Gait and Post-Polio

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Falls are a chief cause of death and increased disability in this country. Among the physical problems leading to falls are loss of balance, overall fatigue, repetitive motion leading to individual muscle fatigue, weak muscles, and abnormalities in gait.[1] Many polio survivors exhibit one or more of these problems. Using assistive devices for walking can reduce the severity of these abnormalities or reduce the effect that they have on the lives of polio survivors.

Some survivors have used assistive gait devices for many years. Others used them only in the acute stage of recovery after polio, while others never used them. How do you know if you need an assistive device for walking or if you need to change the one you have?

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Some signs that can help you answer those questions are these: lessening endurance for walking due to muscle fatigue, worsening of a limp, pain in the legs during walking, a history of falls, or the recent occurrence of new falls.[2] If you suspect that you need an assistive device in walking or a new type, discuss the matter with your doctor, who will probably refer you to a physical therapist for an evaluation.

The therapist will then assess: how your strength and flexibility affect your ability to walk and to get up and down from a seated position; whether you have enough upper body strength and flexibility to safely and effectively use an assistive device; how good your balance is[3]; and how your heart and lungs react to walking. In many cases, the use of an assistive device reduces the strain on the heart and lungs because the device uses less energy than, for example, the limp it corrects. However, in some cases, using an assistive device may be more taxing on the heart and lungs than walking without a device.[4] If this is the case, the assistive device that the therapist recommends may be an electric scooter or motorized wheelchair.

Finding an appropriate assistive device for walking for polio survivors can be a challenge. If a person has a one-sided problem in the legs, usually a one-sided device, such as a cane or a single crutch, is indicated (most often used in the hand *opposite* the affected leg). However, abnormalities of strength, pain, or flexibility in the arms may make using a one-sided device impossible. Similarly, problems in the arms may make using two-sided devices such as walkers, two crutches, or two canes difficult, if not impossible. The trick is to find the device that provides enough assistance to compensate for the physical abnormality without causing other physical problems.

Sometimes the evaluation reveals too much disability for the survivor to benefit from an assistive gait device. This finding can free the survivor to make the decision to walk only in the home and to use motorized conveyances to move about in the community. Many who become motorized are pleasantly surprised to find how easily they can participate in community activities again and how much more energy they have after they make the decision to ride rather than walk outside their homes.

If the evaluation reveals that an assistive device would improve your gait, the therapist will recommend a specific device, assist you in obtaining it, fit it to you, teach you how to use it, and assess its effectiveness in meeting the goal for which it was recommended. Frequently the therapist may also recommend a *gentle* exercise program of strengthening and stretching to further assist your walking efforts. Certain types of braces or splints may also be recommended.[5,6]

In working with polio survivors for the last 15 years, I have seen many of them helped significantly by their using appropriate assistive devices for walking. The devices can help reduce pain and fatigue and reduce limping. And, of course, all of this leads to a reduction in the incidence of falls — resulting in less chance of more serious disability or even premature death.

So, what are you waiting for? If you think an assistive device might make your life easier, start the process described above by obtaining your physician's opinion. ■

References

1. Shumway-Cook A. and Woolacott M. (1995). *Motor control, theory and applications.* Philadelphia: Williams and Wilkins.

2. Pierson F. (1994). *Principles and techniques of patient care.* Philadelphia: Williams and Wilkins.

3. Minor MA and Minor SD. (1995). *Patient care skills.* Norwalk, CT: Appleton and Lange.

4. Perry J. (1992). *Gait analysis.* Thorofare, NJ: Slack, Inc.

5. Smith LK and Mabry M. (1995). *Poliomyelitis and the post polio syndrome.* In Umphred D (Ed.), Neurological rehabilitation. 3rd ed. Philadelphia: Mosby.

6. O'Sullivan SB and Schmitz TJ. (1995). *Physical rehabilitation: assessment and treatment.* 3rd ed. Philadelphia: FA Davis.

readers respond

From *Polio Network News*, Volume 13, No. 3:

"Can anyone offer suggestions as to which is the best car to purchase for putting a wheelchair in the back seat?"

