 'best-practice'. Large well designed placebo-controlled RCTs are needed to demonstrate occupational therapy's effectiveness in Parkinson's disease. Outcome measures with particular relevance to patients, carers, occupational therapists and physicians should be chosen and the patients monitored for at least six months to determine the duration of benefit. The trials should be reported using CONSORT guidelines.

Legg, LA; Drummond, AE; Langhorne, P Occupational therapy for patients with problems in activities of daily living after stroke. Cochrane Database of Systematic Reviews. 4, 2006.

Background: Occupational therapy aims to help people reach their maximum level of function and independence in all aspects of daily life. **Objectives:** To determine whether occupational therapy focused specifically on personal activities of daily living improves recovery for patients following stroke. **Search strategy:** We searched the Cochrane Stroke Group Trials Register (last searched January 2006). In addition, we searched the Cochrane Central Register of Controlled Trials (CENTRAL) (Issue 1, 2006), MEDLINE (1966 to March 2006), EMBASE (1980 to March 2006), CINAHL (1983 to March 2006), PsycLIT (1974 to March 2006), AMED (1985 to March 2006), Wilson Social Sciences Abstracts (1984 to March 2006) and the following Web of Science databases: Science Citation Index (1945 to March 2006), Social Science Citation Index (1956 to March 2006) and Arts and Humanities Citation Index (1975 to March 2006). In an effort to identify further published, unpublished and ongoing trials we searched The Occupational Therapy Research Index and Dissertation Abstracts register, scanned reference lists of relevant articles, contacted authors and researchers and handsearched relevant journals. **Selection criteria:** We identified randomised controlled trials of an occupational therapy intervention

(compared to usual care or no care) where stroke patients practiced personal activities of daily living, or performance in activities of daily living was the focus of the occupational therapy intervention. **Data collection and analysis:** Two review authors independently selected trials and extracted data for pre-specified outcomes. The primary outcomes were the proportion of patients who had deteriorated or were dependent in personal activities of daily living and performance in personal activities of daily living at the end of follow up. **Main results:** We identified 64 potentially eligible trials and included 10 studies (1348 participants). Occupational therapy interventions reduced the odds of a poor outcome (Peto odds ratio 0.67 (95% confidence interval (CI) 0.51 to 0.87; $P = 0.003$), and increased personal activity of daily living scores (standardised mean difference 0.18 (95% CI 0.04 to 0.32; $P = 0.01$). For every 11 (95% CI 7 to 30) patients receiving an occupational therapy intervention to facilitate personal activities of daily living, one patient was spared a poor outcome. **Authors' conclusions:** Patients who receive occupational therapy interventions are less likely to deteriorate and are more likely to be independent in their ability to perform personal activities of daily living. However, the exact nature of the occupational therapy intervention to achieve maximum benefit needs to be defined.

Steultjens EM, Dekker J, Bouter LM, Leemrijse CJ, van den Ende CH. Evidence of the efficacy of occupational therapy in different conditions: an overview of systematic reviews. *Clin Rehabil.* 2005 May;19(3):247-54.

OBJECTIVE: To summarize the research evidence available from systematic reviews of the efficacy of occupational therapy (OT) for practitioners, researchers, purchasing organizations and policy-makers. **DATA SOURCE:** The search for systematic reviews was conducted in PubMed and the Cochrane Library (October 2004). **METHODS:** The reviews included were those that utilized a systematic search for evidence with regard to OT for specific patient groups. Data were summarized for patient group, interventions, outcome domains, type of study designs included, method of data synthesis and conclusions. **RESULTS:** Fourteen systematic reviews were included. Three reviews related to rheumatoid arthritis, four reviewed stroke and four focused on elderly people. Reviews of Parkinson's disease, multiple sclerosis, Huntington's disease, cerebral palsy and mental illnesses were also identified. The reviews of rheumatoid arthritis, stroke and elderly people showed evidence of the efficacy of OT in increasing functional abilities. Positive results were presented for quality of life and social participation in elderly people and stroke respectively. The efficacy of OT in all other patient groups is unknown due to insufficient evidence. **CONCLUSION:** This summary shows that elderly people and people with stroke or rheumatoid arthritis can expect to benefit from comprehensive OT. Evidence of the efficacy of specific interventions is sparse and should be addressed in future research. The evidence that does exist should be incorporated into OT practice.

