

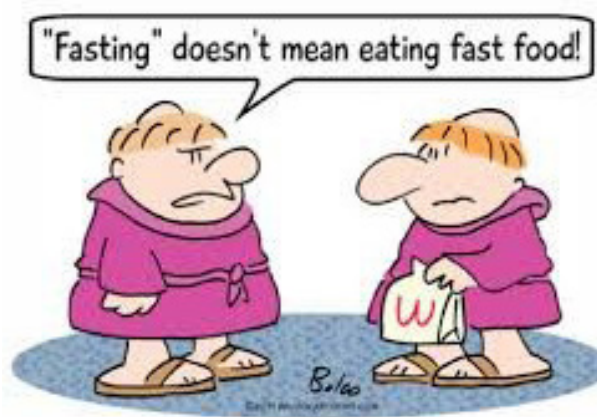
Health Matters

Intermittent fasting may prevent blood clotting

V.V.S. Manian
Intermittent fasting is not just a trendy health hack; it also has some serious medical benefits. As demonstrated in recent studies, it promotes a healthy gut microbiome, aids in significant weight loss, improves diabetes control and insulin sensitivity, and reduces inflammation throughout the body. But don't just stop at fasting - make sure your diet is rich in fiber, leafy greens, legumes, and yogurt to create the perfect environment for beneficial bacteria to thrive. "Your gut will thank you," says Patrick Kee, MD, PhD.

A groundbreaking study has now added another feather to the intermittent fasting cap: it may help prevent blood clotting. Yes, it turns out that skipping a few meals might be a good way to protect your heart, after all. Fasting isn't a new concept—it's been practiced for centuries across different cultures and religions. But in today's fast-food society, we may have forgotten some of the wisdom passed down by our ancestors, especially when it comes to the health benefits of fasting.

In some Hindu traditions, women fast during festivals such as Karwa Chauth, Teej and Chhath to pray for the well-being of their husbands and families. Many Hindus also observe fasting on specific days of the month, like Purnima (full moon) and Ekadaṣī (the eleventh



day after the new and full moon), essentially fasting every fortnight. Christians, on the other hand, fast for 40 days to honour Christ's sacrifices and as a test of self-discipline. I mean, if you can survive 40 days without food, surely resisting that second donut isn't such a big deal, right? Similarly, Muslims fast during Ramadan to get closer to the Almighty, honour the revelations of the Quran, help the poor through charity, and, perhaps most impressively, to practice self-control over their appetites. All of these fasting traditions are rooted in deeper spiritual and social meanings, and it turns out, there may be even more physical benefits than we realised.

The new study that caught our attention shows that intermittent fasting may help reduce the components of blood clotting by promoting the production of indole-3-propionamide (IPA) by gut microorganisms. Blood clot formation can lead to life-threatening

events like strokes and heart attacks, and so understanding how to mitigate these risks is crucial.

A study published in Life Metabolism examined the effects of intermittent fasting on blood clotting. The research, which involved 160 human participants, blood samples, and mice models, found that intermittent fasting helps inhibit platelet activation and clot formation. Platelet activation is one of the early stages of blood clot formation—a process that can be problematic, particularly in cases of heart attacks. By enhancing the gut's production of IPA, intermittent fasting may help slow this process, effectively reducing the likelihood of clot formation.

Further experiments on mice showed that intermittent fasting could also reduce brain and heart damage caused by the temporary loss and subsequent return of blood flow, a common complication in heart attacks and strokes.

So, why does intermittent

fasting work? Researchers are still investigating the exact mechanisms, but the process involves limiting food intake during certain periods while eating normally at other times. In the body, blood clotting occurs through a complex process involving platelet activation, which eventually leads to thrombus (clot) formation. Intermittent fasting, it seems, interferes with this process by reducing platelet activation, thus providing cardiovascular benefits.

In light of these findings, intermittent fasting could become a lifestyle-based intervention to reduce cardiovascular risks, particularly for those at high risk of stroke or heart attack. It could serve as a complementary therapy alongside current cardiovascular medications.

This study also highlights the important connection between gut health and broader bodily functions, including cardiovascular health. It's a reminder that what we eat (or don't eat) has a profound impact on how our body operates. So, before you decide to raid the fridge, remember: a little bit of "starvation" might just be the heart-healthy strategy you never knew you needed.

Patients interested in trying intermittent fasting should consult with their healthcare providers to determine the best approach, ensuring it's a good fit for their overall health plan.

