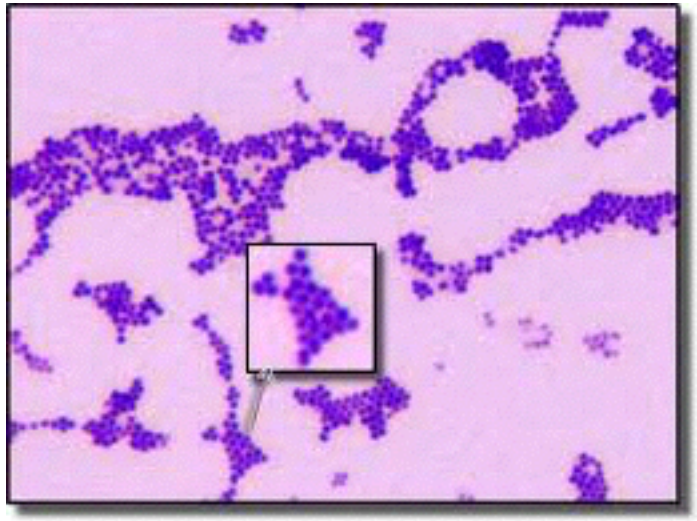
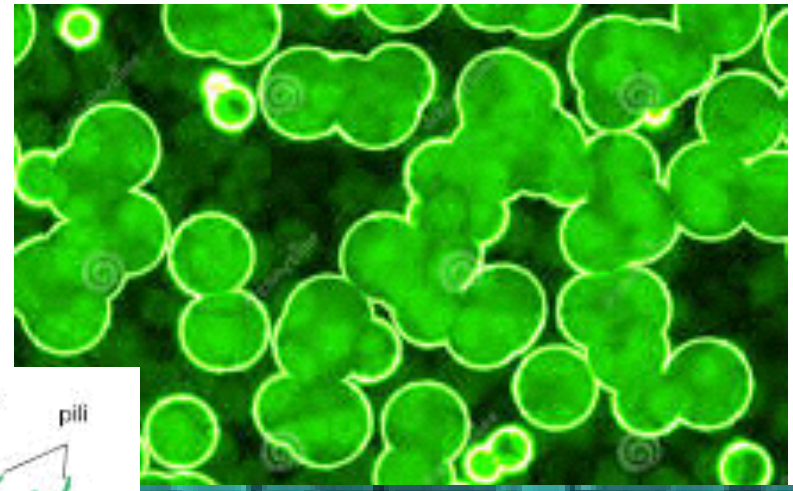
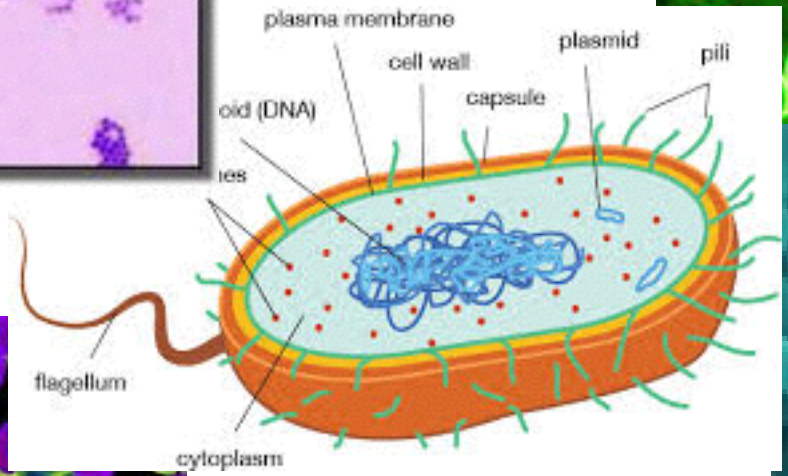
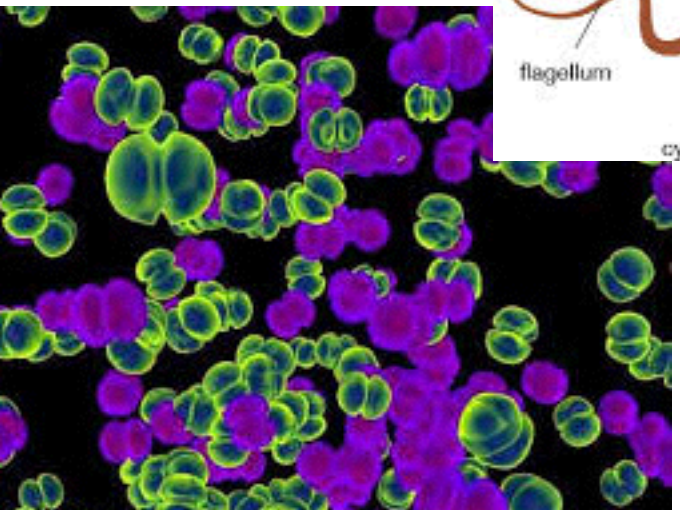
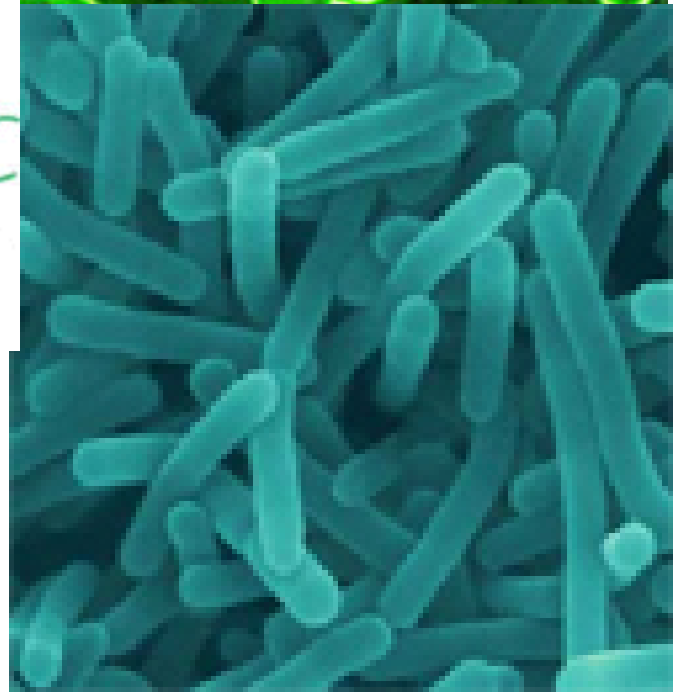
Kingdom: Bacteria