Walker MF, Leonardi-Bee J, Bath P, Langhorne P, Dewey M, Corr S, Drummond A, Gilbertson L, Gladman JR, Jongbloed L, Logan P, Parker C. Individual patient data meta-analysis of randomized controlled trials of community occupational therapy for stroke patients. *Stroke.* 2004 Sep;35(9):2226-32

BACKGROUND AND PURPOSE: Trials of occupational therapy for stroke patients living in the community have varied in their findings. It is unclear why these discrepancies have occurred. **METHODS:** Trials were identified from searches of the Cochrane Library and other sources. The primary outcome measure was the Nottingham Extended Activities of Daily Living (NEADL) score at the end of intervention. Secondary outcome measures included the Barthel Index or the Rivermead ADL (Personal ADL), General Health Questionnaire (GHQ), Nottingham Leisure Questionnaire (NLQ), and death. Data were analyzed using linear or logistic regression with a random effect for trial and adjustment for age, gender, baseline dependency, and method of follow-up. Subgroup analyses compared any occupational therapy intervention with control. **RESULTS:** We included 8 single-blind randomized controlled trials incorporating 1143 patients. Occupational therapy was associated with higher NEADL scores at the end of intervention (weighted mean difference [WMD], 1.30 points, 95% confidence intervals [CI], 0.47 to 2.13) and

higher leisure scores at the end of intervention (WMD, 1.51 points; 95% CI, 0.24 to 2.79). Occupational therapy emphasizing activities of daily living (ADL) was associated with improved end of intervention NEADL (WMD, 1.61 points; 95% CI, 0.72 to 2.49) and personal activities of daily living (odds ratio [OR], 0.65; 95% CI, 0.46 to 0.91), but not NLQ. Leisure-based occupational therapy improved end of intervention NLQ (WMD, 1.96 points; 95% CI, 0.27 to 3.66) but not NEADL or PADL. **CONCLUSIONS:** Community occupational therapy significantly improved personal and extended activities of daily living and leisure activity in patients with stroke. Better outcomes were found with targeted interventions.

Voigt-Radloff S, Schochat T, Heiss HW. [Controlled trials on the efficacy of occupational therapy with elderly. Part II: Evidence for prioritized diseases and disabilities] *Z Gerontol Geriatr.* 2004 Dec;37(6):450-8. [Article in German]

OBJECTIVE: To identify the evidence for the efficacy of occupational therapy on prioritized diseases and disabilities of the elderly. **METHOD:** Reviews, meta-analyses and clinical trials with control group design regarding "occupational therapy" were identified by an electronic search of pubmed and reviewed based on the CONSORT-Statement. The study results were summarised in regard to diseases and commented considering further literature. **RESULTS:** A total of 31 studies were identified: 10 on stroke, 6 on dementia, 5 on prevention of falls, growing loneliness or inactivity, 4 on need of nursing care, and 6 on other diseases or disabilities. There is evidence for a positive efficacy of occupational therapy on the level of several controlled trials or reviews. **CONCLUSION:** Especially in Germany, further research specific to occupational therapy is needed in the fields of depression, diabetes mellitus and nursing care in the community.

