

DID YOU KNOW?

## Long-term air pollution exposure raises Alzheimer's risk, especially after stroke

A new study has found that long-term exposure to air pollution increases the risk of developing Alzheimer's disease, particularly among older adults with a history of stroke. The research was published in PLOS Medicine.

Alzheimer's disease is the most common form of dementia, affecting about 57 million people worldwide. Previous research has already linked air pollution to Alzheimer's and to chronic health conditions like hypertension, stroke, and depression — conditions that themselves are associated with dementia. But it was not clear whether pollution leads to dementia indirectly by causing these illnesses or whether it harms the brain directly.



To find out, the team led by Yanling Deng analysed data from more than 27.8 million U.S. Medicare recipients aged 65 and older from 2000 to 2018. They compared individuals' long-term exposure to fine particulate air pollution with their likelihood of developing Alzheimer's disease, while also tracking whether they had conditions such as stroke, hypertension, or depression.

The study found that people with greater exposure to fine particulate matter had a higher risk of Alzheimer's. This risk was slightly stronger in individuals with a history of stroke, suggesting that stroke survivors may be particularly vulnerable to the effects of pollution on brain health.

These results are important for several reasons. First, they suggest that air pollution contributes to Alzheimer's disease primarily through direct effects on the brain rather than only through other chronic illnesses. That means improving air quality could directly help protect brain health, not just heart and lung health. Second, identifying groups that are more susceptible — such as people who have had a stroke — can help doctors and carers tailor health advice and monitoring.

## Women and underserved communities face biggest gaps in cataract care!

The World Health Organisation (WHO) is urging countries to accelerate access to cataract surgery, a simple and highly effective procedure that can restore sight and prevent avoidable blindness.

Cataract, a clouding of the eye's lens that causes blurred vision and can lead to blindness, affects more than 94 million people worldwide. The surgery takes around 15 minutes and is considered one of the most cost-effective medical procedures, providing immediate and lasting restoration of vision.

A new study in The Lancet Global Health shows that nearly half of all people with cataract-related blindness still need surgery. While global coverage has improved by 15% over the past two decades, ageing populations and rising cataract cases mean demand continues to outpace progress. Current projections suggest only an 8.4% increase in coverage this decade, falling short of the 30% target by 2030 set by the World Health Assembly.

The study highlights major gaps in access, particularly in the African region, where three in four people needing surgery remain untreated. Women are disproportionately affected in all regions, reflecting long-standing barriers such as shortages of trained eye-care professionals, high costs, long waiting times, and limited awareness of treatment options.

WHO recommends integrating vision screening into primary health care, investing in surgical infrastructure, and expanding the eye-care workforce, especially in rural and underserved areas. Targeted efforts for women and marginalised communities are essential to reduce inequities.

With sustained commitment, cataract surgery can become universally accessible, helping millions regain independence, dignity, and opportunity while ending avoidable blindness worldwide.

Source: World Health Organisation



## RAMADAN DAILY FOOD GUIDE

### Nourishing your body while fasting

DR NUR-A-SAFRINA RAHMAN

Ramadan is a sacred month of fasting from dawn to sunset. While fasting is primarily spiritual, proper nutrition is essential to maintain energy, hydration, and overall health. With meals limited to suhoor (pre-dawn) and iftar (sunset), a structured daily eating routine, portion control, and hydration plan help prevent fatigue, digestive issues, and dehydration.

#### Daily iftar routine: Breaking the fast

**1. Start with the sunnah:** Begin with 1-3 dates and a glass of water, milk, or fresh juice. This quickly restores blood sugar, potassium, and hydration.

**2. Light starter:** Enjoy a small bowl of lentil or vegetable soup. It gently prepares the stomach for digestion and adds extra fluids.

**3. Main plate structure: Complex carbohydrates (1/4 plate):** Whole-grain rice, oats, barley, or wholemeal bread for slow-release energy.

**Lean protein (1/4 plate):** Grilled, baked, or steamed chicken, fish, beans, lentils, or eggs to support muscle repair and satiety.

**Vegetables & fibre (1/2 plate):** Fresh salads, sautéed vegetables, or light soups for vitamins, minerals, and hydration.

**Healthy fats (small amount):**

Olive oil, nuts, or seeds for nutrient absorption and fullness.

**4. Hydration:** Sip water gradually instead of drinking large amounts at once. Include water-rich fruits like watermelon, oranges, and cucumbers. Herbal teas are a gentle alternative to caffeine.

**5. Treats:** Fried foods and sweets are best enjoyed occasionally. Focus on moderation to prevent sluggishness.

#### Daily suhoor routine: Fuel for the fasting day

**1. Focus on slow-release energy:** Protein: Eggs, yoghurt, milk, paneer, cholar dal, moong dal, or light fish curry.

**Complex carbohydrates:** Whole-grain roti, brown rice, red rice (lal chaal), oats, or lightly soaked flattened rice (chira).

