

Autophagy as a central “longevity” pathway

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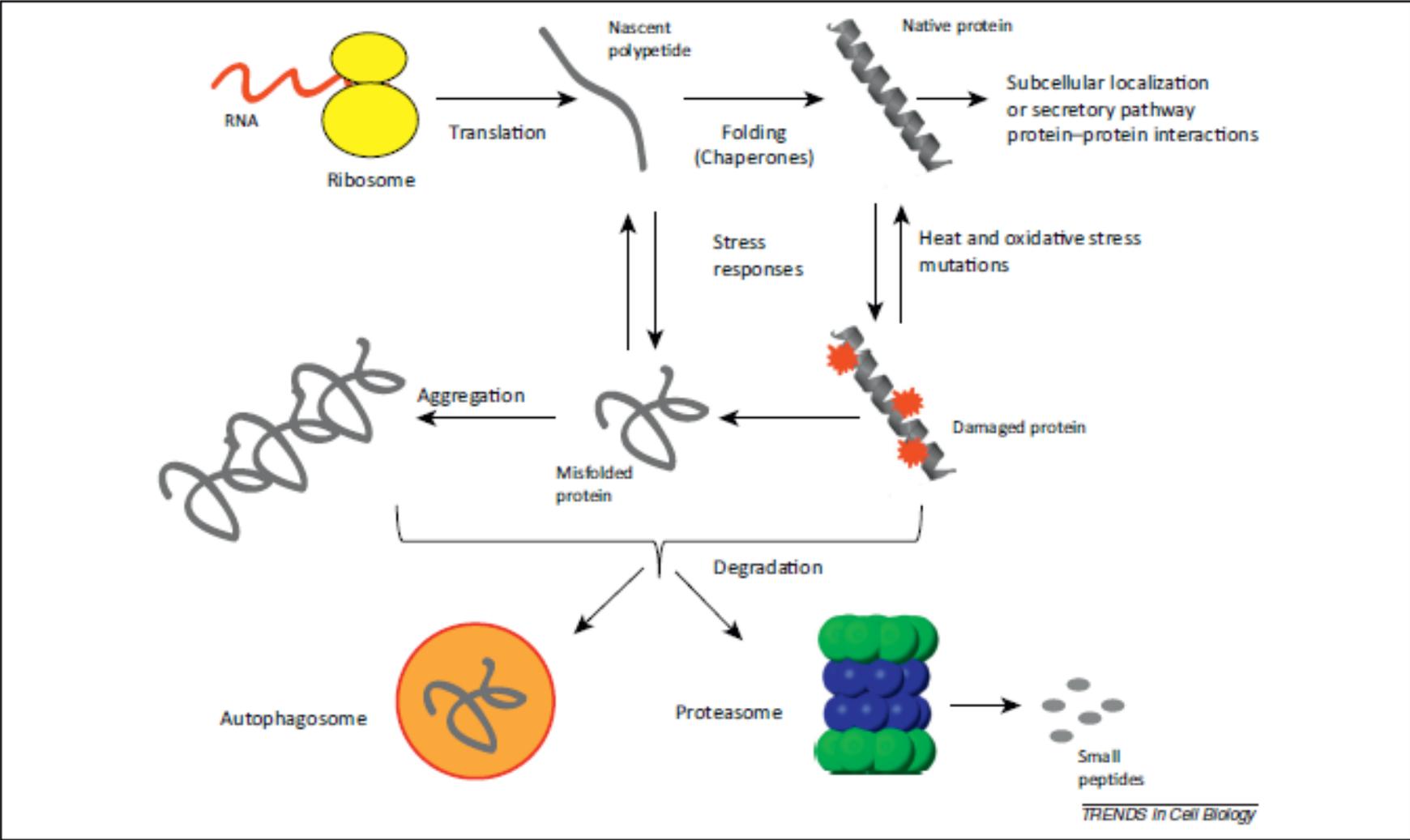
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Disclosures

