Understanding a Patient’s Surgical Journey
What joint replacement surgery entails and the role massage therapy plays pre- and post-surgery

BY ANNIE MORIEN
Massage therapists serve an important role in helping patient’s transition from pre-surgery to post-surgery rehabilitation. The goal of this article is to understand the most common causes of joint pain, non-surgical and surgical treatment options, and the effects of massage therapy before and after joint surgery. In addition, this article describes current research regarding the various surgical approaches, as well as joint replacement components (including metal-on-metal implants). By understanding patients’ pre-surgical journey of pain and disability, you can help them unlock the post-surgical road to recovery.

Joint Replacement
Our focus will be on the two primary joints involved in ambulatory movement: the hip and knee. The hip joint supports the body, and is important in balance and posture. The knee is the largest joint in the body and supports a significant proportion of body weight. Healthy hip and knee joints allow for smooth, unrestricted movement. Injury to the hip or knee, or change to these joints brought on by disease, often produces pain and disability. Over time, pain and dysfunction can become severe and significantly limiting. When quality of life is compromised and all non-surgical treatments fail to alleviate the pain, an individual may decide to undergo a joint replacement, or arthroplasty, which is Latin for “joint repair.”

Joint replacement entails replacing diseased parts of a joint with implants. Such replacements have performed more than 427,900 hip and 675,300 knee replacement operations in the United States (Steiner, Andrews, Barrett & Weiss, 2012). By 2030, researchers predict the demand for hip and knee replacement surgery will increase by 175 percent and 674 percent, respectively (Kurta, Ong, Lau, Mowat & Halpern, 2007).

Several factors account for the increasing demand for replacement surgery, including an aging “baby boom” population, increasing obesity and the demand for a better quality of life. Indeed, the increased demand for hip and knee replacement surgery has increased health care costs. Health economists estimate that the average hospital cost for the first (primary) hip or knee replacement falls between $18,000 and $19,000 (Steiner et al., 2012). A recent study suggested that total hospital charges could reach $80.2 billion by 2015 (Kim, 2008).

Osteoarthritis
Arthritis is the primary cause of joint pain and disability. Although more than 100 different types of arthritis exist, osteoarthritis (OA) is the most common type of arthritis worldwide, and the leading chronic illness in the United States. An estimated 27 million Americans over age 25 have symptoms of osteoarthritis (Lawrence, Felson, Helmick, Arnold, Choi, Deyo, Gabriel, Hirsch, Hochberg, Hunder, Jordan, Katz, Kremers & Wolfe, 2008). Pain from osteoarthritis is the primary reason people undergo joint replacement surgery. According to the Arthritis Foundation, osteoarthritis most commonly affects hip and knee joints (arthritis.org). One in four people will likely develop hip arthritis in their lifetime (Murphy, Helmick, Schwartz, Remer, Tudor, Koch, Dragomir & Kalbebeck, 2010) and one in two people will likely develop knee arthritis by age 85 (Murphy, Schwartz, Helmick, Remer, Tudor, Koch, Dragomir & Kalbebeck, Luna & Jordan, 2008).

Although osteoarthritis is known as a degenerative joint disease (DJD), the condition is more complex than simply “wearing out” the joint. Osteoarthritic joints undergo chronic, progressive cycles of inflammation and degeneration that affect the joint’s articular cartilage, bone, synovium and ligaments. Over time, the cyclic low-grade inflammation alters these structures, resulting in pain and dysfunction.

Risk Factors
Research identifies several factors for the development of osteoarthritis, including age, gender, joint trauma, obesity, genetics and muscle weakness. First, as people age, their risk of developing osteoarthritis increases until age 80 (at which point their risk levels off) (Blackwarter, Saltzman & Brown, 2004). Second, females face greater risk of developing osteoarthritis, especially after age 50. Third, joint trauma that results from prolonged, intense, high-level activity may increase the risk of developing osteoarthritis. Also, occupational activities, such as high impact loads, heavy lifting and jumping, to name a few, may lead to the development of osteoarthritis.

