Combining BMI with body shape better predictor of cancer risk

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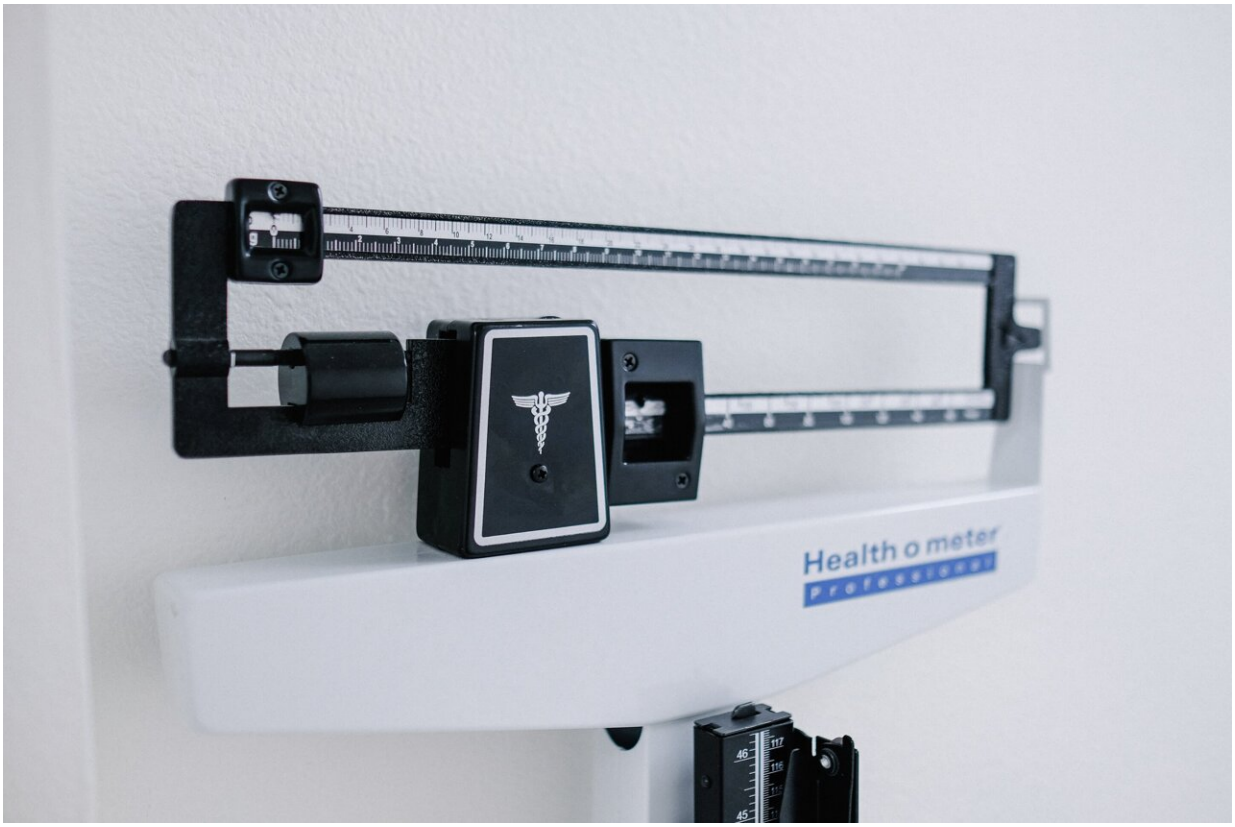

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New research being presented at The European Congress on Obesity (ECO) held online this year, suggests that a measure of body shape should be used alongside body mass index (BMI) to help determine the

risk of obesity-related cancers.

BMI is a simple way of measuring body fat from the weight and height of a person. But its reliability is often criticised, because it does not distinguish fat from muscle, or take into account where body fat is stored or an individual's sex or age. Similarly, waist circumference takes into account belly fat, which is linked to several health risks including cardiovascular disease, type-2 diabetes and cancer, but fails to account for height.

A new metric to measure obesity, called 'A body shape index' (ABSI), takes into account an individual's age, sex, weight, height and waist circumference—and it may provide a more accurate estimate of cancer risk than BMI.

To explore this further, researchers from the University of Glasgow and the University of Newcastle, combined data from 442,614 participants (average age 56 years) from the UK Biobank prospective cohort who were followed for an average of 8 years, during which 36,961 individuals were diagnosed with cancer.

Participants were broken down into three groups (tertiles) according to their body shape to examine the associations with the risk of 24 different types of cancer; and to examine ABSI and BMI as predictors of cancer risk. Results were adjusted for age, sex, ethnicity, deprivation, education, income, smoking, alcohol consumption, dietary intake, physical activity, and sedentary time.

The analysis found that body shape and BMI predicted different obesity-related cancer risk in adults. Specifically, ABSI was linked with an increased risk for three cancers. Participants in the highest ABSI tertile were 38% more likely to develop liver cancer, 40% more likely to develop lung cancer, and had a 17% increased risk of bowel cancer,

compared to those in the lowest ABSI tertile, regardless of BMI.

However, researchers found that high ABSI and high BMI combined were linked with an increased risk for seven different types of cancer—uterine, oesophageal, liver, stomach, kidney, bowel, breast cancer. For example, participants in the highest ABSI tertile who were also overweight or obese (BMI 25 kg/m2 or over) were at twice the risk of developing uterine cancer than those with the lowest ABSI and normal BMI.

"Our findings underscore the importance of measuring more than just BMI when predicting cancer risk, and suggest that people's body shape may increase their risk of certain cancers", says lead author Dr. Carlos Celis-Morales from the University of Glasgow, UK. "Whatever method you use, being overweight or obese is the single biggest preventable cause of cancer after smoking. More urgent actions are needed to help people maintain a healthy bodyweight and shape throughout their lives, starting at an early age."

Having excess body fat can lead to biological changes that alter levels of sex hormones, such as oestrogen and testosterone, cause levels of insulin to rise, and lead to inflammation, all of which have been linked with increased risk of 13 different types of cancer.

This is an observational study, so cannot establish cause, and it is not a representative sample of the UK adult population, so the results cannot be generalised to the general population.

More information: This article is based on poster presentation EP3-06 at the European Congress on Obesity (ECO).

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