In this section you will find our recommendations for exercises and everyday activities around your home. We hope that by following our guidelines your healing process will go faster and there will be less chance of injuring your new knee(s).

patients.d-h.org/ortho/knees
Physical Therapy During Your Hospital Stay

Physical Therapy
The physical therapy team will work with you following your joint replacement to:
- improve the range of motion and strength in your knee
- restore your ability to walk and function in the home
- help plan for a safe discharge from the hospital

Physical Therapy Goals
- Your physical therapist will work with you to set goals based on your specific home setup and resources available to you at home.
- Goals will include getting in and out of bed, getting in and out of a chair, walking, knowing your exercises, knowing positioning techniques, and how to get up and down stairs if necessary at home.

Exercises
- The exercises recommended by your physical therapist are important to your overall recovery and functional abilities.
- Beginning the exercises immediately after surgery and doing them daily will lead to a greater range of motion in your new joint and the best possible function during activities.
- Practicing the exercises or at least becoming familiar with them before surgery is helpful for many.
- Practicing “chair push ups” regularly before surgery is helpful. A “chair push up” is pushing with both arms from the armrests to raise yourself up from the seat surface, keeping your feet on the floor.

Walking
- Many patients use a front wheeled walker right after surgery. Using crutches is another option.
- Using a front wheeled walker allows you to walk naturally without the added coordination necessary to use crutches. You may progress to crutches over time with ongoing help from a physical therapist.
- Your physical therapist will instruct you in using crutches if you are safely able to do so.

Stairs
- Follow the rule, “Up with the good, down with the bad,” meaning step up with the non-operative (“good”) leg first, step down with the operative (“bad”) leg first.
- There are various techniques and sequences for negotiating stairs, all which involve doing only one step at a time. Your physical therapist will teach you the safest method depending on your home setup and assistance available to you.

Positioning Techniques
- To help you straighten your knee fully, place a pillow under your heel while you are resting in bed or reclined in a chair. The effects of gravity will gradually allow you to straighten your leg naturally.
- Never rest your leg with a pillow under the knee. This may feel comfortable but will lead to tightness at the back of your knee and limit your ability to straighten it all the way.
- While sitting throughout the day, alternate between sitting upright with your knee bent and reclining with your leg out straight.

Pain Management
- Some pain is normal and expected with performing your exercises. Your physical therapist will try to see you when your pain is best under control.
- Use of the cooling system you may receive, use of ice packs, or elevation of your leg can help to reduce pain and prevent swelling.

In this binder, we have provided you with a physical therapy protocol grid that you can share with the physical therapist you’ll work with after you leave the hospital. Plus, there are instructions about the five exercises you need to do while you’re in the hospital and the exercises you need to do after you are discharged.

Occupational Therapy
Based on your clinical needs following surgery, an occupational therapist may see you to make recommendations for your discharge, including:
- instructing you in the use of adaptive equipment for bathing and dressing
- instructing you to complete household tasks easily and safely
- teaching you safe techniques for moving around the bathroom
## Physical Therapy Protocol: Knee Replacement

### Guidelines:
- Acute hospitalization D/C when medically stable
- SNF for special circumstances
- Continue physical therapy in outpatient or with home health services

### ROM Expectations:
- **Acute Setting:** -15° to 80°
  - Week 1: -10° to 85°
  - Week 2: -5° to 90°
  - Week 3-5: 0°-5° to 100°
  - Week 6-8: 0° to 120°-130°

### Assistive Device Guideline:
- Progress safely and to limit gait deviation
- Walker for weeks 0-5
- Cane for weeks 4-8
- No device as early as week 5

