

Can AI predict suicide?

Artificial intelligence (AI) and machine learning are increasingly being used in healthcare, raising hopes that technology could help identify people at risk of suicide and self-harm earlier than ever before. However, a new study suggests that machine learning tools are not reliable enough to predict suicidal behaviour in a way that would be useful for everyday healthcare. While there has been growing hope that artificial intelligence could help doctors identify people at high risk and intervene earlier, the research indicates that this promise has not yet been fulfilled.

For decades, clinicians have used various risk assessment tools to try to predict suicide or self-harm, but these have generally struggled to do so accurately. Machine learning was expected to improve this by analysing large amounts of health information and spotting hidden patterns. However, the latest findings show that these newer approaches perform no better than traditional methods.

In simple terms, the algorithms are much better at identifying people who are unlikely to harm themselves than those who actually will. Many



individuals who later went on to self-harm or die by suicide were incorrectly labelled as "low risk". At the same time, a large number of people flagged as "high risk" never went on to harm themselves, meaning the tools also generate many false alarms.

The researchers conclude that relying on these predictions could be misleading and potentially harmful if they are used to decide who receives care or support. Current clinical guidelines already advise against using risk prediction alone to guide treatment, and this study reinforces that advice.

SOURCE: PLOS MEDICINE

7,000 steps a day could be the sweet spot for better health!

Staying physically active is widely known to be good for health, but how much activity is really enough? For years, the popular target of 10,000 steps a day has dominated fitness advice, despite limited scientific backing. Now, a major new study published in *The Lancet* Public Health suggests that a lower and more achievable goal – around 7,000 steps a day – may be enough to significantly reduce the risk of a wide range of serious health problems.

The study brings together evidence from dozens of previous studies involving more than 160,000 adults, making it one of the most comprehensive reviews of step-based physical activity to date. The findings show that people who walk around 7,000 steps per day have a much lower risk of early death compared with those who take very few steps. Regular walking at this level is also linked to lower risks of heart disease, type 2 diabetes, some cancers, depression, dementia and even falls.

Importantly, the benefits are not limited to people who are already active. Even increasing daily movement from very low levels to moderate levels appears to make a meaningful difference. People

who walked around 4,000 steps a day were healthier than those taking roughly 2,000 steps, showing that small increases in activity can still deliver health gains.

For certain conditions, particularly heart disease, benefits continued to increase beyond 7,000 steps. However, for most outcomes, the improvements tended to level off, suggesting that more steps are not always necessary to gain protection.

One of the most significant aspects of this research is its practicality. Many people find the 10,000-step target intimidating or unrealistic, especially older adults, people with long-term conditions or those who are currently inactive. A 7,000 step goal may feel far more achievable and could encourage more people to move regularly rather than give up altogether.

The study also broadens the conversation about physical activity. Rather than focusing solely on heart health or weight, it highlights links between walking and brain health, mental wellbeing and independence later in life. The association with reduced risk of dementia and depression, while still based on limited evidence, is particularly encouraging given the growing public health burden of these conditions.

Daily step counts are simple to track using smartphones, watches or pedometers, making them an accessible way for people to monitor their activity. Unlike structured exercise plans, walking can easily be built into daily routines – such as commuting, shopping or spending time outdoors.

The findings could help shape future public health guidance by offering a clear, realistic target that still delivers meaningful health benefits. For individuals, the message is reassuring: you do not need to run marathons or hit extreme fitness goals to improve your health. Consistent, moderate movement can go a long way.

Aim to move more, sit less, and remember that every step counts – with 7,000 steps a day emerging as a realistic and beneficial goal for many people.



DR M EASIN ALI

As winter approaches, many people experience an increase in joint pain and stiffness. The condition is particularly noticeable in the knees, lower back, neck, shoulders, and small joints of the hands and feet. Individuals suffering from osteoarthritis, rheumatoid arthritis, or other rheumatic disorders; those with previous joint injuries; and older adults are especially prone to worsening symptoms during the colder months. Seasonal environmental changes and lifestyle factors are key contributors to this problem.

