

## 7. PELVIC ORGANS/WOMAN'S HEALTH

### Depression post birth

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#### **Effect of couple-based cognitive behavioural intervention on prevention of postnatal depression: multisite randomised controlled trial.**

Ngai FW<sup>1</sup>, Wong PW<sup>2</sup>, Chung KF<sup>3</sup>, Chau PH<sup>4</sup>, Hui PW<sup>5</sup>.

##### *OBJECTIVE:*

To compare a couple-based cognitive behavioural intervention (CBI) for postnatal depression with comparison (CBI delivered to women alone) and control (standard perinatal care).

*DESIGN: Multisite randomised controlled trial.*

*SETTING: Antenatal clinics at three regional public hospitals in Hong Kong.*

##### *SAMPLE:*

Three hundred eighty eight low-risk childbearing couples.

##### *METHODS:*

Childbearing couples were randomly allocated to couple-based CBI (n = 134), women-alone CBI (n = 124) or control (n = 130). The CBI consists of a 3-hour antenatal group session and two 30-minute postnatal telephone follow-up sessions.

##### *MAIN OUTCOME MEASURES:*

The primary outcome was depressive symptoms, measured on the Edinburgh Postnatal Depression Scale (EPDS). Assessments were collected at baseline (during pregnancy), 6 weeks, 6 months and 12 months postpartum.

##### *RESULTS:*

Depressive symptoms were significantly more improved at 6 weeks postpartum for mothers in couple-based CBI than in women-alone CBI (difference 1.46, 95% CI 0.11-2.81) or control groups (difference 1.71, 95% CI 0.29-3.13). The proportion of mothers with postnatal depression (EPDS score  $\geq 10$ ) was significantly lower at 6 weeks postpartum in couple-based CBI than in control (difference 17.8%, 95% CI 3.6-32.0%). However, the treatment effect was not maintained at 6 and 12 months. There was no significant intervention effect among fathers.


##### *CONCLUSIONS:*

Couple-based CBI is more effective than CBI delivered to mothers alone and standard perinatal care in reducing the incidence of postnatal depression among Chinese mothers in early postpartum period. This article is protected by copyright. All rights reserved.

## 14. HEADACHES

### Vagal nerve stimulation helps

#### **Differential efficacy of non-invasive vagus nerve stimulation for the acute treatment of episodic and chronic cluster headache: A meta-analysis**

Ilse F de Coen , Juana CA Marin, Stephen erstein, .

<https://doi.org/10.1177/0333102419856607>

#### Background

Two randomized, double-blind, sham-controlled trials (ACT1, ACT2) evaluated non-invasive vagus nerve stimulation (nVNS) as acute treatment for cluster headache. We analyzed pooled ACT1/ACT2 data to increase statistical power and gain insight into the differential efficacy of nVNS in episodic and chronic cluster headache.

#### Methods

Data extracted from ACT1 and ACT2 were pooled using a fixed-effects model. Main outcome measures were the primary endpoints of each study. This was the proportion of participants whose first treated attack improved from moderate (2), severe (3), or very severe (4) pain intensity to mild (1) or nil (0) for ACT1 and the proportion of treated attacks whose pain intensity improved from 2–4 to 0 for ACT2.

#### Results

The pooled population included 225 participants (episodic:  $n = 112$ ; chronic:  $n = 113$ ) from ACT1 ( $n = 133$ ) and ACT2 ( $n = 92$ ) in the nVNS ( $n = 108$ ) and sham ( $n = 117$ ) groups. Interaction was shown between treatment group and cluster headache subtype ( $p < 0.05$ ). nVNS was superior to sham in episodic but not chronic cluster headache (both endpoints  $p < 0.01$ ). Only four patients discontinued the studies due to adverse events.

#### Conclusions

nVNS is a well-tolerated and effective acute treatment for episodic cluster headache.

## Association of LBP and HA's

**The association between headache and low back pain: a systematic review**

- Arani Vivekanantham, Claire Edwin, Tamar Pincus, Manjit Matharu, Helen Parsons & Martin Underwood

*The Journal of Headache and Pain* volume 20,  
Background

To systematically review studies quantifying the association between primary chronic headaches and persistent low back pain (LBP).

**Main text**

We searched five electronic databases. We included case-control, cross-sectional and cohort studies that included a headache and back pain free group, reporting on any association between persistent LBP and primary headache disorders. Methodological quality was assessed using Newcastle-Ottawa Scale. Our primary outcome was the association between primary headache disorders and persistent LBP. Our secondary outcomes were any associations between severity of LBP and severity of headache, and the relationship between specific headache sub-types classified as per International Classification of Headache Disorders (ICHD) criteria and persistent LBP.

