



## Joint Replacements: The New You

As technology evolves, advances in medical and surgical treatment and rehabilitation follows. A pair of new joints can markedly improve function, alleviate pain and provide better quality of life. Joint replacement or arthroplasty is the medical procedure where a person's full or partial joint surface is replaced by synthetic components.

There are many joints that may be replaced; these include the shoulder, ankle, fingers, thumb CMC, elbow and wrist. However, the most common joint replaced are the hips (THA) and knees (TKA). Surgical attempts to treat the painful hip date back to at least 1826. A number of materials were used including soft tissue, wood and gold foil, which were unsuccessful. Now several materials are used to replace defective joint parts, including titanium, stainless steel, cobalt alloy, oxidized zirconium, silicone and polyethylene. The total number of THA and TKA performed annually has grown dramatically in the past 20 years having approximately 773,000 hip or knee replacements in US (2009), and predicted a 174% increase by 2030.



Both THA and TKA are indicated for those patients with severe disabling pain, as a result of destruction of the joint with failure to respond to conservative therapy (PT, NSAIDs). Common causes of joint destructions include osteoarthritis, rheumatoid arthritis, avascular necrosis, traumatic arthritis, fractures, tumors, and failed previous operation, are amongst others. The only absolute contraindication for joint replacement is active sepsis, both local and systemic.

### REHABILITATION PRE-SURGERY

Patients may be referred to physical therapy prior to undergoing joint replacement procedure. The main goal is to educate the patient. Patient instructions are provided which may include: proper use of assistive device or adaptive equipments, gait training, strengthening, cardiovascular endurance training, education about post-surgery precautions and functional training.

### REHABILITATION POST-SURGERY

The goal of any rehabilitation program following total joint replacement is not only to maximize the patient's functional status with respect to mobility and activities of daily living (ADL)

but also to minimize postoperative complications. Common problems are as follows: dislocation or loosening of the prosthesis and/or joint surfaces, deep venous thrombosis (DVT), pulmonary embolism, joint stiffness secondary to scar tissue adhesions, hypertrophic scarring and pressure sores. Post-operative precautions to prevent dislocation are determined by surgical approach. This is applicable most commonly with hip replacements. An example of these precautions is with posterolateral surgical approach, which is most frequently used for THA. The patient is not allowed to bend the hip towards the trunk beyond 90 deg, adduct the hip beyond midline and internally rotate the leg beyond neutral. However, there are some new approaches surfacing in the past few years. The anterior approach was developed allowing less muscular detachments during surgery and leaving the posterior capsule, hip external rotators and abductor attachment intact. This also allows early weight-bearing as tolerated immediately after surgery and removing the need for dislocation precautions. In some recent surgeries, these precautions are lifted approximately one month post surgery.

In TKAs, precautions can be based on type of prosthetic fixation. Weight bearing is the most commonly controlled factor. Patients may be allowed from either weight bearing as tolerated (WBAT) or non-weight bearing (NWB).

Patients are referred to physical therapy immediately post-surgery in different treatment settings. This may be in the hospital prior to discharge, in a skilled nursing facility, home health services or out-patient setting like Kassimir PT (KPT). Regardless of the setting, treatment will still be according to the set goals during initial evaluation.

### GOALS DURING REHABILITATION:

1. Restore functional to full range of motion both actively and passively
2. Increase strength and muscular endurance
3. Normalize gait pattern with least restrictive assistive device
4. Decrease postoperative pain and swelling
5. Improve proprioception and balance
6. Return to previous level of activity

### SOME INITIAL EXERCISES BENEFICIAL FOR HIP AND KNEE REPLACEMENTS

1. Ankle pumps and circles: beneficial to decrease post-operative swelling and formation of blood clots (DVT). This exercise may be done with leg elevated on pillows or a wedge.

