

Physiology of Urine Formation

[DEPTH OF BIOLOGY]

Urine Formation

- Glomerular filtration
- Reabsorption (selective)
- Secretion (tubular)

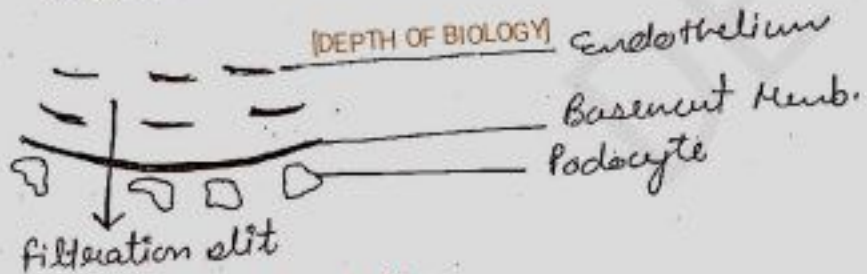
Glomerular Filtration

- Except protein whole plasma gets filtered here in Bowman's capsule

Total blood \rightarrow 5L

\downarrow
1st part 1200 ml blood filtered minute

\downarrow
Filtered by
filtration slit.



Podocyte \rightarrow B. capsule cells

\rightarrow arrange in intricate manner \rightarrow so as to leave minor spaces called slits pores.

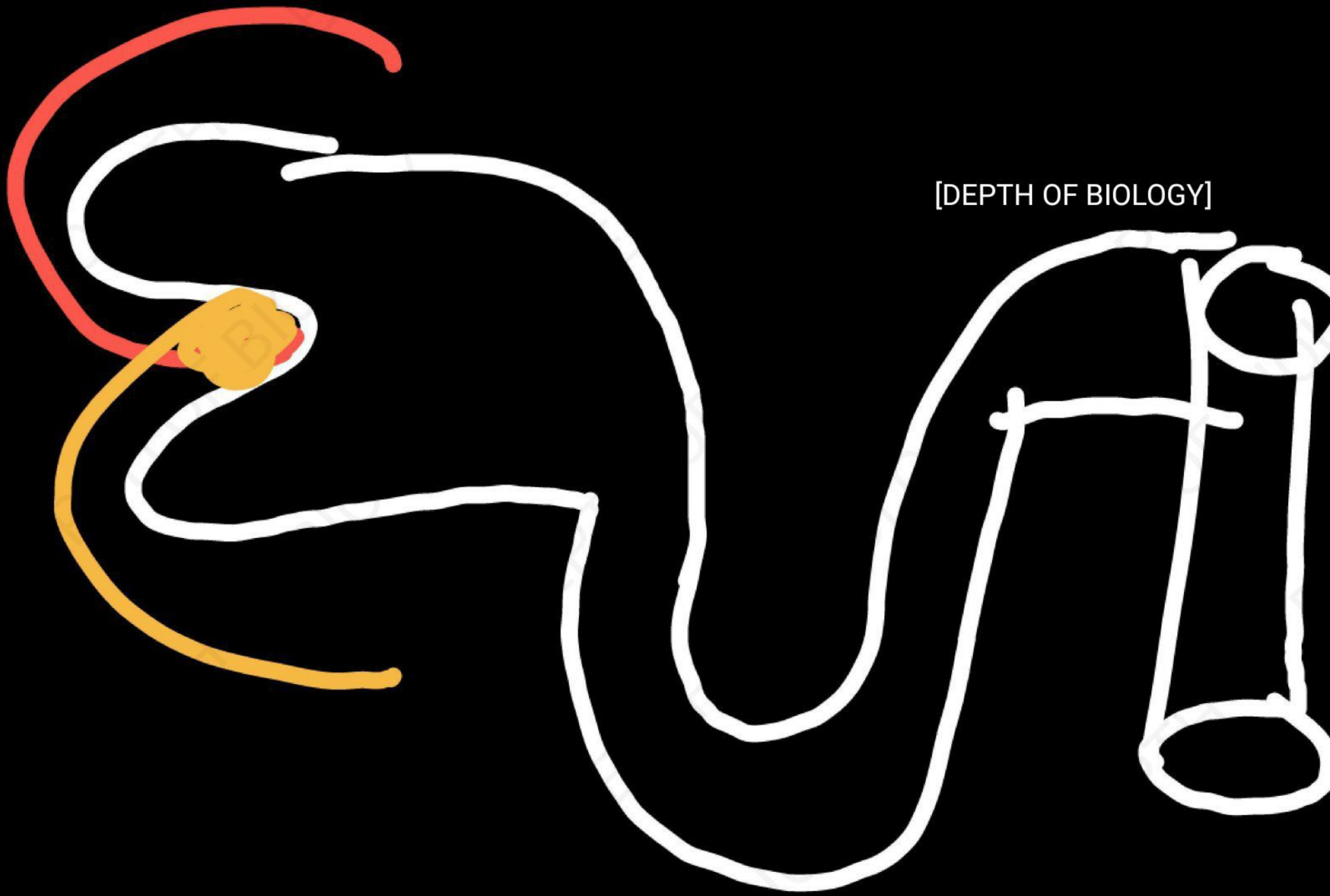
Filtration slit causes
 \downarrow
ultrafiltration

(Almost all constituent of plasma filtered except protein.)

GFR = 125 ml/minute \rightarrow healthy individual.

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\downarrow controlled by JGA \downarrow 180 L/Day



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Reabsorption includes passive diffusion, active transport, and cotransport.

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Tubular cell secretion K^+ , H^+ \rightarrow $\downarrow\downarrow$

1.5 litres (urine) in 24 hrs.

Imp. step in
urine formation

helps maintain of Ionic and Acid Base Balance.

Selective reabsorption

1.80L \rightarrow 1.5L (99% is reabsorbed)

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Loop of Henle \rightarrow use for concentrate urine

Asc. limb of loop of Henle \rightarrow permeable to ion

Desc. limb of loop of Henle \rightarrow permeable to H_2O

Thick ascend. limb of loop of Henle \rightarrow No absorption
takes place here.

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