Come explore with us! The cells’ identification could lead to new allergy treatments or cures A newly discovered subset of memory cells could one day be used to learn whether a person's allergy is likely to last or could disappear with time or treatment. Nastasic/E+/Getty Images By Tina Hesman Saey April 12, 2024 at 6:30 am Allergy sufferers may one day be able to erase the source of their sniffles, itchy skin and swelling. A newfound subtype of immune cells seems to underlie long-lasting allergies. The finding could lead to new ways to diagnose, treat or even cure allergies. Memory B cells are important for long-lasting protection against infectious diseases. The new cells are called type 2 memory B cells or MBC2s. This subset holds the memory of proteins that cause allergies. And these cells are primed to make the type of antibodies that trigger classic allergy symptoms. Two separate groups of researchers described these cells February 7 in Science Translational Medicine. Allergies happen when the immune system reacts to harmless things, such as pollen, peanuts and pet dander. Some immune cells release a type of antibody called IgE to fight the mistaken foe. Usually, IgE antibodies battle real threats, such as parasitic worms. In the United States, about one-third of adults and one-quarter of all children have allergies. For many, their symptoms are just seasonal sniffles. But in some people, insect stings or certain foods can cause life-threatening allergic reactions. Some allergies disappear over time or with treatment. Others last a lifetime. For decades, scientists have been searching for the source of those long-lived allergies. Memory B cells help the body remember vaccinations and natural infections. Recently, researchers began to suspect they might be linked to allergies, too. These memory B cells produce antibodies known as IgG. These ward off viral and bacterial infections. They can also neutralize some toxins. It wasn’t clear how the cells might switch to making IgE antibodies instead. To explore this, both research teams studied the immune cells of people with allergies and some without. One group worked with adults, the other with kids. The two studies also looked at different types of allergies. Joshua Koenig helped lead one of the studies. He’s an immunologist at McMaster University. That’s in Hamilton, Ontario, in Canada. His team of scientists examined more than 90,000 memory B cells. The cells came from six adults with birch allergies, four allergic to dust mites and five people with no allergies. The team focused on the cells’ RNA. RNA is like a blueprint that cells use to make proteins. Based on RNA, some of the memory B cells appeared ready to make the antibodies and other proteins involved in an allergic response. The researchers called this subset of cells MBC2s.