Can high-impact exercise delay joint replacement?

Counterintuitive as it may seem, more movement may help manage arthritis better. But it's not for all — a patient's overall fitness status holds the keys

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When 65-year-old homemaker Meera (name changed) sought treatment for knee osteoarthritis, she was finding it increasingly difficult to stay active despite regularly taking long walks and doing household chores. Rather than advising her to avoid strenuous activity, her physiotherapist prescribed modified high-intensity interval training (HIIT) — short bursts of exercise followed by brief recovery periods. Three sessions a week for six weeks included a regime of careful exercise that her weak knee could take: countertop push-ups, sit-to-stands, active counter mountain climbers, stepping jacks and wall sits, followed by muscle-release exercises and cold packs. Meera's knee held up, and over time, its strength and functional ability improved. Pain reduced and fear of progress towards knee replacement receded.

The long-held belief that higher impact exercise worsens osteoarthritis is now being challenged, with newer research pointing to the opposite. A recent study published in British Journal of Sports Medicine analysed data from 18,000 people with hip or knee osteoarthritis who had enrolled in Denmark's Good Life with osteoArthritis (GLA:D) registry. Researchers found those engaging in high-impact physical activity had 36-48% lower odds of hip replacement over the following year, while their knee replacement risk was no higher than those doing lower-impact exercise.

Not licence to start running

Though the findings are encouraging, they are not strong enough to change existing guidelines, says Dr Uma Kumar, head of rheumatology at AIIMS Delhi. "This study is observational, follows patients for only 12 months, and cannot establish that high-impact exercise itself prevents joint replacement." For decades, people with osteoarthritis have routinely been advised to stick to low-impact activities such as walking, swimming and cycling owing to concerns that repetitive impact could hasten joint damage. The new findings suggest clinicians may recommend higher-impact activities for select patients with hip osteoarthritis, and support continued participation among those with knee osteoarthritis when symptoms, functional capacity and patient goals allow.

> The type and intensity of exercise should depend on the stage of arthritis, the patient's age and medical conditions. Low-impact exercise is not always the right choice, but it is equally incorrect to conclude that high-impact activity will benefit every patient or delay joint replacement
>
> **Dr Mandeep S Dhillon,** DIRECTOR, ORTHOPAEDICS AND SPORTS MEDICINE AT FORTIS MOHALI

So what worked for Meera may not for others. The study should not be interpreted as a licence for everyone with arthritis to start running or playing high-impact sport. "In the study, patients who were able to participate in higher-impact activities may already have had a milder version of the disease, stronger muscles or better overall fitness than those who remained inactive," Dr Kumar points out. According to her, the findings support shared decision-making and individualised exercise prescription. Patients with mild osteoarthritis, good muscle strength and balance, and well-controlled symptoms may gradually progress to higher-impact activities under professional supervision, she says.

The Danish findings build on earlier evidence from a large US study of 89,377 runners and walkers followed for up to seven years, which found that recreational running was not associated with a higher risk of osteoarthritis or hip replacement. In fact, runners had a lower risk of both, although part of the benefit appeared to be related to their lower body mass index. Unlike the new Danish study, the US cohort primarily involved healthy runners and walkers rather than people already diagnosed with osteoarthritis.

Who is ready for it?

It's not about whether an exercise is labelled "high impact" but about whether the patient's body is ready for that level of loading , says Dr Vandana Sethi, senior sports physiotherapist and founder of PHYWorld Clinic. "Rehabilitation should be based on pain levels, muscle strength, balance, movement quality and joint function. It should include progressive strength training, balance exercises, mobility work, functional retraining, and education about pain and activity pacing rather than simply strengthening the affected joint," she adds.

Dr Sethi explains that all the loading joints — hips, knees, ankles that take the body's weight, pelvis, and even the shoulders when we are doing push-ups — benefit from supervised loading. But Dr Mayank Daral, assistant professor at Sports Injury Centre, Safdarjung Hospital says patients should not decide to do high-impact exercise on their own. "Doctors assess several factors before recommending such activities, including severity of arthritis on X-rays or MRI, pain during and after exercise, muscle strength, balance, previous sporting activity, age and medical conditions such as diabetes and hypertension," he says, adding that for select patients, brisk uphill walking, light jogging, recreational badminton, stair climbing and supervised jumping exercises may be introduced gradually.

