

Renal Pathology

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1. Introduction

- Renal pathology studies diseases of the kidneys and urinary system.
- The kidneys filter waste, balance fluids, and regulate blood pressure.

2. Glomerular Diseases

- **Glomerulonephritis:** inflammation of the glomeruli impairing filtration.
- **Nephrotic syndrome:** heavy protein loss causing edema and low blood protein.
- Nephritic syndrome features hematuria and reduced urine output.

3. Tubular and Interstitial Disease

- Acute tubular necrosis from ischemia or toxins.
- **Pyelonephritis:** bacterial infection of the kidney.
- Interstitial nephritis often follows drug reactions.

4. Renal Failure

- **Acute kidney injury:** sudden, often reversible loss of function.
- Chronic kidney disease is progressive and irreversible.
- Both lead to waste retention and electrolyte imbalance.

5. Other Conditions

- Kidney stones obstruct urine flow and cause pain.
- Polycystic kidney disease is an inherited cystic disorder.
- Diagnosis uses urinalysis, blood tests, and imaging.