Hip Mobility

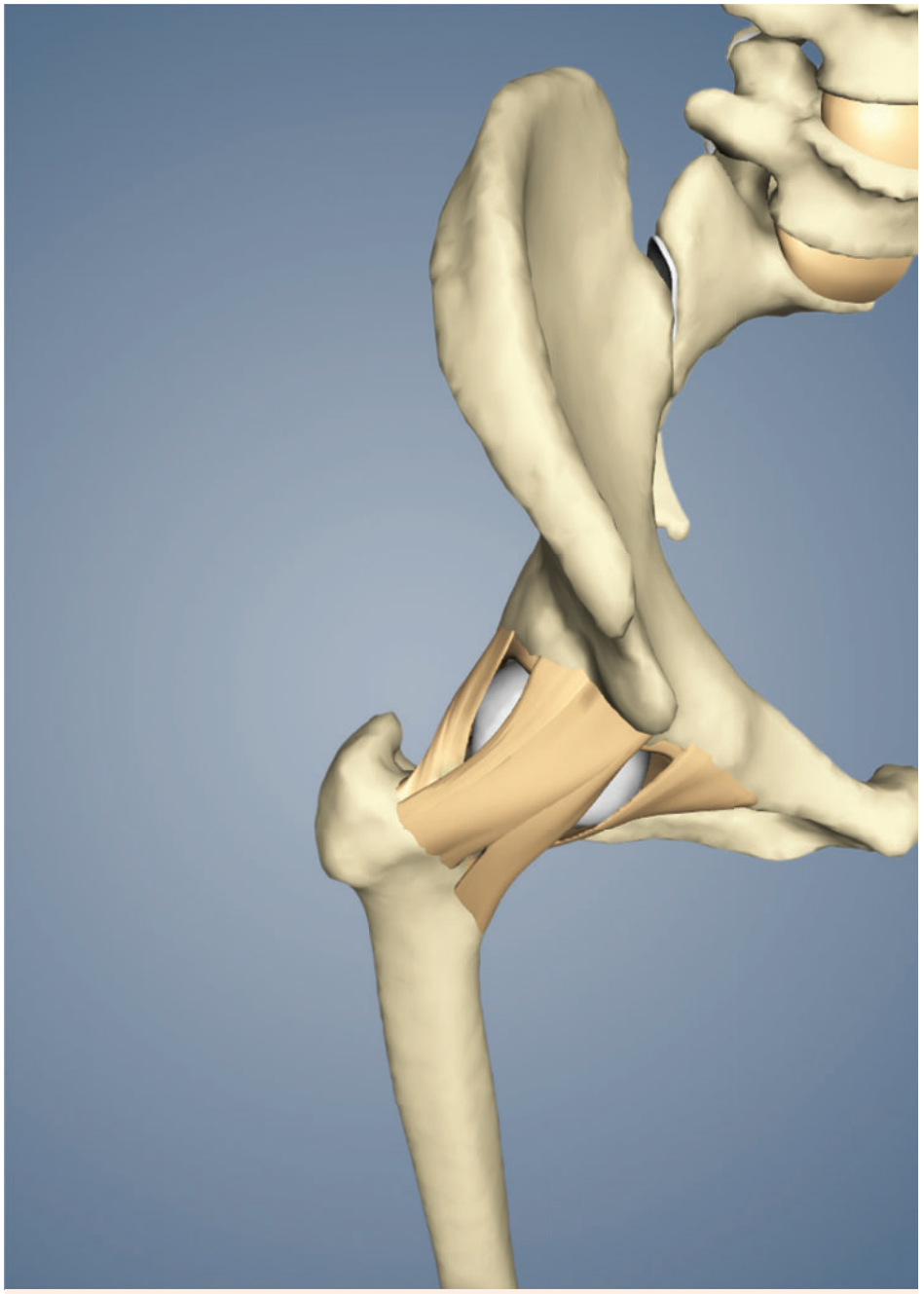


Figure 10.1
The iliofemoral, pubofemoral, and ischiofemoral ligaments limit hip motion.

When I was a student at the Rolf Institute in the 1980s, I heard a story about its founder, Dr. Ida Rolf, which underlined the importance of pelvic mobility in her work. According to the story, Dr. Rolf would regularly quiz her trainees about the aims of each of her ten "hours" or sessions.

