

Ask a Patient Health News May 1, 2022

- Unexplained cases of **hepatitis** (inflammation of the liver) are emerging in previously healthy **children** (mostly age 1 to 13) in the U.S., U.K., Canada, and 11 other countries. Tests suggest that many of the cases may have a connection to **adenovirus type 41 infection**, not hepatitis viruses, which are the usual cause for the disease.

The Centers for Disease Control and Prevention (CDC) issued an alert on April 21 asking physicians to consider adenovirus testing for pediatric patients having hepatitis with unknown origins and to report such cases to the CDC. Since then, the number of cases in the U.S. has more than doubled, with nine cases in Alabama, three in Illinois, two in North Carolina, four in Wisconsin, and seven in California so far.

Separately, the World Health Organization (WHO) also issued an [outbreak alert](#), based on over one hundred unexplained cases in Great Britain and Northern Ireland. Type 41 adenovirus is not known to be a cause of hepatitis in otherwise healthy children, and typically causes diarrhea, vomiting, and fever often along with respiratory symptoms. The WHO says that although adenovirus is one hypothesis about the underlying cause, it does not fully explain the severity of the clinical picture. About ten percent of the children diagnosed worldwide have required liver transplants, and at least one child has died from the illness, according to the WHO.

<https://abcnews.go.com/Health/clusters-severe-hepatitis-cases-children-investigated/story?id=84379149>

- The Food and Drug Administration announced a [draft plan](#) that would lower the guidance level for **lead in fruit juices** from 50 parts per billion (ppb) to 10 ppb for apple juice and 20 ppb for other fruit juices. The move is part of the Agency's "Closer to Zero" action plan, which aims to lower the levels of toxic heavy metals that children are exposed to through baby food and juice. *Consumer Reports* and other advocacy groups have been pushing the FDA to set limits, but say these levels do not go nearly far enough. "These proposed levels seem weak, especially when you consider a significant majority of the industry is already meeting them," says Brian Ronholm, director of food policy at *Consumer Reports*. "These action levels seem to give credit for work already done instead of attempting to protect public health."

<https://www.consumerreports.org/toxic-chemicals-substances/fda-takes-action-to-limit-lead-levels-in-juice-a6404326014/>

"Forever Chemicals" Research

- University of Southern California researchers identified a link between exposure to "**forever chemicals**" and **liver damage**, as well as a potential connection to **non-alcoholic fatty liver disease**. Exposure to such compounds, also known as per- and polyfluoroalkyl substances or PFAS, was associated with elevated levels of a liver enzyme called ALT, which serves as a biomarker for liver damage. The authors synthesized the results of more than 100 peer-reviewed studies in both humans and rodents, ultimately finding that three of the most common types of PFAS detected in humans are all connected to elevated levels of ALT in human blood. The study was published in *Environmental Health Perspectives*.

<https://keck.usc.edu/synthetic-forever-chemicals-known-as-pfas-linked-to-liver-damage/>

- Scientific nonprofit Battelle has developed a technique that could get rid of forever chemicals that are present in **drinking water**, and has partnered with a wastewater treatment plant for additional testing of the technique, which involves a process called "supercritical water oxidation." The process involves increasing temperature and pressure to get the water into a special state that "annihilates" the PFAs.

<https://www.cbsnews.com/news/pfas-forever-chemicals-drinking-water-battelle/>

- A year-long study looked at how **donating blood** affects **PFA levels** in the body. 285 Australian firefighters were placed in one of three groups: those that donated blood, those that donated blood and plasma, and those that made no donations. Results suggest that donating blood leads to lower levels of forever chemicals in the donor's blood, and that **plasma donation** appears to be the most effective at removing forever chemicals. The research was published in *JAMA Network Open*.