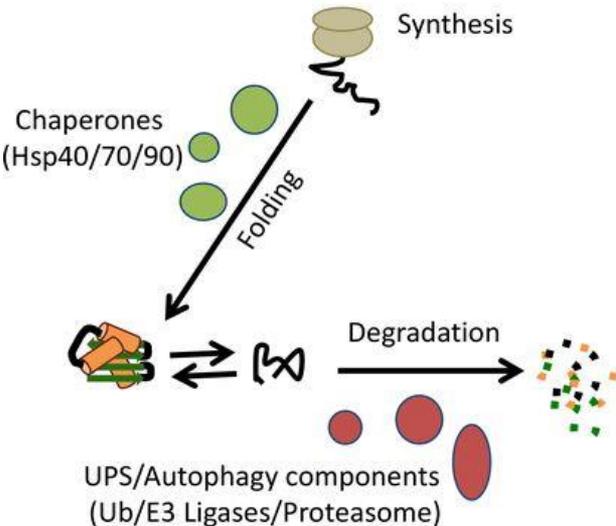
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Cellular proteostasis.

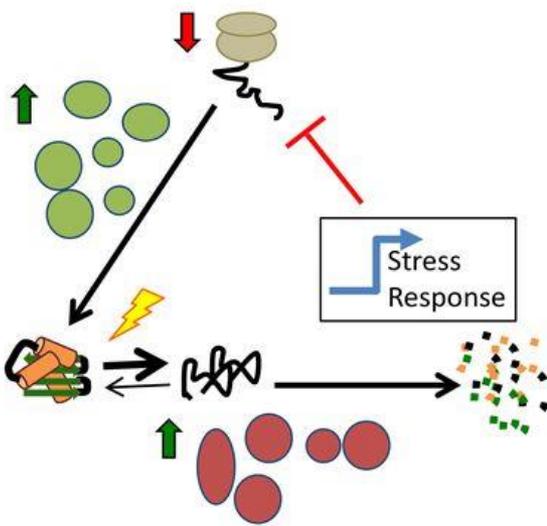


Healthy and aged proteostasis.

