

Top 5 Glamorous Mosquito Borne Illnesses



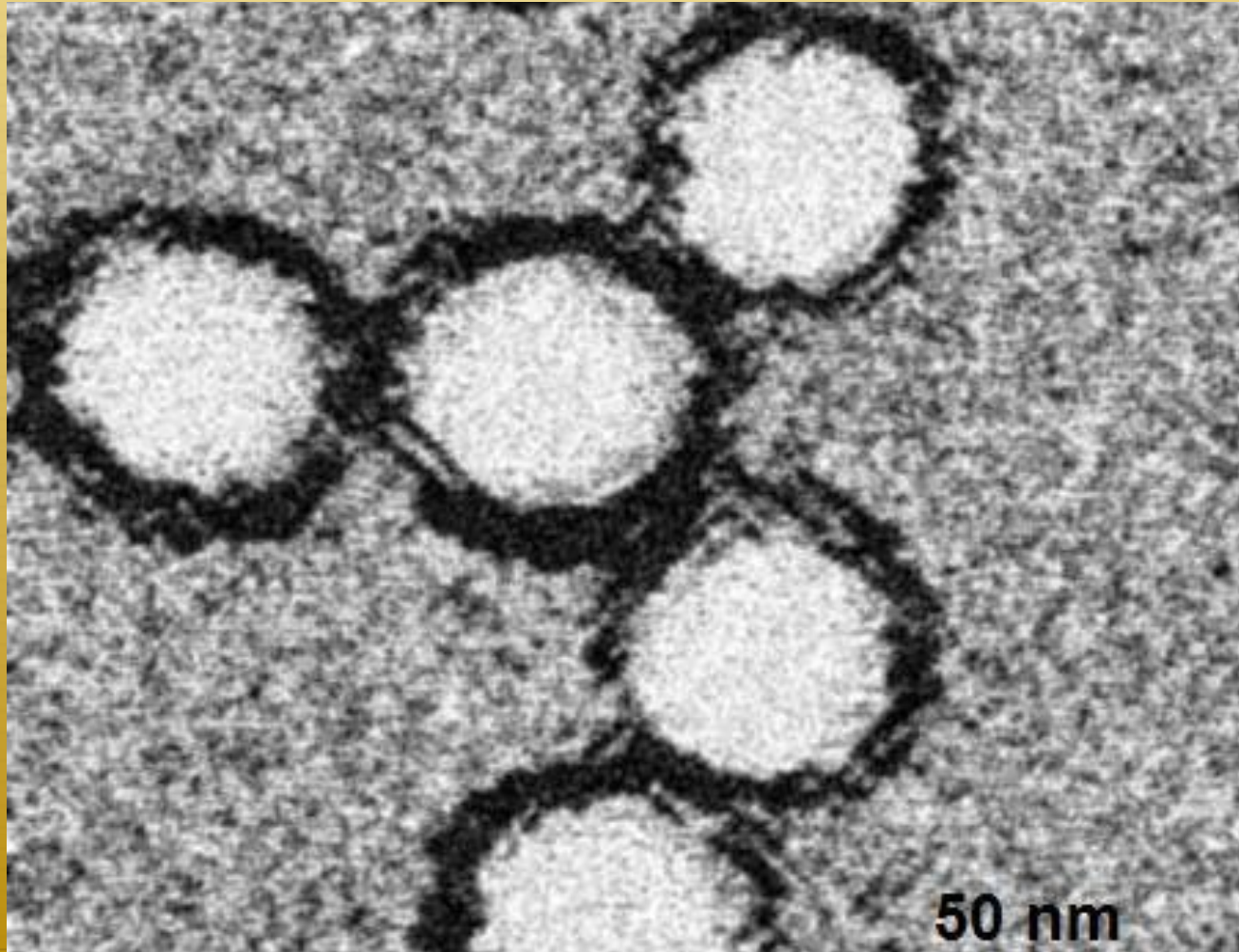
Doc's Trip Advisor

Top 5 Glamorous Mosquito Borne Illnesses



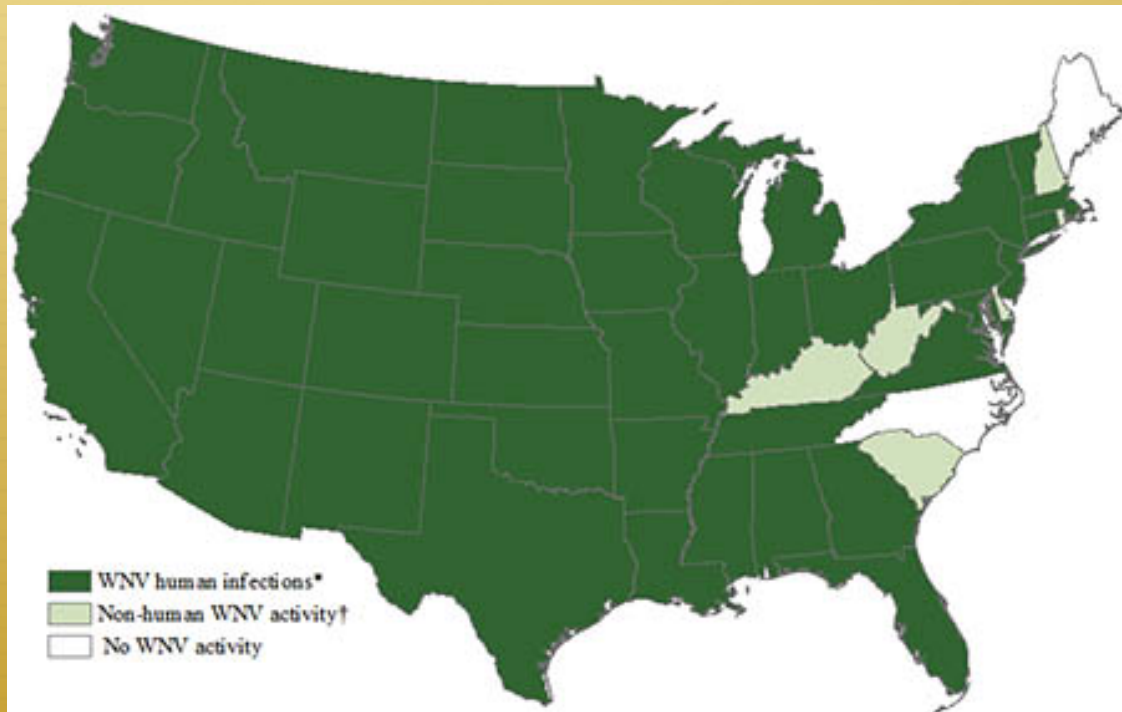
Gregory J Moore, MD FACEP FAWM

Number 5

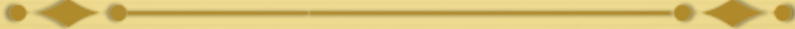


West Nile Virus

- ✦ Most common mosquito virus in the US
- ✦ Only 20% will have symptoms
- ✦ Sx- Fever, Chills, Body aches, Vomiting, HA, Diarrhea, Rash
- ✦ Severe Sx in about 1% including neurologic Sx
- ✦ Of these, 10% can die

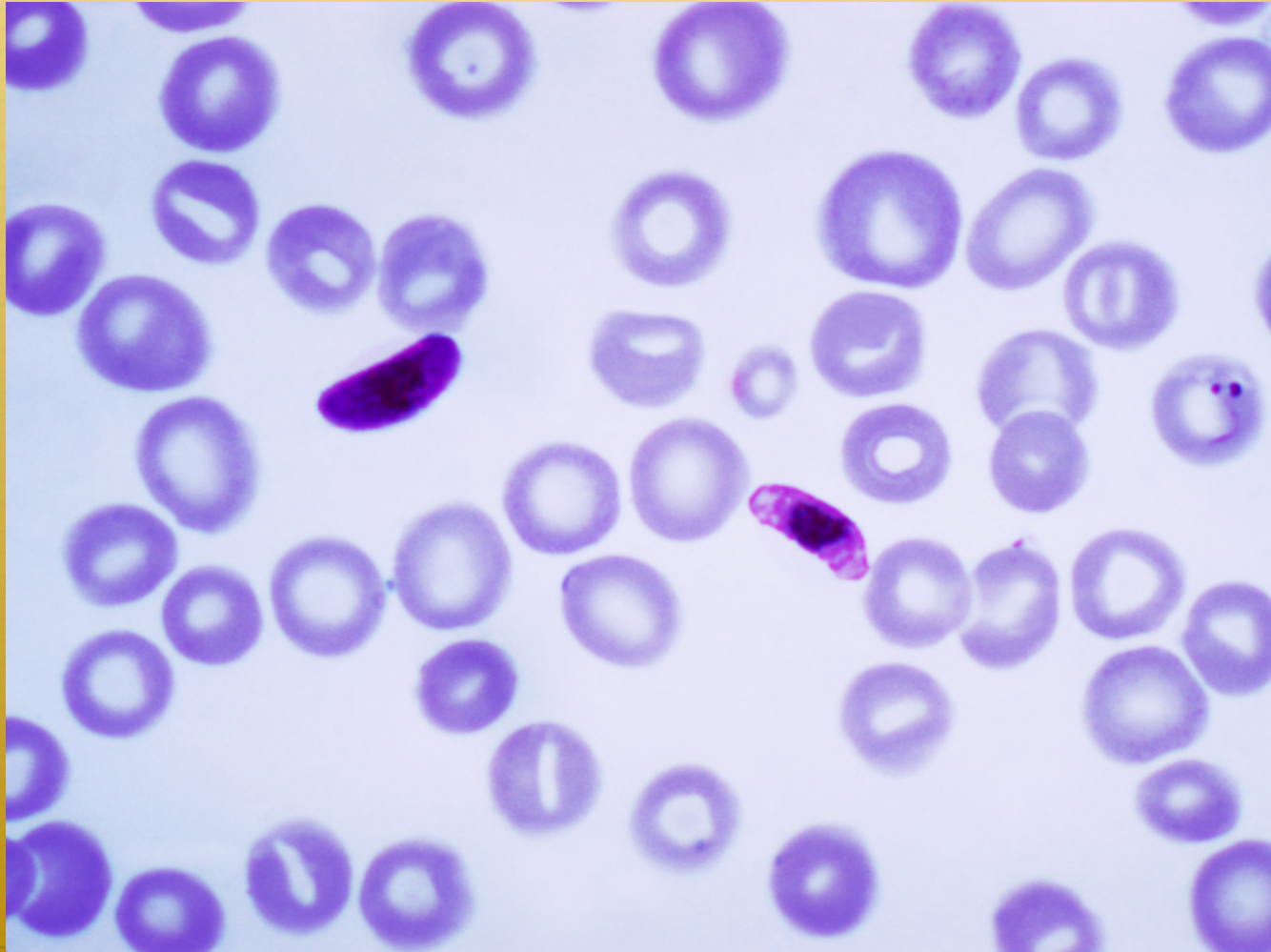
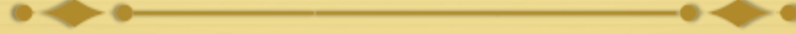


West Nile Treatment



- ✦ No vaccine or specific antiviral treatments for West Nile virus infection are available.
- ✦ Over-the-counter pain relievers can be used to reduce fever and relieve some symptoms
- ✦ In severe cases, patients often need to be hospitalized to receive supportive treatment, such as intravenous fluids, pain medication, and nursing care.
- ✦ Prevention

Number 4



Malaria

- ✦ The most frequently diagnosed disease among travelers
- ✦ 250 million cases a year
- ✦ Accounts for 600,000 deaths
- ✦ Plasmodium falciparum, P ovale, P vivax, P malariae
- ✦ Costa Rica- Vivax
- ✦ Anopheles mosquito



Malaria symptoms



- ✦ Incubation 8-14 days for all but *P malariae* which is 18 days.
- ✦ Relapsing fever every 48 hours except *malariae* which is every 72
- ✦ Chills, rigors, nausea, vomiting, headache, backache, sweats
- ✦ Diagnosis by sequential blood samples with fever

