Carpal tunnel syndrome

Effects of shock wave therapy in patients with carpal tunnel syndrome: a systematic review and meta-analysis
Xie Y. et al.
Disabil Rehabil. 2020 May 18:1-12
We determine whether shock wave therapy could improve symptoms and hand function in patients with carpal tunnel syndrome. Shock wave therapy could be conductive to improve syndrome and hand function for carpal tunnel syndrome patients. Shock wave therapy is beneficial for alleviating syndrome and improving hand function of carpal tunnel syndrome patients. Radial shock wave therapy seems superior to focused shock wave therapy on syndrome alleviation and functional recovery of hand in carpal tunnel syndrome patients.

Cerebral palsy

Epidemiology of Cerebral Palsy in Adulthood: A Systematic Review and Meta-analysis of the Most Frequently Studied Outcomes
van Gorp M. et al.
We describe the epidemiology of health status, impairments, activities and participation in adults with cerebral palsy (CP). The present systematic review and meta-analysis on the epidemiology of adults with CP provided state-of-the-art knowledge on the most frequently studied outcomes. On average, adults with CP are fatigued, and a majority experience pain, are ambulant, and have little or no difficulty with manual ability. On average, 40% are employed and 30% live independently. More uniformity in assessment and reports is advised to improve knowledge on epidemiology and gain insight in more outcomes.

COVID-19

Systematic rapid living review on rehabilitation needs due to Covid-19: update to April 30th 2020
de Sire A. et al.
Eur J Phys Rehabil Med. 2020 May 15
This paper adds to the series of systematic rapid living reviews, started in April 2020, to provide the rehabilitation community with updates on the latest scientific literature on rehabilitation needs due to Covid-19 pandemic. We present the results of a systematic scientific literature search performed on papers published from April 1st to April 30th, 2020. This systematic rapid living review showed an increasing evidence on rehabilitation needs due to COVID-19 outbreak during April 2020. The main novelties include: 1) the first appearance of epidemiological data on the likely high incidence of neurological complications/disabling sequelae...
in patients hospitalized for COVID-19; 2) rapid guidelines on the management of chronically disabled patients in the COVID-19 era; 3) advices to provide COVID-19 patients with early respiratory rehabilitation in the acute phase, and with telemonitoring and telerehabilitation in the post-acute phase. Although the overall quality of studies has increased, prospective cohort studies on disability course in COVID-19 pandemic and experimental studies on the effects of rehabilitation are still warranted.

Long-term clinical outcomes in survivors of severe acute respiratory syndrome and Middle East respiratory syndrome coronavirus outbreaks after hospitalisation or ICU admission: A systematic review and meta-analysis
Ahmed H. et al.
J Rehabil Med. 2020 May 25
We determine long-term clinical outcomes in survivors of severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) coronavirus infections after hospitalization or intensive care unit admission. Lung function abnormalities, psychological impairment and reduced exercise capacity were common in SARS and MERS survivors. Clinicians should anticipate and investigate similar long-term outcomes in COVID-19 survivors.

Exercise

The effect of exercise on cardiometabolic risk factors in adults with chronic spinal cord injury: A systematic review
Farrow M. et al.
We determine the effects of exercise on individual cardiometabolic syndrome (CMS) risk factors in adults with chronic spinal cord injury (SCI). Upper-body aerobic exercise training (>75% maximum heart rate) appears to improve waist circumference and hepatic insulin sensitivity, but appears insufficient for improving fasting glucose, lipid profile, or resting blood pressure. The addition of RT to upper-body aerobic exercise may elicit favourable changes in the lipid profile. More high-quality studies are needed to confirm if FES-cycling is effective at improving peripheral insulin sensitivity.

Nordic Walking influence on biomechanical parameters: a systematic review
Roy M. et al.
Nordic Walking (NW) as a form of physical activity has been shown to have benefits in various domains, but little is known about the effect of NW on more specific biomechanical parameters. The purpose is to determine the impact of NW on the following parameters: walking speed/distance, muscle activation, spatiotemporal parameters, kinematics and ground reaction force. NW has beneficial effects on many biomechanical parameters. It appears to be an effective way of doing physical activity and could be used in physical rehabilitation or in daily life.

