

Folic acid can help prevent birth defects

researchers - including experts from the University of Central Florida and Emory University - has demonstrated, for the first time in a field study, that using folic acid-fortified bifida and anencephaly, iodised table salt can contributing to a high prevent multiple severe birth defects.

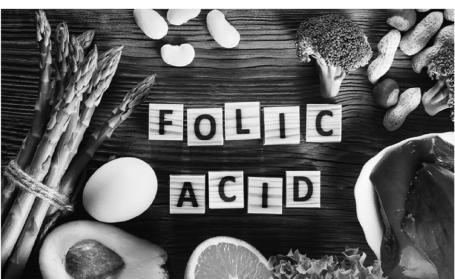
women having enough folic acid in their bodies before and during pregnancy to prevent permanent and lifethreatening birth defects, such as spina bifida and anencephaly, has been known for decades. The World Health Organisation recommends that all women should take supplement pills with 400 micrograms of folic acid daily, from the moment they begin attempting to conceive through the first three months of pregnancy.

Mandatory staple food fortification with folic acid is a cost-effective, safe, and an equitable way to address the issue. In May 2023, the World Health Assembly adopted a resolution promoting food fortification with folic acid to accelerate the slow pace of prevention of spina bifida and other birth defects associated

A team of international levels at the time of early pregnancy.

Yet approximately 260,000 births worldwide - about 20 per every 10,000 births - are still affected by spina number of stillbirths, elective pregnancy The importance of terminations, and deaths of infants and young children. While folic acid has been added through mandatory staple grain food fortification in about 65 countries, including the United States, more than 100 countries have yet to implement fortification due to challenges that include limited capacity for large-scale fortification of staple grains in these regions or lack of political will. A new study published recently showed that a solution is not only possible, many people already have it on their kitchen tables.

The clinical trial showed that mixing folic acid to commercially available iodized table salt, based on the existing average daily consumption of salt, increased serum folate levels among participants to levels needed for prevention of spina bifida and anencephaly. The with low maternal folate increase was significant,



a 3.7-fold improvement before and after a fourmonth period of using the study salt with iodine and folic acid.

"We proved that folic acid can get into the blood through salt. Hopefully countries that have not already implemented fortification programs can now look at their infrastructures and realize that salt fortification is cheap and it's really easy to add in the amount of folic acid needed to save lives," says Jogi Pattisapu, MD, the study's lead author and a neurosurgeon from UCF's College of Medicine.

"It might just turn -- who consumed the

the salt a little yellow, but the participants did not mind and we know it works. What we need now is action."

Pattisapu credits the study's successful outcome to the collaborative nature of the research team, specifically the efforts and expertise of researchers from Emory University's Rollins School of Public Health and the colleagues from multiple institutions in India, who co-led the study and recruited and monitored the 83 nonpregnant women -- who were between the ages of 18-45, from four different villages in southern India

folic acid-fortified salt as part of their regular diet during a four-month period in 2022.

India has a high prevalence of spina bifida and anencephaly.

"This is a global goodwill involving the health of mothers and babies. We are making sure we apply the knowledge we have," says Vijaya Kancherla, an associate professor in the Department of Epidemiology at Rollins. other causes. It also raises

strategy to treat infertility

New research from Oregon Health & Science University describes the science behind a promising technique to treat infertility by turning a skin cell into an egg that is capable of producing viable embryos.

Researchers at OHSU documented in vitro gametogenesis, or IVG, in a mouse model through the preliminary steps of a technique that relies upon transferring the nucleus of a skin cell into a donated egg whose nucleus has been removed. Experimenting in mice, researchers coaxed the skin cell's nucleus into reducing its chromosomes by half, so that it could then be fertilised by a sperm cell to create a viable embryo.

"The goal is to produce eggs for patients who don't have their own eggs," said senior author Shoukhrat Mitalipov, PhD, director of the OHSU Center for Embryonic Cell and Gene Therapy.

The technique could be used by women of advanced maternal age or for those who are unable to produce viable eggs due to previous treatment for cancer or



Study unveils new

the possibility of men in same-sex relationships having children who are genetically related to both parents.

Rather than attempting to differentiate induced pluripotent stem cells, or iPSCs, into sperm or egg cells, OHSU researchers are focused on a technique based on somatic cell nuclear transfer, in which a skin cell nucleus is transplanted into a donor egg stripped of its nucleus. In 1996, researchers famously used this technique to clone a sheep in Scotland named Dolly.

In that case, researchers created a clone of one parent.

