ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

12th Biennial ISAKOS Congress • May 12-16, 2019 • Cancun, Mexico

Paper #202

Feedback from Activity Trackers Improve Daily Step Count After Knee and Hip Arthroplasty: A Randomized Controlled Trial

Justin P. Roe, FRACS, A/Prof., AUSTRALIA
Neill Van Der Walt, MD, AUSTRALIA
Lucy J. Salmon, PhD, AUSTRALIA
Benjamin Gooden, MBBS, FRACS, PhD, AUSTRALIA
Matt Lyons, FRACS, AUSTRALIA
Michael O'Sullivan, MBBS FRACS, AUSTRALIA
Kaka Martina, RN, AUSTRALIA
Leo A. Pinczewski, MBBS, FRACS, FAOA, AUSTRALIA

North Sydney Orthopaedic and Sports Medicine Centre
Sydney, NSW, AUSTRALIA

Summary:
Subjects who received feedback from a commercial activity tracker with a daily step goal had significantly higher activity levels after hip and knee arthroplasty over 6 weeks and 6 months, compared to subjects who did not receive feedback in a randomized controlled trial.

Abstract:

Background

Commercial wrist worn activity monitors have the potential to accurately assess activity levels, and are being increasingly adopted in the general population. The aim of this study was to determine if feedback from a commercial activity monitor improves activity levels over the first 6 weeks after total hip (THA) or knee arthroplasty (TKA).

Methods

163 consecutive subjects undergoing primary TKA or THA were randomized into 2 groups. Subjects received an activity tracker with the step display obscured 2 weeks prior to surgery and completed patient reported outcome measures (PROMS). On day 1 after surgery participants were randomized to either the “Feedback Group” (FB) or the “Non Feedback Group” (NFB). The FB group were able to view their daily step count, and were given a daily step goal. Participants in the NFB group wore the device with the display obscured for 2 weeks after surgery, after which time they were also able to see their daily step count, but did not receive a formal step goal. The mean daily steps at 1, 2, 6 weeks, and 6 months were monitored. At 6 months after surgery subjects repeated PROMS and daily step count collection.

Results

Of the 163 subjects, 95 underwent THA and 68 underwent TKA. FB subjects had a significantly higher ($p<0.03$) mean daily step count by 43% in week 1, 33% in week 2, 21% in week 6, and 17% at 6 months, compared to NFB. FB subjects were 1.7 more likely to achieve a mean 7,000 steps per day than NFB subjects at 6 weeks after surgery ($p=0.02$). There was no significant difference between the groups in PROMS at 6 months. 91% of FB and 83% of NFB reported they were satisfied with the results of the surgery ($p=0.08$). At 6 months after surgery 70% of subjects had a greater mean daily step count compared to their preoperative level.

Paper #202

Discussion And Conclusion

Subjects who received feedback from a commercial activity tracker with a daily step goal had significantly higher activity levels after hip and knee arthroplasty over 6 weeks and 6 months, compared to subjects who did not receive feedback in a randomized controlled trial. Commercial activity trackers may be a useful and effective adjunct after arthroplasty.