Muscle strength is key

Orthopaedic surgeon Dr Rajesh Malhotra from Indraprastha Apollo Hospitals stresses the importance of building muscle strength and good functional capacity before one is struck by osteoarthritis. "Cartilage is living tissue that responds positively to intermittent loading for nourishment and lubrication when surrounding muscles are strong enough to absorb stress. But constant loading (such as in obesity) or very high-impact activity can damage cartilage," he says, adding that those with advanced osteoarthritis, unstable joints or poor neuromuscular control cannot get into high-impact activities.

Dr Mandeep S Dhillon, director, orthopaedics and sports medicine at Fortis Mohali, says there is no generalising the study's findings. "The type and intensity of exercise should depend on the stage of arthritis, the patient's age and medical conditions. Low-impact exercise is not always the right choice, but it is equally incorrect to conclude that high-impact activity will benefit every patient or delay joint replacement," he says.

TOI HealthTech

New kidney implant can do dialysis without needle pricks

Device that can filter waste while allowing a patient to mostly lead a normal life set for human trials

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India bears one of the world's largest kidney disease burdens, with more than 2 lakh new patients being diagnosed with end-stage kidney disease (ESKD) every year. But only 6-10% of them undergo dialysis and barely 1% gets new kidneys. For those on dialysis, repeated needle pricks and frequent hospital visits can be quite exhaustive.

A new implantable device promises to ease that ordeal by functioning as an artificial kidney. Named 'holly', it is designed by urologists Dr Nikhil Shah and Dr Hiep Nguyen, co-founders of medical device company Nephrodite in Atlanta, Georgia. "Holly is surgically placed inside the body, stays connected to blood vessels in the pelvis, and keeps filtering waste continuously like a normal kidney," says Dr Shah, unlike current dialysis sessions that filter waste and excess fluids from the blood only 2-3 times a week.

Dr K S Nayak, director of nephrology at Gleneagles Fortis Hospital, Hyderabad and lead medical advisor, Nephrodite India, says the technology could greatly improve quality of life, especially in India. "During the day, no one will even know the patient has a device implanted. They can work, travel and carry on with normal life, connecting to a bedside machine for water removal only when convenient, usually at night. It can serve as a bridge to kidney transplants or even become a destination therapy for many."

Holly was named a 'breakthrough device' by the US FDA in 2025 after encouraging animal studies (in living sheep) that showed it could safely replace kidney function over several days. FDA has also given the nod for human trials. The prototype has been perfected for over a decade, and is now in its pre-clinical phase. An animal study is expected in 2027 before human trials begin in India. The device is already being manufactured in Kochi, Bengaluru and Mumbai. Dr Nayak says it is currently the only medical device with a proven track record of providing a solution for ESKD.

Dr Sree Bhushan Raju, head of nephrology at Nizam's Institute of Medical Sciences, Hyderabad says that while earlier concepts involved bulky, wearable systems that were difficult to use, newer designs are smaller, lighter and more practical. "These implantable kidney systems have the potential to make dialysis simpler and more convenient, giving kidney failure patients more freedom. Manufacturing the device in India could reduce costs and improve access," he says.

India was chosen for its engineering, manufacturing and clinical research capabilities. "Our goal is to develop a scalable artificial kidney that can reduce dependence on dialysis centres and improve access to kidney replacement therapy worldwide," says Dr Shah.

HOW IT WORKS

- Implanted surgically, connected to blood vessels in pelvis permanently
- Mimicks kidney by filtering waste, excess fluid from blood continuously
- External dialysate tube connects device to compact bedside unit for 8 odd hours every day (preferably overnight) to drain excess fluid
- Doesn't need repeated needle punctures, unlike conventional dialysis
- Once disconnected from bedside unit, it operates invisibly, letting patients work, travel, and go about daily life as usual

WHICH ONE IS HEALTHIER?

Soybean curry (30g dry soybeans)	1 bowl	Egg curry (2 eggs)
130-150	CALORIES	190-220
11-12g	PROTEIN	12-13g
5-6g	FAT	13-15g
9-10g	CARBS	2g
5-6g	FIBRE	Nil

A serving of soybean curry has almost the same amount of protein as a two-egg curry, while adding fibre and plant compounds that eggs do not provide. However, eggs are an excellent source of Vitamin B12 (nerve function, cellular health, producing blood) and choline, which is vital for brain health, memory, and liver function, particularly in the growing years. For those who avoid gluten, soybeans can also trigger inflammation. Both the curries support healthy ageing and gut health, and reduce inflammation. So, eating both on different days is likely more beneficial than replacing one with the other.

