Could intermittent fasting diets increase diabetes risk?

May 20 2018

Fasting every other day to lose weight impairs the action of sugar-regulating hormone, insulin, which may increase diabetes risk, according to data presented in Barcelona at the European Society of Endocrinology annual meeting, ECE 2018. These findings suggest that fasting-based diets may be associated with long-term health risks and careful consideration should be made before starting such weight loss programmes.

Type-2 diabetes is a growing global epidemic that is often attributed to poor diet and a sedentary lifestyle, so is closely linked to obesity. Blood sugar is partially regulated by the hormone insulin, which is produced by the pancreas, if insulin levels are too low, or the body becomes resistant to its effects, type-2 diabetes results and high blood sugar levels can cause serious health issues, including heart, kidney and eye damage. In addition to medical strategies used to treat type-2 diabetes, patients are also advised to make lifestyle and dietary changes to lose weight. Recently, intermittent fasting diets have gained general popularity for weight loss, however, evidence on their success has been contradictory and there is a lack of knowledge and some debate on their potentially harmful long-term health effects. Previous research has also shown that short-term fasting can produce molecules called free radicals, which are highly reactive chemicals that can cause damage to the body at a cellular and may be associated with impaired organ function, cancer risk and accelerated aging.

In order to investigate whether an intermittent fasting diet could also

generate damaging free radicals, Ana Bonassa and colleagues, from the University of Sao Paulo in Brazil, examined the effects of fasting every other day on the body weight, free radical levels and insulin function of normal, adult rats, over a 3-month period. Although the rats' body weight and food intake decreased as expected over the study period, the amount of fat tissue in their abdomen actually increased. Furthermore, the cells of the pancreas that release insulin showed damage, with the presence of increased levels of free radicals and markers of insulin resistance were also detected.

Ana Bonassa comments, "This is the first study to show that, despite weight loss, intermittent fasting diets may actually damage the pancreas and affect insulin function in normal healthy individuals, which could lead to diabetes and serious health issues."

The researchers now plan to investigate how this diet impairs pancreas and insulin function. There are many conflicting reports on the benefits and disadvantages, and many different types of intermittent fasting diets. Although these data were obtained in normal weight rats with positive effects on weight gain and food intake, the results suggest that in the long-term harm may be caused and that more investigation is needed to assess how people may be affected, particularly those with existing metabolic issues.

Ana cautions, "We should consider that overweight or obese people who opt for intermittent fasting diets may already have insulin resistance, so although this diet may lead to early, rapid weight loss, in the long-term there could be potentially serious damaging effects to their health, such as the development of type-2 diabetes."

Provided by European Society of Endocrinology