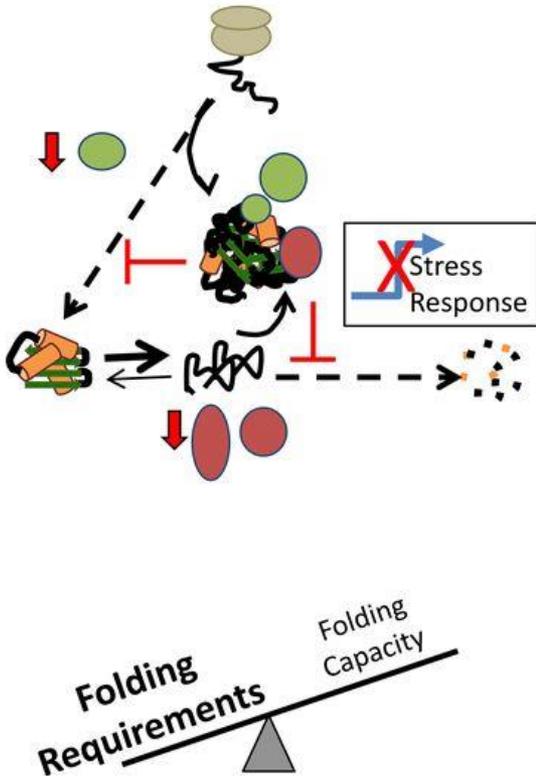
Healthy
Unstressed



Healthy
Stressed



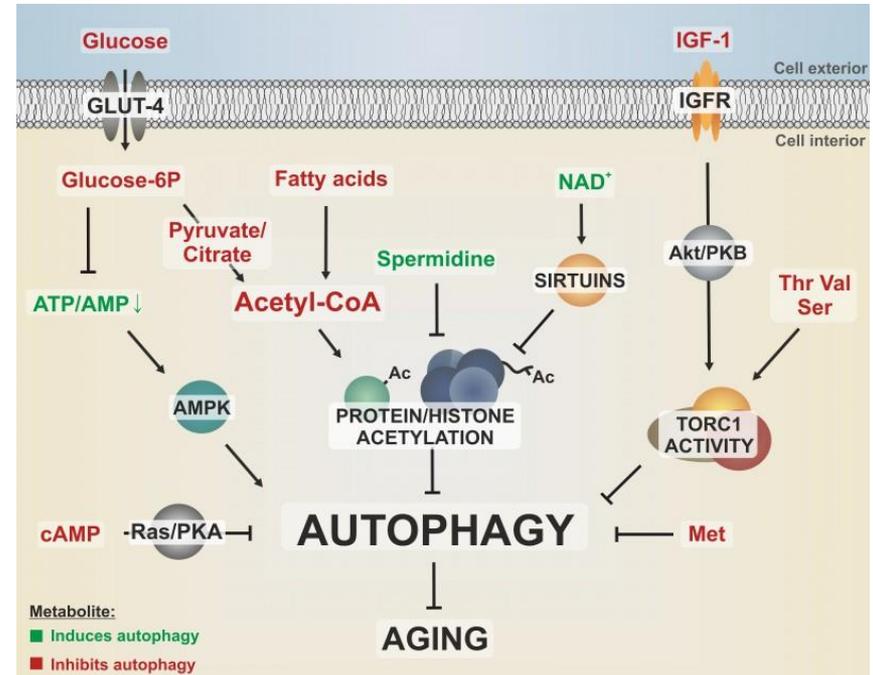
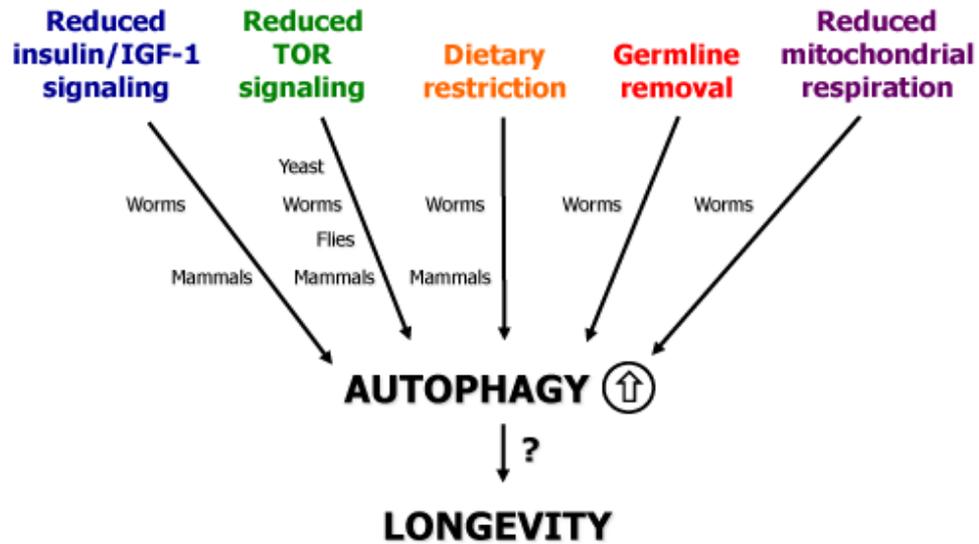
Aged or Diseased

