

Kingdom Monera

- Archaeobacteria:

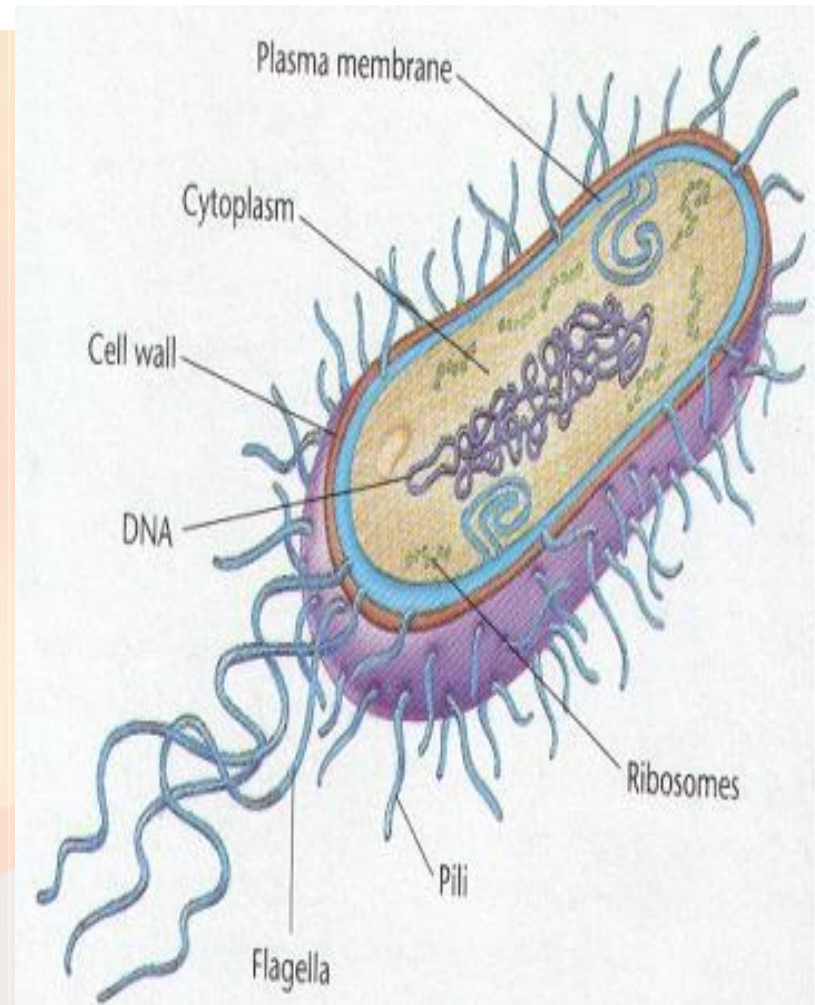
- *Primitive bacteria*
- *Survive under extreme conditions*
- Types:
 - Thermophiles* - extreme heat
 - Methanogens* - swamps, no O₂
 - Halophiles* - salty enviro's

- Eubacteria:

- *More advanced bacteria, more common*



Bacteria

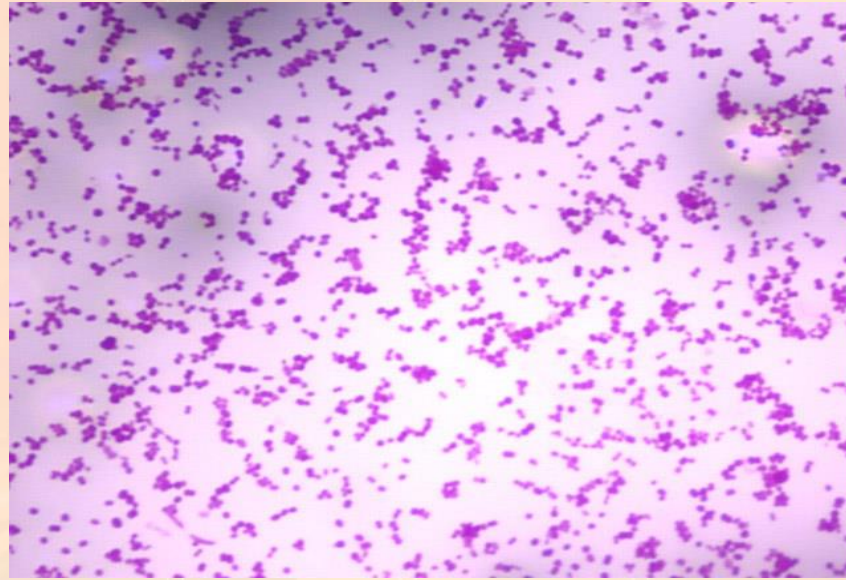
1. *All bacteria are single celled.*
2. *All are prokaryotes (no nucleus).*
3. *Cell organelles are not surrounded by membranes.*
4. *DNA is made of a single chromosome in a ring called a plasmid.*
5. *Most reproduce asexually.*