Obesity, too, is an influential (yet modifiable) osteoarthritis risk factor. Research suggests that two out of every three people who are obese will develop knee osteoarthritis (Lawrence, et al., 2008). A loss of approximately 11 pounds, however, decreases the risk of developing knee osteoarthritis by 50 percent (Felson, Zhang, Anthony, Naimark & Anderson, 1992). In addition to the extra weight exerted on joints, obesity is linked to the production of metabolic mediators involved in osteoarthritis. Research suggests that adipose tissue is a source of pro-inflammatory and catabolic chemicals that may promote changes in cartilage, bone and synovium.

Family and twin studies suggest that certain osteoarthritic traits are inherited, and specific genes are associated with greater risk.

WEAK MUSCLES
Weak knee muscles are associated with OA-related pain and dysfunction.
“Although osteoarthritis is known as a degenerative joint disease, the condition is more complex than simply ‘wearing out’ the joint.

**Diagnosis and Treatment**

Medical providers make a diagnosis of osteoarthritis after careful examination and the evaluation of tests. A thorough medical history and physical exam reveal much about the patient’s condition, and x-rays provide visual evidence of joint deterioration. Unless the diagnosis is in question, MRIs (magnetic resonance imaging) or blood tests are unnecessary.

**Non-surgical treatment**

Treatment for osteoarthritis should start with safe, non-invasive therapies before advancing to surgical treatment. Non-surgical treatment includes conservative measures such as strengthening exercises, activity modification, manual therapy, and the use of a cane or walker. Pharmacological treatment includes NSAIDS (non-steroidal anti-inflammatory drugs) such as over-the-counter Ibuprofen and prescription COX2-inhibitors such as Celebrex. Some of these conditions warrant specific surgeries, such as partial hip replacement, which is beyond the scope of this article.

Two surgical options are available to treat severe osteoarthritis: total hip replacement and hip resurfacing. In total hip replacement surgery, the entire femur head and neck are removed and replaced with an artificial prosthesis. Alternatively, hip resurfacing entails the addition of a metal “surface” to the intact femur head. Resurfacing accounts for approximately 0.2 percent of all hip surgery procedures in the United States (Millennium Research Group, 2006), but is more popular in other countries. For example, resurfacing accounted for about 1 percent of all hip surgeries in both Australia and the United Kingdom, (Australian Orthopaedic Association National Joint Replacement Registry, 2013; Full 10th NJR Annual Report, 2013).

**Total hip replacement**

Replacing a diseased acetabular and femoral articular cartilage requires that the surgeon have access to both structures. Thus, the surgeon cuts through skin, adipose, fascia, and the joint capsule to expose the hip joint. The surgeon then cuts the femur bone at the inferior neck, which allows for dislocation of the patient—not the surgeon—makes the decision on whether to have surgery.

**Surgical treatment—the hip**

Advanced, symptomatic osteoarthritis is responsible for 86 percent of total hip replacement surgeries (American Academy of Orthopaedic Surgeons, 2011). A smaller percentage of people have hip surgery for other reasons, including femur fractures, avascular necrosis, congenital deformities and rheumatoid arthritis. Some of these conditions warrant specific surgeries, such as partial hip replacement, which is beyond the scope of this article.

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The surgeon inserts a metal spike into the femur, and attaches an artificial ball to the spike. The surgeon then reshapes the acetabulum with special tools that realign the joint-related tissues, dislocates the joint, and reshapes (reams) the acetabulum. In contrast to total hip replacement, the surgeon does not remove the head and neck. Rather, the surgeon reshapes the femur head, which is then covered with a metal cap (surface overlay) and secured (cemented). The metal cap and acetabular cup are made of a metal alloy (typically cobalt-chrome). [Note: Future designs are likely to replace the metal cap with ceramic or similarly hard material.]