During winter, lower temperatures cause blood vessels to constrict, reducing blood flow to the joints and surrounding muscles. This reduced circulation often leads to increased pain, stiffness, and discomfort. Cold weather also affects the synovial fluid inside the joints, making it thicker and less effective in facilitating smooth movement. Furthermore, reduced physical activity during winter results in joint stiffness and muscle weakness. Changes in

humidity and atmospheric pressure may also aggravate joint pain in susceptible individuals.

Effective management of winter-related joint pain requires proper care and timely treatment. Keeping the body and affected joints warm is essential. Wearing warm clothing, using knee or lumbar supports, and avoiding exposure to cold air can significantly reduce discomfort. Heat therapy applied to painful joints helps improve blood circulation and relieves stiffness.

Physiotherapy is one of the most effective treatment approaches for managing joint pain in winter. Modalities such as ultrasound therapy, shortwave diathermy, interferential therapy (IFT), TENS, and joint-specific therapeutic exercises help reduce pain, improve mobility, and restore joint function. Regular stretching and light strengthening exercises enhance muscle support around the joints and prevent further deterioration.

Medications, including pain relievers and anti-inflammatory drugs, should only be taken under medical supervision. In

some cases, supplements such as calcium and vitamin D may be recommended. Self-medication for prolonged periods should be avoided, specialised treatments or joint injections may be necessary for severe conditions.

A balanced diet also plays a crucial role in maintaining joint health. Foods rich in calcium, vitamin D, protein, and omega-3 fatty acids – such as milk, eggs, small fish, vegetables, fruits, and nuts – are beneficial. Adequate hydration helps maintain joint lubrication, while weight control reduces excessive pressure on weight-bearing joints.

In summary, increased joint pain during winter is a common but manageable condition. With proper medical care, regular physiotherapy, a healthy lifestyle, and adherence to professional advice, individuals can maintain joint health and mobility throughout the winter season.

The writer is the Chairman and Chief Consultant at Dhaka City Physiotherapy Hospital, Dhanmondi, Dhaka.
Email: dreasin20@gmail.com

Health records could help spot diabetes early

Diabetes is often thought of as an individual condition, but growing evidence suggests it can affect entire households. Lifestyle habits, shared environments and genetics mean that when one person is at risk, others living under the same roof may be too. New research presented at the European Association for the Study of Diabetes (EASD) Annual Meeting in Vienna showed that analysing routine health records at a household level could help identify people at risk of diabetes much earlier than current approaches.

The study focused on adults with prediabetes and examined the health profiles of people living with them, including other adults and children. It found that diabetes risk frequently clusters within households, with many family members showing warning signs such as excess weight or abnormal blood sugar levels. Some adults living with someone who had prediabetes were already showing



signs of type 2 diabetes, while many children had risk factors that could place them in danger later in life.

This approach could help health systems move from treating individuals to supporting whole families. Identifying risk early creates opportunities for shared lifestyle changes, earlier testing and prevention programmes before diabetes develops. It may also help uncover undiagnosed cases, particularly in people who feel well and would not otherwise seek testing.

Overall, the findings highlight a simple but powerful idea: preventing diabetes may be more effective when families are supported together, rather than one person at a time.

Meeting clean air targets could curb the diabetes burden in Bangladesh

JUWEL RANA

Air pollution may play a significant role in Bangladesh's rapidly growing diabetes burden, according to a new nationally representative study that finds that air pollution increases diabetes risk among adults.

In our study of 13,965 adults, published in the prestigious international journal *Science of the Total Environment*, we found that Bangladesh's annual average $PM_{2.5}$ concentration, approximately 70 micrograms per cubic metre, is among the highest globally and far exceeds both national standards and World Health Organisation (WHO) air quality guidelines. Currently, about 16 percent of Bangladeshi adults live with diabetes, highlighting the scale of the public health challenge we are facing.

We discovered that each 10 microgram per cubic metre increase in long-term $PM_{2.5}$ exposure was associated with a 10 percent higher risk of diabetes. We also found that urban residents, women, older adults, and individuals with obesity or hypertension were particularly vulnerable to the air pollution-related risk of diabetes.



Our analysis further estimates that between 4.6 and 7.5 percent of diabetes cases nationwide could be prevented if Bangladesh were able to meet its national clean air target of $15 \mu g/m^3$ per year or the WHO interim air quality guideline of $35 \mu g/m^3$. We observed that the largest potential health gains would be seen among urban residents, women, older adults, and those with obesity or hypertension.