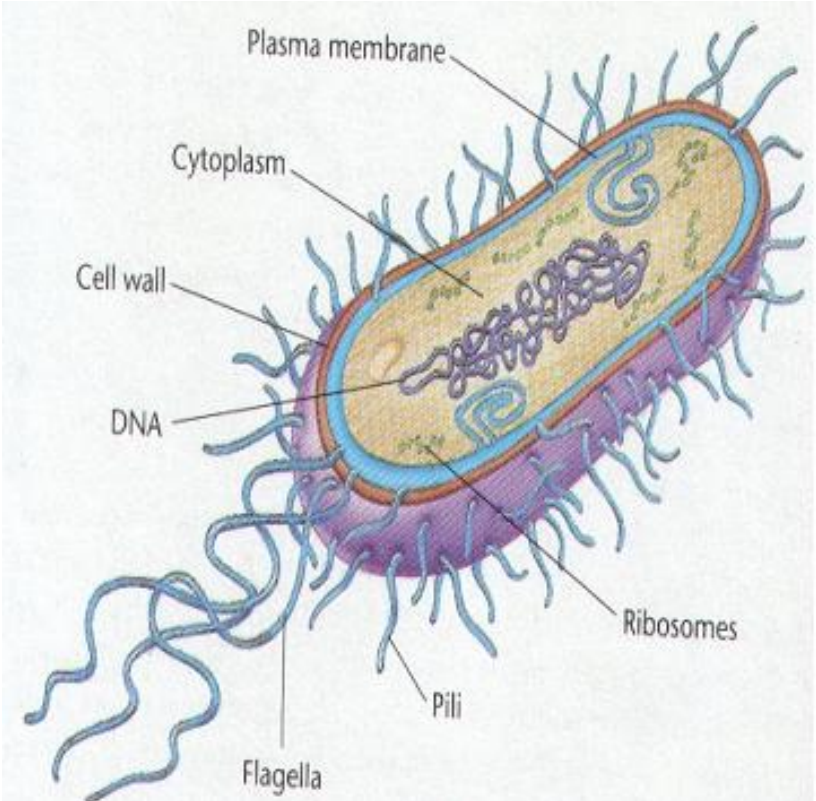


Learning Goals

D 3	***We are learning to*** *demonstrate an understanding of the diversity of living organisms*
	I can…
	- describe unifying and distinguishing anatomical & physiological characteristics of representative organisms from each of the kingdoms

