

## Higher Dengue Infections in Europe

### Why in news?

Recent research by EU health agency shows that warmer conditions are helping the *Aedes albopictus* mosquito to transmit dengue, chikungunya and Zika viruses in Europe.

### What is Dengue Fever?

- **Causes** - It is a **viral infection**, and there are four serotypes of the dengue virus - DEN-1, DEN-2, DEN-3 and DEN-4.
- **Infection** - Each virus interacts differently with antibodies in the human body and is capable of manifesting into
  - Dengue fever
  - Dengue hemorrhagic fever
  - Dengue shock syndrome.
- **Spread** - Dengue is found in tropical and sub-tropical climates worldwide, mostly in urban and semi-urban areas.
- **Vector borne disease** - It is spread through the mosquito vector.
- It is the world's fastest-growing vector borne disease.
- **Transmission** - It is transmitted to humans by the *Aedes mosquito species*, which also spreads Chikungunya and Zika virus.
- It is primarily by the *Aedes aegypti* mosquito while other species within the *Aedes* genus are normally secondary to *Aedes aegypti*.
- **Symptoms** - Mostly asymptomatic, but the most common symptoms are high fever, headache, body aches, nausea and rash.
- **Diagnosis** - IgM, IgG antibodies test and NS1 antigen test.
- Both are done through ELISA kits and hence are popularly known as **Elisa test**.
- **Treatment** - No specific treatment but generally treated with **pain medicine**.
- **Prevention** - Prevention and control of dengue depend on vector control.
- There is no specific treatment for dengue/severe dengue, and early detection and access to proper medical care greatly lower fatality rates of severe dengue.

## DO'S TO PREVENT DENGUE

- Keep home, environment and surroundings in hygienic conditions
- Remove all stagnant water, containers, old tyres, air-coolers, etc.
- Keep all drains well maintained
- Observe dry day once
- Repellents, medicated screens, coils and sprays to avoid mosquito bites
- No self-medication. Consult a physician if high fever persists for more than 48 hours



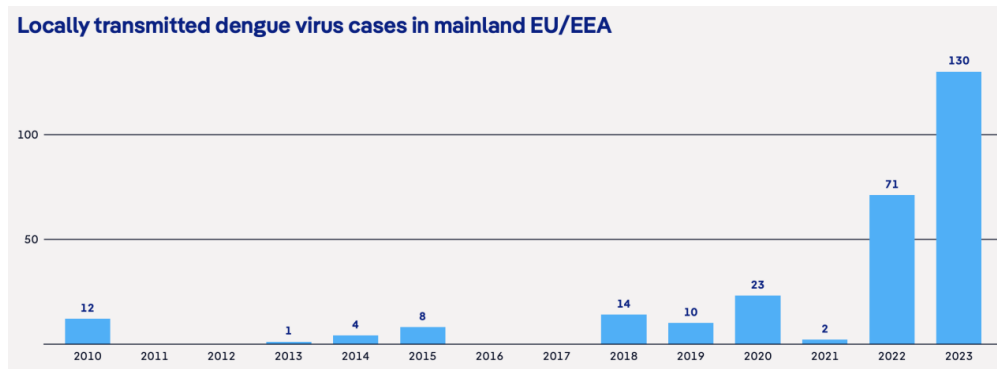
- **Vaccine** - *Dengvaxia* was the first vaccine to receive a nod in 2015, and has been licensed in 20 countries since.
- It is a *live attenuated vaccine*.
- WHO recommends 'Dengvaxia' for children aged 9 to 16 years.
- **Challenges** - Dengvaxia's *efficacy is limited* to those with confirmed previous infections.
- Dengvaxia is *not licensed in India*.

### Global Burden of Dengue

- *About half of the world's population* is now at risk of dengue with an estimated 100-400 million infections occurring each year.
- The incidence of dengue has grown dramatically around the world in recent decades, about *5.2 million cases in 2019*.
- The *highest number of dengue cases was recorded in 2023*, affecting over 80 countries in all regions of WHO.
- It resulted in a historic high of *over 6.5 million cases* and more than 7300 dengue-related deaths reported.
- **Factors for increasing risk of spread** - The *changing distribution of the vectors* (chiefly *Aedes aegypti* and *Aedes albopictus* mosquitoes), especially in previously dengue naïve countries.
- The consequences of *El Niño phenomena in 2023* and *climate change* leading to increasing temperatures and high rainfall and humidity.
- *Fragile health systems* in the midst of the COVID-19 pandemic.
- The *political and financial instabilities* in countries facing complex humanitarian crises and high population movements.

### Why there is rise in dengue cases in Europe?

- There are different types of *Aedes* mosquito, but the one most widespread in Europe is the *aedes albopictus*.



- **High temperature** - Europe is experiencing higher heat shocks in recent times due to climate change.
- Not only during the day but also at night, may contribute to the spread of dengue in southern Europe.

*Temperatures need to be high between 15 and 35 degrees Celsius for the mosquitos to thrive.*

- **High mosquito population** - Longer stints of high temperatures offer more time for the mosquitoes to breed, ultimately resulting in more mosquitoes as summers start early and stretch late into fall.
- **Travel-related transmission of the virus** - Because dengue is not endemic in Europe, this occurs when a traveler brings the virus from abroad.
- **Expansion of mosquito populations** - The Aedes albopictus mosquito was first detected in Europe in the early 2000s.
- It has since spread to many more areas around the Mediterranean and Central Europe and has increased in abundance in areas close to larger population centers.

### What lies ahead?

- **Awareness campaign** - Doctors across Europe should ***increase their awareness of the symptoms*** of dengue, because most cases are mild or asymptomatic and therefore hard to spot.
- **Vector control** - Vector control describes measures used to limit or eradicate human contact with the "vector," the thing that transmits a disease in this case the mosquito.

### Measures by India to control Spread of Dengue

- Established Sentinel Surveillance Hospitals with laboratory support for augmentation of diagnostic facility for Dengue in endemic States.
- Government is providing free testing/treatment of dengue in government hospitals.
- Rate of Elisa test to confirm dengue have been capped in private hospitals.
- More than 15 lakh houses are been visited by health department for breeding checking.
- Genome sequencing involving analysing the genetic makeup of the virus and aims to create a comprehensive understanding of dengue.
- Under National Health Mission, budgetary support is provided to the States/UTs for Dengue and Chikungunya control activities.

## References

1. [DW| Higher spread of Dengue in Europe](#)
2. [WHO| Dengue Infection](#)

