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[www.vajiraoinstitute.com](http://www.vajiraoinstitute.com)



[info@vajiraoinstitute.com](mailto:info@vajiraoinstitute.com)

# TODAY'S ANALYSIS

## (08 April 2024)

### TOPICS TO BE COVERED

- TOTAL SOLAR ECLIPSE
- WORLD HEALTH DAY



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## TOTAL SOLAR ECLIPSE

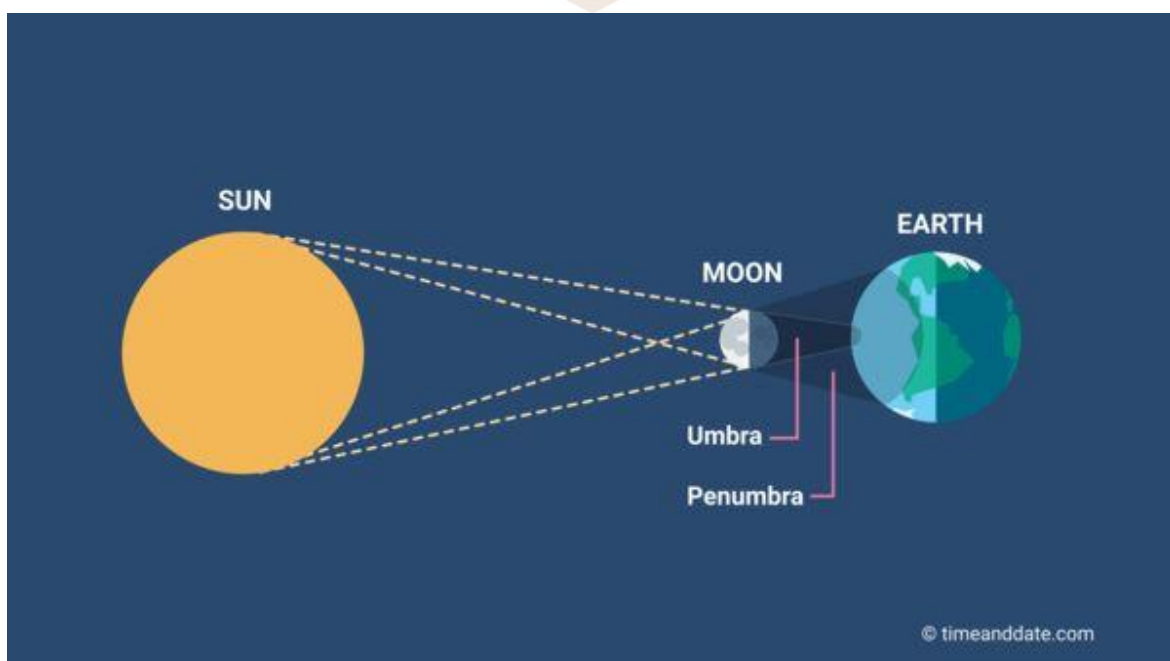
On April 8, a **total solar eclipse** will cross **North America**, passing over Mexico, the United States, and Canada.

This type of solar eclipse is a **rare event for any particular spot**. According to **Royal Museums Greenwich**, once a place on Earth witnesses a total solar eclipse, it will be about **400 years** before that part sees the next one.

### WHAT IS A SOLAR ECLIPSE?

A solar eclipse takes place **when the Moon moves in the middle of Earth and the Sun**.

The Moon blocks the light of the Sun, **either fully or partially**, which casts a huge shadow on some parts of the world.





## TYPES OF SOLAR ECLIPSE

There are **four different types of solar eclipses**, including total solar eclipse, annual solar eclipse, partial solar eclipse, and hybrid solar eclipse.

