

Common osteoporosis drug may reduce risk of type 2 diabetes

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New research being presented at the annual meeting of the European Association for the Study of Diabetes (EASD), held online this year, suggests that the widely used osteoporosis drug alendronate reduces the

risk of type 2 diabetes.

It has been known for decades that patients with [diabetes](#) have a higher risk of fractures—suggesting a link between the blood sugar regulation and bone quality. More recently, animal studies have suggested that the modification of bone cells by osteoporosis drugs affects glucose regulation.

"Thus, we speculated that the treatment of osteoporosis might impact on the risk of type 2 diabetes," says Dr. Rikke Viggers, of Aalborg University Hospital, Aalborg, Denmark.

To find out more, Dr. Viggers and colleagues compared diabetes rates among those prescribed the osteoporosis [drug](#) alendronate with those not given the treatment.

The first-line treatment for osteoporosis, alendronate and other bisphosphonates help strengthen bones and reduce the risk of a fracture.

Hospital records were used to identify all individuals with type 2 diabetes in Denmark between 2008 and 2018. Each diabetes patient was matched by age and sex with three healthy people from the population.

Prescription records were used to determine whether the participants had ever been prescribed alendronate.

The 163,588 patients with type 2 diabetes and 490,764 participants without diabetes had an average age of 67 and 55 per cent were male.

Analysis revealed that those who had taken alendronate were 34 per cent less likely to have been diagnosed with type 2 diabetes than those who had never taken the drug. Factors such as smoking, [alcohol use](#), obesity, income and [marital status](#) were included in the analysis.

Taking alendronate for at least eight years could potentially reduce the risk by more than half (53 per cent) compared to those who have never used alendronate.

Further analysis suggested a dose-dependent effect i.e. the longer a person took the drug, the lower their odds of developing the condition.

The study's authors say that it isn't clear how alendronate reduces the risk of developing type 2 diabetes. One theory is that the drug reduces low-grade inflammation and oxidative stress, two processes thought to be central to the development of insulin resistance. (Insulin resistance, in which the body's cells don't respond properly to insulin and can't easily take up glucose from blood, is a key feature of type 2 diabetes.)

It isn't known if other osteoporosis medicines have the same effect.

Dr. Viggers adds: "Type 2 diabetes is a serious lifelong condition that can lead to other serious health issues such as stroke, [heart disease](#), blindness and limb amputation and anything that prevents, or even delays it, will also reduce a person's risk of all these other conditions.

"Excitingly, our research suggests that alendronate, an inexpensive medicine widely used to treat [osteoporosis](#), may also protect against type 2 diabetes.

"We believe that doctors should consider this when prescribing [osteoporosis drugs](#) to those with pre-diabetes or at high risk of type 2 diabetes."

Provided by Diabetologia

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