Research & Services | Researching Bone Structure and Function in Health and in Disease Conditions of Such as Osteoporosis (Yissum)

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Ron Shahar, HUJI, Faculty of Agricultural, Food and Environmental Quality Sciences, The Koret School of Veterinary Medicine

In our laboratory, we use a variety of tools to investigate the structure and mechanical function of bones.

Categories	Life Sciences and Biotechnology, Medicine

Laboratory of Musculoskeletal Biomechanics, Koret School of Veterinary Medicine, The Robert H. Smith Faculty of Agriculture, Food and Environmental Quality Sciences

Research Capabilities

- The detailed structure of many types of bone – human, mammal, avian, fish, reptile – is studied in terms of the different hierarchies. Findings are correlated to mechanical properties such as stiffness, fracture resistance mechanisms, fatigue resistance, etc.
- Experimental equipment is used as well as numerical tools (such as finite element analysis).
- Bones are examined both in terms of basic science and under disease conditions (such as osteoporosis) and for the effects of various diagnostics, disease treatments, drug testing, etc.

Advantages

The group offers expertise and advanced tools associated with bone research (microCT, micromechanical testing device), together with a combination of engineering background and a thorough knowledge of basic bone biology and clinical orthopaedics

Research Background

The purpose of the research carried out is to increase understanding of biological/physical interactions, contribute to the understanding of specific mechanisms associated with basic and clinical bone biology, and its relationship to various disorders.

Researcher and Research Interests

Professor Ron Shahar, Associate Professor of Veterinary Surgery, is an experienced small animal surgeon and diplomate of the European College of Veterinary Surgery. He has had extensive exposure to all facets of orthopaedic surgery. He also holds a Ph.D. in biomedical engineering and has extensive experience in bone research, with a large number of papers published in this area.

Available Resources

Include a mechanical materials testing machine, micromechanical testing device (samples tested in water), microCT scanner, reflective light microscope, polishing and sanding

Laboratory Contact

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