3D bioprinted cartilage

- A team from Indian Institute of Technology (IIT) Delhi has been successful in 3D bioprinting of cartilage using a bioink.
- The bioink has high concentration of bone-marrow derived cartilage stem cells, silk proteins and a few factors.
- The chemical composition of the bioink supports cell growth and long-term survival of the cells.
- The cartilage developed in the lab has remained physically stable for up to six weeks.
- While the cartilage found in the knee is an articular cartilage that is typically sponge-like and has a huge load-bearing capacity, the ones produced in the lab so far are of a different kind — transient cartilage.
- Unlike articular cartilage, transient cartilage becomes bone cells and, therefore, brittle within a short time.
- As a result, the engineered cartilage loses its capacity to bear huge load that is typically encountered in the knee.