Is there a reason why patients stop kneeling after a partial knee replacement (PKR)? If there is, doctors and Physical Therapists haven’t been able to find it. And without the ability to kneel, daily activities can become quite restricted.

In this study, Physical Therapists describe how to regain this skill. According to preoperative tests, many patients were unable to kneel before knee surgery. Even more had to give it up after surgery. The patients gave many different reasons for the inability to kneel. These included placement of the scar, loss of knee (or other joint) motion, pain, and skin numbness.

The therapists decided to try a six weeks postoperative intervention to improve or restore kneeling after PKR. They included education, advice, reassurance, and specific instructions on kneeling.

All patients were seen one time for a follow-up intervention visit approximately six weeks after the PKR operation. Everyone had the Oxford® Partial Knee Replacement from Biomet Orthopedics. This partial knee implant was first approved for use in the United States by the Food and Drug Administration in 2004. Since then, it has become increasingly more popular.

It is designed to repair only the medial side of the knee (side closest to the other knee). About one in four patients with osteoarthritis have limited knee arthritis, known as medial compartment arthritis. A partial knee replacement replaces only one side of the knee joint. A total knee replacement removes all the knee joint surfaces.

Some advantages of the Oxford® partial knee replacement are that it removes much less bone and cartilage than a total knee replacement. The implant is much smaller than a total knee implant. And the knee is less painful afterwards making recovery much faster.

By keeping all of the undamaged parts, the joint may bend and function more naturally compared to a total knee replacement. In theory, kneeling should be possible when it might not be allowed with other types of implants.

Patients were randomly divided into two groups: those who received kneeling education and instruction (group 1) and those who received the routine follow-up instructions (the control group).

Before surgery, everyone completed the Oxford Knee Score (OKS) and had a digital photograph of the knee taken. The Oxford Knee Score is a self-report survey that specifically asks about kneeling. There was no difference in ability to kneel between the two groups before surgery. The photograph provided a record of scar position and numbness (drawn in with markers). Range-of-motion for the knee was recorded to the nearest degree.

Patients in the kneeling group were told they could kneel on the implant without causing it any harm. The therapist showed them how to kneel on a soft mat using arm support to aid in getting up and down. Kneeling was done on both knees. The therapist offered feedback on proper posture and alignment and answered any questions the patients had. Limited knee flexion prevented sitting back fully on the heels.

At the one-year follow-up visit, one Physical Therapist re-evaluated everyone in both groups. The therapist did not know who was in the intervention group or who was in the control group.
Both groups improved in their ability to kneel. The control group that received routine care probably made progress in kneeling because of improved function and relief of pain after surgery. However, the results did show a much greater improvement in kneeling for the intervention group compared to the control group.

This was the first study published on training patients to kneel after a partial knee replacement. Kneeling is important to maintain activity level and overall function. Without the ability to get up and down (or into and out of a kneeling position), older adults have no way to get up off the floor after a fall. Household chores can be more difficult when kneeling is no longer possible. And patients who can't kneel during religious services may choose not to attend, thus limiting their social life and reducing their quality of life.

The authors conclude that education and supervised intervention after a partial knee replacement can make a difference. Practice kneeling (getting down and getting up) under the guidance of a Physical Therapist was very helpful in restoring this valuable skill.

There was no link between scar position, numbness, and range of motion and a change in kneeling ability. Sensitivity of the knee near the kneeling area from nerve injury was unpleasant but didn't affect kneeling ability. It appears that the key factors were to reduce fear and provide direction on how to kneel safely and easily.

Although knee flexion is needed to start kneeling, patient range-of-motion was not significantly different before and after surgery. This finding suggests that a loss of motion is not the reason patients can't or don't kneel after partial knee replacement. And problems in other joints were not a barrier to kneeling. Patient with arthritis in other joints reported being able to kneel using the therapist's suggestions.

Given the results of this study, the authors remind us that only patients with an Oxford PKR were included. The good results need to be tested and reproduced in patients with other types of implants. Further studies may find more than one possible pattern of kneeling that could be integrated into the rehab program.