



HIV & Corrections

Understanding HIV-Related Disease



About this module

This module was developed in 2020 by the North Carolina HIV Training & Education Center (NCHTEC), a partner in the Southeast AIDS Education & Training Center (SE AETC) network.

These resources are intended to complement training materials created for *Enhancing Linkages to HIV Primary Care and Services in Jail Settings*, a HRSA Special Projects of National Significance (SPNS) initiative that ran from 2007-2012. For more information about that initiative, visit: <https://nextlevel.targethiv.org/deii/jails>



DISSEMINATION OF
EVIDENCE-
INFORMED
INTERVENTIONS



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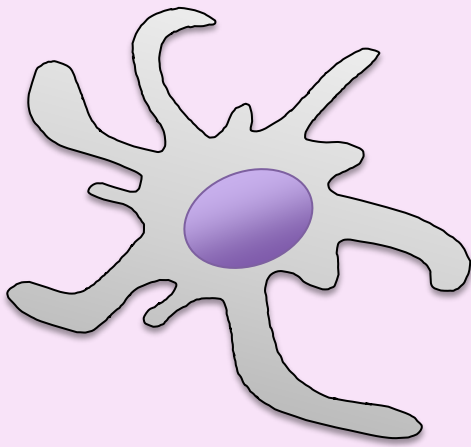
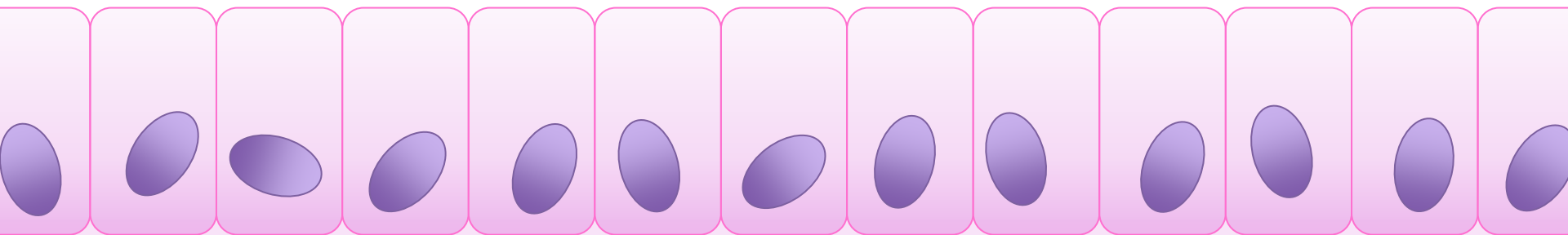
Learning objectives

- Explain how HIV establishes infection in the body, following a sexual exposure.
- Describe what happens to CD4+ T-cells and HIV RNA (viral load) after someone is infected with the virus.
- Outline three opportunistic infections that can affect people with HIV.
- Identify which opportunistic infections are the most common among people with HIV in the US.



How does HIV infect someone?