**Candidates for hip resurfacing**. The best candidates for hip resurfacing are people who are healthy, within normal weight and have solid bones. Healthy patients have strong immune systems that combat infections and stress. Because normal weight patients place less stress on joints (additional weight on the new joint increases the risk that the artificial joint may fail), surgeons often discourage patients with body mass index (BMI; body mass divided by height squared) greater than 35 to lose weight before surgery. Additionally, good candidates should have solid bones, or an abundance of hip and femur bone (called bone stock). The surgeon needs plenty of solid bone in order to implant the artificial components. And finally, total hip replacement candidates can be any age, but risk of the new implant failing increases by 40 percent with each decade after 65 years of age.

**Hip resurfacing**. Similar to total hip replacement, the surgeon cuts through all joint-related tissues, dislocates the joint, and reshapes (reams) the acetabulum. In contrast to total hip replacement, the surgeon does not resurface the femur head and neck. Rather, the surgeon reshapes the femur head, which is then covered with a metal cap (surface overlay) and secured (cemented). The metal cap and acetabular cup are made of a metal alloy (typically cobalt-chrome). [Note: Future designs are likely to replace the metal cap with ceramic or similarly hard material.]

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**Replacement or Resurfacing—Which is Better?**

Both total hip replacement and resurfacing have advantages and disadvantages.

The advantages of total hip replacement:

- Currently, the outcomes for total hip replacement implants are better than resurfacing.
- People over age 60 can receive resurfacing surgery provided they have solid bone stock.
- Although surgeons do not stipulate an age cut-off, the typical resurfacing patient is under age 60.
- A recent study reported that “resurfacing failure rates in women were unacceptably high,” and recommended that “resurfacing procedures are not undertaken in women” (Smith, Dieppe, Howard, Blom; on behalf of the National Joint Registry for England and Wales, 2012). The reason women have higher failure rates is unclear, but some research suggests that a small femoral head (typically implanted in women) may be problematic and bone loss (commonly seen after menopause) can contribute to increased risk of femoral neck fracture. Or, a combination of both of these factors may be at play. In 2012, an FDA advisory panel suggested that young males are the best resurfacing candidates, and surgeons should use large-diameter femoral heads. Although surgeons do not stipulate an age cut-off, the typical resurfacing patient is under age 60. People over age 60 can receive resurfacing surgery provided they have solid bone stock.
Advantages of Total Hip Replacement and Hip Resurfacing

TOTAL HIP REPLACEMENT:
> Better outcomes
> Ability to alter leg length
> Appropriate for certain conditions
> No metal-on-metal issues (in non-metal implants)

HIP RESURFACING:
> Bone preservation
> More natural hip stress load
> Better hip abduction, joint proprioception
> Appropriate for certain conditions
> Low dislocation rate

Adverse Local Reactions Near the Artificial Acetabulum
Metal debris can cause adverse local tissue reactions near the artificial acetabulum.

Surgical Approaches for the Hip
The location of the incision for total hip replacement and resurfacing determines the type of approach the surgeon uses. Although there are multiple approaches, the anterior and posterior approaches are the focus of this article. We’ll also focus some time on the less invasive surgery approach.

Each approach is named according to the location of the incision, with reference to the great trochanter. For example, the posterior approach is named for the greater trochanter.

Posterior Approach. The posterior or traditional approach is the most widely used in the United States. The patient is placed in the prone position or on the side (lateral decubitus). The surgeon makes a 10- to 12-inch, curved incision over the buttocks (posterior to the greater trochanter). The surgeon cuts through the gluteus maximus, external rotator muscles and the posterior joint capsule.

Compared to other approaches, the advantages of the posterior approach are its long and successful history, the large, visual exposure of the acetabulum and femur it provides and the fact that the abductor muscles are not cut.

The disadvantages include the fact that the patient’s gluteus maximus and short external rotator muscles are cut (and may or may not be reattached), increasing the risk of posterior dislocation. The sciatic nerve is at risk of being inadvertently cut, as well, and the incision is long (compared to the anterior approach). Because of the risk of dislocation, the patient must follow strict hip precautions. These include limited hip flexion and internal rotation up to one year after surgery.

