

# Best of Last Year: The top Medical Xpress articles of 2022

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It was a good year for medical research as [Swedish scientist Svante Paabo won the Nobel Prize in medicine](#) for discoveries he made regarding human evolution—he spearheaded the development of new

techniques that will allow researchers to compare the genomes of modern humans and that of other hominins such as Neanderthals and Denisovans.

An international team of researchers found that the widely used food additive E415 (also known as xanthan gum) [affects the human gut microbiota](#). They found that it is so commonly used that the human gut has evolved to digest it. One bacterium in the family Ruminococcaceae, in particular, has become more common in the gut and it is part of a food chain that has developed since food makers began adding the material to foods such as ice cream, baked goods and also as a substitute for gluten.

A team at the University of Bristol produced evidence indicating that granddaughters and great-granddaughters of men who start to smoke before puberty [have more body fat than expected](#). They analyzed data from the "Children of the '90s" study on 14,000 people, and found patterns of increased body fat in women who had ancestors that began smoking before they reached puberty.

Also, researchers from King's College London, the University of Cambridge and the University of Liverpool, working with the COVID Clinical Neuroscience Study Consortium and a colleague from Karolinska Institute, found evidence of [a causal link between blood groups and severe COVID-19](#), though they were unable to link precise blood groups with increased risk.

An international team of researchers found that the commercial dietary supplement nicotinamide riboside, a form of vitamin B3, could, in high doses, [increase a person's risk of developing certain types of breast cancer](#). They also found that its use could also lead to an increased risk of breast cancer metastasizing to the brain, which the team noted is almost always deadly.

On a more positive note, a team at Brigham and Women's Hospital found that people taking vitamin D supplements with or without omega-3s have [a decreased risk for autoimmune diseases](#). In their five-year trial of vitamin D supplements with or without omega-3 fatty acids, they found it had a significant impact on lowering rates of autoimmune diseases compared to people taking a placebo.

A team with members from Duke University, the University of Minnesota and Laboratory Corporation of America Holdings found that the things that define how long older adults will live comes down to just [17 often surprising factors](#)—and most of them had to do with physical abilities such as being able to go shopping or doing their own housecleaning.

And a team at Isfahan University of Medical Science in Iran explored [the effects of eating dark chocolate on the rat brain](#) and found it may have beneficial effects for people with chronic isolation stress. More specifically, they found it reversed negative effects on synaptic potency associated with isolation and increased plasticity of the CA1 hippocampal area.

A combined team from the Cambridge Health Alliance and the University of Mississippi School of Pharmacy, studied a large number of over-the-counter supplements and found that many of them have [high levels of levodopa](#)—an amino acid that, when consumed, can cause feelings of paranoia. The team also found that it was most prevalent in supplements that contained *Mucuna pruriens*, a type of bean.

A pair of researchers, one with the University of Ottawa, the other Oxford Brookes University, looked into records from WWII showing that approximately 98% of women arriving at Nazi concentration camps stopped menstruating shortly after their arrival. Noting that research since then has shown that such a biological change could not be

attributed to fear or pain, Peggy Kleinplatz and Paul Weindling took a deeper look and found it was due to camp workers [putting synthetic steroids in their food](#).

Also, an international team of researchers conducting a metastudy identified [a gene variant that protects against COVID-19](#). Their finding showed that in addition to factors such as age and [health conditions](#), people may be at more or less risk of severe symptoms or death due to genetic factors. They found that the protective gene variant rs10774671-G determines the length of the protein encoded by the gene OAS1, making it easier for the body to break down the invading virus.

A team of researchers affiliated with several institutions in Germany working with one colleague in the U.S. and a small team at the KORA Study Group found that two drugs often prescribed for people with high blood pressure or heart disease [may put patients at greater risk of having a heart attack](#) during very hot weather. They found that use of beta-blockers or aspirin can increase the risk of heart attack when a person is active during hot weather.

