

## Background

While depression is frequently managed by general practitioners, often patients self-manage these symptoms with alternative therapies, including St John's wort (SJW). We tested whether use of SJW was associated with different patterns of conventional and complementary health service use, strategies used for management of depression, or user dissatisfaction with or lack of trust in their general practitioner or clinic overall.

## Methods

Secondary analysis of data collected from an Australian population screened for a longitudinal cohort study of depression. Main outcome measures were CES-D for depressive symptoms, satisfaction with their general practitioner (GPAQ), Trust in Physician scale, self-report of health services usage and strategies used to manage depression, stress or worries.

## Results

Response rate was 7667/17,780 (43.1%). Of these, 4.3% (320/7,432) had used SJW in the past 12 months (recent 'SJW users'). SJW users were significantly more likely to be depressed and to have a higher CES-D score. There were no statistically significant differences between recent SJW users and non-SJW users in satisfaction with their general practice or in trust in their general practitioner (GP) when adjusted for multiple factors. SJW users were significantly more likely to use all health services, whether conventional or complementary, as well as other strategies used for mental health care. SJW users were also more likely to consider themselves the main carer for their depression.

## Conclusions

Primary care attendees with symptoms of depression who use SJW appear not to be rejecting conventional medicine. Rather, they may be proactive care seekers who try both conventional and complementary strategies to manage their depressive symptoms.

If GPs enquire and find that their depressed patients are using SJW, this may indicate that they might explore for unrelieved symptoms of depression and also consider the issue of potential for interactions between SJW and other medicines.

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*Eo HJ, Park JH, Park GH, Lee MH, Lee JR, Koo JS & Jeong JB.*

### 5Anti-inflammatory and anti-cancer activity of mulberry (*Morus alba* L.) root bark. BMC

Complementary and Alternative Medicine 2014, 14:200 doi:10.1186/1472-6882-14-200

## Background

Root bark of mulberry (*Morus alba* L.) has been used in herbal medicine as anti-phlogistic, liver protective, kidney protective, hypotensive, diuretic, anti-cough and analgesic agent. However, the anti-cancer activity and the potential anti-cancer mechanisms of mulberry root bark have not been elucidated. We performed in vitro study to investigate whether mulberry root bark extract (MRBE) shows anti-inflammatory and anti-cancer activity.

## Methods

In anti-inflammatory activity, NO was measured using the griess method. iNOS and proteins regulating NF-κB and ERK1/2 signaling were analyzed by Western blot. In anti-cancer activity, cell growth was measured by MTT assay. Cleaved PARP, ATF3 and cyclin D1 were analyzed by Western blot.

## Results

In anti-inflammatory effect, MRBE blocked NO production via suppressing iNOS over-expression in LPS-stimulated RAW264.7 cells. In addition, MRBE inhibited NF-κB activation through p65 nuclear translocation via blocking IκB-α degradation and ERK1/2 activation via its hyper-phosphorylation. In anti-cancer activity, MRBE dose-dependently induced cell growth arrest and apoptosis in human colorectal cancer cells, SW480. MRBE

treatment to SW480 cells activated ATF3 expression and down-regulated cyclin D1 level. We also observed that MRBE-induced ATF3 expression was dependent on ROS and GSK3β. Moreover, MRBE-induced cyclin D1 down-regulation was mediated from cyclin D1 proteasomal degradation, which was dependent on ROS.

## Conclusions

These findings suggest that mulberry root bark exerts anti-inflammatory and anti-cancer activity.

## Integrative medicine

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*Loudon A, Barnett T, Piller N, Immink MA & Williams AD.*

### Yoga management of breast cancer-related lymphoedema: a randomised controlled pilot. BMC

Complementary and Alternative Medicine 2014, 14:214 doi:10.1186/1472-6882-14-214

## Background

Secondary arm lymphoedema continues to affect at least 20% of women after treatment for breast cancer requiring lifelong professional treatment and self-management. The holistic practice of yoga may offer benefits as an adjunct self-management option. The aim of this small pilot trial was to gain preliminary data to determine the effect of yoga on women with stage one breast cancer-related lymphoedema (BCRL). This paper reports the results for the primary and secondary outcomes.

## Methods

Participants were randomised, after baseline testing, to receive either an 8-week yoga intervention (n = 15), consisting of a weekly 90-minute teacher-led class and a 40-minute daily session delivered by DVD, or to a usual care wait-listed control group (n = 13). Primary outcome measures were: arm volume of lymphoedema measured by circumference and extra-cellular fluid measured by bioimpedance spectroscopy. Secondary outcome



measures were: tissue induration measured by tonometry; levels of sensations, pain, fatigue, and their limiting effects all measured by a visual analogue scale (VAS) and quality of life based on the Lymphoedema Quality of Life Tool (LYMQOL). Measurements were conducted at baseline, week 8 (post-intervention) and week 12 (four weeks after cessation of the intervention).

