<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brain injury</td>
<td>2</td>
</tr>
<tr>
<td>Cerebral palsy</td>
<td>2</td>
</tr>
<tr>
<td>Exercise</td>
<td>2</td>
</tr>
<tr>
<td>Multiple Sclerosis</td>
<td>3</td>
</tr>
<tr>
<td>Orthopaedics</td>
<td>3</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>3</td>
</tr>
<tr>
<td>Pain</td>
<td>4</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>4</td>
</tr>
<tr>
<td>Stroke</td>
<td>5</td>
</tr>
<tr>
<td>Trauma</td>
<td>6</td>
</tr>
</tbody>
</table>
Brain injury

**Association Between Traumatic Brain Injury and Dementia in Veterans: A Rapid Systematic Review**
Petersen, K., et al
*The Journal of head trauma rehabilitation.*
2020
We systematically review the prevalence of dementia in Veterans versus civilians and the association between previous traumatic brain injuries (TBIs) and the risk and timing of dementia onset in Veterans. Dementia prevalence is likely similar in Veteran and civilian populations, and the risk of dementia is likely increased by TBI. To inform development of screening, prevention, and rehabilitation efforts, research is still needed addressing the mechanism of association and timing of dementia onset.

Cerebral palsy

**A systematic review of vestibular stimulation in cerebral palsy**
Topley, D., et al
*Disability and rehabilitation.*
2020, 1–7
We identify the types and dosage of vestibular stimulation interventions in persons with cerebral palsy (CP), and establish the efficacy of these interventions on balance and function. Clinical practice recommendations cannot be made due to lack of high quality studies and heterogeneity of treatment protocols. Future research should address theory-driven selection of intervention, establish dosage, use psychometrically robust tools and include all ages of persons with CP.

**Pain in adults with cerebral palsy: a systematic review and meta-analysis of individual participant data**
van der Slot, W. M. A., et al
*Annals of physical and rehabilitation medicine.*
2020
There is little focus on adults with cerebral palsy (CP) in research and health care and insufficient knowledge on how to identify and manage pain in this population. This systematic review and meta-analysis aimed to determine whether pain prevalence in adults with CP is high and to explore variations in pain prevalence of subgroups, pain locations, pain severity and pain interference. This meta-analysis provides the first reliable pain prevalence estimate in a large international sample of adults with CP.

Exercise

**Effects of high-intensity interval training in a three-week cardiovascular rehabilitation: a randomized controlled trial**
Wehmeier, U. F., et al
*Clinical rehabilitation.* 2020, 269215520912302
The aim of this study was to assess the benefit of using high-intensity interval training for cardiovascular patients undergoing outpatient rehabilitation in a standard short-term (three-week) program in Germany. The implementation of high-intensity interval training during a typical three-week German cardiac rehabilitation has the power to increase the outcome for the patients.

**Aquatic cycling improves knee pain and physical functioning in patients with knee osteoarthritis: a randomised controlled trial**
Rewald, S., et al
*Archives of physical medicine and rehabilitation.* 2020
We assess the efficacy of a 12-week aquatic cycling training program for improving knee pain and physical functioning in patients with knee osteoarthritis. The results suggest that a 12-week aquatic cycling training programme improves self-reported knee pain and physical functioning in patients with mild to moderate knee OA compared to usual care.

**Survey of Exercise Prescription in US Pulmonary Rehabilitation Programs**
Garvey, C., et al
*Journal of cardiopulmonary rehabilitation and prevention, 40/2 (2020), 116–119*
The purpose of this investigation was to identify current PR exercise prescription practices via survey sent to 1758 PR programs in the United States. The 2016 survey responses show a greater use of guideline-based exercise prescription methodology, with an increase in use of FITT methodology for exercise prescription.