Complicated Malaria



- ✦ >5%-10% parasites in the blood
- ✦ Encephalopathy- delirium and seizures (if untreated almost 100% fatal)
- ✦ Hypoglycemia from glucagon depletion
- ✦ Renal failure-falciparum
- ✦ Pulmonary edema
- ✦ Anemia
- ✦ Liver dysfunction

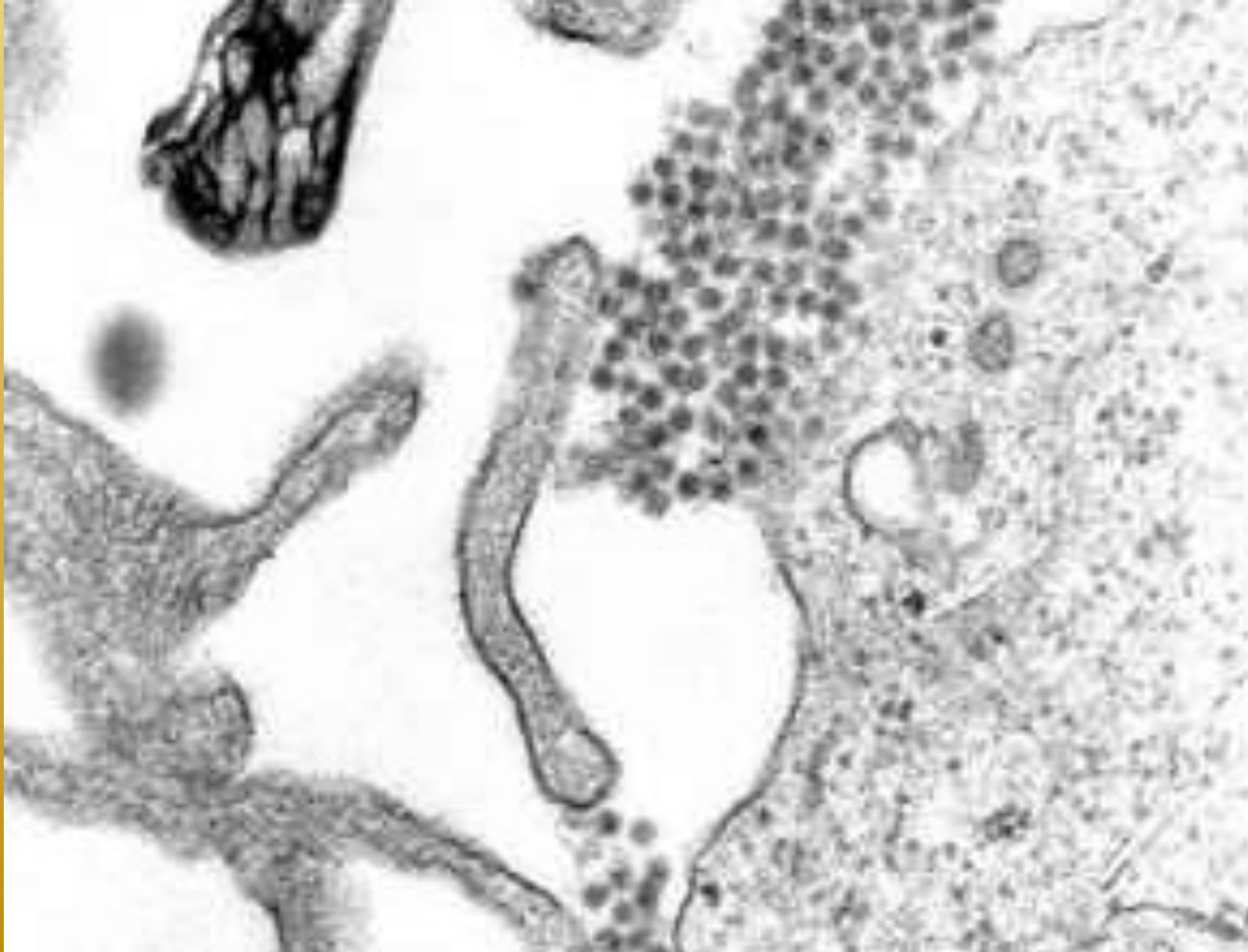
Malaria Treatment

- ✦ Based on region and resistance
- ✦ Chloroquine and mefloquine- chloriquine 2500 gm over 3 days (1 gm followed by 500 mg in 6h followed by 500 mg qd x 2 days) plus Primaquine 30 mg PO qd x 14 days
- ✦ For complicated infections combination therapy seems best; atovaquone-proguanil 4 adult tabs PO daily for 4 days or
Artemether-Lumefantrine 4 tabs PO q8 hrs x 2 then BID x 2 days plus Primaquine 60 mg/d x 14 days
- ✦ Quinine can be used but high side effects

