

Diseases and Ecosystem Disruption Guided Notes

Disease

- Viruses
 - _____, small infectious agent that are _____ inside the living cells of other organisms
 - _____ for prevention
 - Anti-viral drugs for treatment (though no cure!)
- Bacteria
 - Microscopic _____ (no nucleus in cell)
 - Most are _____ or _____
 - Some are _____ (cause disease and are transmittable)
 - Some may be treated through _____
 - Problem: _____ resistance
 - MRSA, tuberculosis
- Prions
 - Misfolded _____ that are infectious
 - Examples
 - _____ disease
 - Creutzfeldt-Jakob Disease
 - _____
 - Cannibalism background in New Guinea!
- Dinoflagellates
 - _____
- Fungus
 - Athlete's foot in _____
 - _____ elm disease in trees

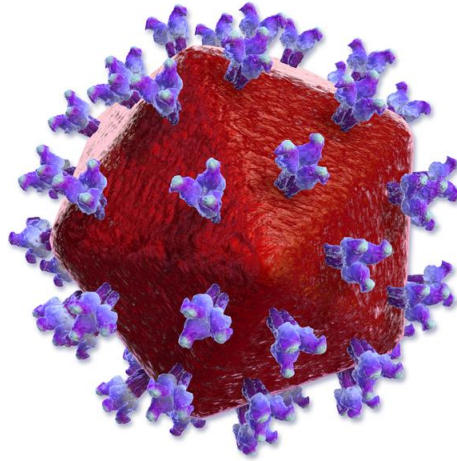
AIDS

- Caused by the _____ Immunodeficiency Virus (HIV)
- Attacks the body's _____ system
- If left untreated, a person's immune system will eventually be completely _____
- HIV is often transmitted through _____ sex or sharing needles through drug use
- _____ drugs are now available so people with HIV can live a normal, healthy life

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What HIV looks like

LABEL THE RECEPTORS



Human Immunodeficiency Virus (HIV)

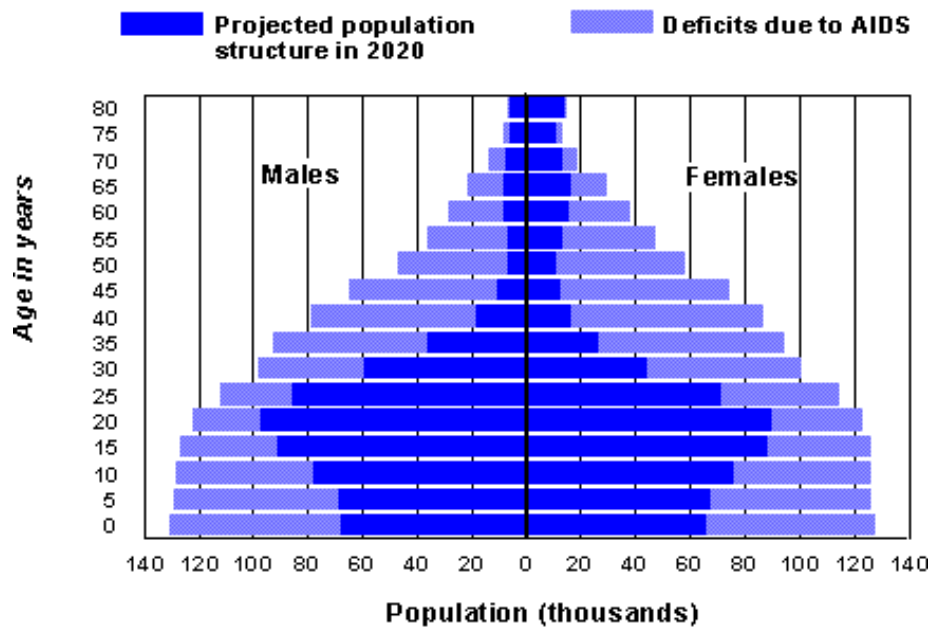
Interesting tidbit about HIV

- _____ attach to helper T cells which are part of the immune system
- _____ of European populations are resistant to HIV
 - WHY?
 - A genetic _____ prevents the virus from entering the cells of the immune system
 - HOW?
 - This mutation become more common approximately _____ years ago during the same time the _____ swept into Europe
 - WHAT?
 - Black death was the result of _____ infections which spread throughout Europe and caused a significant _____ in European populations

AIDS and Human Populations

- Approximately _____ million people worldwide living with HIV/AIDS
- _____ of those infected worldwide live in sub-Saharan _____
- _____ of the world's HIV-positive children live in Africa
- Lack of access to _____, care, and _____ in poorer countries

Projected population structure with and without the AIDS epidemic, Botswana, 2020



Source: US Census Bureau, World Population Profile 2000

Influenza

- _____ infection
- Mutates into different strains frequently
- _____ are available, but not always effective
- Spanish flu
 - 1918 influenza pandemic
 - _____ virus (also caused a pandemic in 2009)
 - Infected over _____ million people during World War I
 - _____ to _____ million people died
 - Life expectancy in the US dropped by about _____ years in the first year of the pandemic

Think-Pair-Share

- Why was the 1918 Spanish flu pandemic more severe than the 2009 H1N1 pandemic?

(both were caused by the same variant of the flu virus – H1N1)

What's different????

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Tuberculosis

- Infectious disease caused by a _____
- Generally affects the _____
- Also known as _____
- Spread through _____, spitting, speaking, or sneezing
- _____ of the world's population is infected with tuberculosis
- Most deaths occur in poorer countries
- More common in close living situations
 - _____

Tuberculosis Treatment

- Treatment through _____
 - Problem: _____
 - Reason: people who are prescribed antibiotics do _____ finish the full treatment
 - Outcome: _____ bacteria _____ while _____ tuberculosis bacteria _____ and _____ → then go on to _____ other individuals

Problem in the sea

- Pfiesteria
 - Also called the red tide
 - Heterotrophic _____ "bloom"
 - Toxin released by dinoflagellate _____ the respiratory system of fish
 - Pfiesteria then _____ on tissue of its dead prey
 - Discovered off the coast of _____

Plant Problems

- Dutch elm disease
 - Caused by _____
 - Affects elm trees and is spread by the _____
 - Disease originated from _____
 - Native populations of elm trees were not _____ to the disease and died
 - _____ death of infected trees