

GULF WAR ILLNESS

No Updates this Week for Gulf War Illness or Chronic Multisymptom Illness.

CHRONIC FATIGUE SYNDROME

[Cognitive behavioural therapy for myalgic encephalomyelitis/chronic fatigue syndrome is not effective. Re-analysis of a Cochrane review.](#)

[Vink M](#)¹, [Vink-Niese A](#)².

Health Psychol Open. 2019 May 2;6(1):2055102919840614. doi: 10.1177/2055102919840614. PMID: PMC6498783. PMID: 31080632.

Analysis of the 2008 Cochrane review of cognitive behavioural therapy for chronic fatigue syndrome shows that seven patients with mild chronic fatigue syndrome need to be treated for one to report a small, short-lived subjective improvement of fatigue. This is not matched by an objective improvement of physical fitness or employment and illness benefit status. Most studies in the Cochrane review failed to report on safety or adverse reactions. Patient evidence suggests adverse outcomes in 20 per cent of cases. If a trial of a drug or surgical procedure uncovered a similar high rate, it would be unlikely to be accepted as safe. It is time to downgrade cognitive behavioural therapy to an adjunct support-level therapy, rather than a treatment for chronic fatigue syndrome.

[Assessment of the scientific rigour of randomized controlled trials on the effectiveness of cognitive behavioural therapy and graded exercise therapy for patients with myalgic encephalomyelitis/chronic fatigue syndrome: A systematic review.](#)

[Ahmed SA](#)¹, [Mewes JC](#)¹, [Vrijhoef H](#)^{1,2, 3}.

J Health Psychol. 2019 May 10:1359105319847261. doi: 10.1177/1359105319847261. PMID: 31072121. [Epub ahead of print]

Cognitive behavioural therapy and graded exercise therapy have been promoted as effective treatments for patients with myalgic encephalomyelitis/chronic fatigue syndrome. However, criticism on the scientific rigour of these studies has been raised. This review assessed the methodological quality of studies on the effectiveness of cognitive behavioural therapy and graded exercise therapy. The methodological quality of the 18 included studies was found to be relatively low, as bias was prominently found, affecting the main outcome measures of the studies (fatigue, physical functioning and functional impairment/status). Future research should focus on including more objective outcome measures in a well-defined patient population.

HEADACHE and MIGRAINE

[Pregnancy, Birth, Neonatal, and Postnatal Neurological Outcomes After Pregnancy With Migraine.](#)

[Skajaa N](#)¹, [Szépligeti SK](#)¹, [Xue F](#)², [Sørensen HT](#)¹, [Ehrenstein V](#)¹, [Eisele O](#)³, [Adelborg K](#)^{1,4}.

Headache. **2019 May 8**. doi: 10.1111/head.13536. PMID: 31069791. [Epub ahead of print]

BACKGROUND: Prevalence of migraine is high during the reproductive age. Although migraine often improves during pregnancy, the risk of adverse pregnancy, birth, neonatal, and neurological outcomes in mother and offspring remains poorly understood.

OBJECTIVE: To investigate the associations between maternal migraine and risks of adverse pregnancy outcomes in the mother, and birth, neonatal and postnatal outcomes in the offspring.

METHODS: We used Danish population registries to assemble a cohort of pregnancies among women with migraine and an age- and conception year-matched comparison cohort of pregnancies among women without migraine. The study period was 2005-2012. We computed adjusted prevalence ratios (aPRs) for pregnancy and birth outcomes and adjusted risk ratios (aRRs) for neonatal and postnatal outcomes, adjusting for age, preconception medical history, and preconception reproductive history.

