Universität Basel

Research Project

Aging-proteostasis and CVD

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The average lifespan of humans has immensely increased over the past decades and with it the percentage of elderly. Aging is associated with a progressive decline in numerous physiological processes, leading to an increased risk of health complications and disease. Aging is the most important determinant of a person's cardiovascular health: ***aging*** remarkably affects the heart and arterial system and is considered one of the major risk factors for the development and progression of cardiovascular diseases (CVD) including atherosclerosis, hypertension, myocardial infarction and stroke. Another major risk factor for CVD is ***obesity***, and evidence supports also that obesity may accelerate the aging process. A very important cellular process crucial to cardiovascular health is ***proteostasis***. This refers to a collection of cellular processes handling protein folding, misfolding, unfolding, and degradation, and it is fundamental to cell survival and function. Both aging and obesity lead to gradual dysfunction and collapse of the proteostasis network. Thus, it is now clear that not only are aging, obesity and proteostasis malfunction *per se* pivotal in development and progression of CVD, they also profoundly impact each other (Fig. 1). Understanding fundamental mechanisms that dictate their interactions could lead to significant advancements in both preventative and therapeutic treatments of CVD.

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