**Meta-analysis of cardiovascular superiority trials published in the New England Journal of Medicine to elucidate the concept of superiority margin**
Gamad, N., et al
*Postgraduate medical journal*. 2020
We show that overpowered trials claim statistical significance detouring clinical relevance and warrant the need of superiority margin to avoid such misinterpretation. The results of this meta-analysis indicate that overpowered trials give statistically significant results undermining clinical relevance. To avoid such misuse of current statistical tools, there is a need to derive superiority margin. We hope to generate debate on considering clinically significant difference, used to calculate sample size, as superiority margin.

**Balance impairment and effectiveness of exercise intervention in Chronic Obstructive Pulmonary Disease—a systematic review**
Chuatrakoon, B., et al
* Archives of physical medicine and rehabilitation*. 2020
We systematically review the evidence for balance impairment and effectiveness of interventions on balance in people with chronic obstructive pulmonary disease (COPD). Impaired balance is evident in people with COPD. Available RCTs suggest that exercise interventions may improve balance performance in COPD patients. However, more research on the effect of exercise interventions on balance in COPD patients is still required.

**Multiple Sclerosis**

**Standardized, comprehensive, hospital-based circuit training in people with multiple sclerosis (MS-FIT): results on feasibility, adherence and satisfaction of the training intervention**
Lehmann, I., et al
*European journal of physical and rehabilitation medicine*. 2020
We developed a standardized, comprehensive, ambulatory, hospital-based neurorehabilitation program (“MS-Fit”) to improve disability, activities of daily living and quality of life in people with multiple sclerosis (PwMS). We aim to assess feasibility, adherence and satisfaction of the training intervention. MS-Fit is a feasible training program with high patient satisfaction and adherence. It enables high intensity ambulatory training and can be easily reproduced due to its standardized nature.

**Orthopaedics**

**Perioperative Blood Flow Restriction Rehabilitation in Patients Undergoing ACL Reconstruction: A Systematic Review**
Lu, Y., et al
*Orthopaedic journal of sports medicine*, 8/3 (2020), 2325967120906822
Low-load blood flow restriction (BFR) training has attracted attention as a potentially effective method of perioperative clinical rehabilitation for patients undergoing orthopaedic procedures. This systematic review found evidence on the topic of BFR rehabilitation after ACLR to be sparse and heterogeneous likely because of the relatively recent onset of its popularity. While a few authors have demonstrated the potential strength and hypertrophy benefits of perioperative BFR, future investigations with standardized outcomes, long-term follow-up, and more robust sample sizes are required to draw more definitive conclusions.

**Paediatrics**

**Cognitive interventions for children with acquired brain injury: A systematic review**
Camm, S., M. et al
*Neuropsychological rehabilitation*. 2020, 1–46
This systematic review identified empirically supported evidence of effective cognitive intervention for children with Acquired Brain Injury (ABI) and included clinical practice guidelines and recommendations for intervention of attention, memory and executive functioning. Key suggestions included using more homogeneous samples
in terms of age and injury characteristics (e.g., nature and severity of ABI, age at ABI) and incorporating long-term monitoring of outcome. Interventionalists must consider the dynamic nature of brain and cognitive development and the changing environmental needs of children.

**Pain**

**Efficacy of Extracorporeal Shock Wave Therapy on pain, function in Myofascial Pain Syndrome of the Trapezius: a systematic review and meta-analysis**

Zhang, Q., et al

*Archives of physical medicine and rehabilitation.*

2020

We evaluate the effect of Extracorporeal Shock Wave Therapy (ESWT) on pain, 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.

**Improving characterization and diagnosis quality of Myofascial Pain Syndrome: a systematic review of the clinical and biomarker overlap with Delayed Onset Muscle Soreness**

Vadasz, B., J. et al

*European journal of physical and rehabilitation medicine.*

2020

Myofascial Pain Syndrome (MPS) is one of the most common conditions of chronic musculoskeletal pain, yet its mechanisms are still poorly understood. Delayed Onset Muscle Soreness (DOMS) is also a regional pain syndrome that has clinical similarities to MPS, but has been better investigated. Emerging research suggests that DOMS may be a valid experimental model for studying MPS; however, a comparison of the similarities and differences of these two conditions has previously not been performed. Herein, we aimed to identify the similarities and differences in the clinical features and biomarkers between DOMS and MPS in order to better define MPS and identify future areas of (DOMS-informed) MPS research.

