

Q: Write down the main five differences on cancellous and cortical screws.

Cancellous and cortical screws are two distinct types of screws used in orthopedic and other medical applications. Here are the main five differences between them:

1. Screw Design:

- Cancellous Screws: These screws have a partially threaded design. They typically have a threaded portion at the proximal end (near the screw head) and a smooth or partially threaded shank at the distal end.

- Cortical Screws: Cortical screws are fully threaded along their entire length, providing a consistent grip along the bone surface.

2. Primary Use:

- Cancellous Screws: Cancellous screws are primarily used in softer, spongy bone, such as the metaphyseal regions of long bones. They are ideal for fixation in trabecular bone, like the ends of long bones.

- Cortical Screws: Cortical screws are designed for use in denser cortical bone, which makes up the shafts of long bones. They are used for stronger fixation in areas with solid bone.

3. Thread Pitch:

- Cancellous Screws: These screws have a larger thread pitch (the distance between threads), which allows for better purchase in softer bone, as it reduces the risk of stripping the bone.

- Cortical Screws: Cortical screws have a smaller thread pitch, providing a finer grip in harder bone, which is less prone to stripping.

4. Screw Head:

- Cancellous Screws: Cancellous screws typically have a larger, rounded head, which allows for better distribution of load and minimizes the risk of pullout from softer bone.

- Cortical Screws: Cortical screws often have a flatter or conical head, designed to sit flush with the bone surface to prevent irritation or protrusion.

5. Material and Size:

- Cancellous Screws: These screws are often made from materials like stainless steel, titanium, or bioabsorbable materials. They come in various lengths and diameters.

- Cortical Screws: Cortical screws are also typically made from materials like stainless steel or titanium and come in a range of sizes to suit the specific application.

These differences are essential to ensure that the right type of screw is chosen for a particular surgical procedure, as using the wrong type can lead to complications or treatment failure. The choice between cancellous and cortical screws depends on the type of bone, location within the body, and the specific requirements of the surgical procedure.