Voigt-Radloff S, Schochat T, Heiss HW. [Controlled trials on the efficacy of occupational therapy with elderly. Part I: Research question, search strategy and methodological quality of trials] *Z Gerontol Geriatr.* 2004 Dec;37(6):444-9. [Article in German]

OBJECTIVE: To investigate how far controlled trials give evidence for the assumption that occupational therapy treatment improves or stabilises the competence, autonomy or satisfaction of elderly while performing every day activities. **METHOD:** Clinical trials with randomised, quasi-experimental or crossover control group design and "occupational therapy" as the main subject were identified by an electronic search of the medline database. The criteria for the analysis were derived from the CONSORT-Statement and adapted for occupational therapy. They relate to the quality of sample, intervention, measurement and data analysis. **RESULTS:** The 31 identified studies (RCT, n=23; quasi-experimental, n=2; crossover, n=6) were mainly conducted in Great Britain, USA and Canada, but not in Germany. They are heterogeneous regarding the characteristics and size of samples, the outcome variables and treatment approaches. They give evidence for a significant efficacy of occupational therapy with elderly, but also show some methodological shortcomings. **CONCLUSION:** While on an international level the positive potential of occupational therapy for the elderly is evident, there is a strong need for further studies in Germany. Therefore a methodological harmonization and a co-operation with occupational therapy research and occupational science emerging currently in Europe are recommended.

Stoffel VC, Moyers PA. An evidence-based and occupational perspective of interventions for persons with substance-use disorders. *Am J Occup Ther.* 2004 Sep-Oct;58(5):570-86.

An interdisciplinary evidence-based review of interventions among persons with substance-use disorders was completed in 2001 as part of American Occupational Therapy Association's (AOTA's) Evidence-Based Literature Review Project (Lieberman & Scheer, 2002). Four effective interventions for adults and adolescents with substance use were identified, including brief interventions, cognitive behavioral therapy, motivational strategies, and 12-step programs. The research studies reviewed reported outcomes primarily related to reduction in alcohol and drug use. Occupational therapy interventions grounded in current evidence-based literature are suggested. Interventions are modified to include an

occupational perspective leading to outcomes consistent with the Occupational Therapy Practice Framework (American Occupational Therapy Association [AOTA], 2002). Study findings propose research questions to encourage further investigation of the effectiveness of these best practice interventions.

Steultjens EM, Dekker J, Bouter LM, Jellema S, Bakker EB, van den Ende CH. Occupational therapy for community dwelling elderly people: a systematic review. *Age Ageing*. 2004 Sep;33(5):453-60.

OBJECTIVE: Occupational therapy might play an important role in maintaining independent living for community dwelling elderly people. The aim of this systematic review is to determine whether occupational therapy improves outcome for people who are ≥ 60 years and are living independently. **METHODS:** An extensive search in MEDLINE, CINAHL, EMBASE, AMED and SCISEARCH until July 2002 was performed. Studies with controlled and uncontrolled designs were included. Six intervention categories were distinguished and individually analysed using a best-evidence synthesis, based on the type of design, the methodological quality, type of outcome measures and statistical significance of findings. **RESULTS:** 17 studies were included, ten of which were randomised clinical trials. Six randomised clinical trials had a high methodological quality. Strong evidence is present for the efficacy of advising on assistive devices as part of a home hazards assessment on functional ability. There is some evidence for the efficacy of training of skills combined with a home hazard assessment in decreasing the incidence of falls in elderly people at high risk of falling. Some evidence is available for the efficacy of comprehensive occupational therapy on functional ability, social participation and quality of life. Insufficient evidence is present for the efficacy of counselling the primary caregiver of dementia patients about maintaining the patient's functional abilities. **CONCLUSION:** This review shows that occupational therapy interventions for community dwelling elderly people results in positive outcomes. Future research in the efficacy of occupational therapy in elderly patient groups such as people with dementia is recommended. Furthermore, research into tailoring interventions to the needs of elderly patients is recommended.

Steultjens EM, Dekker J, Bouter LM, van Schaardenburg D, van Kuyk MA, van den Ende CH. Occupational therapy for rheumatoid arthritis. *Cochrane Database Syst Rev*. 2004;(1):CD003114.