<https://theswaddle.com/regular-blood-donations-can-reduce-toxic-forever-chemicals-in-the-bloodstream-study/>

- Accidental deaths have soared among high school and college-age youth amid a proliferation of **fentanyl-filled pharmaceuticals** sold on platforms such as Snapchat and Instagram; sometimes the counterfeit drugs are delivered straight to kids' homes. Fentanyl-laced illicit drugs like cocaine, meth, and heroin continue to be a problem, but the ingredient is now working its way into many other substances, including marijuana and fake prescription pills like Xanax, Percocet, and Oxycodone.

Fentanyl is a **synthetic opioid** that is stronger than morphine and heroin. It is approved by the FDA for use in conjunction with surgery. Also, patches or sublingual sprays containing fentanyl (like Actiq or Subsys) may be used to treat people with cancer-related pain.

https://gazette.com/news/local/fentanyl-and-its-dangerous-mix-cheap-easy-to-produce-and-deadly/article_a7e475f2-bcd8-11ec-a251-4b59e2603070.html

- A group of researchers based in the U.S. and Korea have developed and tested an **edible matrix code made of silk** that can be attached to tablets or added to liquids as an **anti-counterfeiting** measure. The tag is made of silk and is invisible to the eye, but can be picked up by specific optical filters on a smartphone camera that can pick up fluorescence.

Most smart phones have the capacity to “see” light waves that are not visible to the naked eye, such as the infrared light from a TV remote. However, most anti-counterfeit measures are applied to medicine packaging, not the drug itself. Other ‘on-dose’ tags do exist, such as DNA tags. The problem with these is they mostly require skilled personnel and expensive machinery to process, while this new technology only would require a **smartphone camera**. <https://www.chemistryworld.com/news/edible-fluorescent-silk-tags-could-help-stem-tide-of-counterfeit-medicines/4015578.article>

- The White House released a plan to prioritize what is known as “harm reduction” to combat the overdose crisis; that means saving lives by making **fentanyl test strips**, clean syringes, and the naloxone (brand name Narcan) overdose antidote drug more widely available. [Bars and eateries](#) in some areas are making fentanyl test strips easily available.

[AP News Release](#)

- Using artificial intelligence (AI) technology in medical settings can be controversial because of the risk of accidental release of confidential patient data. University of Leeds set out to discover whether a form of AI called swarm learning could be used to help computers predict cancer using medical images of patient tissue samples, without releasing the data from hospitals. The principle of swarm learning is to jointly train a machine learning model in different physically separated computer systems without the need for any data to be released to third party companies or to be sent between hospitals or across international borders.

<https://www.leeds.ac.uk/main-index/news/article/5069/using-ai-to-detect-cancer-from-patient-data-securely>

- University of Leicester researchers looked at walking survey data as well as microscopic data for more than 400,000 middle-aged people, and found that brisk walking may slow biological aging process. Those who self-reported a habitual average pace of 3 miles an hour or greater had longer telomeres, on average, than their slower-walking counterparts. Telomeres are the caps at the end of each strand of DNA that protect our chromosomes, and have been compared to the plastic tips on shoelaces. They shorten with age: in newborns, the length of telomeres is around 8,000 base pairs and can be as low as 1,500 in elderly people. Telomeres explained:

<https://learn.genetics.utah.edu/content/basics/telomeres/>

Walking Study:

<https://le.ac.uk/news/2022/april/walking-speed-ageing>

- Eggs or yogurt, veggies or potato chips? We make decisions about what to eat every day, but those choices may not be fully our own. University of Pittsburgh research on mice shows for the first time that the **microbes in animals' guts** influence what they choose to eat, making substances that prompt cravings for different kinds of foods. The study was published in *Proceedings of the National Academy of Sciences*.

<https://www.pitt.edu/pittwire/features-articles/food-cravings-pitt-study>

- Andrew Rosen wasn't surprised when he was diagnosed with **high blood pressure** at age 39. He acknowledged that he must have had it for years, but had dismissed high readings in his 20s at his check-ups as “white coat” high blood pressure (caused by anxiety over being at a doctor's office). Also, hypertension ran in his family; both his parents had taken medication, which had effectively controlled the condition.