- (1) **Total Solar Eclipse:** When the Moon blocks the Sun entirely, the areas in the centre of the Moon's shadow at the time witness a **total solar eclipse**. The sky darkens and people who are in the path of a total solar eclipse can get a glimpse of the Sun's corona — the outer atmosphere — which is usually not visible due to the bright face of the Sun.
- (2) **Annular Solar Eclipse:** When the **Moon** passes in front of the Sun but **is at or near the farthest point from Earth**, an annular solar eclipse occurs. In this scenario, the Moon covers the Sun in such a way that only the periphery of the Sun remains visible — looking like a ring of fire.
- (3) **Partial Solar Eclipse:** A partial solar eclipse takes place **when the Moon blocks just a part of the Sun**, giving it a **crescent shape**. During both partial and annular eclipses, the regions outside the area covered by the Moon's umbra — the middle and the darkest part of the lunar shadow — will see a partial solar eclipse. Partial solar eclipse is the most common type of solar eclipse.

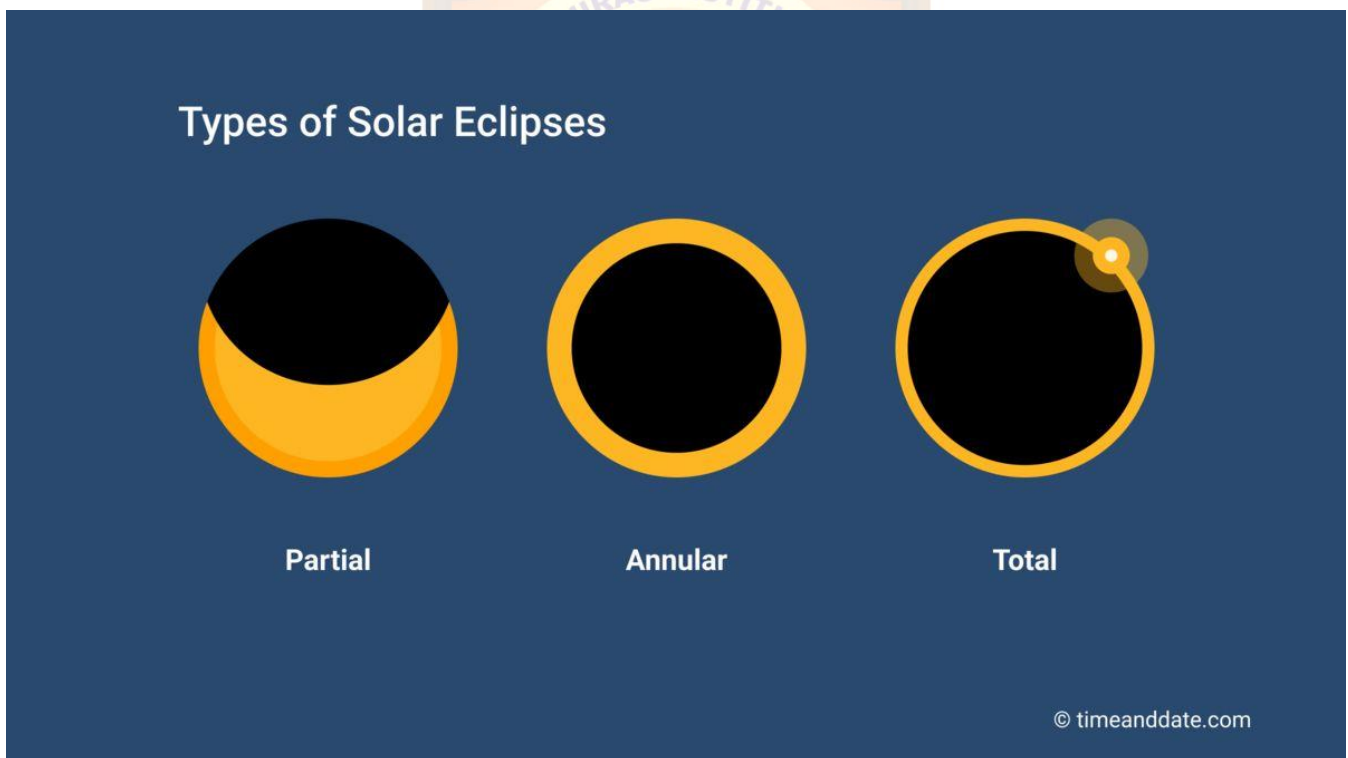
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**(4) Hybrid Solar Eclipse:** A hybrid solar eclipse — the rarest type of solar eclipse — is witnessed when an eclipse shifts between annular and total as the shadow of the Moon moves across the globe.