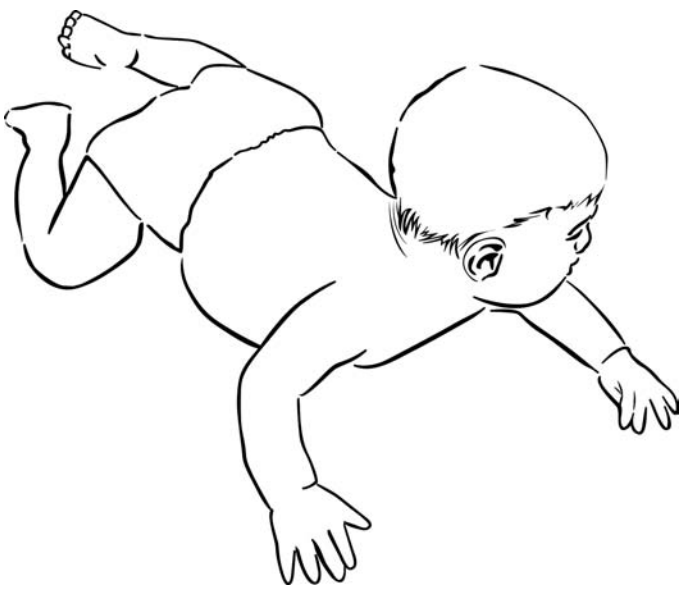
She reportedly asked her classes questions such as, "What is the goal of the fifth hour?" As a demanding teacher, very few answers would satisfy her; but even though each session was different, she reportedly accepted the answer "free the pelvis" as a correct one, no matter which session she would ask about.

While this story probably has an element of folklore to it (since her death in 1979, many "Ida stories" have assumed the status of legend in the structural integration community), it illustrates the key role that pelvic adaptability at the hip joints played in her vision of an integrated body. Dr. Rolf referred to the hips and pelvis as "the joint that determines symmetry." She was not alone in emphasizing the key role of the hips; balanced hip joint mobility is important in fields as diverse as athletics, dance, geriatrics, and back pain management.

I became even more curious about the relationship of the low back to hip-joint mobility when I traveled to Japan to teach and practice manual therapy, a few years after graduating from the Rolf Institute. I noticed challenges in my own hip mobility as I adjusted to the Japanese practice of sitting on floor cushions more often than on chairs. I noticed considerably more hip mobility (especially external rotation) in my Japanese clientele than I had seen in my American and European clients.

My Japanese clients also seemed to have generally flatter spinal curves. Was this also related to their hip mobility? In utero, humans develop with flexed hips and no secondary lumbar curve

Watch Til Luchau demonstrate the Push Broom techniques: http://advanced-trainings.com/v/pa04.html



Figures 10.2/10.3

Infants have more hip flexion as a result of their position in utero.

(Figure 10.2). It is only once they begin to crawl (Figure 10.3) and extend their hips that they develop a lumbar curve. Conventional wisdom maintains that freer hips mean happier backs, and research both in Japan (1) and in the USA (2) generally supports this.

In this chapter, I will describe three techniques that are used to assess and balance hip joint mobility, which can be useful when working not only with hip mobility issues directly, but as a way to ameliorate low back pain and other issues.

Techniques

Push Broom "A" Technique

The "Push Broom" series is an effective way to increase hip joint mobility without undue effort or strain by the practitioner. Using gravity, we will take the hip through three positional techniques that will release all of the structures in the hip joint: from the deep iliofemoral ligaments (Figure 10.1), to the iliopsoas, hamstrings, hip abductors and adductors, rotators, sartorius, quadriceps, and their enveloping fascias.

The term "push broom" refers to the starting grip: hold your prone client's leg at the ankle and knee as if holding the handle of a push broom (Figure 10.4). Swing the knee outwards as you walk the leg up into full hip flexion, bringing the knee as far towards the head as comfortably possible. Rolling the pelvis away from you as you bring the knee up will make it easier to flex the hip past the 90-degree point. With almost all clients, it will be more comfortable if you take the leg past this 90-degree position so that the femur is close to the side of the body, rather than perpendicular to it.

Simply being put into this "baby crawling" or "bullfrog" position often gives a therapeutic stretch to the hip joints; however, while we are here, we can increase hip mobility by

Figure 10.4
The "A" variation of the Push Broom Technique.

Figure 10.5
Once the hip is flexed with the lower leg on the table, use your forearms to release the medial attachments of the gluteal muscles.

releasing the gluteals. While stabilizing your client's leg with your own, use the flat of your forearm to gently lean into the medial attachments of the gluteus maximus just below the iliac crest (Figures 10.5 and 10.6). Tendinous attachments have concentrations of Golgi tendon organs. These respond to sustained pressure, so you will get the best results by waiting with slow, nearly static pressure here, rather than sliding or moving your touch. Use moderate pressure, with a slight vector of pressure towards yourself, in order to ease or nudge the gluteus away from its bony attachments on the ilium.