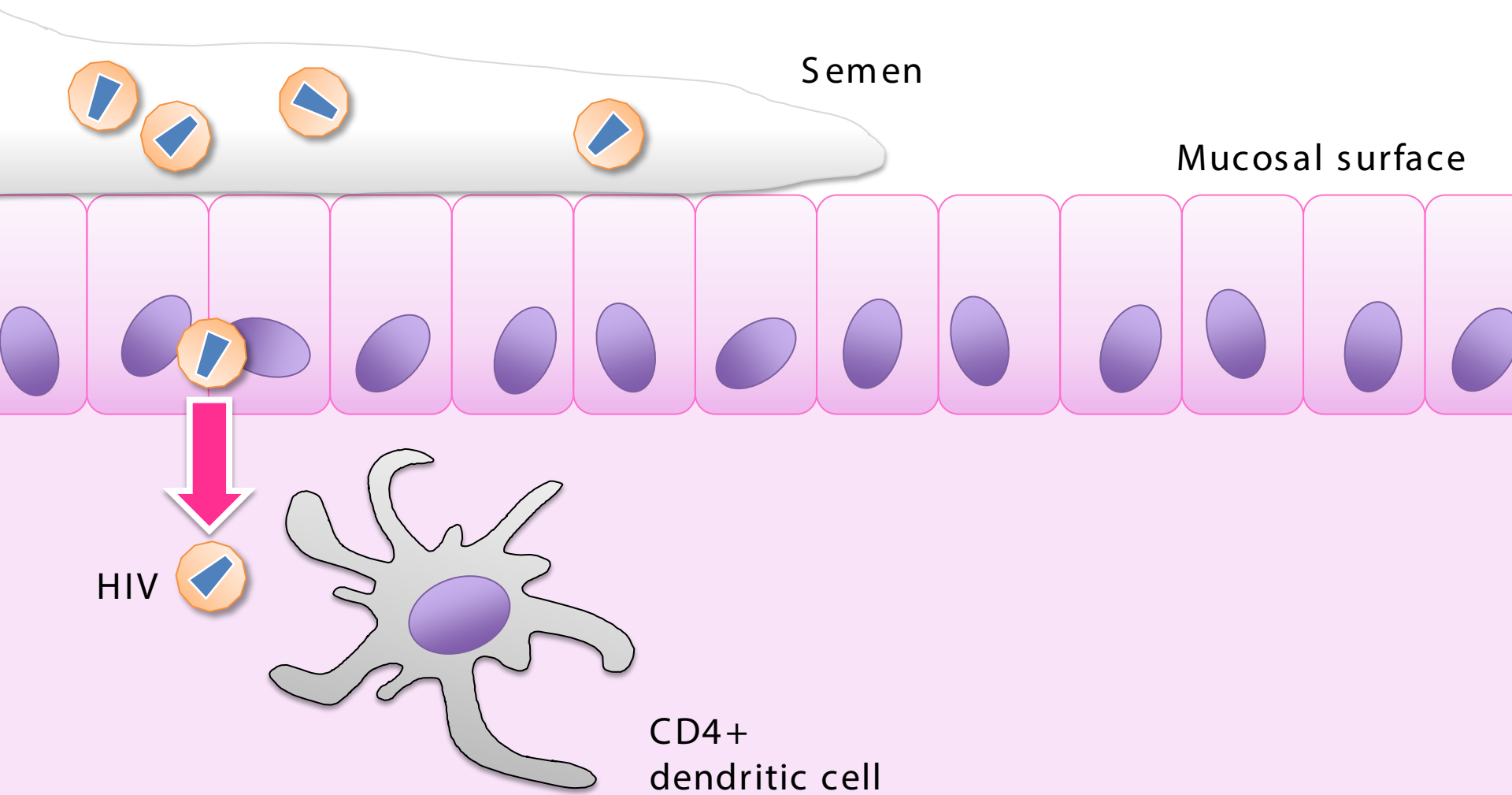
Mucosal surface



CD4+
dendritic cell

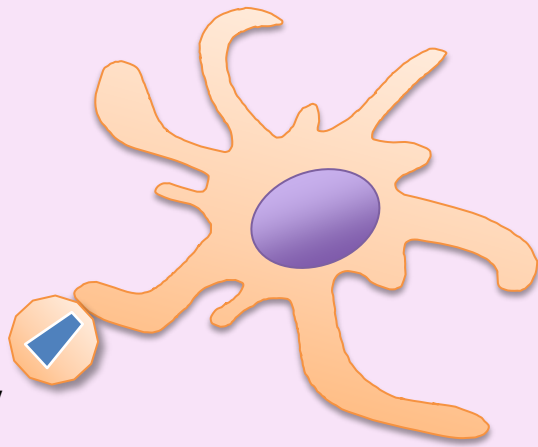
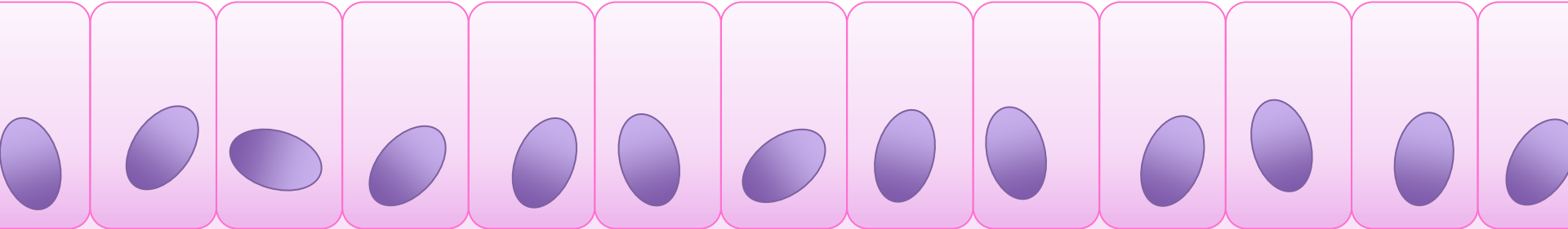


How does HIV infect someone?





How does HIV infect someone?

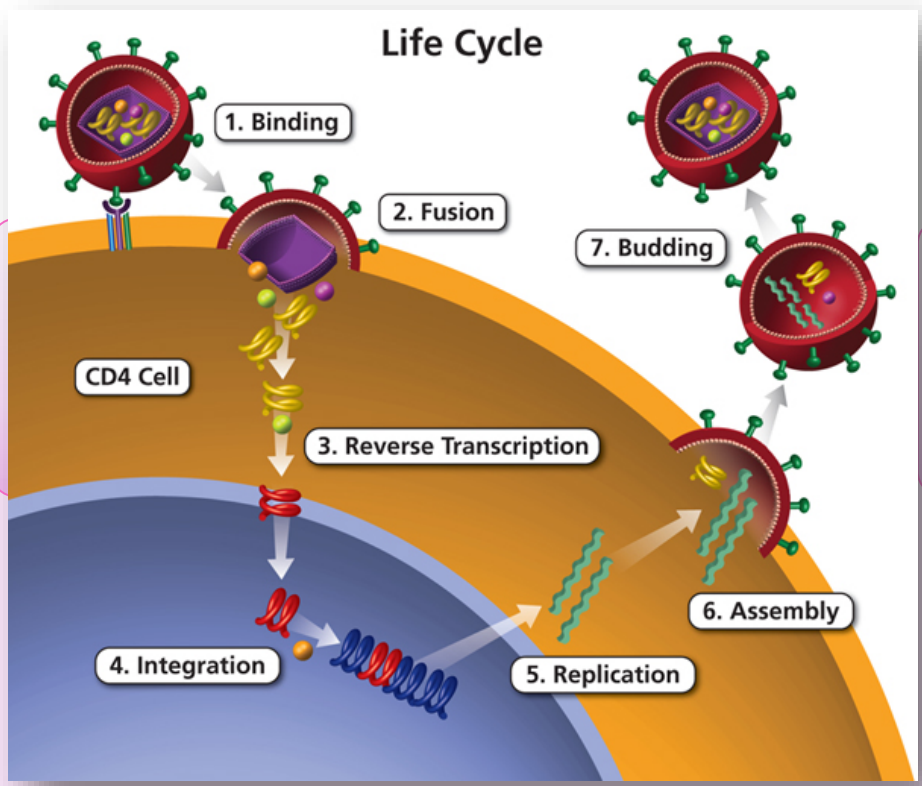
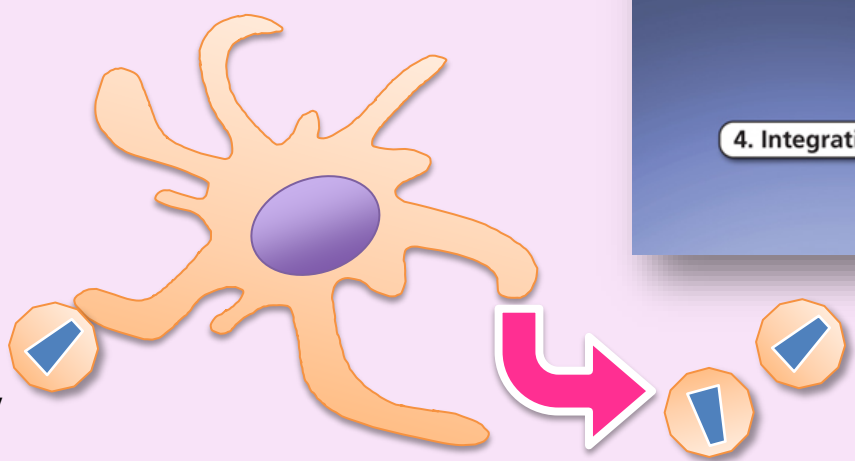
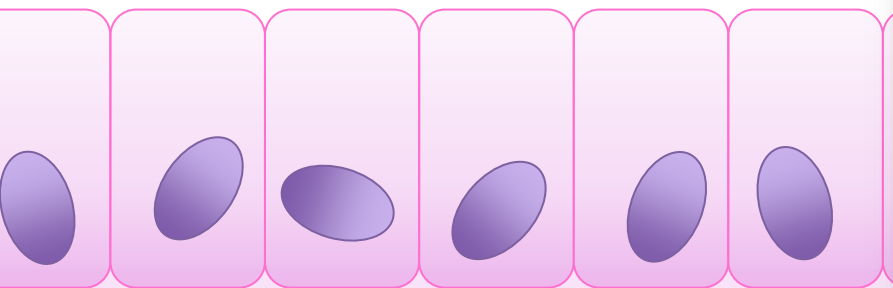