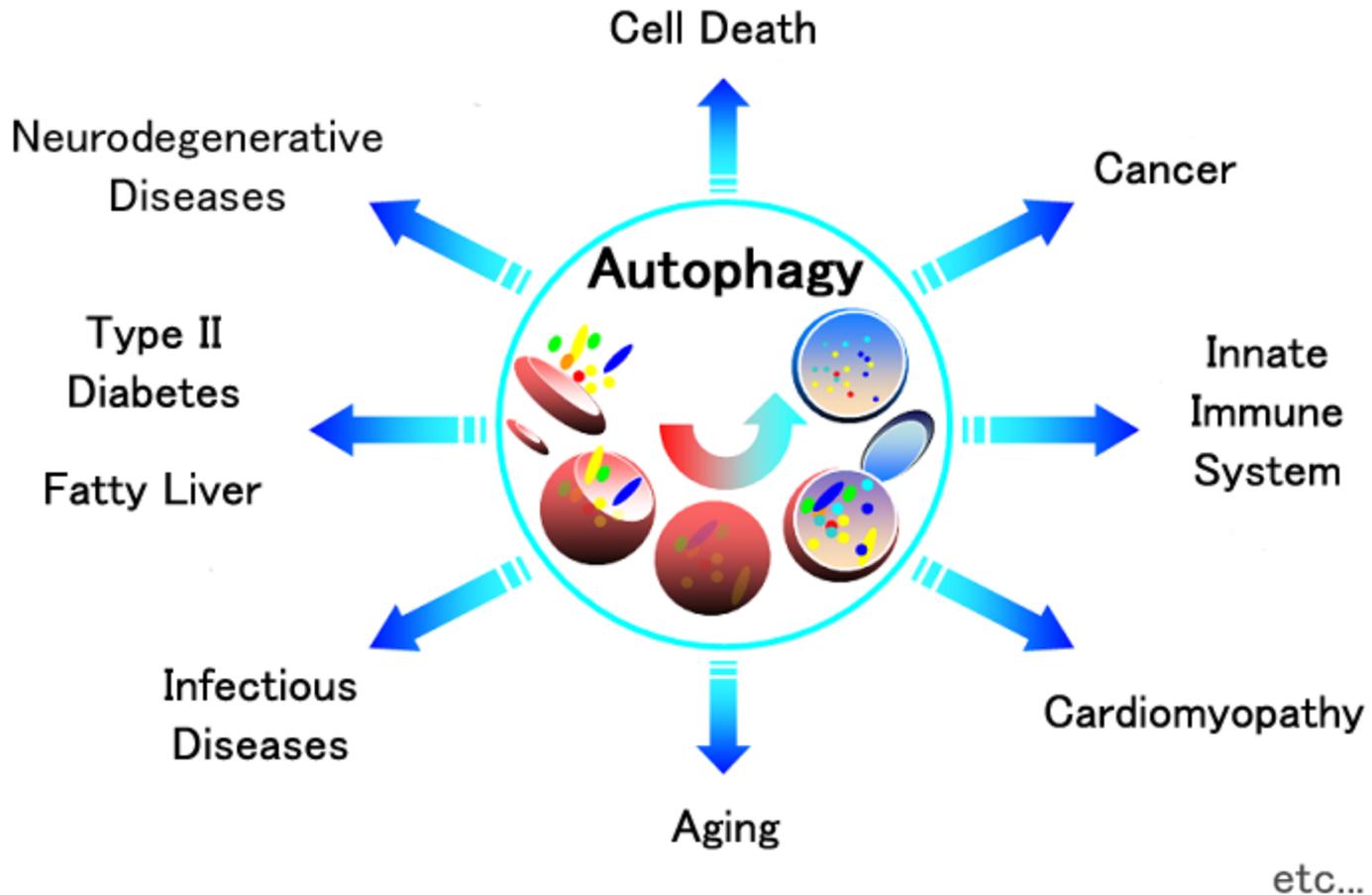


Courtney L. Klaipts et al. J Cell Biol 2018;217:51-63

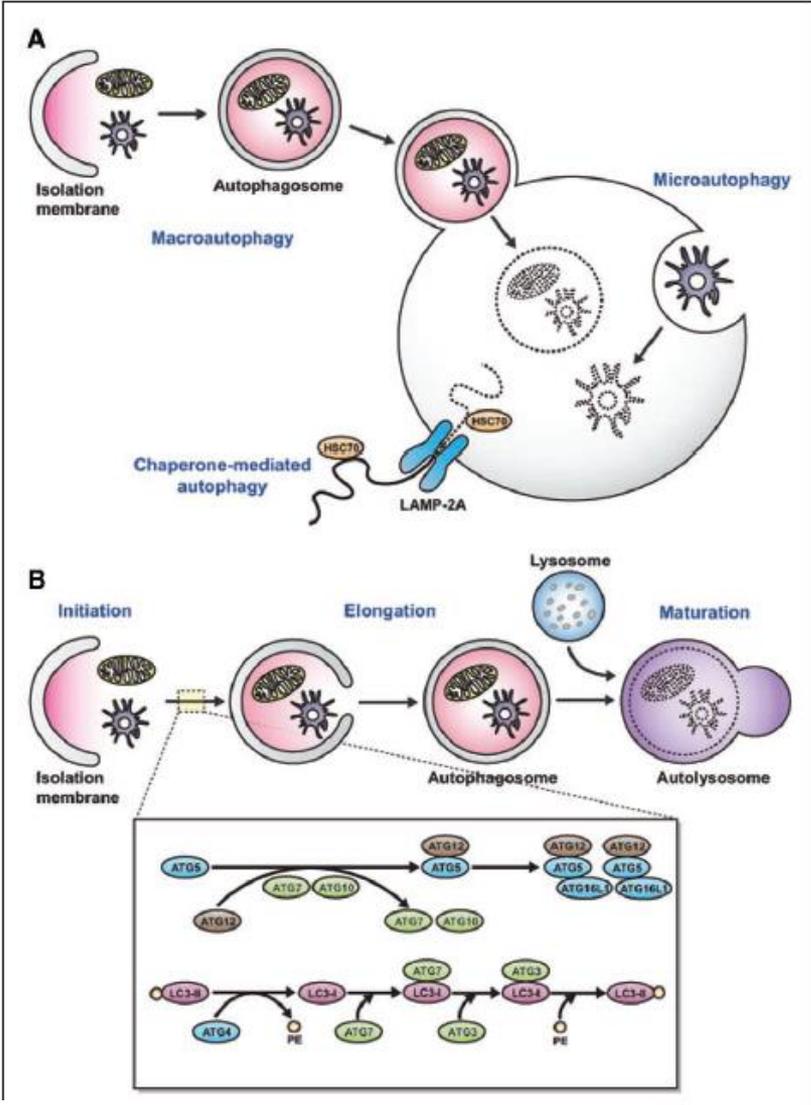


Autophagy and Aging





Different types of autophagy



