

ORGANISMS TO BE KNOWN, UNDERSTOOD, USED AND APPRECIATED - SPRING 2004

After these organisms are presented in class, you must memorize their name, spelled correctly, and their cell shape and arrangement, spore forming or not, and Gram stain. Learn one disease caused by each, or another distinguishing characteristic.

<u>ORGANISM</u>	<u>SHAPE</u>	<u>GRAM</u>	<u>DISEASE OR DISTINGUISHING CHARACTERISTIC</u>
<i>Treponema pallidum</i> [This organism is not examined by the Gram stain; it is best examined by dark field or fluorescence microscopy]	spirochete	(negative)	syphilis
<i>Mycobacterium tuberculosis</i> [This organism is not examined by the Gram stain; it is Acid Fast in the acid fast stain]	bacillus	(positive)	tuberculosis
<i>Staphylococcus aureus</i>	spheres in clumps	positive	boils (furuncles), abscesses, impetigo, infections of bones (osteomyelitis), joints, deep organs (e.g., endocarditis, which is interior of the heart), soft tissues (e.g., pneumonia), leading cause of wound infections toxic shock syndrome, staph food poisoning
<i>Staphylococcus epidermidis</i>	spheres in clumps	positive	usually non-pathogenic commensals
<i>Streptococcus pyogenes</i>	spheres in chains	positive	acute pharyngitis, impetigo, wound infections, TSS, Complications include rheumatic fever (which is, fever, carditis, heart valve damage, heart failure) and glomerulonephritis (which is inflammation of kidney)
<i>Streptococcus pneumoniae</i>	spheres	positive	bacterial pneumonia, acute otitis media
<i>Neisseria meningitidis</i>	diplococcus	negative	meningitis
<i>Neisseria gonorrhoeae</i>	diplococcus	negative	gonorrhea
<i>Bacillus anthracis</i>	bacillus spore former	positive	anthrax
<i>Corynebacterium diphtheriae</i>	pleomorphic rods	positive	diphtheria
<i>Rhodospirillum rubrum</i>	rigid, spiral	negative	photosynthetic organism; non-pathogenic

Organisms, continued

<i>Borrelia burgdorferi</i>	spirochete	negative	Lyme disease
<i>Clostridium botulinum</i>	bacillus spore former	positive	botulism
<i>Clostridium perfringens</i>	bacillus spore former	positive	gangrene
<i>Clostridium tetani</i>	bacillus spore former	positive	tetanus
<i>Pseudomonas aeruginosa</i>	bacillus	negative	bacteremia, opportunistic pathogen of burn victims, cystic fibrosis patients
<i>Azotobacter vinelandii</i>	oval	negative	non-symbiotic nitrogen fixation
<i>Myxococcus xanthus</i>	bacillus	negative	gliding bacteria, fruiting body formation
<i>Escherichia coli</i>	bacillus (coliform)	negative	usually non-pathogenic; some enteropathogenic strains (e.g., O157 H7)
<i>Salmonella typhi</i>	bacillus	negative	typhoid fever
<i>Salmonella typhimurium</i>	bacillus	negative	gastroenteritis*
<i>Shigella dysenteriae</i>	bacillus	negative	dysentery, which is gastroenteritis with invasion of the pathogen through the intestine wall into the blood
<i>Shigella sonnei</i>	bacillus	negative	gastroenteritis*
<i>Vibrio cholerae</i>	rigid, curved rods	negative	cholera
<i>Campylobacter jejuni</i>	rigid, curved rods	negative	gastroenteritis*
<i>Helicobacter pylori</i>	rigid, curved rods	negative	chronic gastritis, peptic ulcers

*Gastroenteritis is inflammation of the stomach and bowel. It might include fever, abdominal pain, vomiting, and diarrhea, which is frequent, watery stools.