Definitions

- Oliguria: Decreased urine output values
- Uraemia: Raised level of urea in the blood
- Azotaemia: Raised level of nitrogenous compounds in the blood
- NSAIDs: Non-steroidal anti-inflammatory drugs
- Intrinsic: Originating due to factors caused within the body
- Benign: No harmful effects
- Malignant: Dangerous/harmful effects
- Hypoperfusion: Sudden reduction to blood flow to the kidneys
- GFR: Glomerular Filtration Rate
- Eosinophiluria: Eosinophils in the urine
- Haematuria: Blood in the urine

Useful equations

Creatinine clearance: \( \frac{U \times V}{P} \) mL/min

\( U = \) Urine creatinine conc. umol/L
\( V = \) Urine flow rate mL/min**
\( P = \) Plasma creatinine conc. umol/L

** urine collection is the main source of error in calculating creatinine concentration/remember to calculate flow rate per minute – usually expressed in 24 hrs (aka 1440 minutes) \( \frac{V}{1440} = V \) mL/min

Estimated GFR (eGFR aka Cockcroft-Gault equation): \( \frac{(140 - \text{AGE in years}) \times \text{WEIGHT in kg}}{\text{plasma creatinine umol/L}} = X \) mL/min

eGFR is invalid for people who are pregnant, >18yo, or extremes in body mass (anorexia/obesity)

Underweight BMI = <18.5
Normal BMI = 18.5 - 24.9
Overweight BMI = >25

Diagnosis example

This patient is suffering from acute kidney injury (AKI). The aetiology of AKI is pre-renal/intrinsic/post-renal. Despite rapid loss of renal function AKI is potentially reversible and normal renal function can be regained if patient survives initial acute illness.