



**Editorial**

# Roles of Nutrition on Sarcopenia: Recommendations from AWGS

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Sarcopenia has become one of the most appealing research focus in Geriatrics and Gerontology that attracts extensive international research attentions. Until now, over 15,000 publications related to sarcopenia have been identified in the PubMed with a substantially growing trend year by year. Sarcopenia is defined as age-related loss of muscle mass with reduced muscle strength or/and low physical performance based on the operational definitions of different working groups.<sup>1-4</sup> Due to the fundamental differences in ethnic backgrounds, body size, body composition, dietary habits, lifestyles, risk factors, diagnosis, natural course, and treatment responses, sarcopenia in Asian populations may differ great from Caucasians. Hence, the Asian Working Group for Sarcopenia (AWGS) started in 2013 and invited major researchers of sarcopenia or related fields in Asian countries to discuss how sarcopenia should be diagnosed and treated in Asian populations. After extensive discussions, AWGS published the Asian consensus for sarcopenia diagnosis and treatment based on research data from Asian countries,<sup>3</sup> which basically followed the diagnostic algorithm of the European group. The diagnostic criteria of sarcopenia were revised in 2019, which not only modified the diagnostic algorithms, but also strongly addressed the importance to integrate sarcopenia in the clinical management of chronic conditions and multimorbidity.<sup>4</sup>

Recently, the AWGS special interest group introduced the consensus and recommendations focused on the roles of nutrition on sarcopenia based on systematic reviews of related studies published in Asian countries.<sup>5</sup> Overall, Asian studies focused on nutrition in sarcopenia were not as abundant as expected and malnutrition remained to be a main issue in many countries. To respond to the common challenge in Asian countries, the consensus strongly emphasized the importance of regular nutritional assessment for community-dwelling older adults and to ensure sufficient calorie and protein intake. Moreover, AWGS clearly recommended protein intake of 1.0 gm/kg body weight/day for all community-dwelling older adults, and 1.2g/kg body weight/day for those with sarcopenia. Moreover, exercise programs consisting of aerobic, resistance training or multi-component interventions are recommended. Besides, 25-(OH) vitamin D supplementation for 800-1000 IU/day was recommended for those with vitamin D insufficiency; oral nutritional supplementation for protein, amino acids, or beta-hydroxy-

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beta-methylbutyrate (HMB) may be considered as needed. The consensus also recommended using parameters related to sarcopenia (body mass index, calf circumference, handgrip strength, or 5-time chair rise test) or a more holistic measurement of quality of life to assess the effectiveness of sarcopenia intervention programs. Overall, the evidence-based consensus confirmed the importance of malnutrition (screening and management), socioeconomic and environmental factors, dietary protein intake and exercise interventions, and potential impacts related to COVID-19 pandemic in Asian countries. However, more evidence is needed to improve the knowledge for sarcopenia prevention and management. Recent studies from Asia confirmed the clinical benefits of sufficient dietary protein, oral supplementation of amino acids, as well as HMB to enhance muscle health in the middle-to-aged population through randomized controlled trials.<sup>6-8</sup> These studies provide strong evidence for the consensus development, however, some Asian countries are still facing challenges of malnutrition related to socioeconomic disadvantages. Therefore, AWGS addressed the importance of regular assessment and intervention to ensure sufficient calorie and protein intake for community-dwelling older adults in all Asian countries despite the differences in socioeconomic status, cultural or religious backgrounds.

Previous studies have demonstrated the prognostic roles of nutritional status in clinical outcomes of older adults in different healthcare settings,<sup>9-11</sup> but intervention-based studies to examine the efficacy of nutritional intervention are limited. The co-existence of malnutrition and advanced aging not only negatively influenced clinical outcomes of older patients, but also were strongly associated with outcomes of COVID-19 disease.<sup>12</sup> Demirdağ et al., reported that nutritional status was an important mediator for age-related muscle loss and frailty,<sup>13</sup> and a recent report also indicated that malnutrition negatively influenced the COVID-19 vaccine efficacy in patients with advanced chronic kidney disease.<sup>14</sup> Therefore, maintaining sufficient protein intake in all health conditions is essential to health of older people, especially the acute and critical conditions. However, the nutritional status is usually difficult to be established within a short period of time, particularly during acute illnesses. Peng, et al., reported that higher daily dietary protein intake did not lead to better muscle health than ensuring sufficient dietary protein intake.<sup>6</sup> Without incorporation with exercise programs, higher animal protein intake would result in higher pro-inflammatory status and declining estimated glomerular filtration rate. Overall, the AWGS consensus clearly identified important issues for the roles of nutrition on sarcopenia, and recommendations were all based on systematic review and inputs of the expert panel. More research efforts are needed to clarify the clinical benefits of nutritional

intervention in preventing or treating sarcopenia in different healthcare settings in Asia.

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