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Cancellous bone

Anatomy

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Alternate titles: *spongy bone; trabecular bone*

Cancellous bone, also called **trabecular bone** or **spongy bone**, light, porous bone enclosing numerous large spaces that give a honeycombed or spongy appearance. The **bone** matrix, or framework, is organized into a three-dimensional latticework of bony processes, called trabeculae, arranged along lines of stress. The spaces between are often filled with **marrow** and **blood vessels**.



Cancellous bone makes up about 20 percent of the human **skeleton**, providing structural support and flexibility without the weight of **compact bone**. It is found in most areas of bone that are not subject to great mechanical stress. It makes up much of the enlarged ends (epiphyses) of the long bones and is the major component of the **ribs**, the shoulder blades, the flat bones of the **skull**, and a variety of short, flat bones elsewhere in the skeleton. Cancellous bone is usually surrounded by a shell of **compact bone**, which provides greater strength and rigidity. The open structure of cancellous bone enables it to dampen sudden stresses, as in load transmission through the **joints**. Varying proportions of space to bone are found in different bones according to the need for strength or flexibility. Cancellous bone also has a relatively high level of metabolic activity.

Cancellous bone can develop into compact bone through the action of bone-forming cells called **osteoblasts**. It is in that manner that all long bones develop in the **embryo**. The osteoblasts deposit new bone matrix in layers around the trabeculae, which thus enlarge at the expense of the spaces between them. Eventually the spaces are eliminated, and immature compact bone is produced. *See also* [bone formation](#).

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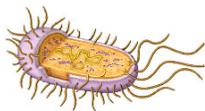
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