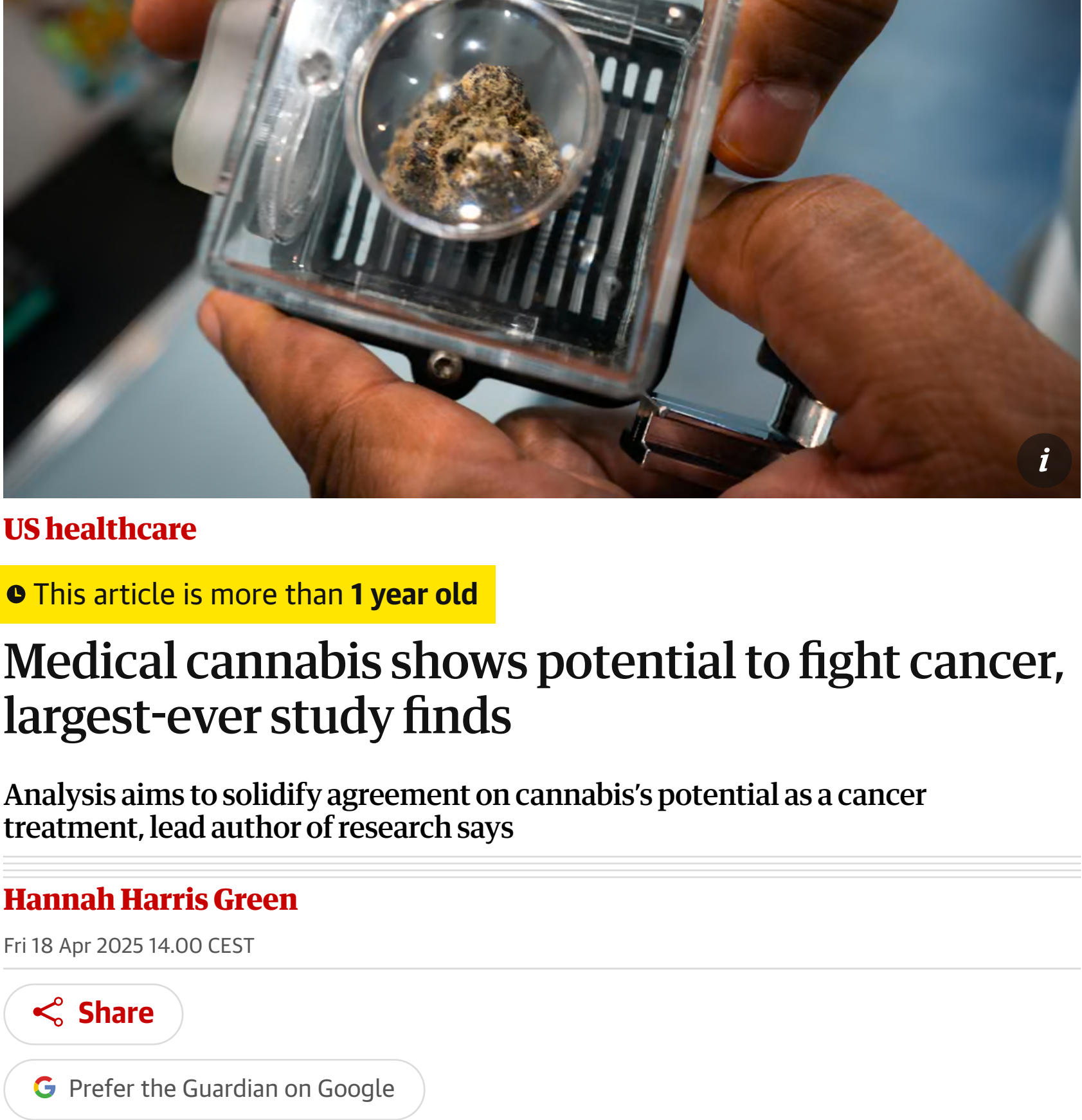




US healthcare

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Medical cannabis shows potential to fight cancer, largest-ever study finds

Analysis aims to solidify agreement on cannabis's potential as a cancer treatment, lead author of research says

