

## DISORDERS OF PURINE METABOLISM

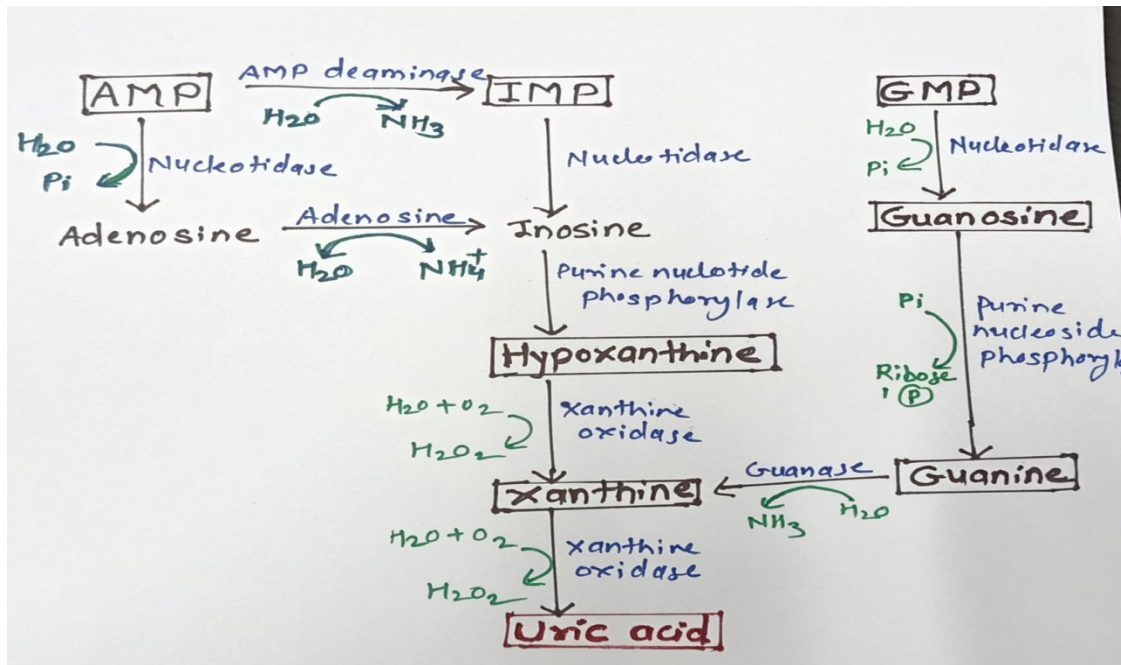
Normal range uric acid -2-5 mg -females,3-7 mg - male

Most of the disorders of purine metabolism are associated with **hyperuricemia**, a term that refers to elevated levels of uric acid in the blood – above 7.0 mg/dl in men and above 6.0 mg/dl in women.

Hypouricemia -uric acid levels below 2 mg/dl

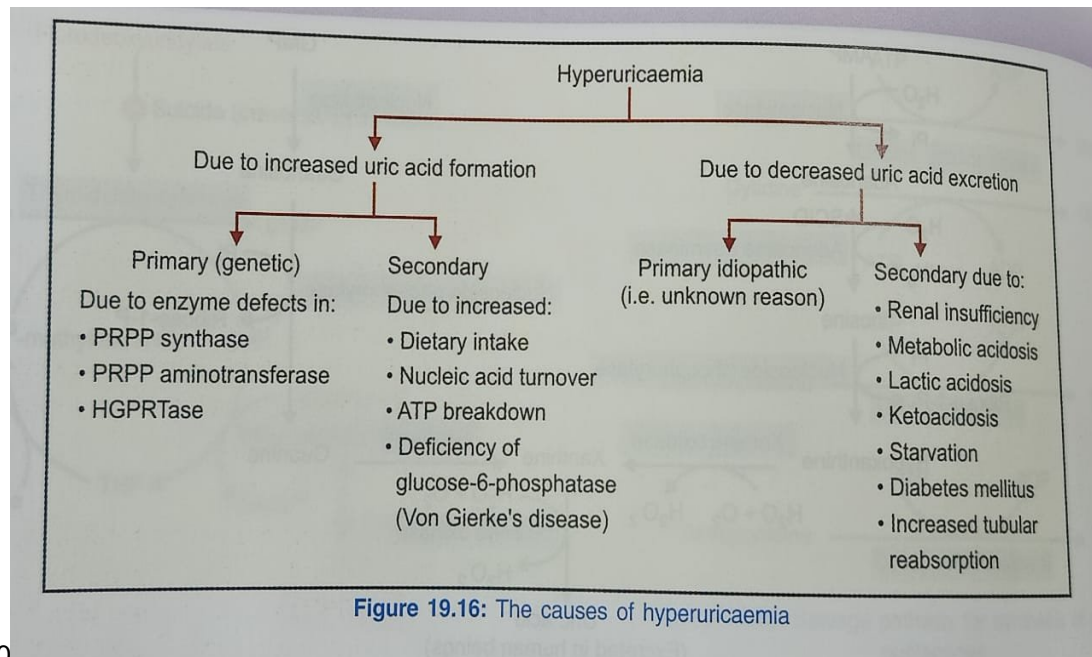
Rare genetic defect in xanthine oxidase.

Also associated with severe liver disease and renal tubular defects



- Strong reducing agent
- Free radical scavenging molecule
- Antioxident -in upper respiratory tract
- Strong correlation observed in CVD and uric acid
- Normal range -2-5 mg -females , 3-7 mg - male

Daily excretion varies from 500-700mg



- Primary gout
- Hyperactivity of PRPP synthetase
- Superactivity of PRPP glutamyl amidotransferase
- HGPRT deficiency
- Glucose-6-phosphatase deficiency

Due to various diseases –cancer, psoriasis etc.

- Secondary gout -variety of diseases that cause elevated destruction of cell or defective elimination
- Rapidly growing malignant tissues e.g. Leukemia, myeloma, lymphoma
- Cancer patient on chemotherapy-increased cellular turnover
- Increased tissue damage due to trauma and raised rate of catabolism as in starvation
- Reduced excretion
- Renal failure
- Treatment with thiazide –inhibits tubular secretion
- Lactic acidosis ,ketoacidosis

Clinical findings of gout

- Gouty attacks - high purine diet and increased intake of alcohol.
- Unbearable joint pain early in the morning
- Chronic cases –uric acid get deposited around joints causing swelling

- Total urate pool (normal 1200mg) is increased 3000 mg in gout without tophi and it may be as high as 30,000 mg with tophi.