In contrast, the OHSU study described the result of a technique that resulted in embryos with chromosomes contributed from both parents. The process involves three

Researchers transplant the nucleus of mouse egg that is stripped of its own nucleus.

cytoplasm - liquid that fills cells - within the donor egg, the implanted skin cell nucleus discards half of its chromosomes. The process is similar to meiosis, when cells divide to produce mature sperm or egg cells. This is the key step, resulting in a haploid egg with a single set of chromosomes.

Researchers then fertilize the new egg with sperm, a process called in vitro fertilization. This creates a diploid embryo with two sets of chromosomes - which would ultimately result in healthy offspring with equal genetic contributions from both parents.

The researchers found that the skin cell's nucleus segregated its chromosomes each time it was implanted in the donor egg. In rare cases, this happened perfectly, with one from each pair of matching egg and sperm chromosomes.

"This publication basically shows how we achieved haploidy. In the next phase of this research, we will determine how we enhance that pairing a mouse skin cell into a so each chromosomepair separates correctly," Mitalipov said.

Blood-based marker to identify sleep deprivation

A blood test that can accurately detect when someone has not slept for 24 hours has been developed by experts at Monash University, in Australia, and the University of Birmingham, in the UK.

This level of sleep deprivation increases the risk of serious injury or fatality in safety critical situations.

The biomarker used a combination of markers found in the blood of healthy volunteers. Together, these markers accurately predicted when the study volunteers had been awake for more than 24 hours under controlled laboratory conditions.

The biomarker detected whether individuals had been awake for 24 hours with a 99.2 percent probability of being correct, when compared to their own well-rested sample. When a single sample was considered without the well-rested comparison (similar to a diagnostic blood test), it dropped to 89.1 per cent, which was still very high.

With about 20 per cent of road accidents worldwide caused by sleep deprivation, researchers hope the discovery may inform future tests to quickly and simply identify sleep deprived drivers. The biomarker could also be developed for other situations where sleep deprivation may lead to catastrophic consequences, such as in safety-critical workplaces.

Senior author Professor Clare Anderson led the research while she was with the Monash



University School of Psychological Sciences and Turner Institute for Brain and Mental Health. She is now Professor of Sleep and Circadian Science at the University of Birmingham in the UK.

"This is a really exciting discovery for sleep scientists, and could be transformative to the future management of health and safety relating to insufficient sleep," Professor Anderson said. "While more work is required, this is a promising first

"There is strong evidence that less than five hours' sleep is associated with unsafe driving, but driving after 24 hours awake, which is what we detected here, would be at least comparable to more than double the Australian legal limit of alcohol performance

The test may be also ideal for future forensic use but further validation is required.

First author Dr Katy Jeppe, from the Monash Proteomics and Metabolomics Platform, previously from the School of Psychological Sciences, said it was difficult to say how developed for post-

accident use.

controlled environment and maybe under forensic conditions, particularly if it was to be used as evidence for crashes involving drivers falling asleep,"

"Given it's blood, the test is more limited in a roadside context,

Dr Jeppe said.

but future work could examine whether our metabolites, and therefore the biomarker, are evident in saliva or breath." This sleep deprivation

awake, but can detect down to 18 hours awake. A biomarker for limited sleep over the previous night could be developed but more research is required to combine the time since sleep with the amount of sleep in the predictions.

Institutet in Sweden reveals that immune cells in the liver react to high cholesterol levels and eat up excess cholesterol that can otherwise cause damage to arteries. The findings suggest that the response to the onset of atherosclerosis begins in the liver. Cholesterol is a type of fat that

is essential for many functions in the body, such as making hormones and cell membranes. However, too much cholesterol in

A new study from Karolinska

biomarker is based the blood can be harmful, as it can on 24 hours or more stick to the walls of the arteries and form plagues that narrow or block the blood flow. This results in atherosclerotic

cardiovascular disease, the primary underlying cause of heart attacks and strokes, and the leading cause of death worldwide.

In the current study, researchers wanted to understand how different tissues in the body react to high levels of LDL, also called 'bad cholesterol', in the blood.

To test this, they created a



Liver immune system eats up

bad cholesterol

system where they could quickly increase the cholesterol in the blood of mice.

'Essentially, we wanted to detonate a cholesterol bomb and see what happened next," says Stephen Malin, lead author of the study and principal researcher at the Department of Medicine, Solna, Karolinska Institutet.

"We found that the liver responded almost immediately and removed some of the excess cholesterol."

However, it wasn't the typical liver cells that responded, but a type of immune cell called Kupffer cells that are known for recognising foreign or harmful substances and eating them up. The discovery made in mice was also validated in human tissue samples.

"We were surprised to see that the liver seems to be the first line of defence against excess cholesterol and that the Kupffer cells were the ones doing the job," says Stephen Malin.