HIV

CD4+
dendritic cell

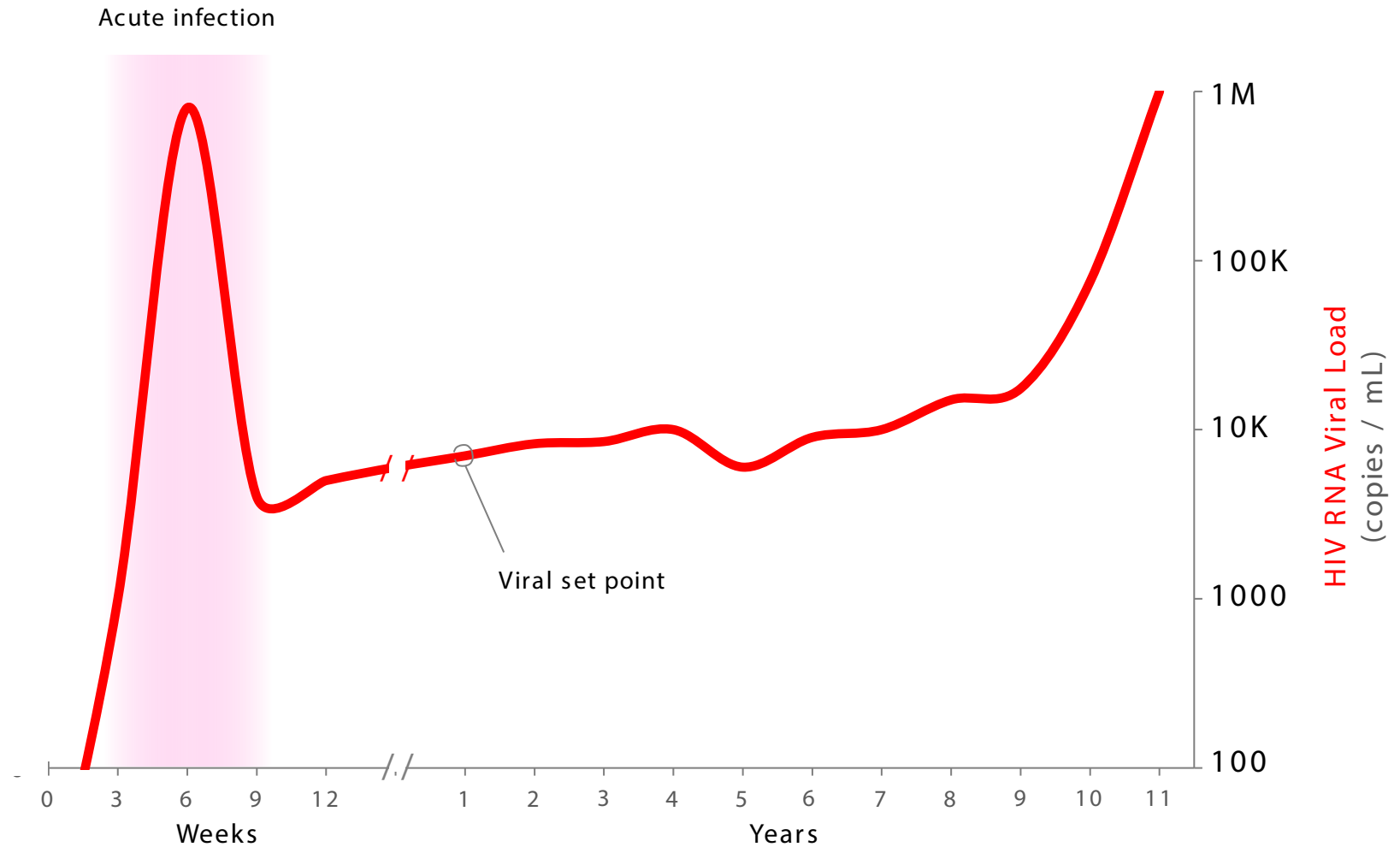


How does HIV infect someone?