Gently sustain this pressure until you feel the tissue respond with a subtle softening or easing; then, release your pressure and move to the next segment of gluteal attachments.

Key points: Push Broom Techniques

Indications include:
- Limited hip mobility.
- Balance or gait issues.
- Back, sacroiliac, or sciatic pain.

Purpose
- Restore mobility and refine proprioception at the iliofemoral (hip) joint.

Instructions
- Without causing any pain, gently bring leg into flexed, abducted and rotated positions as described in the text. Use static pressure on muscle attachments.
- Wait in each position for a tissue response to the stretch.
- Repeat with other hip.

For almost all clients, the position is more comfortable when taken past 90 degrees of flexion.

Cautions
- Certain movements may be contraindicated for recent hip replacement patients.

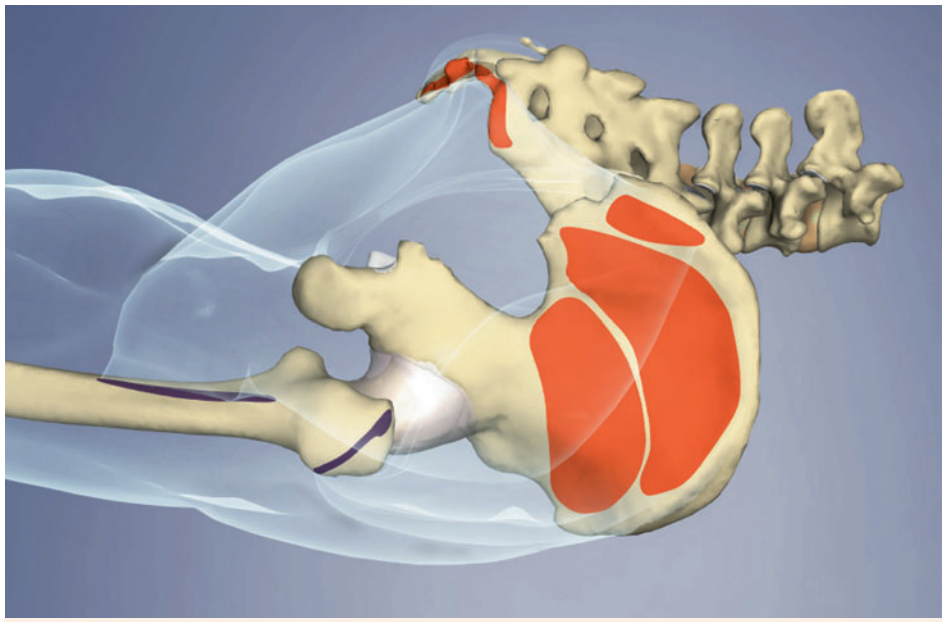


Figure 10.6
The medial attachments of the gluteus muscles.

Figure 10.7
The "B" (external rotation) variation of the Push Broom Technique.

Push Broom "B" (External Rotation)

While still in the leg-up position of the Push Broom "A" technique, drop your client's lower leg off the table (Figure 10.7). Roll the femur into external rotation by lifting the adductors towards you with both hands. This also allows you to prevent any pressure that the edge of the table might otherwise put behind your client's knee. At the same time, use your leg under the table to augment the femoral rotation by gently pressing your client's foot towards the head of the table. Your client should feel no strain on the knee or anywhere else – only a stretch and release around the hip joint (Figure 10.8). Omit the pressure on your client's foot if it produces any discomfort.

Stay comfortable and upright in your own body. Invite your client to breathe easily and relax into the stretch. Sustain this positional technique until you feel a response – softening, easing, or relaxing. Usually this takes at least three to five breaths.

Push Broom "C" (Internal Rotation)

Specific kinds of hip mobility have been correlated with low back health. Internal hip rotation, hip flexion, and hip extension in both sexes, and hamstring flexibility in men, all have a negative correlation with back pain (that is, people with those types of mobility generally have less back pain) (3). The "C" variation of the Push Broom Technique combines several of these important motions: internal femoral rotation, hip flexion, and hamstring stretch.