"This shows that the liver immune system is an active player in regulating cholesterol levels, and suggests that atherosclerosis is a systemic disease that affects multiple organs and not just the arteries."

The researchers hope that by understanding how the liver and other tissues communicate with each other after being exposed to high cholesterol, they can find new ways to prevent or treat cardiovascular and liver diseases.

"Our next step is to look at how other organs respond to excess cholesterol, and how they interact with the liver and the blood vessels in atherosclerosis," says Stephen Malin. "This could help us develop more holistic and effective strategies to combat this common and deadly disease."

The COVID-19 virus can persist in the blood and tissue of patients for more than a year after the acute phase of the illness has ended, according to new research from UC San Francisco that offers potential clues to why some people develop long COVID.

The scientists found pieces of SARS-CoV-2, referred to as COVID antigens, lingering in the blood up to 14 months after infection and for more than two years in tissue samples from people who had COVID.

"These two studies provide some of the strongest evidence so far that COVID antigens can persist in some people, even though we think they have normal immune responses," said Michael Peluso, MD, an infectious disease researcher in the UCSF School of Medicine, who led both studies.

The findings were presented at the Conference on Retroviruses and Opportunistic Infections (CROI).

Early in the pandemic, soon the test could be COVID-19 was thought to be a transient illness. But a growing number of patients, even those "Next steps would who had previously been healthy, be to test it in a less continued having symptoms,

such as, brain fog, digestive problems and vascular issues, for months or even years.

The researchers looked at blood samples from 171 people who had been infected with COVID. Using an ultra-sensitive test for the COVID "spike" protein, which helps the virus break into human cells, the scientists found the virus was still present up to 14 months later in some people.

Among those who were hospitalized for COVID, the likelihood of detecting the COVID antigens was about twice as high as it was for those who were not. It was also higher for those who reported being sicker, but were not hospitalized.

"As a clinician, these associations convince me that we are on to something, because it makes sense that someone who had been sicker with COVID would have more antigen that can stick around," Peluso said.

Since the virus is believed to persist in the tissue reservoirs, the scientists turned to UCSF's Long COVID Tissue Bank, which contains samples donated by patients with and without long COVID.

They detected portions of viral RNA for up to two years after infection, although there was no evidence that the person had become reinfected. They found it in the connective tissue where immune cells are located, suggesting that the viral fragments were causing the immune system to attack. In some of the samples, the researchers found that the virus could be active.

Peluso said more research is needed to determine whether the persistence of these fragments drives long COVID

and such associated risks as heart attack and stroke.

But, based on these findings, Peluso's team at UCSF is involved in multiple clinical trials that are testing whether monoclonal antibodies or antiviral drugs can remove the virus and improve the health of people with long COVID.

"There is a lot more work to be done, but I feel like we are making progress in really understanding the long-term consequences of this infection," Peluso said.

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CIN: U65900DL2020PLC366027 AUCTION NOTICE

The following borrowers of Shivalik Small Finance Bank Ltd. are hereby informed that Gold Loan/s availed by them from the Bank have not been adjusted b them despite various demands and notices including individual notices issued by the Bank. All borrowers are hereby informed that it has been decided to auction the Gold ornaments kept as security with the Bank and accordingly 28.03.2024 has been fixed as the date of auction at 03:00 pm in the branch remises from where the loan was availed. All, including the borrowers, account holders and public at large can participate in this auction on as per the terms and conditions of auction. The auction will be conducted online https://egold.auctiontiger.net on 28 03 24 from 03:00 pm to 05:00 pm

Branch	Account No.	Actt Holder name	Father's/ Spouse Name	Address	Ac opening Date	Payoff
CHENNAI	101042516409	PREMKUMAR A	S/O ALAGURAJ	D NO 5 2 21A ,THENITALUK, EAST STREET, V E E R A P A N D I (T P), T H E N I MUTHUTHEVANPATTITN 625534	14-06-2023	189,072.7
CHENNAI	104142510081	PREMKUMAR A	S/O ALAGURAJ	D NO 5 2 21A ,THENITALUK, EAST STREET, V E E R A P A N D I (T P), T H E N I MUTHUTHEVANPATTITN 625534	09-01-2024	49,244.3
CHENNAI	104142510156	PREMKUMAR A	S/O ALAGURAJ	D NO 5 2 21A ,THENITALUK, EAST STREET, V E E R A P A N D I (T P), T H E N I MUTHUTHEVANPATTITN 625534	29-01-2024	38,241.7

Authorised Officer, Shivalik Small Finance Bank Ltd.