Cass Business School
CITY UNIVERSITY LONDON

The secret to a longer life - keep your waist to half your height

- *Waist-to-height ratio is a better predictor of mortality risks than BMI, experts show, as they calculate effect of obesity on life expectancy*
- *Academics call for review of current obesity tests which leave people at increased risk of serious health problems*

Keep your waist trimmer than half your height and you could significantly boost your life expectancy.

Academics are urging policymakers to adopt the simple message after finding waist-to-height ratio (WHtR) is a more accurate predictor of mortality risk than body mass index (BMI).

Researchers at Cass Business School and Ashwell Associates are calling for the measurement - waist circumference divided by height – to replace BMI in primary public health screening.

It comes after the authors compared the effect of central obesity (as measured by WHtR) and total obesity (as measured by BMI) on life expectancy.

Analysing more than 20 years of UK data for non-smoking men and women, they found a stronger link between WHtR and mortality rates than BMI and mortality rates. In the first study* of its kind, the authors quantified the number of years of life lost to obesity as measured using WHtR.

The authors cite the example of movie stars Arnold Schwarzenegger and Danny De Vito. Both actors have a BMI of 34. If BMI is used as the measure of obesity then a BMI of 34 would suggest that both actors stand to lose 3.6 years of life.

However, the researchers propose that WHtR should be considered instead. Using this measure of obesity, they estimate that Schwarzenegger, having around the optimal level of WHtR of 0.48, would not expect to lose any years of life; whereas, De Vito, with a WHtR of 0.71, could be expected to lose 5.8 years of life. This is because Schwarzenegger has a high BMI due to muscle whereas De Vito has the same level of BMI but due to fat.

Co-author of the study Dr Margret Ashwell said the average 30-year-old, 5ft 10in tall man should have a waist of no more than 35in. This would put him in the healthy category. If his waist expanded to 42in or 60 per cent of his height, he risked losing 1.7 years of life and if it increased to 56in he could die 20.2 years earlier. An average 30-year-old, 5ft 4in tall woman risked dying 1.4 years earlier if she let her waist swell from half her height, 32in, to 60 per cent of her height, 38.4in. If her waist increased to 51in, she could die 10.6 years earlier.

In new unpublished research, the authors examine how further increases in BMI and WHtR would affect life expectancy. They examine the impact of 5%, 10% and 15% increases in BMI and WHtR for average men and women aged 30, 50 and 70 years.

The study shows that a 15% increase in WHtR for an average 50-year old man results in an additional 2.0 years of life being lost while for a 50-year old woman it is an additional 1.1 years.

Cass researcher, Jon Richardson, said: "Using the methodology outlined in our paper, BMI was found to be a statistically weak predictor of early death from obesity for females whereas WHtR was a good indicator for both sexes."

Professor Les Mayhew of Cass Business School said the latest findings highlighted the need for an urgent review of how obesity is measured.

"There is now overwhelming evidence that government policy should place greater emphasis on WHtR as a screening tool," he said. "Current UK policy tends to be restricted to BMI and, to a lesser extent, waist circumference. Focusing on WHtR, which is more globally useful than waist circumference, will identify those with central obesity and ensure resources are focused on those most at risk."

Cass Business School's Professor Ben Rickayzen added: "The use of WHtR in public health screening, with appropriate action, could help add years to life. If health professionals included this simple measurement in their screening procedures then many years of productive life could be saved."

Dr Margaret Ashwell OBE, Director of Ashwell Associates, and a visiting academic at Oxford Brookes University, said: "BMI measures fat and muscle and so it will be high in muscular people and cannot give information about fat distribution. In contrast, WHtR is a better proxy for central fat, which has greater associated health risks than fat stored in other parts of the body. The cut-off value of 0.5 has been proposed for people in all countries and ethnic groups. The cut off value even works for children too. This latest study on YLL supports the cut-off values of 0.5; hence the very simple global message: "Keep your waist circumference to less than half your height"."

*The study was funded by the Institute and Faculty of Actuaries

Media enquiries:
Chris Johnson, Senior Communications Officer, Cass Business School
Tel: +44 (0)20 7040 5210
E-mail: chris.johnson.1@city.ac.uk

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