Bacteria Shapes:

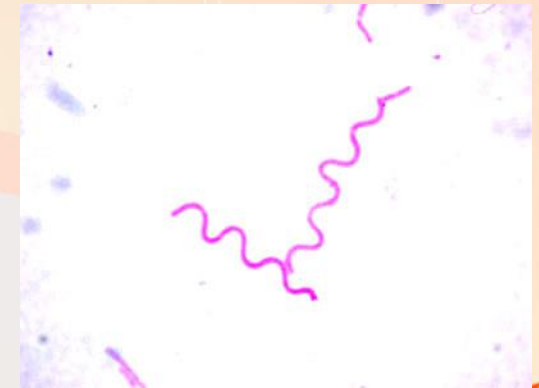
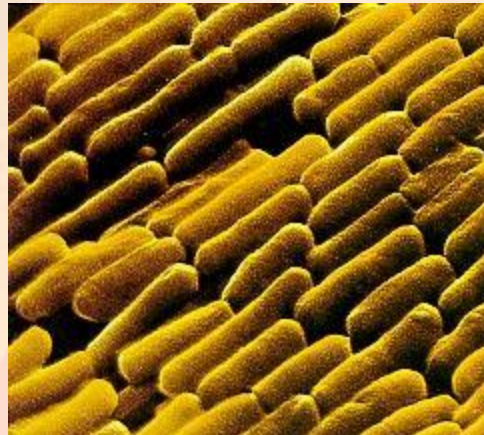
Shapes:

- *Coccus* 
- *Bacillus* 
- *Spirillum*



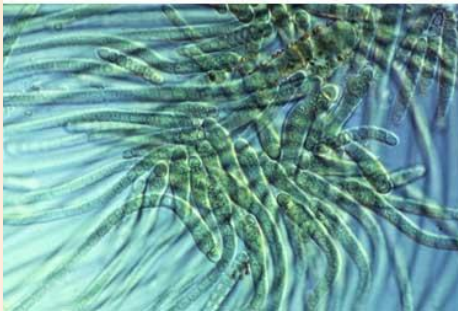
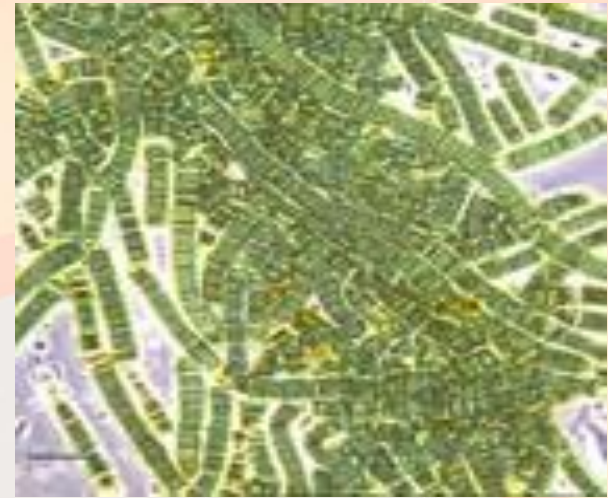
Prefixes:

