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Molecule discovered that makes obese people develop diabetes

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Obesity is a major risk factor for diabetes. Credit: N. Murat (Creative Commons, Reconocimiento, No derivados).

Many people who are overweight or obese develop insulin resistance and type 2 diabetes at some stage in their lives. A European research team has now discovered that obese people have large amounts of the molecule CXCL5, produced by certain cells in fatty tissue.

The main risk factors for type 2 diabetes are obesity and a sedentary lifestyle. The biomedical community has known for many years that substances produced by fatty tissue are responsible for the link between obesity and diabetes. "Chronic inflammation of the adipose tissue, which is characteristic of obese people, is a crucial stage in the development of insulin resistence and type 2 diabetes", Lluis Fajas, lead author of the study and a researcher at the Institute of Health and Medical Research

(Inserm) in France, told SINC.

The results of this new study show that serum levels of a chemokine molecule called CXCL5, produced by certain adipose tissue cells, appear at much high levels in the tissues of obese people than in those of individuals with normal weight. This has helped Lluis Fajas's research team to come to a biomedically relevant conclusion: "The CXCL5 molecule helps cause insulin resistance and type 2 diabetes".

The most important part of this study, published in the journal Cell Metabolism, is the discovery that an experimental treatment aimed at inhibiting the action of CXCL5 can help to protect obese mice from develping type 2 diabetes. "If these studies can be confirmed in humans, this treatment would represent a fundamental improvement in the quality of life of obese individuals", the researcher concludes.

Bad habits cause obesity and diabetes

According to the latest data from the Spanish Diabetes Federation (FED), almost 3.5 million people in Spain have diabetes. This illness is most common in Andalusia and Murcia, regions where the highest percentage of people who are obese and sedentary. The specialists agree on the importance of prevention. Avoiding obesity, doing daily physical exercise and giving up smoking are some of the measures that could help to cut the number of diabetes cases by a half.

The International Diabetes Federation (IDF) says that more than 190 million people worldwide currently have diabetes. This figure will rise to 330 million by 2025, due to population growth, the ageing of the population, and increasing urbanisation and sedentary lifestyles. Obesity is the main avoidable risk factor in developing type 2 diabetes. Worldwide, 1.7 billion people are already at high risk of developing a non-contagious, weight-related illness, such as type 2 diabetes.

Obesity can reduce the life expectancy of people with type 2 diabetes by up to eight years, and 80% of people diagnosed with the illness are overweight at the time they are diagnosed.

At least half of all cases of type 2 diabetes among adults could be avoided if they did not put on weight. Taking action on lifestyle, such as changing diet and taking moderate physical exercise, can reduce the risk of developing type 2 diabetes by up to 60%.

More information: Chavey C., Lazennec G., Lagarrigue S., Clapé C., Iankova I., Teyssier J., Annicotte J. S., Schmidt J., Mataki C., Yamamoto H., Sanches R., Guma A., Stich V., Vitkova M., Jardin-Watelet B., Renard E., Strieter R., Tuthill A., Hotamisligil G. S., Vidal-Puig A., Zorzano A., Langin D. y Fajas L. "CXC ligand 5 is an adipose-tissue derived factor that links obesity to insulin resistance". Cell Metabolism; 9(4):339-49, April 2009.

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