Hannah Harris Green

Fri 18 Apr 2025 14:00 CEST

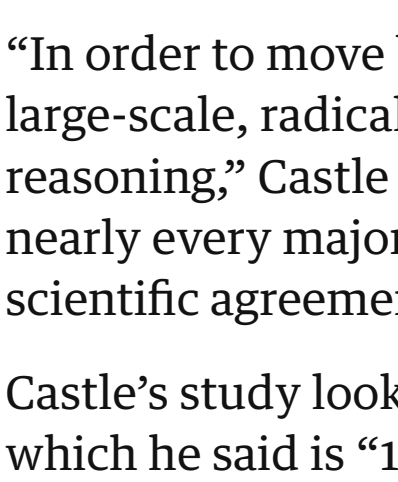
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The largest ever study investigating medical cannabis as a treatment for cancer, **published this week** in *Frontiers in Oncology*, found overwhelming scientific support for cannabis's potential to treat cancer symptoms and potentially fight the course of the disease itself.

The intention of the analysis was to solidify agreement on cannabis's potential as a cancer treatment, said Ryan Castle, research director at the Whole Health Oncology Institute and lead author of the study. Castle noted that it has been historically difficult to do so because marijuana is still federally considered an illegal Schedule I narcotic.

“Our goal was to determine the scientific consensus on the topic of medical cannabis, a field that has long been dominated by a war between cherry-picked studies,” Castle said.

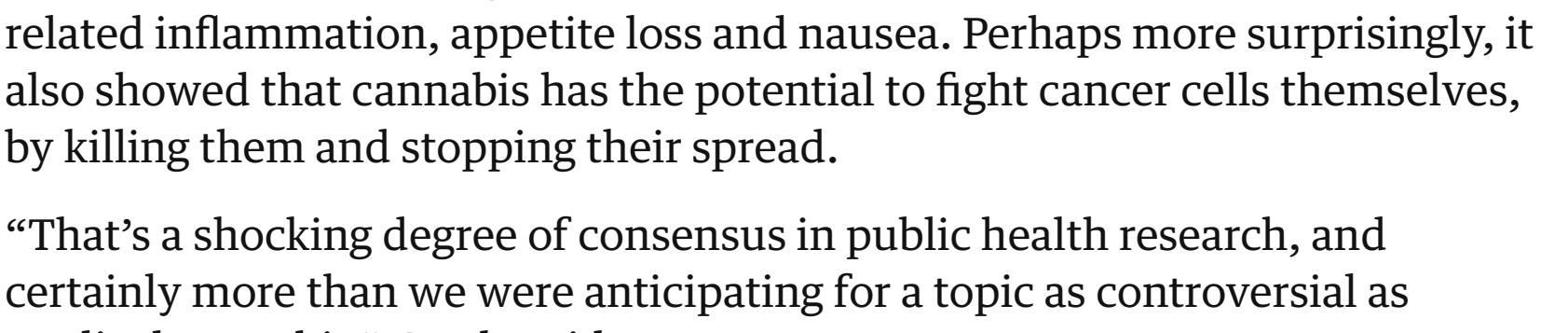


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The study was funded by Cancer Playbook, which works with the Whole House Oncology Institute to collect, analyze and share **data on patient-reported outcomes**.

While research restrictions on Schedule I substances severely hamper clinical research on cannabis in humans, there is a large body of observational studies on medical cannabis and cancer – as well as lab research – that looks at cannabis's effect on tumors in test tubes and in animals. The analysis included as many of those studies as possible.



“In order to move beyond bias – conscious or not – it was essential to use a large-scale, radically inclusive methodology based on mathematical reasoning,” Castle said, adding: “We wanted to analyze not just a handful, but nearly every major medical cannabis study to find the actual points of scientific agreement.”

Castle's study looked at more than 10,000 studies on cannabis and cancer, which he said is “10 times the sample size of the next largest study, which we believe helps make it a more conclusive review of the scientific consensus”.

To analyze the massive quantity of studies, Castle and his team used AI – specifically, the natural language processing technique known as “sentiment analysis”. This technique allowed the researchers to see how many studies had positive, neutral or negative views on cannabis's ability to treat cancer and its symptoms by, for example, increasing appetite, decreasing inflammation or accelerating “apoptosis”, or the death of cancer cells.

