

Dengue



Prevention What you need to know...

Presenter

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What is dengue fever?

Dengue is the most common mosquito-borne viral disease of humans that in recent years has become a major international public health concern and is spread by the *Aedes aegypti* mosquito.

Dengue Fever is spread from an infected person by the bite of an *Aedes aegypti* mosquito which may later bite and infect a healthy individual.

History:

The first recorded outbreak happened in Australia in 1897.

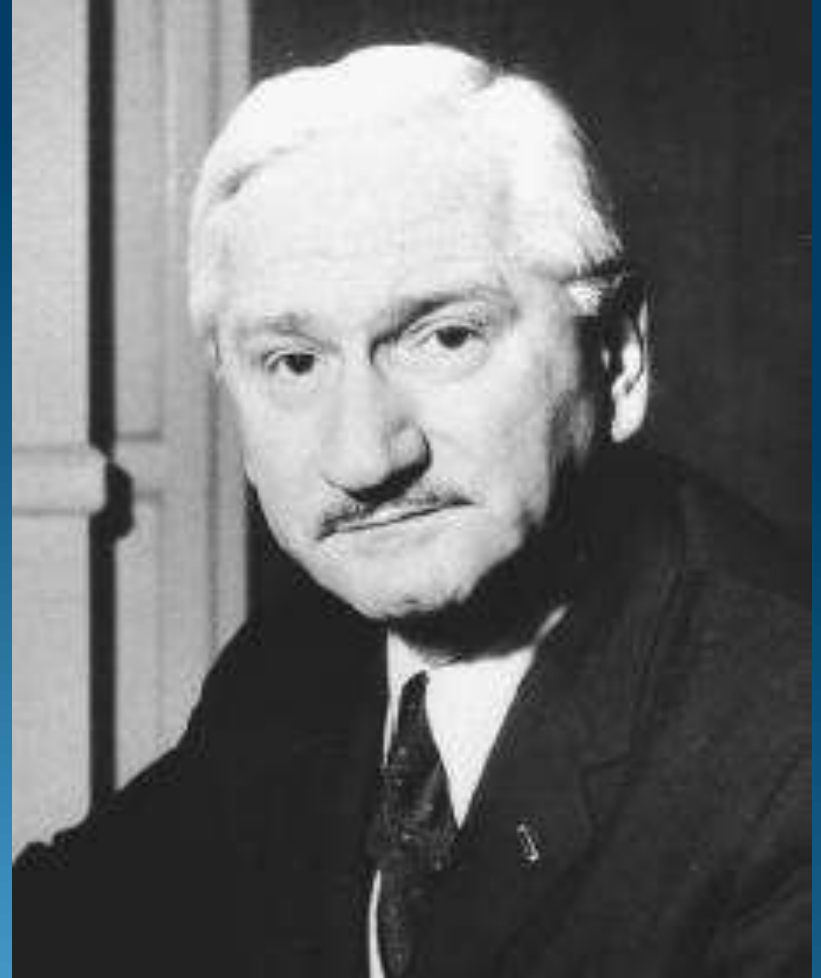
A reoccurrence was noted in 1928 during an epidemic in Greece and again, for the third time, in Taiwan in 1931.