From the external rotation "B" variation, go right into internal rotation with Push Broom "C". Instead of dropping the lower leg below the level of the table as in "B", rotate the femur so that the lower leg is high. By using the grip and position shown in Figure 10.9, gently take the femur to its soft end-range of internal rotation; hold, and wait for tissue response. Remember to keep the

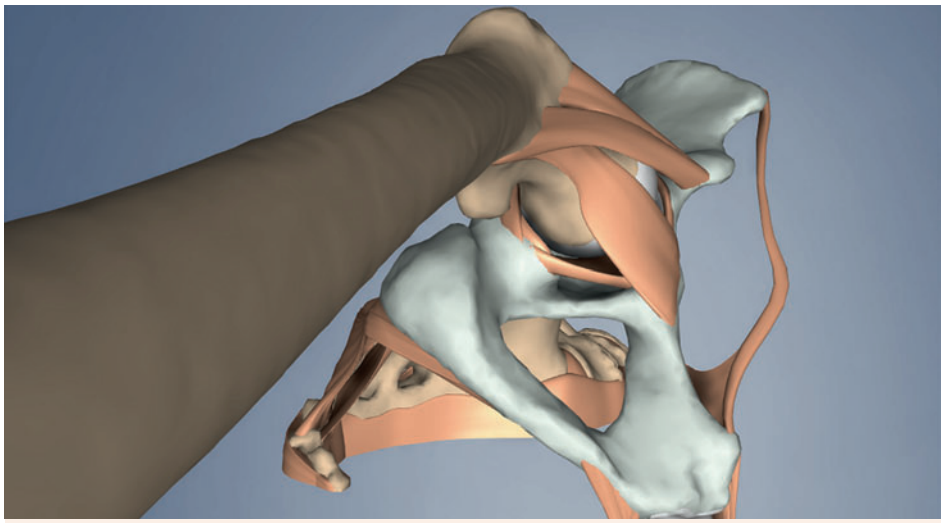


Figure 10.8
Viewing the hip joint from below helps visualize how external rotation can open the anterior hip joint.

Figure 10.9
The "C" variation of the Push Broom Technique (internal rotation).

hip flexed at least 90 degrees (that is, keep the femur perpendicular to the body, or even a little past this position toward the head). As in the "B" variation, be mindful to avoid strain or discomfort on the knee.

Once you have completed these three Push Broom variations on one leg, return the leg to its anatomical position. Clients will often comment that this leg feels significantly longer and freer than the one you have not yet worked on. Repeat these techniques with the other side to balance the left and right sides.

Other considerations

Although we have described these three variations above as hip joint techniques, they also affect the ligamentous adaptability of the pelvic girdle itself, mobilizing the sacroiliac joints by addressing sacrotuberous, sacrospinous, and sacroiliac ligament restrictions, and balancing the torsion and flaring movements of the ilia on the sacrum. This makes them useful in addressing appendicular sciatic pain (Chapter 11), sacrotuberous pain (Chapter 12), sacroiliac pain (Chapter 13), and other conditions of the pelvis.

If your client or patient is unclothed or minimally clothed, you can drape these techniques by simply grasping the leg through the top sheet in variation "A", and move the sheet together with the leg. Alternatively, especially for the "B" and "C" variations, the leg can be out of the drape, with the sheet gathered around the thigh so as to give a sense of security and privacy to the client.

When applying the techniques described here, it is important that they do not cause pain. In addition to soft-tissue restrictions to mobility, there can be bony restrictions as well, such as the shape or orientation of the acetabula or femoral heads. These can cause pain or irritation when pushed to their physiologic limit. Femoral acetabular impingement (FAI) syndrome is a painful restriction of hip movement caused by

Figure 10.10
X-ray of a total hip replacement (total hip arthroplasty)

abnormal contact between the femur and the rim of the acetabulum, probably due to both genetic and usage factors. Although often addressed surgically, techniques that increase mobility are also effective in managing FAI pain –though pushing a stretch too aggressively can aggravate this condition, so use caution at the end ranges of motion, especially if there is discomfort deep in the hip joint itself.

What about hip replacements?

Although the prevention of difficulties is more difficult to measure or study than the difficulties themselves, it is reasonable to assume that maintaining balanced hip mobility can help prevent or ameliorate the joint pain, degeneration, or arthritic conditions that if otherwise unaddressed, can lead to hip replacement or resurfacing.

