Continuing Professional Development

CPD

Recognising and supporting sarcopenia in older adults: A pharmacist's guide

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60 Second Summary

Pharmacists meet older people with reduced physical function every day. Many of these older people are reliant on mobility devices, hearing aids, polypharmacy, home modifications, friends and family to perform basic and instrumental activities of daily living. Reduced physical function generally results from loss of muscle strength and mass.

In practice, sarcopenia often goes unrecognised, with many health providers and older people themselves unaware of the impact of the condition at both individual and health system levels.

Management of sarcopenia in the community setting is multifactorial and evidence-informed interventions include resistance training and a nutrient-dense diet. Resistance training is any exercise designed to improve strength and endurance by forcing muscles to contract against an external resistance and differs from aerobic physical activity (such as walking, cycling, swimming).

As no pharmaceutical treatments for sarcopenia exist, pharmacists can emphasise to their patients that exercise is medicine. Exercise can improve symptoms of stiffness, fatigue, pain, insomnia, constipation, depression, falls risk and can provide opportunities for older people to socialise, increasingly recognised as important for overall well-being in older adults.

Pharmacists need to be aware of the signs of sarcopenia and encourage their patients to engage in resistance training and consume a nutrient-dense diet that contains sufficient protein in line with Department of Health and Health Service Executive Guidelines.

1. REFLECT - Before reading this module, consider the following: Will this clinical area be relevant to my practice?

2. IDENTIFY - If the answer is no, I may still be interested in the area but the article may not contribute towards my continuing professional development (CPD). If the answer is yes, I should identify any knowledge gaps in the clinical area.

3. PLAN - If I have identified a knowledge gap - will this article satisfy those needs - or will more reading be required?

4. EVALUATE - Did this article meet my learning needs - and how has my practise changed as a result? Have I identified further learning needs?

5. WHAT NEXT - At this time you may like to record your learning for future use or assessment. Follow the 4 previous steps, log and record your findings.

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Pharmacists meet older people with reduced physical function every day. Many of these older people are reliant on mobility devices, hearing aids, polypharmacy, home modifications, friends and family to perform basic and instrumental activities of daily living. Reduced physical function generally results from loss of muscle strength and mass.[1, 2] Between the ages of 50 and 60 years, adults lose approximately 1.5% of their muscle strength annually.[3] Those aged 70 and over experience a decline in muscle mass of approximately 4% per decade.[4] This loss of muscle strength and mass can lead to the development of sarcopenia. Sarcopenia can occur at any age because of acute or chronic disease (secondary sarcopenia) but is most frequently seen in those who are older (primary sarcopenia) for the biological reasons outlined above. The prevalence of sarcopenia in adults aged over 60 ranges from 10-27%[5] and consequences include increased falls and fractures, mobility limitations and disability, metabolic disorders, negative clinical events and higher risk of mortality.[6]

In practice, sarcopenia often goes unrecognised, with many health providers and older people themselves unaware of the impact of the condition at both individual and health system levels. Community pharmacists frequently meet older people with undiagnosed muscle loss, placing them in a key position to support symptom recognition, screening, practical advice and referral for specialist care when appropriate. Visible physical changes such as slow gait, difficulty rising from a chair, balance issues, decreased grip when handling items, cognitive decline or confusion are all warning signs.[7, 8] Older people trust their pharmacists whom they have generally known for many years. Hence, pharmacists are often uniquely positioned to refer patients to their GP for further investigation.