Intervention Treatment for Myocardial Infarction With Tai Chi: A Systematic Review and Meta-analysis
Wu B. et al.
Arch Phys Med Rehabil. 2020 Mar 28:S0003-9993(20)30154-4
We assess the efficacy of Tai Chi (TC) in patients with myocardial infarction and provide up-to-date evidence for its application. Compared with no exercise or other types of low-intensity physical activities, TC improved the outcome of the 6-minute walk, left ventricular ejection fraction, quality of life, and short form-36 scores, but reduced the outcome of pro-B type natriuretic peptide in patients with myocardial infarction. Therefore, TC could be an effective exercise option for cardiac rehabilitation. More research should be done to identify the effects of TC on academic functioning and to determine ways of motivating patients to use preventive TC interventions.

Effect of dance therapies on motor-cognitive dual-task performance in middle-aged and older adults: a systematic review and meta-analysis
Murillo-Garcia A. et al.
Disabil Rehabil. 2020 Mar 17:1-12
Purpose: To systematically review the effectiveness of dance-based programs to improve motor-cognitive dual-task performance in middle-aged and older adults. Dance-based intervention programs may be effective at improving the performance on motor-cognitive dual-task in middle-aged and older adults. Apart from the effects on the cognitive Time Up and Go test, dance interventions may also improve speed walking with a cognitive task. All these conclusions must be taken with caution due to the heterogeneity and the small number of articles. Future research can be developed to increase the knowledge on these issues. Implications for rehabilitation interventions based on dance as part of rehabilitation can improve the performance on TUG under dual-task condition in aging. Interventions based on dance can be effective to improve the development of some tasks of
daily life by reducing time in a motor task under dual task condition in aging. Physical therapists, personal
trainers and other clinicians can use different types of dance for improving dual-tasking among the adults.

From guidelines to practice: development and implementation of disability-specific physical activity guidelines
Martin Ginis KA. and West CR.
Disabil Rehabil. 2020 May 12:1-8
Among people with physical disabilities, one of the most frequently-cited barriers to physical activity
participation is a lack of basic information on what to do. Likewise, rehabilitation professionals often cite a lack
of knowledge about what to recommend or prescribe, as their primary reason for not promoting physical activity
to clients with disabilities. The development and implementation of disability-specific physical activity guidelines
are important steps toward addressing informational barriers. This paper describes the reasoning behind
disability-specific physical activity guidelines, the gold-standard process used to develop disability-specific
guidelines for people with spinal cord injury and multiple sclerosis, and the "who, what, and how" of behavioural
interventions and messaging to support people with disabilities in achieving physical activity guidelines. The
needs, values and preferences of people with disabilities must be taken into consideration when undertaking a
disability-specific guideline development process. Guidelines can play an important role in physical activity
promotion, but behavioural and other interventions are required to address the myriad physical activity barriers
faced by people with disabilities.

Effects of Tai Chi on essential hypertension and related risk factors: A meta-analysis of randomized controlled
trials
Guan Y. et al.
J Rehabil Med. 2020 May 11;52(5):jrm00057
Physical exercise is an important part of hypertension management. The impact of different training styles and
durations of tai chi on essential hypertension has not been evaluated to date. We analyse the influence of tai chi
on blood pressure and related risk factors in patients with essential hypertension. Tai chi is an effective physical
exercise in treating essential hypertension compared with control interventions. Different training durations and
styles have different effects. Further randomized controlled trials are needed into the use of tai chi for the
treatment and prevention of essential hypertension and other related chronic diseases.