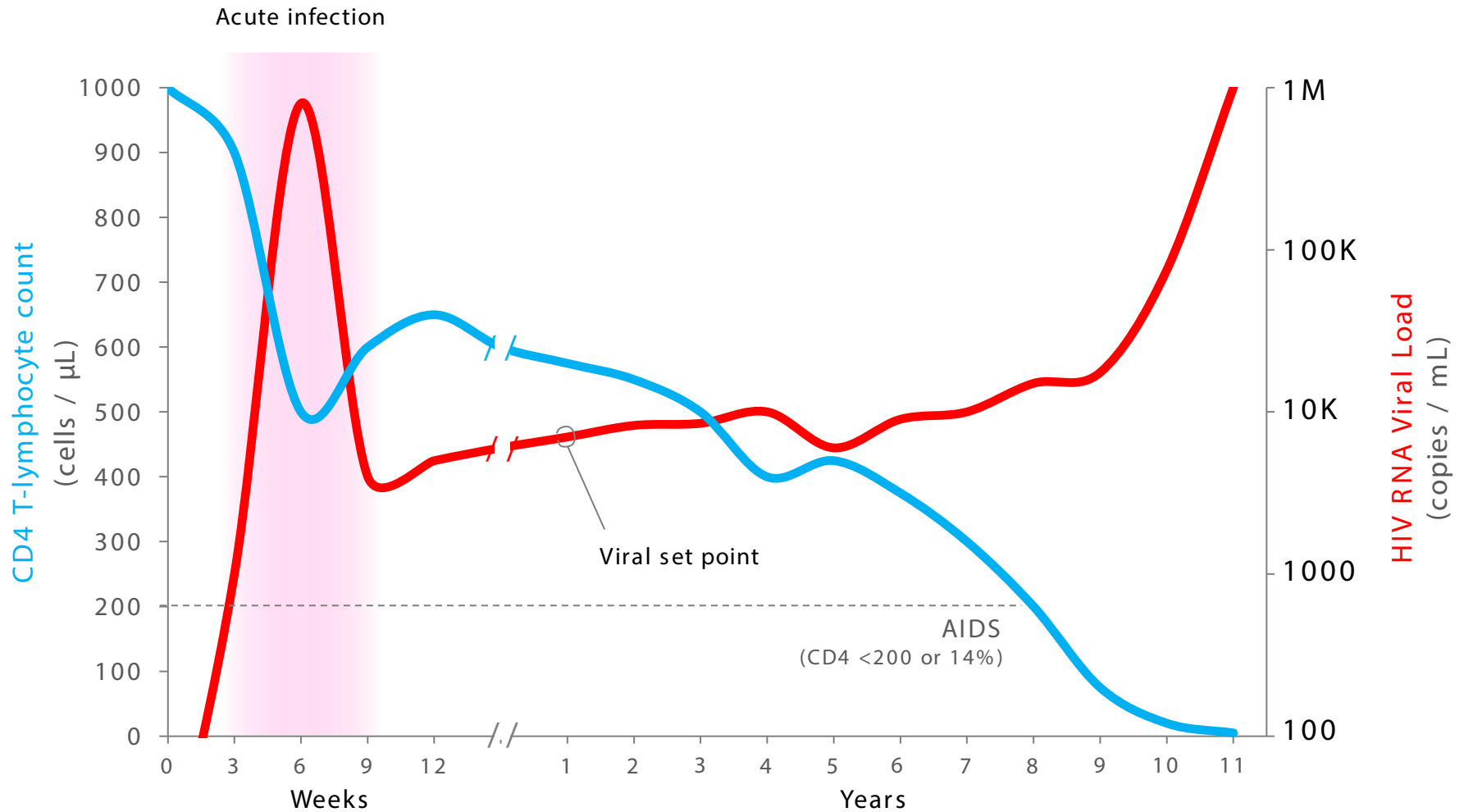


What happens after HIV disseminates?



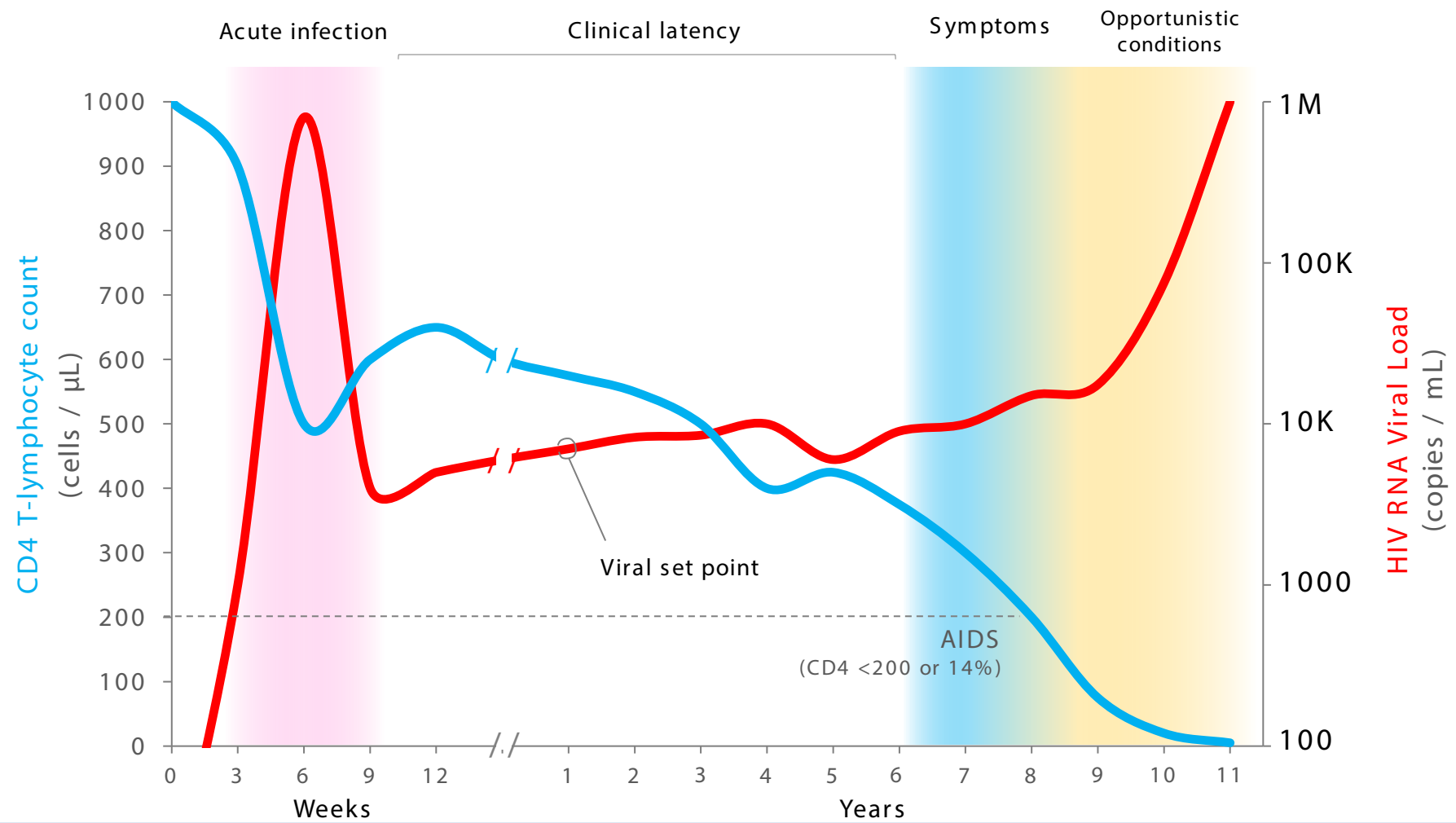


What happens after HIV disseminates?