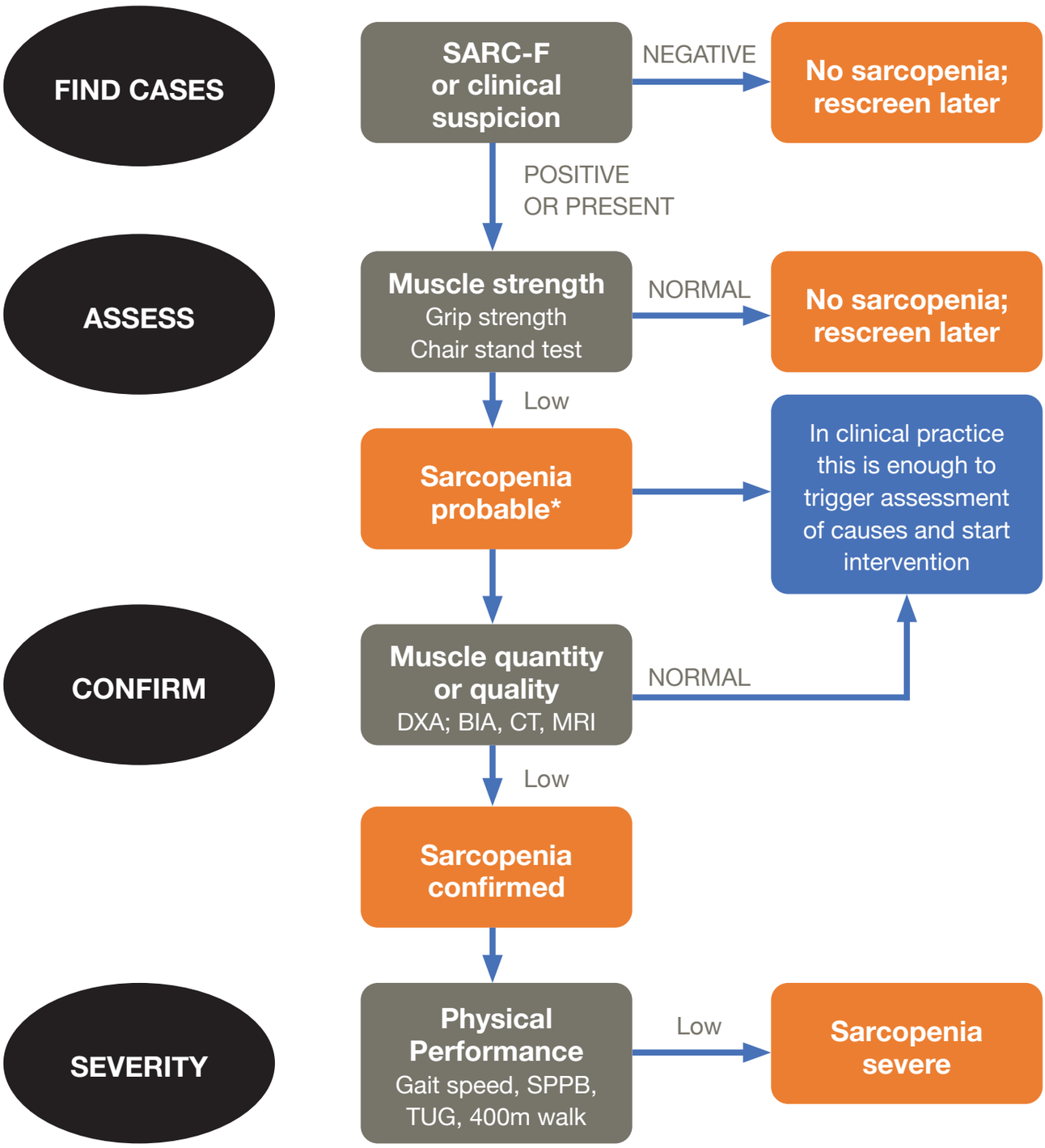
To screen for sarcopenia, the screening questionnaire Strength, Assistance with walking, Rising from a chair, Climbing stairs, and Falls (SARC-F) questionnaire can be used (Figure 1).[1] This simple 5-item questionnaire can indicate if a person needs further assessment; a score over four indicates risk of sarcopenia.[1] To assess loss of muscle strength, a simple lower body strength test is the Five-times Sit-To-Stand (5xSTS) (Figure 1).[1] This test requires a person to sit and stand five times from a chair and the time taken to perform this is recorded. Taking more than 15 seconds to perform this test indicates lower body muscle weakness.[1] Ideally, muscle mass is assessed using dual-energy X-ray absorptiometry (DEXA) or bioelectrical impedance (BIA) (Figure 1).[1] However, these are often unavailable in practice and simple measurement of calf and/or mid-upper arm circumference can provide a useful, readily obtainable indication of muscle mass.[1]

Management of sarcopenia in the community setting is multifactorial and evidence-informed interventions include resistance training and a nutrient-dense diet.[1, 9, 10] Resistance training is any exercise designed to improve strength and endurance by forcing muscles to contract against an external resistance.[11] and differs from aerobic physical activity (such as walking, cycling, swimming). Many older people believe walking is sufficient exercise; however, although walking is good for cardiovascular health, resistance training is necessary for muscle health. Resistance training should be performed at least twice weekly, using progressive external loads, such as body weight, free weights, resistance bands or machines to target different muscles.[11] The weight lifted should provide some physical challenge and should be performed repeatedly, for example, 1-3 sets of 6-12 repetitions. Resistance training can be performed at home, in the gym, at community classes and even online.