Malaria Prevention

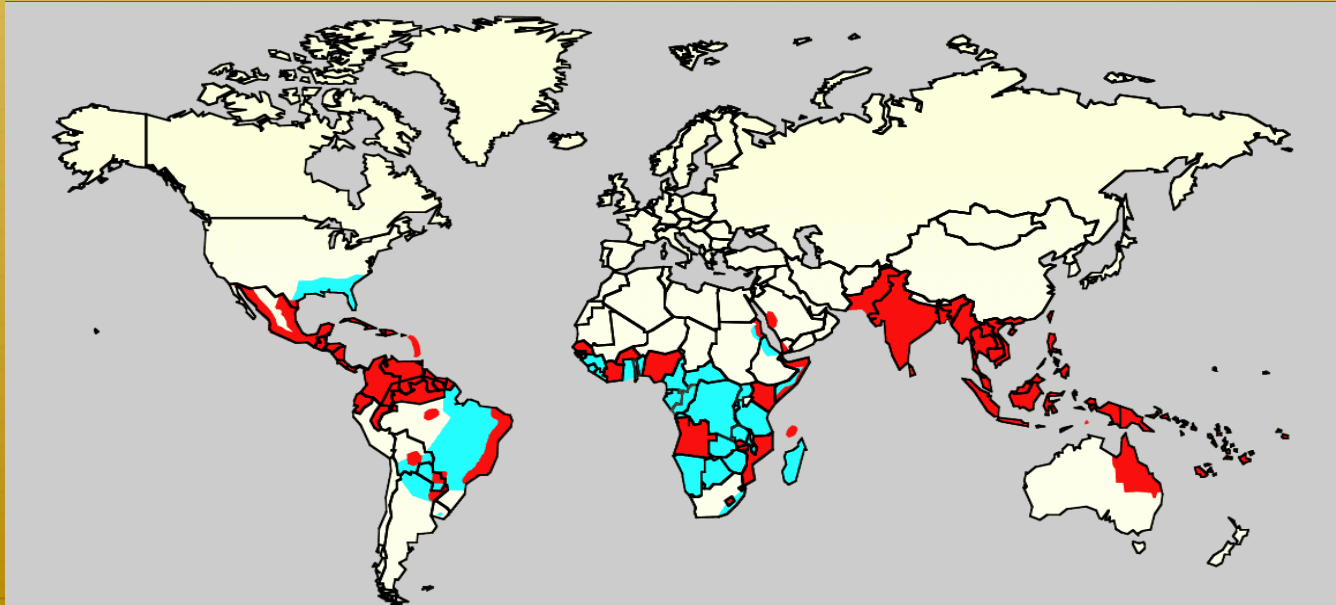
- ✦ Chemoprophylaxis- Chloroquine, mefloquine, atovaquone-proguanil, doxycycline
- ✦ Repellant

Number 3



Dengue

- Arboviral infection
- Now the most prevalent mosquito borne disease worldwide
- Presents in a wide variety of symptoms
- There are 4 identified Dengue viruses of the Flavivirus genus



Classic Dengue

- ✦ Incubates 4-7 days
- ✦ Fever lasts 1-7 days
- ✦ Headache and retro-orbital pain
- ✦ Muscle aches and pains
“break-bone fever”
- ✦ Extreme fatigue
- ✦ Mild maculopapular rash
- ✦ Nausea and slight cough



Lab findings



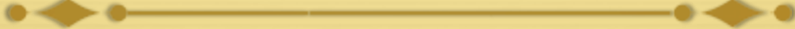
- ✦ Leukopenia
- ✦ Thrombocytopenia
- ✦ Elevated liver enzymes
- ✦ Diagnosis is mostly clinical
- ✦ Confirmed with serology ELISA IgG, IgM

Dengue Complications

- ✦ Hemorrhagic fever (DHF) capillary leaks, severe thrombocytopenia
- ✦ Dengue Shock Syndrome
- ✦ Encephalopathy, and seizures
- ✦ Liver failure
- ✦ Has been associated with Guillain Barre

