

Mechanism of HCV Infection: 1. – **Extrahepatic Effects**: HCV can cause conditions like cryoglobulinemia, diabetes, and fatigue due to systemic inflammation. – **Immune Evasion**: HCV blocks immune responses by: – Cleaving proteins (MAVS, TRIF) that activate interferon (IFN) pathways. **Replication**: Viral RNA is copied using viral proteins (NS3/4A protease, NS5A, NS5B polymerase). **Entry**: HCV binds to liver cells using receptors (e.g., CD81, SR-B1, claudin-1, occludin). **Pathophysiology**: – **Liver Damage**: Chronic HCV infection triggers inflammation, leading to: – **Fibrosis**: Scar tissue forms in the liver. – Creating viral quasi-species (mutations) to escape immune detection. **Release**: New virus particles are assembled in lipid droplets and released as lipovirions. – **Cirrhosis**: Severe scarring disrupts liver function. 2.3