We included 14 studies. The sizes of the studies ranged from 88 participants to a large international study with 404, 206 participants. Odds ratios for the association were between 1.55 (95% confidence interval (CI) 1.13–2.11) and 8.00 (95% CI 5.3–12.1). Study heterogeneity meant statistical pooling was not possible. Only two studies presented data investigating persistent LBP and chronic headache disorders in accordance with ICDH criteria.

**Conclusions**

We identified a positive association between persistent LBP and primary headache disorders. The quality of the review findings is limited by diversity of populations, study designs and uncertainty about headache and LBP definitions.

**Botulism helps HA's****Real-world effectiveness of onabotulinumtoxinA treatment for the prevention of headaches in adults with chronic migraine in Australia: a retrospective study**

- Catherine Stark, Richard Stark, Nicole Limberg, Julian Rodrigues, Dennis Cordato, Raymond Schwartz & Robert Jukic

*The Journal of Headache and Pain* volume 20,  
Background

OnabotulinumtoxinA (BOTOX®, Allergan plc, Dublin, Ireland) is approved for the preventive treatment of headaches in adult patients with chronic migraine (CM) in Australia by the country's reimbursement mechanism for medicines, the Pharmaceutical Benefits Scheme (PBS). To our knowledge, this study represents the first focused report evaluating real-world evidence of onabotulinumtoxinA treatment via the PBS in Australian clinics.

#### Methods

This study reviewed the medical records of adults with inadequately controlled CM from 7 private neurology practices in Australia who, beginning in March 2014, received PBS-subsidized onabotulinumtoxinA per product labelling for the first time. The primary effectiveness measure was the percentage of patients achieving a response defined by 50% or greater reduction in headache days from baseline after 2 treatment cycles. Additional data were recorded in the case report form when available and included demographics, clinical characteristics, headache severity and frequency, Headache Impact Test (HIT-6) score, medication use, and days missed of work or study at baseline, after 2 treatment cycles, and at last follow-up. Differences in mean changes from baseline were evaluated with a 1-tailed *t*-test or Pearson's chi-squared test ( $p < 0.05$ ).

#### Results

The study population included 211 patients with a mean (SD) of 25.2 (5.3) monthly headache days at baseline. In the primary outcome analysis, 74% of patients achieved a response, with a mean (SD) of 10.6 (7.9) headache days after 2 treatment cycles ( $p < 0.001$ ). Secondary effectiveness outcomes included mean (SD) reductions in HIT-6 score of -11.7 (9.8) and -11.8 (12.2) after 2 treatment cycles ( $p < 0.001$ ) and final follow-up ( $p < 0.001$ ), respectively, and mean (SD) decreases in days per month of acute pain medication use of -11.5 (7.6) after 2 treatment cycles ( $p < 0.001$ ) and -12.7 (8.1) at final follow-up ( $p < 0.001$ ).

#### Conclusion

This study provides additional clinical evidence for the consistent effectiveness of onabotulinumtoxinA for the treatment of CM in Australia. This effectiveness was made evident by reductions in migraine days, severe headache days, and HIT-6 scores from baseline

**20 A. ROTATOR CUFF****Synthetic patch works**

Shoulder Elbow. 2014 Jan;6(1):35-9. doi: 10.1111/sae.12046. Epub 2013 Oct 12.

**Synthetic Patch Rotator Cuff Repair: A 10-year Follow-Up.**

Shepherd HM<sup>1</sup>, Lam PH<sup>1</sup>, Murrell GA<sup>1</sup>.

**BACKGROUND:**

The present study aimed to determine the long-term outcome as a result of the use of synthetic patches as tendon substitutes to bridge massive irreparable rotator cuff defects.

**METHODS:**

All patients who previously had a rotator cuff repair with a synthetic patch (2-mm Gore DUALMESH ePTFE patch; Gore, Flagstaff, AZ, USA; or a 2.87-mm Bard PTFE Felt pledgets; CR Bard, Warwick, RI, USA) were followed-up at a minimum of 8.5 years postoperatively. Assessment of shoulder pain, function, range of motion, strength and imaging was performed.