- 1 = *mono*
- 2 = *diplo*
- Chain = *strepto*
- Cluster = *staphylo*



Nutrition

- **Heterotrophs:** (*most*)
 - *Parasites (absorb nutrients from living orgs.) ... or...*
 - *Saprobies (decay dead matter)*
- **Autotrophs-** (*few*)
 - *Use sunlight (cyanobacteria)*



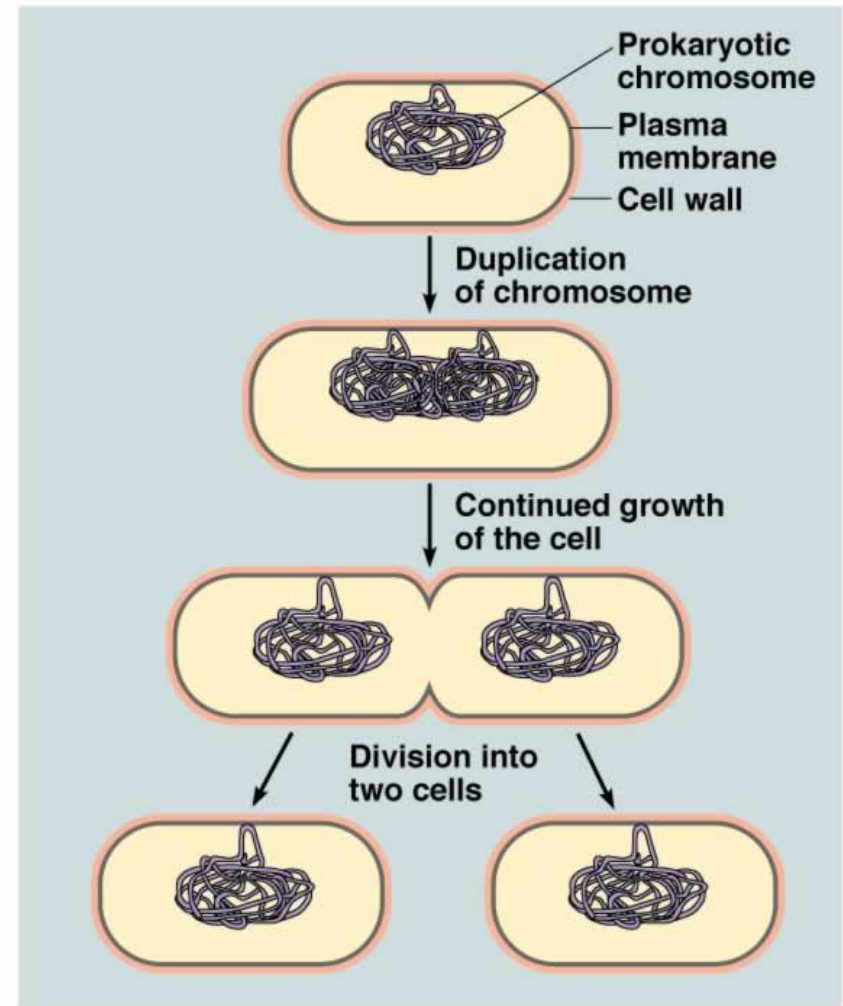
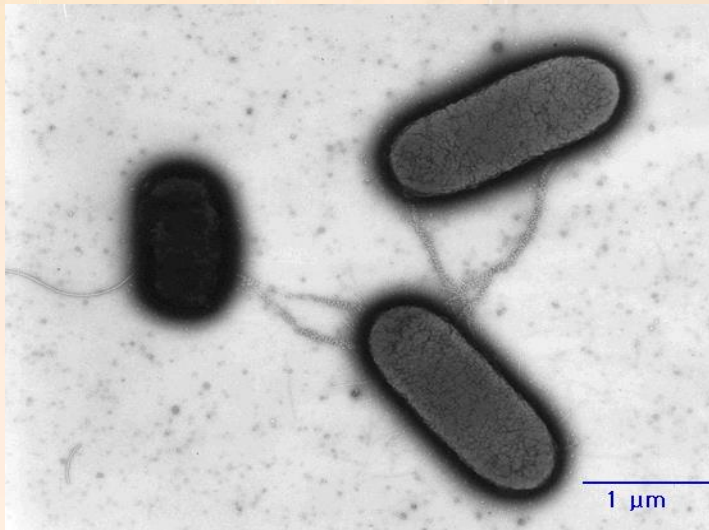
Respiration

