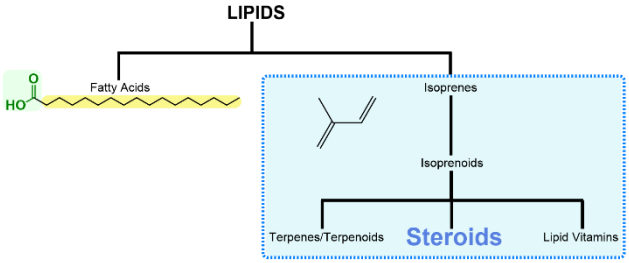
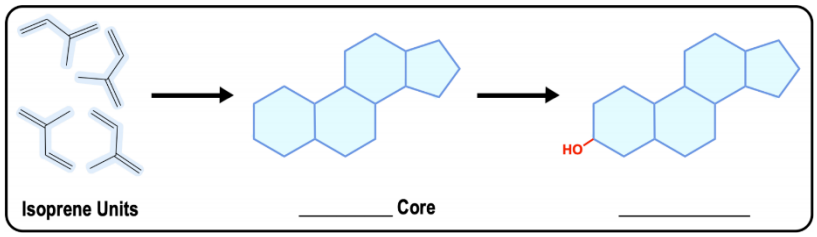
CONCEPT: STEROIDS:

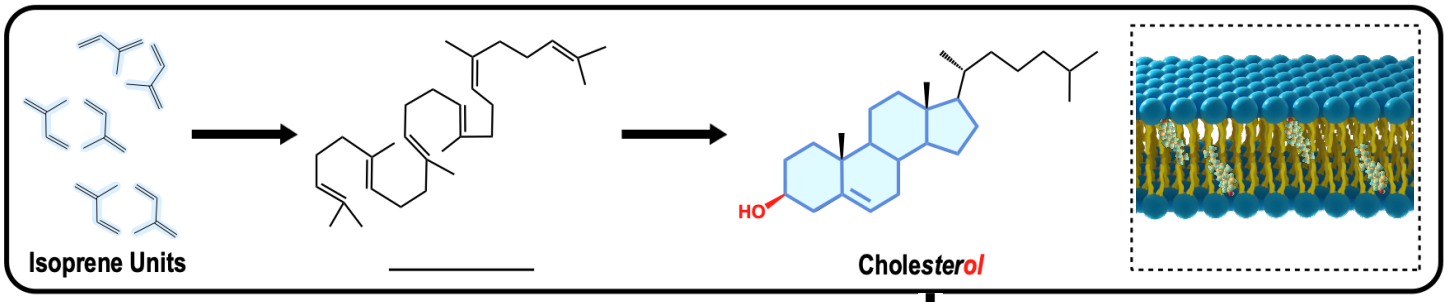
- _____: *isoprenoid* lipids with a core 17-carbon *tetracyclic* ring structure called *gonane*.
  - □ Steroid *gonane core* has *four* rings *fused* together: _____ *six-membered*-rings & _____ *five-membered*-ring.
  - □ Biosynthetically derived from _____ *units* (although it may not always be structurally obvious).
  - □ *Sterols*: steroids with ≥ 1 _____ group (-OH).

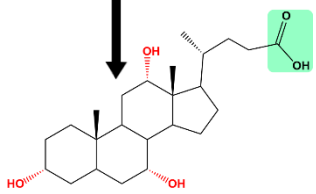




Cholesterol: our Most Abundant Steroid

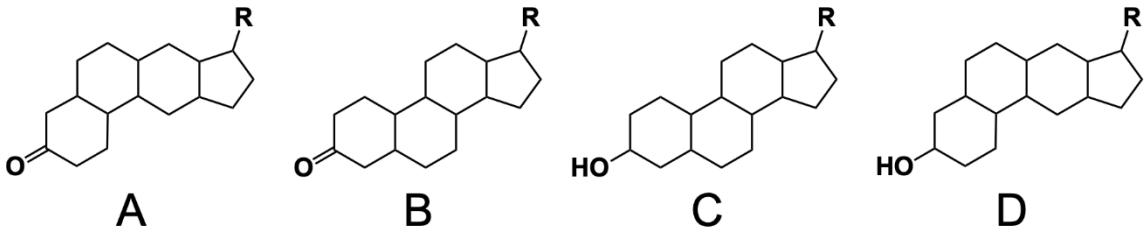
- _____: a lipid *sterol* with a *C3 hydroxyl* (-OH) & a *C17 hydrocarbon side chain*.
  - □ The most abundant steroid in _____, found in *animal cell membranes*.
  - □ Derived from cyclization of the terpene lipid molecule called _____.
  - □ Cholesterol is a *precursor* molecule for _____ *acids* (like *cholic acid*) which help *digest* fats.





PRACTICE: Which of the following structures is a sterol?

a) A. b) B. c) C. d) D.



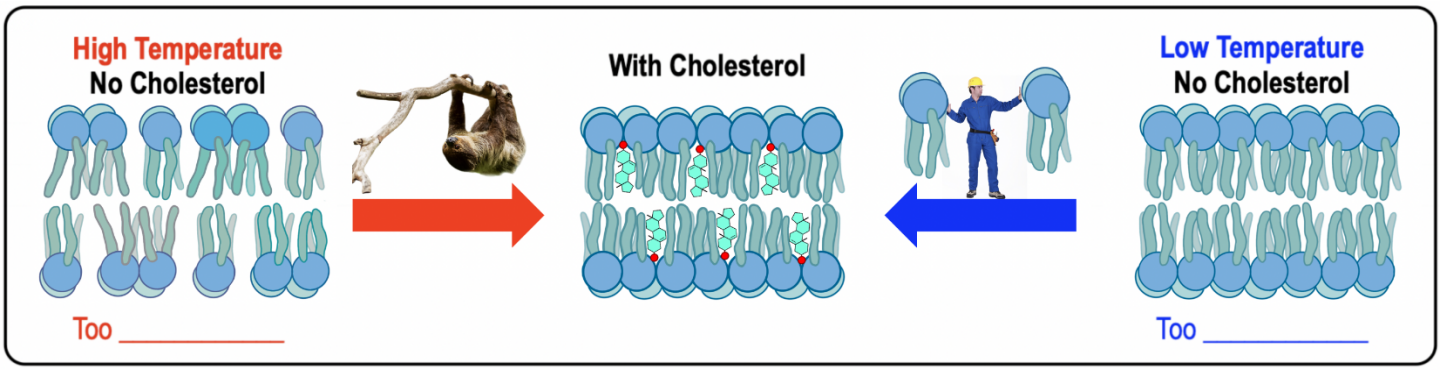
CONCEPT: STEROIDS

Membrane Functions of Cholesterol

●Cholesterol's regulation-effect on animal cell membrane *fluidity* is dictated by _____:

1) At ____ temp. (membranes risk being too *fluid*), so cholesterol _____ membrane fluidity & _____ rigidness/viscosity.

2) At ____ temp. (membranes risk being too *rigid*), so cholesterol _____ membrane fluidity & _____ rigidness/viscosity.



PRACTICE: What is the effect of cholesterol in a membrane?

a) Increases membrane fluidity by preventing acyl chain packing.

b) Reduces membrane fluidity acyl chain movement.

c) Both a & b.

d) Neither a or b