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## Research of the mechanism by which food microorganisms and dietary fiber intake prevent and improve obesity-related disorders

Excess energy intake and lack of exercise not only cause obesity, but various lifestyle-related diseases caused by obesity. Although correction of lifestyle is the most important to prevent and improve them, intake of food microorganisms and dietary fiber is effective as an additional preventive measure. In our laboratory, we are searching for new food microorganisms and dietary fibers that prevent and improve obesity-related disorders, and we are also studying how these food materials act on gut microbiota and gut immune system to exert their effects.

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## Effect of fat and oil intake on gut microbiota and immune system

We daily consume a variety of fats and oils such as lard, beef fat, and vegetable oil. The fatty acid composition of these fats and oils differs greatly, which affects the physiological effects of each fat and oil. In our laboratory, we evaluate the effect of type of fats and oils and their intake amount on gut microbiota composition, secretion of immunoglobulin A (IgA), a major molecule responsible for gut immune system, and the IgA reactivity to gut microbiota.