Cryo-electron microscopy sheds new light on cancer target

Every day, billions of cells in your body divide, helping to replace old and injured cells with new ones. And each time this happens, your entire genetic library - your genome, which totals more than 3 billion base pairs of DNA - has to be copied, precisely, from the parent cell to the new daughter cell.

When organisms encounter problems - what scientists call "replication stress" - this process is more prone to errors, which often cause mutations in the genetic code. These mutations can be copied forward and give rise to cancer and other diseases.

One source of this stress is when the bio-machinery that does that copying gets physically stuck. And one of the things it can get stuck on is the DNA template itself, which can adopt alternative structures in certain contexts. For example, regions of the genome that are rich in guanine bases (represented by G in the DNA code) can fold into a DNA structure called a G-quadruplex, or G4 for short, which is more compact than normal DNA.

Using cryo-electron microscopy (cryo-EM), a team of structural and molecular biologists at Memorial Sloan Kettering Cancer Center (MSK) set out to investigate G4s -- which have gained



attention as potential therapeutic targets in cancer -- working to understand their influence on DNA replication. Additionally, the scientists unexpectedly captured for the first time a detailed picture of how the "engine" driving the cellular replication machinery moves along DNA in human cells.

Their findings, which were published March 7 in Science, one of world's leading scientific journals, not only reveal new details about how secondary DNA structures like G4s can impede DNA replication, but also offer new insights into fundamental human biology.

The study was led by co-first authors Sahil Batra, PhD, a research scholar in the lab of senior author Dirk Remus, PhD, and Benjamin Allwein, a graduate student in the lab of senior author Richard Hite, PhD. Both labs are part of the Sloan Kettering Institute, a hub for foundational biology

research at MSK.

"The DNA double helix is one of the most recognizable molecular structures in science," Dr. Batra says. "But DNA can actually exist in multiple shapes, and G-quadruplexes are one of them. There are drugs being developed to target G4s in cancer cells, but the mechanisms underlying G4s' harmful effects are not clear -- which is one of the reasons we are studying them." G4s have been associated with a number of well-known cancer-driving oncogenes like MYC and KRAS, the researchers say, as well as with cancer cells' ability to extend their lifespans by replenishing their telomeres, the protective caps on their chromosomes.

"So the idea is that by targeting G4s in cancer cells, you can lock them in place, preventing the DNA from being unwound and copied, and thus interfering with the ability of cancer cells to divide and proliferate,"

Dr. Remus says. "We've known that G4s are associated with genomic instability -- and now our study provides a much clearer understanding of how they work and why they're so detrimental."

Structural biologists use a variety of tools to be able to see the shapes of biological molecules and study how they physically interact with each other. This can provide insights that aren't available through other methods and allow researchers to identify opportunities, for example, to block or enhance the activity of a particular protein or complex of proteins.

This new study provides definitive evidence about how these secondary DNA structures can pose physical barriers to DNA replication machinery, along with raising new questions about how problems might be resolved to allow replication to be completed.

— like an obstacle on the monorail track -- inside the center of the ring-shaped protein complex called the CMG helicase that serves as the engine for unwinding the strands," he says.

By uncovering precisely how G4s can block replication, scientists can now use that understanding to inform future studies and develop treatments that involve this critical cellular process.

Plant oils could lead to better health

People who consume plant-based oil instead of butter may experience beneficial health effects and even have a lower risk of premature death, according to a new study by investigators from Mass General Brigham, Harvard T.H. Chan School of Public Health, and the Broad Institute of MIT and Harvard. The researchers examined diet and health data from 200,000 people followed for more than 30 years and found that higher intake of plant-based oils, especially soybean, canola, and olive oil, was associated with lower total, cancer, and cardiovascular disease mortality, whereas butter

intake was associated with increased risk of total and cancer mortality.

"What's surprising is the magnitude of the association that we found - we saw a 17% lower risk of death when we modelled swapping butter with plant-based oils in daily diet. That is a pretty huge effect on health," said study lead author Yu Zhang, MBBS, research assistant at the Channing Division of Network Medicine at Brigham and Women's Hospital, a founding member of the Mass General Brigham healthcare system. Zhang is also a student in the Department of Epidemiology at Harvard Chan School.

A key difference between butter and oil is the types of fatty acids contained in them. Butter is rich in saturated fatty acids, while plant-based oils have more unsaturated fatty acids. While there have been many studies on dietary fatty acids, fewer studies have focused on their primary food sources, including butter and oils. Many previous studies have looked at a person's diet at a point in time and have been done in a small population, limiting their applicability to public health.