Bacteria

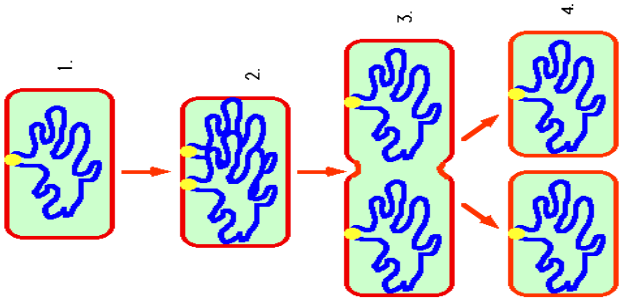
- found almost everywhere!!
- oldest & most abundant of organisms!
- first evolved 3.5 billion years ago



Characteristics of Bacterial Cells

Bacteria cells:

- are prokaryotic
- all single-celled
- no membrane-bound nucleus or organelles
- single chromosome
- reproduce by binary fission (asexually)

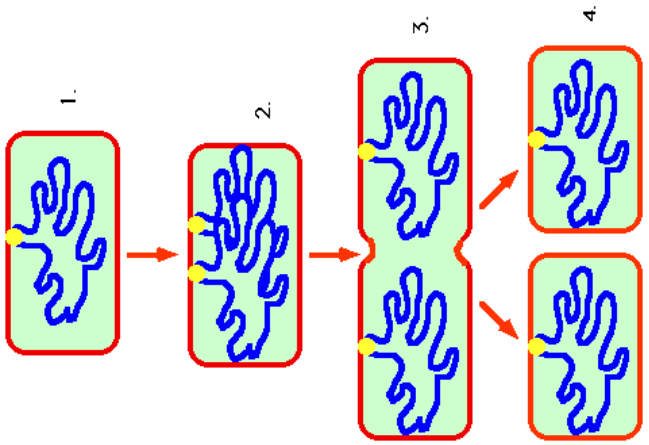


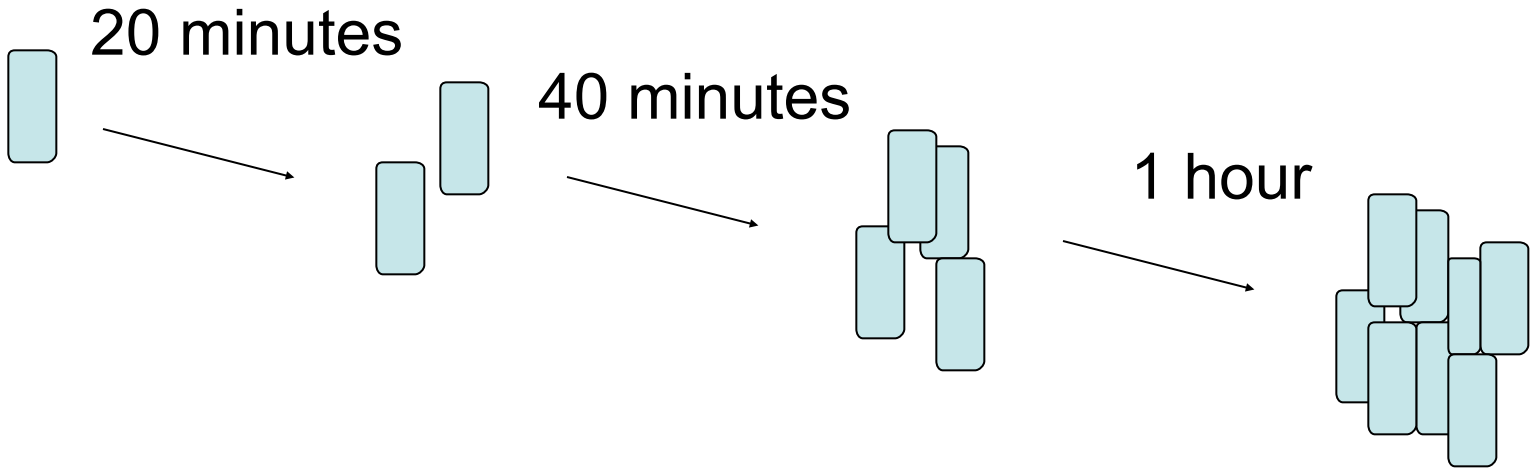
Reproduction

1. Binary Fission

-simpler than mitosis

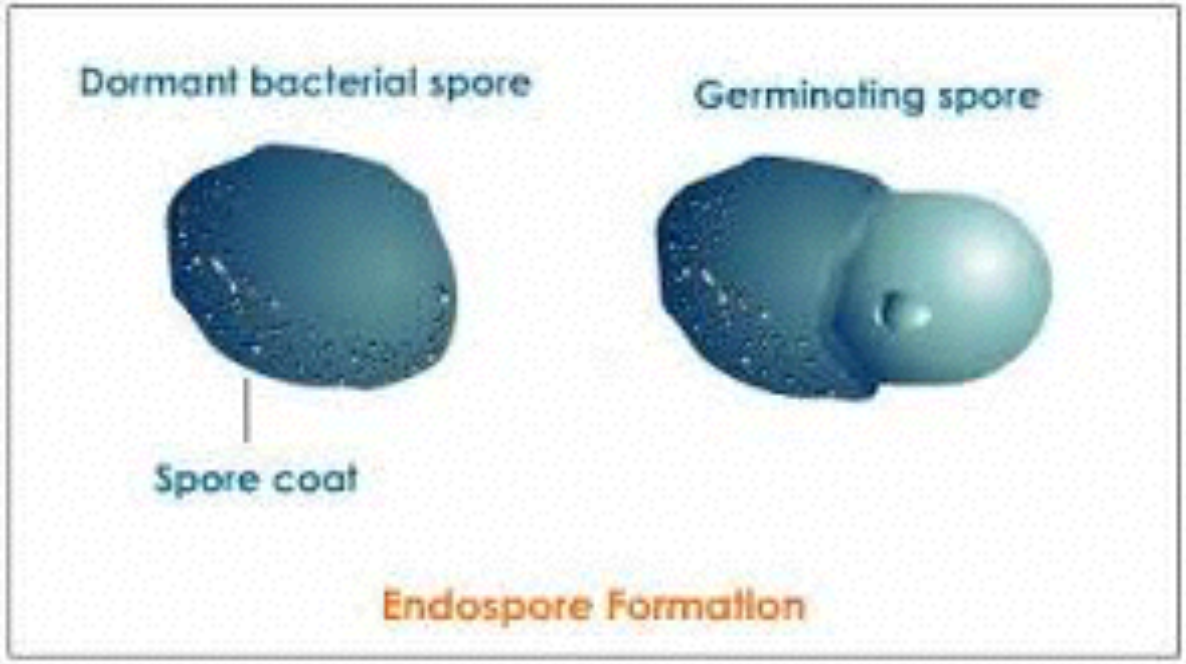
- single strand of DNA replicates, cell mb & wall grows through midsection, cytoplasm is divided




