



### Useful bacteria build intestine's fortitude

If someone told you that trillions of organisms lived inside your body, you might be worried. After all, people can get very sick when certain microorganisms successfully invade the body. But the reality is that the human body contains about 10 times as many bacterial cells as it does its own human cells. And this is actually a good thing!

The vast majority of these organisms live in the intestine, where a complex community exists with hundreds of different types of bacteria. These various organisms have profound effects on the body. The mixture of various bacterial species is collectively called the intestinal microbiota. The composition of this microbiota can affect susceptibility to infections, development of some cancers, and possibly even the development of obesity.

**Question:** How do intestinal bacteria affect the body in so many ways?

**Answer:** In a healthy person, intestinal bacteria form a natural

defense barrier that protects the body from invasion by disease-causing bacteria. Some of these friendly bacteria break down toxic substances and others produce substances that benefit our cells. Some bacteria even produce vitamins, like vitamin K, a nutrient required for normal blood clotting.

**Q:** What determines the types of bacteria that live in the body?

**A:** An individual's microbiota is established primarily during the first year of life. Within the first minutes of life, bacteria claim their intestinal territory and build colonies. Studies show that infants born by Caesarean section develop a different intestinal microbiota than infants born by vaginal delivery. In addition, breast-feeding promotes a healthier bacterial colony, and the neighborhood pattern of bacteria established during infancy tends to survive throughout life.

**Q:** Can the relative amounts of different types of bacteria in the intestine be changed?

**A:** Although an individual's

intestinal bacteria pattern is resistant to change throughout a lifetime, consuming foods that contain live bacteria cultures can have some impact on the makeup of these bacterial populations. Foods such as live-culture yogurt are called probiotics.

The microbial ecosystem can also be affected by a person's diet. Certain food components, called prebiotics, enhance the growth of specific bacteria and inhibit the growth of others. These prebiotic compounds are found mostly in various fruits and vegetables.

**Q:** Can beneficial bacteria be obtained from supplements?

**A:** Probiotic supplements are available. However, in most products it is not possible to know if the bacteria present are primarily beneficial types and still alive.

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