Source: Ishi Khosla, clinical nutritionist and author, 4G Code to Good Health

TIMES NATION

I-Day first: Vande to be sung before national anthem

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New Delhi: For the first time at the 80th Independence Day function at Red Fort this year, over 27,000 dignitaries, visitors and students will stand as Vande Mataram is sung, defence secretary Rajesh Kumar Singh said Monday. Besides this, 'Yuva Shakti' will be on full display.

"As 2026 marks 150 years of Vande Mataram, the national song that inspired millions during the freedom struggle will be sung from the ramparts of the Red Fort for the first time as a tribute to its enduring legacy." Under the ceremonial sequence, it will be played upon the Prime Minister's arrival on the ramparts, followed by unfurling of the national flag and playing of the national anthem, he said.

A floral decoration of Vande Mataram will be formed by 2,500 cadets of NCC and 'My Bharat' volunteers on Gyanpath opposite the ramparts. An IAF Mi-17 helicopter will carry a banner commemorating 150 years of the national song and shower flower petals.

The celebrations will also acknowledge the success of youth in different spheres. "Ninteen students who won medals in international physics, chemistry, biology and mathematical Olympiad have been invited for the function and will be seated on the ramparts," he said, adding, "Over 500 students from Delhi govt schools have also been invited for the event."

> **A floral decoration of Vande Mataram will be formed by 2,500 cadets of NCC and 'My Bharat' volunteers on Gyanpath**

On whether 'Yuva Shakti: Leading the journey to Viksit Bharat @2047' theme was decided after the Jantar Mantar student protest, Singh said, "Such big celebrations are planned much in advance. It was planned much before the protests."

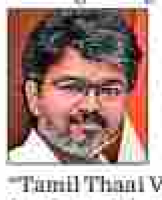
About the controversy in the past involving leader of the opposition Rahul Gandhi's seating arrangement, the defence secretary said, "In the past, his seat was assigned as per the table of precedence. This year too, the leader of the opposition has been invited and his seating would be as per the table of precedence, which is exactly after Cabinet ministers."

Over 1,500 Delhi-based people from various states/UTs dressed in traditional attire have also been invited to witness the grand ceremony.

TN to play state song ahead of Vande Mataram & Jana Gana

Chennai: The Tamil Nadu assembly Monday unanimously adopted a special resolution mandating 'Tamil Thaai Vazhthu' as the opening song — ahead of Vande Mataram and the national anthem — at events organised by educational institutions, govt offices, PSUs and public institutions.

The resolution moved by CM **C Joseph Vijay** is seen as a counter to Centre's July 9 directive on singing Vande at the beginning of govt events. Tabling the resolution, he said his govt would not compromise on protecting Tamil pride. He said offering "muthal mariyathai" (first honour) to Tamil was the state's duty. "Tamil Thaai Vaazhthu should be in the forefront. It is our right," he said, urging all parties to support the cause.



Vijay said Tamil was not merely a language but a source of "gethu" (pride) and that the language holds a power of its own. While BJP's lone MLA, M Bhojarajan, maintained silence, members of all other parties supported the resolution.

DMK's former higher education minister Govi Chezhiyan welcomed the resolution. Endorsing it, AIADMK general secretary Edappadi K Palaniswami highlighted the contributions of party's M G Ramachandran and J Jayalalithaa to the Tamil language. TNN

Amid delimit buzz, NCP-SP MPs meet PM: Eight Lok Sabha MPs of NCP-SP, led by Supriya Sule, met PM Narendra Modi Monday amid buzz that govt is eyeing their support for its Constitution amendment bill for delimitation. TNN