20 minutes
40 minutes
1 hour

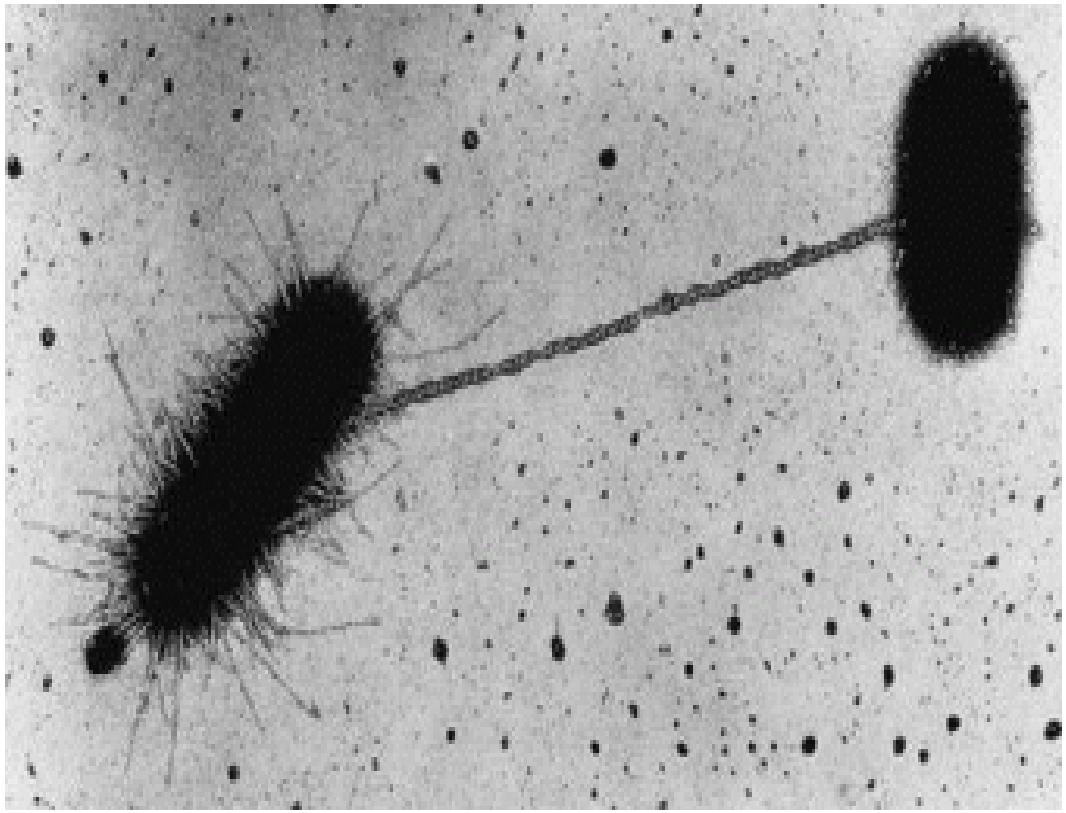
2. Spore production

- Many reproduce by making tough resistant spores
- Spores survive conditions bacteria can't
- Not technically reproduction… but a way to protect the bacteria's DNA!



3. Conjugation

- cells link by a tube called a pilus
- favourable genetic info is shared
- new bacterial *strains* are created

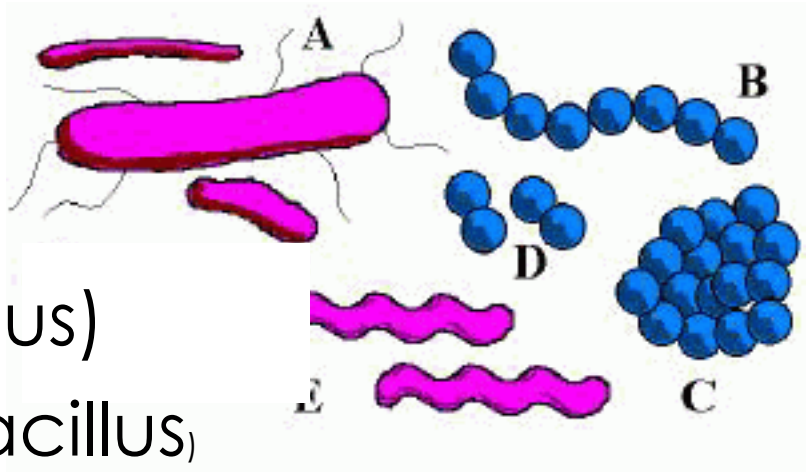


How Are Bacteria Classified??