Effects of High-Intensity Interval Training After Stroke (the HIIT-Stroke Study): A Multicenter Randomized
Controlled Trial
Gjellesvik TI. et al.
We examine if 8 weeks of high-intensity interval training (HIIT) in addition to standard care would increase and
maintain peak oxygen uptake (Vo(2peak)) more than standard care alone in patients with stroke. The HIIT
intervention, which was well-tolerated in this sample of well-functioning survivors of stroke, was not superior to
standard care in improving and maintaining Vo(2peak) at the 12-month follow-up. However, secondary results
from the peak test showed a significant improvement from before to immediately after the intervention.

Effects of Exercise-Based Interventions on Fall Risk and Balance in Patients With Chronic Obstructive Pulmonary
Disease: A SYSTEMATIC REVIEW
Delbressine JM. et al.
J Cardiopulm Rehabil Prev. 2020 May;40(3):152-163
Chronic obstructive pulmonary disease (COPD) is a highly prevalent disease characterized by airflow limitation
and is associated with decreased balance and increased fall risk. Since falls are related to increased mortality,
interventions targeting balance and fall risk could reduce morbidity and mortality. The objective of this review
was to systematically assess the effects of exercise-based interventions on fall risk and balance in patients with
COPD. Exercise-based interventions have a positive effect on balance in patients with COPD. Pulmonary
rehabilitation with balance training seems to have the most beneficial effect on balance. The effects on fall risk,
as well as the long-term intervention effects remain unclear. A standardized balance assessment and research on
long-term effects and fall risk are recommended.

Effectiveness of Tai Chi for health promotion for adults with health conditions: a scoping review of Meta-
analyses
Easwaran K. et al.
Disabil Rehabil. 2020 Feb 18:1-12
We complete a scoping review of meta-analyses summarizing evidence of the effectiveness of Tai Chi for adults
with health conditions. Healthcare providers now have information to advise clients with health conditions on
the effectiveness of Tai Chi for overall health promotion. Tai Chi is a form of safe, enjoyable, light-to-moderate
aerobic physical activity for adults that is inexpensive to implement in diverse community settings. Adults with
Health conditions require physical activity for prevention of secondary impairments and overall health promotion. This scoping review of meta-analyses elucidates "high" and "moderate" quality evidence of the effectiveness of Tai Chi in improving important outcomes for people with numerous health conditions. This information can be useful for healthcare providers who wish to recommend effective community-based physical activity to clients they are serving.

### Multiple Sclerosis

**Systematic Review on Exercise Training as a Neuroplasticity-Inducing Behavior in Multiple Sclerosis**
Sandroff BM. et al.
Neurorehabil Neural Repair. 2020 May 26:1545968320921836

Exercise training is associated with functional improvements in persons with multiple sclerosis (MS), perhaps based on neuroplasticity. However, inferences regarding neuroplasticity require observations of exercise-related changes in the central nervous system that explain functional adaptations. This systematic review critically evaluated studies on exercise training, neuroimaging outcomes, and functional outcomes in MS based on consistency with a well-established conceptual model for characterizing exercise training as a possible neuroplasticity-inducing behavior in this population. Such a paucity of evidence supporting exercise-induced neuroplasticity in MS is likely a product of a very small number of papers that do not sufficiently examine hypothesized mechanisms of action. Future research might consider examining specific neural changes that might result from exercise prescriptions that are specifically designed to induce certain functional changes among persons with MS.

**Immediate and Sustained Effects of Interventions for Changing Physical Activity in People with Multiple Sclerosis: Meta-Analysis of Randomized Controlled Trials**
Kim Y. et al.

We examine the immediate and sustained effects of interventions for changing physical activity behavior in people with multiple sclerosis (MS), and explore factors that might moderate intervention effects on physical activity behavior (e.g., intervention type and duration, type of physical activity measurement, intensity of theory integration [degree of theory used in study design], and study quality). Current evidence demonstrates that interventions are efficacious for increasing and potentially sustaining physical activity behavior in adults with MS. The effects appear optimized based on the delivery of behavioral interventions alone, and these interventions may be capable of supporting long-term behavior change.

