



National Institutes of Health
Turning Discovery Into Health

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Advances for type 1 diabetes

In type 1 diabetes, the immune system attacks insulin-producing cells in the pancreas. Affected people must depend on insulin treatments to survive. Researchers found that a common blood pressure drug called verapamil could [protect insulin-producing cells in the pancreas](#) of people with type 1 diabetes and reduce the need for insulin treatments. Other scientists developed a [bionic pancreas](#) that helped manage blood glucose levels in people with type 1 diabetes better and with less user input than existing methods. Notably, in November 2022 the FDA approved the [first](#) treatment to delay the onset of type 1 diabetes, based in part on [NIH-supported clinical trials](#) completed the previous year.

[Improved dietary supplement for age-related macular degeneration](#)

Age-related macular degeneration (AMD) is the most common cause of blindness in older Americans. An [NIH-funded](#) study 20 years ago showed that a dietary supplement could slow AMD progression, but the safety of one ingredient in the supplement has been questioned. A new supplement formulation replaced the questionable ingredient. A followup study showed that the new supplement was safer and better at slowing AMD progression over a 10-year period than the earlier supplement.

[Testing ways to encourage exercise](#)

Fewer than 1 in 4 adults in the U.S. get the amount of exercise recommended to maintain health and prevent chronic disease. A large nationwide study identified inexpensive interventions that boosted weekly gym visits by up to 27%. The results point to affordable strategies to help increase the amount of exercise Americans get on a regular basis.

[Robotic exoskeleton helps people walk](#)

Researchers created an [artificial](#) robotic device, called an exoskeleton, that provides personalized walking assistance under real

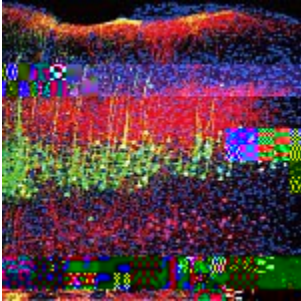


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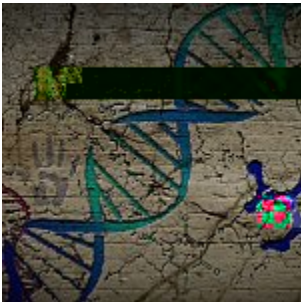
How the microbiome impacts health and disease
Researchers found several new ways that the microbiome—the collection of bacteria and other microbes living in and on our bodies—affects human health. People who ate a high



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[Understanding how sound suppresses pain](#)
Studies have shown that music and other kinds of sound can help reduce acute and chronic pain in people. How the brain produces this pain reduction has been less clear. Scientists identified brain circuits in mice through which sound can blunt pain. These circuits connect the auditory cortex to the thalamus. The findings could lead to the development of safer methods for treating pain in people.



[How infections helped shaped human evolution](#)
Two studies revealed how ancient infections affected human evolution. Researchers identified [genetic variants that helped the immune system fight the Black Death](#)—the fourteenth-century bubonic plague pandemic that killed up to half the population in Europe, the Middle East, and North Africa. But this quick burst of immune system evolution may also have had the lasting side effect of increasing susceptibility to autoimmune diseases. In another study, researchers found that stretches of viral DNA long embedded in the human genome can produce [proteins that help block infection by viruses](#). Further identification and study of these protective virus-based proteins could provide new insights for fighting viral infections.