Anterior Approach. The patient is placed in the supine position and the surgeon makes a 7- to 10-inch linear (straight) incision anterior to the greater trochanter, separating the vastus lateralis and rectus femoris (or rectus femoris and sartorius). The surgeon then cuts through the anterior joint capsule.

The advantages of the anterior approach are its low dislocation rate, the large, visual exposure of the acetabulum and femur it provides and the fact that the abductor muscles are not cut.
Although the risk of dislocation is low, the surgeon may place the patient on hip precautions, limiting hip hyperextension and excessive external rotation up to one year post-surgery, for example. Note that hyperextension and external rotation are movements used in some yoga poses (i.e., warrior pose), thus caution is warranted.

Less invasive surgery. This approach incorporates small incisions and minimally invasive techniques. Typically, small incision indicates that the incision is about half the length of the conventional (anterior and posterior, for example) approach. Minimally invasive usually indicates use of an innovative technique that produces less tissue trauma. In some medical clinics, “less invasive surgery may include unique pre- and post-operative pathways for anesthesia, nursing care and rehabilitation” (American Association of Hip and Knee Surgeons, accessed 11/01/13).

In hip replacement surgery, one type of less invasive surgery uses a single, small (4- to 6-inch) capsular incision and minimal muscle detachment, and has various names, including mini-anterior, mini-posterior, and mini-anterolateral surgery.

A second, less invasive technique incorporates two small (2- to 4-inch) incisions, one anterior and the other posterior to the greater trochanter. The anterior incision allows the surgeon access to the femur, whereas the posterior incision allows access to the acetabulum. This technique is called the two-incision minimally invasive surgery. Advantages of the less invasive surgery are smaller, cosmetically appealing incisions, and less muscle damage. Also, the phrase “minimal invasive surgery may include significant risk of negative outcomes. During the surgery (and soon after) there is risk of blood clots, fracture, infection, nerve injury, significant blood loss and complications related to anesthesia. Long-term complications include metal sensitivity, leg length differences, nerve palsy, scarring and pain. Complications associated with metal-on-metal hip implants are elevated metal ion levels in the joint, blood and systemic reactions, and possible transport of metal ions across the placenta. There is an increased risk of femoral neck fracture in hip resurfacing.

Some implants fail, necessitating a second hip replacement called a “revision” surgery. With a revision, part or all of the implant components are replaced. In the United States, approximately 50,000 revisions occur each year (Steiner et al., 2012).

Revision surgery is more complex than the primary surgery, typically requiring a larger incision and deliberate removal of the old components and cement. Replacing (grafting) bone from a bone bank might also be necessary.

The reasons for revision surgery are complex and involve multiple factors related to the patient, surgeon and implant. Patient-related factors include young age, highly active, diagnosed with inflammatory disorders (such as avascular necrosis and rheumatoid arthritis); multiple comorbidities (sickle cell anemia and poor bone quality, for example) and prone to infections. Surgeon-related factors range from less experience (fewer surgeries) to incorrect placement of implants, while implant-related factors include instability (implant movement) and bearing surface failure (i.e., the once-smooth surface cracks or becomes rough). This failure results in bone separation (osteolysis) and the implant loosening, two common reasons for revision (Prokopetz, Losina, Bliss, Wright, Baron & Katz, 2012). In general, the longevity or survival of the patient’s implant is longer after primary surgery than after a revision surgery. Most primary total hip replacement implants survive 15 to 20 years. The longevity of the revision surgery is more variable: 35 percent to 100 percent fail within 10 years. A higher failure rate occurs in younger patients (Springer, Fehring, Griffin, Odum & Masonis, 2009) because patients less than 65 years of age tend to be more active, weigh more and live longer than older counterparts. Advancements in the technology of new implant designs, computer-assisted surgeries and more experience with minimally invasive surgery will likely increase the longevity of revision surgery.