In this case, some parts of the world see a total solar eclipse, while others observe an annular solar eclipse.



## HOW OFTEN DOES A SOLAR ECLIPSE OCCUR?

A solar eclipse is witnessed **only during the new moon** — when the Moon and Sun are aligned on the same side of Earth.

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## WHEN DOES A NEW MOON OCCUR?

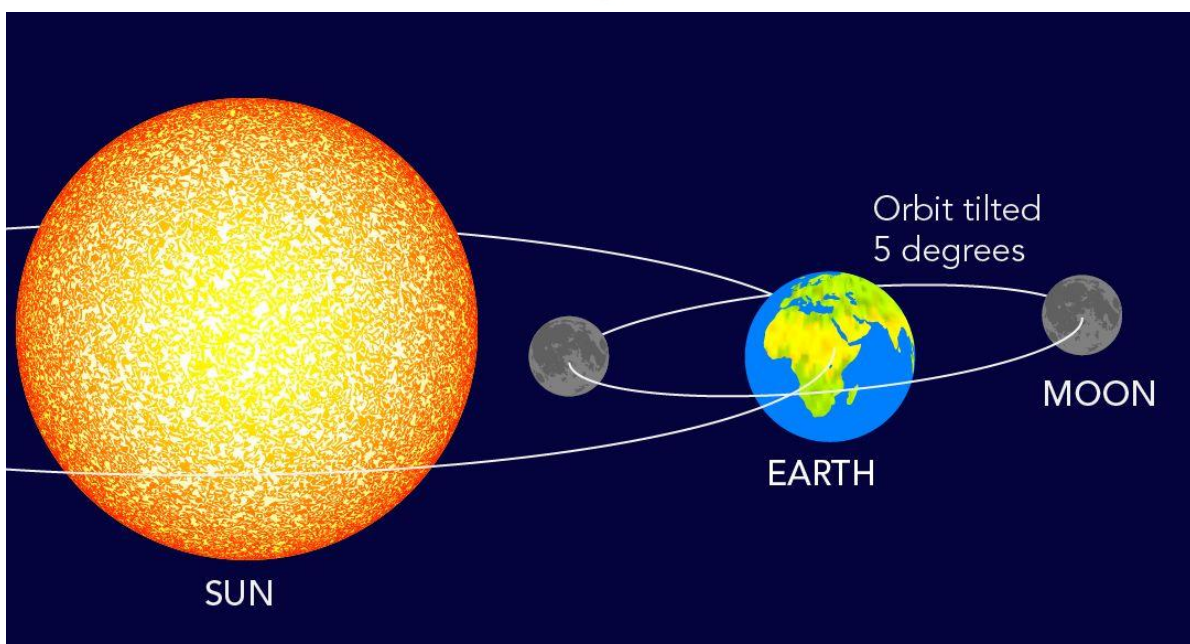
A new moon occurs about **29.5 days** because that is how long it takes the Moon to orbit Earth.

## DOES THIS MEAN THAT A SOLAR ECLIPSE OCCURS EVERY 29.5 DAYS?

This, however, **does not mean** that a solar eclipse happens every month. It takes place only between **two to five times annually**.

## WHY SOLAR ECLIPSE TAKES PLACE 2 TO 5 TIMES ANNUALLY?

It is because the **Moon does not orbit Earth in the same plane as the Earth orbits the Sun**. In fact, the Moon is **tilted by about five degrees** with respect to Earth. As a result, most of the time when the Moon is in between the Sun and Earth, its **shadow is either too high or too low to fall on the Earth**.