- Occurs in the inner cell membrane
 - Aerobic Bacteria (need O_2)
 - Anaerobic Bacteria (no O_2 needed)
- Eg. *Clostridium Botulinum*...Carrot juice



Reproduction

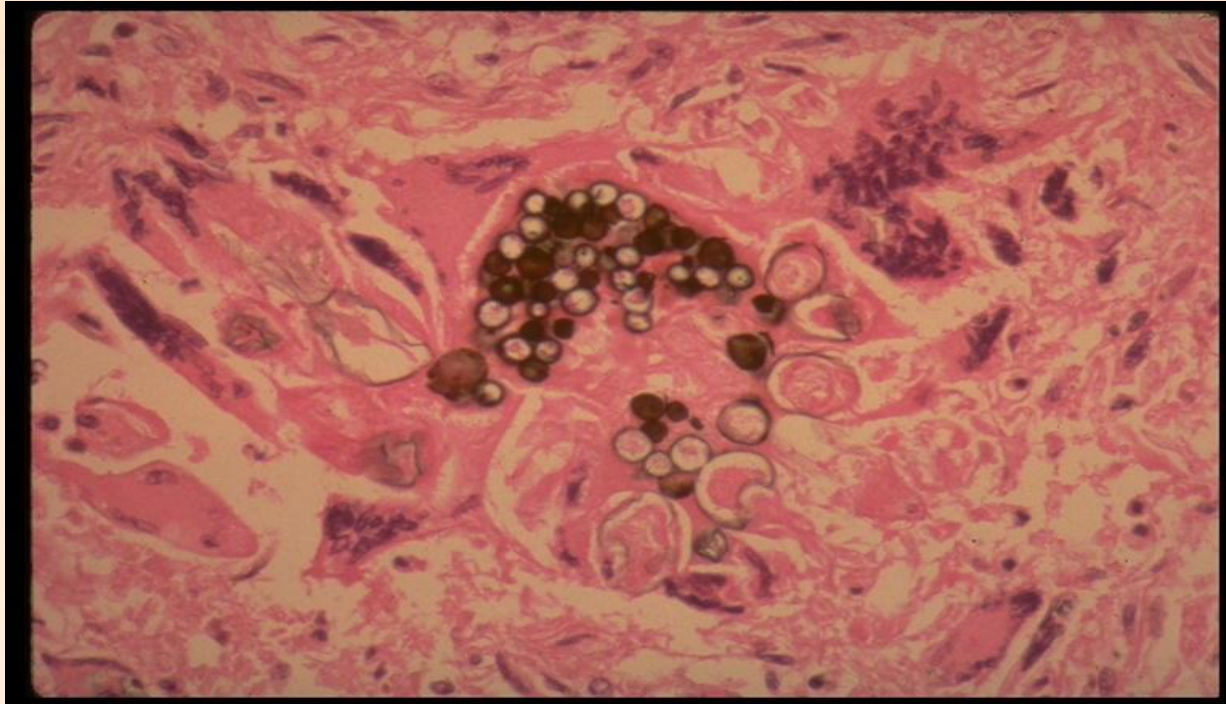
1. Binary fission →
Asexual
2. Conjugation →
Sexual ...leads to
resistance to antibiotics



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Reproduction

- Endospores – When conditions are unfavourable the bacteria forms a protective wall and lies dormant until conditions improve.



