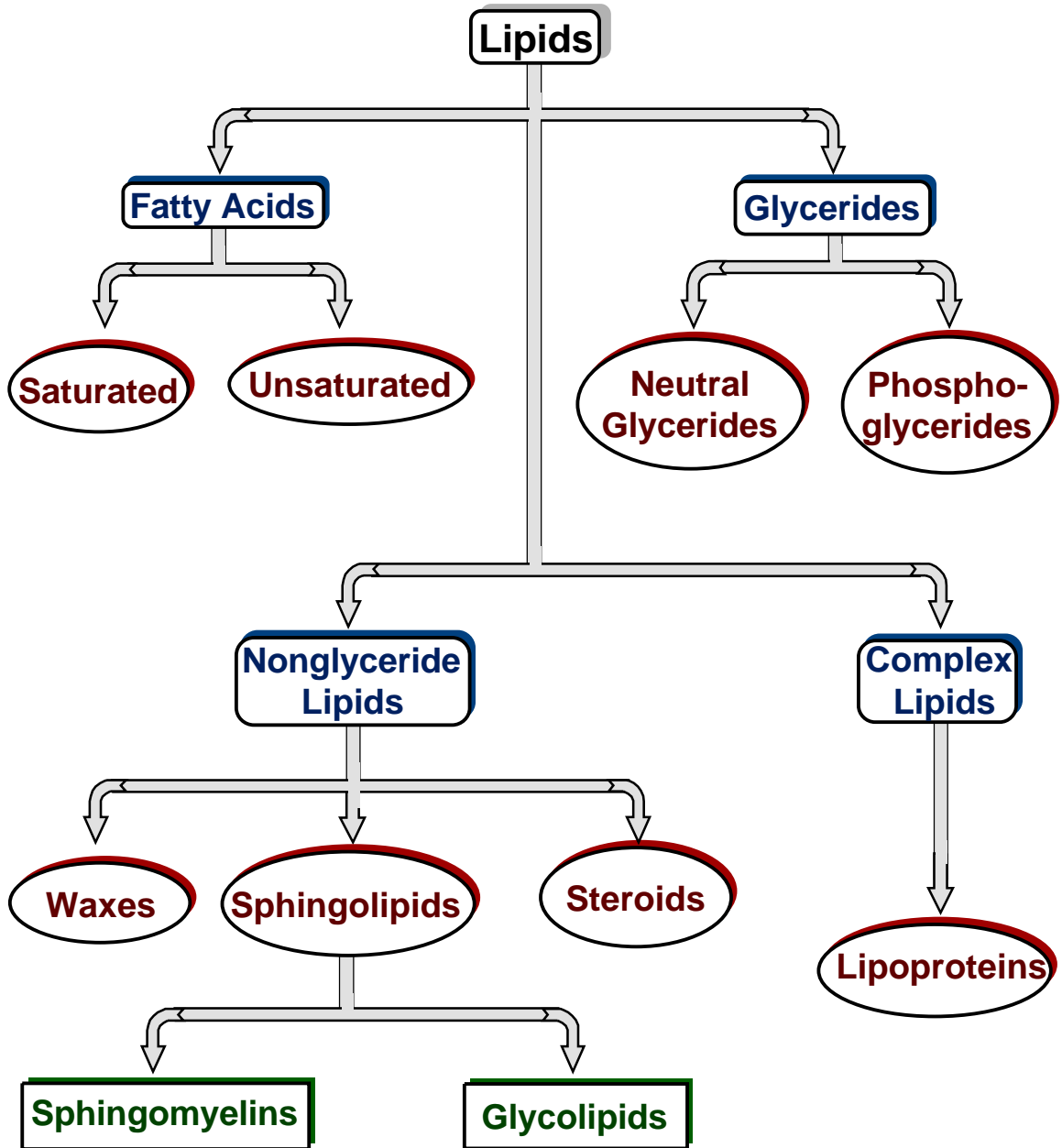
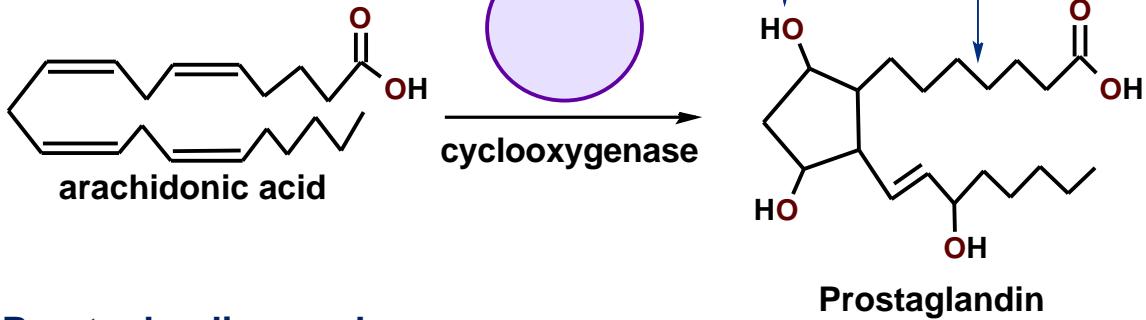
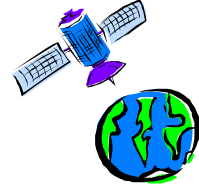