As no pharmaceutical treatments for sarcopenia exist,[12] pharmacists can emphasise to their patients that exercise is medicine. Exercise can improve symptoms of stiffness, fatigue, pain, insomnia, constipation, depression, falls risk[13, 14] and can provide opportunities for older people to socialise, increasingly recognised as important for overall well-being in older adults.[15] Guidelines for resistance training are provided by Healthy Ireland and pharmacists can encourage their older patients to participate.

In addition to following a structured resistance training programme, consuming a healthy diet is important for muscle maintenance. Healthy older

Figure 1. European Working Grouping on Sarcopenia 2019 (EWGSOP2) algorithm for screening and diagnosis of sarcopenia[1]



Abbreviations: BIA, bioelectrical impedance analysis; CT, computed tomography; DXA, whole body dual-energy X-ray absorptiometry; MRI, magnetic resonance imaging; SARC-F, Strength, assistance with walking, rising from a chair, climbing stairs, and falls questionnaire; SPPB, short physical performance battery; TUG, timed get up and go.

adults should consume a more protein-dense diet than the general adult population while those who are frail, sarcopenic or undernourished need a protein-dense diet that provides adequate energy.[16] Although it can appear that high protein foods are a younger adult 'trend', these foods can be very useful in providing sufficient protein for older people who are frail, sarcopenic or undernourished. A serving of protein should be eaten at each meal, and when an older person reports poor appetite, providing protein as snacks, nourishing drinks, side dishes and desserts can be a useful strategy. Protein is found in both animal- (e.g., beef, poultry, eggs, dairy products) and plant-based food (e.g., beans, lentils and legumes). A food-first approach for an older person with poor appetite is always recommended, as this provides familiar foods (which can be fortified), has a high impact and a low cost.[17, 18] However, when this is insufficient, oral nutritional supplements (ONS) can be prescribed.[18] These can provide high amounts of energy and protein in small volumes. Pharmacists can help to ensure adherence to ONS by recommending their consumption between meals, providing preferred flavours, suggesting ways to incorporate ONS into the usual diet, providing samples and referring to a dietitian when appropriate.[19, 20]



Table 1. Practical advice for pharmacists for the management of sarcopenia in older adults

Topic	Key recommendation	Notes for pharmacists
Resistance training	Perform two times per week; 2-3 sets per exercise; 6-12 repetitions	Benefits of strength training include feeling stronger, improved confidence and fall prevention
Type of exercises	Target major muscle groups: quadriceps, hamstrings, gluteus maximum, calves, ankle/foot, shoulders, chest, back	Relevant for performing basic and instrumental activities of daily living such as dressing, cooking and self-care
Protein intake per meal	Include a serving of protein at each meal	Supports muscle maintenance
Animal-based protein	Beef, poultry, eggs, dairy, fish	Food-first approach where possible
Plant-based protein	Beans, lentils, legumes, dairy-alternatives	
Vitamin D supplementation	Daily vitamin D supplement for all adults ≥65 years in Ireland	Encourage adherence throughout the year

Another nutrient that is important for bone and muscle health in older adults is vitamin D. Because of our latitude in the Northern Hemisphere, older people living in Ireland are recommended to take a daily supplement of vitamin D.[21] Pharmacists can reiterate the importance of daily consumption of vitamin D for bone and muscle function.

The POWER study is a recently completed randomised controlled trial that investigated the effects of a 12-week whey protein oral nutritional supplement plus online resistance training compared to resistance training alone on physical function, nutritional status and health-related outcomes in older Irish adults receiving homecare who were at risk of sarcopenia.[22] The study results indicate that physical function and nutritional status improved and that the resistance training could be safely and effectively delivered using an online platform.

In summary, sarcopenia is a condition that can have multiple negative consequences. Pharmacists need to be aware of the signs of sarcopenia and encourage their patients to engage in resistance training and consume a nutrient-dense diet that contains sufficient protein in line with Department of Health and Health Service Executive Guidelines.

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- Contains 6.25µg of vitamin D in one bottle
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- Adequate protein, calcium and vitamin D are important for muscle mass, strength, function and bone health and can contribute towards improved functionality in older age.[8]

High in Calcium

- Contains 438mg of calcium in one bottle
- Calcium supports bone strength and density[9].
- Combined with vitamin D, it provides a preventive measure against osteoporatic fracture. [10].