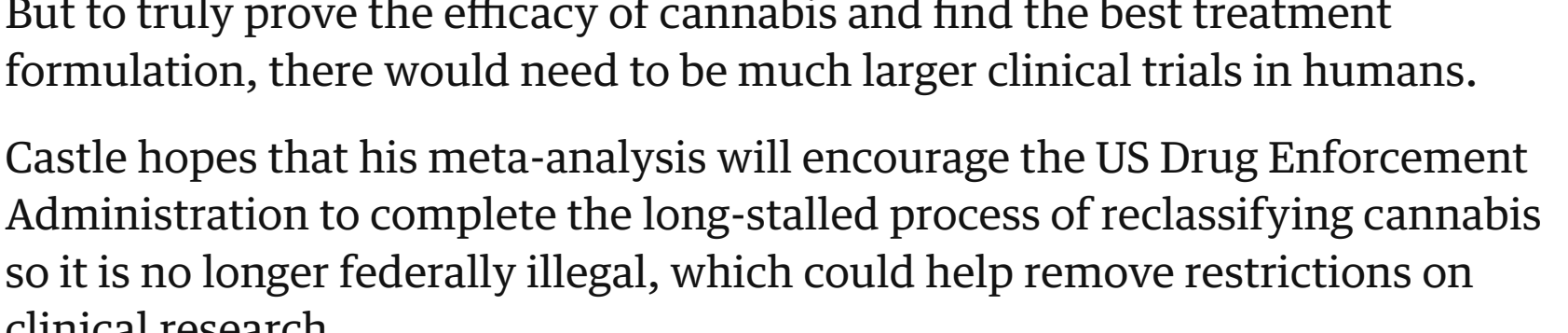
Castle says his team hoped to find “a moderate consensus” about cannabis's potential as a cancer treatment, and expected the “best case scenario” to be something like 55% of studies showing that medical cannabis improved cancer outcomes.

“It wasn't 55-45, it was 75-25,” he said.

The study overwhelmingly supported cannabis as a treatment for cancer-related inflammation, appetite loss and nausea. Perhaps more surprisingly, it also showed that cannabis has the potential to fight cancer cells themselves, by killing them and stopping their spread.

“That's a shocking degree of consensus in public health research, and certainly more than we were anticipating for a topic as controversial as medical cannabis,” Castle said.

Medical cannabis is controversial when it comes to cancer. A 2024 meta-analysis published last year in *Jama* found that adults with cannabis-use disorder – defined by criteria including an inability to stop or cut down – **were 3.5-5 times more likely to develop head and neck cancer**. Donald Abrams, an oncologist and professor emeritus of medicine at the University of California, San Francisco, says that study was “flawed” in his opinion, “as those patients are so often using tobacco and alcohol, known risk factors for those cancers”.



For his part, Abrams has found cannabis to be useful for cancer patients managing symptoms like appetite loss, nausea, pain and anxiety. But he is skeptical of claims that cannabis can actually *fight* cancer.

“I have been an oncologist in San Francisco for 42 years now where many if not most of my patients have had access to cannabis. If cannabis cures cancer, I have not been able to appreciate that,” he said.

Still, Abrams admits that “there is elegant pre-clinical evidence from test tubes and animal models that cannabis can affect cancer cells or transplanted tumors” but “as yet those findings have not translated into clinical benefit in people”.

Castle, however, believes that the combination of pre-clinical evidence and patient reported outcomes show that cannabis does have cancer-fighting potential.

A **small pilot trial** in which 21 patients received either a placebo or a cannabis-based medication in addition to traditional chemotherapy found that those who received the cannabis-based medication survived for longer. Another study of **119 cancer patients** found that synthetic CBD helped reduce tumor size and tumor cell circulation.

But to truly prove the efficacy of cannabis and find the best treatment formulation, there would need to be much larger clinical trials in humans.

Castle hopes that his meta-analysis will encourage the US Drug Enforcement Administration to complete the long-stalled process of reclassifying cannabis so it is no longer federally illegal, which could help remove restrictions on clinical research.

“We are not arguing that the standards for adopting new cancer treatments should be lower. We are arguing that medical cannabis meets or exceeds those standards,” he said, “often to a greater extent than current pharmaceutical treatments.”

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