# Classification of Lipids





## Prostaglandins



Prostaglandins are hormones

They transmit signals within cells and between cells

Local activity only

All cells make prostaglandins

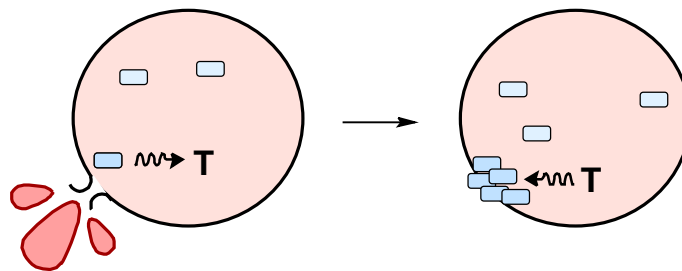
Different classes made in different tissues

Action is determined by class produced

Many different functions



## Blood Clotting



Thromboxin A (T) causes platelet aggregation  $\longrightarrow$  clot

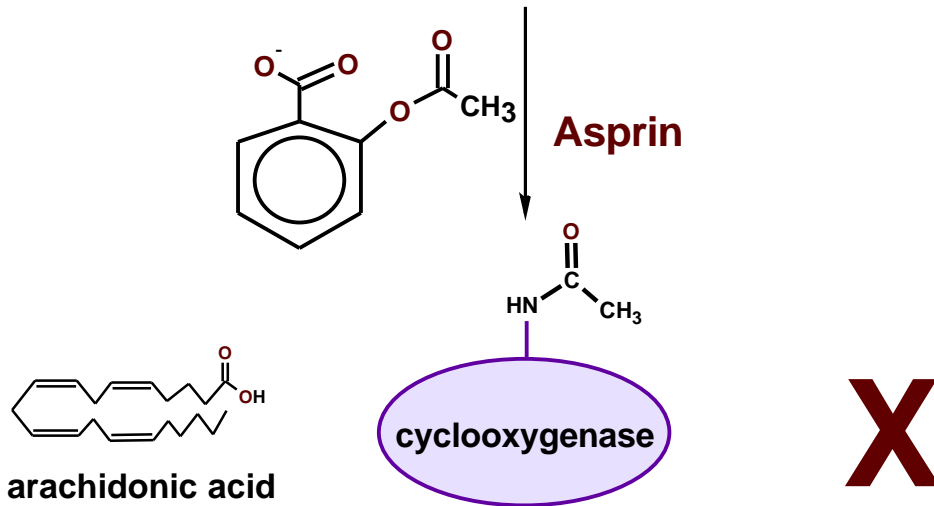
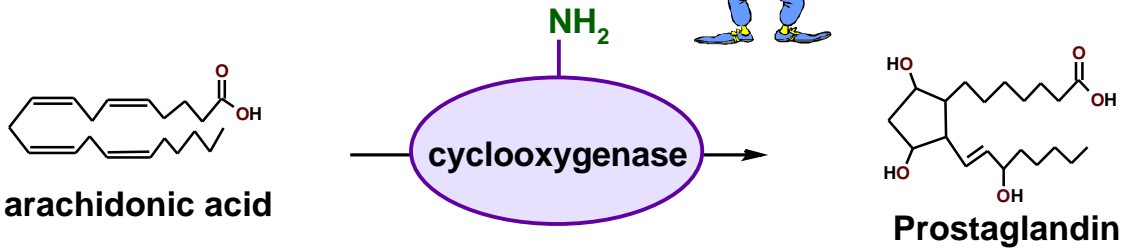
Prostacyclin ( $\text{PGI}_2$ ) inhibits aggregation  $\longrightarrow$  no clot



