### Acellular Casts

<table>
<thead>
<tr>
<th>Type</th>
<th>Composition</th>
<th>Clinical condition</th>
</tr>
</thead>
</table>
| Hyaline casts | • The most common type of casts  
• They are solidified Tamm–Horsfall mucoprotein.  
• Lower refractive index                      | • Normal individuals  
• Dehydration  
• Vigorous exercise                         |
| Granular casts | • Second most common type of cast  
• Form from breakdown of cellular casts, inclusions of plasma aggregates or immunoglobulin light chains.  
• More of cigar-shape and higher refractive index than hyaline cast | • Chronic renal disease  
• Vigorous exercise  
• Acute tubular necrosis                      |
| Waxy casts | • End product of cast evolution  
• Cylindrical  
• Higher refractive index  
• More rigid with sharp broken-off ends  | • Severe chronic renal disease  
• Chronic nephrotic syndrome                |
| Fatty casts | • By-products of lipid-rich epithelial cells breakdown.  
• They are hyaline casts with fat globules  
• Yellowish-tan in colour | • Nephrotic syndrome  
• Tubular degeneration  
• Hypothyroidism                              |
| Pigment casts | • From adhesion of metabolic breakdown products or drug pigments.          | • Hemolytic anemia  
• Rhabdomyolysis  
• Liver disease                               |
| Crystal casts | • Formed from crystallised solutes like oxalates, urates, or sulphonamides. | • Not clinically important.                |

### Cellular Casts

<table>
<thead>
<tr>
<th>Type</th>
<th>Composition</th>
<th>Clinical condition</th>
</tr>
</thead>
</table>
| RBC casts    | • Made up of red blood cells              | • Pyelonephritis  
• Glomerulonephritis  
• Acute interstitial nephritis  
• Lupus nephritis          |
| WBC casts    | • Made up of white blood cells            | • Glomerulonephritis                    |
| Bacterial casts | • Made up of bacteria cells              | • Acute polynephritis  
• Intrinsic renal infection |
| Epithelia cell casts | • Made up of renal tubular epithelia cells | • Acute tubular necrosis  
• Viral hepatitis  
• Cytomegalovirus  
• Toxic substances like; mercury, diethylene glycol or salicylic acid. |

**Note:** *Make sure you read our article on Urinary Casts.*