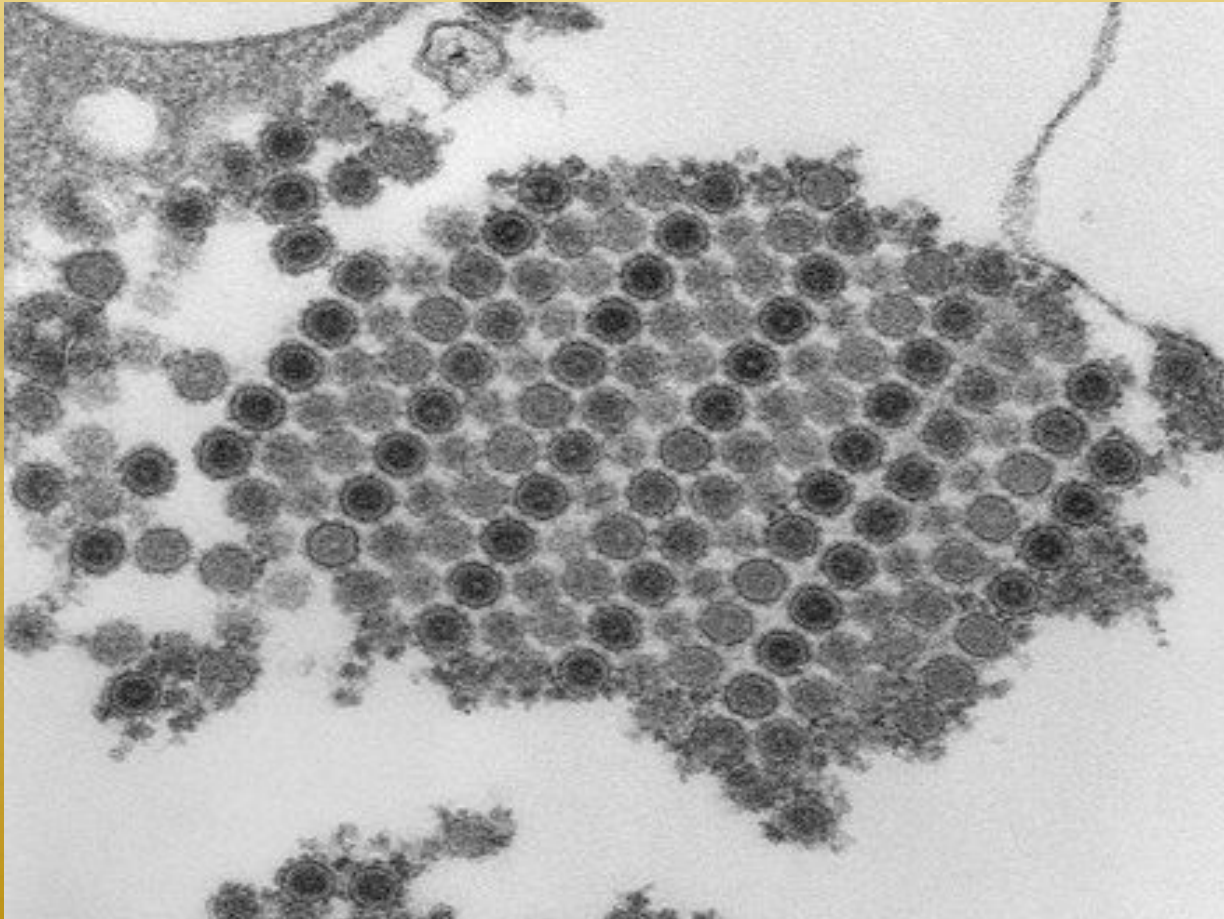


Dengue Treatment

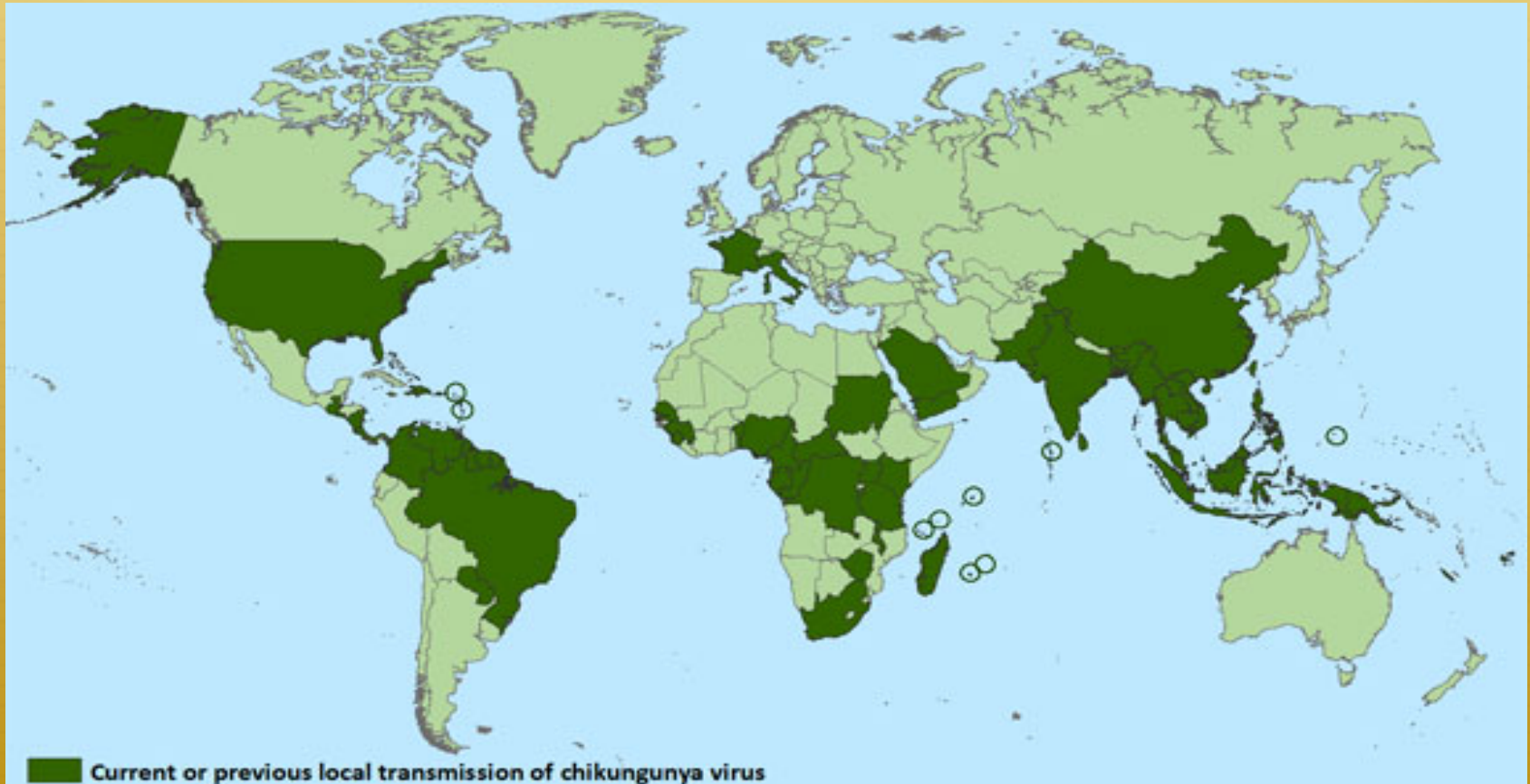


- ✦ The mainstay of treatment is PREVENTION!
- ✦ DEET when in the endemic areas
- ✦ Treatment is supportive
- ✦ Acetaminophen is recommended
- ✦ Stay well hydrated
- ✦ Aggressive fluid therapy for complications with isotonic crystalloids
- ✦ Hemorrhage may need transfusion
- ✦ No commercial vaccine is available yet in US