If your client has already had hip replacement surgery (Figure 10.10), special considerations may apply when using these techniques. Hip replacement surgery involves cutting through tissues and dislocating the joint being replaced, either posteriorly or anteriorly, depending on the type of surgery. This can leave the hip with less support in the direction of the surgical dislocation, at least during recovery.[1]

Different types of hip surgeries have different movement restrictions associated with their recovery period. Surgeons also differ widely in their recommended movement restrictions after surgery. In 2010, during an informal survey of hip surgeons' recommendations to yoga teachers, it was found that a third of responding surgeons did not require any movement restrictions whatsoever after an anterior hip replacement (4). However, the most conservative recommendations say that for six months to one year after surgery, hip replacement patients should avoid:

1 To learn more about the procedures involved in a posterior replacement, I recommend checking out edhead.org's interactive hip surgery simulator at www.edheads.org/activities/hip/. The squeamish need not be concerned – the animated procedures keep it neat and tidy, unlike real posterior hip surgeries, which can appear downright gory and brutal to the uninitiated. Accessed 5/2014.

- Adduction, internal rotation, and hip flexion past 90 degrees for posterior hip replacements
- Abduction, external rotation, and hip extension for anterior replacements.

Given these variables, the best practice for manual therapists is to inquire about any movements that the client's surgeon or rehabilitation therapist recommended avoiding during the recovery period.

Many hip replacement patients continue to experience soft tissue-based movement restrictions long after their surgeries have fully healed. For these older, healed hip replacements (approximately one year or more after surgery), these techniques can be a great help with longer-term recovery and maintenance of mobility. However, given that we are not trying to stretch or alter the artificial materials of the prosthesis itself, go easy on the end-range of any stretching applied to the replaced hip. Think about keeping the tissues around the joint long, easy, and mobile, rather than trying to deeply stretch the artificial joint itself.

Finally, do not hesitate to adapt these techniques for senior or physically challenged clients. By being sensitive and staying in communication about their comfort, you will often be surprised as to how comfortable and effective these releases are, even for those with limited active mobility.

With practice, these techniques will become indispensable parts of your technique toolbox, enabling you to assess and release many hip restrictions within the context of your regular work. Your clients of all ages and activity levels will appreciate this: whether we have lower back pain or not (and 80 percent of people experience back pain at some point in their lives), most of us will benefit from increased hip adaptability, as it makes our sitting, walking, and moving easier, more efficient, and more comfortable.

References

[1] Horikawa, K. et al. (2006) Prevalence of osteoarthritis, osteoporotic vertebral fractures, and spondylolisthesis among the elderly in a Japanese village. *Journal of Orthopaedic Surgery*. 14(1). p. 9–12.

[2] Harris-Hayes, M. et al. (2009) Relationship between the hip and low back pain in athletes who participate in rotation-related sports. *Journal of Sport Rehabilitation*. Feb; 18(1) p. 60–75.

[3] Mellin, G. (1988) Correlations of hip mobility with degree of back pain and lumbar spinal mobility in chronic low-back pain patients. *Spine*. 13(6) p. 668–670.

[4] Jones, N.M. (2010) *Yoga after a Hip Replacement*. http://www.xpandinglight.org/free/yoga-teacher/articles/yoga-therapy/yoga-after-a-hip-replacement.asp. [Accessed 5/2014]

Picture credits

Figures 10.1, 10.6 and 10.8 courtesy Primal Pictures, used by permission.
Figure 10.2 is a public domain image.
Figures 10.3, 10.4, 10.5, 10.7 and 10.9 courtesy Advanced-Trainings.com, used by permission.
Figures 10.10 is a public domain image from the National Institutes of Health.

Study Guide

Hip Mobility

1 **The text cites research that indicates that freer hips correlate with:**

a less knee pain
b less back pain
c less shoulder pain
d less jaw pain

2 **Which types of hip mobility have been correlated with low back health in both men and women?**

a external hip rotation, hip flexion and extension
b internal hip rotation, hip flexion and extension
c internal hip rotation, hip flexion and hip abduction
d external hip rotation, hip flexion and hip adduction

3 **In the Push Broom "A" Technique, the practitioner applies static pressure to the attachments of the gluteus maximus:**

a just above the iliac crest
b just below the iliac crest
c at the ischial tuberosity
d the gluteus maximus attachment to the ITT

4 **The author states that the Golgi tendon organs located in the tendinous attachments respond best to:**

a sliding pressure
b pulsing pressure
c light pressure
d sustained pressure

5 **The text suggests holding the position of the Push Broom "B" Technique:**

a 3–5 minutes
b 3–5 breaths
c 3–5 seconds
d 3–5 times

For Answer Keys, visit www.Advanced-Trainings.com/v1key/