High quality protein containing leucine

- Leucine supplementation is useful to address age-related muscle loss. [11, 12]
- Leucine is responsible for muscle protein synthesis. As little as 0.6g leucine has been shown to stimulate Muscle Protein Synthesis.[13]



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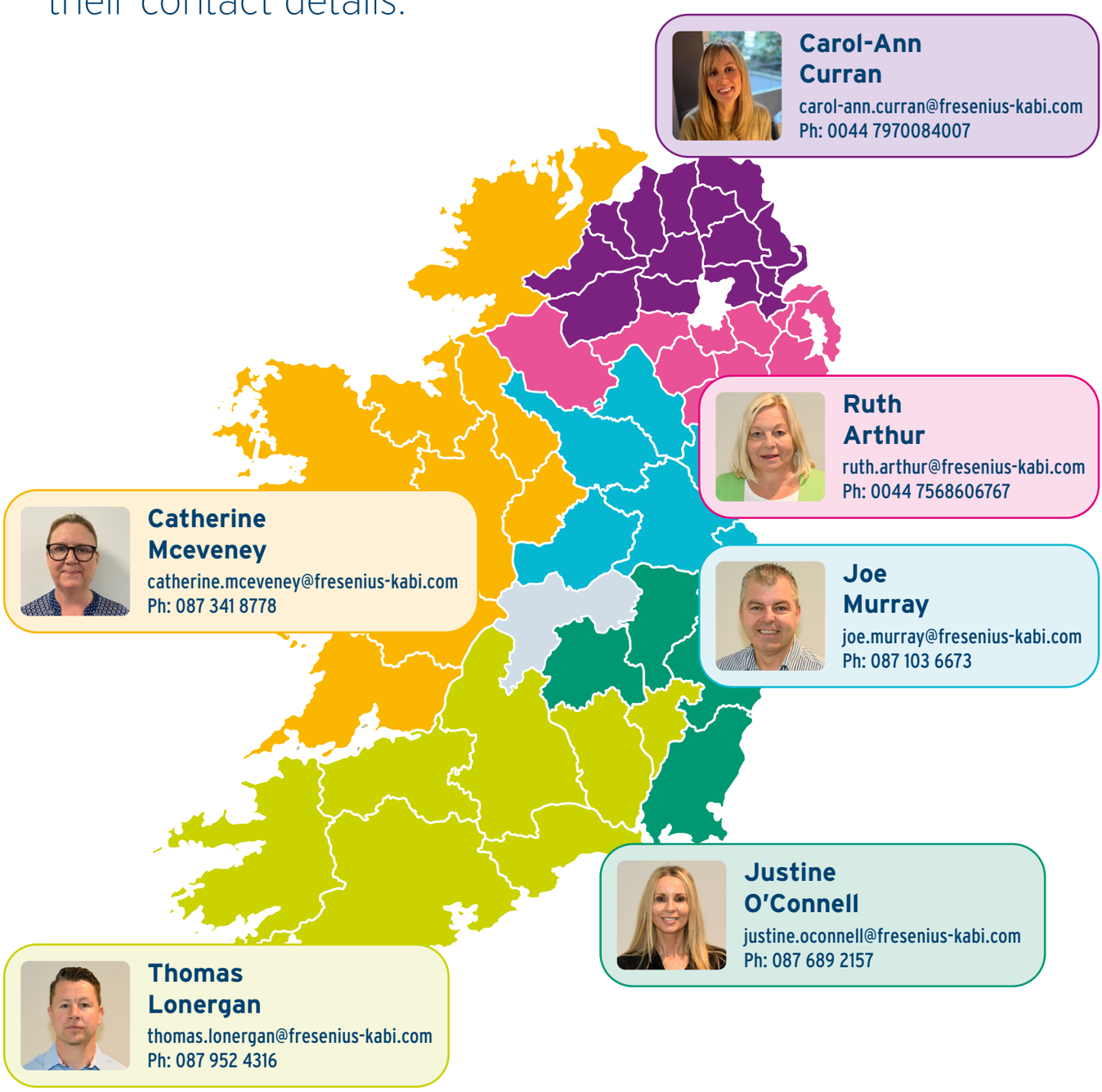
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Community Map

This map shows the areas covered by each Fresenius Kabi sales representative along with their contact details.



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Community Map

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 Ruth Arthur	*South & East Belfast, Southern Trust, South Eastern Trust & Fermanagh*
 Catherine McEveney	*Donegal, Galway, Mayo, Leitrim, Sligo, Roscommon, Longford & Clare*
 Joe Murray	*North Dublin, North County Dublin, Meath, Cavan, Monaghan, Louth & Westmeath*
 Justine O'Connell	*South Dublin, Kildare, Wicklow & Wexford*
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