### Modalities:
- Ice: 20 minutes, 3-4x/day
- Electrical stimulation for muscle strengthening

### EXERCISES/THERAPY

<table>
<thead>
<tr>
<th></th>
<th>PHASE I</th>
<th>PHASE II</th>
<th>PHASE III</th>
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<tbody>
<tr>
<td></td>
<td>Acute Care</td>
<td>week 1</td>
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<tr>
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<tr>
<td>Quad set</td>
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<tr>
<td>Ankle pumps</td>
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<td>Short arc quads</td>
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<td>Active sitting knee flexion</td>
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<td>Active sitting Knee extension</td>
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<td>Passive knee flex/extension</td>
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<tr>
<td>*Sitting hamstring stretch</td>
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<td>*Sitting knee extension</td>
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<td>*Gastroc stretch</td>
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<td>SLR: 4 planes</td>
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<tr>
<td>Bridging</td>
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<tr>
<td>Heel slides</td>
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<tr>
<td>No exercise with weight or resistance</td>
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<tr>
<td>Stationary bike/NuStep</td>
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</tbody>
</table>

**Standing (at walker or counter):**

- Heel raises
- Mini squats
- Hamstring curls
- Hip abduction, adduction
- Hip extension, flexion
- Weight shifting
- Scar massage
- Patella mobility

**Closed chain:**

- Heel raises
- Mini squats
- Wall slides/leg press
- Hamstring curls
- Hip abduction, adduction
- Hip extension, flexion
- Step up, down, lateral
- Lunge
- Single limb stance progression
- Aquatic therapy

*All stretches should be held for 30 seconds
Knee Replacement:

Exercise Program for Knee Replacement During Your Hospital Stay

1. **Ankle pumps**
   Lie down or recline and move your foot up and down through full range.

2. **Quadriceps set**
   Lie down or recline with a small towel roll under your ankle. Actively straighten your knee. Try to push the back of your knee toward the bed. Hold for three seconds then relax.

3. **Short arc knee extension**
   Lie down or recline and prop your knee on a rolled pillow or bolster. Actively straighten your knee as much as you can by raising your foot, but not your thigh. Hold for three seconds then return to start position.

4. **Sitting knee bending**
   Sit at the edge of a chair or bed and bend your knee as far as you can by sliding your foot on the floor. Hold for three seconds then return to start position.

5. **Sitting knee straightening**
   Sit on a chair or bed with your thigh supported and actively straighten the knee as much as you can to raise your foot off the floor. Hold for three seconds then return to start position.

This exercise program begins immediately after your surgery and continues daily until your home-based or outpatient physical therapist progresses you to more advanced exercises.

Perform ten repetitions of each exercise, three times each day.
Sitting knee flex
Sit on the edge of a bed or in a chair. Slide your foot back on the floor and bend your knee as far as you can. Hold your foot in that position and then gently and slowly, scoot your body forward. Perform 1 set of 3 repetitions, 3 times a day. Hold the exercise for 30 seconds.

Hamstring stretch
Sit with a straight back and your healing leg in a straight position. Lean forward from your hips, keeping your back straight, until you feel a stretch in the back of your leg. Perform 1 set of 3 repetitions, 3 times a day. Hold the exercise for 30 seconds.

Calf stretch with towel
Sit with a straight back with your healing knee straight. Loop a towel around the ball of your foot. Gently pull on the towel with your arms, keeping the knee straight. Perform 1 set of 3 repetitions, 3 times a day. Hold the exercise for 30 seconds.

Standing calf stretch
Stand facing the wall with your hands on the wall. Step forward with your uninvolved leg, leaning hip toward wall. Keep your healing leg straight with heel on the floor. Perform 1 set of 3 repetitions, 3 times a day. Hold the exercise for 30 seconds.

These are the exercises you should do once your home-based or outpatient physical therapist says you are ready to move on to more advanced exercises.
**Straight leg raise**
Lie on your back and straighten your healing leg and bend your other knee. With the foot of your healing leg in neutral, complete a quadriceps set (see exercise on previous page) and then raise your leg 12” up from the table or bed. 
Perform 1 set of 15-20 repetitions, 3 times a day.
Hold the exercise for 2-3 seconds.