**Participation in and outcomes from a 12-month tailored exercise programme for people with multiple sclerosis (MSTEP©): a randomized trial**
Mayo NE. et al.
Clin Rehabil. 2020 May 21:269215520923089

We estimate, among people with multiple sclerosis, the extent to which a personally tailored exercise programme (MSTEP©) resulted in greater improvements in exercise capacity and related outcomes over 12 months in comparison with general exercise guidelines. The disappointing exercise retention suggests that people with multiple sclerosis may not consider exercise important to their brain health. Either type of exercise resulted in stable exercise capacity over 1 year in those sticking with the programme.

**Experiences of adjustment to secondary progressive multiple sclerosis: a meta-ethnographic systematic review**
Meek C. et al.
Disabil Rehabil. 2020 Mar 14:1-12

We provide an overview of the experiences and needs of patients adjusting to life after receiving a diagnosis of secondary progressive multiple sclerosis (SPMS). People adjust to SPMS in different ways, with the success of adjustment influenced by a patient's primary coping mechanism. Coping mechanisms are determined by pre-existing individual differences, alongside engagement with, and quality of, social support networks and activities. Services should ensure that people are provided with informational support about their illness progression, and emotional support concerning coping strategies, social networks, and physical activity, as these are key determinants of successful adjustment. Adjusting to secondary progressive multiple sclerosis is a difficult and stressful time for patients. Coping strategies patients use, their support network and their activity levels are key determinants of successful adjustment. Clinicians should be open with patients about their assessment of their changing diagnosis, rather than trying to avoid upsetting the patient by withholding information. Clinical services should be proactive in supporting patients during adjustment with learning positive coping strategies, and maintaining or increasing social relationships and activity levels.
Accelerated Trajectories of Walking Capacity Across the Adult Life Span in Persons With Multiple Sclerosis: An Underrecognized Challenge
Hvid LG. et al.
Neurorehabil Neural Repair. 2020 Apr;34(4):360-369
In the general population, trajectories of walking capacity is accelerated and nonlinear with advanced age. Whether this is more pronounced in persons with multiple sclerosis (pwMS), along with the prevalence of dismobility (ie, slow gait speed), are currently unknown. Our objective was to investigate trajectories of walking capacity and prevalence of dismobility across the adult life span in pwMS versus healthy controls (HC). The present data on walking capacity provide evidence for an accelerated deterioration in pwMS with advanced age, coinciding with high prevalences of dismobility (ie, slow gait speed).

Neurological conditions

Efficacy of electrical stimulation of denervated muscle: A multicenter, double-blind, randomized clinical trial
Piccinini G. et al.
Muscle Nerve. 2020 Jun;61(6):773-778
This was a multicenter, double-blind, randomized clinical trial to investigate the efficacy of electrical stimulation of denervated muscle (ESDM) on recovery of patients with peripheral nerve injuries. This study failed to demonstrate the efficacy of ESDM for peripheral nerve injuries. However, given the large number of variables related to ES and the heterogeneity in disease etiologies and clinical manifestations, future studies on homogeneous populations using different stimulation protocols may be useful.

Effects of Virtual Reality Therapy on Gait and Balance Among Individuals With Spinal Cord Injury: A Systematic Review and Meta-analysis
Abou L. et al.
Neurorehabil Neural Repair. 2020 May;34(5):375-388
The use of virtual reality (VR) therapy among individuals with spinal cord injury (SCI) is a relatively new rehabilitation approach replicating real-life scenarios. The aim of this study was to evaluate the effectiveness of VR therapy for improving gait and balance in individuals with SCI. This study demonstrated the beneficial effects of VR therapy to enhance sitting and standing balance and showed a trend of gait improvement in individuals with SCI. This conclusion is based on mainly preliminary data and therefore, more RCTs are needed to confirm the effects of the use of VR in individuals with SCI.

Orthopaedics

The clinical efficacy of kinesio taping in shoulder disorders: a systematic review and meta analysis
Celik D. et al.
We evaluate the effects of kinesio taping on shoulder disorders, as a single treatment modality or as conjunction to other treatments. Despite reported positive effects in some studies, there is no firm evidence of any benefit of kinesio taping on shoulder disorders.