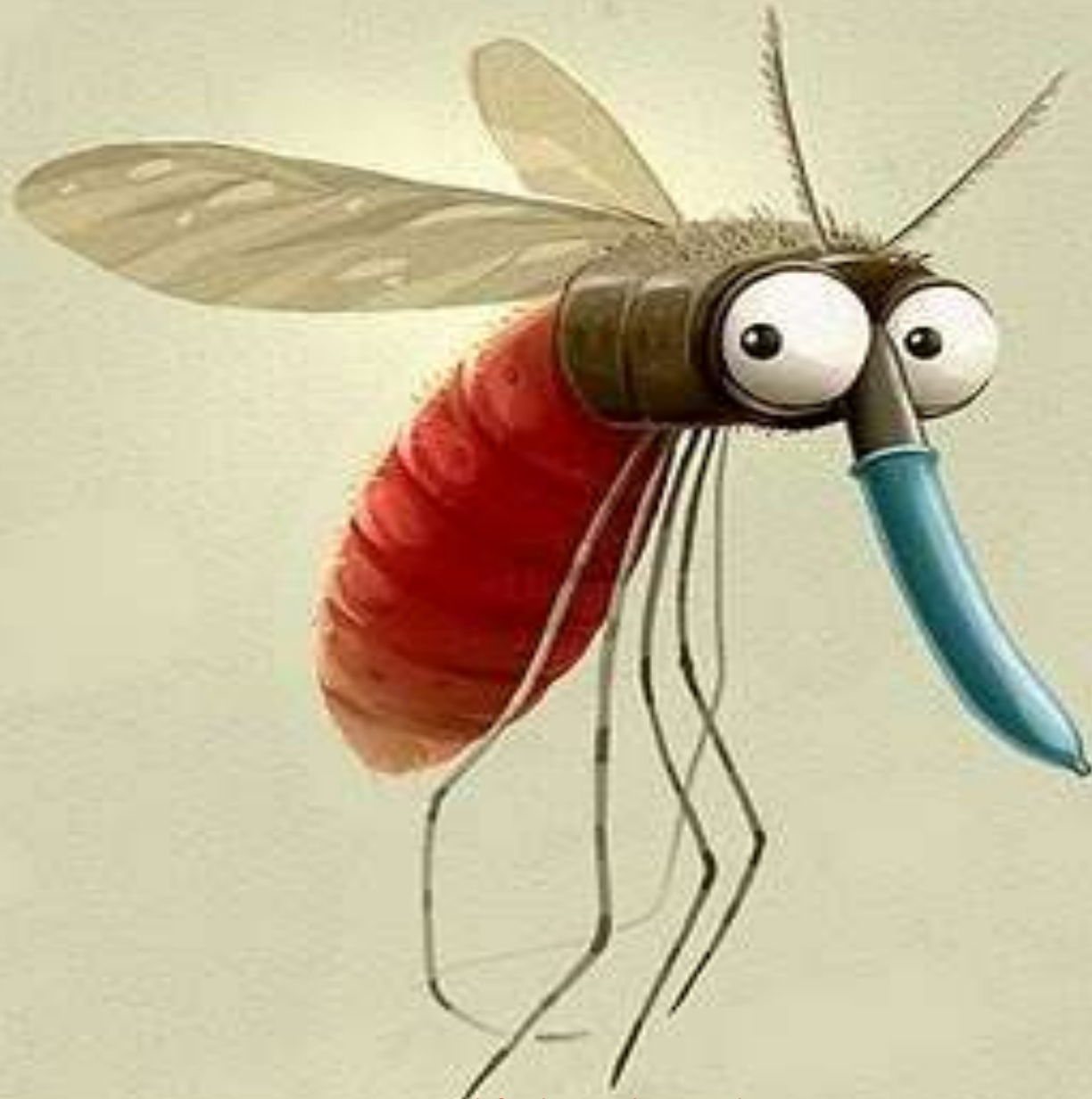


It was not long before it reached other Asian countries including Pakistan, India, Indonesia, Maldives, Myanmar, Sri Lanka, and Thailand, as well as in Singapore, Cambodia, China, Laos, Malaysia, New Caledonia, Palau, Philippines, Tahiti and Vietnam in the Western Pacific Region.

History:

