

Personalised therapy reduces cancer risk for diabetes patients

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Personalised therapy reduces cancer risk for diabetes patients. Credit: Medical University of Vienna

The links between Type 2 diabetes and cancer are complex: people suffering from diabetes mellitus essentially have a higher risk of developing cancer but, on top of that, some diabetes drugs are also suspected of increasing the risk in some cases. However, scientists at the Department of Medicine III and the Section for Science of Complex Systems at MedUni Vienna have demonstrated that these risks can now be practically eliminated by using optimised, personalised therapy.

"Cancer and [diabetes](#) share common risk factors such as being overweight, smoking, poor eating habits, lack of exercise, insulin resistance, inflammatory and hormonal changes and, on top of that, poorly controlled diabetes with [high blood glucose](#) levels can increase the cancer risk," explains Alexandra Kautzky-Willer, MedUni Vienna expert in gender medicine and diabetes. A total of around 600,000 Austrians suffer from [diabetes mellitus](#) (Type 2 diabetes).

In a study published in the renowned *Journal of Internal Medicine*, Stefan Thurner and Peter Klimek from the Section for Science of Complex Systems and Kautzky-Willer were able to show that the risk can be eliminated using targeted precision medicine. And also that concomitant treatment with statins (which are mainly used to reduce cholesterol in metabolic disorders) are even associated with a reduced cancer risk and that the commonest and most widely used [diabetes drug](#), metformin, displays consistently reduced risks – that also applies to the insulin sensitiser "pioglitazone" used in drug treatment to increase insulin sensitivity and hence counteract [insulin resistance](#).

The research setting: A statistical survey was compiled of 1.85 million Austrians who had been in hospital at least once. Around 300,000 of these had Type 2 diabetes – they were treated with a total of around 300 different combinations of diabetes drugs (incretin-based therapies and SGLT-2 inhibitors were not yet involved at this time). The results of the study: Primary insulin-stimulating drugs (sulphonylurea and insulin), displayed a significantly higher cancer risk than insulin inhibitors, especially in the case of pancreatic cancer in men and women, liver cancer in men and lymphoma in women – and this effect was significant in both men and women. "However, if statins are taken at the same time, this risk is massively reduced, even down to zero as compared with non-diabetic patients," says Kautzky-Willer.

"This shows that it is possible to optimise individual treatments to

substantially reduce the general [cancer risk](#) for diabetes patients. In today's precision medicine, we have a wide selection of drugs available to us and possible combination treatments that would make this possible," adds Klimek.

More information: A. Kautzky-Willer et al. Use of statins offsets insulin-related cancer risk, *Journal of Internal Medicine* (2016). [DOI: 10.1111/joim.12567](#)

Provided by Medical University of Vienna

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