Intestinal mycobiota in health and disease

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Video Byte

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Abstract

The intestinal tract is home to a variety of microbes that live in a delicate balance with their host. Although this symbiosis is well-studied for bacteria, gut fungi (mycobiota) are often neglected due to their lower abundance in the gut microbiome. While fungi are traditionally investigated using culture-dependent methods, next-generation sequencing has allowed for more in-depth understanding. Fungi may colonize the gut as soon as birth, and the gut mycobiota can be affected by many factors throughout life, such as the environment, diet and nutrition, and the seasons. Gut fungi regulate many physiological functions in their hosts, including metabolism, control of aging, and disease progression. Immune homeostasis, in particular, is linked to gut mycobiota, and fungi can affect both innate and adaptive immune responses in the gut. Gut mycobiota have also been linked with intestinal diseases, and imbalanced fungal community composition can alter intestinal homeostasis. Beyond the intestines, gut microbiota can also affect other organ systems, including the brain, lungs, kidneys, and pancreas. The broad health effects of gut fungi underscore the need to better understand the roles of these important microbes and their equilibrium in human health and disease.