# Prostaglandins

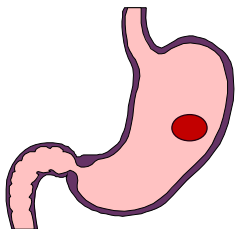


## Inflammatory Response and Aspirin



Enzyme is acetylated → inactivation

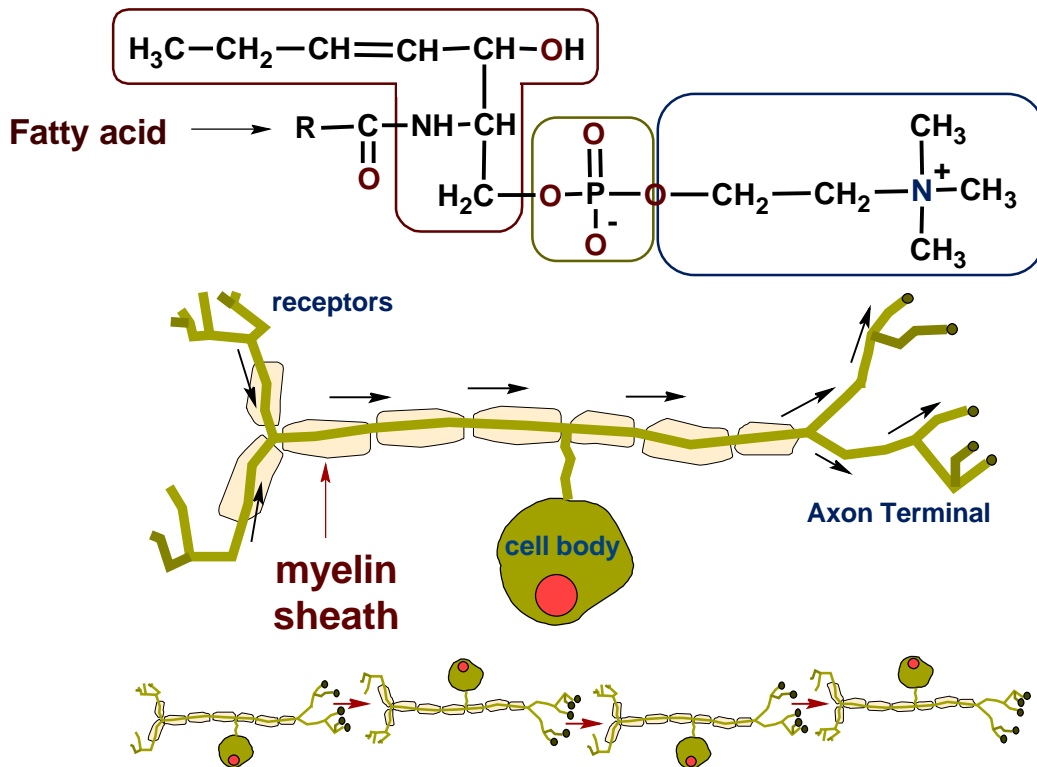
BUT.... Prostaglandins also



- inhibit stomach acid production
- increase mucous production

So trade headache for ulcers!

## Spingomyelin



**Myelin increases the speed of nerve impulse conduction & protects axon.**

**Development continues in infant...**

**reason for less coordination and delayed responses**

### Disorders

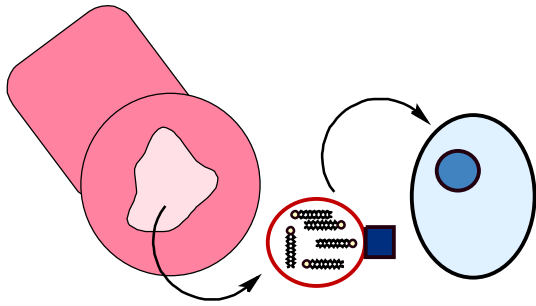
#### **Niemann-Pick Disease:**

- No Spingomyelinase (breaks spingomyelin down)
- Accumulates incells (brain, bone marrow, liver)
- Lack of motor skills, muscle strength and tone
- Lose vision and hearing
- Death within a few years