**Hip abduction**
Lie on your side with your healing leg on top. Bend the other leg to a 90 degree angle for support. Keeping your foot in a neutral position, raise your healing leg. 
Perform 1 set of 15-20 repetitions, 3 times a day.
Hold the exercise for 2-3 seconds.

**Kicking hip backward**
Lie on your stomach, keeping your healing leg straight. Lift this leg upward. 
Perform 1 set of 10-15 repetitions, 3 times a day.

**Bridging**
Lie on your back with your knees bent. Lift your buttocks off the bed. Return to the start position. Be sure to maintain a neutral spine – do not curve your back or tip your hips. 
Perform 1 set of 10-15 repetitions, 3 times a day.
Hold the exercise for 30 seconds.

**Heel slides**
Lie on your back with your healing leg straight and bend your other knee. Slowly slide your heel (of the healing leg) up to a bent position, as far as you can go. Then slowly slide your heel back to the starting position. 
Perform 1 set of 15-20 repetitions, 3 times a day.
<table>
<thead>
<tr>
<th>Exercise</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standing heel raises</strong></td>
<td>Standing at your kitchen counter or in front of a sturdy chair for balance. Bend the healing leg backward at the knee. Return to starting position. Perform 1 set of 10-15 repetitions, 3 times a day.</td>
</tr>
<tr>
<td><strong>Leg curls</strong></td>
<td>Standing at your kitchen counter or in front of a sturdy chair for balance. Bend the healing leg backward at the knee. Return to starting position. Perform 1 set of 10-15 repetitions, 3 times a day.</td>
</tr>
<tr>
<td><strong>Standing hip abduction</strong></td>
<td>Standing at your kitchen counter or in front of a sturdy chair for balance. Slowly kick your healing leg out to the side. Perform 1 set of 10-15 repetitions, 3 times a day.</td>
</tr>
<tr>
<td><strong>Standing hip extension</strong></td>
<td>Standing at your kitchen counter or in front of a sturdy chair for balance. Keeping your knee straight, slowly kick your leg back. Do not arch your back. Perform 1 set of 10-15 repetitions, 3 times a day.</td>
</tr>
<tr>
<td><strong>Standing hip flexion</strong></td>
<td>Standing at your kitchen counter or in front of a sturdy chair for balance. March your healing knee up as high as possible, bending your knee. Perform 1 set of 10-15 repetitions, 3 times a day.</td>
</tr>
<tr>
<td><strong>Wall slides</strong></td>
<td>Lean on a wall, feet approximately 12 inches from the wall, shoulder distance apart and about 6-8 inches away from wall. Bend both knees, keeping your back against the wall. Lower yourself slowly to about 45 degrees (1/3 of the way down). Return to standing slowly. Perform 1 set of 10-15 repetitions, 3 times a day.</td>
</tr>
<tr>
<td><strong>Step ups</strong></td>
<td>Stand with the healing leg on a step. Shift your weight over the knee and step up slowly. Step back down leaving your healing leg on the step. Perform 1 set of 10-15 repetitions, 3 times a day.</td>
</tr>
</tbody>
</table>
Lateral step ups
Stand sideways next to a step. Step up with healing leg. Step back down leading with the uninvolved leg. Perform 1 set of 10-15 repetitions, 3 times a day.

Single leg stance
Standing near your kitchen counter or in front of a sturdy chair for balance. Lift your unaffected leg and stand only on your healing leg, keeping your knee straight. Hold your balance for up to 20 seconds. Perform 1 set of 5, 3 times a day.

Step downs
Stand on step with both feet. Step down slowly with the uninvolved leg first. Step back leading with the uninvolved leg. Perform 1 set of 10-15 repetitions, 3 times a day.

Lunges
Stand. Step forward with your healing leg. Bend both your knees while keeping your body upright. Push back up to the starting position. Perform 1 set of 10-15 repetitions, 3 times a day.