## WHY THIS ECLIPSE IS SPECIAL?

- Total eclipses only happen about **once every 18 months** or so.
- As mentioned before, a particular spot on Earth witnesses a total solar eclipse only once in 400 years.
  - This is because a **total eclipse** is only visible if one is **standing in the umbra** — the other part of the shadow is called the **penumbra, which is not as dark as the umbra.**
  - The umbral shadow is very small, covering only a small part of Earth. In fact, the entire path of the umbral shadow during a solar eclipse will only **cover less than one per cent of the globe.**
  - This is why only very few people will get to see a total eclipse at a time.
- Moreover, about **70 per cent of the globe is underwater** and **half of the land is considered uninhabited.** That's why, it is **quite rare when a total solar eclipse happens and a lot of people get to see it.**

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## WORLD HEALTH DAY

**World Health Day**, which is observed every year on **April 7**, unites us around **health equity**, an essential topic at the heart of global health and justice.

The World Health Organization (WHO) has declared health to be a fundamental human right.

The **theme this year** is **“My Health, My Right”**.

There is an **alarming gap in health-care access**, highlighted by the **COVID-19 epidemic**, **environmental crises**, and **growing socio-economic gaps**.

Even though **over 140 nations recognise health as a constitutional right**, the WHO Council on the Economics of Health for All reports that **more than half the world’s population needs complete access to essential health services**.

### WHAT IS THE MEANING OF HEALTH EQUITY?

Health equity **ensures that every person has an equal opportunity to achieve their highest health potential**, no matter what their circumstances.

Recognising that **social, economic, and environmental factors** impact health outcomes, this idea **goes beyond genetics**.

WHO’s mission is to eliminate unfair and preventable disparities in health among different social and economic categories.

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True health equity addresses the root causes of health inequities such as **poverty, discrimination, limited access to high-quality education, a healthy diet, clean water, fresh air, and housing**, and merely grants equal access to health care.

## IS THERE NEED FOR HEALTH EQUITY IN INDIA?

**Consider an example:** A child born into poverty in a rural area has no access to clean water, wholesome food, or immunisations, which lays the foundation for chronic health problems.

These differences are **made worse by pandemics, climate change, and sociopolitical unrest.**

**India is diverse and has wide socioeconomic gaps.** Thus this predicament strikes a chord.

Access to health care in rural areas is significantly less than in metropolitan areas. Social and economic barriers exacerbate this disparity.

## INDIA'S HEALTH EQUITY CHALLENGE

With a large and diversified population, **India faces persistent obstacles** to health equity, including notable differences in health-care outcomes and access.

- Even though access to health care has improved over the past 20 years, **there is still much work to be done in rural India.**

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- According to the 2011 Census, **urban slums** make up over 17% of India's metropolitan areas, and exhibit serious health disparities.
  - Health risks are increased by **overcrowding, poor sanitation, and restricted access to clean water**. Infectious diseases, such as **tuberculosis**, are 1.5 times more common in slums than in non-slum areas, according to the Indian Council of Medical Research.
- **Disparities across caste** are profound. National Family Health Survey (NFHS)-5 (2019-21) data indicates that Scheduled Castes and Scheduled Tribes experience higher child mortality and lower immunisation rates.
- **Disparities across gender: 59% of women in the lowest wealth quintile** suffer from **anaemia**, almost **double the rate in the highest quintile**, demonstrating the intersection of caste, gender, and economic status in health outcomes.
- A critical **shortage of doctors** exacerbates these issues, with WHO data indicating only **0.8 doctors per 1,000 people**, which is below the advised ratio (**1 doctor per 1000 people**). Even though over 75% of health-care professionals work in **metropolitan regions**, which only account for **27% of the population**, the **shortage is particularly severe in rural areas**.

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## WHAT SHOULD INDIA DO?

India's **health equity issues require a comprehensive approach** beyond improvements in health-care facilities to address more extensive socioeconomic determinants of health.