Surgical treatment—the knee. Nine-ty-seven percent of total knee replacements are performed because of advanced, symptomatic osteoarthritis (American Academy of Orthopaedic Surgeons, 2011). A small percentage of patients undergo surgery due to ligament injuries, rheumatoid arthritis, dislocation and fractures.

Patients have two surgical options to treat severe osteoarthritis: total and partial knee replacement. In total knee replacement surgery, the distal femur, tibial plateau, and cruciate ligaments are removed and replaced with artificial prostheses. In contrast, only small areas of the knee (e.g., small sections of the tibia, femur or patella) are removed and replaced in partial knee replacement surgery.

Total knee replacement. With total knee replacement, the surgeon cuts through skin, adipose, fascia and the joint capsule; some surgeons invert or pull the patella to the side. Once the articular cartilage is exposed, the surgeon cuts through and removes the ends of the distal femur and proximal tibia bones. In most cases the surgeon removes the anterior and posterior cruciate ligaments, although some total hip components allow retention of ligaments. If the patella contains extensive osteoarthritic damage, the surgeon removes and resurfaces the posterior side (patellar component). The surgeon inserts metal fitted components over the femur (femoral component) and tibia (tibial component), securing each compo-

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**Advantages of Total Knee and Partial Knee Replacement Surgery**

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<th>TOTAL KNEE REPLACEMENT:</th>
<th>PARTIAL KNEE REPLACEMENT:</th>
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<tr>
<td>&gt; Longer prosthesis survival</td>
<td>&gt; Small incision</td>
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<td>&gt; Better adjustment of leg length and knee angle deformities</td>
<td>&gt; Greater bone preservation</td>
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<td>&gt; Successful history</td>
<td>&gt; Less traumatized tissue and blood loss</td>
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<tr>
<td>&gt; Appropriate for certain conditions (torn ACL, extensive osteoarthritis, damage, and rheumatoid arthritis)</td>
<td>&gt; Lower dislocation rate</td>
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<tr>
<td>&gt; Quick recovery</td>
<td>&gt; More natural feel during movement and greater range of motion</td>
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“Less invasive surgery incorporates small incisions and minimally invasive techniques.”

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The implant is secured using special cement or a press-fit fixation, which allows bone ingrowth.

There are two major types of partial knee replacements: unicompartmental and bicompartmental. Unicompartmental surgery replaces one arthritic knee area, such as the medial or lateral joint surfaces. Bicompartmental surgery involves replacing two joint surfaces.

Candidates for partial knee replacement are typically healthy patients with small arthritic areas, usually on one side of the knee and with mild varus or valgus deformity. Similar to total knee replacement, patients should be in good health and good bone stock. Partial knee replacement surgery is not appropriate for patients with extensive osteoarthritis damage, rheumatoid arthritis, infections or compromised immune systems.
Total or Partial Knee Replacement—Which is Better?

Both total and partial knee replacement surgeries have advantages and disadvantages.

The advantages of total knee replacement:

Total knee replacement components remain functional for longer periods than most partial knee components. For example, the nine-year failure rate for total knee replacement surgery ranges from 2.9 percent to 7.2 percent compared with 11.6 percent to 16 percent reported for partial knee replacement surgery (Full 10th XJR Annual Report, 2012).

Surgeons correct leg length and varus/valgus deformities better with total knee replacement surgery. Moreover, surgeons are more familiar and commonly perform, total knee replacement surgeries.

Finally, patients with a torn anterior cruciate ligament, extensive osteoarthritis damage, and rheumatoid arthritis can undergo total knee replacement surgery, whereas many partial knee replacement surgery is not appropriate for these conditions.

The advantages of partial knee replacement:

Surgeons typically use smaller incisions and remove less bone with partial knee replacement surgeries. Because of less tissue disruption, patients experience less blood loss, lower dislocation risk, and recover quicker from surgery. Some patients report a more “natural feeling” knee and greater range-of-motion after receiving partial knee replacement.

