Canes & Walkers: A Practical Guide to Prescribing

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Primary care physicians often see older adults using gait aids during office visits. Gait aids can provide increased independence with functional mobility but, if used incorrectly, can lead to injury. Unfortunately, gait aids are often purchased without professional advice. Gait aid prescription requires consideration of multiple factors. This article outlines general tips primary care physicians can use to help decide which gait aid might be most appropriate for a patient. Primary care physicians should examine an older patient’s gait aid as physical mobility needs change, and consider referring the patient to a physiotherapist for a complete assessment and gait training.

Key words: gait aid, cane, walker, older adults, ambulation

Introduction

Primary care physicians often see older patients using various gait aids during office visits. Neighbourhood drugstores frequently carry an array of canes, crutches, and walkers of all different materials, shapes, and sizes. Unfortunately, gait aids are often purchased without professional advice, leading to their inefficient and unsafe use. This article outlines general tips primary care physicians can use to help decide which gait aid might be most appropriate for a patient. Primary care physicians should examine an older patient’s gait aid as physical mobility needs change, and consider referring the patient to a physiotherapist for a complete assessment and gait training. Please note that this article is intended only to provide basic information and outline general principles, and is not meant to substitute for assessment or consultation by a licensed health care professional.

Gait aids may be used to manage a number of issues including impaired balance, pain, decreased endurance, weakness, joint instability, excessive skeletal loading, and weight-bearing restrictions following surgery. The safe use of a gait aid requires a sufficient level of cognitive function, judgment, insight, vision, balance, endurance, and strength. The most common gait aids used by older adults are walkers and canes. Crutches—axillary and forearm—are not commonly prescribed for use by older adults. As both types of crutches can require a significant amount of upper extremity strength and physical endurance, they are more appropriately used by younger or highly active individuals. In terms of balance improvement and fall prevention, each gait aid—ranging from the standard walker to the single point cane—offers a different level of stability.

Selecting an Appropriate Gait Aid

The following approach highlights the general principles used to help select the correct gait aids for patients. Primary care physicians can help optimize the selection of their patients’ gait aid by asking three simple questions: Is it being used for balance or is weight bearing required? Is it the right height? and Is it being used correctly?

Is It Being Used for Balance or Is Weight Bearing Required?

Gait disturbances can be divided into three useful categories: balance (including sensory and cerebellar systems), motor (including cerebral initiation of walking and muscular strength), and joint or skeletal problems. The standard cane (Figure 1) can be useful in cases of peripheral sensory disorders such as sensory ataxia, vestibular ataxia, and visual ataxia. It can help stabilize gait by providing an extra contact point with the ground, thereby increasing the base of support. People who use their standard cane backwards may signal unsafe and excessive weight bearing and may warrant a change in gait aid.

If light weight bearing through the cane is required, as for individuals with osteoarthritis of the hip or knee pain, then an offset cane (Figure 1) may provide greater support as it allows force to be placed directly along the cane’s shaft. If significant weight bearing is required, as for a patient with hemiplegia, then a four-legged “quad” cane (Figure 1) may be needed. These canes can easily support up to 15–20% of an individual’s body weight.

Figure 1: Various Canes

From left to right: standard single point cane, offset single point cane, four-legged “quad” cane.
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A quick test, easily performed in the office, involves walking with patients while holding their hand. If a single assisting hand helps them walk, then a cane may be of potential benefit. However, if both hands need to be held to steady their gait or provide weight-bearing support, a walker might be a better choice. While walkers are more stable than canes, they eliminate normal arm swing during gait, are cumbersome in confined spaces, and cannot be used on stairs.

Is It the Right Height?
The degree of elbow flexion is generally the most reliable guide to selecting the appropriate height for a cane or walker due to variations in body proportions. Cane length is roughly the distance from the ground to the greater trochanter or wrist crease when the patient’s arm is hanging at the side (Figure 2). When positioned approximately 15 cm laterally from the toes, there should be about 20–30 degrees of elbow flexion (Figure 3).\(^1\)

Walker handle height can be determined in the same manner, with the walker positioned so that the rear feet are approximately in line with the midfoot.\(^5\) The seat height of a rollator walker should be at a level that results in less than 90 degrees of knee flexion when the patient is sitting down as this will help the patient to stand up more safely and easily.