Isolated by
Albert Sabin
in 1944





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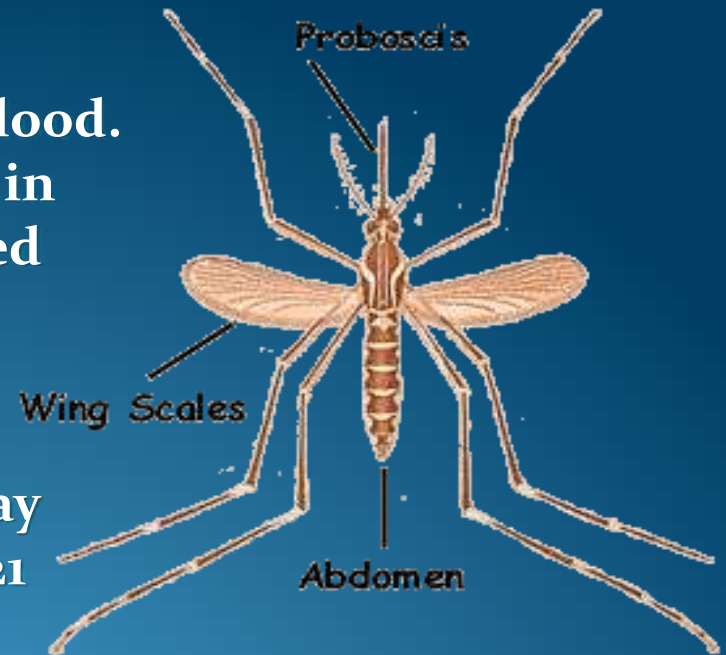




Do You Know...

Only the female Aedes Mosquito feeds on blood. this is because they need the protein found in blood to produce eggs. Male mosquitoes feed only on plant nector.

On average, a female Aedes mosquito can lay about 300 eggs during her life span of 14 to 21 days.



Do You Know...

- Dengue Fever (DF)

