

JULY 2007  
VIVA 4

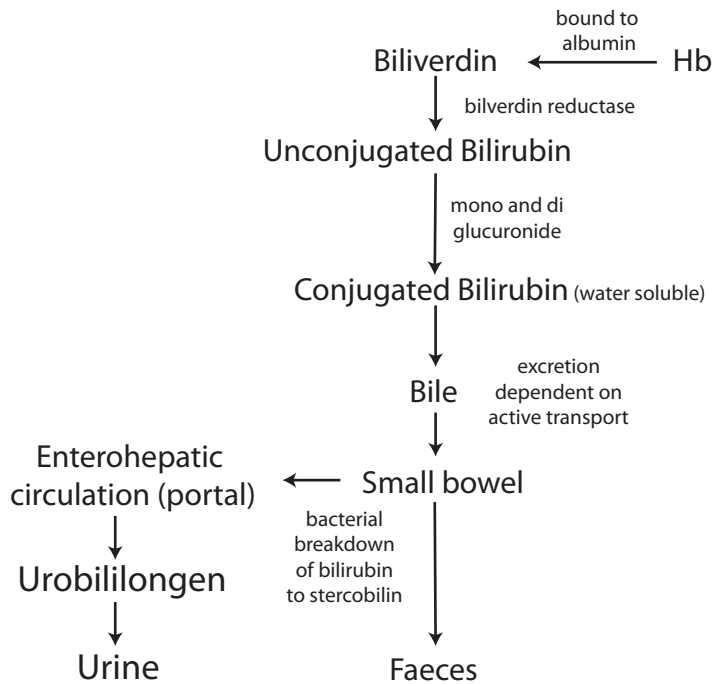
Describe the physiology of bilirubin production and clearance

**“What is bilirubin and how is it metabolised?”**

catabolic product of heme metabolism

hemoglobin, myoglobin, cytochromes, catalase, peroxidase, and tryptophan pyrrolase (Eighty 80% from Hb (250 to 400 mg daily)

20% other heme proteins and a rapidly turning-over small pool of free heme



**“How do values of plasma bilirubin versus urine bilirubin vary?”**

Plasma bilirubin levels are a balance of production and clearance

in well patients plasma levels bilirubin are mostly unconjugated  
conjugated bilirubin is normally minimal

Urine bilirubin levels

conjugated levels will rise in disease

urobilinogen is the main component in well patients (via the bowel/portal system)

unconjugated is protein bound and not filtered at the glomerulus

**“Compare and contrast the bilirubin levels in intrahepatic disease and post hepatic disease”**

Intrahepatic disease

Plasma levels

total bilirubin, unconjugated and conjugated all elevated

Urine levels

increased urobilinogen, increased conjugated

Post hepatic disease

Plasma levels

total bilirubin, conjugated bilirubin elevated, unconjugated unchanged

Urine levels

increased conjugated bilirubin, decreased urobilinogen