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ELDER CARE

A Resource for Interprofessional Providers

Canes

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A previous issue of *Elder Care* discussed the use of walkers as an ambulation aid. This issue will discuss canes, which are used by one in ten older adults.

Canes are primarily used to improve balance and stability. Although some types of canes can be used for limited weight bearing, individuals whose ambulation requires major weight-bearing support generally need to use a walker or hemi-walker.

Two-thirds of patients who use a cane obtain it on their own, without any professional guidance about the proper type or sizing of the cane, or even about whether a cane is the appropriate walking aid for their needs. Even fewer, about one in five, receive proper education on how to use their cane.

The three main types of canes are standard canes, offset canes, and multiple-legged canes. Each has variations, plus advantages and disadvantages.

Standard Canes

A standard cane, also called a single-point cane (Figure 1), is usually made of wood or aluminum, and is the most widely used type of cane. Its main purpose is to improve balance by widening an individual's base of support. Standard canes are not appropriate for individuals who need assistance with weight bearing (i.e., who need to lean heavily on the cane because they can't bear weight on their legs).

Aluminum canes typically have an adjustable length, so perfect fitting before purchase is not always critical. Aluminum canes are also available as a "folding"



Figure 1. Standard Cane

cane that can be collapsed for compact storage when traveling (Figure 2).

In contrast to aluminum canes, wooden canes are lightweight and inexpensive. But, they have a fixed length and thus require proper fitting prior to purchase.

Offset Canes

Offset canes (Figure 3) are similar to standard canes except the shape positions the patient's weight over the axis of the cane. This allows the cane to be used for occasional weight bearing. Offset canes are often recommended for patients who have arthritis in the hip or knee and occasionally need to decrease the weight borne on a painful lower extremity.



Figure 3 . Offset Cane

Multiple-Legged Canes

Multiple-legged canes typically have four, though sometimes three, short legs attached to a rectangular base at the lower end of the cane's shaft. Depending on the number of legs, they are referred to as quadripod or "quad" canes, or tripod or "tri" canes (Figure 4).

Because they have multiple legs, these canes provide more support than standard or offset canes and are capable of bearing more of a patient's weight. They can be used by patients who have an antalgic gait due to osteoarthritis and by patients with hemiplegia.



Figure 4. Multiple-Legged Cane



Figure 2. Folding Cane

TIPS FOR RECOMMENDING CANES

- Recommend standard canes when there is need for assistance with balance, but not weight bearing.
- Recommend an offset cane for patients who require occasional limited weight bearing support.
- Recommend a multiple-legged cane for patients who require more substantial weight bearing support.
- Proper fit: when arm dangling at side cane should reach wrist crease; when holding cane handle, elbow flexed ~20°
- Be sure the patient receives proper instruction on how to use the cane.

ELDER CARE

Continued from front page

In addition to weight bearing, another advantage of a quad cane is that it can stand upright by itself when not in use. This frees the patient's hands to do other things until they need to resume walking, and the cane can be retrieved without the need to bend down. In addition, a modification known as a "sit-to-stand cane" combines the stability of a multi-legged base with a bent handle that can be gripped at two levels (Figure 5). This allows the patient to put weight on the cane via the lower part of the handle when rising from a sitting position.



Figure 5.
Sit-To-Stand Cane

Despite these advantages, quad and tri canes are sometimes challenging to use. The principal challenge arises from the fact that for proper use, all the legs should strike the ground simultaneously, particularly if the device is to be used for weight bearing. This requirement is sometimes awkward, particularly for individuals with a relatively rapid gait.

The solution to this challenge in some cases is to change from a

quad cane to a tri cane, or to change the multi-legged bottom to a smaller size in which the legs are closer together. The faster an individual walks, the fewer legs and the closer together the legs can be, though the trade off is some loss of stability during weight bearing.

Fitting and Using a Cane

Two key considerations in fitting a cane are elbow flexion and cane length. The elbow should be flexed at about 20 degrees when the tip of the cane is positioned on the floor, about 6 inches from the lateral edge of the toes. A proper cane length is the distance from the floor to the crease of the wrist when the patient's arm is dangling loosely at the patient's side.

References and Resources

American Geriatrics Society. Health in Aging. Choosing the right cane or walker.

http://www.healthinaging.org/files/documents/tipsheets/canes_walkers.pdf

Bradley SM, Hernandez CR. Geriatric assistive devices. *Am Fam Physician*. 2011; 84:405-411.

Lam R. Choosing the correct walking aid for patients. *Can Fam Physician*. 2007; 53:2115-2116.

Silva J. How to use a cane. (Video from CaregiversTraining.com). <http://www.youtube.com/watch?v=fRn8ZZJMzno>

Van Hook FW, Demenruev D, Weiss BD. Ambulatory devices for chronic gait disorders in the elderly. *Am Fam Physician*. 2003; 1717-1724.

A variety of handle styles and grips are available, and patients with certain hand and wrist problems may find some more comfortable than others. For example, carpal tunnel syndrome has been reported with the umbrella-style handle often used on standard canes, while foam-padded horizontal palm grips (Figure 6) are less likely to cause this problem. Patients who need wrist support or who have a need to decrease stress on the wrist may benefit from an ergonomic handle, which is used as if one is shaking hands with the handle (Figure 7). These handles are also available for right-hand or left-hand use.

Figure 6. Padded Horizontal Palm Grips

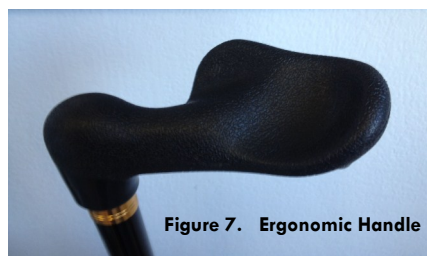


Figure 7. Ergonomic Handle

When walking with a cane, it is generally held by the arm on the same side as the patient's stronger leg. Advance the cane simultaneously with the opposite (affected) leg.

If the patient's gait is affected bilaterally, then the cane is usually held in the dominant or unaffected upper extremity.

Canes should be fitted with non-skid rubber tips. These tips should be checked frequently and replaced when worn out.

For walking, the unaffected lower limb should assume the first full weight-bearing step on level surfaces and going up a step. The affected limb should descend a step first, balanced in line with the cane.

Walking safely with a cane takes practice. Patients being considered for a cane may benefit from a referral to a physical therapist for gait analysis, postural and strength training, and selection of an optimal ambulatory aid.

Interprofessional care improves the outcomes of older adults with complex health problems

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