Ed, Missouri

"We like our '93 Plymouth Vista made by Mitsubishi, sold by Plymouth dealers as Vista and Eagle Summit. It is a mini mini-van looking vehicle with all-wheel drive and a low loading height. The wheelchair stands upright behind the rear seat. Unfortunately, the last year of importation was 1996. You may be able to find an older model still with the guarantee."

Paul, New York

"Most people think that they should buy a four-door car, however, a two-door works much better because the door opens wider and is 'out of the way' as you put your wheelchair in the back seat."

Carolyn, Florida

"As of 1996, the only ones that have that option are GM cars. Call your GM dealer or the GM Mobility Assistance Hotline at 800/323-9935.

"Another option is to buy a four-door car with a bench or split front seat and put the chair in a car-top carrier on the roof. Whoever installs hand controls, etc. in your area would have that information."

Alice, Ohio

Resources

For a free, state-specific information packet and details about the GM Mobility reimbursement program, contact: GM Mobility Assistance Center, P.O. Box 9011, Detroit, MI (Michigan) 48202 (800/323-9935 voice, 800/833-9935 TTY, or 313/974-4383 fax).

According to the GM literature, several two-door models of Chevrolet and Pontiac and a fewer number of two-door models of Buick, Geo, Oldsmobile, and Cadillac can accommodate a typical adult folding wheelchair in either the back seat or trunk. Numerous four-door models can accommodate the wheelchair in the trunk only. They also provide a listing of vans and light trucks which are wheelchair and electric scooter compatible.

The GM Mobility Assistance Program offers financial reimbursement (up to $1,000) towards adaptations on new and unused vehicles. Contact them for details including mobility equipment installers, driver assessment facilities, state rehabilitation services, and driver licensing offices, etc.

For similar information, contact Ford Mobility Motoring Program Headquarters, P.O. Box 529, Bloomfield Hills, MI (Michigan) 48303-9857 (800/952-2248), or Chrysler Corporation's Automobility Program Headquarters, P.O. Box 3124, Bloomfield Hills, MI (Michigan) 48302-3124 (800/255-9877 voice, 800/922-3826 TTY, or www.automobility.chrysler.com).

For "designer" canes and walking sticks, contact:

The Harris Company

Penny and Bob Harris
29 Dennison Avenue,
Swampscott, MA (Massachusetts) 01907 (Jan-May) or
(May-Dec) 16040 Loch Katrine Trail, #7805, Delray Beach, FL (Florida) 33446

Contact them at 800/943-5646, access 41 or www.walkingstick.com.

Prompted by his wife's wish to have more fashionable crutches during her recuperation from hip surgery, "retired" women's shoe designer Bob Harris decorated a pair with red-white-and-blue bunting. When then First Lady Barbara Bush broke her leg, Bob sent a decorated pair to her, which resulted in a story printed in *The Boston Globe*. Thus began a new career for the designer, who now creates handcrafted canes of selected woods and finishes, also available in a wide variety of scotch-guarded fabrics and coverings.

House of Canes

Mailing Address: P.O. Box 574,
Shipping Address: 767 Old Onion Mt. Road, Wilderville, OR (Oregon) 97543 (541/476-4094, 541/955-8820 fax, or kay@houseofcanes.com)

Mark Fontaine has made over 18,000 canes in 18 years. The single point wooden cane with the off-set T or Derby handle is his specialty, but other shaped handles and even ready-made canes are available.

For "designer" crutches and other walking aids, contact:

Walk Easy, Inc.

2915 South Congress Avenue,
Delray Beach, FL (Florida) 33445 (800/441-2904)

Walk Easy carries a full line of modern, lightweight walking aids including forearm and underarm crutches. Colors include blue, bronze, green, black, purple, white, yellow, several "neons," and several pastels.