

# Overlaps between Frailty and Sarcopenia Definitions

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Advanced aging is characterized by the catabolism and degeneration of organs and organ functions. Sarcopenia and frailty are two fairly recently defined geriatric syndromes [1, 2] that show considerable overlapping as they both relate to impaired muscle function. Defining frailty may follow the ‘index’ model or the ‘phenotype’ model [3]. The phenotype definition requires that three out of five criteria; i.e. weight loss, exhaustion, low activity, slowness and weakness, are fulfilled [4]. Primary sarcopenia, i.e. loss of muscle mass and function [5] related to aging alone, precedes frailty. Exhaustion, weakness, and slowness, i.e. criteria of frailty, are conditions that are not exclusively related to muscle function. On the other hand, the concept of sarcopenia is more focused on muscle itself (mass and function) and, moreover, not only related to aging. Thus, sarcopenia may also be related to disease, starvation, and disuse, i.e. secondary sarcopenia [5].

The distinction between frailty and sarcopenia is also reflected by the different ‘loss-of-mass’ criteria. Frailty requires weight loss, which could be either muscle or fat loss, whereas sarcopenia requires muscle loss (table 1). The strength or power criterion of sarcopenia (gait speed or hand grip strength) corresponds to slowness and weakness of frailty (also measured by walking speed and hand grip strength), whereas exhaustion and low activity are related to self-reported fatigue and walking capacity, respectively. Thus, there are also great overlaps between the diagnostic criteria of the two conditions.

**Table 1.** Diagnostic criteria for frailty and sarcopenia

Frailty	Sarcopenia
Walking capacity	Walking capacity, gait speed
Weight loss	Muscle loss
Exhaustion, fatigue	Grip strength

For clinical purposes, it could be suggested that for geriatric care an assessment of physical function should be integrated into the geriatric comprehensive assessment. Thus, gait speed or walking capacity should be assessed. For those younger than 70 years where the risk of frailty is not yet imminent, a more focused sarcopenia screening could be advised; i.e. register gait speed or hand grip strength. If reduced, a body composition measurement could be performed. Questionnaire alternatives are also available. Treatment for frailty and for sarcopenia overlaps, i.e. provide adequate protein and vitamin D supplementation, and encourage resistance exercise.

## References

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