Number 2

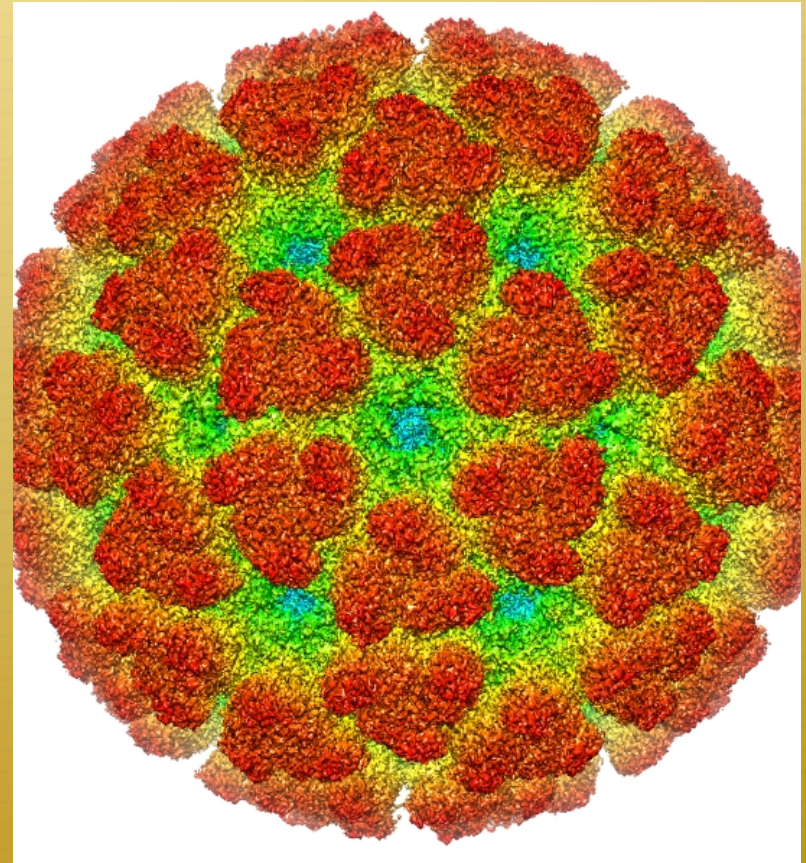


Chikungunya



Chikungunya

- ✦ Alphavirus
- ✦ Transmitted by *A. aegypti*
- ✦ Incubates 2-12 days
- ✦ Fever up to 104
- ✦ Maculopapular rash
- ✦ Myalgias, HA, fatigue
- ✦ Joint pain may last several months-years
- ✦ Rx-Symptomatic, NSAIDS
- ✦ Prevention!!



And The Current Number 1 Is?



Breaking Headlines

Blame Zika mosquitoes on DDT ban

HEARTLAND
Jacqueline Rowarth



The pesticide is estimated to have saved more lives than any other man-made chemical

Emotion transcends evidence; fears transcend facts; anti-science is on the rise.

In 1962 Rachel Carson's book *Silent Spring* hit the shelves.

The American Council on Science and Health describes the book as "lyrical but scientifically flawed – arguing eloquently but erroneously that pesticides, and especially DDT, were poisoning the environment and also endangering human health."

Ospreys, bald eagles and peregrine falcons were identified as suffering from thinning of eggshells, ultimately leading to the potential demise of the species.

Research in captive birds "proving" the link was later found to have involved low calcium diets and no evidence of DDT in the eggs.

Research on bird numbers in the wild reported an increase in bird counts after the DDT years in America in comparison with before, thereby disproving the link between DDT and bird populations.

Yet the mythology continues.

DDT was banned in the US in 1972

mirr.co.uk

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OFFICIAL WARNING TO BRITS

SHRUNKEN HEAD VIRUS: DON'T GET PREGNANT

Sex alert for tourists who have been to Zika disease areas



NATIONAL NEWSPAPER OF THE YEAR

£3 Record-breaking tally for our GOSH appeal - thanks to you!

Zika virus spreading 'explosively'

The essential daily briefing
from The INDEPENDENT

FRIDAY 29 JANUARY 2016

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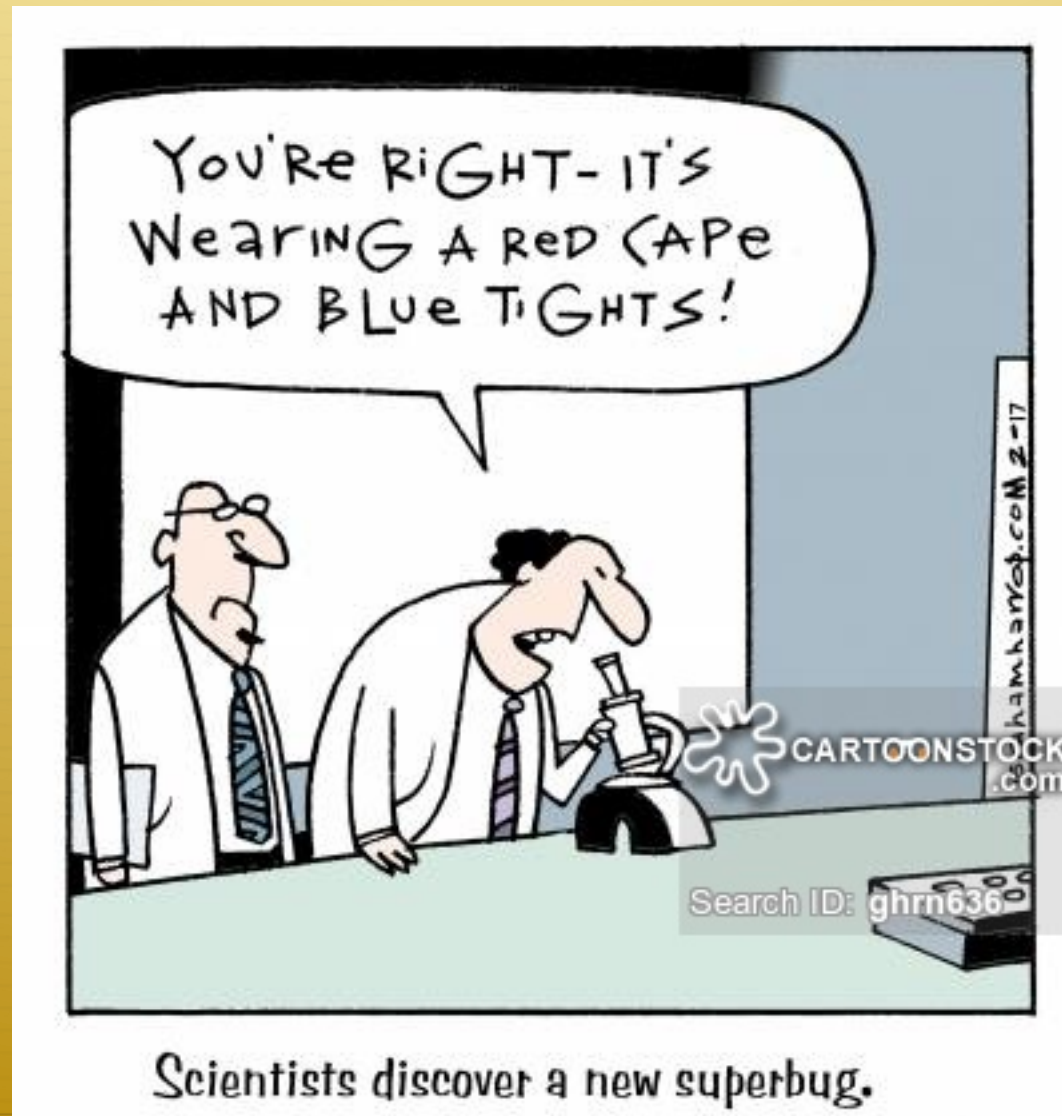
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Are These Super Viruses?



