Professor links temperature, obesity

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(Medical Xpress) -- Fat dogs are cool. And obese people may be, too. That's what research by a University of South Carolina Salkehatchie professor suggests.

Dr. Roberto Refinetti, a professor of psychology and associate dean, studied the relationship between body temperature and body weight in lean and obese dogs. His findings showed that obese dogs have lower body temperature than lean dogs, and the difference in temperature is enough to account for weight gain.

Refinetti is the senior author of the study that was published in the Aug. 10 issue of the *International Journal of Obesity*. He collaborated with researchers from the University of Messina in Sicily, Italy.

"We don't fully know the causes of the obesity epidemic that the U.S. is experiencing," Refinetti said. "One possible cause that hasn't been studied is the relationship between a lower body temperature and obesity."

His study compared the rectal temperatures of 287 lean and obese dogs over several years. He found that larger dogs have lower temperatures than smaller dogs and that, for the same body size, obese dogs have lower temperatures than lean dogs.

Most humans and most animals gain weight because they accumulate fat. That occurs when they take in more energy than they expend. The unused energy is stored as fat.

“The way to reduce energy intake is to eat less, but that means you feel hungry, and a common way to increase energy expenditure is to exercise, but many people lack the motivation,” he said.

Refinetti’s study explored the theory that obesity may result from a less obvious reduction in energy expenditure: a reduction in body temperature. The idea is that warm-blooded animals spend much of their energy generating heat to keep the body warm. However, some animals have body temperatures that are naturally lower and therefore do not need to use as much energy to stay warm.

The reduced body temperature would be sufficient to account for body weight gain over several months.

“Although not yet replicated in humans, these results suggest that human obesity may be caused by a small reduction in the temperature at which the body maintains itself,” he said.

Provided by University of South Carolina

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