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# Research Review: Stretching for a good night's sleep?

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# Research Review

## Stretching for a good night's sleep?

**Title:** Stretching Before Sleep Reduces both the Frequency and Severity of Nocturnal Leg Cramps

**Author:** Dr Hallegraeff and colleagues (Hanze University of Applied Sciences, The Netherlands)

**Source:** Journal of Physiotherapy, 58: 17-22, 2012.

**Introduction:** I'm having a bit of a chuckle as I write this issue of Research Review as patients never cease to amaze me (but then again, never do the amount of friends who ask for a 'quick consult!'). I've lost track of the number of older patients who have complained of leg cramps, particularly at night. With the reported pain ranging from minor discomfort to the sensation of the muscle pulling off the bone, these complaints are entirely valid, of course. Duration of the cramps varies from a few seconds to a few minutes (which feels like an eternity to the sufferer). Regardless of the severity and duration, the cramps are a nuisance and quite disruptive, especially when they also ruin a good night's sleep.

Last week I received an interesting call from a friend in her mid-forties who is very physically active (group exercise, resistance training, surfing). She called out of the blue to say 'hi', which is a bit out of character for her, so I immediately wondered whether she was planning on visiting the Gold Coast to hit the surf and was calling to solicit an invite to stay. Shame on me, why do I always suspect an alternative motive? No such invitation was sought, however, and after being cut short on my pleasantries, she hit me with the 'Well seeing as how we're chatting, I've started to get leg cramps at night... any suggestions?' And so, I felt it was time to check the literature to see what non-pharmaceutical therapies are available.

Kudos to Dr Hallegraeff and her colleagues for their very timely and unique study. Muscle cramps

are experienced by much of the population, young and old. As well as those related to pregnancy, there are cramps associated with athletic training and underlying medical conditions. Dr Hallegraeff initially reported that nocturnal (evening) leg cramps are suddenly-occurring, painful, sustained involuntary muscle contractions which occur most commonly in the calf muscles, hamstrings or foot muscles. The cramps are fairly common and affect approximately 50 per cent of individuals over the age of 50, with no gender differences, and occur in approximately 20 per cent of individuals in the daytime. Unfortunately the mechanism (cause) of these cramps is still unknown, but it is believed that they may be the result of an electrolyte imbalance. For this reason, the use of supplements, such as magnesium, for relief of cramps is widespread – although there is a lack of sufficient research supporting the efficacy of this treatment.

Medications associated with cramps include diuretics, steroids and lithium, while quinine (found in tonic water) has been shown to be moderately effective at reducing the severity and frequency of cramps (though that's not to say I'm prescribing a G&T before bed!). Dr Hallegraeff also proposed that physical inactivity – and more specifically, a lack of stretching – may also be responsible, hence the reason for her study.

**Methodology:** A total of 80 individuals with a history of at least one leg cramp per week volunteered to participate in this study. Most (43 per cent) of the participants complained of calf and

hamstring cramps, this was followed by whole leg (25 per cent) and calf (25 per cent). Subjects were randomly assigned to either a stretching or no-stretching group. Those individuals in the stretching group were required to complete standing calf stretches, standing hamstring stretches and combined calf and hamstring stretches (all static stretches) three times per day for six weeks. Each of the stretches was performed three times, with each stretch held for 10 seconds in the evening. The control group was requested to not complete any stretching during the study period.

**Results:** The stretching group demonstrated a significant improvement in cramp frequency, with a reduction of 58 per cent and a reduced severity (on a scale of 1 to 10, visual analog pain scale), down 18.1 per cent.

Although these results are promising, the authors did comment that the reduction in frequency equated to only one less cramp per night: however, this was still deemed a significant therapeutic effect.