Is It Being Used Correctly?
For a weak or painful leg, the cane is held in the contralateral hand and advanced in unison with the affected leg. Studies have shown that this method can reduce the total force across the affected hip joint by almost two thirds.\(^6\) When the cane is used primarily for balance impairment, patient preference determines the hand in which the cane is held. If a quad cane is used, the longer feet should be positioned on the lateral side to allow foot clearance during ambulation. During ambulation, all four feet of the cane should maintain simultaneous contact with the ground in order to provide stability.

Standard walkers provide the most stability, with four rubberized feet instead of wheels (Figure 4). These walkers are appropriate for individuals who are non-weight bearing or minimally weight bearing through one lower extremity as body weight is transferred to the ground by the upper extremities.\(^1\) Standard walkers do require sufficient cognition, upper body strength, and endurance to lift the walker with each step of the gait cycle.

Two-wheeled walkers often have ski or glide attachments on the rear feet, instead of rubberized tips, to reduce friction (Figure 5). Users do not have to lift the walker off the ground, leading to consistent balance support, decreased energy consumption, and a more normal gait pattern than with a standard walker.

Rollator walkers have four large swivelling wheels, hand brakes, a seat, and basket. They are typically used by

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**Figure 2: Aid Height**
Cane or walker height is roughly the distance from the ground to wrist crease.
Source: Lam R, 2007.\(^7\)

**Figure 3: Elbow Flexion**
Goniometer measuring elbow flexion: ideally 20–30 degrees while holding a cane or walker.
Source: Lam R, 2007.\(^7\)

**Figure 4: Standard Walker**

**Figure 5: Two-Wheeled Walker with Rear Skis**
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Key Points

In order of decreasing support provided, common gait aids used by older adults include the standard walker, two-wheeled walker, rollator walker, quad cane, and single point cane.

Canes are generally held in the hand opposite the affected (weak or painful) leg.

Prescribing a gait aid requires consideration of many factors, including the individual’s cognition, coordination, strength, endurance, balance, environment, and preference.

The degree of elbow flexion is generally the most reliable guide to selecting the appropriate height for a cane or walker.

Primary care physicians should assess their older patients’ gait aids on an ongoing basis as functional mobility needs change over time, and they should consider referring patients to a physiotherapist for a comprehensive mobility assessment and gait training.

individuals who are more mobile, and they are more suitable for outdoor use than aluminum walkers. Although larger than aluminum walkers, rollators can be less stable because they move more quickly and may roll away if a patient bears weight heavily through the upper extremities. Sufficient hand strength, coordination, and cognition are required for proper use of the brakes so that safe control of walking speed is maintained.

Conclusion

The three simple questions stated will help organize the approach of determining which gait aid is most appropriate for a patient, and whether or not a gait aid is being used properly. Choosing the correct gait aid involves the consideration of many factors including the individual’s cognitive function, coordination, upper body and grip strength, physical endurance, and walking environment. Walking with a gait aid must be learned and practised. Ultimately, the individual’s environment and personal preference will dictate the gait aid that will be used: A large walker is more stable than a cane, but it is also heavier and more bulky and cannot be used safely by a person who lives alone in a small or cluttered home, especially if there are stairs to negotiate. A quad cane may spend much time in the closet if not endorsed by the patient and his or her lifestyle.

Primary care physicians should regularly examine an older adult’s gait aid in the office as physical mobility needs change. If questions do arise, consider referring the patient to a physiotherapist for a complete mobility assessment and gait training. A physiotherapist can make further recommendations regarding an appropriate gait aids to optimize safe functional mobility.

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References


Clinical Pearls

A quick test by the primary care physician involves walking with patients while holding their hand. If a single assisting hand helps them walk, a cane might be of potential benefit. If both hands need to be held to steady their gait or provide weight-bearing support, a walker might be a better choice.