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Gut microbiota and chronic exercise in diabetic patients: not only bacteria

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TO THE EDITOR: In a recent interesting paper Pasini *et al*. have shown that exercise controls diabetes also by modifying intestinal mycobiota composition and gut barrier function. In particular, while diabetes was associated with significant gut mycetes overgrowth, exercise improved glycemia and reduced gut mycetes overgrowth. The analysis of the gut microbiota included bacterial species, *Candida Albicans* and *Mycetes spp.* Only *Candida albicans* and *Mycetes spp.* were significantly reduced after exercise ($P = 0.043$ and $P < 0.001$, respectively).[1]

We would like to highlight three crucial points regarding the results of this study.

First, each strategy aiming to obtain the homeostasis of the microbiota should consider the mycobiota. This is not always considered in a time of prevalent interest toward the bacteria.[2]

Second, the study of the gut permeability, as indicator of gut barrier function, by the search for zonulin[3] should be mandatory in this type of investigations.

Third, more and more data confirmed the potential involvement of gut microbiota in several extra-intestinal diseases.[4,5]

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