Clearance

The Clearance of a substance is the amount of plasma, that is cleared of that substance per unit time. Renal clearance is most commonly determined, which is defined as the amount of plasma purified by the Kidneys from a substance per unit time (most commonly expressed in ml / min or ml / s). In a similar way, it is possible to define the clearance of other organs, eg hepatic clearance.

Renal clearance is calculated according to the formula: $C_X = \dfrac{U_X \cdot V}{P_X}$

C_X – clearance of substance X

U_X – concentration of substance X in urine

V – urine volume

P_X – plasma concentration of substance X

The smallest value of renal clearance is 0 (plasma is not purified from the substance at all), the maximum value is equal to the plasma flow through the kidneys (all plasma flowing through the kidneys is purified from the substance).

The clearance of substances that are freely filtered in the glomeruli and are not secreted or resorbed in the tubules is used to determine the value of glomerular filtration (eg inulin or creatinine clearance).

Links

related articles

- Creatine Clearance
- Functional examination of the kidneys