**Fruits & vegetables:** Banana, papaya, apples, cucumber, or lightly cooked greens like pui shak or spinach for fibre and hydration.

**Healthy fats:** Nuts (cashews, almonds), seeds (pumpkin, sesame), or a small drizzle of mustard or groundnut oil.

#### 2. Example suhoor meals:

- Oatmeal with milk, dates, and nuts
- Yoghurt with fruit and seeds
- Whole-grain roti with eggs or paneer and a side of cucumber or salad

#### 3. Tips:

- Avoid very salty or fried foods and limit caffeine to prevent thirst.
- Drink 1-2 glasses of water before dawn to stay hydrated throughout the day.

#### Daily practical tips for healthy fasting

- Drink 5-6 glasses of water between iftar and suhoor, spread evenly.
- Eat slowly and stop when comfortably full.
- Include light physical activity, such as a short walk after iftar, to aid digestion.

- Plan meals in advance to avoid impulsive or less nutritious choices.
- Special groups, such as the elderly or people with diabetes, should focus on easy-to-digest, nutrient-rich foods and monitor sugar intake.

By following this daily Ramadan routine, starting iftar with dates and water, eating a balanced main meal, having a slow-release suhoor, and staying hydrated, individuals can maintain energy, support overall health, and fully engage in the spiritual essence of the month. Consistency, moderation, and mindful eating turn fasting into a period of both physical well-being and spiritual growth.

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## UPDATE Next-generation flu vaccines could save millions of lives worldwide

Next-generation influenza vaccines, which aim to provide broader and longer-lasting protection than current seasonal vaccines, could significantly reduce the global burden of flu, according to the World Health Organisation (WHO). Seasonal influenza causes around a billion cases each year, with 3 to 5 million leading to severe illness and an estimated 290,000 to 650,000 deaths from respiratory complications.

Current vaccines help protect against influenza, but their effectiveness varies by season, vaccine type, and age group, and protection usually lasts for only one season. WHO recommends new flu vaccine strains twice a year to keep up with evolving viruses, yet most vaccines are used in higher-income countries.

WHO's Full Value of Improved Influenza Vaccine Assessment (FVIVA) suggests that next-generation vaccines could prevent up to 18 billion cases of influenza and save 6.2 million lives globally between 2025 and 2050, particularly among older adults, young children, and pregnant women. Wider vaccine use could also reduce unnecessary antibiotic use, helping combat antimicrobial resistance.

Next-generation vaccines could avert up to 1.3 billion daily doses of antibiotics in the same period.

WHO guidance encourages developing vaccines that provide broader and longer-lasting protection, better prevent severe disease, and can be locally produced in low- and middle-income countries. People can benefit from staying informed about vaccine updates, getting vaccinated annually, and supporting efforts to make influenza vaccines more widely available.

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Source: World Health Organisation



## Nutrient synergy: Eating smarter for better health

RAISA MEHZABEEN & TABASSUM BINTA NOWSHAD (RAHMA)

We often admire dynamic duos in movies—Sherlock and Watson, or the Avengers—working together to achieve the impossible. Surprisingly, the same principle applies to our food. Many nutrients, while powerful alone, become even more effective when paired with others. This is the concept of nutrient synergy—when two or more nutrients work together to enhance absorption, functionality, and overall health impact.

#### What is nutrient synergy?

Nutrient synergy happens when the combined effect of nutrients in your body is greater than the sum of their individual effects. Take vitamin C and iron, for example. Iron from plant foods (non-heme iron) is poorly absorbed on its own, but consuming it with vitamin C from citrus fruits, bell peppers, or tomatoes dramatically improves absorption. Such combinations show how thoughtful food pairing can maximise nutrition.

#### Everyday examples of nutrient synergy

Many of us unknowingly benefit from nutrient synergy every day:

- **Fats + Carotenoids:** Olive oil boosts absorption of beta-carotene from carrots and lycopene from tomatoes.
- **Turmeric + Black Pepper:** Piperine in black pepper increases curcumin absorption from turmeric by up to 2,000%.
- **Magnesium + Vitamin D:** Magnesium activates Vitamin D, supporting stronger bones.

#### Other notable combos:

- **Calcium, Vitamin D, and K:** Vitamin D helps absorb calcium, while Vitamin K directs it to bones instead of arteries, lowering osteoporosis and heart risks. Try grilled salmon with spinach and cheese, or yoghurt with fortified cereal and broccoli.
- **Vitamin C + E:** Both are antioxidants that protect cells differently. Salads with kale, bell peppers, strawberries, and nuts, or smoothies with papaya, guava, avocado, and sunflower seeds, make great combinations.
- **B Vitamins (B6, B12, Folate):** Support metabolic health and reduce the risk of conditions like high blood pressure and high blood sugar. Eat fortified cereal with banana and milk, or a spinach and chickpea salad.
- **Potassium, Magnesium, and Calcium:** Together, they lower blood pressure and support heart, brain, and eye health. Try yoghurt with bananas and pumpkin seeds, or tofu with olive oil and leafy greens.