- To move India toward **universal health coverage** and a **more equitable future**, the **government, civil society, health-care providers, and communities** need to work together.
- Governments and officials may influence the state of health through funding, creative policies, and laws.
  - **Ayushman Bharat:** Provides **free health coverage** to the bottom 40% economically
  - **National Health Mission:** includes both the **National Rural Health Mission (NRHM)** and the **National Urban Health Mission (NUHM)**, reduces the health-care gap between rural and urban India by expanding access, strengthening infrastructure, and providing essential services to vulnerable populations.
- Achieving health equity requires **raising health literacy**. India should turn health equality into a shared, community-driven goal **by including health education in the NHM**, enabling its people to seek equitable care and make educated health decisions.

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- Together with the **government, the public and private health-care sectors** provide services to underprivileged communities, emphasising preventive education, workforce development, and infrastructure enhancement.
- **Non-governmental organisations** and civic societies engage in direct community outreach to draw attention to and resolve regional health concerns.
  - Their **collaboration with international and governmental organisations** allows them to tailor health initiatives that are culturally sensitive to the community's unique needs.
- **Through innovation and technical growth**, particularly in **digital health**, the commercial sector and charitable organisations advance **accessibility and affordability** while extending reach and efficacy.

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## MCQs

1. Consider the following questions and mark the correct statement:

1. A total Solar eclipse occurs once in 400 years on Earth.
2. Solar Eclipse happens when the moon comes between Sun & Earth.

- (A) Only 1  
(B) Only 2  
(C) Both 1 & 2  
(D) Neither 1 nor 2

**Ans. (B)**

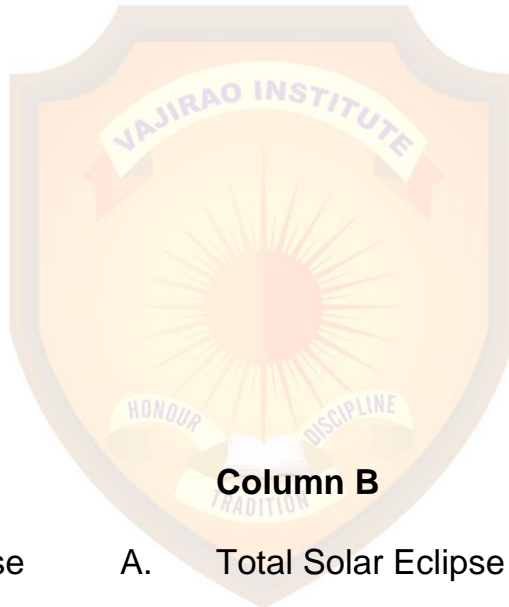
2. Match the following:

### Column A

1. Total Solar Eclipse
2. Annual Solar Eclipse
3. Umbra
4. Penumbra

- (A) 1A, 2B, 3C, 4D  
(B) 1B, 2A, 3D, 4C  
(C) 1D, 2C, 3A, 4B  
(D) 1C, 2D, 3B, 4A

**Ans. (C)**



### Column B

- A. Total Solar Eclipse
- B. Not so dark
- C. Moon is nearest to earth.
- D. Sun's corona can be visible

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3. Consider the following statements and mark the correct statement:

**Assertion (A):** A solar eclipse is witnessed 2-5 times annually.

**Reasoning (R):** The Moon does not orbit Earth in the same plane as the Earth orbits the Sun.

- (A) Both A & R are correct & R is the correct explanation of A.
- (B) Both A & R are correct & R is not the correct explanation of A.
- (C) A is true & R is false.
- (D) A is false & R is true.

**Ans. (A)**

4. The World Health Day is celebrated on which of the following day?

- (A) April 6
- (B) April 7
- (C) April 8
- (D) April 9

**Ans. (B)**

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5. Consider the following statements and mark the correct one:

1. Health Equity means that healthcare benefits should be available till the last mile.
2. Climate change impacts health equity.

(A) Only 1

(B) Only 2

(C) Both 1 & 2

(D) Neither 1 nor 2

**Ans. (C)**



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