**RESULTS:**

Six patients had an interpositional repair with a synthetic patch. One patient had died. In the remaining five patients, the mean tear size at repair was 27 cm<sup>2</sup>. At 9.7 years postoperatively, all the patches remained in situ and no patient required further surgery. The repair was intact in four out of five patients. Patients had improved external rotation and abduction compared to before surgery ( $p < 0.02$ ).

**CONCLUSIONS:**

We describe the long-term outcomes of patients who had undergone synthetic patch rotator cuff repair for an irreparable rotator cuff tear. At 9.7 years postoperatively, patients reported less severe and more infrequent pain, as well as greater overall shoulder function, compared to before surgery. Patients also had increased passive external rotation and abduction. All the patches remain in situ and there have been no further operations on these shoulders.

**22 B. SHOULDER INSTABILITY****Bankart repair effective****Long-term outcomes of the arthroscopic Bankart repair: a systematic review of studies at 10-year follow-up**

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Hannan Mullett, MCh, FRCS(Tr&Orth)<sup>a</sup>  
DOI: <https://doi.org/10.1016/j.jse.2019.04.057>

**Background**

The purpose of this study was to systematically review the evidence in the literature to ascertain the functional outcomes and recurrences rates, as well as subsequent revision rates, following arthroscopic Bankart repair at a minimum of 10 years' follow-up.

**Methods**

Two independent reviewers performed a literature search based on Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines, using the Embase, MEDLINE, and Cochrane Library databases. Studies were included if they were clinical studies on arthroscopic Bankart repair with a minimum of 10 years' follow-up. Statistical analysis was performed using SPSS software.

**Results**

Our review found 9 studies including 822 shoulders meeting our inclusion criteria. The majority of patients were male patients (75.5%), the average age was 28.0 years (range, 15-73 years), and the mean follow-up period was 149.4 months. The most commonly used functional outcome score was the Rowe score, with a weighted mean of 87.0. Overall, 77.6% of athletes were able to return to sports postoperatively. The overall rate of recurrent instability was 31.2%, with 16.0% of patients having recurrent dislocations, and the overall revision rate was 17.0%. Evidence of instability arthropathy was found in 59.4% of patients, with 10.5% of patients having moderate to severe arthropathy.

**Discussion and conclusion**

Arthroscopic Bankart repair for anterior shoulder instability has been shown to result in excellent long-term functional outcomes despite a relatively high rate of recurrent instability necessitating revision surgery. In addition, the high rate of instability arthropathy is a concern following arthroscopic Bankart repair in the long term.

**34. PATELLA****Total vs patella****The Clinical Outcome of Patellofemoral Arthroplasty vs Total Knee Arthroplasty in Patients under age 55 with Isolated Patellofemoral Osteoarthritis**

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<https://doi.org/10.1016/j.arth.2019.07.016>Get rights and content

**Abstract****Background**

Patellofemoral osteoarthritis (PF OA) affects 10% of patients over 40 years of age and is commonly treated by Patellofemoral Arthroplasty (PFA) or a Total Knee Arthroplasty (TKA). PFA is a more conservative approach with documented faster recovery. No study to date has compared both approaches with respect to patient reported outcome measures (PROMs) in patients under 60 years of age.

**Methods**

A retrospective case-matched cohort study based on age, sex, BMI, and side, of 23 PFAs (in 19 patients) operated on by two surgeons and 23 TKAs (23 patients) operated on by six surgeons were included in the study. All patients were under the age of 55 and operated on between March 2010 and September 2015. The Western Ontario and McMaster Osteoarthritic Index (WOMAC), Knee injury and Osteoarthritis (KOOS) scores, Tegner, and UCLA were compared between pre-operative and minimum 2-year post-operative timepoints between groups.

**Results**

TKA and PFA were comparable on all PROMs at minimum 2-year follow-up, however, PFA patients exhibited statistically significantly larger improvement between 1-year post-op and 2 years post-op ( $p < 0.05$ ). All patients improved between preoperative and post-operative timepoints ( $p < 0.05$ ).

**Discussion**

Although TKA performed better with respect to functional outcomes at the 1-year mark, at 2-year follow-up, PFA and TKA performed equally well. Our results allow us to conclude that in younger patients with isolated PF OA who desire a more conservative, kinematic-preserving approach, PFA continues to be a practical treatment option yielding early outcomes that compare favorably with TKA.