But none of the medications seemed to work for Andrew, and he was taking as many as five at a time. His doctors insisted that he had “essential hypertension,” which is hypertension without a known cause, but Andrew disagreed, based on his symptoms and the fact that the medications didn't help much. After some research, multiple doctors' visits, which included a visit to an endocrinologist, Andrew received a diagnosis that confirmed his suspicions and provided a new treatment path. As it turns out, his condition isn't as uncommon as people think, and not enough people with high blood pressure are being screened for it. Read Sandra Boodman's latest **medical mystery**. <https://www.washingtonpost.com/health/2022/04/23/high-blood-pressure-medical-mystery/>

Coming soon:

Ask a Patient's "strange symptoms" story: When a young doctor began craving strange smells and salty flavors, he self-diagnosed it as a form of "pica," but it took more than a year to find out what was causing it.

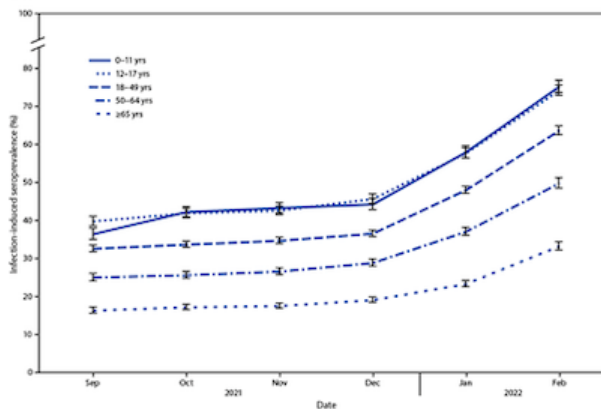
Covid News

Data from the CDC's Commercial Laboratories Seroprevalence Survey suggest that more than half of American have been exposed to Covid-19, with many of them becoming infected during the recent Omicron variant surge that started in December 2021. 75% of children and adolescents had evidence of previous infection with approximately one third gaining the antibodies since December 2021.

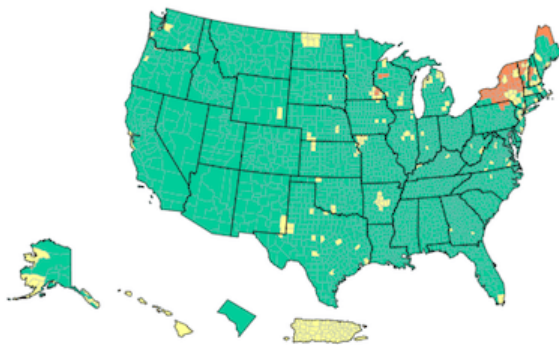
The greatest increases in seroprevalence during September 2021–February 2022, occurred in the age groups with the lowest vaccination coverage; the proportion of the U.S. population fully vaccinated by April 2022 increased with age (5–11, 28%; 12–17, 59%; 18–49, 69%; 50–64, 80%; and over 65 years, 90%). The CDC said that the presence of the antibodies in a large portion of the population should not be interpreted as protection from future infection.

Not brought up in the CDC release is the counterintuitive observation that despite the fact that the **adolescent** cohort has **twice the vaccination** rate of younger children (59% vs. 28%), they have almost **identical levels of infection**. See chart below.

FIGURE. Seroprevalence of infection-induced SARS-CoV-2 antibodies, * by age group — United States, September 2021–Feb 2022



* Error bars represent 95% CIs at each time point.



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Global Statistics

During the week of 18 through 24 April 2022, the World Health Organization reports that the number of new COVID-19 cases declined for the fifth consecutive week, with a 21% decrease as compared to the previous week. However, the regions of the Americas reported a 9% increase in cases and the African region reported a 32% increase in cases. The number of new weekly deaths also continued the decreasing trend (-20% as compared to the previous week), but with Southeast Asia region reporting an increase in deaths (largely due to reporting delays in India) and a 32% increase in deaths in Africa region. <https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---27-april-2022>

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