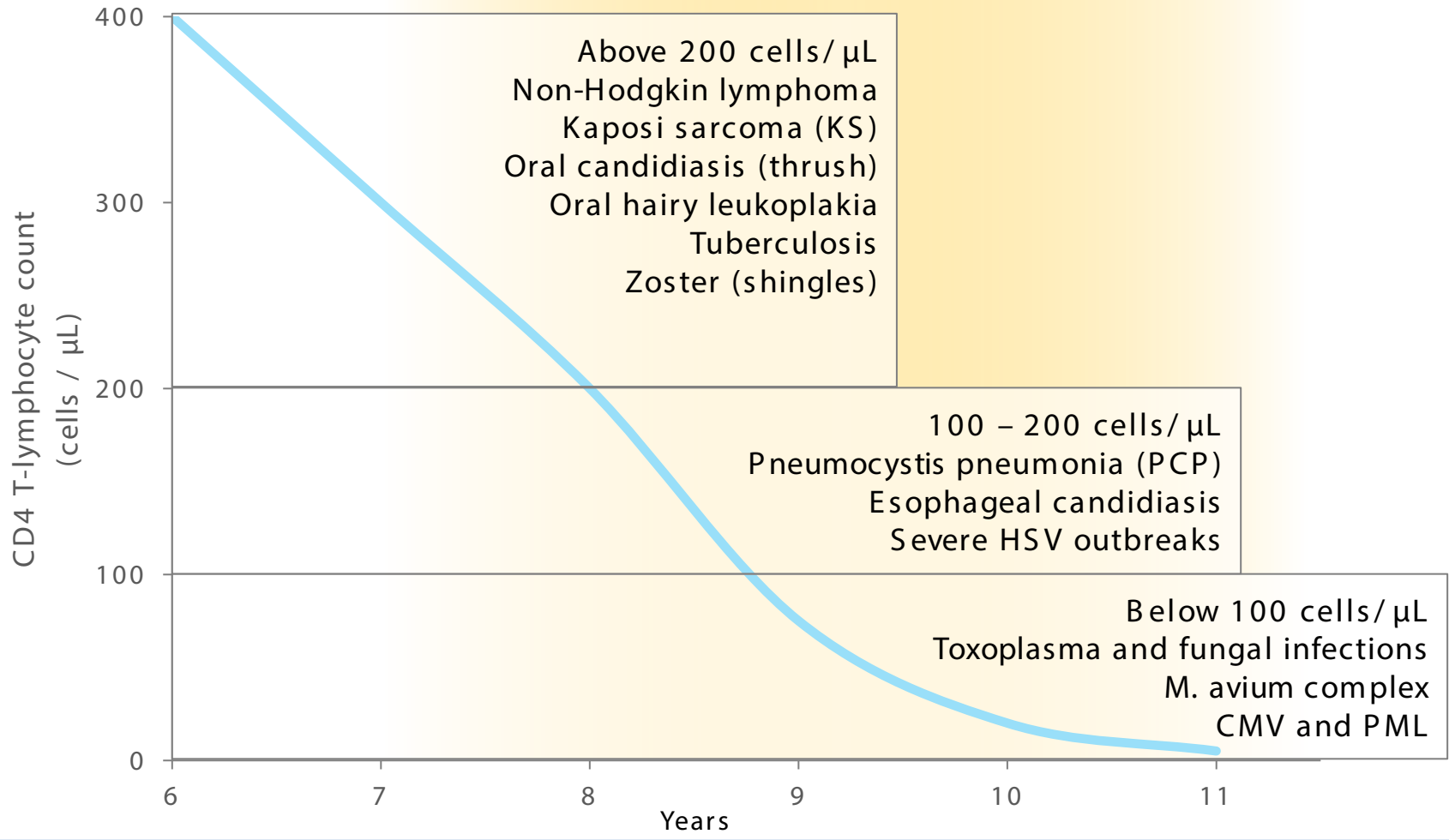
What happens after HIV disseminates?





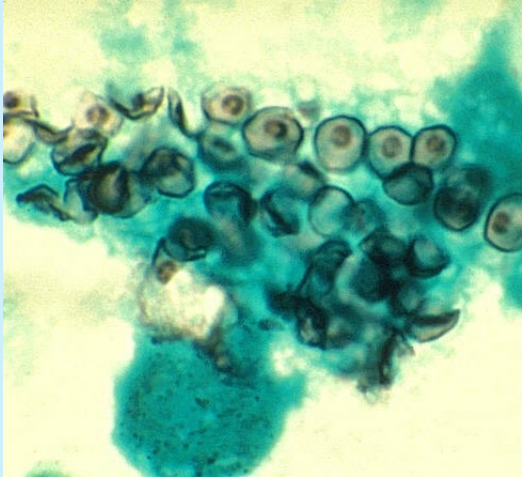
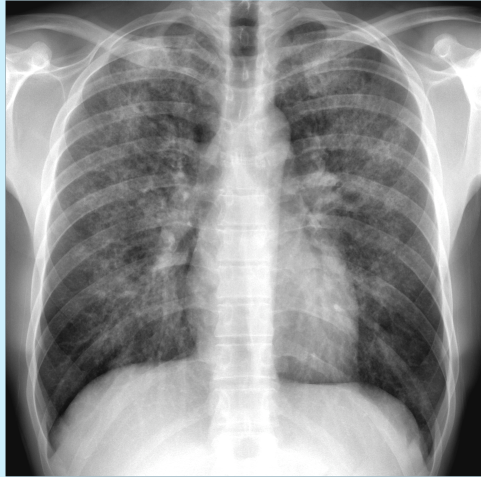
When do complications develop?