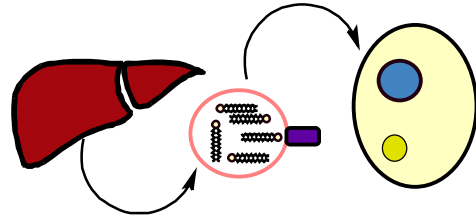
#### **Multiple Sclerosis:**

- Believed to be an autoimmune response
- Antibodies attack myelin around nerves
- Different levels of severity

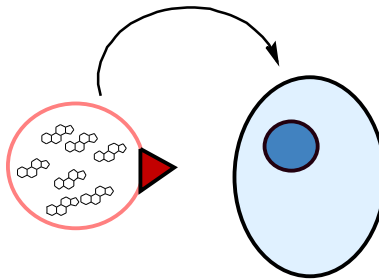
# Lipoproteins



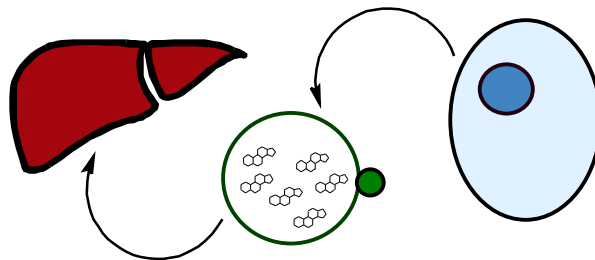
**Chylomicron**  
triglycerides  
from intestine to cells  
for use



**VLDL**  
triglycerides  
from liver to cells for  
storage



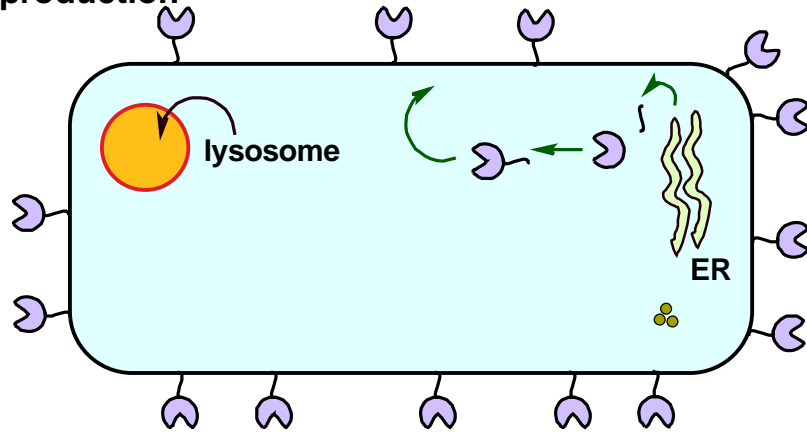
**LDL**  
Cholesterol  
to cells for use  
**MOST CHOLESTEROL**



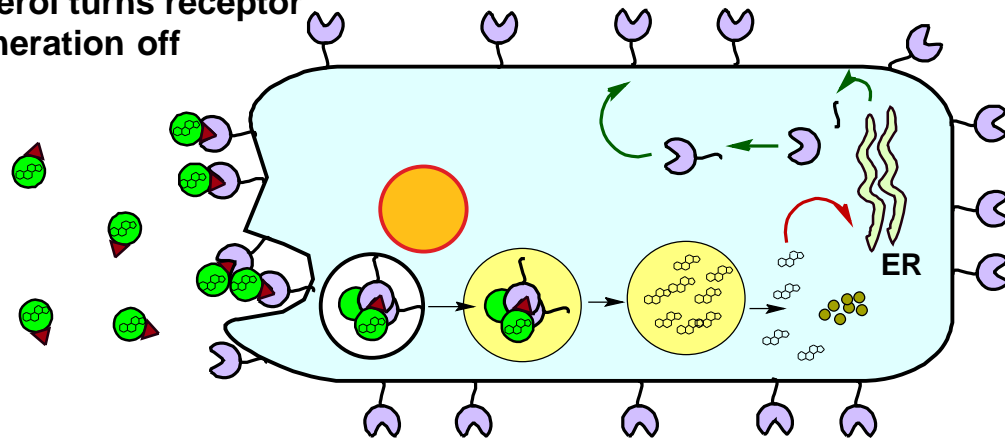
**HDL**  
Cholesterol  
from cells to liver  
for disposal