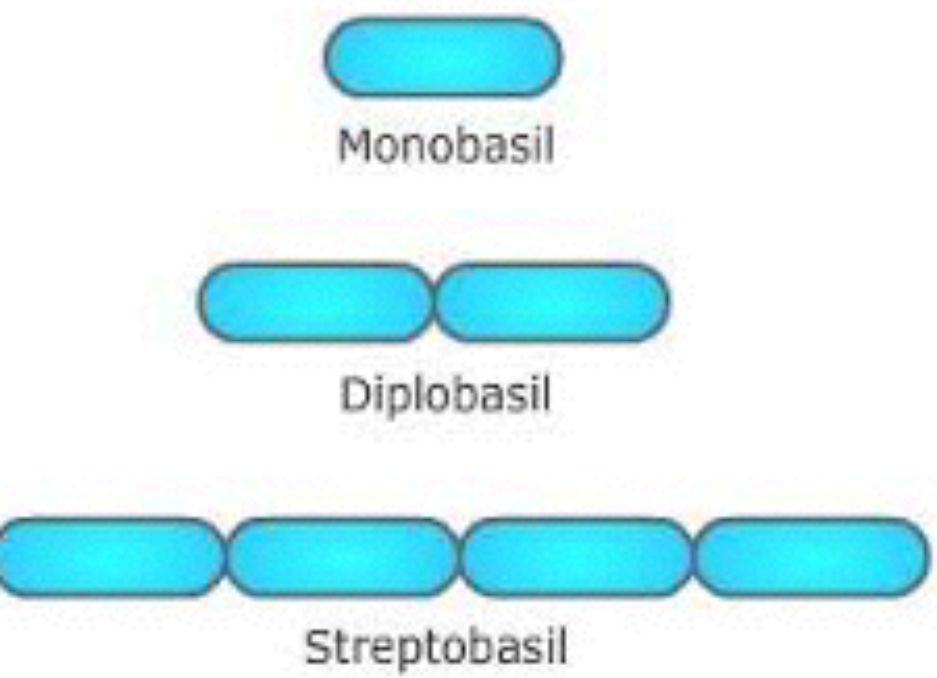
Classified by

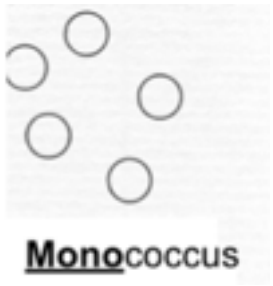
(1) Shape:

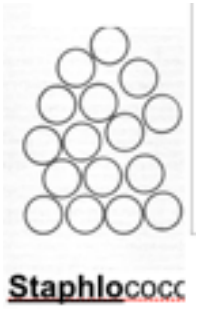
- spherical (cocci/coccus)
- rod-shaped (bacilli/bacillus)
- spiral (spirilla/spirillum)



(2) how they cluster:







mono

↓

diplo

↓

strept

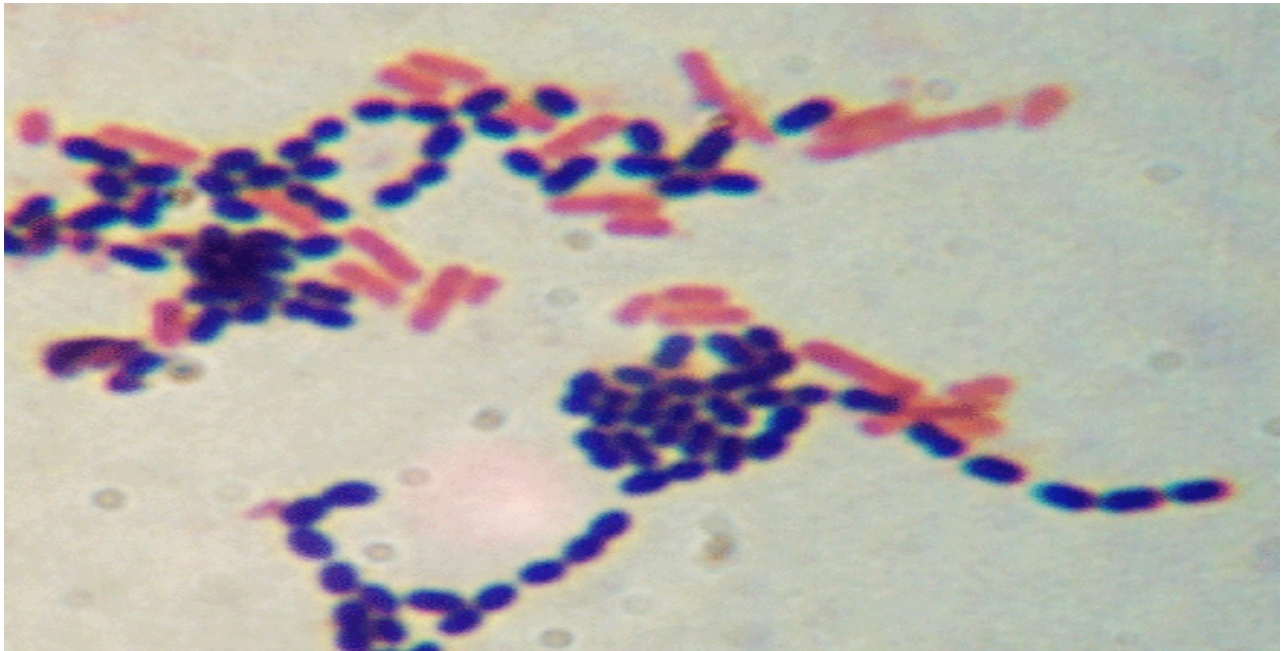
↓

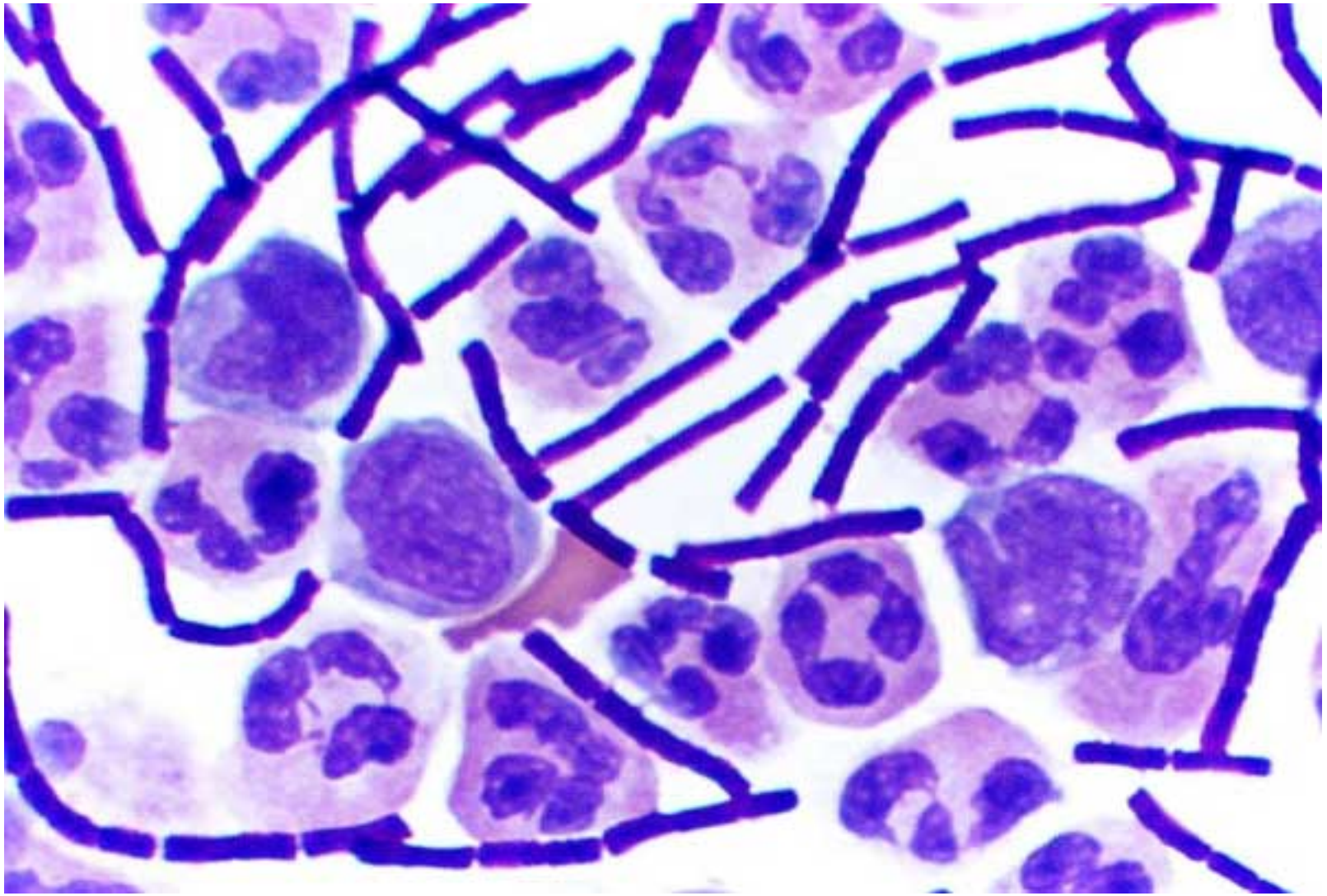
staphlo

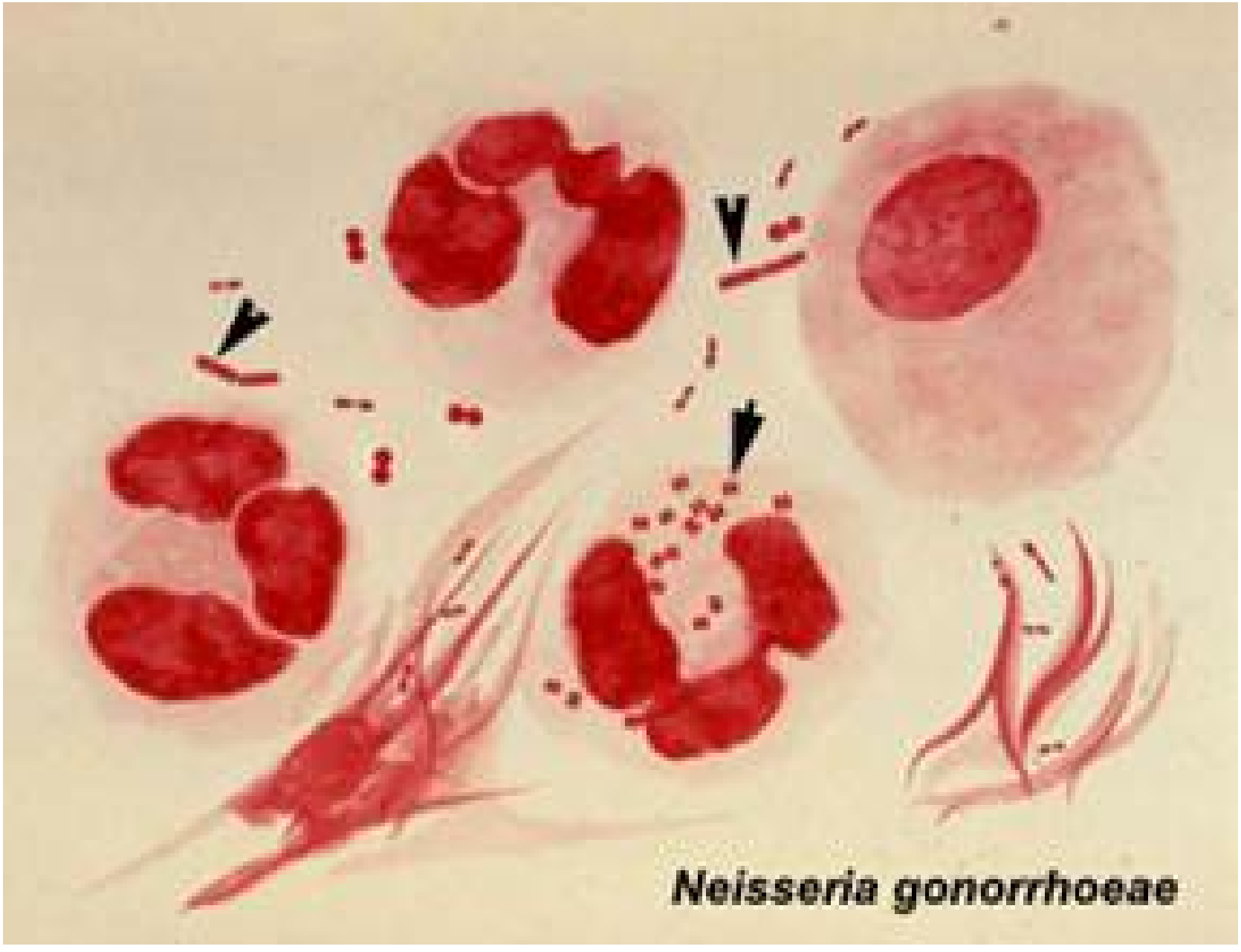
(3) Cell Wall:

(determined by staining)

- gram-positive (stain purple) due to their thick protein layer on their cell wall
- gram-negative * (stain pink/red) due to their thin protein layer

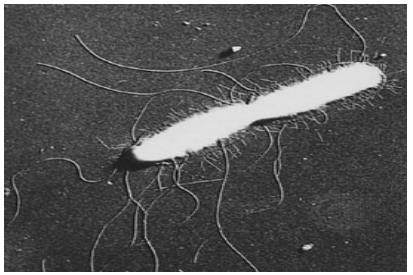





Neisseria gonorrhoeae

Classified by Respiration

- **obligate aerobes** - need oxygen for respiration



- **obligate <u>an</u>aerobes** - must have no oxygen

- **facultative aerobes** - prefer oxygen, but can live without