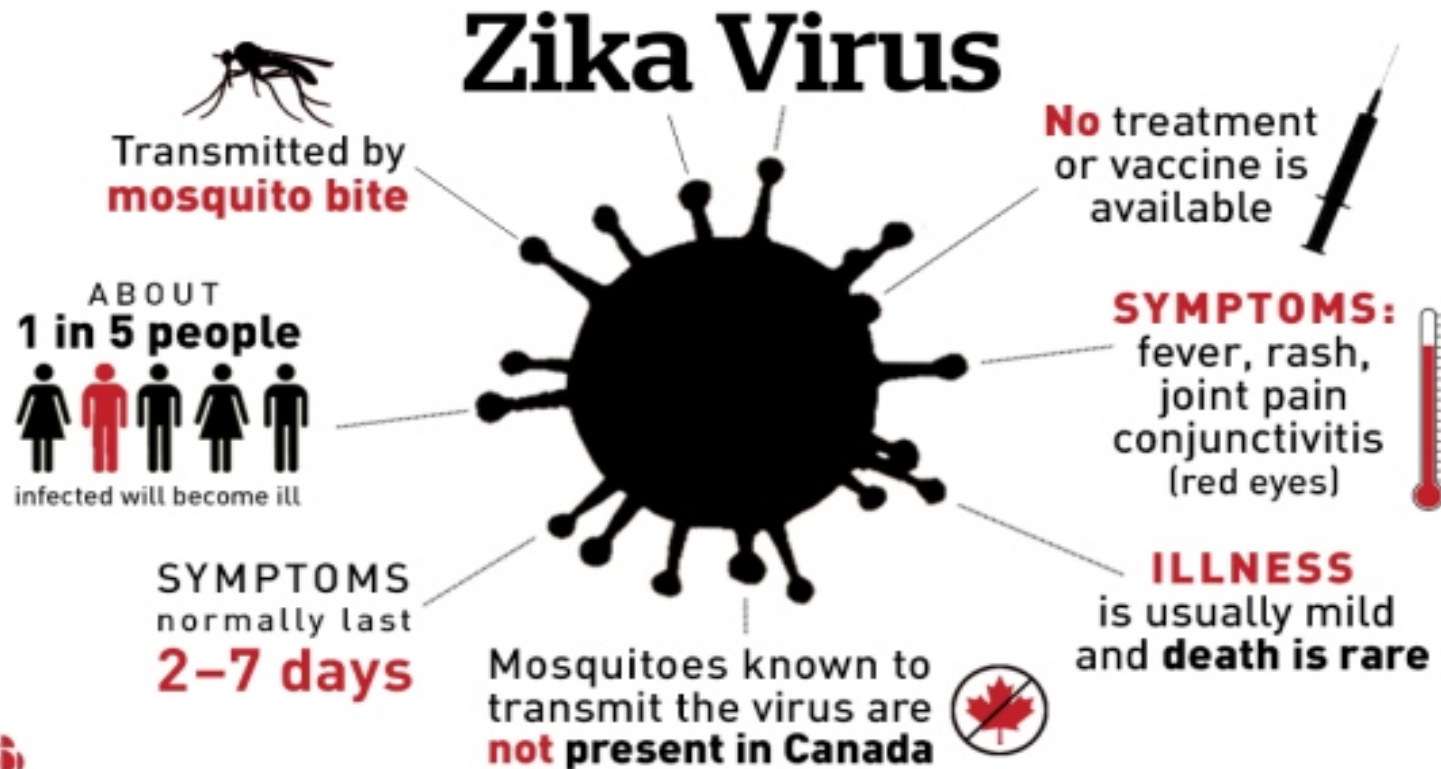
Scientists discover a new superbug.

Zika Virus

- ✦ Flaviviridae virus
- ✦ Transmitted by bite of *Aedes* mosquito
- ✦ Causes mild disease in humans
- ✦ Significant disease in pregnancy



Zika Virus



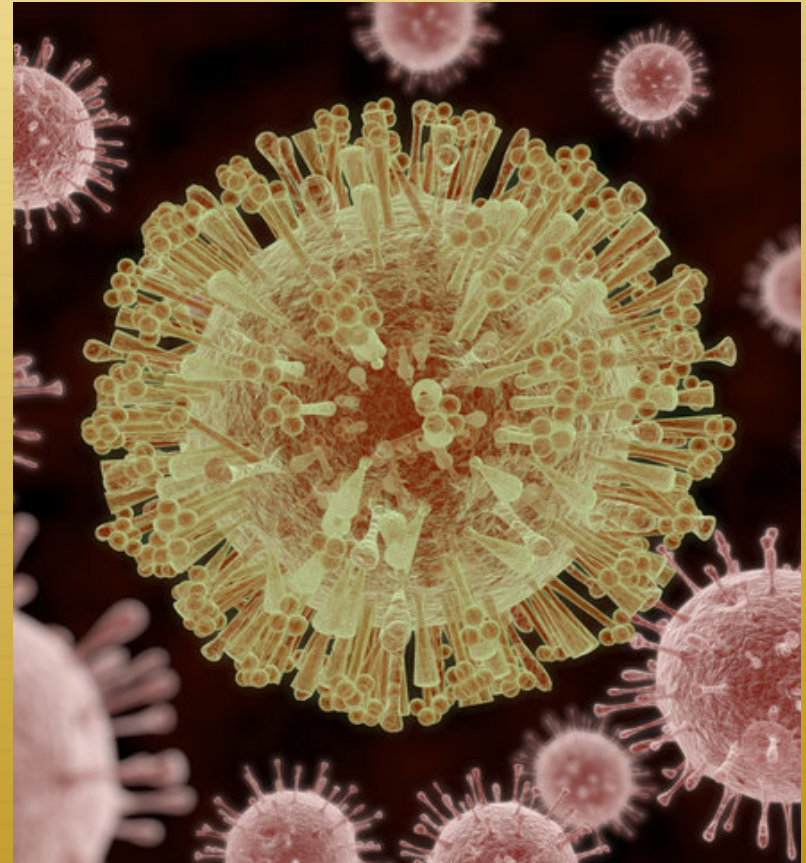
Zika Virus in Pregnancy

- ✦ Transmittent maternally
- ✦ Can be transmitted sexually
- ✦ Can be transmitted by transfusion
- ✦ Not transmitted in breast milk
- ✦ Also has been associated with Guillain-Barre