Implant material concerns:

Knee replacement components can wear-out, produce debris and create metal sensitivity in some patients. Polyethylene wear is evident by the progressive growth of inflammatory tissue in and around the joint. The implant wear may be dependent on the manufacturer, implant design, skill of the surgeon and activity level of the patient.

Some knee replacement implants have problems with metal debris and corrosion. Savarino and colleagues (2010) measured serum chromium metal ion levels in patients that had stable or unstable components and reported that ion levels were significantly higher in patients with unstable components than in patients with stable components.

Surgical approaches—the knee:

The location of the incision for total and partial knee replacements determines the type of approach the surgeon uses. There are two conventional approaches, medial and lateral, and a third technique called less invasive. Each approach is named according to the location of the incision in reference to the patella:

Medial approach. With the patient in the supine position, the surgeon makes an 8- to 12-inch incision medial to the patella through skin and adipose; with the knee bent and in a second incision is made through the joint capsule. Surgeons either cut or spare the vastus lateralis and rectus femoris muscles.

Lateral approach. With the patient in the supine position, the surgeon makes an 8- to 12-inch incision lateral to the patella, and with the knee bent, a second incision is made through the joint capsule. Surgeons usually either cut or spare the vastus lateralis and rectus femoris muscles.

Less invasive surgery. Similar to hip replacement surgery, “less invasive surgery” incorporates small incisions and minimally invasive techniques. The surgeon typically makes a 4- to 6-inch incision, compared with the conventional 8 to 12 inches.

In addition, the surgeon maintains minimal tissue trauma with small incisions to the extensor muscles and/or the suprapatellar bursa, a technique called mini-midvastus or mini-subvastus. Sparing the extensor muscles is called mini quad-sparing. Unfortunately, the multiple names for similar surgeries cause confusion in the media and research literature.

Complications and Revisions:

Knee replacement surgery carries risk of short and long-term complications. During and after surgery, there is risk of blood clots, fracture, infection, nerve injury, significant blood loss and complications related to anesthesia. Long-term complications are aseptic (no infection) component loosening, wound infection, polyethylene component wear, instability, pain and stiffness, osteolysis (bone loss), and bone-implant misalignment.

Post-Surgery—Hip and Knee

Post-Surgery—Hip and Knee

“Massage and physical therapy play an important role in a patient’s recovery from hip and knee replacement surgery.”

Rehabilitation and Conditioning

Massage and physical therapy play an important role in a patient’s recovery from hip and knee replacement surgery. Hospital-based massage therapists provide individualized therapy that is dependent on the patient’s needs, massage therapist’s training and hospital’s protocol. For example, the massage therapist may address a patient’s pain and edema by applying gentle back, foot or hand massage, or use pressure massage. Hospital protocol may dictate the application of massage once or twice per day until discharge of the patient.

The hospital-based physical therapists provide therapy directed at post-surgical ambulance. For example, the physical therapist encourages the patient to conduct simple “musclevaking” exercises, such as gait training, contractions, ankle circles, and heel slides (hip replacement patients), as well as quadriceps contractions, ankle pumps, and heel slides (knee replacement patients).

In time, the patient learns how to safely move to the edge of the bed, rise from a chair, and walk with crutches or a walker. Before discharge from the hospital, the patient must demonstrate (using crutches or a walker) the ability to walk a short distance, and ascend and descend stairs safely. Some doctors require patients to continue to use a walker or crutches for four weeks (hip replacement) or six to eight weeks (knee replacement) after surgery.

After discharge from the hospital, the patient will either go home or to an inpatient rehabilitation center. Patients that go home presumably have a partner or family member to assist the patient with dressing changes, meals and bathing. Physical therapists may come to the patient’s house several days per week to ensure the patient is moving properly and performing exercises. Patients that go directly to inpatient rehabilitation facilities have nursing staff trained to change wound dressings, assist in bathing and general ambulation, and physical therapists trained to properly strengthen and rehabilitate hips and knees.