Opportunistic conditions




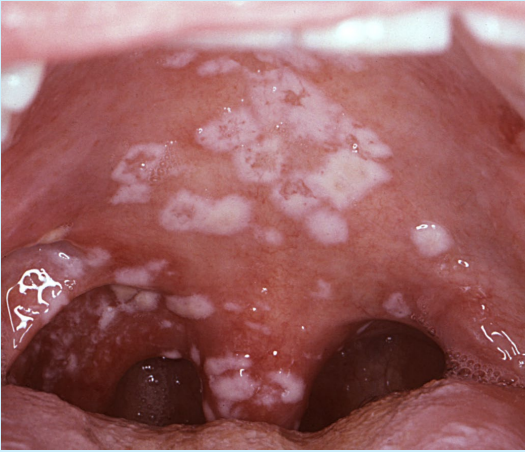


What is *Pneumocystis* pneumonia (PCP)?

Caused by	Signs & Symptoms	Diagnosis
<p data-bbox="108 322 639 372">Pneumocystis jirovecii</p> <p data-bbox="181 425 566 568">(a fungus acquired through our lungs, from other people)</p> 	<p data-bbox="880 322 1039 368">Fever</p> <p data-bbox="697 429 1228 665">Progressively worsening shortness of breath (especially with exertion)</p> <p data-bbox="832 725 1093 775">Dry cough</p> <p data-bbox="743 829 1184 875">Chest discomfort</p> <p data-bbox="745 936 1182 1043">Poor oxygenation of the blood</p>	<p data-bbox="1408 322 1696 372">Chest x-ray</p> <p data-bbox="1302 429 1802 608">Microscopy of specimens (sputum or bronchoscopy)</p> 

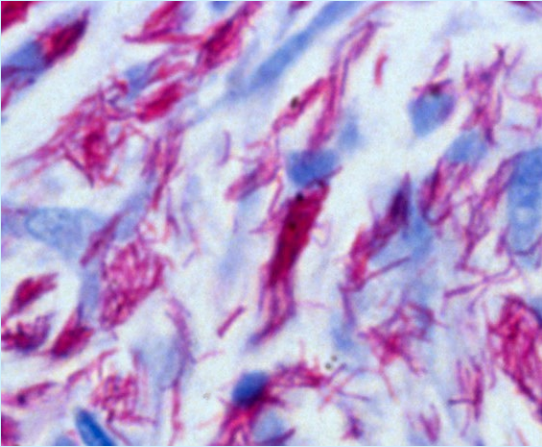


What is esophageal candidiasis?

Caused by	Signs & Symptoms	Diagnosis
<p>Candida albicans (a fungus that normally lives in our GI tract)</p> 	<p>Painless, white plaques in mouth or throat</p> <p>Red patches without white plaques on palate or tongue</p> <p>Pain with swallowing</p> <p>“Burning” chest pain (especially behind sternum)</p>	<p>History</p> <p>Physical exam</p> <p>Microscopy (if needed)</p> 

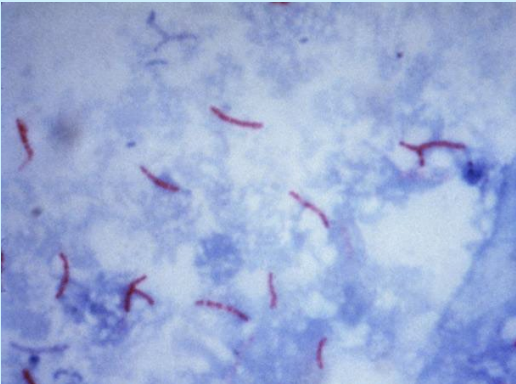
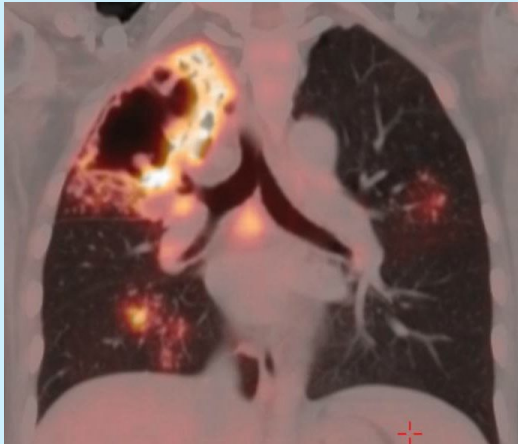


What is MAC?

Caused by	Signs & Symptoms	Diagnosis
<p>Mycobacterium avium complex</p> <p>(bacteria acquired through our lungs or GI tract, from the environment)</p> 	<p>Fever</p> <p>Night sweats</p> <p>Weight loss</p> <p>Fatigue</p> <p>Diarrhea</p> <p>Abdominal pain</p> <p>Anemia</p>	<p>Physical exam (Enlarged liver or spleen)</p> <p>Abnormal blood tests (alkaline phosphatase)</p> <p>Cultures</p> <p>Imaging findings</p> <p>Microscopy of specimens</p>

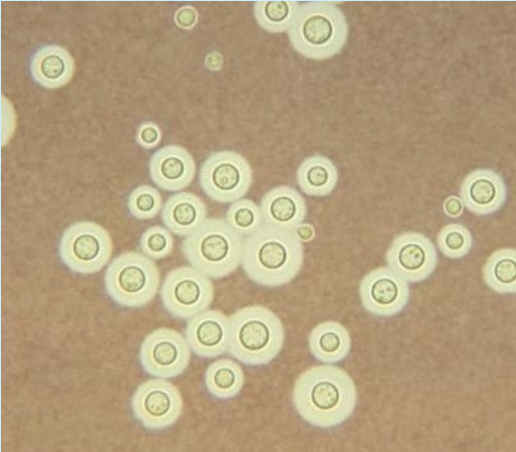


What is tuberculosis (TB)?

