

iNCREDIWEAR[®]

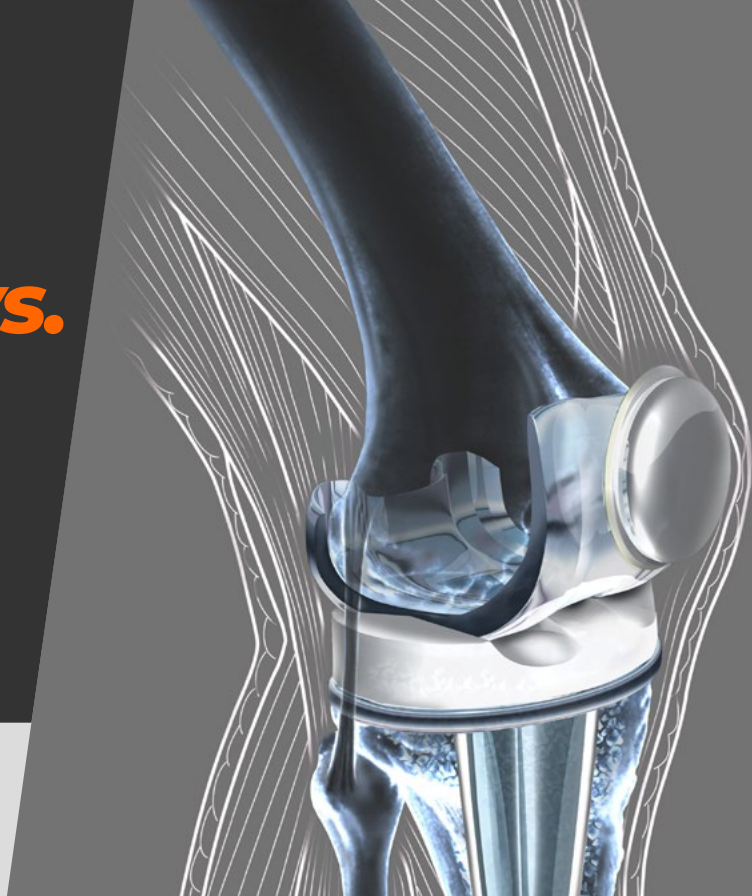
Less Swelling vs. Compression Following Total Knee Replacement

Background

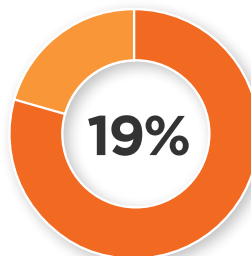
Compression stockings are routinely prescribed after total knee arthroplasty (TKA). Non-compressive sleeves embedded with semiconductor elements (Incrediwear) are designed to enhance blood flow. The objective of this investigation is to compare compression stockings and Incrediwear on post-TKA measures.

Methods

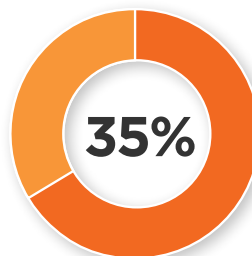
In this single-center prospective clinical study, patients undergoing TKA were assigned to either the compression stocking (control) or Incrediwear (experimental) group. Subjects were evaluated preoperatively and postoperative at 3 weeks for pain, knee effusion, knee range of motion (ROM), thigh and calf circumferences.



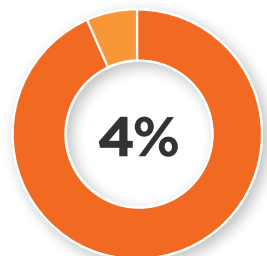
TOTAL KNEE ARTHROPLASTY STUDY



LESS
Swelling with
Incrediwear



MORE
Swelling with
TED Hose

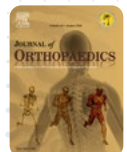


GREATER
R.O.M. with
Incrediwear

Key Findings

- At Day 21 post-op, subjects who received Incrediwear had 19% LESS swelling
- At Day 21 post-op, subjects who received TED Hose (compression, standard of care) had 35% INCREASED swelling
- Subjects who received Incrediwear had less pain and had 4% better Range of Motion compared to the standard of care (compression) group.

Non-Compressive Sleeves vs. Compression Stocking
After Total Knee Arthroplasty: A Prospective Pilot Study
March 2024 Journal of Orthopaedics



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24 / 7 WEARABLE THERAPY



Results:

Incrediwear subjects had slightly higher preoperative effusion than controls (mean effusion 1.38 vs. 1.16, $p = .28$); however, by week 3, Incrediwear subjects had lower levels of effusion than controls (1.12 vs. 1.56, $p = .015$).

At week 3, when compared to pre-op, Incrediwear subjects experienced a 19% decrease in effusion while controls experienced a 35% increase in effusion ($p = .003$).

Preoperatively, there were no differences observed between Incrediwear subjects and controls flexion ROM (mean ROM 117 vs. 116, $p = .67$); however, by week 3, Incrediwear subjects had greater flexion ROM than controls (113 vs. 108, $p = .02$).

Incrediwear subjects experienced only a 3% decrease in flexion ROM while controls experienced a 7% decrease in ROM ($p = .07$).

Incrediwear subjects reported higher preoperative pain than controls (mean pain 4.2 vs. 3.2, $p = .051$); however, by week 3, there was no difference observed between these groups (2.9 vs. 3.0, $p = .440$).

Credit authorship contribution statement

T. Elaine Justice: Funding acquisition, Writing, Investigation, Data curation, Validation, Formal analysis. Paul B. Jacob: Conceptualization, Methodology, Project administration, Investigation, Supervision, Visualization.



Discussion:

Non-compressive sleeves embedded with semiconductor elements (Incrediwear) appeared to reduce effusion and improve knee flexion better than traditional compression stockings 3 weeks after total knee arthroplasty.