and Dengue

Hemorrhagic Fever

(DHF) are the most

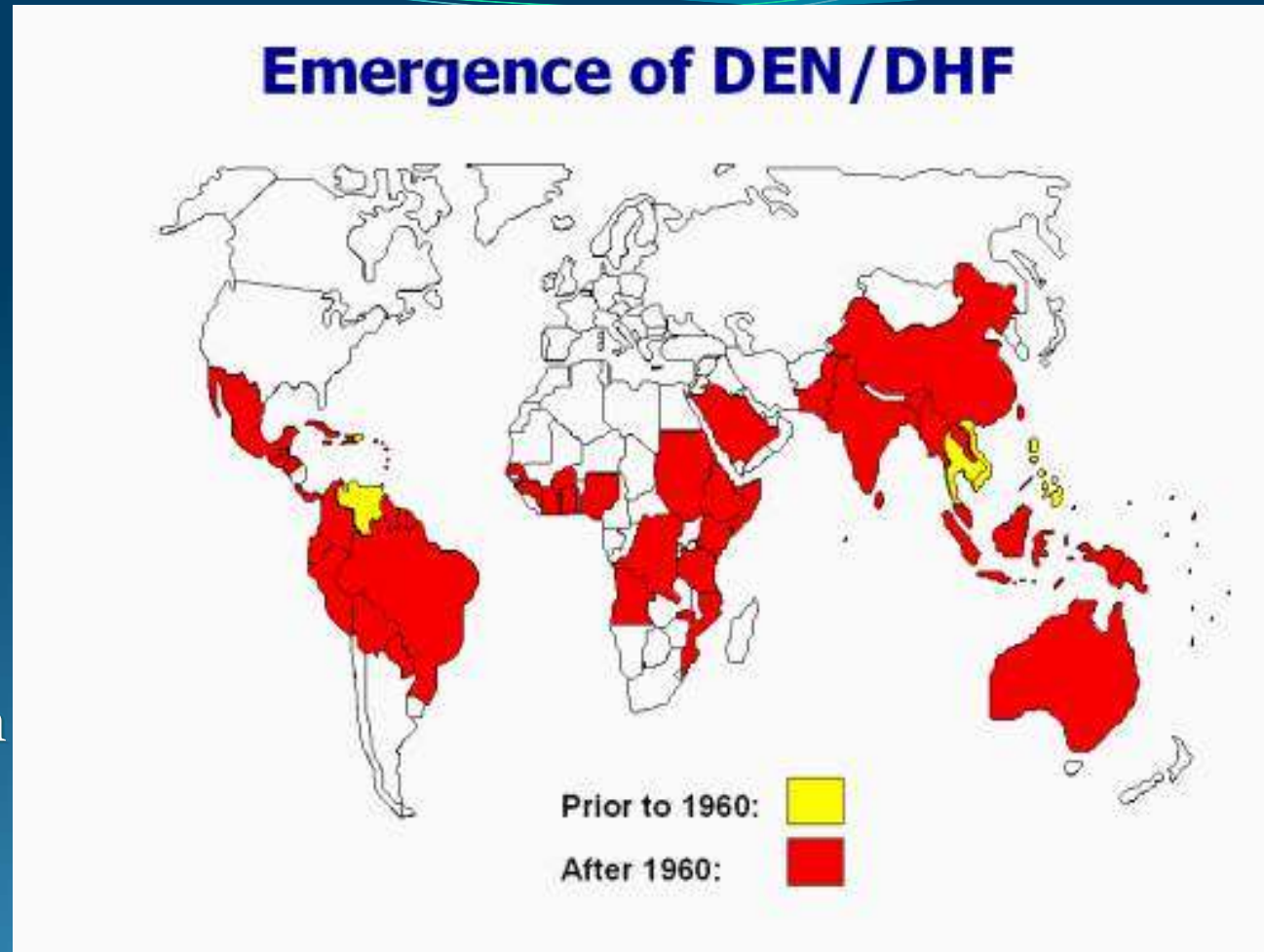
Common mosquito -

borne viral diseases in

the World.