**Rehabilitation**

**A Systematic Review of Workplace Interventions to Rehabilitate Musculoskeletal Disorders Among Employees with Physical Demanding Work**

Sundstrup, E., et al

*Journal of occupational rehabilitation.*

2020

This systematic review investigates the effectiveness of workplace interventions to rehabilitate musculoskeletal disorders (MSDs) among employees with physically demanding work. The evidence synthesis recommends that implementing strength training at the workplace can reduce MSD among workers with physically demanding work. In regard to workplace ergonomics, there was not enough evidence from the scientific literature to guide current practices. Based on the scientific literature, participatory ergonomics and multifaceted workplace interventions seem to have no beneficial effect on reducing MSD among this group of workers. As these interventional domains were very heterogeneous, it should also be recognized that general conclusions about their effectiveness should be done with care.

**Measurement properties of a two-dimensional movement analysis system: A Systematic Review & Meta-analysis**

Lu, Z., et al

*Archives of physical medicine and rehabilitation.*

2020

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.

**Defining discharge-readiness from subacute care from all stakeholders’ perspectives: a systematic review**

Gledhill, K., et al
Disability and rehabilitation.  
2020, 1–8
Research to date has focused on clinicians’ views on patients’ discharge readiness from acute hospital settings. This study aims to synthesise the literature on discharge readiness from sub-acute (rehabilitation) hospital settings from all stakeholders’ perspectives. Despite limited literature defining sub-acute patients’ discharge readiness from all stakeholders’ perspectives, synthesis of available findings identified major themes for consideration when determining when a patient is ready to leave hospital. Limitations include the heterogeneity of the studies located impacted on data extraction and quality appraisal.

Does Blood Flow Restriction Therapy in Patients Older Than Age 50 Result in Muscle Hypertrophy, Increased Strength, or Greater Physical Function? A Systematic Review
Baker, B. S. et al
Clinical orthopaedics and related research, 478/3 (2020), 593–606
Blood flow restriction (BFR) is a process of using inflatable cuffs to create vascular occlusion within a limb during exercise. The technique can stimulate muscle hypertrophy and improve physical function; however, most of these studies have enrolled healthy, young men with a focus on athletic performance. Furthermore, much of the information on BFR comes from studies with small sample sizes, limited follow-up time, and varied research designs resulting in greater design, selection, and sampling bias. Despite these limitations, BFR’s popularity is increasing as a clinical rehabilitation tool for aging patients. It is important for practitioners to have a clear understanding of the reported effects of BFR specifically in older adults while simultaneously critically evaluating the available literature before deciding to employ the technique.

#Top of the Document

Stroke

Efficacy of Controlled Whole-Body Vibration Training on Improving Fall Risk Factors in Stroke Survivors: A Meta-analysis
Yang, F. and A. J. Butler
Neurorehabilitation and neural repair.  
2020, 1545968320907073
Controlled whole-body vibration (CWBV) training has been applied to people with stroke. However, it remains inconclusive if CWBV reduces fall risk in this population. We assess the immediate and retention effects of CWBV training on fall risk factors in people at postacute and chronic stages of stroke and examine if CWBV dosage is correlated with the effect size (ES) for 3 fall risk factors: body balance, functional mobility, and knee strength. CWBV training may benefit balance and mobility immediately, but the training effect may not persist among people with stroke. Additionally, the CWBV dosage correlates with the ES for body balance and mobility. More high-quality studies are needed to determine the retention effects of CWBV training.