RESULTS: We identified 22,841 pregnancies among women with migraine and 228,324 matched pregnancies among women without migraine. Migraine was associated with an increased risk of pregnancy-associated hypertension disorders (aPR: 1.50 [95% confidence interval (CI): 1.39-1.61]) and miscarriage (aPR: 1.10 [95% CI: 1.05-1.15]). Migraine was associated with an increased prevalence of low birth weight (aPR: 1.14 [95% CI: 1.06-1.23]), preterm birth (aPR: 1.21 [95% CI: 1.13-1.30]) and cesarean delivery (aPR: 1.20 [95% CI: 1.15-1.25]), but not of small for gestational age offspring (aPR: 0.94 [95% CI: 0.88-0.99]) and birth defects (aPR: 1.01 [95% CI: 0.93-1.09]). Offspring prenatally exposed to maternal migraine had elevated risks of several outcomes in the neonatal and postnatal period, including intensive care unit admission (aRR: 1.22 [95% CI: 1.03-1.45]), hospitalization (aRR: 1.12 [95% CI: 1.06-1.18]), dispensed prescriptions (aRR: 1.34 [95% CI: 1.24-1.45]), respiratory distress syndrome (aRR: 1.20 [95% CI: 1.02-1.42]), and febrile seizures (aRR: 1.27 [95% CI: 1.03-1.57]), but not of death (aRR: 0.67 [95% CI: 0.43-1.04]) and cerebral palsy (aRR: 1.00 [95% CI: 0.51-1.94]).

CONCLUSIONS: Women with migraine and their offspring have greater risks of several adverse pregnancy outcomes than women without migraine.

[Periodontal inflammation is related to increased serum calcitonin gene-related peptide \(CGRP\) levels in patients with chronic migraine.](#)

[Leira Y](#)^{1,2,3}, [Ameijeira P](#)², [Domínguez C](#)⁴, [López-Arias E](#)⁵, [Ávila P](#)⁵, [Pérez-Mato M](#)⁵, [Sobrinho T](#)⁵, [Campos F](#)⁵, [D'Aiuto F](#)¹, [Leira R](#)^{4,5}, [Blanco J](#)^{2,3}.

J Periodontol. **2019 May 9**. doi: 10.1002/JPER.19-0051. PMID: 31070784. [Epub ahead of print]

BACKGROUND: Recently, a relationship was found between periodontitis and chronic migraine. Calcitonin gene-related peptide (CGRP) is a key element in migraine pathophysiology. However, no information exists of the potential association between periodontal inflammation and CGRP in chronic migraine. The aim of the study was, therefore, to investigate whether there is a link between periodontitis and peripheral levels of CGRP in a cohort of patients with chronic migraine.

METHODS: We included 102 chronic migraineurs and 77 age and gender matched individuals free of headache/migraine. Full-mouth periodontal parameters were recorded and the periodontal inflamed surface area (PISA) was calculated to quantify the periodontal inflammatory status for each participant. Socio-demographic data and co-morbidities were assessed by means of a standard questionnaire. We collected blood samples and serum concentrations were done for CGRP, interleukin (IL)-6 and IL-10.

RESULTS: In the chronic migraine group, patients with periodontitis had greater levels of serum CGRP (19.7±6.5 vs. 15.3±6.2 pg/mL) and IL-6 (15.1±9.2 vs. 9.6±6.3 pg/mL, P<0.0001) while non-significant differences were observed with IL-10 (2.0±1.0 vs. 2.8±1.5 pg/mL, P = 0.675) concentrations than those without periodontitis. PISA was independently associated with CGRP in patients with chronic migraine (β = 0.003; 95%CI: 0.001-0.006, P = 0.031). PISA correlated positively with CGRP (r = 0.236; P = 0.017) and IL-6 (r = 0.262; P = 0.008) in chronic migraine.

CONCLUSIONS: Periodontal inflammation is associated with increased circulating levels of CGRP in chronic migraineurs. Elucidating the exact mechanisms through which periodontitis and CGRP are linked in these patients deserves further investigation. This article is protected by copyright. All rights reserved.