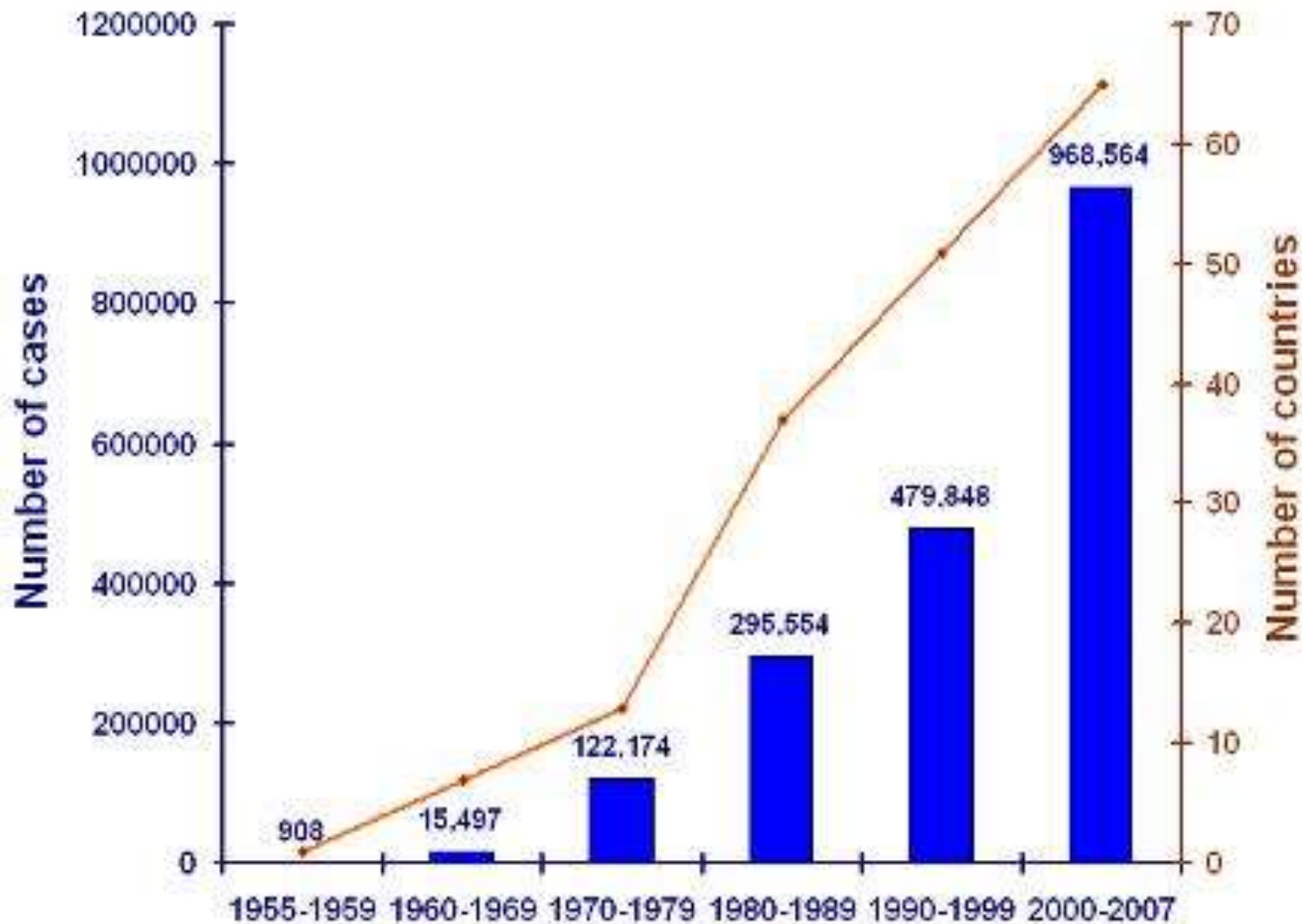
- These can be Fatal

Dengue is found in tropical and sub-tropical regions around the world, predominantly in urban and semi-urban areas



Average annual number of DF/DHF cases reported to WHO & average annual number of countries reporting dengue

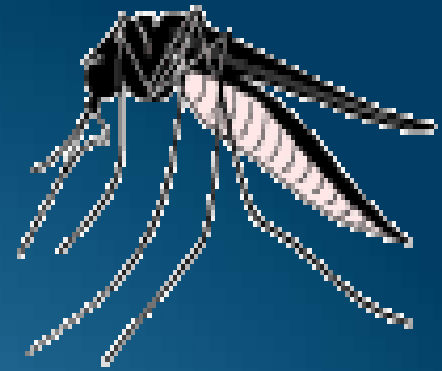
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Transmission

Dengue viruses are transmitted to humans through the bites of infective female *Aedes* mosquitoes. Mosquitoes generally acquire the virus while feeding on the blood of an infected person. After virus incubation for eight to 10 days, an infected mosquito is capable, during probing and blood feeding, of transmitting the virus for the rest of its life. Infected female mosquitoes may also transmit the virus to their offspring by transovarial (via the eggs) transmission, but the role of this in sustaining transmission of the virus to humans has not yet been defined.

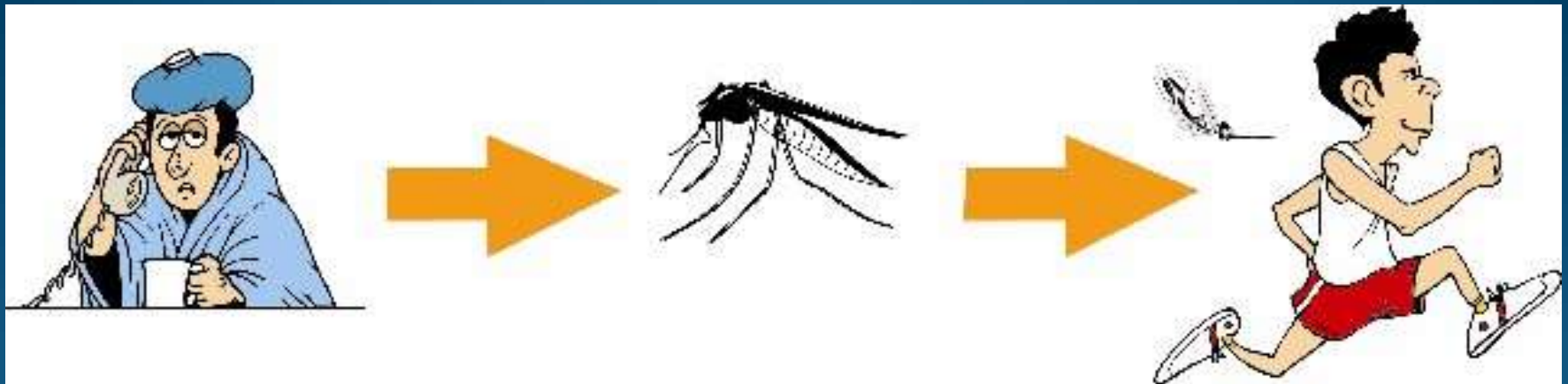
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How do Aedes Mosquitoes Transmit Disease

Mosquito bites and sucks blood containing the virus from an infected person.