Responsiveness of kinematic and clinical measures of upper-limb motor function after stroke: a systematic review and meta-analysis
Villepinte, C., et al
Annals of physical and rehabilitation medicine.  
2020
This systematic review and meta-analysis aimed to report trends in use and compare the responsiveness of kinematic and clinical measures in studies measuring the effectiveness of constraint-induced movement, trunk restraint and bilateral arm therapies for upper-limb function after stroke. These results are consistent with current literature supporting the use of combined kinematic and clinical measures for comprehensive and accurate evaluation of post-stroke upper-limb function. Future research should include other design trials and rehabilitation types to confirm these findings, focusing on subgroup analysis of type of rehabilitation intervention and functional levels.

Effects of robotic gait training after stroke: a meta-analysis
Moucheboeuf, G., et al
Annals of physical and rehabilitation medicine.  
2020
Robotic devices are often used in rehabilitation and might be efficient to improve walking capacity after stroke. We investigate the effects of robot-assisted gait training after stroke and try to explain the observed
heterogeneity of results in previous meta-analyses. Robot-assisted gait training combined with physiotherapy and body-weight support training seems an efficient intervention for gait recovery after stroke.

**Effect of chronic stretching interventions on the mechanical properties of muscles in patients with stroke: A systematic review**
Lecharte, T., et al
*Annals of physical and rehabilitation medicine.*
2020
Muscle contractures are common after stroke and their treatment usually involves stretching. However, recent meta-analyses concluded that stretching does not increase passive joint amplitudes in patients with stroke. The effectiveness of treatment is usually evaluated by measuring range of motion alone; however, assessing the effects of stretching on the structural and mechanical properties of muscle by evaluating the torque-angle relationship can help in understanding the effects of stretching. Although several studies have evaluated this, the effects remain unclear. Long interventions involving high stretching volumes and/or loads may have effects on muscle/joint mechanical properties, for preventing/treating contractures after stroke injury, but need to be further explored before firm conclusions are drawn.

**The effects of exercise on cognition post-stroke: are there sex differences? A systematic review and meta-analysis**
Khattab, S., et al
*Disability and rehabilitation.*
2020, 1–18
The aim of this systematic review was to investigate if sex moderated the effect of exercise on cognition in adults post-stroke. There were no sex differences in the effects of exercise on memory, executive functioning, language or global cognition in individuals with stroke. Further research is warranted to address sex differences in individuals with stroke to enable better targeting, prevention, and interventions in stroke rehabilitation.

**Effects of High-Intensity Interval Training after Stroke (The HIIT-Stroke study) - A Multicenter Randomized Controlled Trial**
Gjellesvik, T. I., et al
*Archives of physical medicine and rehabilitation.*
2020
We examine if eight weeks of high-intensity interval training (HIIT) in addition to standard care would increase and maintain peak oxygen uptake (VO$_2$peak) more than standard care alone in patients with stroke. The HIIT intervention, which was well-tolerated in this sample of well-functioning stroke survivors, was not superior to standard care in improving and maintaining VO$_2$peak at the 12-month follow-up. However, secondary results from the peak test showed a significant improvement from before to immediately after the intervention.

**Trauma**

**Biomarkers in Traumatic Spinal Cord Injury-Technical and Clinical Considerations: A Systematic Review**
Leister, I., et al
*Neurorehabilitation and neural repair,* 34/2 (2020), 95–110
We examine (1) if serological or cerebrospinal fluid (CSF) biomarkers can be used as diagnostic and/or prognostic tools in patients with spinal cord injury (SCI) and (2) if literature provides recommendations regarding timing and source of biomarker evaluation.
Need further help? The outreach team at the Bodleian Health Care Libraries is here to support the information needs of all OUH Trust staff. We’re happy to help you with literature searches, search skills training and advice, keeping you up to date, and general references enquiries.

Contact us:
01865 221936
hcl-enquiries@bodleian.ox.ac.uk
www.bodleian.ox.ac.uk/nhs

Register for OpenAthens to access e-resources:
https://openathens.nice.org.uk/

To subscribe/unsubscribe from this bulletin please email library@ouh.nhs.uk or reply to this email.

Please see our privacy notice https://libguides.bodleian.ox.ac.uk/Keeping_up_to_date/privacynotice