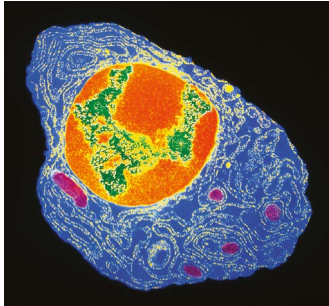


News in brief



HAD COVID? YOU'LL PROBABLY MAKE ANTIBODIES FOR LIFE

Many people who have been infected with SARS-CoV-2 will probably make antibodies against the virus for most of their lives, suggest researchers who have identified long-lived antibody-producing cells in the bone marrow of people who have recovered from COVID-19.

A team led by immunologist Ali Ellebedy at Washington University in St. Louis, Missouri, tracked antibody production in 77 people who had recovered from mostly mild cases of COVID-19. As expected, SARS-CoV-2 antibodies plummeted in the four months after infection. But this decline slowed, and up to eleven months after infection, the researchers could still detect antibodies that recognized the SARS-CoV-2 spike protein (J. S. Turner *et al. Nature* <https://doi.org/gj6hmb>; 2021).

In bone-marrow samples collected from a subset of participants, the scientists found ultra-low but detectable populations of bone-marrow plasma cells, the formation of which was triggered by the individuals' coronavirus infections. These cells hide away in bones, trickling out antibodies for decades.

The study provides evidence that immunity generated by SARS-CoV-2 infection could be extraordinarily long-lasting.

LIGHT-SENSITIVE PROTEINS RESTORE BLIND MAN'S VISION

After 40 years of blindness, a 58-year-old man can once again see images and moving objects, thanks to an injection of light-sensitive proteins into his retina.

This is the first successful clinical application of optogenetics, a technique in which flashes of light are used to control gene expression and neuron firing.

The man has retinitis pigmentosa: a degenerative disease that kills off the eye's photoreceptor cells, the first step in the visual pathway. In a healthy retina, photoreceptors detect light and send electrical signals to retinal ganglion cells (RGCs), which then transmit the signal to the brain. The optogenetic therapy skips the damaged photoreceptor cells entirely by using a virus to deliver light-sensitive bacterial proteins into the RGCs, allowing them to detect images directly.

Researchers injected the virus into the man's eye and waited four months for protein production by the RGCs to stabilize before testing his vision. Eventually, with the help of a specially engineered set of goggles that capture visual information using a camera and optimize it for detection by the proteins, he was able to make out high-contrast images, including objects on a table and the white stripes in a pedestrian crossing (J. A. Sahel *et al. Nature Med.* <https://doi.org/gj6mvv>; 2021).

Six other people were injected with the same light-sensitive proteins last year, but the COVID-19 pandemic delayed their training with the goggles. Further results from the trial are expected in about a year.

Boom in ships with 'fake' flags that trash the environment

Ships transport 90% of the world's cargo. But when vessels are demolished, they create huge amounts of pollution, particularly if it happens in countries with lax regulations. Research shows that the number of vessels misleadingly registered to nations other than their country of origin – called flags of convenience – has skyrocketed (Z. Wan *et al. Mar. Pollut.* **130**, 104542; 2021).

Between 2002 and 2019, the proportion of ships owned in European Union nations that were registered in low-income countries rose from 46% to 96%, the study finds. This allows owners from wealthy nations with strict environmental regulations to have vessels dismantled cheaply. Business owners in the EU, United States, South Korea and Japan control much of the world's cargo fleet. But between 2014 and 2018, 80% of their scrapped ships were demolished in 3 nations, where shipyards are governed by weak environmental and safety regulations – Bangladesh, India and Pakistan.

PLAYING THE SYSTEM

Most ships scrapped in 2019 used a 'flag of convenience' loophole and ended up being dismantled in nations with lax rules – sometimes in a way that is highly detrimental to the environment.