The new study analysed dietary data from 221,054 participants in the Nurses' Health Study (NHS), Nurses' Health Study II (NHSII), and Health Professionals Follow-up Study (HPFS). Every four years, they answered questions about how often they consumed certain types of food. The researchers used the data to estimate how much butter and plant oils they ate. Total butter intake included butter from butter and margarine blend, spreadable butter added to food and bread, and butter used in baking and frying at home. The intake of plant-based oils was estimated based on the reported use in frying, sautéing, baking, and salad dressing.

The researchers also identified participants who had died and their causes of death. Using statistics to compare death rates across different diet intake levels, the researchers found that participants who ate the most butter had a 15% higher risk of dying than those who ate the least.



A novel analysis of more than 375 published studies concluded that the association between chronic pain and rates of depression and anxiety is staggering. The study, led by investigators at Johns Hopkins Medicine found that 40% of adults with chronic pain experienced "clinically significant depression and anxiety." Among those most at risk, the analysis showed, were women, younger adults and people with fibromyalgia.

For decades, research has provided evidence of clear links between pain and mood, but the new study's leaders say the co-occurrence levels they identified pose a significant public health concern that should re-

Chronic pain linked to high rates of depression

quire routine screening in clinical settings, better access to specialty care and development of innovative therapies.

Historically, studies show that people with chronic pain and both depression and anxiety lack consistent access to specialized pain clinics focused on acute pain, and are routinely excluded from clinical trials for pain management.

Chronic pain, described as pain that persists for greater than three months, can be a debilitating condition. According to the Centers for Disease Control and Prevention, an estimated 20.9% of U.S. adults (51.6 million people) experienced chronic pain in 2021. Patients who have chronic pain exhibit symptoms of depression and anxiety. In fact, studies show that 20-40% of adults with

chronic pain have co-occurring depression and anxiety.

"Right now, we have effective psychological

treatments for depression and anxiety, and effective psychological treatments for chronic pain, but these treatments are often

siloed. In fact, many studies exclude people who with chronic pain who have depression or anxiety from clinical trials.

HDFC BANK
Registered Office: HDFC Bank House, Senapati Bapat Marg, Lower Parel (West), Mumbai - 400 013 and having one of its office as Retail Portfolio Management at HDFC Bank Ltd, 1st Floor, I-Think Techno Campus, Kanjurmarg (East), Mumbai - 400042.

SALE INTIMATION AND PUBLIC NOTICE FOR SALE OF SECURITIES PLEDGED TO HDFC BANK LTD.

The below mentioned Borrowers of HDFC Bank Ltd. (the "Bank") are hereby notified regarding the sale of securities pledged to the Bank, for availing credit facilities in the nature of Loan/Overdraft Against Securities.

Due to persistent default by the Borrowers in making repayment of the outstanding dues as per agreed loan terms, the below loan accounts are in delinquent status. The Bank has issued multiple notices to these Borrowers, including the final sale notice on the below-mentioned date whereby, Bank had invoked the pledge and provided 7 days' time to the Borrower to repay the entire outstanding dues in the below accounts, failing which, Bank would be at liberty to sell the pledged securities without issuing further notice in this regard. The Borrowers have neglected and failed to make due repayments, therefore, Bank in exercise of its rights under the loan agreement as a pledgee has decided to sell / dispose off the Securities on or after **20th March 2025** for recovering the dues owed by the Borrowers to the Bank. The Borrowers are, also, notified that, if at any time, the value of the pledged securities falls further due to volatility in the stock market to create further deficiency in the margin requirement then Bank shall at its discretion sell the pledged security within one (1) calendar day, without any further notice in this regard. The Borrower(s) shall remain liable to the Bank for repayment of any remaining outstanding amount, post adjustment of the proceeds from sale of pledged securities.

