

Caterpillar fungus could hold the key to relieving the pain of arthritis

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A drug from a parasitic mushroom that lives on caterpillars could become an effective new painkiller for people with osteoarthritis within the next six years, according to UK researchers.

Arthritis Research UK-funded scientists at the University of Nottingham are exploring the painkilling potential of cordycepin, a compound found in cordyceps mushrooms, which are widely used in Chinese traditional medicine.

Dr Cornelia de Moor and her team have a three-year grant of £260,000 from the medical research charity to investigate cordycepin as a new type of drug that has potential to relieve the symptoms of osteoarthritis, a common joint condition that affects more than eight million people in the UK.

They will test the effectiveness of the compound, given as food pellets to rats and mice, to find out if cordycepin can prevent pain occurring after an injury to a joint, and also whether it relieves existing pain.

Dr de Moor said that although their research was in its early stages they were excited about cordycepin's prospects as a completely new type of painkiller.

"When we first started investigating this compound it was frankly a bit of a long-shot and there was much scepticism from the scientific community," she said. "But we were stunned by the response from the

pilot study, which showed that it was as effective as conventional painkillers in rats.

"This study is the first step in a potential drug development for a new class of drugs for osteoarthritis, although there are a number of hurdles we have to go through – necessarily so – before it gets nearer patients. To the best of our knowledge, cordycepin has never been tested as a lead compound for osteoarthritis pain."

Dr de Moor said that provided the safety and effectiveness of the compound could be proven, clinical trials could begin within six to ten years.

Cordycepin blocks the inflammatory process that cause pain in osteoarthritis, but does so in a completely different way and at a different stage in the process to existing painkillers such as corticosteroids and non-steroidal-anti-inflammatory drugs (NSAIDs) such as ibuprofen.

Researchers claim that because cordycepin works so differently it is likely to have benefit where steroids and NSAIDs are ineffective, and is likely to have fewer side-effects.

Dr de Moor will investigate whether cordycepin acts on the knee joint or on the nerves that relay painful messages from the knee to the spinal cord, and the mechanism by which cordycepin inhibits pain.

She is warning against people starting to self-medicate with cordyceps until more is known about the compound. "The lack of quality control means that cordyceps preparations for sale in Europe rarely contain much cordycepin, and may contain other harmful [compounds](#)," she added.

Director of research and programmes at Arthritis Research UK, Dr Stephen Simpson, said: "Dr de Moor's research is certainly novel, and we believe may hold promise as a future source of pain relief for people with [osteoarthritis](#). There is currently a massive gap in available, effective, side-effect-free painkillers for the millions of people with arthritis who have to live with their pain every day, so new approaches are very much-needed."

Provided by University of Nottingham

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