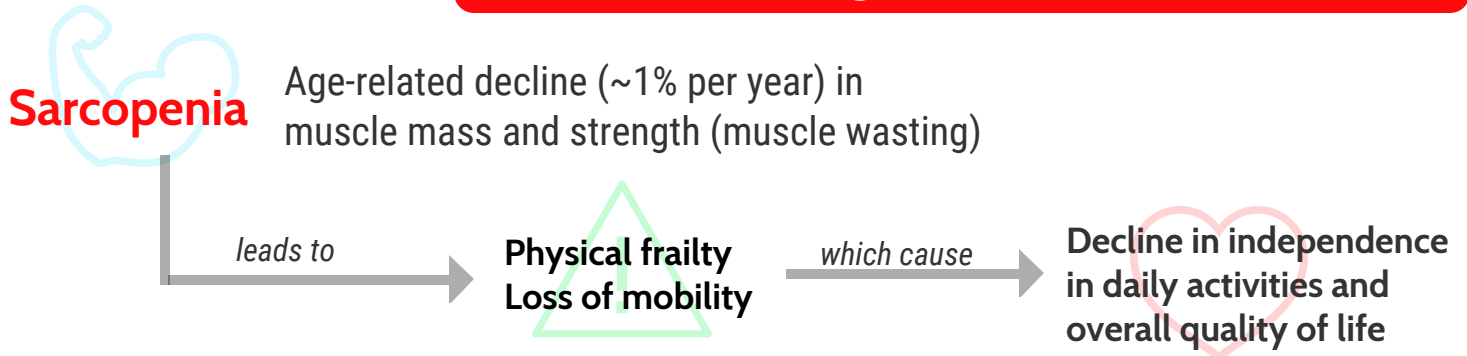


Mobilize Your Future and Age Actively

Sarcopenia and Age-Related Mobility Decline



Quick Facts



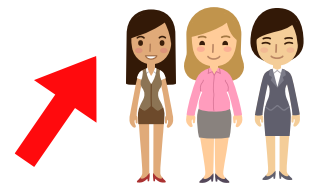
1 in 4 was found to be **sarcopenic** in a Singapore study involving 200 subjects **above 50 years of age**

Up to **11.5%** could be **sarcopenic** across Asia



60% of 80 year-olds are affected by **sarcopenia** across different countries of the world (Asia, America and Europe)

Prevalence is even higher in **women**



Sources: Diz et al., 2015 TODAYonline, 22/08/2016

Causes of Sarcopenia



Cellular ageing

Declining energy output from muscle cells and increased breakdown of muscle tissue



Illnesses

Certain diseases can lead to increased breakdown of muscle fibres



Low muscular activity

Muscles are maintained through regular exercise



Malnutrition

Lack of nutrition required for muscle-building



Hormonal disturbances

Disruptions in hormonal balances can hinder muscle-building

Preventing Sarcopenia



Regular exercise

helps maintain/build muscle mass and strength



Sufficient protein intake

is the key for maintaining lean body weight and building muscle mass



Nutrition solutions

elderly individuals having malnutrition are 2.4 times more likely to suffer from sarcopenia

Source: TODAYonline, 22/08/2016



Targeted nutrition

such as astaxanthin helps reduce muscle damage and improve muscle performance



Enhances muscle strength and endurance by **increasing the number of mitochondria** and improving their efficiency in energy production



Improves oxygen transport to muscles by **keeping red blood cells healthy** and **promoting blood circulation**

How does astaxanthin help manage Sarcopenia?



The **potent antioxidant** and **anti-inflammatory effects** of **astaxanthin** can protect muscle cells against degradation, which often occurs in ageing muscles as a result of excess oxidative stress and chronic inflammation

Clinical Studies on Sarcopenia



Astaxanthin has been shown to **improve mobility** of elderly subjects (aged \approx 81) in the *Six Minute Walking Distance Test* (the standard test for the clinical diagnosis of sarcopenia).

Fujino et al., 2016



Astaxanthin has **significantly improved muscle strength, endurance** and **increase in muscle cross section** in 41 participants aged between 65 and 85.

Conley et al., in press