## Results

At week 8, the intervention group had a greater decrease in tissue induration of the affected upper arm compared to the control group ( $p=0.050$ ), as well as a greater reduction in the symptom sub-scale for QOL ( $p=0.038$ ). There was no difference in arm volume of lymphoedema or extra-cellular fluid between groups at week 8; however, at week 12, arm volume increased more for the intervention group than the control group ( $p=0.032$ ).

## Conclusions

An 8-week yoga intervention reduced tissue induration of the affected upper arm and decreased the QOL sub-scale of symptoms. Arm volume of lymphoedema and extra-cellular fluid did not increase. These benefits did not last on cessation of the intervention when arm volume of lymphoedema increased. Further research trials with a longer duration, higher levels of lymphoedema and larger numbers are warranted before definitive conclusions can be made.

## Message

*Steffens D, Maher CG, Li Q, Ferreira LM, Pereira LS, Koes BW & Latimer J.*

**Weather does not affect back pain: Results from a case-cross-over study.** Arthritis Care & Research. DOI: 10.1002/acr.22378

## Objective

To investigate the influence of various weather conditions on risk of low back pain.

## Methods

We conducted a case-cross-over study in primary care clinics in Sydney, Australia. 993 consecutive patients with a sudden, acute episode of back pain were recruited from October 2011 to November 2012. Following the pain onset, demographic and clinical data about the back pain episode were obtained for each participant during an interview. Weather parameters (temperature, relative humidity, air pressure, wind speed, wind gust, wind direction and precipitation) were obtained from the Australian Bureau of Meteorology for the entire study period. Weather exposures in the case window (time when participants first noticed their back pain) were compared to exposures in two control time-windows (same time duration, one week and one month before the case window).

## Results

Temperature, relative humidity, air pressure, wind direction and precipitation showed no association with onset of back pain. Higher wind speed (OR 1.17, 95% CI 1.04 to 1.32;  $p=0.01$ ; for an increase of 11 km/h) and wind gust (OR 1.14, 95% CI 1.02 to 1.28;  $p=0.02$ ; for an increase of 14 km/h) increased the odds of pain onset.

## Conclusions

Weather parameters that have been linked to musculoskeletal pain such as temperature, relative humidity, air pressure, and precipitation do not increase the risk of a low back pain episode. Higher wind speed and wind gust speed provided a small increase in risk of back pain and while this reached statistical significance, the magnitude of the increase was not clinically important.

*Bruno PA, Millar DP & Goertzen DA.*

**Inter-rater agreement, sensitivity, and specificity of the prone hip extension test and active straight leg raise test.**

Chiropractic & Manual Therapies 2014, 22:23 doi:10.1186/2045-709X-22-23

## Background

Two clinical tests used to assess for neuromuscular control deficits in low back pain (LBP) patients are the prone hip extension (PHE) test and active straight leg raise (ASLR) test. For these tests, it has been suggested examiners classify patients as “positive” or “negative” based on the presence or absence (respectively) of specific “abnormal” lumbopelvic motion patterns. The inter-rater agreement of such a classification scheme has been reported for the PHE test, but not for the ASLR test. In addition, the sensitivity and specificity of such classification schemes have not been reported for either test. The primary objectives of the current study were to investigate: 1) the inter-rater agreement of the examiner-reported classification schemes for these two tests, and 2) the sensitivity and specificity of the classification schemes.

## Methods

Thirty participants with LBP and 40 asymptomatic controls took part in this cross-sectional observational study. Participants performed 3–4 repetitions of each test whilst two examiners classified them as “positive” or “negative” based on the presence or absence (respectively) of specific “abnormal” lumbopelvic motion patterns. The inter-rater agreement (Kappa statistic), sensitivity (LBP patients), and specificity (controls) were calculated for each test.

## Results

Both tests demonstrated substantial inter-rater agreement (PHE test: Kappa = 0.76, 95% CI = 0.57-0.95,  $p < 0.001$ ; ASLR test: Kappa = 0.76, 95% CI = 0.57-0.96,  $p < 0.001$ ). For the PHE test, the sensitivity was 0.18-0.27 and the specificity was 0.63-0.78; the odds ratio (OR) of “positive” classifications in the LBP group was 1.25 (95% CI = 0.58-2.72; Examiner 1) and 1.27 (95% CI = 0.52-3.12; Examiner 2). For the ASLR test, the sensitivity was 0.20-0.25 and the specificity was 0.84-0.86; the OR of “positive” classifications in the

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