CHRONIC PAIN

[Synthesizing the Strength of the Evidence of Complementary and Integrative Health Therapies for Pain.](#)

[Giannitrapani K](#)^{1,2}, [Holliday J](#)¹, [Miake-Lye I](#)³, [Hempel S](#)⁴, [Taylor SL](#)^{5,6}.

Pain Med. **2019 May 9**. pii: pnz068. doi: 10.1093/pm/pnz068. PMID: 31070752. [Epub ahead of print]

OBJECTIVE: Pain and opioid use are highly prevalent, leading for calls to include nonpharmacological options in pain management, including complementary and integrative health (CIH) therapies. More than 2,000 randomized controlled trials (RCTs) and many systematic reviews have been conducted on CIH therapies, making it difficult to easily understand what type of CIH therapy might be effective for what type of pain. Here we synthesize the strength of the evidence for four types of CIH therapies on pain: acupuncture, therapeutic massage, mindfulness techniques, and tai chi.

DESIGN: We conducted searches of English-language systematic reviews and RCTs in 11 electronic databases and previously published reviews for each type of CIH. To synthesize that large body of literature, we then created an "evidence map," or a visual display, of the literature size and broad estimates of effectiveness for pain.

RESULTS: Many systematic reviews met our inclusion criteria: acupuncture (86), massage (38), mindfulness techniques (11), and tai chi (21). The evidence for acupuncture was strongest, and largest for headache and chronic pain. Mindfulness, massage, and tai chi have statistically significant positive effects on some types of pain. However, firm conclusions cannot be drawn for many types of pain due to methodological limitations or lack of RCTs.

CONCLUSIONS: There is sufficient strength of evidence for acupuncture for various types of pain. Individual studies indicate that tai chi, mindfulness, and massage may be promising for multiple types of chronic pain. Additional sufficiently powered RCTs are warranted to indicate tai chi, mindfulness, and massage for other types of pain.

[Trends of opioid use disorder amongst hospitalized patients with chronic pain.](#)

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Pain Pract. **2019 May 11**. doi: 10.1111/papr.12789. PMID: 31077526. [Epub ahead of print]

BACKGROUND: Chronic pain patients managed with opioids are at an increased risk of opioid misuse or opioid use disorder (OUD). In recent years, there has been a stark increase in abuse, misuse, and diversion of prescription opioid medications. The aim of this study is to investigate trends in changing rates of opioid use disorder amongst chronic pain patients.

METHODS: The National Inpatient Sample (NIS) database identified chronic pain admissions with OUD from 2011 - 2015. Patients were identified from the NIS database using International Classification of Diseases, Ninth and Tenth diagnosis codes for chronic pain and OUD. Annual estimates and trends were determined for OUD, patient characteristics, OUD amongst subgroups of chronic pain conditions, and discharge diagnosis.

RESULTS: We identified 10.3 million patients with chronic pain. Of this, 680,631 patients were diagnosed with OUD. OUD increased from 109,222 in 2011 to 172,680 in 2015 ($P < 0.001$). Similarly, there was upward trends of OUD among females (53.2% to 54.5%; $P = 0.09$), patients aged 65 - 84 years (11.8% to 17%; $P < 0.001$), Medicare insured patients (39.5% to 46.0%; $P < 0.01$), patients with low annual household income (27.8% to 33.3%; $P < 0.001$), and cannabinoid use disorder (CUD) (7.2% to 8.3%; $P = 0.01$). OUD increased from 2011 to 2015 in patients with chronic regional pain syndrome (5.53% to 7.46%; $P = 0.01$) and spondylosis (1.32% to 1.81%; $P < 0.001$).

CONCLUSIONS: These findings suggest that OUD increased substantially from 2011 to 2015. Disparities of OUD with increasing use among vulnerable populations including women, those with Medicare insurance, tobacco use disorder, and low annual income should be explored further.

CHRONIC PAIN (Continued)

[Sleep disturbance in individuals with physical disabilities and chronic pain: The role of physical, emotional and cognitive factors.](#)

[Vega R](#)¹, [Miró J](#)², [Esteve R](#)³, [Ramírez-Maestre C](#)³, [López-Martínez AE](#)³, [Jensen MP](#)⁴.

