

Psychologists pinpoint change in weight required to look healthier and more attractive

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A good poker face might prevent others knowing what cards you're holding but it won't prevent them from knowing if you've gained or lost weight. That's because our faces reveal many things, including whether our weight has changed. Now, researchers in the Department of Psychology at the University of Toronto have determined the amount of weight people need to gain or lose before others notice or find them more attractive.

"Women and men of [average height](#) need to gain or lose about three and a half and four kilograms, or about eight and nine pounds, respectively, for anyone to see it in their face," said Nicholas Rule, associate professor and Canada Research Chair in Social Perception and Cognition at U of T, "but they need to lose about twice as much for anyone to find them more attractive."

Rule and postdoctoral fellow Daniel Re looked at facial adiposity—the perception of [weight](#) in the face—because it is an accurate indicator of a person's [body mass index](#) (BMI), which is calculated as a person's weight in kilograms divided by the square of the person's height in metres (kg/m²).

"It is a robust indicator of one's health," said Rule. "Increased facial adiposity is associated with a compromised immune system, poor cardiovascular function, frequent respiratory infections, and mortality."

So, even a small decrease can improve one's health."

To determine at what point a change in the perception of facial adiposity occurs, Rule and Re digitally created a collection of photos of male and female faces between 20 and 40 years old. In all photos, subjects had neutral expressions, hair pulled back, and no facial adornments. They altered each image to produce sequences of images spanning a range of weights on a gradually increasing scale.

Participants in the study were asked to compare randomly drawn pairs of faces from each sequence and choose the heavier-looking one. After several trials, the researchers determined a change in BMI of approximately 1.33 kg/m² is required to make a difference noticeable.

"We calculated the weight change thresholds in terms of BMI rather than simple kilograms or pounds, so that people of all weights and heights can apply it to themselves according to their individual stature," said Re.

The researchers also investigated the threshold at which changes in an individual's facial adiposity resulted in a change in perceived attractiveness. Although beauty is to some extent in the eye of the beholder, a large body of research shows that there are some universal standards of beauty, and these tend to reflect whether or not someone looks healthy.

Rule and Re found that the average decrease required to make the faces in the sample appear more attractive was 2.38 kg/m² for women, and 2.59 kg/m² for men, translating to about 6.3 and 8.2 kilograms (approximately 14 and 18 pounds) for women and men of average height, respectively.

"The difference between the groups suggests women's [facial attractiveness](#) may be more sensitive to changes in weight," said Rule.

"This just means women attempting to lose weight need to shed slightly fewer pounds than men for people to find them more attractive."

"When it comes to incentives for weight loss, some people are more motivated to look attractive than to improve their health," said Re.

The research is described in full in the study 'Heavy Matters: The Relationship Between Just Noticeable Differences in Perceptions of Facial Adiposity and Facial Attractiveness', published in *Social Psychological and Personality Science*.

Provided by University of Toronto

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