Dengue Early Warning System

A study led by **Indian Institute of Tropical Meteorology (IITM), Pune** explores how **climate change** influences **dengue outbreaks**, and proposes an **early warning system** to predict potential outbreaks.

- **Climate Impact on Dengue:** The study reveals that **fluctuating rainfall, and humidity levels between 60-78%** during monsoons increase **dengue cases,** with heavy rainfall above **150 mm** (flushing out mosquito eggs and larvae) **reducing mosquito prevalence.**
  - **Rising temperatures** could increase **dengue-related deaths in India by up to 40% by 2050.**
- **Dengue Early Warning System:** The system predicts dengue outbreaks over two months in advance by analyzing climate factors like temperature, rainfall, and humidity.
  - **Machine Learning and Artificial Intelligence** models enhance prediction accuracy, giving authorities critical time for proactive measures.
- **Dengue:** It is a mosquito-borne disease caused by the **dengue virus (*Genus Flavivirus*),** primarily transmitted by **Aedes aegypti mosquitoes**.
  - It has four serotypes (DEN-1, DEN-2, DEN-3, DEN-4). **Symptoms include** high fever, severe headaches, pain behind the eyes, and intense joint and muscle pain.
  - **Diagnosis is through blood tests,** but there is no specific treatment for dengue.

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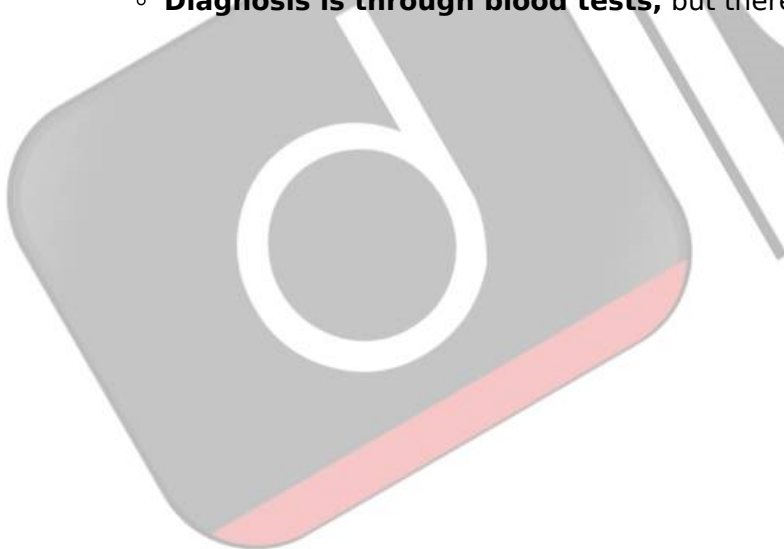
THE DENGUE DILEMMA!

DENGUE
A viral infection spread by Aedes aegypti mosquito

40% of world population live in areas with the risk of dengue transmission.

1800 cases were reported in Delhi alone last year.

HOW TO PREVENT DENGUE!

- Prevent water stagnation.
- Spray bleaching powder on stagnant water bodies.
- Avoid mosquito bites.
- Wear clothes that cover you fully

DANGER SIGNS OF DENGUE!

- Vomiting
- Breathlessness
- Bleeding from any site

If the symptoms persist go to a doctor ASAP!

TESTS TO DIAGNOSE DENGUE!

- Initial 3-4 days - Dengue NS1 Antigen
- Later - Dengue Serology Test

HOW TO MANAGE DENGUE

- Take lots of rest and limit physical activity.
- Have plenty of fluids to maintain hydration.
- Have plenty of fresh fruits & vegetables.
- Take your medication on time, aviod analgesic/painkiller
- Do not panic.
- Consult your physician before taking any mdicine
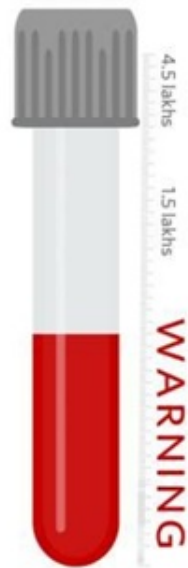
WARNING

4.5 lakhs

1.5 lakhs

IDEAL PLATELET COUNT

1.5 LAKHS-4.5 LAKHS per microlitre of blood.

In Dengue fever platelet count falls below 100,000/ML OF BLOOD. If the platelet count shows a declining trend and other symptoms like - rashes, bleeding tendencies, breathlessness etc. - your doctor may advise hospitalization.

If count is less than 20,000/ML, you must go to the hospital

Read more: Dengue

PDF Refernece URL: https://www.drishtiias.com/printpdf/dengue-early-warning-system