Shoulder Rotator Cuff Disorders: A Systematic Review of Clinical Practice Guidelines and Semantic Analyses of Recommendations
Doiron-Cadrin P. et al.
Arch Phys Med Rehabil. 2020 Jan 31:S0003-9993(20)30030-7
We perform a systematic review of clinical practice guidelines (CPGs) and semantic analysis of specific clinical recommendations for the management of rotator cuff disorders in adults. Only 3 CPGs were of high quality. The development of more rigorous CPGs is warranted.

Photobiomodulation with low-level laser therapy for treating Achilles tendinopathy: a systematic review and meta-analysis
Martimbianco ALC. et al.
The purpose of this study was to determine the benefits and harms of low-level laser therapy for Achilles tendinopathy. The certainty of evidence was low to very low, and the results are insufficient to support the routine use laser therapy for Achilles tendinopathy.

Motivational Interviewing and Return to Work for People with Musculoskeletal Disorders: A Systematic Mapping Review
Aanesen F. et al.
J Occup Rehabil. 2020 Apr 30
There is limited knowledge about motivational interviewing (MI) for people on sick leave with musculoskeletal disorders. Hence, our objective was to investigate what research on MI as a method to facilitate return to work for individuals who are on sick leave due to musculoskeletal disorders exists, and what are the results of the research? This mapping review identified a huge gap in research on MI to increase return to work for individuals with musculoskeletal disorders.

Microcurrent therapy in the treatment of knee osteoarthritis. Could it be more than a placebo-effect? A randomized controlled trial
Ranker A. et al.
Eur J Phys Rehabil Med. 2020 Apr 15
Microcurrent therapy (MCT) is a novel electrotherapy modality with very low current-levels that may reduce pain especially in joints and muscles. We explore potential effects of MCT on pain in patients with knee osteoarthritis, to explore effects of different treatment parameters and to distinguish them from placebo-effects. The results of this RCT suggest that MCT has beneficial effects on pain in patients with knee osteoarthritis that are not explained by a placebo effect. Due to the explorative, pilot character of the study, further confirmation is needed before clear recommendations can be given. More high quality RCTs with transparent parameters should be investigated to elucidate potential effects of MCT in the field of physical medicine and rehabilitation. At the present time MCT is an treatment option that could be helpful in particular for patients who are afraid of unpleasant sensations from electrotherapy with stronger currents.

Impact of C-LEG on mobility, satisfaction and quality of life in a multicenter cohort of femoral amputees
Lansade C. et al.
Ann Phys Rehabil Med. 2020 May 19:S1877-0657(20)30089-0
In some countries, the microprocessor-controlled C-LEG knee joint is reimbursed by the national health insurance for transfemoral amputees under certain conditions. However, whether users really benefit from such a technology in their daily life is unknown. We observe the performance of active C-LEG users in terms of locomotor ability and activities, satisfaction and quality of life after 6 months of wearing the prosthesis in real-life conditions. Active transfemoral amputees with prescription of the C-LEG knee joint showed improved function, satisfaction and physical quality of life after 6 months of wear as compared with their previous prosthesis.

Efficacy of Extracorporeal Shockwave Therapy on Pain and Function in Myofascial Pain Syndrome of the Trapezius: A Systematic Review and Meta-Analysis
Zhang Q. et al.
We evaluate the effect of extracorporeal shockwave therapy (ESWT) on pain and function in myofascial pain syndrome (MPS) of the trapezius. ESWT appears to benefit patients with MPS of the trapezius by alleviating pain. ESWT may not be an ideal therapeutic method to replace conventional therapies but could serve as an adjunct therapeutic method to those treatments.

Effect of types of ankle-foot orthoses on energy expenditure metrics during walking in individuals with stroke: a systematic review
Daryabor A. et al.
Disabil Rehabil. 2020 May 20:1-11
This systematic review is aimed at evaluating the efficacy of AFO types and comparison between them on the energy expenditure metrics of walking in individuals who had suffered a stroke with (sub)acute or chronic evolution. An AFO can immediately improve energy expenditure metrics of walking in stroke survivors. There is a need for further well-designed randomized trials to evaluate long-term effect of gait training using AFOs and comparison among the different types of orthoses. An AFO can immediately improve the energy expenditure metrics during walking after stroke. Measurement of energetic parameters of walking wearing a orthotic device such as an AFO can evaluate gait economy in stroke populations.

