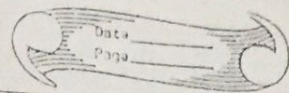


# Creatinine



## \* Quality issue :-

→ If 2 lab. is using same method → variation is  $< 3\%$

→ Relationship B/W  $Cr$  &  $eGFR$  is exponential.  
At lowes ~~or~~ concentration

→ ~~range~~  $1.3$  ~~or~~  $Cr$

→ Overestimation of  $Cr$  = more underestimation of  $eGFR$

→ mostly  $Cr$  based  $eGFR$  calculation is done

→ In order to solve this problem

↓  
NIST has given SRM.

↓  
→ Use of SRM & IEMS method → For kit development

→ Standardization will not solve the prob. of different reactivity  $\tau$  ~~or~~ chromogen across different patient

→ In enzymatic method

↓  
must  
always have one step → product

→ with multiple enzyme reaction

↓  
Various intermediate products can interfere in the test



Date \_\_\_\_\_  
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Ref. Value :-

→ Cr. Urinary excretion is decline as ~~at~~ing age

→ spot urine ratio : Alb/or ratio

→ 24 hrs ratio can be taken  $\Rightarrow$  Alb/or per day  
↳ timed  $\hookrightarrow$  it can be (3hrs, 4hrs, etc...)

→ 24 hrs creatinine measurement  $\rightarrow$  gold std.

\* CrFR :-

→ Best overall measurement of kidney function

→  $\downarrow$  CrFR  $\rightarrow$  deterioration of kidney  
↳ occurs before ClF of kidney d'se

→ Uses : ① Rx ~~sh~~ should given or not

② what kind of Rx is given

③ Monitoring progression of d'se

④ to guide / dosage of Renally excreted drug



to prevent drug toxicity.

\* Clearance :-

→ defined as vol. of plasma from  $\text{c}$  the substance is completely cleared by the kidney per unit of time

→ Substan  $\text{c}$  should have steady conc. in the plasma.







→ GFR is amount of glomerular filtrate produced per unit time  
→ not necessary amount of substance excreted per unit time

clearance :-

→ clearance :-

→ kidney size is roughly proportional to Body surface area

→ Std. surface area : 1.73 m<sup>2</sup>

Renal clearance = GFR

↓

if sub. is completely filtered, ~~not~~ not reabsorbed, not excreted

→ measurement of clearance

→ collection period should be long enough  
→ complete bladder emptying should be there

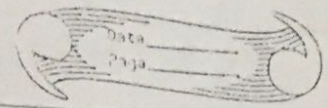
\* Exogenous Markers :-

→ GFR is measured by exogenous markers

→ ~~old~~ gold standard ~~is~~ measurement of GFR by exogenous ~~markers~~ ~~then~~ measurement of GFR by endogenous markers like Cr, & compare them

→ Exogenous markers → very small change in GFR for day to day is ~~also~~ used to can also measured by it.





⇒ Radioisotopic markes :-



- EDTA, chromium-EDTA, DTPA, Tc-DTPA
- Radioactive markes made compounds.



GFR measurement may be based on plasma clearance & urinary clearance



as it is not generated in Body so

Only plasma clearance ~~is~~ <sup>can be</sup> measured



if plasma clearance measured →

pt ~~doesn't~~ should not have ascitis,  
edema.