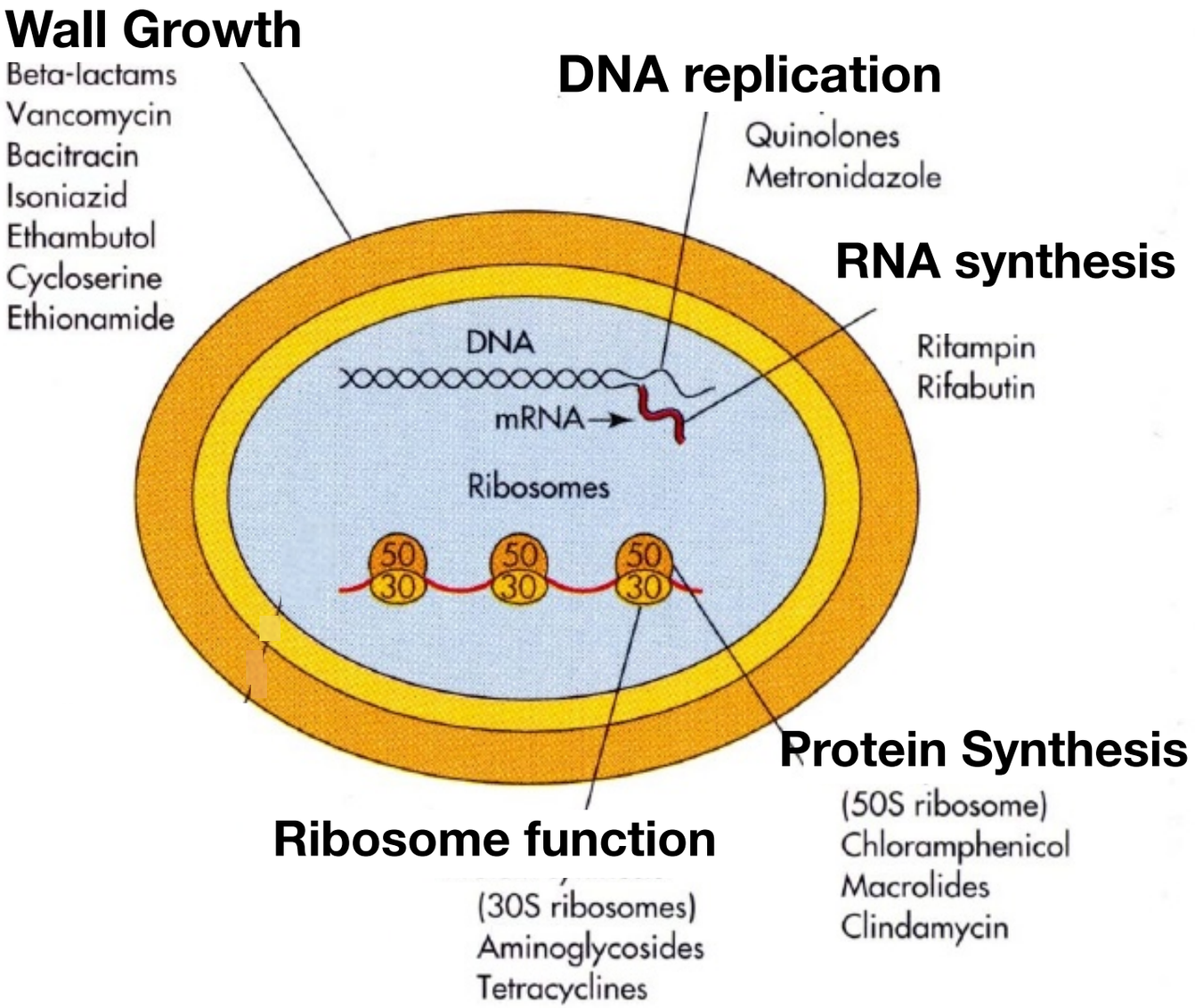
Antibiotics

Antibiotics Mode of Action

Antibiotics **block metabolic** processes that occur in prokaryotes but not in eukaryotic cells.

