Frailty and Dietary Reference Intakes

Frailty

Frailty is an aging-related functional deterioration and considered to confer a high risk for adverse health outcomes, including disability and onset of diseases. Sarcopenia (aging-related loss of muscle force or muscle mass) is considered a cause of frailty.

Criteria Used to Define Frailty*

① Weight loss

② Exhaustion

③ Low physical activity

④ Slow walking speed

⑤ Weakness (grip strength)

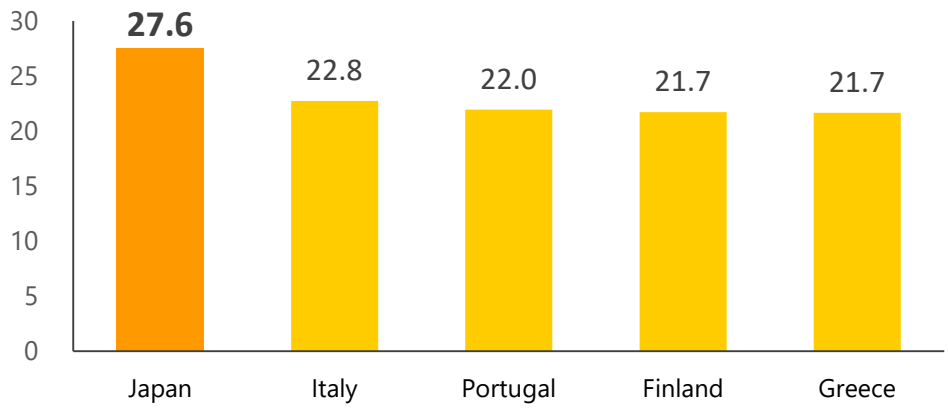
*Frailty is defined if three or more of the above criteria were present.

Reference：Dietary Reference Intakes for Japanese, 2020.
Fried LP, et al. J Gerontol A Biol Sci Med Sci 2001, 56, M146-56.

Japan has the world's oldest population

Japan has the highest aging rate (proportion of people aged 65 years and older) in the world, with a value of 27.6% in 2018. Corresponding to an increase in the aging rate, the Dietary Reference Intakes for Japanese, 2020 was developed to prevent age-related malnutrition and the onset and progression of frailty in the elderly.

Proportion (%) of people aged 65 years and older in 2018



Reference：WHO. World Population Prospects 2019

Dietary Reference Intakes for Japanese, 2020

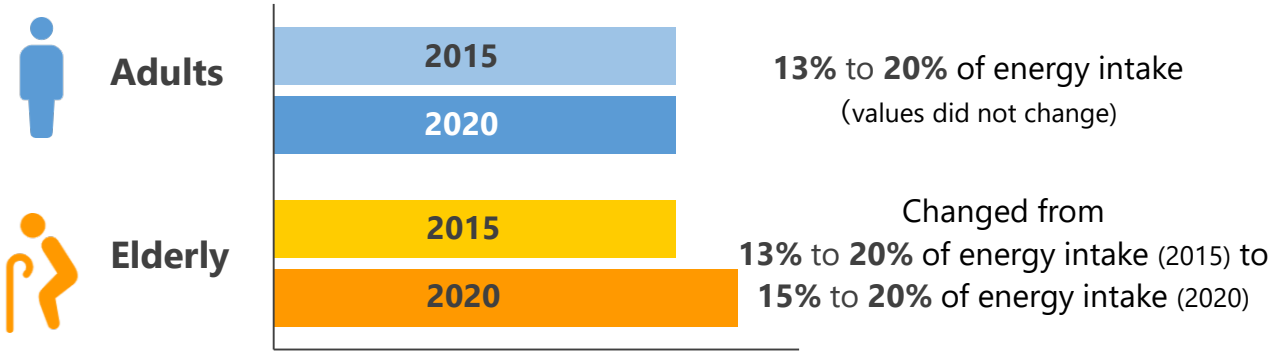
① Age classification for elderly was changed from 2015.

2015
Elderly: 70 years and older

2020
Former-stage elderly: 65 to 74 years
Latter-stage elderly: 75 years and older

② Tentative dietary goals of protein intake for the elderly were set to prevent the onset of frailty.

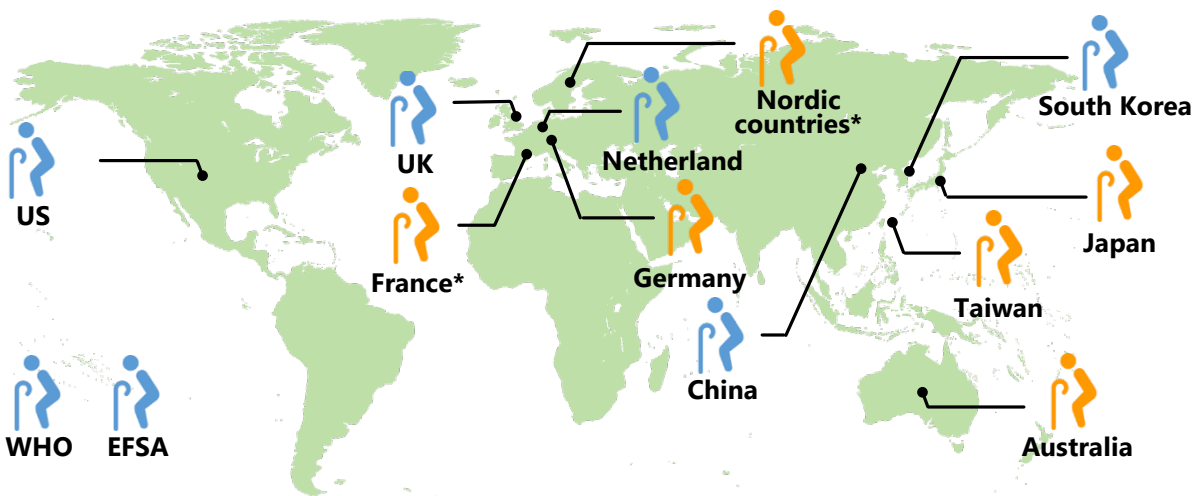
With this change, the values for the elderly are higher than those for adults.



Reference：Dietary Reference Intakes for Japanese (2015 and 2020)

World's dietary reference intakes and frailty

No country has developed the dietary reference intakes of protein intake for elderly to prevent onset of frailty, except for Japan. Several countries, however, set a higher reference value for the elderly than adults to maintain muscle mass against to age-related changes.



Higher (■) or same/lower (■) reference values of protein intake for the elderly than adults.
* Association between protein intake and frailty/sarcopenia is mentioned in the Dietary Reference Intakes.

Reference：Dietary Reference Intakes for Japanese, 2020, Nutrient Reference Values for Australia and New Zealand 2006, Chinese Dietary Reference Intakes 2013, AVIS de l'Anses relatif à l'actualisation des repères alimentaires du PNNS - pour les femmes dès la ménopause et les hommes de plus de 65 ans 2019, D-A-CH-Referenzwerte für die Nährstoffzufuhr 2019, Dietary ReferenceIntakes for Koreans 2015, Dutch Dietary Reference Intakes 2001, Nordic Nutrition Recommendations 2012, Dietary Reference Intakes (Republic of China) 2011, Nutrition Requirements (the UK) 2019, Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (the US/Canada) 2005, EFSA. Dietary Reference Values for Nutrients 2017, WHO. Protein and amino acid requirements in human nutrition 2007