Sr. No.	Loan Account Number	Borrower's Name	Outstanding Amount as on 6 th March 2025 (In Indian Rupees)	Date of Sale Notice
1	XXXX0326	SUNIL KUMAR MEHTA	164.78	11-03-2025
2	XXXX8655	K R GEETHA RAMANI	7,08,775.33	11-03-2025
3	XXXX2365	K SUJATHA	67.93	11-03-2025
4	XXXX2100	R PUNITHA	99,802.64	11-03-2025
5	XXXX6876	J VAISALI	2,22,429.60	06-03-2025
6	XXXX4200	KRITHIKA G	2,23,901.00	06-03-2025
7	XXXX4502	MALAVIKA JAYARAM	3,84,835.48	06-03-2025
8	XXXX5404	KOUSALYA KAVUR	99,815.84	11-03-2025
9	XXXX9422	K K RAMACHANDRAN	9,64,902.00	11-03-2025
10	XXXX7759	K MADHAVAN	9,92,616.82	11-03-2025
11	XXXX1388	SELVAM YAMINI	11,38,873.82	06-03-2025
12	XXXX8511	PARVATHI	48,932.82	06-03-2025
13	XXXX1061	K SREEGAYATHRI	19,76,076.13	11-03-2025
14	XXXX2700	J RAJADURAI	4,14,777.88	11-03-2025

Date: 13.03.2025
Place: TAMIL NADU

Breakthrough research for treatment of ischemic heart failure

Researchers in the Michael E. DeBakey Department of Surgery at Baylor College of Medicine, the QIMR Berghofer Medical Research Institute in Brisbane, Australia, and collaborating institutions report a groundbreaking discovery in cardiac regeneration that offers new hope for the treatment of ischemic heart failure. The study reveals a novel approach to promoting cardiomyocyte proliferation.

"When the heart cannot replace injured cardiomyocytes with healthy ones, it becomes progressively weaker, a condition leading to heart failure. In this study, we investigated a new way to stimulate cardiomyocyte proliferation to help the heart heal," said co-corresponding author Dr. Riham Abouleisa, assistant professor in the Division of Cardiothoracic Surgery at Baylor.

SHIVALIK SMALL FINANCE BANK LTD.
Registered Office : 501, Salcon Aarum, Jasola District Centre, New Delhi - 110025
CIN : U65900DL2020PLC366027

AUCTION NOTICE

The following borrowers of Shivalik Small Finance Bank Ltd. are hereby informed that Gold Loans availed by them from the Bank have not been adjusted by 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 **27th March 2025** has been fixed as the date of auction at **03:00 pm** in the branch premises 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.

S. NO	Branch	Account No.	Actt Holder name	Father's/ Spouse Name	Address	Ac opening Date	Payoff
1.	CHENNAI	104142511253	MAHESWARAN G	C/O GANAPATHY	1 1672 A KALAINGAR STREET, GANDHI NAGAR REDHILLS, THIRUVALLUR, TAMIL NADU, 600052	23-10-2024	154,322.71
2.	CHENNAI	104142510761	BHARATH K G	S/O GAJENDRAN	X 87/1, GANGAIKARAIPURAM PRAKASAM STREET THIYAGARAYA NAGAR EXTN, CHENNAI, TAMILNADU, 600017	11-06-2024	144,250.76
3.	CHENNAI	104142510836	B S BABU	S/O P BALARAMAN	16/15, NOCHI KUPPAM, MYLAPORE, CHENNAI, TAMILNADU, 600004	02-07-2024	163,090.32
4.	CHENNAI	104142511174	P RANGANATHAN	S/O V PARANTHAMAN	NO 3, MAHATHMA GANDHI STREET AMBATTUR, GNANAMURTHY NAGAR EXTN, THIRUVALLUR, TAMILNADU, 600053	05-10-2024	115,190.41
5.	CHENNAI	104142511306	GOPU K R	S/O RAMACHANDRAN	NO 13, MUTHAMIL STREET PONNAMMAN NAGAR CHITLAPAKKA, CHENGALPATTU, TAMILNADU, 600064	01-11-2024	200,913.25
6.	CHENNAI	104142511311	MUJIBU R P M	S/O PEER MOHAMED IBRAHIM	NO 5, BHAVANI STREET TARAMANI TTTI TARAMANI, BHARATHI NAGAR, CHENNAI, TAMILNADU, 600113	02-11-2024	206,899.21
7.	CHENNAI	104142511315	PRAMOTH F	S/O FRANCIS	67, CRESHAR ROAD SITTALAPAKKAM, CHENGALPATTU, TAMILNADU, 600126	04-11-2024	285,101.04
8.	CHENNAI	104142511334	MURALI S	S/O SIVALINGAM	35/7, VAITHIYA NATHAN STREET TONDIPART TONDIPART, CHENNAI, TAMILNADU, 600081	07-11-2024	136,920.60

Auction date is 27th March 2025 @ 03:00 pm.
The Bank reserves the right to delete any account from the auction or cancel the auction without any prior notice.
Authorised Officer, Shivalik Small Finance Bank Ltd.