

Low dose steroids linked to diabetes

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Dr Carolyn Petersons

(Medical Xpress)—Anti-inflammatory steroids are known to increase the risk of diabetes in high doses, but now researchers from Flinders University have discovered a link between low dose steroids and diabetes.

As part of her just-completed PhD in the School of Medicine, Dr Carolyn Petersons studied the effect of anti-inflammatory [steroids](#) on the body's ability to metabolise glucose – a key factor in diabetes – in a

sample of [patients](#) who were taking the drug in low doses to treat [rheumatoid arthritis](#).

The study analysed nine patients given anti-inflammatory steroids for rheumatoid arthritis for a one-week period and compared the results with 12 long-term steroid users.

Anti-inflammatory steroids are traditionally administered post-transplant and to treat a range of autoimmune disorders such as [inflammatory bowel disease](#). In rheumatoid arthritis, steroids may help relieve pain and discomfort, reduce swelling and provide better joint function and mobility.

While steroids have been previously found to raise [blood sugar](#) levels in high doses, which can lead to diabetes, Dr Petersons said her study showed low doses also had a similar effect.

"Low dose steroids are prescribed to about one per cent of the population but until now, no one has really studied the effect of low doses over a long period of time," Dr Petersons said.

"Essentially what my research found is that a low dose of steroids – even after a week – increase the amount of glucose (sugar) your body makes when fasting," she said.

"We looked at how sensitive the patient's body was to insulin before and during steroid use and found that the steroids made them less sensitive to insulin.

"If you're less sensitive to insulin it means your blood sugar levels are going to be higher because insulin works to lower [blood sugar levels](#), and too much sugar in the blood leads to diabetes."

Based on the results, Dr Petersons said doctors should rethink prescribing anti-inflammatory steroids in conditions requiring low doses over a prolonged period.

"Knowing how steroids affect insulin sensitivity in the body means we can find the right kind of treatment to target the underlying cause of the diabetes, but it also means we need to be more vigilant in screening patients so we don't miss people who have steroid-induced diabetes.

"Finally, we should be looking at alternative ways to treat these conditions instead of using steroids, particularly in patients who may be at high risk of developing [diabetes](#).

More information: Carolyn J. Petersons, Brenda L. Mangelsdorf, Arthur B. Jenkins, Anne Poljak, Malcolm D. Smith, Jerry R. Greenfield, Campbell H. Thompson, and Morton G. Burt. "Effects of Low-Dose Prednisolone on Hepatic and Peripheral Insulin Sensitivity, Insulin Secretion, and Abdominal Adiposity in Patients With Inflammatory Rheumatologic Disease." *Diabetes Care* September 2013 36:2822-2829; published ahead of print May 13, 2013, [DOI: 10.2337/dc12-2617](https://doi.org/10.2337/dc12-2617)

Provided by Flinders University

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