

Naegleria fowleri or Brain-eating amoeba

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In news— South Korea has recently reported its first case of infection from *Naegleria fowleri* or “brain-eating amoeba”.

About brain-eating amoeba-

- *Naegleria* is an amoeba, a single-celled organism, and only one of its species, called *Naegleria fowleri*, can infect humans.
- It was first discovered in Australia in 1965 and is commonly found in warm freshwater bodies, such as hot springs, rivers and lakes.
- The amoeba enters the human body through the nose and then travels up to the brain.
- This can usually happen when someone goes for a swim, or dive or even when they dip their head in a freshwater body.
- In some cases, it was found that people got infected when they cleaned their nostrils with contaminated water.
- Scientists haven't found any evidence of the spreading of *Naegleria fowleri* through water vapour or aerosol droplets.
- Once it goes to the brain, it destroys brain tissues and causes a dangerous infection known as primary amebic meningoencephalitis (PAM).
- So far, *Naegleria fowleri* has been found in all continents and declared as the cause of PAM in over 16 countries, including India.

What are the symptoms of PAM?

- The first signs of PAM start showing within one to 12 days after the infection.

- In the initial stages, they might be similar to symptoms of meningitis, which are headache, nausea and fever.
- In the later stages, one can suffer from a **stiff neck, seizures, hallucinations, and even coma.**
- The infection spreads rapidly and on average causes death within about five days.
- **The fatality of PAM is as such that only four people have survived out of 154** known infected individuals in the United States from 1962 to 2021.

The treatment for the infection-

- **As the *Naegleria fowleri* infection is rare and progresses quickly, scientists haven't been able to identify any effective treatments yet.**
- At present, doctors treat it with a combination of drugs, including amphotericin B, azithromycin, fluconazole, rifampin, miltefosine, and dexamethasone.

Climate change impact on the spread of the infection-

- According to the US Centers for Disease Control and Prevention (CDC), with the **rising global temperatures, the chances of getting *Naegleria fowleri* infection will go up as the amoeba mainly thrives in warm freshwater bodies.**
- The **organism best grows in high temperatures up to 46°C** and sometimes can survive at even higher temperatures.
- Various recent studies have found that excess atmospheric carbon dioxide has led to an increase in the temperature of lakes and rivers.
- These conditions provide a more favourable environment for the amoeba to grow.
- Heat waves, when air and water temperatures may be higher than usual, may also allow the amoeba to thrive.