

Saturday Citations: Warp drive disasters; cancer prospects across generations; a large COVID vaccination study

August 3 2024, by Chris Packham



AI impression of a warp bubble collapse. Credit: Katy Clough with AI tool [pixlr.com](https://www.pixlr.com)

This week, researchers reported on the implications of a warp drive

containment breach in case you're interested in theoretical space-borne disasters. Scientists in the U.K. report the cardiovascular benefits of COVID-19 vaccination in an extremely thorough analysis of basically the entire adult population of England. And the American Cancer Society is out with numbers related to rising cancer risk in younger generations in the U.S. So it's not all good news.

Punch it, Ortegas

Compressing the spacetime in front of a spacecraft to achieve faster-than-light travel is only possible *in theory*, the most annoying yet expansive frontier of human endeavor. Theory is all well and good, but it doesn't bring home the Centauri system bacon. However, the theory behind warp drives is robust enough that mathematicians and theoretical physicists can explore the implications without actually violating causality or messing with exotic negative-energy matter.

A multi-institutional collaborative in Europe and the U.K. [presented new research](#) this week exploring the consequences of a warp drive containment failure using mathematical simulations. According to the study, such a containment breach would result in a short, high-frequency burst of gravitational waves.

Although current gravity wave observatories wouldn't be able to detect this signal, in the future, it could be possible to listen for signatures of warp containment failure elsewhere in the universe, which would obviously confirm a lot of speculation about alien life, advanced civilizations, the faulty engineering of those civilizations and maybe even the existence of universal ISO safety standards for faster-than-light spacecraft.

Findings dispiriting

Researchers are still unsure about the cause of rising cancer risk in [young people](#), but the American Cancer Society has [put some numbers to the observation](#)—members of Generation X and millennials in the U.S. have a [higher incidence](#) of 17 of the 34 types of cancer, including breast, pancreatic, testicular, gastric, uterine and [colorectal cancers](#).

The study included data from 23,654,000 patients diagnosed with any cancer, along with mortality data from over 7 million people aged 25 to 84 years for 25 types of cancer over a 20-year period ending in 2019. They calculated birth-cohort-specific incidence rate ratios and mortality rate ratios and found that incidence rates increased with each successive birth cohort since 1920 for eight of 34 cancers. Among other findings, the incidence was two to three times higher in the 1990 birth cohort than the 1955 cohort.

Dr. Hyuna Sung, lead author of the study, says, "These findings add to growing evidence of increased [cancer risk](#) in post-baby-boomer generations, expanding on previous findings of early-onset colorectal cancer and a few obesity-associated cancers to encompass a broader range of cancer types."

Women feelier than men

A systems engineer and haptics expert at the University of Virginia [discovered](#) why women seem to have a better sense of touch than men. Using a new device, a transparent hydraulic actuator, Professor Gregory Gerling found that women excel at touch discrimination because the skin of their fingers is softer than men's.

The experiments used 3D imaging and biomechanical observations of skin and its deformations when pressed, along with tests measuring how participants used touch to perceive objects. Softer skin had greater rates of change in surface contact with the objects in the experiment, and this

mechanism seems to recruit sensory nerve fibers in skin tissue.

Benefits outweigh risks, say benefit weighers

The incidence of cardiac disease rises after COVID-19 infection, but researchers in the U.K. report what they would probably call "quite favorable results indeed" from [an analysis](#) involving most of the adult population of England—the incidence of heart attacks and strokes is lower after COVID-19 vaccination than before or without vaccination.

The researchers analyzed de-identified health records of 46 million adults in England dating between 2020 and 2022. They compared rates of cardiovascular disease after vaccination with the incidence before or without vaccination during the first two years of the program.

Professor William Whiteley, professor of neurology and epidemiology at the University of Edinburgh, says, "This England-wide study offers patients reassurance of the cardiovascular safety of first, second and booster doses of COVID-19 vaccines. It demonstrates that the benefits of second and booster doses, with fewer common cardiovascular events including heart attacks and strokes after vaccination, outweigh the very rare cardiovascular complications."

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Citation: Saturday Citations: Warp drive disasters; cancer prospects across generations; a large COVID vaccination study (2024, August 3) retrieved 3 August 2024 from <https://phys.org/news/2024-08-saturday-citations-warp-disasters-cancer.html>

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