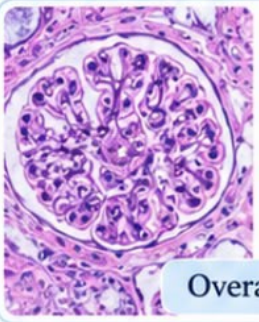
Clinical Utility of Electron Microscopy (EM) in Renal Biopsy

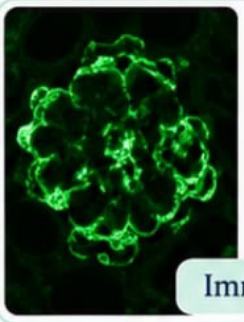
An adjunct to Light Microscopy (LM) + Immunofluorescence (IF)



Light Microscopy (LM)

Overall architecture

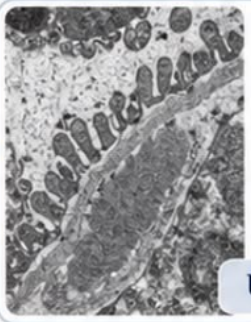
+



Immuno-fluorescence (IF)

Immune deposits

+



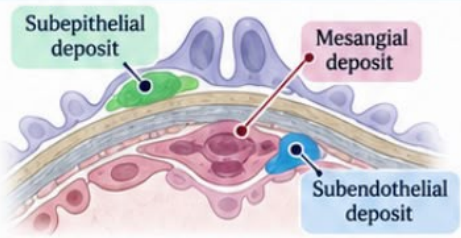
Electron Microscopy (EM)

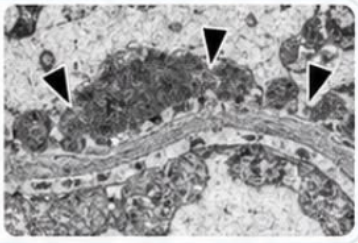
Ultrastructure

What EM adds

1 Deposit location & organization

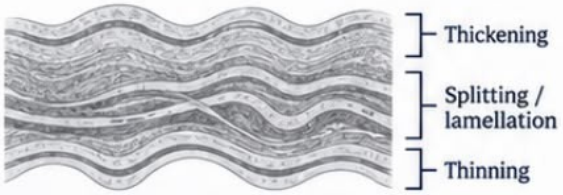
Subepithelial / subendothelial / mesangial.

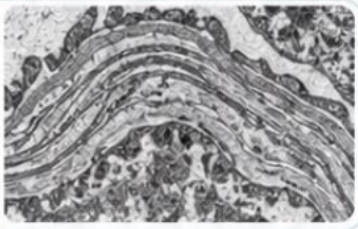




2 GBM architecture

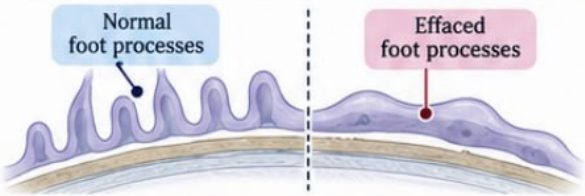
Thinning, thickening, splitting / lamellation.

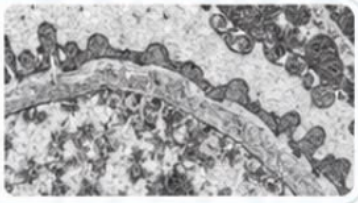




3 Podocyte injury

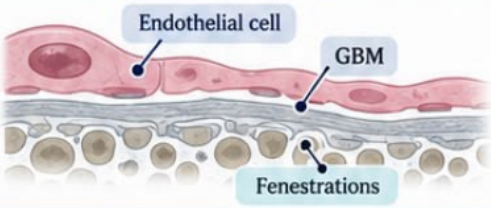
Foot-process effacement.

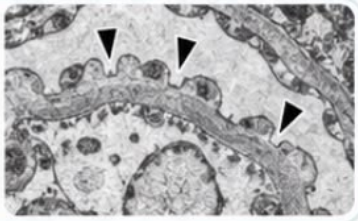




4 Endothelial / basement-membrane details

Clues to TMA and inherited disease.





Clinical value | Can refine classification when LM + IF and clinical findings leave uncertainty.

Evidence note: No randomized trial comparing LM + IF with vs without EM identified; support comes mainly from diagnostic-utility evidence and expert practice.

Interpret all findings with clinical context.