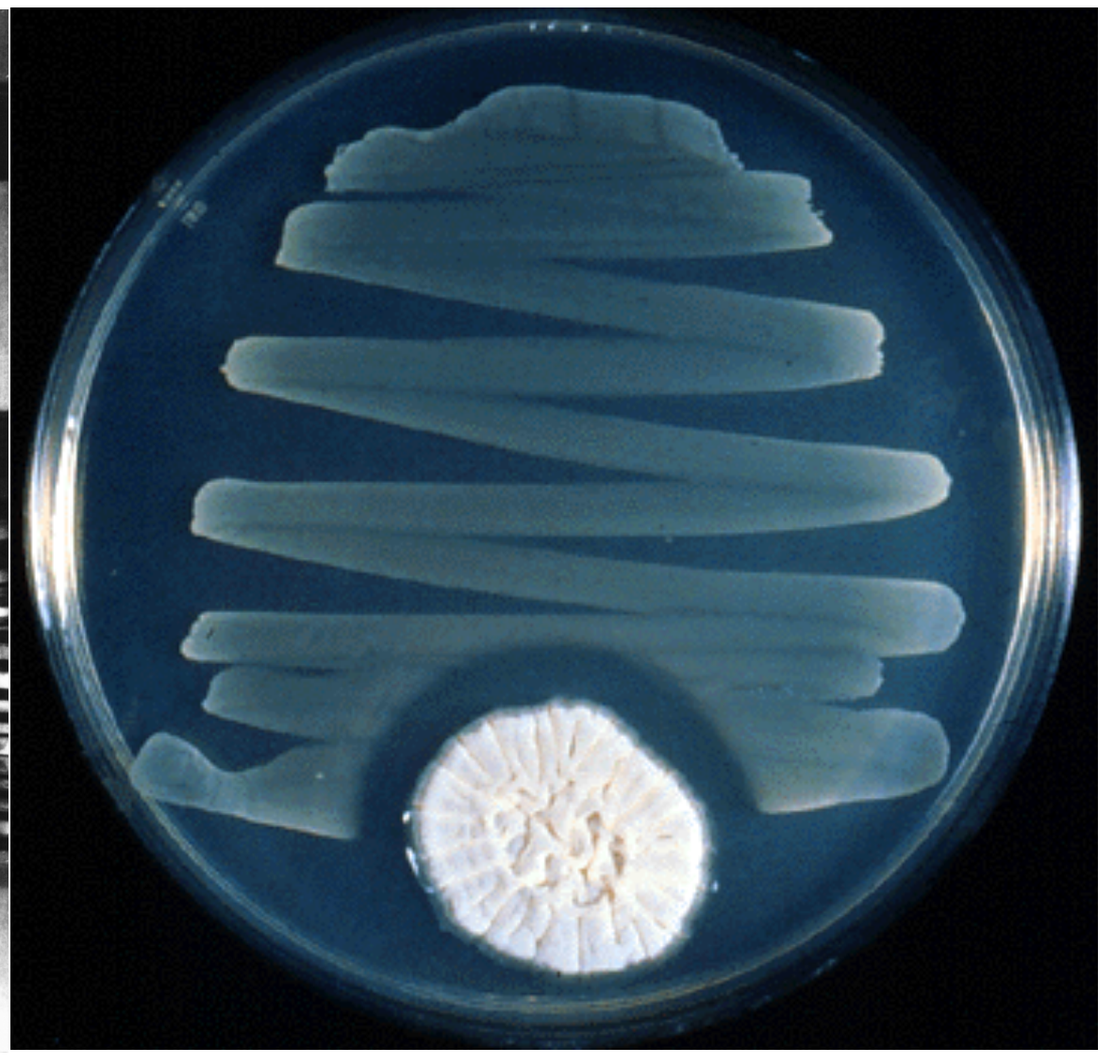
- Inhibits growth through;
- Preventing proteins to be synthesized by inhibiting DNA function
- Inhibit ribosome function
- Inhibiting cell wall production



Inhibit

Most originated from **saprotrophic** fungi. (lives on dead organics)

- Used to out compete saprotrophic bacteria
- Alexander Fleming discovery penicillin by accidental coincidence

