

## Is A Single Crutch a Good Idea?

Dr. William M. DeMayo, MD.

DeMayo's Q & A Clinic

<http://www.papolionetwork.org/demayos-q--a-clinic.html>

I recently received the following question that was generated from a post on Dr. Bruno's Post-Polio Coffee House.

Original Post: I just came from P.T. (because I'm having lower back and hip problems). She is suggesting a crutch with a cuff on the arm.

Dr. Bruno's Response: If you really need one crutch you should have 2. You're beating up your back and hip joints/muscles. Maybe you need to see a PPS knowledgeable physiatrist (a physical medicine doctor).

Additional Question: I'm just a total lay person, but it seems to me a single crutch will really mess up the person's gait, and spine. What do you think?

So, is it a good idea to use only one crutch? And will a single crutch help or hurt hip and back problems? As with many clinical questions posed without lots of specific detail, the answer is ... It depends. My focus, as usual, will be more on the issues behind the question rather than a simplistic answer.

Dr. Bruno correctly questions if a single cane is appropriate and I concur that the decision should be made along with a professional who is able to discuss the pros and cons of all options and educate the polio survivor on the biomechanics involved. There are certainly cases where use of two crutches is preferred and use of one crutch is not a frequent recommendation. Two crutches are needed to provide full offloading of an extremity and if weakness is severe and bilateral. On the other hand, if one crutch is able to correct biomechanical gait deviations and balance concerns then it would obviously be preferable to keep one hand free. A single under arm ("Axillary") crutch or forearm ("Lofstrand") crutch can substitute for unilateral weakness or restore symmetry to gait when there is hip or sacroiliac pain. This is particularly true when weakness or pain causes the individual to compensate by shifting their center of gravity over the painful or weak leg/hip.

If using a single forearm crutch, it is important to use it correctly – always on the side opposite the problem and always bearing weight at the same time as the weak/"problem" side as demonstrated in this You Tube video:

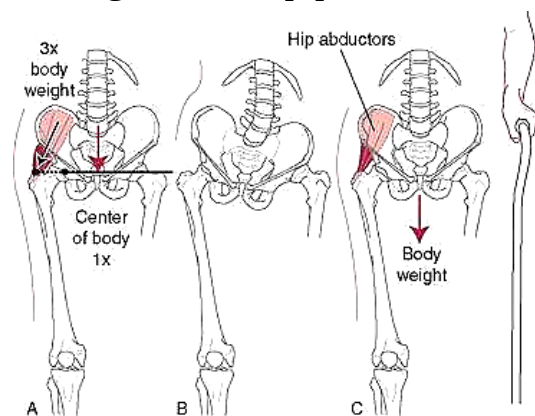
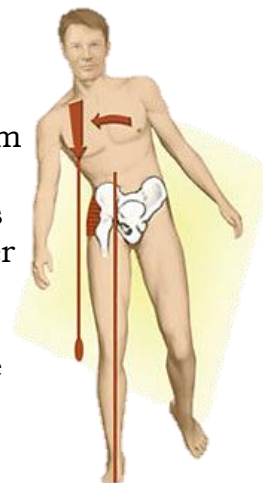
<https://youtu.be/TJMZuuLeOxk>

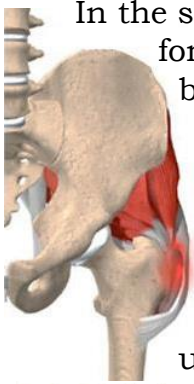
Before fully understanding how a single crutch (or a single cane) can substitute for weak muscles or help a painful hip, it is important to understand the anatomy. The following link is a detailed anatomy video on You Tube that might interest anyone with significant hip problems:

<https://youtu.be/qlCvKEOZtpo> .

For readers who don't have You Tube, it demonstrates an excellent view of the role of hip muscles stabilizing the pelvis – preventing it from dropping on the side where we lift our leg to take a step. In addition, there is a description of how the trochanteric bursa can be inflamed when hip muscles get tight and rub on the greater trochanter of the femur. This is also illustrated in the diagram to the right. With normal anatomic function in "A" the gluteal muscles pictured stabilize the pelvis if the opposite leg is lifted. In "B" there is weakness and/or pain with a drop in the pelvis as the leg is lifted. In "C" a cane substitutes for the weak muscle on the opposite side and prevents the pelvis from dropping.

(Continued . . .)

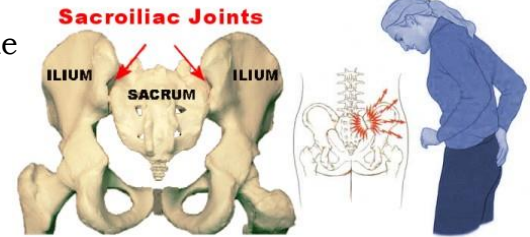




Trochanteric Bursitis

In the same way, a single crutch on the OPPOSITE side of the hip problem, can substitute for weak gluteal muscles, stabilize the pelvis, and alleviate irritation of the trochanteric bursa. By preventing the pelvis from dropping on one side, a single crutch can also prevent back problems caused by excessive pelvis movement. This is particularly true for low back pain caused by sacroiliac dysfunction (arguably the biggest cause of low back pain in the polio population).

For many patients with acute pain, use of a single crutch temporarily can make a dramatic difference. For polio survivors with unilateral weakness or unilateral arthritic problems caused by an asymmetric gait, a single crutch can also be a smart idea.



As with any suggestions you read about, be sure to consult with your health care provider – in this case a Physical Therapist or Physiatrist. Use of a single crutch, if it does NOT improve symmetry of gait can actually lead to long term increased pain and disability. Polio survivors who tap into the gait analysis expertise of their PT or Physiatrist are much more likely to do well long term. At the same time, the polio survivor should be an active part of the decision making. Asking questions such as “Does the single crutch make me more symmetric or less symmetric?”. “Do you see any long term negative consequences of using one crutch instead of two?”, or simply “How does this change my gait?” can initiate an educational interaction whereby the polio survivor can make the optimal decision for their own needs.

Dr. William Demayo, MD  
August, 2016

<http://www.papolionetwork.org/demayos-q--a-clinic.html>