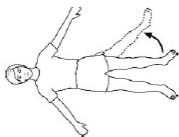


### Alreen "Day" Alfonso, PT

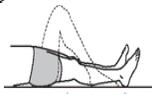
Day joined our staff in June of 2011 as a temporary contract therapist and transitioned to full time permanent staff in December 2011. She received her Bachelor of Science degree in Physical Therapy from the University of Santo Tomas in Manila, Philippines in 2004 and has been practicing PT ever since. She is licensed to practice in Maryland and New York and is an active member of APTA. Day is currently studying to receive her certification for manual therapy. At KPT she acts as an instructor for PT students. Day enjoys being a new mom to her daughter, "Laney," who just turned one.



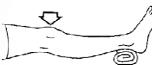
2. Heel slides: Allow ROM for both the knee and the hip



3. Hip abduction: Strengthens gluteus medius/minimus muscles, which plays a major role during gait.

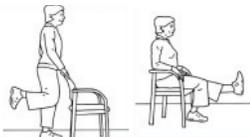


4. Quadriceps setting exercise: helps initiate quadriceps muscle action which is to stabilize the knee and provide better gait mechanics



5. Hamstring curls: works alongside quadriceps muscle in stabilizing the knee

6. Leg extension in sitting: contracts quadriceps muscle in its full ROM



7. Straight leg raising



Both total knee and total hip arthroplasty patients typically achieves 90% of their expected level of functional improvement by the end of the 1st year post-surgery, also reported significant relief of pain with motion and weight bearing. Stiffness may still persist for some patients after recovery. There are evidences showing some weakness on the hip and knee musculature is still present after several months of therapy as compared to healthy non-TKA/THA group of the same age range. As being said, patients need to work hand-in-hand with their PT for a long-term exercise program even after returning to a full level of functional activity and refraining from any high-impact sports or recreational activities, which may decrease the life of the prosthesis. In Conclusion, having THA/TKA or joint replacements in general, can significantly improve the quality of life. It is important to follow-up treatment in a professional PT setting such as Kassimir Physical Therapy. Our PTs can set a skilled rehabilitation protocol after surgery, or even before, in order to facilitate return to normal activities of daily living.

There are several other exercises that may be prescribed for patients who undergo joint replacements according to their impairments and limitations. This will be set by your KPT therapist based on the stage of rehabilitation.

Other PT modalities or techniques may be part of the treatment plan including, but not limited to, the following:

1. Physical agents or modalities (ice/cryotherapy, heat, compression devices, electrical stimulation, biofeedback)
2. Manual therapy (retrograde edema massage, scar and/or soft tissue mobilization, AROM-PROM-stretching, joint mobilization)
3. Wound debridement and scar management
4. Gait training, Neuromuscular re-education and Functional training
5. Aquatic therapy

### KPT News Flash:

We hope everyone is having a great summer! We are excited to announce that Jennifer Bachtel, MPT rejoined our clinical team. We also welcomed a new team of technicians this summer and have been busy with PT interns and student volunteers. Our clinical supervisor Tamara Grunitzky, DPT is returning from her maternity leave in July! Once again, congratulations Tami on your new bundle of joy! Commerce Center renovations are progressing nicely and MICA will be providing an exciting piece of art for everyone to enjoy in our court yard in the near future. KPT sponsored Race for our Kids coming up in September and a tennis event and race for Holabird Sports. As always we thank everyone for their support and continuous patronage.

**KPT** KASSIMIR PHYSICAL THERAPY, P.A.  
"Ultimate Rehab . . . through personal committed care"

#### OFFICE HOURS

Monday	7:30 a.m.	–	8:30 p.m.
Tuesday	8:00 a.m.	–	8:30 p.m.
Wednesday	7:30 a.m.	–	8:30 p.m.
Thursday	8:00 a.m.	–	8:30 p.m.
Friday	7:30 a.m.	–	6:00 p.m.
Saturday	8:00 a.m.	–	12:30 p.m.

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