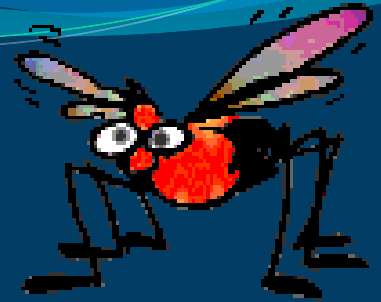
And passes the virus to healthy people when it bites them.



Virus is carried in its body.

Transmission

There are four distinct, but closely related, viruses that cause dengue. Recovery from infection by one provides lifelong immunity against that serotype but confers only partial and transient protection against subsequent infection by the other three.



Types of Dengue Fever

There are three types of Dengue fever

a) Classical Dengue

b) Dengue hemorrhagic fever (DHF)

c) Dengue shock syndrome

Signs & Symptoms of Dengue Fever?

Fever

Headache

Rash



Eye Pain

Back Pain



Muscle Aches

Joint Pain

Signs & Symptoms of Dengue

Fever?

- High Fever
- Headaches (Sometimes Severe)
- Muscle and Joint pains
- Backache -Pain behind the eyes
- Skin Rash
- **Epistaxis and bleeding**
- **from Gums can also be a feature.**
- **Vomiting -Diarrhea**
- **In severe cases, complications like bleeding can occur.**