Relative Effectiveness of Electroacupuncture and Biofeedback in the Treatment of Neck and Upper Back Myofascial Pain: A Randomized Clinical Trial
Eslamian F. et al.
Arch Phys Med Rehabil. 2020 May;101(5):770-780
We determine the differences between clinical effects of electroacupuncture and biofeedback therapy in addition to conventional treatment in patients with cervical myofascial pain syndrome (MPS). Both electroacupuncture and biofeedback therapies were found to be effective in management of MPS when
integrated with conventional treatment. However, intergroup differences showed priority of acupuncture in some parameters vs biofeedback. Thus, electroacupuncture seems to be a better complementary modality for treatment of MPS in the neck and upper back area.

**Effects of lumbar stabilization and muscular stretching on pain, disabilities, postural control and muscle activation in pregnant woman with low back pain: a pilot randomized trial**
Fontana Carvalho AP. et al.
Low back pain is common during pregnancy. Lumbar stabilization and stretching exercises are recommended to treat low back pain in the general population. However, few studies have applied the effects of these two interventions in pregnant women with low back pain. OBJECTIVES: To compare the effects of lumbar stabilization and stretching exercises for the treatment of gestational low back pain. Both modalities (lumbar stabilization and stretching) were efficient for pain reduction, improving balance and increasing one trunk activity muscle after 6 weeks of intervention in pregnant women with low back pain. The present study has implications, especially for clinical decision-making in regards to therapy choice in pregnant women with LBP to reduce pain and improve trunk function as measured through balance performance.

**Effectiveness of a Guided Web-Based Self-help Intervention to Prevent Depression in Patients With Persistent Back Pain: The PROD-BP Randomized Clinical Trial**
Sander LB. et al.
*JAMA Psychiatry.* 2020 May 27
Depression is a frequent comorbid condition in patients with persistent back pain and is associated with substantial adverse consequences, including the risk of developing opioid use disorders. Shifting the focus from depression treatment to preventing depression might be a viable way to reduce the disease burden. We evaluate the effectiveness of a web-based self-help intervention to reduce the incidence of major depressive episode (MDE) in patients with persistent back pain. Results of this trial showed that among patients with persistent back pain, depression can be prevented by a guided web-based self-help intervention in addition to treatment as usual. This finding suggests that using a scalable digital approach to integrate psychological treatment into routine pain management is feasible.

**A systematic review of the effectiveness of mass media campaigns for the management of low back pain**
Suman A. et al.
*Disabil Rehabil.* 2020 Apr 3:1-29
Purpose: To synthesize evidence on the effectiveness of mass media campaigns for the management of LBP on beliefs of the general public and health care providers, LBP-related disability, health utilization, and LBP clinical outcomes. Mass media campaigns for LBP appear effective for improving beliefs of the general public and health care providers. Mass media campaigns about low back pain (LBP) appear effective for improving beliefs of the general public and health care providers, aligning beliefs with current evidence and self-management principles. Rehabilitation professionals should be aware of and seek to support public education initiatives in their communities related to LBP and other disabling health conditions. Rehabilitation professionals can highlight and reinforce campaign messages when providing education and reassurance to individual patients. Several campaign resources (i.e., posters, pamphlets, electronic resources, etc.) are available for rehabilitation professionals to use in their efforts to reduce disability related to LBP.

**The quality of rehabilitation Clinical Practice Guidelines: An overview study of AGREE II appraisals**
Dijkers MP. et al.
We evaluate the quality of rehabilitation Clinical Practice Guidelines (CPGs), specifically with respect to their applicability. CPGs in principle are an ideal means to move knowledge obtained from clinical research into practice. Our review of reviews of rehabilitation CPGs shows that they commonly have deficits, especially where it comes to applicability. Much work needs to be done by guideline developers to make it easier for the average rehabilitation organization and clinician to implement CPGs in daily practice.

