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## Editorial

## SARC-F: A Simple Questionnaire to Rapidly Diagnose Sarcopenia

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Sarcopenia was originally defined as an age-associated loss of muscle mass.<sup>1,2</sup> Recently a number of European and international groups have redefined sarcopenia as being a decline in muscle function (either walking speed or grip strength) associated with loss of muscle mass.<sup>3–5</sup> This approach has been validated.<sup>6,7</sup> Sarcopenia leads to disability, falls, and increased mortality.<sup>8–16</sup> Loss of muscle strength and aerobic function are 2 of the hallmarks of frailty.<sup>17–21</sup> Sarcopenia has been linked to an increased prevalence of osteoporosis, thus further increasing its propensity to produce hip fractures.<sup>22–27</sup>

Although osteoporosis has been classically diagnosed by measuring bone mineral density, it has been recognized that a number of other factors play into the role of diagnosing the propensity to have a fracture.<sup>28,29</sup> This is particularly true in older persons with diabetes mellitus who often have good bone mineral density but weak bones, and this is coupled with an increase in sarcopenia.<sup>30–33</sup> This has led to the concept that the questions associated with the Fracture Risk Assessment Tool (FRAX) ([www.shef.ac.uk/FRAX](http://www.shef.ac.uk/FRAX)) may be sufficient to screen for osteoporosis. Two studies have confirmed that bone mineral density does not need to be measured in most cases to make or exclude the diagnosis of osteoporosis.<sup>34,35</sup> As sarcopenia is much more definable by simple functional questions, this led to the concept that a simple questionnaire could be developed to diagnose sarcopenia and obviate the need for the measurement of muscle mass.

The SARC-F questionnaire has been developed as a possible rapid diagnostic test for sarcopenia.<sup>36</sup> There are 5 SARC-F components: Strength, Assistance with walking, Rise from a chair, Climb stairs and Falls (Table 1). The scores range from 0 to 10, with 0 to 2 points for each component. Our preliminary studies have suggested that a score equal to or greater than 4 is predictive of sarcopenia and poor outcomes.

The ability to rapidly diagnose sarcopenia is important, as there is increasing evidence that therapeutic interventions can improve outcomes. Among successful therapeutic outcomes are resistance exercise,<sup>37–39</sup> vitamin protein supplementation,<sup>40–45</sup> and possibly testosterone.<sup>46–48</sup>

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**Table 1**  
SARC-F Screen for Sarcopenia

Component	Question	Scoring
Strength	How much difficulty do you have in lifting and carrying 10 pounds?	None = 0 Some = 1 A lot or unable = 2
Assistance in walking	How much difficulty do you have walking across a room?	None = 0 Some = 1 A lot, use aids, or unable = 2
Rise from a chair	How much difficulty do you have transferring from a chair or bed?	None = 0 Some = 1 A lot or unable without help = 2
Climb stairs	How much difficulty do you have climbing a flight of 10 stairs?	None = 0 Some = 1 A lot or unable = 2
Falls	How many times have you fallen in the past year?	None = 0 1–3 falls = 1 4 or more falls = 2

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