BACKGROUND: For persons with rheumatoid arthritis (RA) the physical, personal, familial, social and vocational consequences are extensive. Occupational therapy (OT), with the aim to facilitate task performance and to decrease the consequences of rheumatoid arthritis for daily life activities, is considered to be a cornerstone in the management of rheumatoid arthritis. Till now the efficacy of occupational therapy for patients with rheumatoid arthritis on functional performance and social participation has not been systematically reviewed. **OBJECTIVES:** To determine whether OT interventions (classified as comprehensive therapy, training of motor function, training of skills, instruction on joint protection and energy conservation, counseling, instruction about assistive devices and provision of splints) for rheumatoid arthritis patients improve outcome on functional ability, social participation and/or health related quality of life. **SEARCH STRATEGY:** Relevant full length articles were identified by electronic searches in Medline, Cinahl, Embase, Amed, Scisearch and the Cochrane Musculoskeletal group Specialised Register. The reference list of identified studies and reviews were examined for additional references. Date of last search: December 2002. **SELECTION CRITERIA:** Controlled (randomized and non-randomized) and other than controlled studies (OD) addressing OT for RA patients were eligible for inclusion. **DATA COLLECTION AND ANALYSIS:** The methodological quality of the included trials was independently assessed by two reviewers. Disagreements were resolved by discussion. A list proposed by Van Tulder et al. (Van Tulder 1997) was used to assess the methodological quality. For outcome measures, standardized mean differences were calculated. The results were analysed using a best evidence synthesis based on type of design, methodological quality and the significant findings of outcome and/or process measures. **MAIN RESULTS:** Thirty-eight out of 58 identified occupational ther-

apy studies fulfilled all inclusion criteria. Six controlled studies had a high methodological quality. Given the methodological constraints of uncontrolled studies, nine of these studies were judged to be of sufficient methodological quality. The results of the best evidence synthesis shows that there is strong evidence for the efficacy of "instruction on joint protection" (an absolute benefit of 17.5 to 22.5, relative benefit of 100%) and that limited evidence exists for comprehensive occupational therapy in improving functional ability (an absolute benefit of 8.7, relative benefit of 20%). Indicative findings for evidence that "provision of splints" decreases pain are found (absolute benefit of 1.0, relative benefit of 19%). **REVIEWER'S CONCLUSIONS:** There is evidence that occupational therapy has a positive effect on functional ability in patients with rheumatoid arthritis.

Steultjens EM, Dekker J, Bouter LM, van de Nes JC, Lambregts BL, van den Ende CH. Occupational therapy for children with cerebral palsy: a systematic review. *Clin Rehabil.* 2004 Feb;18(1):1-14.

OBJECTIVE: Occupational therapy (OT) for cerebral palsy focuses on the development of skills necessary for the performance of activities of daily living. The aim of this systematic review was to determine whether OT interventions improve outcome for children with cerebral palsy (CP). **METHODS:** An extensive search in MEDLINE, CINAHL, EMBASE, AMED and SCISEARCH was performed. Studies with controlled and uncontrolled designs were included. Six intervention categories were distinguished and individually analysed using a best-evidence synthesis. This synthesis is based on the type of design, the methodological quality, the type of outcome measures and the statistical significance of the findings. **RESULTS:** Seventeen studies were included in this review, seven of which were randomized controlled trials (RCTs). One RCT had a high methodological quality. The analyses resulted in insufficient evidence of the efficacy of occupational therapy in all intervention categories, due to the low methodological quality of studies presenting statistically nonsignificant results. **CONCLUSION:** Despite the reasonable number of studies identified, the inconclusive findings regarding the efficacy of occupational therapy for children with cerebral palsy may be a reflection of the difficulties in efficacy research in OT for children with CP. Future research should critically reflect on methodological issues.