Modulation of pathogen recognition by autophagy

The role of autophagy across the Osteo and Soft Tissues

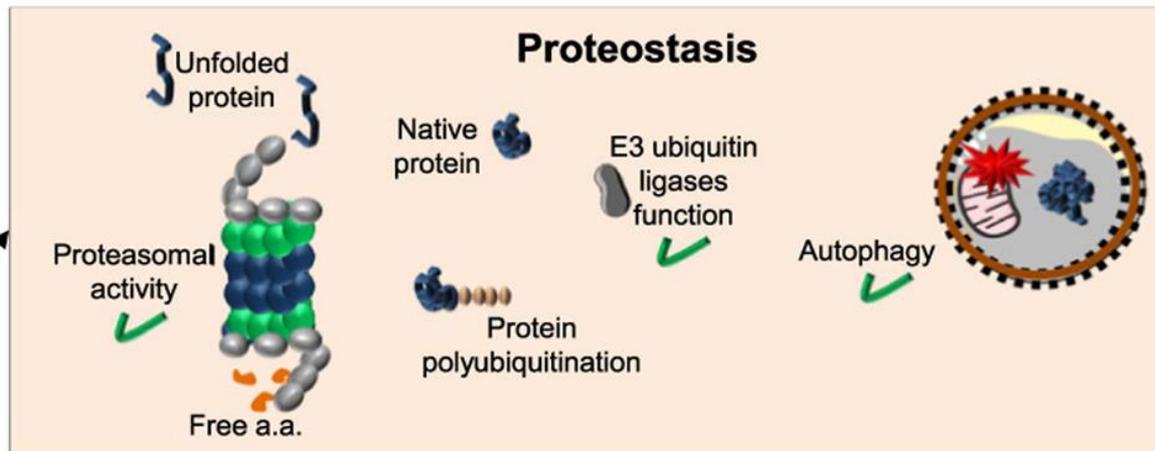


Impaired proteostasis during skeletal muscle aging

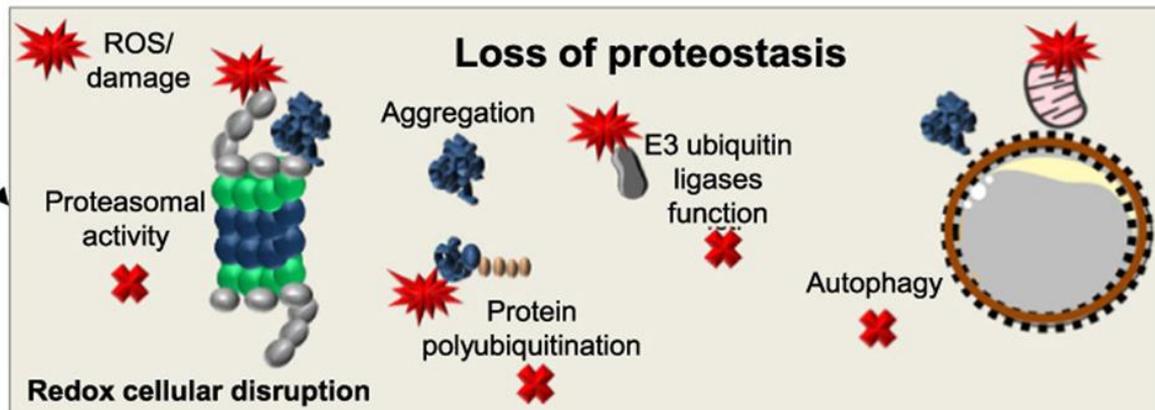
Raquel Fernando^a, Cathleen Drescher^a, Kerstin Nowotny^a, Tilman Grune^{a,b,c,d},
José Pedro Castro^{a,b,e,f,*}

Redox changes lead to the loss of proteostasis and function in the skeletal muscle during aging