Caused by	Signs & Symptoms	Diagnosis
<p data-bbox="189 321 562 429">Mycobacterium tuberculosis</p> <p data-bbox="131 486 614 682">(a bacteria acquired through our lungs, from people with “active” pulmonary TB disease)</p> 	<p data-bbox="880 321 1045 372">Cough</p> <p data-bbox="751 425 1170 476">Blood in sputum</p> <p data-bbox="707 529 1215 581">Shortness of breath</p> <p data-bbox="880 634 1041 685">Fever</p> <p data-bbox="817 738 1105 789">Weight loss</p> <p data-bbox="799 842 1122 893">Night sweats</p> <p data-bbox="865 946 1054 998">Anemia</p>	<p data-bbox="1367 321 1733 429">Microscopy of specimens</p> <p data-bbox="1431 486 1669 538">Lab tests</p> <p data-bbox="1335 591 1765 642">Imaging findings</p> 

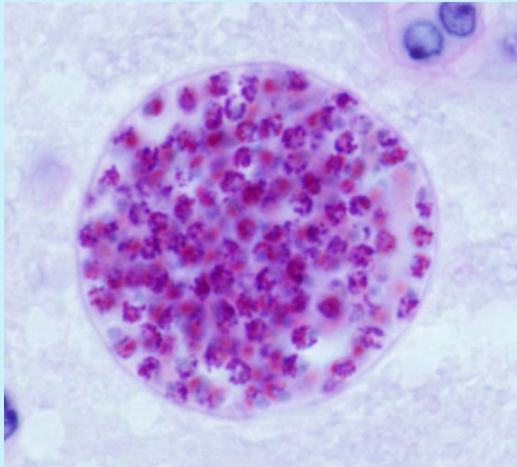



What is cryptococcal meningitis?

Caused by	Signs & Symptoms	Diagnosis
<p>Cryptococcus neoformans</p> <p>(a fungus acquired through our lungs, from the environment)</p> 	<p>Fever</p> <p>Constant headache (most often without neck stiffness)</p> <p>Loss of energy / feeling unwell</p> <p>Confusion or disorientation</p>	<p>Spinal tap</p> <p>Elevated intracranial pressure (ICP)</p> <p>Analysis of spinal fluid</p> <p>Cultures</p> <p>Lab tests</p>

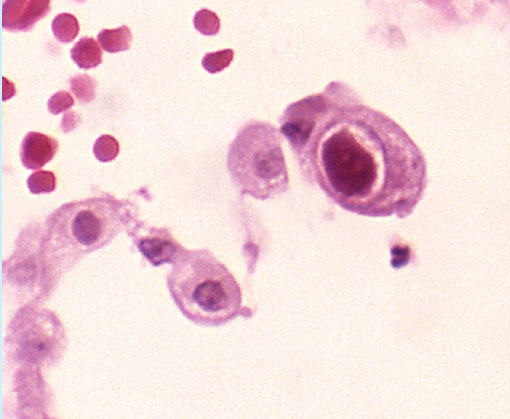
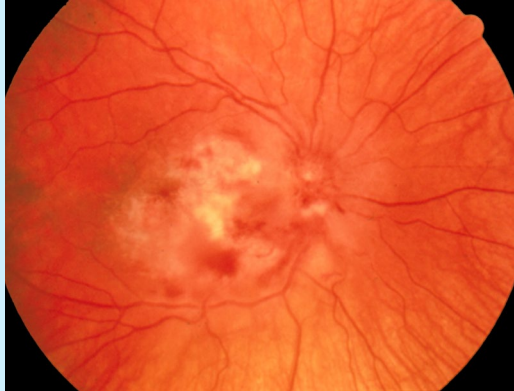


What is toxoplasmosis?

Caused by	Signs & Symptoms	Diagnosis
<p>Toxoplasma gondii</p> <p>(a parasite acquired through our GI tract, from cat feces or certain undercooked meats)</p> 	<p>Fever</p> <p>Headache</p> <p>Confusion</p> <p>Focal neurologic problems (strokes, seizures, weakness, numbness)</p>	<p>Spinal tap</p> <p>Imaging findings (brain abscess)</p> 

