

## OBESITY

## New light shed on obesity-associated gut microbiota

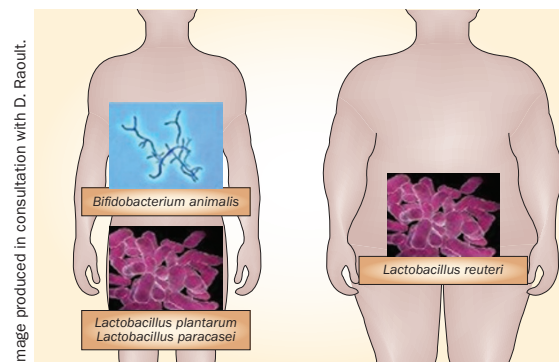
The findings of a recent study published in the *International Journal of Obesity* suggest that *Lactobacillus reuteri* is associated with obesity and that *Bifidobacterium animalis*, *Methanobrevibacter smithii* and other species of *Lactobacillus* are associated with normal weight.

The prevalence of obesity is steadily increasing worldwide and it is a risk factor for a variety of diseases, including stroke and cancer. Many factors are thought to have a role in causing obesity. In particular, research has demonstrated that obesity is associated with a specific profile of gut microbiota. However, the associations between different bacterial species and their role in either protecting against or promoting obesity are complex, and data are limited.

Didier Raoult, corresponding author of the study, is investigating the possible (although controversial) idea that probiotics might have a role in promoting obesity by altering the gut microbiota. “Some bacteria are used as probiotics

in humans and as growth promoters in animals,” he explains. Thus, the aim of this study was to investigate the association between certain bacterial strains that are marketed elsewhere as probiotics for human consumption and obesity.

To that end, the researchers analyzed the stools of 68 obese individuals and 47 controls. They used cultures and quantitative PCR to create a data bank to identify bacterial strains. “We found that *L. reuteri* was significantly linked with obesity; this strain has been used as a growth promoter in animals,” reports Raoult. *B. animalis*, *L. plantarum* and *L. paracasei* were associated with normal weight, as was *M. smithii*. The authors warn that caution is required when considering these results as this is the first study to link a specific species of *Lactobacillus* with obesity. Nonetheless, Raoult concludes: “This work is a step forward in showing that some species of probiotics may be associated with weight gain and some with protection against obesity.”



The authors now plan to perform a meta-analysis of the available data in the literature on probiotics in animals, to focus on species associated with either weight gain or protection from obesity.

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**Original article** Million, M. et al. Obesity-associated gut microbiota is enriched in *Lactobacillus reuteri* and depleted in *Bifidobacterium animalis* and *Methanobrevibacter smithii*. *Int. J. Obes.* doi: 10.1038/ijo.2011.153