

How big is the energy gap in obesity? Top expert warns of public misunderstanding

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The oversimplification of the “energy-in/energy out” equation is generating a fundamental public misunderstanding of the challenges of obesity, an eminent expert has warned at the International Congress on Obesity in Sydney today.

Professor Claude Bouchard, the outgoing president of IASO, the obesity research community’s global organization, described the concept of serious weight gain being the result of just a small imbalance between energy intake and expenditure of as little as 15 kcals was defective.

“This idea that obesity is the result of a tiny energy surplus accumulated over the years is quite misleading,” added Professor Bouchard, a leading geneticist, and Executive Director of Pennington Biomedical Research Center, Baton Rouge, LA, USA.

“I’m concerned when I hear those working in the health field and even some scientists coming out with this kind of notion, which is fundamentally flawed. Clearly if it truly were that simple, we wouldn’t have the massive problem we are facing all over the world.”

The small surplus proposition is based on the assumption that calories are simply converted into fat stores at no energy cost and with no resulting changes in an individual’s energy requirements.

But Prof Bouchard said that not all surplus calories are stored with about a third are used up in the process of converting excess energy to fat

stores. The imbalance in the early stages of weight gain may be very small compared to the much larger surplus involved in weight gain at the later stages of obesity.

Overweight and obese people actually have a normal metabolism, contrary to popular beliefs, but their basic resting energy requirements increase as they gain weight. In addition, obese people need to burn more energy to move around.

“This situation would be typical of someone who has become moderately overweight. In the case of a greater weight gain, as in frank obesity, the energy gap is much more substantial,” said Professor Bouchard.

Someone at an end point with an excess weight gain of 30 kg would have an imbalance of about 600 to 700 calories per day. An excess weight of 40 kg and more – not untypical in the one third of the adult population who are obese in the USA, - can easily translate in an energy gap of 1,000 calories per day to sustain the new body mass in comparison the prior normal weight level.

“This indicates that much larger numbers of calories are consumed compared to the situation when the same individual was normal weight,” he added.

One critical lesson, he warned, was that the narrowing the energy gap was likely to be much more successful when both energy intake and energy expenditure are addressed - cutting down food intake, increasing physical activity, and decreasing time spent in sedentary inactivity . This can be achieved much more easily at the earlier stage of weight gain, before serious levels of overweight are attained when the energy gap or surplus is still relatively small.

“It is important that we have a much clearer understanding of this issue, which is not as complex as it sounds, and reinforces the message that

prevention is much better than cure. So we need to focus on those who are shifting from normal weight into the overweight category to attack that smaller weight gain before it becomes much harder to overcome,” Professor Bouchard concluded.

Source: International Obesity TaskForce

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