Approximately two weeks after hip or knee surgery, patients attend outpatient physical therapy programs. Physical therapy is an essential part of the rehabilitation process. Patients participate in outpatient physical therapy for several weeks to increase strength and range-of-motion. A recent study demonstrated that the combination of physical therapy and (modified)
“Research supports the use of massage therapy as a therapeutic benefit to replacement patients.”

asana yoga benefited total knee replacement patients (Bedekar, Probhu, Shyam, Sanchez & Sancheti, 2012). Specifically, the patients reported “better pain relief, less stiffness and better function.” The authors reported the yoga exercises did not produce any adverse effects.

When designing your patient’s therapy, the patient can resume normal activities, although some surgeons suggest patients practice precautions for approximately six months to one year post-surgery. For example, hip precautions following a posterior approach include avoiding greater than 90-degree hip flexion, crossing legs and inversion of the feet. Knee precautions include an avoidance of deep knee bends, and knee twisting and kneeling.

Current Research—Benefits of Massage Therapy on Surgical Patients

Joint replacement surgery. Research supports the use of massage therapy as a therapeutic benefit to replacement patients. For example, a recent study reported that combined massage and relaxation techniques benefited patients that underwent either total hip or knee replacement surgery (Biyukyilmaz & Attil, 2013). Applications of 10-minute back massages (effleurage and petrissage) and relaxation (rhythmic respiration, muscle relaxation exercises and listening to music) twice daily after surgery resulted in decreased anxiety and pain in patients, compared to patients receiving only conventional care. Likewise, manual lymphatic drainage assists in functional recovery following joint replacement. A recent study examined the effects of manual lymphatic drainage in post-knee replacement surgery patients (Biyukyilmaz, de Oliveira, Gimenes & Moreno, 2013) and in heart failure patients (Leduc, Crasset, Leclu, Baptiste, Foucat, Delahaut, Pastourelet, Wilpagn & Leduc, 2011; and decreased foot volume and improved quality of life in patients with chronic venous disease (Molski, Kruczyński, Molski & Molski, 2013).

Massage therapy may influence the progressive nature of scar tissue too. Martínez Rodríguez and Galán del Río (2013) proposed that specific scar modeling techniques might alter the formation of scar tissue due to myofascial injury. Further, Roh and colleagues (2007) reported improvement in scar-related characteristics, such as skin pigmentation, pliability and vascularity and scar height after daily massage for three months. Moreover, massage produced a significant decrease in depression in patients with burn scars (Roh, et al., 2007).

Massage and other surgeries. The benefits of massage therapy are known to help various post-surgical patients. For example, massage reduced pain and anxiety, and increased a sense of well-being in post-mastectomy patients (Drackley, Degenin, Jakub, Catshall, Thomley, Birdth, Vanderker, Caze, Bujugm, Cha, Bauer & Boughey, 2012) and reduced pain, anxiety and tension in patients following cardiac surgery (Catshall, Wienworth, Engjen, Sundt, Kelly & Bauer, 2010; Brun, Stangnits, Cassanella, Spitzer, Paul, Vardaxis & Rosenfeldt, 2012).

Manual lymphatic drainage decreased swelling and pain following surgical mastectomy (Forchuk, Barruth, Prendergast, Holsay, Bareham, Brimmer, Schulz, Chan & Yammine, 2004), improved lymphedema in post-bariatric surgery patients (Herradiffi, de Oliveira, Gimenes & Moreno, 2013) and in heart failure patients (Leduc, Crasset, Leclu, Baptiste, Foucat, Delahaut, Pastourelet, Wilpagn & Leduc, 2011; and decreased foot volume and improved quality of life in patients with chronic venous disease (Molski, Kruczyński, Molski & Molski, 2013).

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Being Mindful Before and After Surgery

The massage therapist must always work within the scope of practice when dealing with patients. Communicate with the patient’s surgical team (surgeon, physician assistant, physical therapist) to determine pre-surgical contraindications and when to initiate post-surgical massage therapy.