**Measurement Properties of a 2-Dimensional Movement Analysis System: A Systematic Review and Meta-analysis**
Lu Z. et al.
*Arch Phys Med Rehabil.* 2020 Apr 21:S0003-9993(20)30149-0
We critically appraise, compare, and summarize the quality of the measurement properties of the Dartfish software across various populations and motion tasks. Dartfish is a reliable software for assessing a variety of
tasks across multiple contexts of assessments. Evidence suggests that the estimates of motion obtained with Dartfish are valid for single plane movements.

**Implementing patient-reported outcome measures in outpatient rehabilitation settings: A systematic review of facilitators and barriers using the Consolidated Framework for Implementation Research**
Briggs MS. et al.
This systematic review examines the facilitators and barriers to the use of patient reported outcome measures (PROMs) in outpatient rehabilitation settings and provides strategies to improve care to maximize patient outcomes. More barriers than facilitators have been identified which is consistent with PROM underutilization. Clinicians and administrators should find opportunities to overcome the barriers identified and leverage the facilitators to improve routine PROM use and maximize patient outcomes.

**Effect of preparative rehabilitation on recovery after cardiac surgery: a systematic review**
Yau DKW. et al.
Ann Phys Rehabil Med. 2020 May 21:S1877-0657(20)30105-6
Physical prehabilitation (preparative rehabilitation) programs may have beneficial effects on enhancing physical strength and functional status before surgery, but their effects on postoperative recovery are unclear.
OBJECTIVES: This systematic review investigated the effectiveness of physical prehabilitation programs before cardiac surgery on postoperative recovery and other perioperative outcomes. Despite the high heterogeneity among physical prehabilitation trials and the uncertainty regarding robust clinical outcomes, physical prehabilitation before cardiac surgery seems to enhance selected postoperative functional performance measures and slightly reduce the hospital length of stay after cardiac surgery.

Lo J. et al.
Arch Phys Med Rehabil. 2020 Apr 24:S0003-9993(20)30216-1
We present recent evidence on the prevalence, incidence, costs, activity limitations, and work limitations of common conditions requiring rehabilitation. This was a systematic review. Consistent with previous findings, back pain and osteoarthritis are the most prevalent conditions with large aggregate medical costs. By contrast, other conditions have a lower prevalence or cost but relatively higher per capita costs and effects on activity and work. The data are extremely heterogeneous which makes anything beyond broad comparisons challenging: additional information is needed to determine the relative impact of each condition.

**Stroke**

**The long-term unmet needs of informal carers of stroke survivors at home: a systematic review of qualitative and quantitative studies**
Denham AMJ. et al.
Disabil Rehabil. 2020 May 12:1-12
We synthesise research describing the long-term unmet needs of carers who are providing care to a stroke survivor at home who is at least 3 months post-discharge. Evidence from this review suggests that carers are experiencing a range of long-term unmet needs, particularly in education and training, coping and managing their own emotions, and accessing much-needed services. Recommendations to support carers at home include continuing engagement, assessment, and support from health care providers and services to meet the needs of carers throughout the stroke recovery process. Carers of stroke survivors experience complex long-term unmet needs around managing the recovery process of the stroke survivor when they have been discharged from hospital and returned home.

**The Effect of Priming on Outcomes of Task-Oriented Training for the Upper Extremity in Chronic Stroke: A Systematic Review and Meta-analysis**
da Silva ESM. et al.
Neurorehabil Neural Repair. 2020 May 26:1545968320912760
Priming results in a type of implicit memory that prepares the brain for a more plastic response, thereby changing behavior. New evidence in neurorehabilitation points to the use of priming interventions to optimize functional gains of the upper extremity in poststroke individuals. We determine the effects of priming on task-oriented training on upper extremity outcomes (body function and activity) in chronic stroke. Combining priming and task-oriented training for the upper extremities of chronic stroke patients can be a promising intervention strategy. Studies that identify which priming techniques combined with task-oriented training for upper
Extremity function in chronic stroke yield effective outcomes in each ICF domain are needed and may be beneficial for the recovery of upper extremities poststroke.

