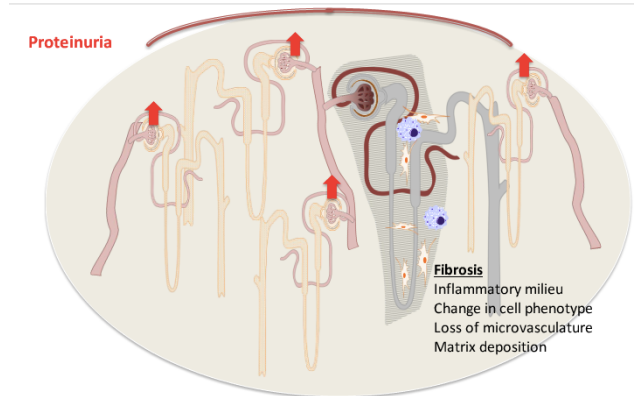


- Blood supply to the rest of that nephron will also have been damaged because the blood supply of the tubule comes from the glomerulus
- Therefore the tubule will become ischaemic
 - Inflammation, deposition of matrix, and the cells that surround the tubule will become more fibrotic leading to interstitial fibrosis
 - Fibrosis: inflammatory milieu, change in cell phenotype, loss of microvasculature, matrix deposition
- To maintain the same GFR, the blood flow to the remaining nephrons will have to increase, the pressure inside each undamaged nephrons will then have to rise
 - Increased pressure in the glomerulus will lead to blood leaking into urea



- Previously normal glomeruli that have been exposed to higher pressure will be damaged by that pressure, they will become ischaemic, reducing the blood supply to the tubule
- All the protein urine passing down the tubule is pro-inflammatory, leading to inflammation, infiltration of inflammatory cells, as well as pro-fibrotic changes in the cells that make up the interstitium leading to further scarring of the kidneys, more fibrosis and loss of further nephrons
 - The remaining healthy nephrons will have to have even more blood pass through, blood flow has caused an even higher pressure inside the remaining functioning glomeruli,
 - Leading to more protein urea
 - Cycle of worsening, scarring and fibrosis
 - Eventually all nephrons will fail

Histology of CKD

- Biopsy of a chronically damaged kidney
- Remains of glomeruli replaced by sclerotic material
- A few remaining tubules, most have been replaced by fibrosis
- Infiltration of inflammatory cells which have responded to this pro-inflammatory environment