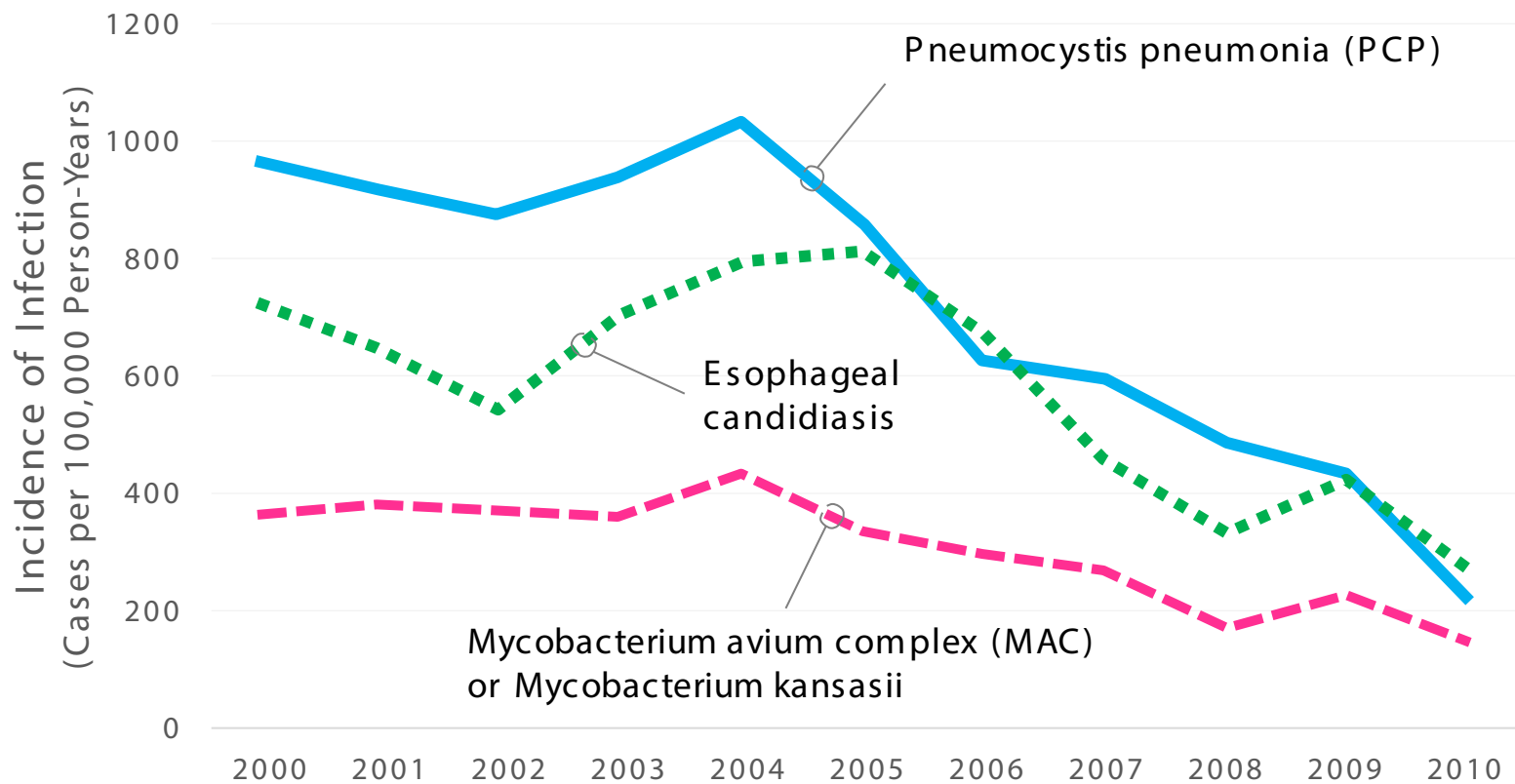


What is CMV retinitis?

Caused by	Signs & Symptoms	Diagnosis
<p data-bbox="162 322 581 372">Cytomegalovirus</p> <p data-bbox="117 425 629 568">(a virus acquired through saliva or body fluids from other people)</p> 	<p data-bbox="697 322 1228 434">Initially in one eye... (or, less commonly, both)</p> <p data-bbox="780 491 1141 541">New “floaters”</p> <p data-bbox="732 598 1209 709">Areas of altered or lost vision</p> <p data-bbox="755 766 1174 878">Peripheral vision defects</p> <p data-bbox="838 935 1083 985">Blindness</p>	<p data-bbox="1335 322 1769 372">Dilated eye exam</p> <p data-bbox="1331 425 1775 541">Sampling of fluid from eye</p> <p data-bbox="1412 598 1692 648">Blood tests</p> 

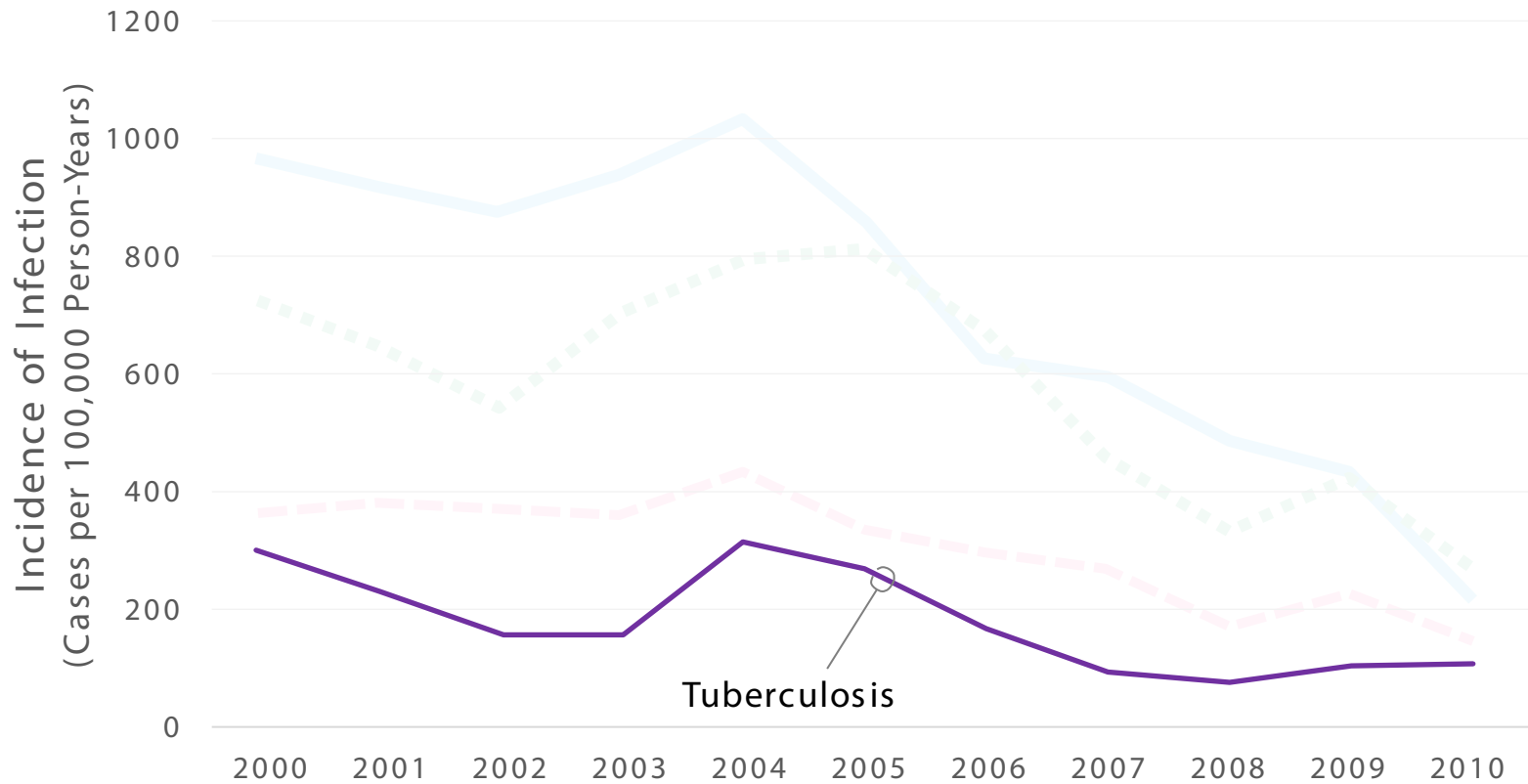


Which OIs are the most common?





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