Endospores in a human lung

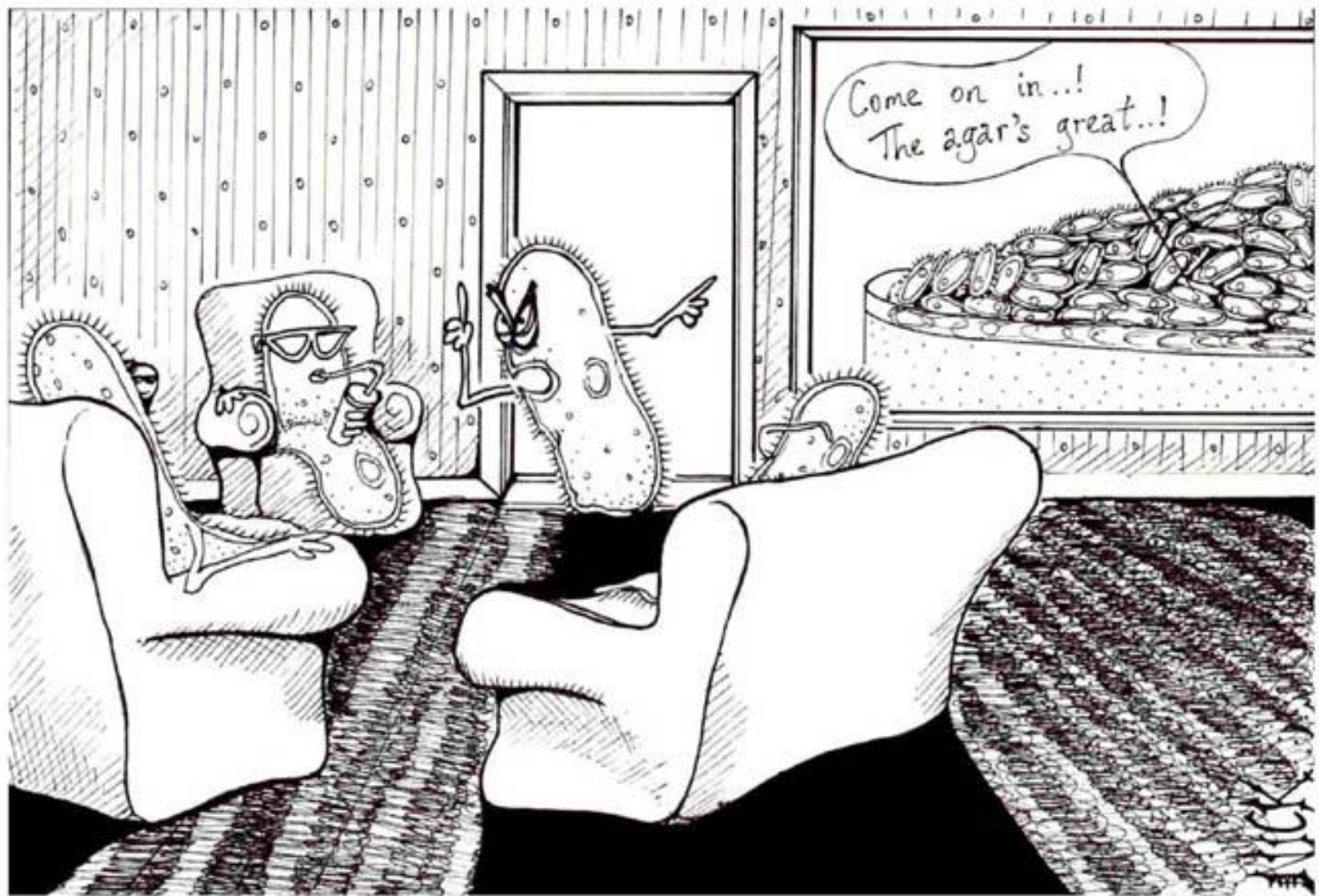
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"I wish you'd learn to put the lid on your Petri dish, Harry! We came here with four kids, and now it looks like we've got twenty million..!!"

Helpful Bacteria

- *Nitrogen Fixation:*
 - *Converts N_2 to the more useful NO_3*
- *Nutrient Cycles:*
 - *Decompose Matter*
- *Waste Management & Bioremediation*
- *Sewage Treatment*
 - *(We produce 5 billion kg a day...bacteria break it down!)*

Harmful Bacteria

- A small percentage are Pathogenic (disease causing)
- These bacteria produce deadly toxins or effects.
- E.g. Coliform levels in water = fecal pathogens
- Examples: Pneumonia, tuberculosis, botulism, Flesh Eating Disease



Streptococcus



Necrotizing Fasciitis