Symptoms of Dengue fever

Febrile phase

sudden-onset fever

headache

mouth and nose
bleeding

muscle and
joint pains

vomiting

rash

diarrhea

Critical phase

hypotension

pleural effusion

ascites

gastrointestinal
bleeding

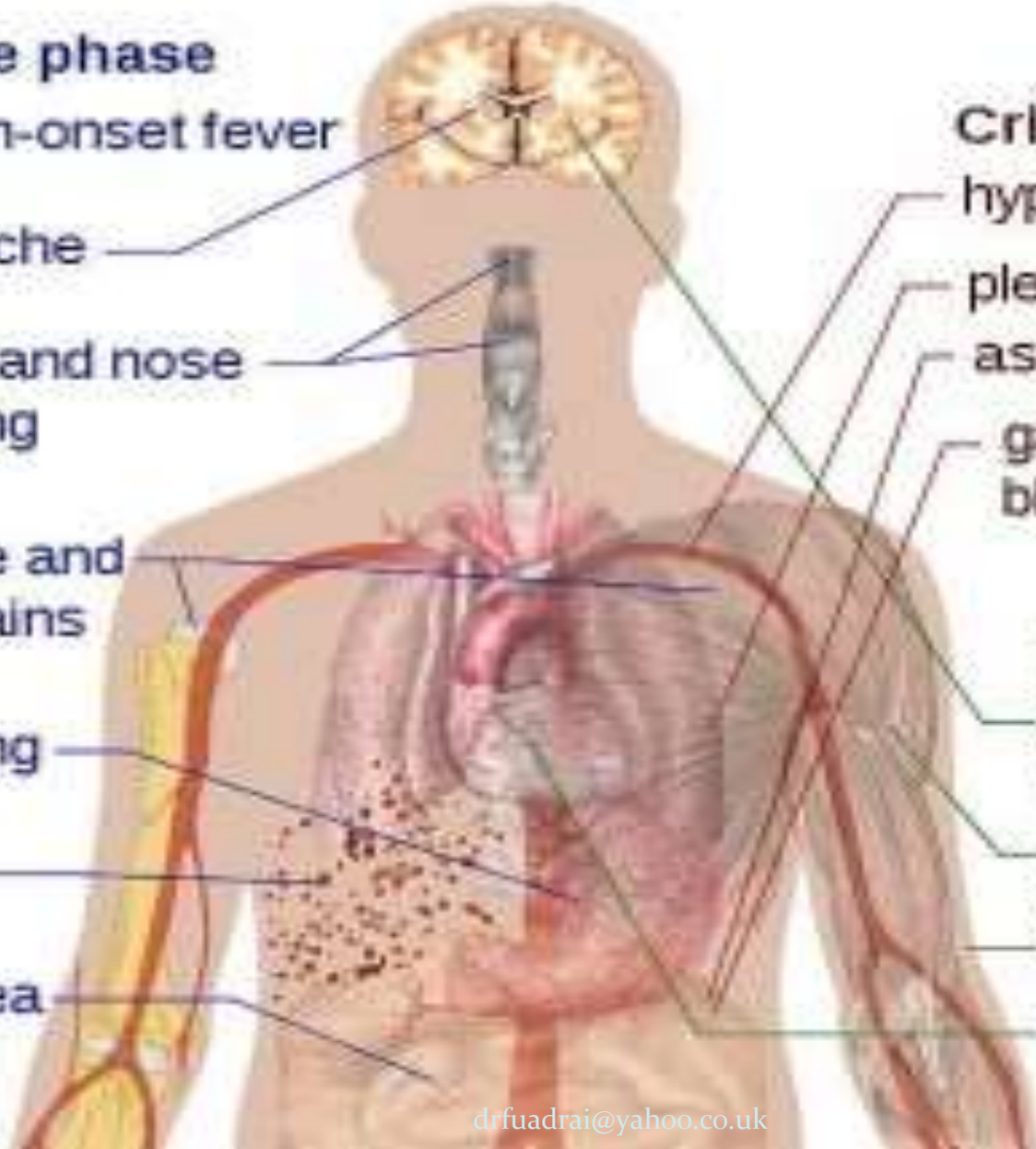
Recovery phase

altered level of
consciousness

seizures

itching

slow heart rate



-Dengue Haemorrhagic Fever (DHF)

is a potentially deadly complication that is characterized by high fever,

-Often with enlargement of the liver, and



-In severe cases circulatory failure.

The illness often begins with a sudden rise in temperature accompanied by facial flush and other flu-like symptoms.

-The fever usually continues for two to seven days and can be as high as 41° C, possibly with convulsions and other complications.

Laboratory Tests

Clinical laboratory tests

CBC—WBC, platelets, hematocrit

Albumin

Liver function tests

Urine—check for microscopic hematuria

Dengue-specific tests

Virus isolation

Serology (IgM ELISA)



Source: Maroof International Hospital Clinical Laboratory 2011

Laboratory Tests (Continued)



Both IgG and IgM are produced after 5–7 days.

The IgM becomes undetectable 30–90 days after a primary infection, but earlier following re-infections.

IgG, by contrast, remains detectable for over 60 years and, in the absence of symptoms, is a useful indicator of past infection.

In a person with symptoms, the detection of IgM is considered diagnostic.

Source: Maroof International Hospital Clinical Laboratory 2011

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Treatment

The centers for disease control and prevention in the United States says there is no specific medication for treatment of a dengue infection.

WHO says there is no specific treatment for dengue fever.

However, proper and early supportive treatment can relieve the symptoms, and prevent complications.

Treatment (Continued)

If you suspect dengue:

- Give analgesics (pain relievers) with paracetamol.
- Avoid close containing aspirin, as well as ibuprofen, since these can increase the risk of bleeding.
- Rest and plenty of fluids are also recommended.
- Even if you're not sure that it's dengue, it's best to consult a physician.

Treatment (Continued)

-A trip to the hospital is a must if vomiting and severe abdominal pain develop in the first 24 hours after the fever declines.

For DHF, fluid replacement therapy is an option for treatment if the condition is detected early. However, this frequently require hospitalization.



Avoid

Asprin and Iboprofen



Prognosis

Typical dengue is fatal in less than 1% of cases. The acute phase of the illness with fever and myalgia lasts about one to two weeks. Convalescence is accompanied by a feeling of weakness (asthenia), and full recovery often takes several weeks.

The case-fatality ratio for DHF averages about 5% worldwide, but can be kept below 1% with proper clinical management.

Source: Médias-France 2007

**This is what
you can do to prevent...**

Prevent *Aedes* from Breeding!

