

Internal body fat is significant to the development of cardiovascular disease and diabetes

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Excess internal body fat is a key driver for the development of cardiovascular disease (CVD) and type-2 diabetes (T2D), a recent position statement published in *The Lancet Diabetes & Endocrinology* concludes.

Experts from the International Atherosclerosis Society and the International Chair on Cardio-metabolic Risk, including Professor Bruce Griffin from the University of Surrey, reviewed the roles of visceral and ectopic fat in the pathophysiology of disease and examined practical recommendations for measuring these types of body fat in [clinical practice](#).

The accumulation of internal body fat that surrounds our vital organs, also known as visceral or intra-abdominal fat, can increase the amount of fat that becomes stored inside the liver, heart and pancreas and in skeletal muscle (ectopic fat). Excess visceral and ectopic fat adversely affects our metabolism and can lead to the development

of cardiovascular disease and type 2 diabetes. Measurement of visceral and ectopic fat can improve the prediction, treatment and prevention of these diseases.

However, the internal location of these types of fat makes them difficult to measure without sophisticated technologies like computer tomography (CT) scanning or magnetic resonance imaging (MRI). Body mass index (BMI) is used to measure body fatness and stages of [obesity](#) but BMI provides no information about the amount of visceral or ectopic fat. Despite this, public health education and clinical campaigns to reduce obesity and its related diseases still place emphasis on measuring BMI, when it has become clear that there is considerable variation in risk of cardiovascular disease and Type 2 diabetes in people with the same BMI.

Experts identified the need to develop simple and clinically applicable tools for measuring visceral fat, which is marker of ectopic fat. These tools include the straightforward measurement of waist circumference as a replacement marker of the amount of [visceral fat](#) in the abdomen, and combining this metric with a measure of elevated blood fat (plasma triglyceride) to give what is known as the 'hypertriglyceridemic waist.' However, it was concluded that more refined imaging-based methods will ultimately be required to measure and reduce these specific types of fat to combat the growing epidemic of obesity related CVD and T2D.

Bruce Griffin, Professor of Nutritional Metabolism at the University of Surrey, said: "The high prevalence of obesity-related cardiovascular disease and diabetes is being driven to a large extent by the accumulation of visceral and ectopic fat. If diet and lifestyle strategies are to be effective in reducing the risk of obesity-related disease, they must be

more specific in identifying and treating visceral obesity as a therapeutic target."

Professor Yuji Matsuzawa from Osaka University said: "This is a major publication which emphasizes to physicians the need beyond the management of the risk of atherosclerosis and cardiovascular [disease](#) mediated by LDL-cholesterol. Indeed, many patients treated with statins, effective drugs for lowering LDL-cholesterol levels, remain at risk for CVD because of their visceral obesity."

Professor Jean-Pierre Després from the University of Laval added: "Despite 30 years of research on the subject, visceral obesity is often not properly evaluated in clinical practice as most physicians still rely on the BMI to evaluate the risk of overweight/obesity in their patients. We hope that this important international consensus position paper will stimulate the health authorities in different countries to align their messages and their actions on the scientific evidence available on the risk of visceral obesity."

More information: Ian J Neeland et al. Visceral and ectopic fat, atherosclerosis, and cardiometabolic disease: a position statement, *The Lancet Diabetes & Endocrinology* (2019). [DOI: 10.1016/S2213-8587\(19\)30084-1](#)

Provided by University of Surrey

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