



Glomerulonephropathies are a group of disorders resulting in damage to the glomeruli of the kidneys which subsequently lead to impaired glomerular filtration. They are not distinct diseases, but a sign suggestive of one of a number of particular diagnoses.

Nephrotic Syndrome: increased glomerular permeability resulting in proteinuria ≥ 50 mg/kg/day, ≥ 1 g/m²/day, or urine PCR ≥ 200 mg/mmol. Classically presents with **severe edema +/- fatigue, foamy urine, & irritability.**



Nephritic Syndrome: glomerular injury secondary to immune-mediated or inflammatory processes. Classically presents with **tea-coloured urine** but can present **asymptotically.**

CARDINAL FEATURES

Nephrotic Syndrome		Nephritic Syndrome	
Proteinuria	Hypoalbuminemia	Hematuria	Peripheral Edema
Peripheral Edema	Hyperlipidemia	Renal Dysfunction	Hypertension

INVESTIGATIONS & DIAGNOSIS

NEPHROTIC SYNDROME	LAB TEST	NEPHRITIC SYNDROME
3 or 4+ proteinuria	Urinalysis	hematuria RBC casts
≥ 200 mg/mmol	Urine Protein-Creatinine Ratio	< 200 mg/mmol
usually normal serum creatinine usually normal serum urea	Renal Function	$\uparrow$ serum creatinine $\uparrow$ serum urea
$\downarrow$ albumin (< 25 g/L)	Serum Proteins	+/- hypoalbuminemia
$\uparrow$ total cholesterol (> 5 mmol/L)	Serum Cholesterol	+/- hypercholesterolemia

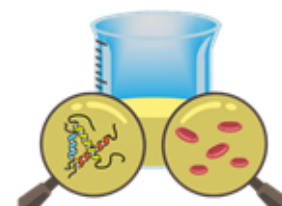
INDICATIONS FOR RENAL BIOPSY

Nephrotic Syndrome: gross hematuria, $\downarrow$ C3/C4, hypertension, $\downarrow$ renal function, frequent relapses, presentation before 1 yr or after 12 yrs.	Nephritic Syndrome: acute renal failure, negative for strep infection, normal C3/C4, no identifiable cause.
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DIFFERENTIAL DIAGNOSIS

Nephrotic Syndromes	Nephritic Syndromes
- Minimal Change Disease (MCD) - Focal Segmental Glomerulosclerosis (FSGS) - Any cause of Glomerulonephritis	- Post-Infectious Glomerulonephritis (PIGN) - IgA Nephritis - IgA Vasculitis - Lupus Nephritis

There is *significant* overlap between the clinical presentations & possible etiologies of glomerulonephropathies. **They are NOT mutually exclusive!** If there is **nephrotic range proteinuria**, the patient has a **nephrotic syndrome**; if there is an **inflammatory mediated glomerular injury**, the patient has a **nephritic syndrome**.



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Alicia Eisen (Medical Student, University of Alberta) and Dr. Karen Forbes (Professor of Pediatrics, University of Alberta) for www.pedscases.com