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ELDER CARE

A Resource for Interprofessional Providers

Canes

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Another edition of *Elder Care* discusses the use of walkers as an ambulation aid. This edition 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.

There is general recognition by caregivers and patients alike of the need for individuals to keep moving safely as they age. As a result, use of mobility devices has increased, and many older adults use more than one device. Canes are the top choice. Women are more likely than men to use a mobility device, and device use is also generally higher among African-Americans and Hispanics.

Canes are also used by individuals with low vision. A standard cane that is white, sometimes with a red tip, will indicate vision loss and offer stability. The probing cane (or folding "long cane") probes for and locates obstacles in the path of travel.



Figure 1. Standard Canes

Using a mobility device does not necessarily mean fewer falls, but among people who fall at home, most do not have an assistive device with them when they fall. Non-users who fall sustain more severe injuries.

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

Standard Canes

Standard canes, also called single-point canes (Figure 1), are usually made of wood or aluminum and are the most widely used types of cane. Their main purpose is to improve balance by widening a person's base of support. Standard canes are not appropriate for individuals needing 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" cane that can be collapsed for compact storage when traveling (Figure 2).



Figure 2. Folding Canes

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 Canes

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.

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



Figure 4. Multiple-Legged Cane

In addition to weight bearing, another advantage of a quad cane is that it stands upright by itself when not in use. This frees patients' hands to do other things until they need to resume walking, and the cane can be retrieved without needing 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 patients to put weight on the cane via the lower part of the handle when rising from a sitting position.

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 are needed 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 cane's tip 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.
- Mayo Clinic. Slide Show: Tips for Choosing and Using Canes. <https://www.mayoclinic.org/healthy-lifestyle/healthy-aging/multimedia/canes/sls-20077060>
- 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=fRn8ZJMzno>
- Van Hook FW, Demenrueun D, Weiss BD. Ambulatory devices for chronic gait disorders in the elderly. Am Fam Physician. 2003; 17:17-1724.
- Wegner, NS. Introduction to the assessing care of vulnerable elders-3 Quality Indicator Measurement Set. J Am Geriatr Soc. 2007; 55:S247-S252

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 Grip

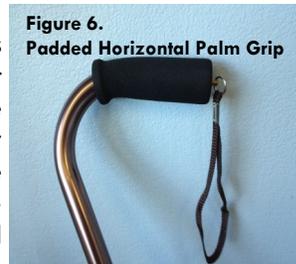


Figure 7. Ergonomic Handle

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.

Final Comment

Many patients who use a cane obtain it on their own without professional guidance about the appropriate type, sizing/fitting, and how to use it. Patients will benefit when clinicians emphasize the importance of cane use for injury prevention and offer patient education and appropriate referrals to promote personal relevance, proper fitting, and training. Maintenance of canes is also important. In particular, clinicians should check the tips and height-adjustment screws, as patients should not be putting their weight on an unsteady cane.

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