## 52. EXERCISE

## Depression helped with exercise

**Resistance training in addition to aerobic activity is associated with lower likelihood of depression and comorbid depression and anxiety symptoms: A cross sectional analysis of Australian women**

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## Highlights

- Lower depression risk when meeting aerobic activity recommendation
- Lower comorbid depression/anxiety risk when meeting aerobic activity recommendation
- Lower depression risk when meeting aerobic and resistance training recommendations
- Lower comorbid depression/anxiety risk when meeting both activity recommendations
- Magnitude of risk reduction greater when meeting both activity recommendations

## Abstract

The mental health benefits of resistance training (RT) alone or beyond those provided by aerobic physical activity (PA) are unclear.

This study aimed to determine the association between meeting recommendations for aerobic PA and/or RT, and symptoms of depression and/or anxiety. Participants were Australian female members of the 10,000 Steps project ( $n = 5180$ ,  $50.0 \pm 11.5$  years).

Symptoms of depression and anxiety were determined using the Depression Anxiety Stress Score. Participants were grouped as ‘depression only’, ‘anxiety only’, ‘co-occurring depression and anxiety’ or ‘neither depression nor anxiety’ based on relevant subscale score (cut-points: depression  $\geq 14$  points, anxiety  $\geq 10$  points). The International Physical Activity Questionnaire-Long Form questionnaire was used to determine PA with an additional item to specify RT frequency. Participants were classified as adhering to ‘aerobic PA only’ ( $\geq 150$  min PA/week), ‘RT only’ (RT  $\geq 2$  days/week), ‘aerobic PA + RT’ ( $\geq 150$  min PA/week + RT  $\geq 2$  days/week), or ‘neither aerobic PA nor RT’ ( $< 150$  min PA/week + RT  $< 2$  days/week). Adjusted relative risk ratios (RRR [95%CI]) were estimated using multinomial logistic regression models. Relative to the ‘neither PA nor RT’ ( $n = 2215$ ), the probabilities of ‘depression only’ ( $n = 317$ ) and ‘co-occurring depression and anxiety’ ( $n = 417$ ) were lower for the ‘aerobic PA only’ ( $n = 1590$ ) (RRR = 0.74 [0.56–0.97] and RRR = 0.76 [0.59–0.97] respectively), and ‘both PA + RT’ ( $n = 974$ ) groups (RRR = 0.61 [0.43–0.86] and RRR = 0.47 [0.33–0.67] respectively). There were no associations between adhering to one or both recommendations and ‘anxiety only’ ( $n = 317$ ), or between ‘RT only’ ( $n = 401$ ) and depression and/or anxiety.

Prevention and treatment strategies including both aerobic PA and RT may provide additional benefits for depression with or without comorbid anxiety.



## Lifetime strength training helps in later years

## Functional Performance With Age

## The Role of Long-Term Strength Training

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## Article Metrics

**Background and Purpose:** Physical function is shown to decline with age. However, how long-term strength training may attenuate the age-related limitation in functional tasks with various force demands is unclear.

**Methods:** In a cross-sectional study, we assessed maximal muscle strength, initial and late phase rate of force development (RFD), as well as 4 tests of functional performance in 11 strength-trained master athletes (MAs), 11 recreationally active older adults (AEs), 10 sedentary older adults (SOAs), and 9 moderately active young controls. Functional performance was divided into 2 categories: more force-demanding (chair-rising ability and stair-climbing power) and less force-demanding (habitual walking speed and 1-leg standing) tasks.

**Results:** MA exhibited 75%, 45%, and 26% higher leg press maximal strength compared with SOA, AE, and young, respectively ( $P < .01$ ). MA leg press RFD was not different from young, but was higher compared to AE and SOA during both the initial (0-50 ms: 104%-177%,  $P < .05$ ) and late phase (100-200 ms: 37%-52%,  $P < .05$ ) of muscle contraction. MA also showed better mean (SD) performance compared with AE and SOA ( $P < .05$ ) in more force-demanding functional tasks; chair-rising ability (MA: 6.2 (1.2) seconds; AE: 8.6 (1.8) seconds; SOA: 9.7 (3.0) seconds; young: 6.5 (1.0) seconds) and stair-climbing power (MA: 701 (161) W; AE: 556 (104) W; SOA: 495 (116) W; young: 878 (126) W). No differences (mean (SD)) were observed between MA and AE in less force-demanding tasks, but both groups were superior ( $P < .05$ ) compared with SOA in walking speed (MA: 1.49 (0.21) m·s<sup>-1</sup>; AE: 1.56 (0.17) m·s<sup>-1</sup>; SOA: 1.27 (0.22) m·s<sup>-1</sup>; young: 1.62 (0.22) m·s<sup>-1</sup>) and balance test completion (MA: 45%; AE: 45%; SOA: 0%; young: 100%).

