Is the Term 'Sarcopenia' Appropriate to Describe Poor Muscle Health in Pediatric Populations?

O Termo 'Sarcopenia' é Adequado para Descrever a Perda de Massa Muscular em Populações Pediátricas?

Keywords: Aging; Child; Muscle Strength; Muscle Weakness; Sarcopenia
Palavras-chave: Criança; Debilidade Muscular; Envelhecimento; Força Muscular; Sarcopenia

Dear Editor,

We are writing to express concerns regarding the article, "Pediatric Sarcopenia: What do We Know?" by authors Marília Marques and Fátima Baptista, published in *Acta Médica Portuguesa*.[1] We note that the authors are not the first to adopt the term sarcopenia for pediatrics, but we believe this term is not appropriate in this population.

Sarcopenia was first coined in 1989 to describe the "age-associated loss of muscle mass and function".[2] In the International Classification of Diseases (ICD-11), sarcopenia is "primarily a disease of the elderly, its development may be associated with conditions that are not exclusively seen in older persons".[3] The ICD-11 classification also states sarcopenia as a muscle wasting or atrophy disease "not elsewhere classified". Sarcopenia was described recently by the Global Leadership Initiative in Sarcopenia (GLIS) network as "the age-related loss of muscle mass and strength/function", as evidenced by the conceptual definition shown in Fig. 1.[4] Older adulthood usually pertains to age above age 60 or 65 years old, and the mention of sarcopenia as "not restricted by age"[3,4] would reasonably allow a 58-year-old adult to be diagnosed with sarcopenia.

The authors conflated several citations describing research in adults and older adults as relating to pediatric sarcopenia. This should be treated with caution. Historically, operational definitions to determine sarcopenia used muscle mass in young adults, aged 18 to 40 years, as the reference norm.[5] Hence, current definitions are not appropriate for children. Moreover, children's muscle physiology and activation are different than in adults. Force generation in children is lower when compared to adults, even after accounting for total body muscle.[6] This is due to maturity factors, including muscle fibre recruitment, growth hormones, nutrition and physical activity adaptation.[6] Pediatricians use muscle atrophy or wasting to describe low muscle mass resulting from disease or malnutrition. Sarcopenia itself is a disease and not a syndrome like cachexia.

Finally, it should be noted that outside of the settings of disease or malnutrition, growing children are generally accumulating, not losing, muscle mass. It is expected that, in any pediatric population, there will be individuals who accumulate less muscle than the overall average. However, in the absence of any evidence that children with lower muscle mass experience challenges with independence and activities of daily living, we do not believe that experts should 'pathologize' this natural phenomenon, which may cause undue concern for children and their families.

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AUTHOR CONTRIBUTIONS

VPST: Conceptualization, Data compilation, Writing – original draft.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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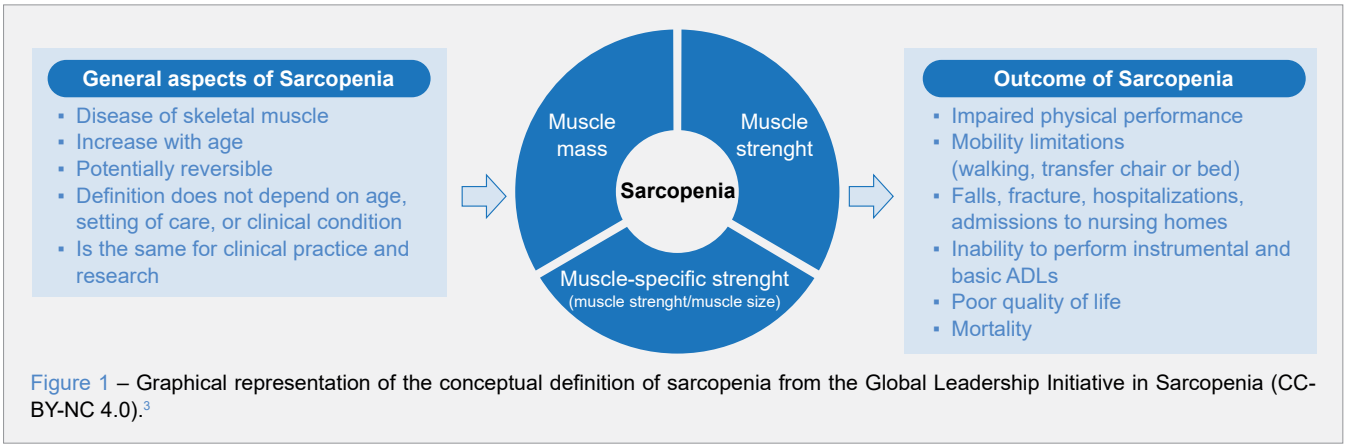

Figure 1 – Graphical representation of the conceptual definition of sarcopenia from the Global Leadership Initiative in Sarcopenia (CC-BY-NC 4.0).[3]

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