Wilkins S, Jung B, Wishart L, Edwards M, Norton SG. The effectiveness of community-based occupational therapy education and functional training programs for older adults: a critical literature review. *Can J Occup Ther.* 2003 Oct;70(4):214-25.

BACKGROUND: This paper examines the results of a critical literature review describing the provision of education and functional training programs by occupational therapists with older adults to maximize their occupational performance. **PURPOSE:** The critical review addressed the following question: What is the effectiveness of education and functional training programs in improving occupational performance and quality of life for older adults? Review methods are described and the outcomes of the critical review discussed. **RESULTS:** The results indicate that there is evidence that programs are effective in three areas: prevention of functional decline and falls, stroke and rheumatoid arthritis. Methodological limitations exist in some studies. There are several randomized controlled studies in this area, though the description of specific occupational therapy interventions is often vague and the programs could not be easily duplicated by occupational therapists. **PRACTICE IMPLICATIONS:** Occupational therapists are provided with information through this critical review to facilitate evidence-based practice when working with older adults.

Steultjens EM, Dekker J, Bouter LM, van de Nes JC, Cup EH, van den Ende CH. Occupational therapy for stroke patients: a systematic review. *Stroke.* 2003 Mar;34(3):676-87.

BACKGROUND AND PURPOSE: Occupational therapy (OT) is an important aspect of stroke rehabilitation. The objective of this study was to determine from the available literature whether OT interventions improve outcome for stroke patients. **METHODS:** An extensive search in MEDLINE, CINAHL,

EMBASE, AMED, and SCISEARCH was performed. Studies with controlled and uncontrolled designs were included. Seven intervention categories were distinguished and separately analyzed. If a quantitative approach (meta-analysis) of data analysis was not appropriate, a qualitative approach (best-evidence synthesis), based on the type of design, methodological quality, and significant findings of outcome and/or process measures, was performed. **RESULTS:** Thirty-two studies were included in this review, of which 18 were randomized controlled trials. Ten randomized controlled trials had a high methodological quality. For the comprehensive OT intervention, the pooled standardized mean difference for primary activities of daily living (ADL) (0.46; CI, 0.04 to 0.88), extended ADL (0.32; CI, 0.00 to 0.64), and social participation (0.33; CI, 0.03 to 0.62) favored treatment. For the training of skills intervention, some evidence for improvement in primary ADL was found. Insufficient evidence was found to indicate that the provision of splints is effective in decreasing muscle tone. **CONCLUSIONS:** This review identified small but significant effect sizes for the efficacy of comprehensive OT on primary ADL, extended ADL, and social participation. These results correspond to the outcome of a systematic review of intensified rehabilitation for stroke patients. The amount of evidence with respect to specific interventions, however, is limited. More research is needed to enable evidence-based OT for stroke patients.

Reid D, Laliberte-Rudman D, Hebert D. Impact of wheeled seated mobility devices on adult users' and their caregivers' occupational performance: a critical literature review. *Can J Occup Ther.* 2002 Dec;69(5):261-80.

The prescription of wheeled seated mobility devices for clients with mobility impairment is a growing area in occupational therapy practice. The goal is to enhance client participation in occupation through technical intervention. This critical review examines the body of knowledge concerning the impact and effectiveness of the provision of wheeled seated mobility on the occupational performance of wheelchair users and their caregivers. The scope and gaps in the literature are defined to identify areas for future research. While the focus is on the methodological issues of the research reports, the relevance of findings to occupational therapy practice will also be reviewed. The results of the 46 studies in this review indicate that the majority of research conducted thus far have methodological limitations, which limits the extent to which this body of research can be drawn upon to provide evidence for the effectiveness of wheeled mobility systems. While most of the studies reviewed addressed constructs of relevance to occupational therapy practice, there was an emphasis on performance components and inadequate attention to engagement in occupations. This review is an important first step in building the ability of occupational therapists to demonstrate effectiveness in wheeled seating interventions.