**Conclusion:** Our results reveal that maintaining a high muscle force-generating capacity into older age is related to beneficial effects on functional performance, which may not be achieved with recreational activity, thus highlighting strength training as an important contribution to healthy aging.

**56. ATHLETICS****Adolescents LBP**

BMC Musculoskelet Disord. 2019 Jul 13;20(1):327. doi: 10.1186/s12891-019-2707-9.

**Gender differences in the prevalence of low back pain associated with sports activities in children and adolescents: a six-year annual survey of a birth cohort in Niigata City, Japan.**

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**BACKGROUND:**

This study was conducted to determine gender differences in the relationship between extracurricular sports activities (ECSA) and low back pain (LBP) in children and adolescents.

**METHODS:**

In a cohort analysis of a 6-year birth cohort annual survey, students were followed from the fourth to sixth grades of elementary school (E4-E6; 9-12 years old) through the first to third grades of junior high school (J1-J3; 12-15 years old). All students completed annual questionnaires on ECSA and LBP. The odds ratio (OR) and 95% confidence interval (CI) were calculated to assess the association strength between ECSA and LBP. We also calculated the population attributable fraction (PAF), which was defined as the proportion of students with ECSA-related LBP among all students with LBP.

**RESULTS:**

ECSA was significantly associated with LBP only in grade J3 among boys (OR: 2.00, 95% CI: 1.47-2.71). On the other hand, among girls, ECSA was significantly associated with LBP in grades E5 (OR: 1.48, 95% CI: 1.00-2.20), E6 (OR: 1.91, 95% CI: 1.33-2.75), and J3 (OR: 1.81, 95% CI: 1.26-2.61). Among boys, PAF was similar in all grades (range, 10-16%), whereas among girls, the PAF varied (-11 to 29%) and was significantly higher in girls than in boys in grades E5 (19.0% vs. 1.1%,  $P < 0.01$ ) and E6 (28.8% vs. 12.8%,  $P < 0.01$ ).

**CONCLUSIONS:**

Although there was a link between ECSA and LBP in both boys and girls, girls were more susceptible to ECSA-related LBP, especially in grades E5 and E6.

**59. PAIN****Genetic factors in developing post surgical pain**

J Pain. 2019 May 23. pii: S1526-5900(19)30079-3. doi: 10.1016/j.jpain.2019.05.008.

**Systematic review and meta-analysis of genetic risk of developing chronic postsurgical pain.**

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Chronic postsurgical pain (CPSP) is a significant detriment to post-surgical recovery and a risk factor for prolonged opioid use. Emerging evidence suggests the estimated heritability for chronic pain is 45% and that genetic factors partially explain individual susceptibility to CPSP.

The aim of this study was to systematically review, assess quality and summarize the studies in humans that have investigated genetic factors associated with CPSP. We also conducted a meta-analysis to derive a single effect size for evaluable genetic associations with CPSP. Our comprehensive literature search included review of 21 full-text articles evaluating variants of 69 genes for association with CPSP. We found significant gene variant associations reported for variants/haplotypes of 26 genes involved in neurotransmission, pain signaling, immune responses and neuroactive ligand-receptor interaction, with CPSP. Six variants of five genes (COMT: rs4680 and rs6269, OPRM1: rs1799971, GCH1: rs3783641, KCNS1: rs734784 and TNFA: rs1800629), were evaluated by more than one study and were included in the meta-analysis. At rs734784 (A>G) of KCNS1, presence of G allele marginally increased risk of CPSP (Additive genetic model; Odds ratio: 1.511; 95% CI 1 to 2.284; p-value 0.050), while the other variants did not withstand meta-analyses criteria. Our findings demonstrate the role of genetic factors with different functions in CPSP, and also emphasize that single genetic factors have small effect sizes in explaining complex conditions like CPSP. Heterogeneity in surgical cohorts, population structure and outcome definitions, as well as small number of available studies evaluating same variants, limit the meta-analysis. There is a need for large-scale, homogenous, replication studies to validate candidate genes, and understand the underlying biological networks underpinning CPSP.

Perspective: Our systematic review comprehensively describes 21 studies evaluating genetic association with CPSP, and limitations thereof. A meta-analysis of 6 variants (5 genes) found marginally increased risk for CPSP associated with rs734784 A>G of the potassium voltage-gated channel gene (KCNS1). Understanding genetic predisposition for CPSP will enable prediction and personalized management.