Zika Virus Treatment

- ✦ Symptomatic
- ✦ Key is prevention
- ✦ Repellant
- ✦ Avoid travel to endemic areas during pregnancy
- ✦ Sexual precautions



Current Endemic Areas



Current Advice to Travelers

- ✦ Pregnant women should not travel to areas with Zika.
- ✦ If Pregnant, use condoms correctly, every time you have vaginal, anal, or oral sex or do not have sex for the entire pregnancy.
- ✦ Men w Sx - consider using condoms or not having sex for at least 6 months after symptoms begin.
- ✦ Women w Sx- consider using condoms or not having sex for at least 8 weeks after symptoms begin.
- ✦ Men and Women No Sx - consider using condoms or not having sex for at least 8 weeks after returning from travel.

Prevention Advice

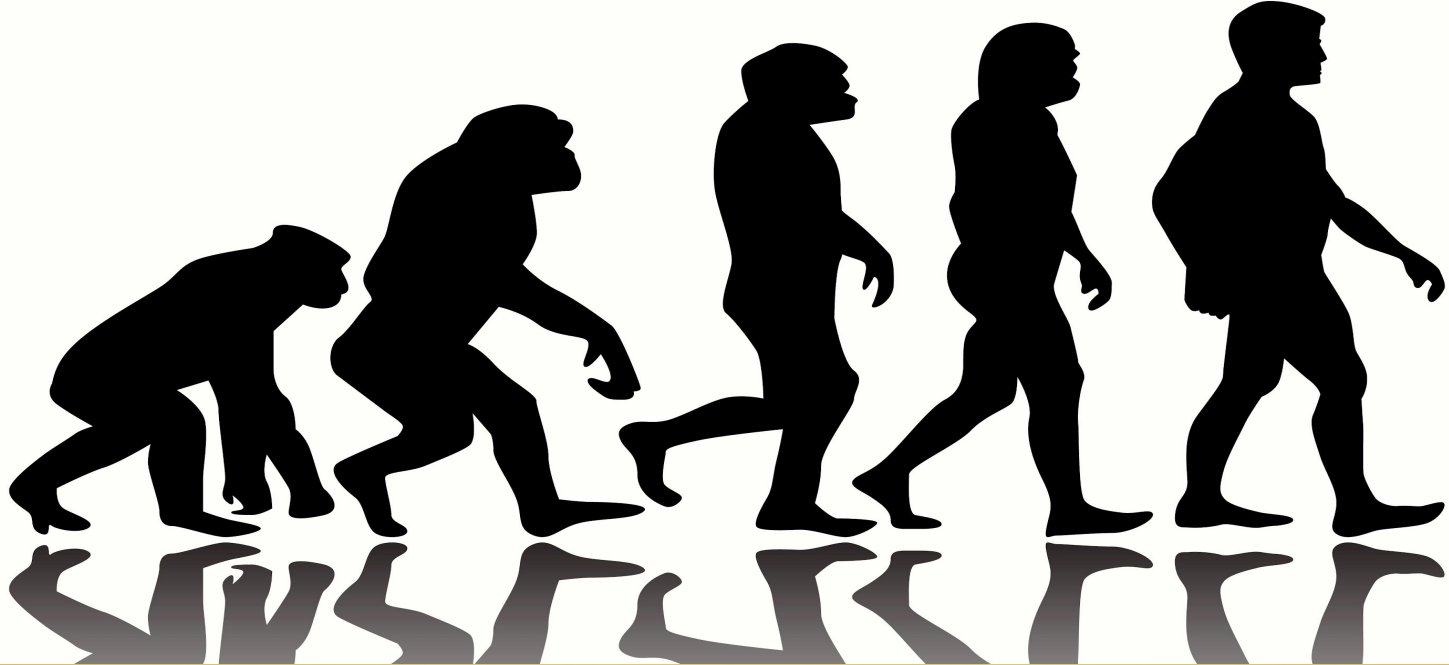


Latest in Travel Fashion





So Who Do You Believe?



Do Not Rely On

- ✦ Internet
- ✦ News Media
- ✦ Tabloids
- ✦ Anecdotal word of mouth
- ✦ Non medical journals

Rely on

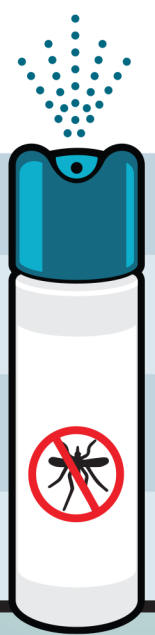
- ✦ Understanding the virus/
bacteria
- ✦ Understanding possible vectors
- ✦ Understanding disease
transmission
- ✦ CDC is an excellent source over
time

Repellant Advice from our Research Scientists



Current Studied Repellants

Active ingredient	Some brand name examples*
Higher percentages of active ingredient provide longer protection	
DEET	Off!, Cutter, Sawyer, Ultrathon
Picaridin , also known as KBR 3023 , Bayrepel , and icaridin	Cutter Advanced, Skin So Soft Bug Guard Plus, Autan (outside the United States)
Oil of lemon eucalyptus (OLE) or para-menthane-diol (PMD)	Repel
IR3535	Skin So Soft Bug Guard Plus Expedition, SkinSmart



Risk Management Summary

- ✦ Where are you going and what is endemic- CDC
- ✦ Understand the disease and vectors
- ✦ Who is travelling with you
- ✦ What risks are there for your particular group
- ✦ Is there preventative vaccines, medications, precautions
- ✦ Do the benefits of travel outweigh the risks

Questions?



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