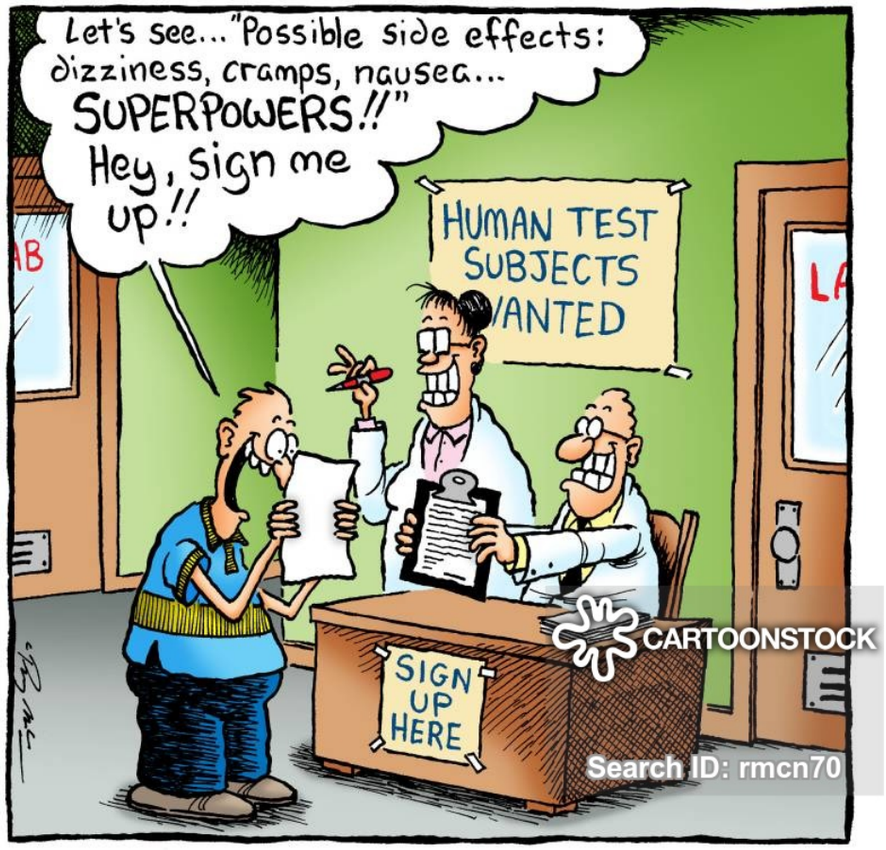


As you watch the video;

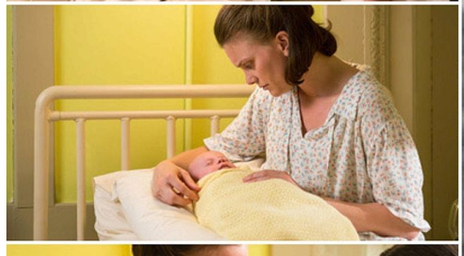
a. What are Florey and Chains contributions to antibiotics?

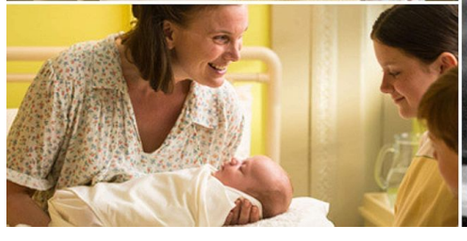
b. What problems needed over coming with antibiotics?

c. How was penicillin improved!



Another successful recruitment drive for the Collins University Medical Research Center.





RESEARCH

Understanding Our Bodies In Health And Illness

FINDING NEW TREATMENTS

1,000,000

NARROWING THE FIELD

250

CLINICAL TRIALS

Phase 1	Phase 2	Phase 3

5

1

APPROVAL

FINDING NEW TREATMENTS

CONTINUOUS MONITORING

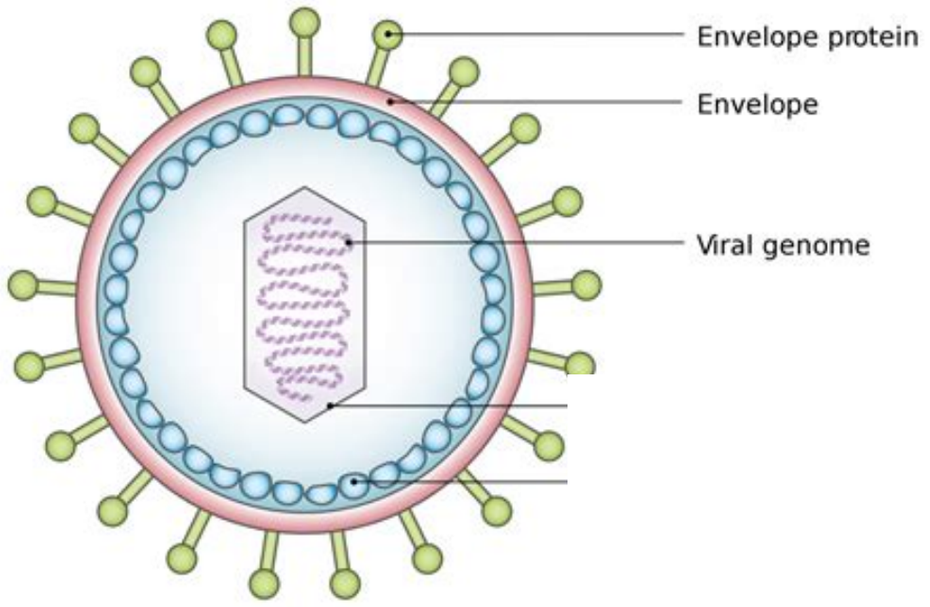
COMPOUNDS

10-15 years, average 12 years

www.understandinganimalresearch.org.uk

Viruses

Antibiotics **block metabolic** processes that occur in prokaryotes but not in eukaryotic cells.



What about Viruses?

- They lack metabolism
- Use host machinery
- No ribosomes or DNA processes
- no protein synthesis

Some doctors might prescribe antibiotics during infection of viruses

- considered unethical
- promotes resistance

As you watch

What are ways bacteria spread resistance?

What can be done to reduce antibiotic resistance?

Resistance

Some strains of bacteria have evolved with genes which confer resistance to antibiotics in some strains of bacteria have multiple resistance

eg. MRSA - Methicillin Resistant Staphlococcus Aureus

Resistance

Is an avoidable problem…

- doctors prescribe only with serious infections
- Complete your course of treatment
- hospital hygiene is the best- reduces cross contamination
- eliminate antibiotics in animal feed (used to stimulate growth)
- develop new antibiotics