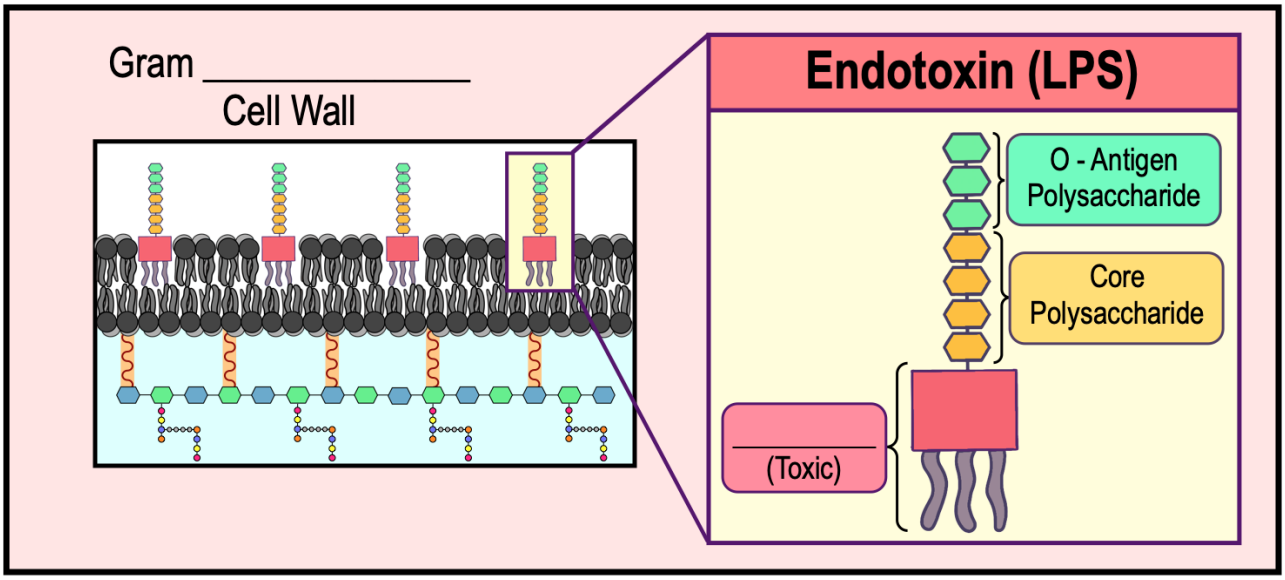
CONCEPT: ENDOTOXIN CAUSES DAMAGE TO THE HOST

●**Endotoxin:** is lipopolysaccharide (_____) that is found in the outer membrane of gram-negative cells.

□ *Recall:* LPS contains the molecule *Lipid* _____.

□ **Lipid A:** the _____ component of LPS that can trigger an inflammatory response.

□ Lipid A can be released during bacterial cell multiplication or bacterial cell lysis.



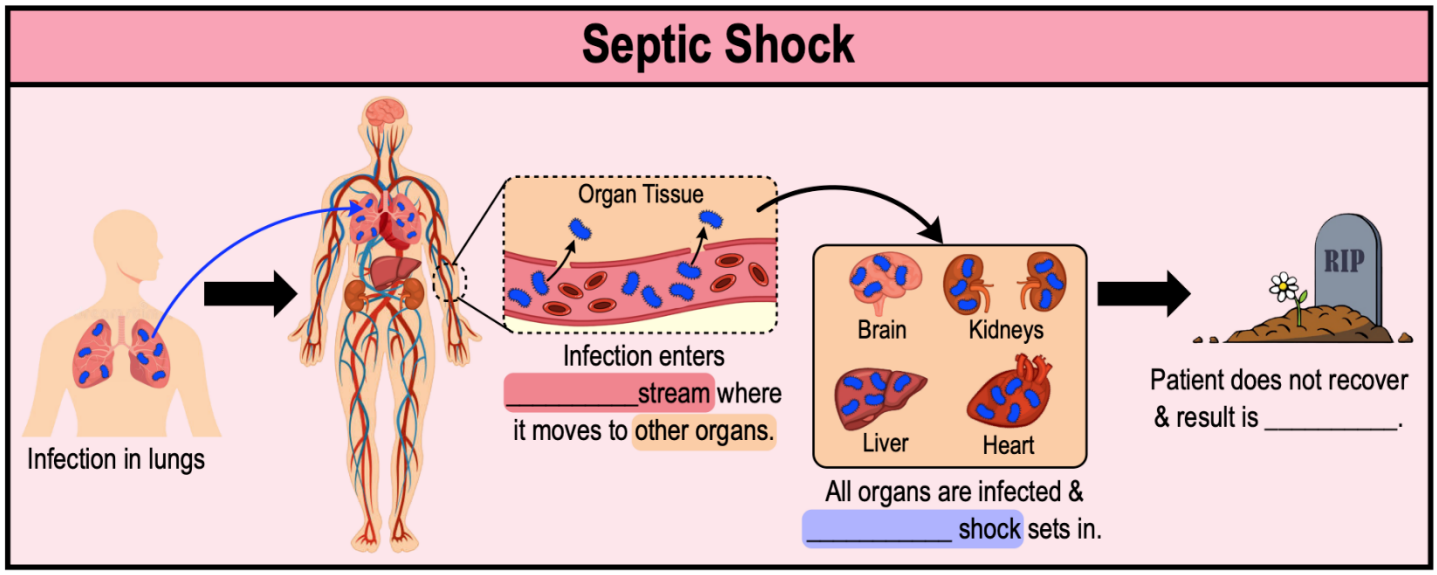
Lipid A Causes Septic Shock

●If lipid A is *released* & infects the *bloodstream*, it can initiate a culmination of systemic *responses* (**septic** _____).

□ Septic shock can include *fever*, _____ (low red blood cell count), *weakness*, *diarrhea*, & *inflammation*.

□ Lipid A can also cause a life-threatening "_____ storm" resulting in rapid *dilation* of blood vessels.

□ Septic shock can have physiological effects on the heart, vascular system, and other body organs.



CONCEPT: ENDOTOXIN CAUSES DAMAGE TO THE HOST

PRACTICE: What part of lipopolysaccharide (LPS) is the dangerous portion of the endotoxin during bacterial infections?

a) O-antigen.
b) Lipid-A.
c) Core Polysaccharide.
d) The entire lipopolysaccharide molecule.

PRACTICE: What type of bacteria create endotoxins?

a) Gram-negative.
b) Gram-positive.
c) Both gram-negative & positive.
d) Endotoxins are only produced by protozoa.

PRACTICE: Lipid A is the toxic component of LPS. When pathogenic bacteria release Lipid A into the bloodstream the infected individual may experience septic shock. Lipid A represents _____.

a) A focal infection.
b) An exotoxin.
c) A systemic infection.
d) An endotoxin.
e) A and B.
f) C and D.

PRACTICE: An endotoxin:

a) Is an AB toxin.
b) Is created by gram-positive bacteria.
c) Is heat stable and will not denature.
d) Triggers T cells to release cytokines.