

## **Osteonic organization of limb bones in mammals (including human) and in birds: preliminary study**

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As it's well known bone tissue is characterized by a calcified extracellular matrix and this makes possible support function of the body and protection of internal organs typical of this kind of tissue. Lamellar bone tissue is organized in lamellae thickened 3-7  $\mu\text{m}$  and arranged concentrically around vascular channels: this type of organization is called *Haversian system* or *osteon* and the diameter of osteons depends on the number of lamellae. Shape and regional density of osteons are related to the bone segment and the specific functional requirements it must satisfy. Aim of this study is the analysis of transverse sections of diaphysis of long bones of mammal (including human) and bird limbs to highlight morphological differences between various types of osteons and so to use these acquisitions to recognize fragments of bone when their origin is unknown. This work is preliminary to a more extensive investigation considering a greater number of samples from other classes of animals, using specific histological staining for bone tissue and histological techniques such as immunohistochemistry and image analysis. Furthermore it could be interesting to correlate the morphology of bone tissue in the various classes of mammals (including human) and birds to identify fragments of bone finds on which it's difficult to apply a taxonomic recognition.

### **References**

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### **Key words**

Osteon, diaphysis, mammals