#### How to apply nutrient synergy

Applying nutrient synergy is simple:

- Add lemon juice to lentils or salads to improve iron absorption.
- Pair vitamin D-rich foods like eggs or milk with nuts or seeds.
- Combine carotenoid-rich vegetables like carrots or sweet potatoes with healthy fats.
- Mix legumes with whole grains and leafy greens for immune and metabolic support.

#### A word of caution

Not all nutrient combinations are beneficial. Calcium can reduce iron absorption, and tea or coffee with iron-rich meals may hinder uptake. Individual factors like age, gut health, and diet also influence nutrient absorption.

Nutrient synergy shows that health is not just about eating more—it is about eating smarter. By choosing colourful, balanced meals with complementary nutrients, we can naturally amplify the benefits of every meal, boost immunity, prevent chronic disease, and support overall wellness. Just like a great team, the right food combinations can make all the difference.

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## Neck pain from improper device use: Prevention and treatment

DR MEASIN ALI

In today's digital era, smartphones, tablets, and laptops have become inseparable parts of our daily lives. From students attending online classes to professionals working long hours and individuals scrolling through social media, prolonged device use has become routine. However, improper posture while using these devices is leading to a growing health concern—neck pain, commonly known as “text neck”.

When we bend our head forward to look at a phone, the weight on the cervical spine increases significantly. A human head weighs approximately 4-5 kilograms in a neutral position. But when tilted forward at 45-60°, the effective load on the neck can increase up to 20-25 kg. This excessive strain puts pressure on the muscles, ligaments, intervertebral discs, and joints of the cervical spine.

Over time, this abnormal stress may lead to muscle fatigue, stiffness, burning pain between the shoulder blades, headaches, and reduced neck mobility. In severe or prolonged cases, it can contribute to cervical spondylosis, nerve irritation, and even bony changes such as osteophyte (bone spur) formation.

#### Common symptoms

- Persistent neck stiffness and pain
- Shoulder and upper back discomfort
- Headaches, especially at the base of the skull
- Tingling or numbness in the arms



- Forward head posture and rounded shoulders
- Ignoring these symptoms can worsen the condition and affect productivity, sleep, and overall quality of life.

#### Prevention: Simple but effective measures

Fortunately, neck pain from improper device use is largely preventable with lifestyle adjustments:

- **1. Maintain proper posture:** Keep your phone at eye level instead of bending your neck downward. While working on a laptop or desktop, ensure the screen is at eye height and

your back is properly supported.

**2. Follow the 20-20-20 rule:** Every 20 minutes, take a short break. Stretch your neck gently, roll your shoulders, and change your posture.

**3. Use ergonomic support:** Sit on a chair with proper lumbar support. Keep both feet flat on the floor and avoid slouching.

**4. Limit continuous device use:** Reduce unnecessary screen time, especially prolonged scrolling while lying down.

**5. Regular exercise:** Strengthening the neck, shoulder, and upper back muscles helps maintain spinal alignment and reduces strain.

#### Treatment options

If neck pain has already developed, early management is essential.

- **Rest and activity modification:** Reduce activities that aggravate symptoms.
- **Hot fomentation:** Applying heat helps relax tight muscles and improve blood circulation.
- **Physiotherapy:** A structured physiotherapy programme is highly effective. Treatment may include posture correction training, manual therapy, stretching, strengthening exercises, and ergonomic education.
- **Medical consultation:** In persistent or severe cases, proper medical evaluation is necessary.

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## Synchronising brain activity makes people more generous!

A recent study suggests that coordinating activity between two brain areas can increase altruistic behaviour. Researchers from East China Normal University and the University of Zurich found that stimulating the frontal and parietal lobes together made people more likely to act unselfishly.

In the study, 44 people played a game where they had to decide how to share money with someone else. While they were making these decisions, a mild electrical stimulation was applied to their brains to make two areas work together in a specific rhythm called gamma waves.

The results showed that



participants were slightly more likely to make altruistic choices, offering more money to others even when it meant earning less for themselves. A computational model suggested that the stimulation nudged people to weigh their partner's outcomes more in their decisions.

The study provides evidence that altruistic behaviour may depend on coordinated brain activity. Researchers caution that they did not directly record neural activity during the trials, and future studies combining stimulation with EEG could confirm the effect more clearly.

These findings suggest that our willingness to help others may not only be shaped by upbringing and culture but also by the underlying neural networks in the brain, offering new insight into the science of cooperation and generosity.

Source: PLOS Biology