Remember, too, you need to be mindful of the patient’s needs before and after joint surgery, and plan ahead to best address each issue. Prior to surgery, the patient likely has high stress and anxiety, and fluctuating mood. The massage therapist can provide relaxation techniques and a safe environment to promote a sense of well-being.

The pre-surgical patient likely has relentless joint pain and muscle stiffness. Hydrotherapy soothes and warms muscles and joint structures, gentle massage increases heat and circulation to the affected area. Joint mobilization with deep pressure is contraindicated because of increased risk of tissue irritation. Also, avoid contact with the surgical site within 48 hours of surgery.

The patient is probably also taking pain and/or anti-inflammatory medications, so be aware of medication side effects and possible altered sensation.

After surgery, the patient may experience a psychological roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient? The patient is probably also going through a roller coaster of emotions, including relief once the surgery is complete. How does this effect the patient?
EDUCATION

of pain and sensation. Blood thin side effects, and the patient’s level blood clot prevention and infection. It is likely that the patient will take medication for pain, applying massage, stretching, and passive movements. Follow the precautions when possible post-surgical complications, such as symptoms of a blood clot and infection. Also, the post-surgical patient site because of risk of infection and pain. Be aware of post-surgical complications and joint precautions. The surgeon will provide the patient with instructions regarding possible post-surgical complications, such as symptoms of a blood clot and infection. Also, depending on the type of surgery and approach, the surgeon will provide hip or knee precautions. Follow the precautions when applying massage, stretching, passive and active movements. The post-surgical patient will likely take medication for pain, blood clot prevention and infection. Once again, be aware of possible side effects, and the patient’s level of pain and sensation. Blood thinners are meant to prevent clots, but they also increase the risk of skin bruising. Therefore, adjust the pressure of the massage accordingly. If any unexplained swelling or pain arises, immediately refer the patient to the medical provider.

Also, make note of any co-morbidities that may influence your massage, such as diabetes and peripheral neuropathy. Massage can alter blood glucose levels and possibly hasten fatigue, and neuropathy can alter the level of sensation. The massage therapist must adapt both the massage (and awareness) to the patient’s circumstances.

Once the risk of infection has passed, the massage therapist can initiate scar therapy with gentle intent. The massage therapist may perform assisted, then passive movements of the patient’s affected limb. Continue lymphatic drainage and support healing through awareness and touch.

In Summary

Osteoarthritis is a complex condition characterized by the slow, chronic destruction of joints, and it is the primary cause of joint pain and disability. Aging, gender, joint trauma, obesity, genetics, and muscle weakness are risk factors for developing osteoarthritis. Non-surgical treatments to alleviate osteoarthritis pain include strengthening exercises, activity modification, weight loss, manual therapy, acupuncture and the use of a cane or walker. Joint replacement surgery is an option only when the osteoarthritis significantly affects the patient’s quality of life and loss of function interferes with daily activities.

Joint replacement surgery is common worldwide and successfully alleviates symptoms of osteoarthritis. Many factors influence the outcome of replacement surgery, such as patient characteristics (age, activity level and co-morbidities, for example), prosthesis, surgical skill and post-surgery rehabilitation. Surgical options are available for osteoarthritic hips and knees (e.g., total hip replacement, hip resurfacing, total and partial knee replacement). Total hip and total knee replacement surgeries are more common and have a longer survival rate than do resurfacing and partial knee replacement.

Massage therapy plays an important role in the patient’s pre- and post-surgical journey. Massage helps to decrease pain, anxiety, edema, and muscle stiffness, and increase mobility and sense of well-being. Manual lymphatic drainage, specific muscle massage, stretching, and scar tissue massage are important techniques that massage therapists can incorporate into the patient’s rehabilitation plan. Awareness and compassion are imperative. As a part of the health care team, massage therapists provide a valuable service to the patient’s road to recovery.

REFERENCES


REFERENCE


This mtj article serves as the basis for the AMTA Online Course of the same name. To register for the course and receive continuing education hours, please visit amtamassage.org/learn.


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