

## Sarcopenia : Screening Made Simple

The 600+ skeletal muscles are an important organ-system of our body. The muscle is an organ which can be used to assess health (muscular fitness) and improve it (through exercise). It can be a target of disease (myopathy), and a target for drug action (anabolic steroids)<sup>1</sup>. In medical discourse, however, discussion on the musculoskeletal system is often limited to bones and joints. Muscle health is usually relegated to the background, even though muscle contributes to 40-50% of our body weight.

When muscle is fit and fine, it usually does not attract adequate attention. However, when muscle is diseased or has less than optimal functionality, it is of even less concern. Sarcopenia is a relatively new term, coined by Rosenberg in 1989<sup>2</sup>, characterized by loss of skeletal muscle mass, quality and strength. This condition is associated with other components of frailty syndrome, and with adverse health outcomes<sup>3</sup>.

Sarcopenia, and its associated disease, sarcopenic obesity, are common in India. A recent analysis of the data from the Longitudinal Ageing Study in India (LASI) Wave1 Survey (2017-18) reveals an overall prevalence of "possible" sarcopenia of 41.9%<sup>4</sup>. Sarcopenic obesity was found in 8.7% of all participants, with an overall obesity prevalence of 27.1%. Sarcopenia was more common in the oldest age group (65.1%), women (42.16), rural dwellers (43.6%), residents of south India (48.1%), those from poorest background (45.1%), with no education (44.7%), who were not working (53.9%) and not living in a union (52.1%). Other factors associated with sarcopenia included lack of physical activity (46.7%), and comorbidities like cardiovascular disease (51.4%), diabetes (44.1%), bone/joint disease (49.1%), neurological illness (45.7%) and multi-morbidity (45.6%).

In spite of this heavy burden on our health, sarcopenia has not been highlighted in medical curricula and continuing medical education programmes. Many factors contribute to this<sup>5</sup>. No medical or surgical specialty "owns" sarcopenia, and the disease thus gets an orphan-like treatment. There is no specific drug therapy for sarcopenia, and this, too, creates lack of interest amongst stakeholders. The main focus of sarcopenic care is prevention through nutrition and lifestyle modification, but these are given short shrift in today's world, which expects magic pills and injections for treatment.

The main reason for lack of interest, however, has been the criteria used for diagnosis of sarcopenia. Till recently, international guidelines required demonstration of reduced muscle mass to conclusively diagnose sarcopenia. This could be done only with the help of expensive imaging tools such as bioimpedance and DEXA scans (Dual Energy X-ray Absorptiometry)<sup>6</sup>. The role of reduction in muscle strength and muscle function, which can be assessed clinically, was limited to suspicion of

probable sarcopenia. This created a situation where sarcopenia assessment was limited to research settings in India.

This year, the South Asian Working Action Group on Sarcopenia (SWAG\_SARCO), composed of experts from 11 countries, published a consensus on the screening, diagnosis and management of sarcopenia<sup>7</sup>.

The authors define sarcopenia as a syndrome in which any two of the following three abnormalities are present in muscle strength, muscle function and/or muscle mass as shown in Table 1.

Table 1 — Definition of sarcopenia: any two of the following three must be present	
Clinical modality	Clinical assessment
Muscle strength	Hand grip and lower limb muscle strength
Muscle function	Walking speed, sit-to-stand test, chair stand test and SPPB (Short Physical Performance Battery)
Muscle mass	Calf circumference, Mid arm circumference, Thigh circumference <sup>7</sup> .

These can be supported by imaging techniques, if available. The rationale of these criteria is similar to that used in other syndromes such as PCOS (polycystic ovary syndrome) and metabolic syndrome, where the presence of a few (but not all) criteria is required for diagnosis.

The SWAG\_SARCO guidelines facilitate community- and clinic-based screening and substantiation of sarcopenia, and thus allow timely institution of preventive and therapeutic interventions. These guidelines along with secondary data analysis of LASI survey will bring focus attention on this syndrome, and on its public health significance. The research data that will be generated by the use of South Asian diagnostic criteria will promote action to address muscle health, and its comorbidities.

In the meanwhile, as physicians, we must begin screening for primary sarcopenia in all elderly adults, and for secondary sarcopenia in all persons with comorbidities. Simple anthropometric measurements such as weight, waist circumference, mid arm circumference and mid-calf circumference must be incorporated into routine clinical evaluation. Tests for muscle strength and function should be made part of clinical examination in not only geriatric medicine and endocrinology, but family medicine as well. A concerted effort for timely diagnosis, associated with lifestyle, nutritional, metabolic and orthotic optimization, will lead to better muscle health, and better overall health, for all.

## REFERENCES

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