**Pros:** A good study and clearly more research needs to be completed in this area.

As aside note, I was surfing at Dee Why on the Northern Beaches of NSW in mid-Winter years ago, and took a wave almost to the shore from out the back. I had assumed that I was in somewhat shallow water and when I attempted to jump off the bottom to get back on my board I fully planar flexed both ankles simultaneously and almost instantly

both of my calves went into tetany (prolonged cramp). The pain was unbelievable! Fortunately it was a very short paddle to the shore. Once there, I couldn't walk so I tried to stretch one calf out while the other one was worsening, then vice versa, as stretching is the only way to alleviate the cramp and associated pain. I'm sure the bystanders at the beach were in hysterics watching me rolling around on the sand trying to resolve the pain. Long story short, those cramps resulted in DOMS for nearly three days.

**Cons:** Given quinine is proposed to be beneficial with regard to cramps (severity and frequency) it would have been interesting if the authors would have included an additional treatment group which only consumed tonic with quinine as an ingredient. In the author's defence, I checked and quinine was banned by the FDA in the USA from over-the-counter sales as it was too dangerous to be taken without medical supervision and it is also associated with a number of side-effects (anemia, heart arrhythmias and liver damage). **D**



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Dr Mike is the program director of Clinical Exercise Science at the Faculty of Health Sciences and Medicine at Bond University, QLD. He is recognised as one of Australia's leading accredited exercise physiologists working with patients suffering from a wide array of chronic diseases and disorders. For more information on this, or any recent Research Reviews, email michael\_climstein@bond.edu.au.

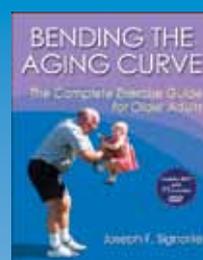
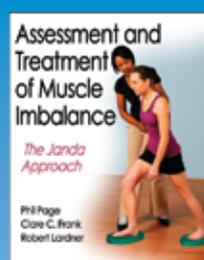
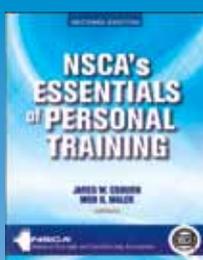
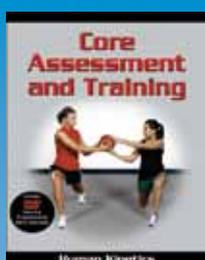
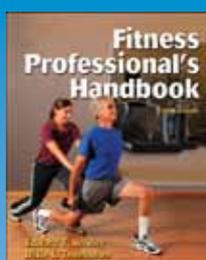
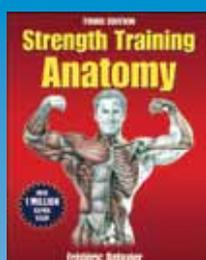


#### Joe Walsh, MSc

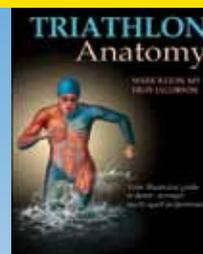
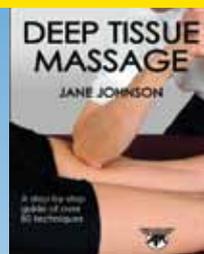
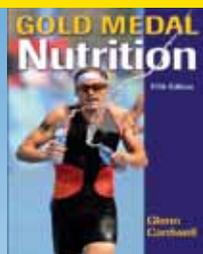
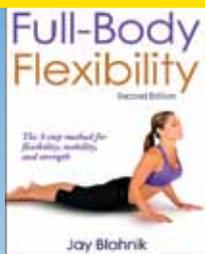
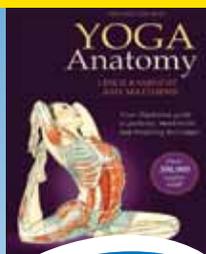
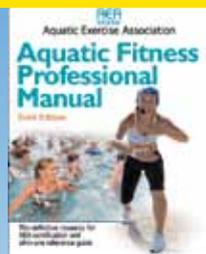
Joe is a highly experienced sport and exercise scientist, currently working as a principle investigator on a series of observational studies investigating the demographics of various cohorts of master athletes. Joe's research interests include mathematical modelling, in particular use of Monte Carlo Methods and Markov Chains for modelling sports performance. He and Dr Mike have authored many scientific publications with findings presented at international conferences in Europe, Asia and North America.

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