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'Cancer hope' from diabetes drug Metformin

Metformin is used to help the body control blood sugar

A common anti-diabetes drug may boost the potency of vaccines against cancer, research suggests.

Tests on mice found metformin, used for Type 2 diabetes, helps the body's T-cells work more effectively.

These cells, the body's key defenders against disease, "remember" former infections or vaccinations, enabling them to fight subsequent illness.

Writing in the journal Nature, a US team said metformin appeared to improve this important memory of disease.

This ability to remember disease has been the subject of much research, but there has been little understanding of the cellular mechanisms behind it.

The team from McGill University and the University of Pennsylvania used an experimental cancer vaccine and found that when administered in mice, the diabetes drug appeared to improve the strength of the inoculation.

Diseases 'linked'

Several studies in recent years have shown that people with diabetes may be more likely to develop certain cancers, although the exact nature of the relationship is unclear. Type 2 diabetes is associated with extra weight for instance, as are certain types of cancer.

But there also appear to be similarities between the basic chemical reactions which happen in the cells when affected by either of these diseases.

"Many genes involved in diabetes regulation also play a role in cancer progression," said Dr Russell Jones of McGill's Goodman Cancer Centre, one of the report's author.

"There is also a significant body of data suggesting that diabetics are more prone to certain cancers. However, our study is the first to suggest that by targeting the same metabolic pathways that play a role in diabetes, you can alter how well your immune system functions."

This is turn could help the body fight cancer more effectively with a vaccine.

Cancer vaccines are still at an early stage, but ideally could help both stop the disease developing in the first place or treat it when it arises.

Dr Kat Arney, Cancer Research UK's senior science information officer, said: "This

is a fascinating piece of research, which sheds light on the complex links between the immune system, cell metabolism and cancer.

"At the moment, this research has only been done in mice and there is a long way to go before it can be applied to cancer patients, but it certainly holds promise for the future."