**Respiratory muscle training improves strength and decreases the risk of respiratory complications in stroke survivors: a systematic review and meta-analysis**

Wu F. et al.

We evaluate the effects of respiratory muscle training in a population of stroke patients. Respiratory muscle training improved post-stroke muscle strength and the benefits were carried over for up to 12-weeks, including improved lung function, walking capacity and a reduced risk of respiratory impediments.

**Functional electrical stimulation of the peroneal nerve improves post-stroke gait speed when combined with physiotherapy. A systematic review and meta-analysis**

Jaqueline da Cunha M. et al.

Functional electrical stimulation (FES) applied to the paretic peroneal nerve has positive clinical effects on foot drop secondary to stroke. We evaluate the effectiveness of FES applied to the paretic peroneal nerve on gait speed, active ankle dorsiflexion mobility, balance, and functional mobility. This meta-analysis revealed low quality of evidence for positive effects of FES on gait speed when combined with physiotherapy. FES can improve ankle dorsiflexion, balance, and functional mobility. However, considering the low quality of evidence and the high heterogeneity, these results must be interpreted carefully.

**Factors Influencing the Delivery of Intensive Rehabilitation in Stroke: Patient Perceptions Versus Rehabilitation Therapist Perceptions**

Janssen J. et al.
Phys Ther. 2020 Feb 7;100(2):307-316

Despite increasing evidence regarding the benefit of intensive task-specific practice and aerobic exercise in stroke rehabilitation, implementation remains difficult. The factors influencing implementation have been explored from therapists' perspectives; however, despite an increased emphasis on patient involvement in research, patients' perceptions have not yet been investigated. OBJECTIVE: The study aimed to investigate factors influencing implementation of higher intensity activity in people with stroke and to compare this with therapists’ perspectives. People with stroke perceived no barriers regarding the implementation of higher intensity rehabilitation in practice and were positive towards working at more intense levels. Contrasting, from the therapists' perspective, therapists' beliefs about quality of movement and issues around staffing and resources were perceived to be barriers. In addition, therapists and people with stroke perceived the contents of the intervention differently, highlighting the importance of involving patients and clinicians in the development and evaluation of rehabilitation interventions.

**Repetitive transcranial magnetic stimulation for management of post-stroke impairments: An overview of systematic reviews**

Kim WJ. et al.
J Rehabil Med. 2020 Feb 7;52(2):jrm00015

We evaluate evidence from published systematic reviews of clinical trials to determine the effectiveness of repetitive transcranial magnetic stimulation (rTMS) in stroke population. Despite widespread use of rTMS, high-quality evidence for its routine use for the treatment of stroke survivors is lacking. Further studies are required to establish differential roles of various protocols and long-term effects of rTMS in the stroke population.

**Evaluating the effects of tDCS in stroke patients using functional outcomes: a systematic review**

Bornheim S. et al.
Disabil Rehabil. 2020 May 12:1-11

Transcranial direct current stimulation (tDCS) has been extensively studied over the past 20 years to promote functional motor recovery after stroke. However, tDCS clinical relevance still needs to be determined. The present systematic review aims to determine whether tDCS applied to the primary motor cortex (M1) in stroke patients can have a positive effect on functional motor outcomes. Despite heterogeneous stimulation parameters, outcomes and patient demographics, tDCS seems to be complementary to classical and novel rehabilitation approaches. With minimal adverse effects (if screening parameters are respected), none of which were serious, and a high potential to improve recovery when using optimal parameters (i.e.: 20 mA with 25 or 35 cm(2) electrodes that are regularly humidified), tDCS could potentially be ready for clinical applications. Evidence of very low to very high quality is available on the effectiveness of tDCS to improve motor control following stroke. This should with caution be focused on the primary motor cortex.
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