



J Clin Invest. 2013 Mar 1;123(3):966-72. doi: 10.1172/JCI64098. Epub 2013 Mar 1.

Cellular senescence and the senescent secretory phenotype: therapeutic opportunities.

Tchkonia T, Zhu Y, van Deursen J, Campisi J, Kirkland JL.

Robert and Arlene Kogod Center on Aging, Mayo Clinic, Rochester, Minnesota 55905, USA.

Abstract

Aging is the largest risk factor for most chronic diseases, which account for the majority of morbidity and health care expenditures in developed nations. **New findings suggest that aging is a modifiable risk factor, and it may be feasible to delay age-related diseases as a group by modulating fundamental aging mechanisms.** One such mechanism is cellular senescence, which can cause chronic inflammation through the senescence-associated secretory phenotype (SASP). We review the mechanisms that induce senescence and the SASP, their associations with chronic disease and frailty, therapeutic opportunities based on targeting senescent cells and the SASP, and potential paths to developing clinical interventions.