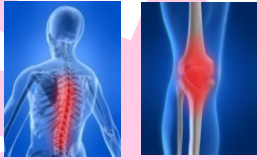
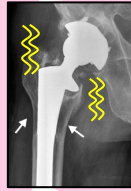


Bone weakness and regeneration

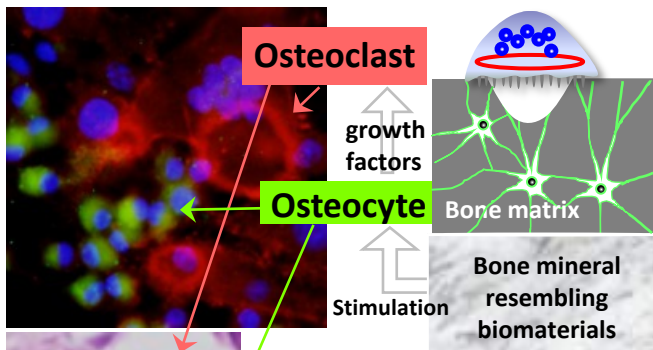


Clinical problems



Main goal of our research is to find a solution for **bone regeneration** in elderly population, such as osteoarthritis and osteoporosis and for **clinical problems** such as osteolysis caused by prosthetic biomaterials.

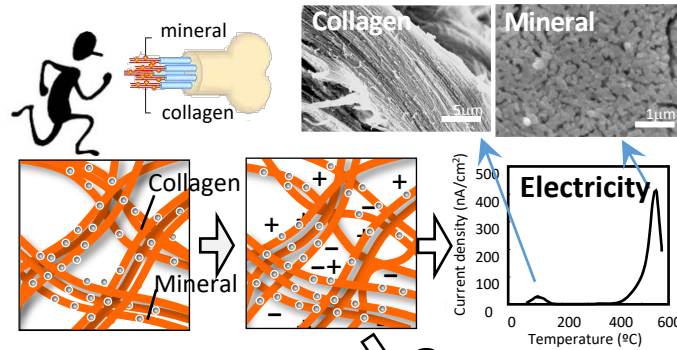
Designed biomaterials to enhance bone regeneration by the manipulation of bone cells



Osteoclast formation is accelerated by carbonate containing hydroxyapatite (= bone mineral resembling biomaterials).

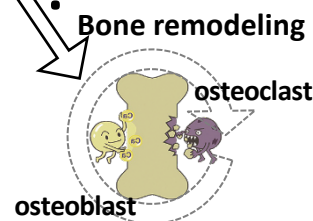
Design of a new biomaterial?

The role of electrical charges for evaluation of bone quality

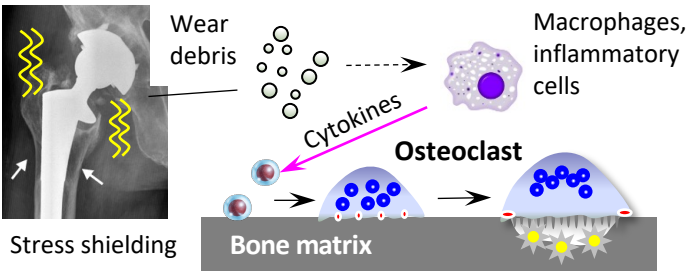


Mechanical loading generates stimulating electrical charges in bone matrix.

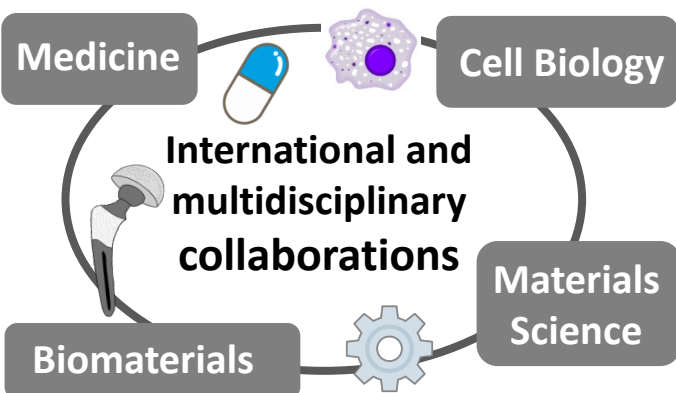
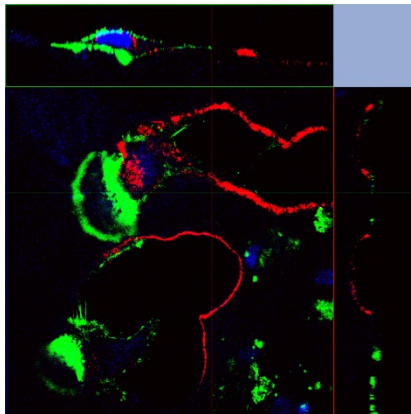
What is the effects of the electricity on bone remodeling?



Mechanism of osteolysis in aseptic loosening



The fact is that many initially successful treatments have to be revised later because of the aseptic loosening of the artificial joint materials from the bone socket. What is the mechanism?



We are looking for students (undergraduates, masters, Ph.D. candidates all welcome) with different backgrounds!

Please feel free to contact/visit us.

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