## Cholesterol Regulation

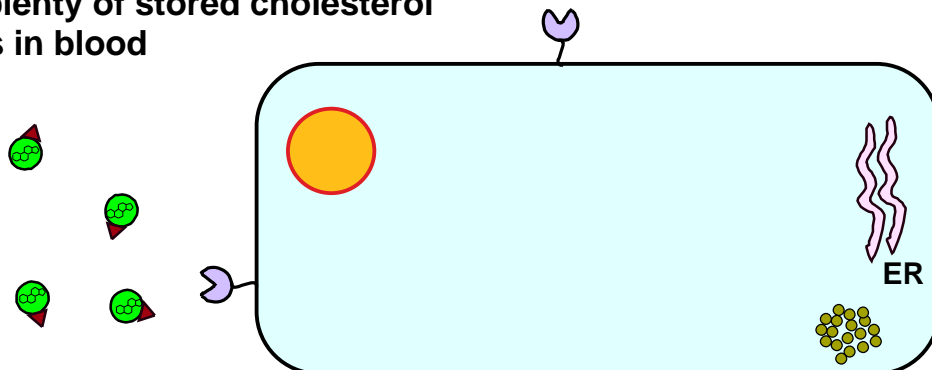
low cholesterol in cell  
Increased receptor production



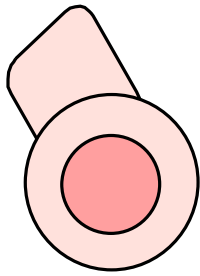
LDL absorbed by cells  
Cholesterol turns receptor generation off



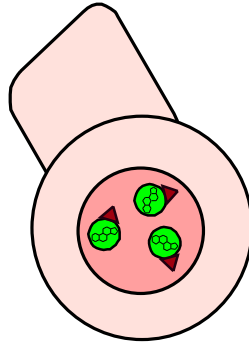
Cell has plenty of stored cholesterol  
LDL stays in blood



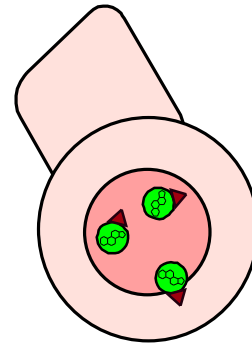
## Arteriosclerosis



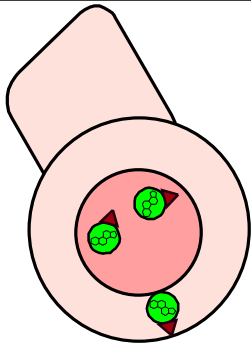
**Normal  
Artery**



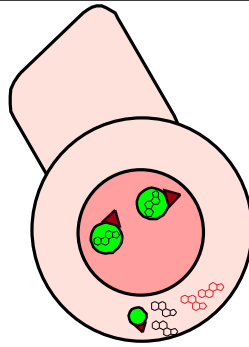
**High  
LDL**



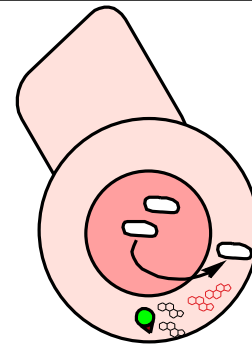
**LDL lodges  
into artery wall lining**



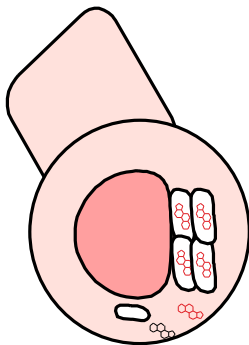
**LDL enters  
lining**



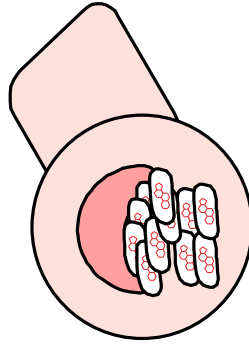
**Cholesterol release  
and oxidized**



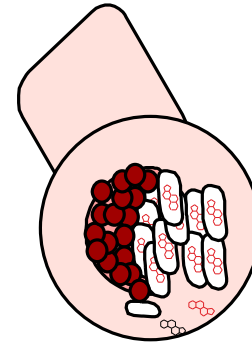
**White blood cells  
respond**



**White blood cells  
consume cholesterol  
forming plaque,  
narrow artery**



**Plaque can rupture  
through  
artery wall lining**



**Causing clots  
artery blockage**