Districts with heavy industrial activity and dense populations, such as Dhaka, Narayanganj, Gazipur, and Munshiganj, are likely to benefit most from improved air quality, with substantial potential reductions in the diabetes burden. While diabetes is often associated with lifestyle factors, the study highlights air pollution as an underrecognised risk factor. Long-term $PM_{2.5}$ exposure may increase the risk of diabetes through inflammation, oxidative stress, and impaired insulin function, underscoring air pollution control as a critical public health intervention.

The writer is a doctoral candidate in environmental epidemiology at McGill University, Canada, and led this research.
Email: juwel.rana@mail.mcgill.ca

Silent threats before birth: Air pollution and climate risks for infants

Prenatal exposure to ambient air pollution

and climatic factors, such as temperature and rainfall, is associated with adverse birth outcomes in India, according to a new study published in *PLOS Global Public Health*. Ambient fine particulate matter ($PM_{2.5}$), tiny particles less than 2.5 microns in diameter produced mainly by burning fossil fuels and biomass, poses a significant health risk and has been linked to a variety of paediatric and adult illnesses. India is among the most polluted countries globally, with $PM_{2.5}$ levels far exceeding both national and World Health Organisation standards.

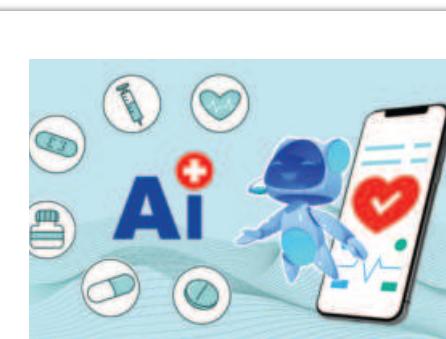


While most research on air pollution and birth outcomes has focused on high-income countries, this study examined the impact of $PM_{2.5}$ at the national level in India, assessing low birth weight and preterm birth. Using satellite data and large-scale surveys, the researchers found that higher in utero exposure to $PM_{2.5}$ was associated with

increased risks of both outcomes. Climatic factors, including high temperatures and irregular rainfall, were also linked to adverse birth outcomes. Northern districts of India were identified as particularly vulnerable.

The study highlights the need for targeted public health interventions. Strengthening the National Clean Air Program with stricter emission standards and improved air quality monitoring is recommended, alongside climate adaptation measures such as heat action plans and better water management. Awareness campaigns for pregnant women about the risks of air pollution and climate extremes could also help reduce health risks.

The findings underscore the importance of integrating air quality management and climate resilience into maternal and child health strategies to protect vulnerable populations and improve birth outcomes across India.



AI in colonoscopy: A helpful tool or a risk to doctors' skills?

Artificial intelligence (AI) is rapidly becoming part of everyday medical care, with growing enthusiasm for its ability to support doctors in making faster and more accurate decisions. In colonoscopy, AI systems have been widely welcomed for helping clinicians identify precancerous growths that might otherwise be overlooked. However, emerging evidence suggests that routine dependence on this technology may have unintended consequences.

In a recent study, researchers compared colonoscopies performed by highly experienced specialists before and after AI tools were introduced into regular clinical practice. Although AI-assisted procedures continued to show strong detection results, a different pattern emerged when clinicians worked without technological support. Several months after AI became routine, the same specialists were less successful at identifying precancerous growths on their own.

These findings raise important concerns about whether long-term AI use could reduce clinicians' vigilance or decision-making skills when technology is unavailable. Notably, this is the first study to suggest that artificial intelligence may negatively affect healthcare professionals' ability to perform a task that has direct and meaningful consequences for patient outcomes.

Colonoscopy plays a crucial role in preventing bowel cancer by identifying and removing precancerous lesions early. If reliance on AI weakens clinicians' core skills, this could have implications for patient safety, particularly in settings where AI tools are unavailable or malfunction. The study highlights the importance of balancing innovation with ongoing training as AI becomes more embedded in healthcare.

SOURCE: THE LANCET GASTROENTEROLOGY & HEPATOLOGY