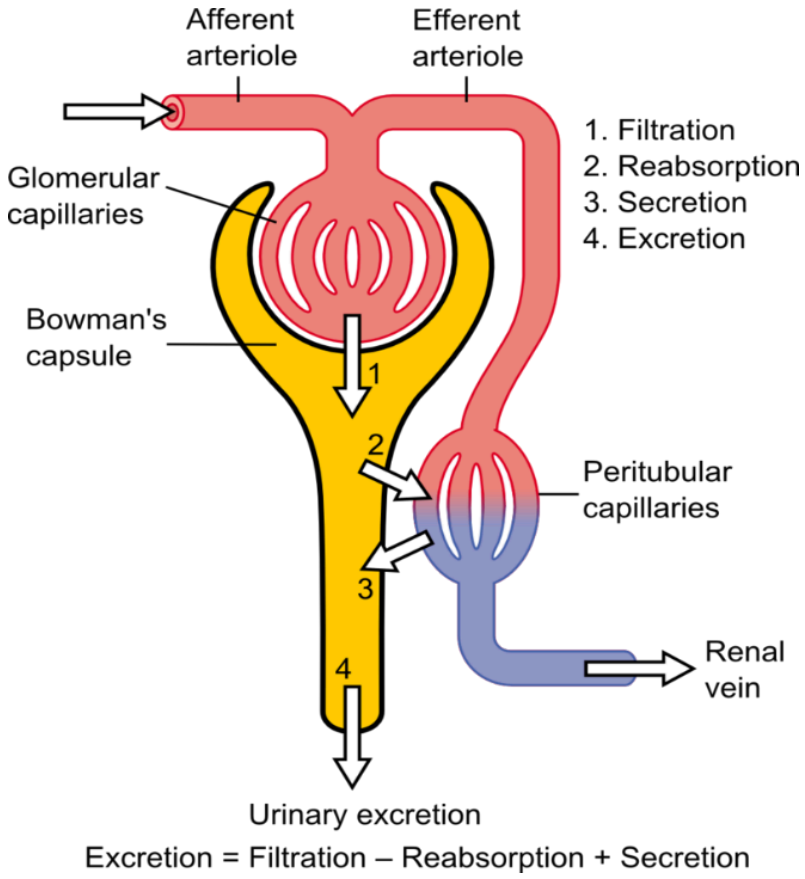
7.2.4

Excretion

Now that you have learned about filtration, reabsorption and secretion, we are ready to put all three together to discuss excretion. First let's review:

- **Filtration:** Filtering through the Bowman's capsule everything from the blood small enough to fit through the fenestrations: Water, Glucose, NaCl, amino acids, small proteins, metabolites and urea and leaving behind the larger proteins, and red and white blood cells. The filtration rate is dependent on pressure (GFR) with normal GFR about 125 ml plasma/min;
- **Reabsorption:** As the filtrate passes through the nephron and kidney tubules, the vasa recta and peritubular capillaries reabsorb all of the good stuff your body still needs: Water, Na^+, Glucose, Cl^-, H^+, and Amino Acids. Reabsorption is accomplished by osmosis, facilitated diffusion, the countercurrent multiplier system created by the vasa recta running counter to the flow of the filtrate through the nephron, active transport with the Na^+/K^+ ATPase pump, and by hormonal influence from Aldosterone and Antidiuretic Hormone (ADH);
- **And Secretion:** Moving substances from the peritubular capillaries directly into the kidney tubules, such as H^+, toxins, drugs (penicillin), PAH, K^+, NH_4^+

Excretion combines all of these in the formation of urine.



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