Disabil Health J. **2019 Apr 29**. pii: S1936-6574(19)30060-3. doi: 10.1016/j.dhjo.2019.04.001. PMID: 31076226. [Epub ahead of print]

BACKGROUND: Sleep problems are common for individuals living with physical disabilities and chronic pain. However, the factors that influence the relationship between pain and sleep problems in these populations remain unknown.

OBJECTIVE: The aim of this study was to increase our understanding of the physical, emotional and cognitive factors associated with sleep disturbance in individuals with chronic health conditions often associated with physical disabilities.

METHODS: Participants were recruited from a database of individuals with a variety of chronic health conditions, including multiple sclerosis, spinal cord injury, back pain, osteoarthritis, and amputations. To participate in the study, they needed to report having a chronic pain problem. Participants completed an online survey using REDCap assessing average pain intensity (Numerical Rating Scale-11), pain extent (number of painful body areas), sleep disturbance (PROMIS Sleep Disturbance), depression (PROMIS Emotional Distress-Depression) and catastrophizing (Coping Strategies Questionnaire). A total of 455 participants ($M_{\text{age}} = 58.9$; $SD = 11.4$), of which 292 (64%) were women, provided complete data. We performed a series of four regression analyses.

RESULTS: After controlling for age and sex, the predictors explained an additional 7-16% of the variance in sleep disturbance. The final model with all of the predictors explained 22%.

CONCLUSIONS: Consistent with the study hypothesis, all the variables examined made significant and independent contributions to the variance in sleep disturbance. The findings provide additional evidence that physical, emotional and cognitive factors all play a role in the sleep quality of individuals with chronic health conditions often associated with physical disabilities.

[The effect of interactive virtual reality on pain perception: a systematic review of clinical studies.](#)

[Wittkopf PG](#)¹, [Lloyd DM](#)¹, [Coe O](#)¹, [Yacoobali S](#)¹, [Billington J](#)¹.

Disabil Rehabil. **2019 May 8**:1-12. doi: 10.1080/09638288.2019.1610803. PMID: 31067135. [Epub ahead of print]

PURPOSE: The aim of this systematic review was to evaluate the effect of immersive and non-immersive interactive virtual reality on pain perception in patients with a clinical pain condition.

METHODS: The following databases were searched from inception: Medline (Ovid), PsychInfo, CINAHL, Cochrane library and Web of Science. Two reviewers screened reports and extracted the data. A third reviewer acted as an arbiter. Studies were eligible if they were randomized controlled trials, quasi-randomized trials, and uncontrolled trials. Crossover and parallel-group designs were included. Risk of bias was assessed for all included studies.

RESULTS: Thirteen clinical studies were included. The majority of studies investigated a sample of participants with chronic pain. Six were controlled trials and seven uncontrolled studies. Findings from controlled research suggest that interactive virtual reality may reduce pain associated with ankylosing spondylitis and post-mastectomy, but results are inconsistent for patients with neck pain. Findings from uncontrolled studies suggest that interactive virtual reality may reduce neuropathic limb pain, and phantom limb pain, but had no effect on nonspecific chronic back pain.

CONCLUSIONS: There is a need for more rigorous randomized control trials in order to conclude on the effectiveness of the use of virtual reality for the management of pain. Implications for rehabilitation Interactive virtual reality has been increasingly used in the rehabilitation of painful conditions. Interactive virtual reality using exergames may promote distraction from painful exercises and reduce pain post-mastectomy and in patients with ankylosing spondylitis. Interactive virtual representation of limbs may reduce neuropathic and phantom limb pain.

IRRITABLE BOWEL SYNDROME

No Updates this Week for Irritable Bowel Syndrome.

OTHER RESEARCH OF INTEREST

No Updates this Week for Other Research of Interest.

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