Also, a team of researchers affiliated with several institutions in Spain, working with a colleague from Austria, found that just 1 in 3 unvaccinated people infected with COVID-19 [had no detectable antibodies in their system a year later](#). The study, conducted on a Catalan population, showed that people should get vaccinated even if they have already been infected because hybrid immunity is both longer-lasting and more robust.

A team at the University of Maryland School of Medicine conducting a meta-analysis that found a person's blood type can be [a predictor of stroke risk before the age of 60](#). The team came to this finding by conducting a [meta-analysis](#) of data from 48 prior studies involved with studying the genetics involved with various types of stroke. They found

that people with blood type A are more likely to have a stroke while those with type O blood are less at risk.

A team at the University of Miami, working with a colleague from Bar Harbor's MDI Biological Lab, found that hydrogen peroxide could be used as [a healing agent for nerve regeneration](#). In their work with time-lapse photography of zebrafish, the researchers found that applying hydrogen peroxide to skin injuries resulted in regeneration of nerves due to its interaction with the epidermal growth factor receptor found in skin.

And a team of researchers at the University of Bristol working with a colleague from the University of Udine and another from Cardiff University reported that the SARS-CoV-2 virus spike protein binds to the heart's vascular cells, [potentially contributing to severe microvascular damage](#). Their finding helped to explain why many people died so suddenly from COVID-19 infections.

Also, a team at the University of Waterloo found that combining certain medications with ibuprofen could [permanently injure the kidneys](#). More specifically, they found that people taking diuretics or renin-angiotensin system inhibitors to treat high blood pressure should avoid taking ibuprofen because doing so could lead to acute kidney injury, which, in some cases, could be permanent.

And a team with members from institutions in Ireland, Denmark, Australia and the U.S. conducted an analysis of research regarding the link between high cholesterol and heart disease and [found it to be inconsistent](#). After finding these inconsistencies, they went on to challenge the efficacy of using statins to lower LDL-C, which are prescribed to treat cardiovascular disease.

A team at the Salk Institute discovered [a surprising link between the](#)

[human immune system and hair growth](#). They found communications between hair follicle stem cells and regulatory T cells in patients with alopecia, a condition in which the immune system attacks hair follicles, prevented hair from growing.

A team at the Rush University Medical Center found [a possible link between excessive daytime napping and onset of Alzheimer's disease](#). In following the health of 1,400 patients for 14 years (using wrist sensors), the researchers found that longer and more frequent napping by older people led to worsening cognition. They also noted that they could not say for sure if frequent napping led to cognitive decline or if cognitive decline was leading to more napping.

A team with members affiliated with multiple institutions in China conducted a two-year follow up study on patients who had been admitted to the hospital due to a COVID-19. They found that roughly half of the 1,192 participants in the study [still had one or more symptoms](#) from the infection. They also found that while physical and mental health improved for those afflicted, such patients all reported having poorer health and reduced quality of life.

And in a similar study, a team of researchers from several institutions in the U.K. conducted follow-up reviews of 2,000 people hospitalized for COVID-19. They found that after one year, [only 25% of such patients felt that they had returned to full health](#). The researchers also found that other factors, such as gender and obesity, had an impact on the degree of wellness patients experienced a year after recovering.

In related news, a team of researchers affiliated with Optum Labs in the U.S., Optum Global Advantage in Ireland, and the Harvard T.H. Chan School of Public Health found that almost 1 in 3 [older adults developed new conditions after recovering from a COVID-19 infection](#) in the months after the initial infection. Such new conditions ranged from

problems with major organs to mental health issues.

And finally, a team with members from the University of Rome Tor Vergata and the University of Calabria found evidence that hinted at [the role gut microbiota might play in autistic spectrum disorders](#). While it is still not clear what causes autism, the new study suggested it may be related to the state of the gut biome during the early years of a child's life—the time period during which symptoms typically begin to appear.

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