

University of Massachusetts Medical School

eScholarship@UMMS

---

UMass Center for Clinical and Translational  
Science Research Retreat

2016 UMass Center for Clinical and  
Translational Science Research Retreat

---

May 20th, 12:30 PM


## 6-Month Change in Pain and Function by Pre-Operative Pain and Function among Patients Selected for Total Knee Replacement in the United States

Uyen-Sa D.T. Nguyen  
*University of Massachusetts Medical School*

*Et al.*

Let us know how access to this document benefits you.

Follow this and additional works at: [https://escholarship.umassmed.edu/cts\\_retreat](https://escholarship.umassmed.edu/cts_retreat)

 Part of the [Health Services Administration Commons](#), [Health Services Research Commons](#), [Orthopedics Commons](#), and the [Surgical Procedures, Operative Commons](#)

---

Nguyen UD, Ayers D, Li W, Harrold LR, Franklin PD. (2016). 6-Month Change in Pain and Function by Pre-Operative Pain and Function among Patients Selected for Total Knee Replacement in the United States. UMass Center for Clinical and Translational Science Research Retreat. Retrieved from [https://escholarship.umassmed.edu/cts\\_retreat/2016/posters/61](https://escholarship.umassmed.edu/cts_retreat/2016/posters/61)

Creative Commons License



This work is licensed under a [Creative Commons Attribution-NonCommercial-Share Alike 3.0 License](#). This material is brought to you by eScholarship@UMMS. It has been accepted for inclusion in UMass Center for Clinical and Translational Science Research Retreat by an authorized administrator of eScholarship@UMMS. For more information, please contact [Lisa.Palmer@umassmed.edu](mailto:Lisa.Palmer@umassmed.edu).

6-Month Change in Pain and Function by Pre-Operative Pain and Function among Patients Selected for Total Knee Replacement in the United States

**Uyen-Sa D. T. Nguyen<sup>1</sup>, David C. Ayers, Wenjun Li, Leslie Harrold, Patricia D. Franklin**  
University of Massachusetts Medical School  
Department of Orthopedics and Physical Rehabilitation  
Worcester, MA 01655

**Background/Purpose:** The increase in total knee replacements (TKRs) between 1979 and 2006 is staggering. Debate is growing regarding the appropriate utilization of TKRs. We examined pain, function, quality of life (QOL), and satisfaction at 6-month post-surgery by pain and function at time of surgery.

**Methods:** Data came from the nationally representative FORCE-TJR cohort of patients from 150 surgeons. Participants had primary, unilateral TKRs due to osteoarthritis between 2011 and 2014. Their knee pain (KOOS), physical functions (SF36), and QOL were measured at pre- and 6 months post-surgery. We classified patients as having high or low pre-operative pain (KOOS Pain <70 vs. ≥70), low or high pre-operative physical function (SF-36 PCS <40 vs. ≥40), and grouped as: 1) Low pain-High function (LP-HF), 2) Low pain-Low function (LP-LF), 3) High pain-High function (HP-HF), and 4) High pain-Low function (HP-LF). We compared pre- and post-operative changes in pain and function scores among the four groups.

**Results:** Of 4,563 participants, 5% had pre-operative LP-HF and 75% HP-LF. By 6-month post-surgery, 85% of LP-HF patients reported no change and 4% reported worse symptoms; the HP-LF group had 18% no change and 52% with large improvement. For function in the LP-HF group, mean 6-month change (SD) was 2.6 (7.8), with post-operative mean of 50.0 (7.4). Mean change for the HP-LF group was 11.9 (9.0), with post-operative mean of 42.0 (9.5). For pain score in the LP-HF group, mean 6-month change was 8.3 (14.6), with post-operative mean (SD) of 88.9 (13.0). The HP-LF group had average improvement of 37.2 (19.7), and post-operative mean of 79.9 (17.3). QOL was better among the LP-HF than HP-LF groups; satisfaction was similar.

**Conclusion:** The majority of patients had appropriate TKR utilization and achieved large improvement in pain and function. Patients with pre-operative LP-HF achieved the smaller mean change, but better absolute outcomes.

**Contact:**

[Uyensa.Nguyen@umassmed.edu](mailto:Uyensa.Nguyen@umassmed.edu); x61661