

Choosing the correct walking aid for patients

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Family physicians often see elderly patients sporting various assistive walking devices while visiting the office. A trip to the neighbourhood drugstore will often show an array of canes, crutches, and walkers of various materials, shapes, and sizes. The simplest device is a cane, popular because of its maneuverability, ease of use, and social acceptance. Unfortunately, a cane is often purchased without professional advice, leading to inefficient and unsafe use. MEDLINE was searched from 1990 to 2006, using the key words *gait disorder*, *geriatric assessment*, *orthopedic equipment*, and *canes*. To find articles dealing with the selection of assistive devices, it was helpful to limit the search to review articles and family medicine journals.

The following approach highlights the general principles found from my research and experience working with physiotherapists in geriatric rehabilitation. Family physicians can help optimize their patients' use of canes by asking 3 simple questions:

Is the cane being used for balance or is weight bearing required? Gait disturbances can be divided into 3 useful categories: balance (including sensory and cerebellar systems), motor (including cerebral initiation of walking and muscular strength), and joint or skeletal problems.¹

The standard cane (**Figure 1**) is generally used for mild sensory or coordination problems found in visual, auditory, vestibular, peripheral proprioceptive, or central cerebellar disease.² It can help stabilize a patient's gait by providing an extra contact point with the ground, therefore, increasing the base of support.

If the cane is required to bear weight, such as for patients with osteoarthritic hip or knee pain, then an offset cane could provide greater stability, as it allows force to be placed directly along the cane's shaft. If substantial weight bearing is required, such as in a hemiplegic patient, then an offset 4-legged quad cane (**Figure 1**) might be needed.

Is the cane the right length? There are various ways of fitting a cane, but most physiotherapists use elbow flexion as a guide. Ideally, there should be 20° to 30° of flexion in the elbow when holding the cane approximately 15 cm from the lateral border of the toes (**Figure 2**).³ This amount of flexion allows for efficient elbow movement while walking. Cane length should be roughly the distance from the ground to the greater trochanter or wrist crease when the patient's arm is hanging by their side (**Figure 3**).



Figure 1. Various canes (from left to right): a standard wooden cane, an adjustable aluminum cane, and an offset 4-legged quad cane.



Figure 2. A goniometer measuring elbow flexion, which should ideally be 20° to 30° while holding a cane




Figure 3. Cane length should be roughly the distance from the ground to the wrist crease

Is the cane being used correctly? A cane is generally advanced in unison with and on the side opposite the weak or painful leg. Studies have shown that use in this way reduces force on the leg opposite the cane by almost two-thirds.⁴ Canes can easily support up to 15% to 20% of a patient's body weight.⁵ Watch out for patients using their standard cane grip backward, as this might signal unsafe and excessive weight bearing.

A quick test you can do in the office would involve walking with the patient while holding their hand. If a single assisting hand helps them walk, then logically a cane might be of potential benefit. If, however, you need to hold both their hands to steady their gait, a walker might be a better choice.

These questions will help organize your approach when determining whether patients have the right canes and whether they are using them properly. Choosing the correct ambulatory device, however, involves considering many factors, including the patient's cognitive function, coordination, upper-body and grip strength, physical endurance, and walking environment. Ultimately, a patient's performance and personal preference will dictate the correct aid. A large walker is more stable but is also heavier, more bulky, and cannot be used by a patient who lives in a small apartment, especially if there are stairs to negotiate. Further, unattractive 4-legged canes might spend more time in the closet if not endorsed by patients and their lifestyles. If problems do arise, consider referring your patient to a physiotherapist for a complete mobility assessment.

A physiotherapist can make further recommendations about appropriate gait aids to maximize function. 

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Competing interests

None declared

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Kinder immunizations for babies

Michelle Greiver MD CCFP

We give many "shots" to babies. In Ontario, infants usually get 2 needles at 2, 4, 6, 12, 15, and 18 months of age. I routinely ask parents to give their baby some acetaminophen before the visits and have recently implemented several other changes to decrease the discomfort associated with vaccinations.

A study published in the *British Medical Journal* found that babies vaccinated with longer needles (25 mm) had fewer local reactions than those vaccinated with shorter needles (16 mm).¹ I now use 25-gauge, 1-inch needles. At the end of the well-baby examination, I load both vaccines in my laboratory area, away from the examination room, and fill the immunization card ahead of time. When I return, I ask mom or dad to hold baby securely in their arms, I put half of each band-aid on, and I get my alcohol wipes ready. I let the baby's mother know that she can breastfeed afterward if she wishes and then quickly give both vaccines. I try to have all my counseling finished before giving the needles so

that parents can concentrate on soothing their baby. I just remind parents to make the next appointment and let them know that they can take their time getting their child settled and ready to go. I then leave the examination room.

Babies seem to cry and fuss less with this process; I think the calmer approach is helpful to parents as well. These changes have not added any time to the visits; I think they could easily be implemented by any health professional offering vaccines to infants. 

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Competing interests

None declared

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