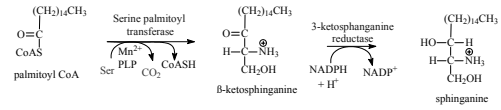


## Trig Formation

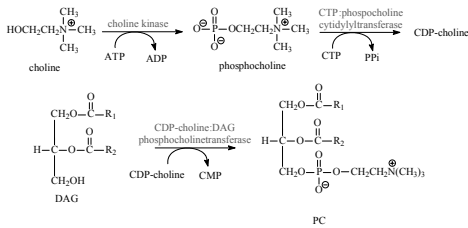
- Sources of glycerol
- Enzymes
  - glycerol kinase (liver and kidney)
  - G3P acyltransferase
  - MAG acyltransferase
  - phosphatase
  - DAG acyltransferase
- Product

## Sphingomyelin Synthesis

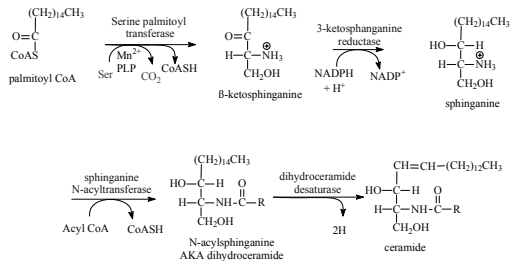


## Mammalian *de novo* Phospholipid Synthesis

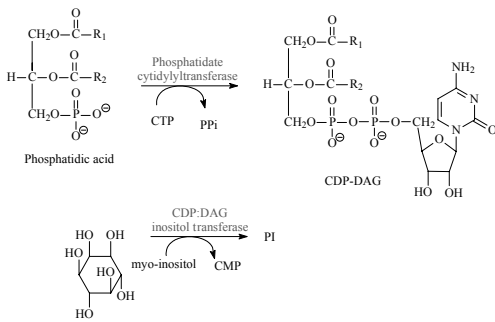
- From DAG or from PA
- DAG: choline, phosphocholine, CDP-choline, PC



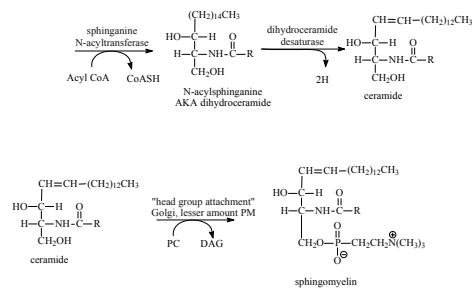
## Sphingomyelin Synthesis



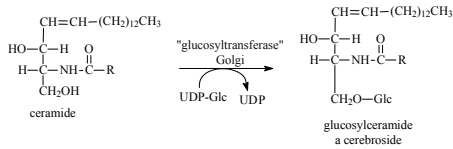
## PI Synthesis as an Example Originating with PA



## Sphingomyelin Synthesis

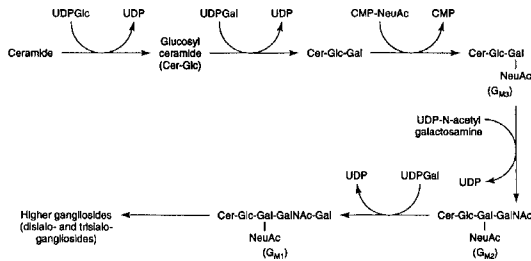


## Cerebroside Synthesis

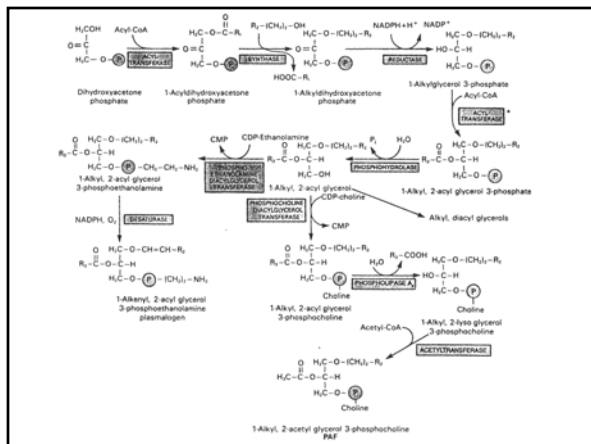


## Cholesterol Synthesis Occurs in Four Stages. I. Synthesis of Mevalonate from Acetyl CoA

## Synthesis of Higher Cerebrosides



## Cholesterol Synthesis Occurs in Four Stages. II. Conversion to Isopentylpyrophosphate



## Cholesterol Synthesis Occurs in Four Stages. III. Cyclization of Squalene...

Cholesterol Synthesis Occurs in Four Stages. IV. Epoxidation, cyclization, and reduction of squalene to cholesterol

### Regulation of Cholesterol Synthesis

- Decreased synthesis during fasting- cannot be explained
- Feedback inhibition of HMG-CoA reductase
- Diurnal variation- cannot be explained
- Insulin activation of HMG-CoA reductase  
(?protein phosphatase mechanism?)