

Media Release

Chiefs of Staff, News Directors

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Vitamin D and fish oil ruled out as knee osteoarthritis treatments

Despite good news for many years on the benefits of Vitamin D and fish oil, recent research at the University of Tasmania's Menzies Institute for Medical Research has shown that neither will provide the answer to treating the pain of knee osteoarthritis.

A very substantial clinical trial looking at the benefits of Vitamin D for individuals with knee osteoarthritis, published this week in the highly-ranked *Journal of the American Medical Association*, showed that Vitamin D supplementation provided no help in reducing knee pain or slowing cartilage loss.

Symptomatic knee osteoarthritis occurs in 10 per cent of men and 13 per cent of women aged 60 years or older, and currently has no treatment apart from symptomatic pain relief or joint replacement.

The study was led by Professor Changhai Ding, who works in the Musculoskeletal Health and Diseases research theme at Menzies. The study randomly divided 413 patients with symptomatic knee osteoarthritis and low Vitamin D levels into two groups. One group received a monthly oral vitamin D treatment and the other an identical placebo.

The researchers found that vitamin D supplementation, compared with placebo, did not result in significant change in MRI-measured tibial cartilage volume or a measure of knee pain over two years. There were also no significant differences in change of knee cartilage defects or change in knee bone marrow lesions, even though blood vitamin D levels increased much more in the vitamin D group than in the placebo group over the two years.

"This data suggests a lack of evidence to support vitamin D supplementation for slowing disease progression or reducing knee pain in knee osteoarthritis," Professor Ding said. "Our study is the largest in the world to examine the potential effect of vitamin D supplementation on knee osteoarthritis."

Another research project completed recently at Menzies found a lack of impact for knee osteoarthritis from fish oil.

The study was published in *Annals of the Rheumatic Diseases*. It compared 202 people, aged over 40, with knee osteoarthritis. They were randomly assigned into two groups and given either low-dose fish oil combined with sunola oil or high-dose fish oil over two years. Although there was improvement in both groups, the low-dose group had greater improvement in knee pain and function after two years than the high-dose group. There was no difference between the two groups in cartilage volume loss at two years.

Professor Graeme Jones, who leads the Musculoskeletal Health and Diseases research theme at Menzies and was senior author on the study, said the hypothesis had been that high-dose fish oil would have superior efficacy to low-dose fish oil for symptomatic and structural outcomes in people with knee osteoarthritis.

“However, this shows us that fish oil is ineffective for osteoarthritis symptoms. To our surprise, the comparison oil was more effective for pain probably due to the sunola component, suggesting a benefit for a high oleic acid content.”

Professor Jones said it was important to remember that just because Vitamin D had not proved to be useful in the treatment of knee osteoarthritis, its importance in overall bone health was not in question. Likewise the finding on fish oil related only to its efficacy in relation to knee osteoarthritis, in comparison to rheumatoid arthritis where it is effective.

Professor Jones said Menzies was now working on a randomised controlled trial of the impact of krill oil on knee osteoarthritis. This is expected to be a more effective anti-inflammatory therapy and will target patients with fluid in the knee.

All three projects have received funding from the National Health and Medical Research Council.

For more information:

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Professors Jones and Ding will be available for interview at 10am today at the University of Tasmania’s Medical Science Precinct, 17 Liverpool St, Hobart.

Read the research papers here:

[Xingzhong Jin, Graeme Jones, Flavia Cicuttini, Anita Wluka, Zhaohua Zhu, Weiyu Han, Benny Antony, Xia Wang, Tania Winzenberg, Leigh Blizzard, Changhai Ding. Effect of vitamin D supplementation on tibial cartilage volume and knee pain among patients with symptomatic knee osteoarthritis: a randomized clinical trial. – *Journal of the American Medical Association*](#)

[Catherine L Hill, Lynette M March, Dawn Aitken, Susan E Lester, Ruth Battersby, Kristin Hynes, Tanya Fedorova, Susanna M Proudman, Michael James, Leslie G Cleland, Graeme Jones, Fish oil in knee osteoarthritis: A randomised clinical trial of low dose versus high dose fish oil. *Annals of Rheumatic Diseases*.](#)