Skeletal muscle

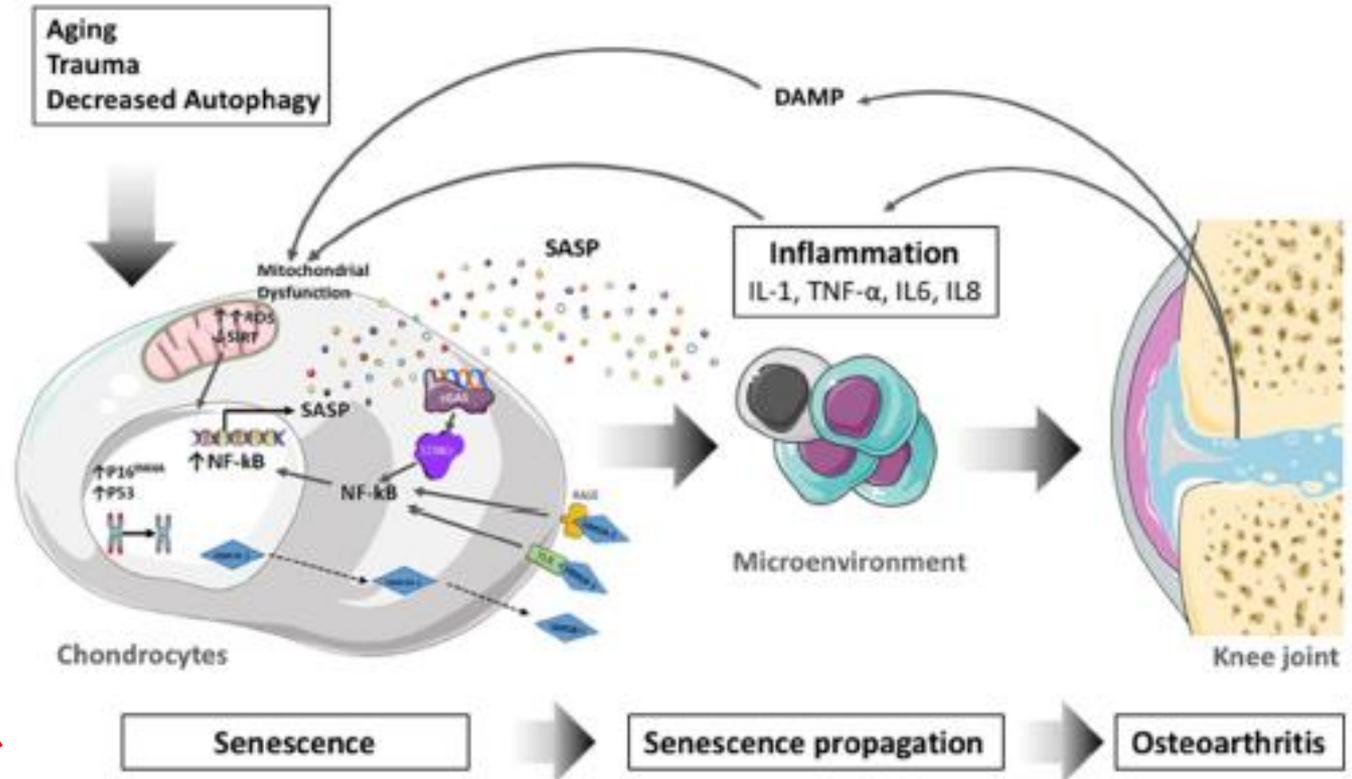
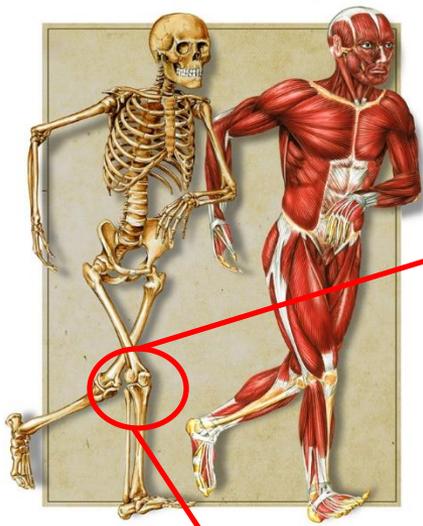


