Guts match the surface area of a studio apartment

Our gut feeling can go down the drain when it comes to guessing the size of some of our innards.

Swedish researchers report that the inside surface area of the human gastrointestinal tract is much less extensive than stated in medical textbooks. Apparently the total gut mucosa, as doctors call it, is not equivalent to the floor space of a large villa, or if you prefer, a tennis court.

It has been commonly suggested that the surface of the surface of the intestinal tract, from the gullet down to the stomach and intestines, can be over a couple of hundred square metres.

The real size is much more modest: About the same as one-room-and-kitchen flat, according to researchers at the Gothenburg University’s Sahlgrenska Academy.

Don’t visualise a tennis court, say scientists in the home country of Björn Borg, Stefan Edberg and Mats Wilander – think rather in terms of half a badminton court.

The new study has been published in the Scandinavian Journal of Gastroenterology.

It might seem odd, but ...

The human gut is still no doghouse, with its 30-40 square metres of surface area, but it’s puny compared to the previously estimation of up to 180-300 m².

“It may appear to be simply a curious fact, but the dimensions of the inner surface of the gastro-intestinal tract are important for the uptake of nutrients and drugs, and the new information will help us understand how the mucous membrane protects the body from harmful factors in the intestinal contents,” he says.

Researcher Lars Fändriks understands that the finding might seem to be a curious fact, but insists that these dimensions are by no means unimportant:

“The size of the internal surface of the gastrointestinal tract has a huge impact on the uptake of nutrients and drugs and the new information will help us understand how the mucous membrane protects the body from harmful factors in the intestinal contents.”

Really quite logical

The Swedish researchers explain why the inaccurate calculations in square metres have been repeated in textbooks and reference books:

“The gastrointestinal tract is a dynamic system that is hard to access in the abdominal cavity. This makes it difficult to measure. Since the past measurements were carried out either during post mortems or during abdominal surgery, when the tissue is relaxed, it is easy to obtain misleading measurements,” says researcher Herbert Helander.
The Sahlgrenska scientists chose a new approach using data from radiological examinations coupled with their own studies of the microscopic structure of the gastrointestinal tract, through the use of endoscopes.

The Swedes stress that their new measurements apply to an average, healthy adult.

“From an anatomical point of view, the smaller area is quite logical since it means that the risk of effects from the intestinal contents is lower,” explains Helander.

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