**Remove ALL sources of
stagnant water.**

**Deny the *Aedes* mosquito of any chance
to breed.**

Prevention from Dengue Fever:

-Neither vaccine nor drugs for preventing infection are available.

-The bite of one infected mosquito can result in infection.

The risk of being bitten is highest during the early morning, several hours after daybreak, and in the late afternoon before sunset.

However, mosquitoes may feed at any time during the day.

Aedes mosquitoes typically lives indoors and are often found in dark, cool places such as

- In closets,
- Under beds,
- Behind curtains, and
- In bathrooms.

Personal Prevention

No vaccine

Prevent mosquito breeding

Eliminate standing water

Fix window screens

Spray DEET or Picaridin

Mosquito control:

Improved water storage

Insecticides

Introduction of mosquito-eating fish and copepods

Use of Mosquito Nets

Use of Mosquito Repellents

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Prevention

Dengue mosquitoes breed in stored, exposed water collections.

Favoured places for breeding are

barrels,
drums,
jars,
pots,
buckets,
flower vases,
plant saucers,
tanks,
discarded bottles,
tins,
tyres,
water coolers etc.



A Vaccine

Nothing yet but progress is being made

Tetravalent live
attenuated

Intertypic chimaeric
vaccine

Chimaeric vaccine



Community Prevention

Lessons for Future Dengue Prevention Programs

- Sustainable environmental control vs. eradication
- Community-based programs
- Promote the priority among Health Officials, Not for Profit Organizations and General Public

ڈینگھی بخار سے بچاؤ کے لیے ہدایات

کیا نہیں کرنا چاہیے

- نکل نہ جانے والے درخیز خرابیوں اور کھردرائی سے باہر نہ نکلنے دلائیں۔
- تھکنے والی غیر حفاظت سے متوجہ نہ ہوں۔
- ماف پائی اور کالے نائے نکلنے والے کھلم کھلا حصوں سے اجتناب کریں۔
- پریشانی نہ ہوں۔
- گریس لگوانے سے بچیں۔
- دروازوں اور کھڑکیوں پر جالی نہ لگائی جائے اور کھولتے چھوڑیں۔
- آہنگی اور سہولتی یا پست کا فرش نہیں ہے بلکہ فرش کی چھانچائی سے اجتناب کریں۔
- مانات ظاہر ہونے پر قریبی اسپتال سے رجوع کرنے میں ہرگز ہیر نہ کریں۔
- دستیابی آتی ہے تو ہرگز کھول نہ کریں۔

کیا کرنا چاہیے

- گرمیوں میں پانی اور کھانے والے ذائقوں میں ڈینگھی بخار سے بچاؤ۔
- پھلدار، گھاس کے پے سے بچیں اور پانی کی تھکنوں اور مگالوں سے بچیں۔
- مگالوں سے بچاؤ کے لیے مگالوں سے اجتناب کریں اور مگالوں سے بچاؤ کریں۔
- کھانے کے بعد صاف ہاتھ دھو کر کھانے کے کھانے سے اجتناب کریں۔
- گرمیوں میں مگالوں سے بچاؤ کریں۔
- صبح اور شام کے وقت میں ام کے کھانے سے بچیں اور بچاؤ کریں۔
- ڈینگھی بخار کے مانات ظاہر ہونے کی صورت میں فوراً قریبی اسپتال سے رجوع کریں۔
- یاد رکھیں! ڈینگھی بخار جیسا مانات ظاہر ہے تاکہ ہر وقت مگالوں اور مانات ظاہر نہ ہوں۔

Thank You



Dr. Fuad Hameed Rai, Executive Director & Medical Director, Maroof International Hospital, receiving Brands of the Year Award 2011-2012 in the category of Best Hospitals from Dr. Abdul Hafeez Shaikh, Finance Minister in Karachi on January 28, 2013. Seen on the left is Mr. Zahid Malik, Editor-in-Chief, Pakistan Observer, who is also the President of the Brands Foundation of Pakistan.

I specially thank the Geneva Foundation for Medical Education and Research Team



to give me this opportunity to
educate all of you about a very
important

Public Health Problem.

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