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Bid No.: 0N/EL/CDR-0F/217 E-TENDER NOTICE Tender ID: 2026_NCRTC_285229_1
Online bids are invited for Design, Supply, Installation, Testing, Commissioning and integrated test of Facade lighting work along with 2 years DLP and further 3 years AMC beyond 2 years DLP at Sarai Kale Khan Namo Bharat Station of Delhi-Ghaziabad-Meerut Namo Bharat Corridor of NCRTC.
For detailed information and subsequent addendum/corrigendum (if any), please visit NCRTC website www.ncrtc.in or CPP Portal www.eprocure.gov.in/eprocure/app from 12.08.2026 to 23.09.2026 (upto 1500 hrs).
Sd/- DGM/E&M

E-Auction Sale Notice under IBC, 2016.
Notice for Sale of Assets
Plutus Infraventures Private Limited
CIN :U51432CT2014PTC001546
Regd. Office :Paradise, Ring Road No.-1, Kaushal Ghri Nirman Samiti, Raipura Chowk, Raipur – 492001 (CG)
Liquidator's Office: A D B & Company, Chartered Accountants, 1st Floor, Mahavir Gaushala Complex, Moudhapara, Raipur (C.G.) – 492001
Sale of Assets of M/s Plutus Infraventures Private Limited (In Liquidation) forming part of Liquidation Estate by the Liquidator appointed by the Hon'ble National Company Law Tribunal, Cuttack Bench vide order I.A. (IB) No. 28/CB of 2023 dated 24th January 2023 The sale will be done by the undersigned through e-auction platform- https://ibbi.baanknet.com

Auction	Description of the Property	Reserve Price / EMD Amount / Bid Incre. Value
1.	Land & Building: Freehold diverted land (0.327 Hect.) situated within the boundary wall at Kh.No. 83/20 P.H. No. 104/58, in front of Indian Bank, DDU Nagar, Daganiya, Pt. Deendayal Ward No. 69, Raipur-492001 (CG)	6,30,67,504/- / 6,30,000/- / 2,00,000/-
2.	Plant & Machinery: Royal Enfield - Classic (Motorcycle) 346 CC & 2016 Model	41,043/- / 4,100/- / 1,000/-

EMD Submission Deadline- Date- 26.08.2026
Date & Time of E- Auction : Date – 29.08.2026, Time – 01:00 PM to 02:00 PM with unlimited extension of 05 minutes each.
Terms & Conditions of the E-Auction are as under: 1. E-Auction will be conducted on "AS IS WHERE IS", "AS IS WHAT IS" AND "WHATEVER THERE IS" basis. As such sale of assets of the company is without any recourse or any kind of warranties and indemnities and is being conducted through approved E-Auction Service Provider PSB Alliance Private Limited. All the terms and conditions of the auction are available at https://ibbi.baanknet.com. 2. Prospective bidders need to register on Baanknet auction platform. (https://ibbi.baanknet.com) and should carefully read the eligibility criteria and shall submit the requisite documents, including a declaration of eligibility under Section 29A of the Insolvency and Bankruptcy Code through the electronic auction platform. 3. Prospective bidders shall deposit the Earnest Money Deposit (EMD) through the Baanknet auctionplatform. It is also be specified that if the bidder is found ineligible undersection 29A or under any other criteriaof the Code, EMD shall be forfeited. 4. All the auction process documents are uploaded on the Baanknet Portal and the participants must download the same and submit all the documents on the portal. 5. The Qualified Bidders, prior to submitting their Bid, should make their independent enquiries regarding the Company, Assets, Claims and Liabilities, Commercial and Financial Commitments, Operational and Maintenance Charges and other recurring and incidental business costs, if any, at their own expense and satisfy themselves. 6. The Successful Bidder will be responsible for the applicable stamp duties, legal cost, transfer charges and fees, GST and other taxes related to the sale unit under this E-Auction and for completing the documentation and obtaining the permission relating to the sale of assets of Company. 7. As per the Paragraph 12 of Schedule I of IBBI (Liquidation Process), Regulations, 2019, on the close of the auction, the highest bidder shall be invited to provide balance sale consideration within ninety days of the date of such demand. Provided that payments made after thirty days shall attract interest at the rate of 12%. Provided further that the sale shall be cancelled if the payment is not received within ninety days. 8. It is clarified that, this invitation purports to invite prospective bidders and does not create any kind of binding obligation on the part of the Liquidator or the Company to effectuate the sale. The Liquidator reserves the right to cancel or modify the e-auction process and / or not to accept and / or disqualify any interested party / potential investor / bidder without assigning any reason and without any liability. 9. The property is being sold with all the existing and future encumbrances whether known or unknown to the Liquidator. The Liquidator shall not be responsible in any way for any third-party claims / rights / dues. 10. The sale shall be subject to regulation prescribed under the Insolvency & Bankruptcy Code, 2016.
Bankim Shukla
Liquidator,
Plutus Infraventures Private Limited-In Liquidation
IBBI Reg. No : IBBI/IPA-001/IP-P00606/2017-18/11067
AFA Valid Till 30.06.2027
Place: Raipur
Date: 12.08.2026
E-mail Id :liquidation.pipl@gmail.com, bankimshukla2016@gmail.com