Young - Healthy muscle

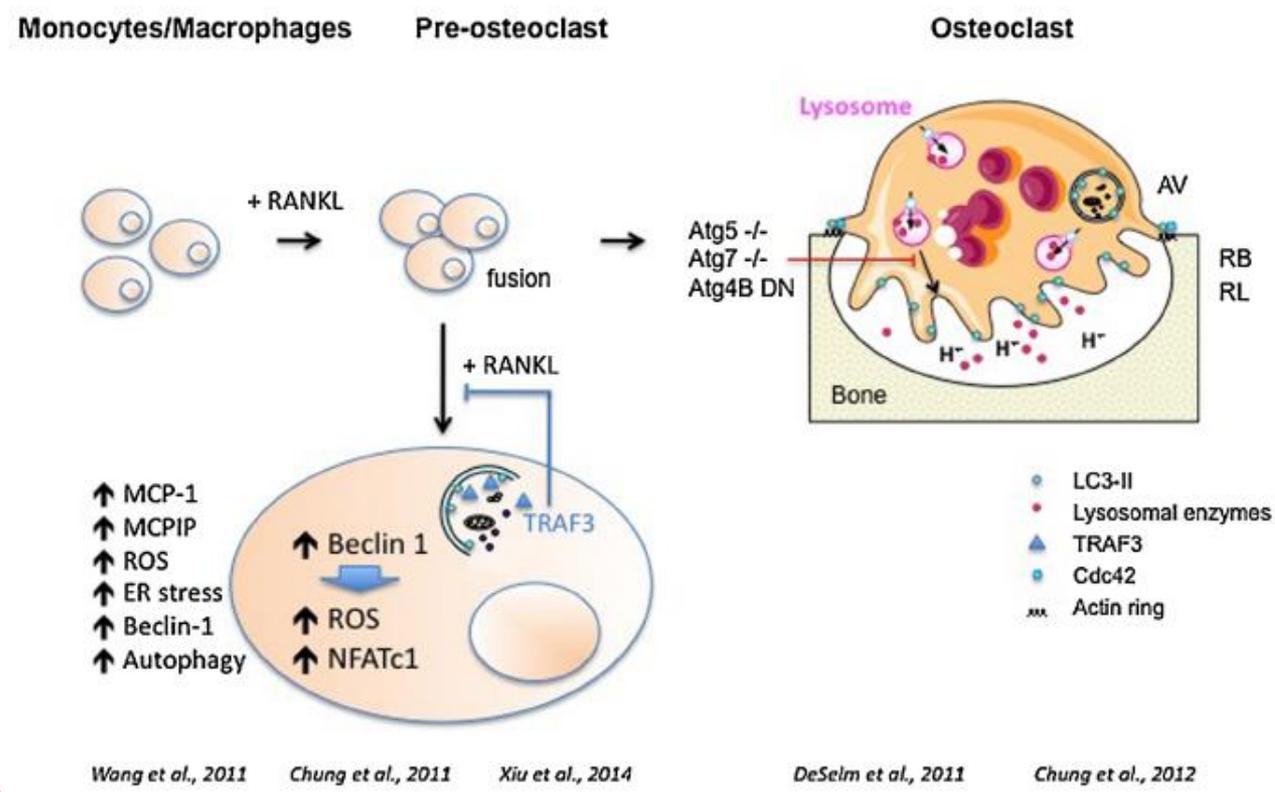
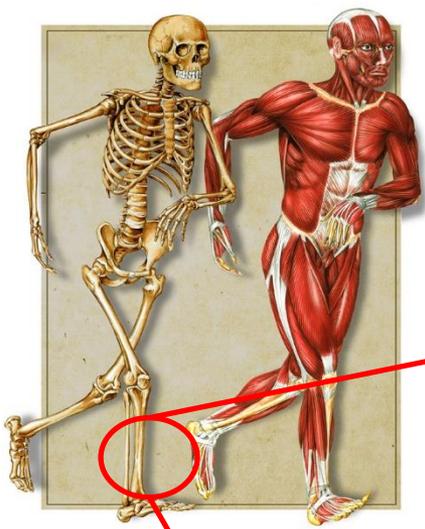


Old - Dysfunctional and sarcopenic muscle





Role of the Inflammation-Autophagy-Senescence Integrative Network in Osteoarthritis



Autophagy in bone: Self-eating to stay in balance

Valérie Pierrefite-Carle^{a,*}, Sabine Santucci-Darmanin^a, Véronique Breuil^{a,b},
Olivier Camuzard^{a,c}, Georges F. Carle^a

Questions to consider..

- Are autophagy-inducing drugs legitimate anti-aging therapeutic targets?
- Is autophagy a cell-autonomous process or can a “signal” from distant tissues induce autophagy?
- Does caloric restriction/exercise secrete factors to promote proteostasis/autophagy?

Thank you

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and HUMAN DEVELOPMENT



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- **Harvey Cohen, MD**



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