Ma HI, Trombly CA. A synthesis of the effects of occupational therapy for persons with stroke, Part II: Remediation of impairments. *Am J Occup Ther.* 2002 May-Jun;56(3):260-74.

This article is the second of a two-part synthesis of research regarding the effects of occupational therapy to improve activity and participation and to reduce impairment for persons with stroke. Part I synthesized research findings for restoration of role participation and activity performance. Part II synthesizes research findings regarding the effects of occupational therapy to remediate psychosocial, cognitive-perceptual, and sensorimotor impairments. Only 29 studies involving 832 participants (mean age = 64.3 years) addressed these goals. No studies directly researched the effects of occupational therapy on depression after stroke. Eight studies addressed cognitive-perceptual abilities. The findings indicated that homemaking tasks resulted in greater improvement of cognitive ability than paper-and-pencil drills and that tasks that forced awareness of neglected space, including movement of the opposite limb into that space, improved unilateral neglect. Fifteen studies examined the effect of occupational therapy on various motor capacities after stroke. Coordinated movement improved under these conditions: (a) following written and illustrated guides for movement exercises, (b) using meaningful goal objects as targets, (c) practicing movements with specific goals, (d) moving both arms simultaneously but independently, and (e) imagining functional use of the affected limb. Research on inhibitory splinting was

inconclusive. Based on these few studies and lack of replication, we could make only tentative recommendations for practice. Further definitive research is needed.

Trombly CA, Ma HI. A synthesis of the effects of occupational therapy for persons with stroke, Part I: Restoration of roles, tasks, and activities. *Am J Occup Ther.* 2002 May-Jun;56(3):250-9.

This article synthesizes research findings regarding the effects of occupational therapy on the restoration of role, task, and activity performance for persons who have had a stroke, with the purpose of guiding practice and research. It is the first of a two-part review of studies. Part II synthesizes research findings regarding the effects of occupational therapy on remediating impairments. Part I includes 15 studies involving 895 participants (mean age = 70.3 years). Of these studies, 11 (7 randomized controlled trials) found that role participation and instrumental and basic activities of daily living performance improved significantly more with training than with the control conditions. We conclude that occupational therapy effectively improves participation and activity after stroke and recommend that therapists use structured instruction in specific, client-identified activities, appropriate adaptations to enable performance, practice within a familiar context, and feedback to improve client performance. Empirical research to verify these findings and to characterize the key therapeutic mechanisms associated with desired outcomes is needed.

Deane KH, Ellis-Hill C, Jones D, Whurr R, Ben-Shlomo Y, Playford ED, Clarke CE. Systematic review of paramedical therapies for Parkinson's disease. *Mov Disord.* 2002 Sep;17(5):984-91.

We evaluated the efficacy of physiotherapy, occupational therapy, and speech and language therapy in Parkinson's disease by synthesizing six Cochrane systematic reviews. All randomised, controlled trials examining the efficacy of a paramedical therapy versus control intervention and all those comparing the efficacy of two forms of active therapy in Parkinson's disease were included. Trials were identified by searching biomedical databases, reference lists, hand searching, and contacting investigators. The main outcome measures were quality of life, speech intelligibility, activities of daily living, and individual measures of motor and speech impairment. We identified 16 physiotherapy randomised controlled trials (399 patients), two occupational therapy trials (84 patients), and five speech and language therapy for dysarthria trials (154 patients). None of these studies examined nonpharmacological swallowing therapy for dysphagia. We were unable to perform meta-analysis of the results because the trials used heterogeneous therapy methods and outcome measures. The trials also had marked methodological flaws that could have introduced bias. In summary, we failed to find conclusive evidence of benefit for any form of paramedical therapy sufficient to recommend them in routine clinical practice. However, this lack of evidence is not proof of a lack of effect. Further large pragmatic randomised controlled trials are required to determine the effectiveness of paramedical therapies in Parkinson's disease. Copyright 2002 Movement Disorder Society