राजस्थान धरोहर प्राधिकरण
[illegible]
Tel: 0141-2615648/40 Email: rhppa.jaipur@gmail.com
ई-निविदा सूचना संख्या 30/2026-27
[illegible]

क्र. सं.	कार्य का विवरण	अनुमानित लागत (रु.)	कार्य पूर्ण करने की अवधि
1	Development Work of Gathering Area for Statue at Baneshwar Dham, Dist. Dungarpur. UBN is: [illegible]	143.19 Lakh	9 Months

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[illegible] मुख्य कार्यकारी अधिकारी

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Ref No. BIRAC/VAC/ADV-25/Jul/02
Biotechnology Industry Research Assistance Council (BIRAC) is a not-for-profit Section 8, Schedule B, Public Sector Enterprise, set up by Department of Biotechnology (DBT), Government of India invites online applications for the following position: -

Position Code	Position	No. of Vacancies
CON-66	Senior Consultant-Communications and Outreach	01
CON-67	Associate Consultant - Communications and Outreach	01

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Last Date for Online Applications: Aug 20, 2026

Office of The Executive Engineer P.W.D (B/R) Division Katni (M.P.)
E-mail- eepwdkatni@nic.in Phone No. 07622-224277
NIT No- 12/SAC/2026-27/ Tender Notice Date 07.08.2026
Online Tender for mentioned below are being invited. The Tender have been uploaded on the E-Procurement system of Public Works Department on the Portal https://mptenders.gov.in Tender details are as below:-

S. No.	Tender ID No.	District	SOR	Nature of work	Name of work	Call No.	Estimated Cost PAC) (Rs. In lack)	Amount of security deposit	Value of the Tender form	Duration of work
1	2	3	4	5	6	7	8	9	10	11
1	2026_PWDRB_527925_1	KATNI	11.04.25	Road	CONSTRUCTION OF PADARIYA TO GADA PAHADIKHEDA ROAD LENGTH 2.28 KM INCLUDING ELECTRIFICATION	3rd	333.58	333600	15000	08 Month I/c rainy season
2	2026_PWDRB_527926_1	KATNI	11.04.25	Road	STRENGTHENING OF B.HAM KA ROJHAN ROAD LENGTH 3.0 KM	3rd	273.11	273200	15000	08 Month I/c rainy season
3	2026_PWDRB_527927_1	KATNI	11.04.25	Road	REPAIR OF CD'S STRUCTURES UNDER PWD (B/R) SUB DIVISION NO I KATNI	3rd	19.14	38280	2000	06 Month
4	2026_PWDRB-527928_1	KATNI	01.01.24	Building	RENOVATION OF AUDITORIUM AND WATER PROOFING WORK IN ADMISTRATIVE BUILDING OF GOVT. TILAK COLLEGE KATNI	1ST	9.55	19100	2000	05 Month
5	2026_PWDRB-527929_1	KATNI	11.04.25	Road	REPAIR OF TRANSFERRED PART OF NH 7 AGAINST THE AGREEMENT No 58/DL/2023-24	1ST	19.96	39900	2000	08 Month I/c rainy season
					Total		655.33			

After making online payment in the above website, the tender document can be obtained through the website. The last date for purchasing the tender form and submission of online bid is scheduled till 27.08.2026 at 17.30 pm. E.M.D. Only RTGS/NEFT and other documents will be obtained only through online medium. Detailed NIT Details of the government and other information can be found on the website of the government website. All amendments to the tender will be published only on the above mentioned website. Separate newspapers will not be published.
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Sd/-
Executive Engineer
PWD (B/R) Division Katni