

# Edema and its impact on functional mobility

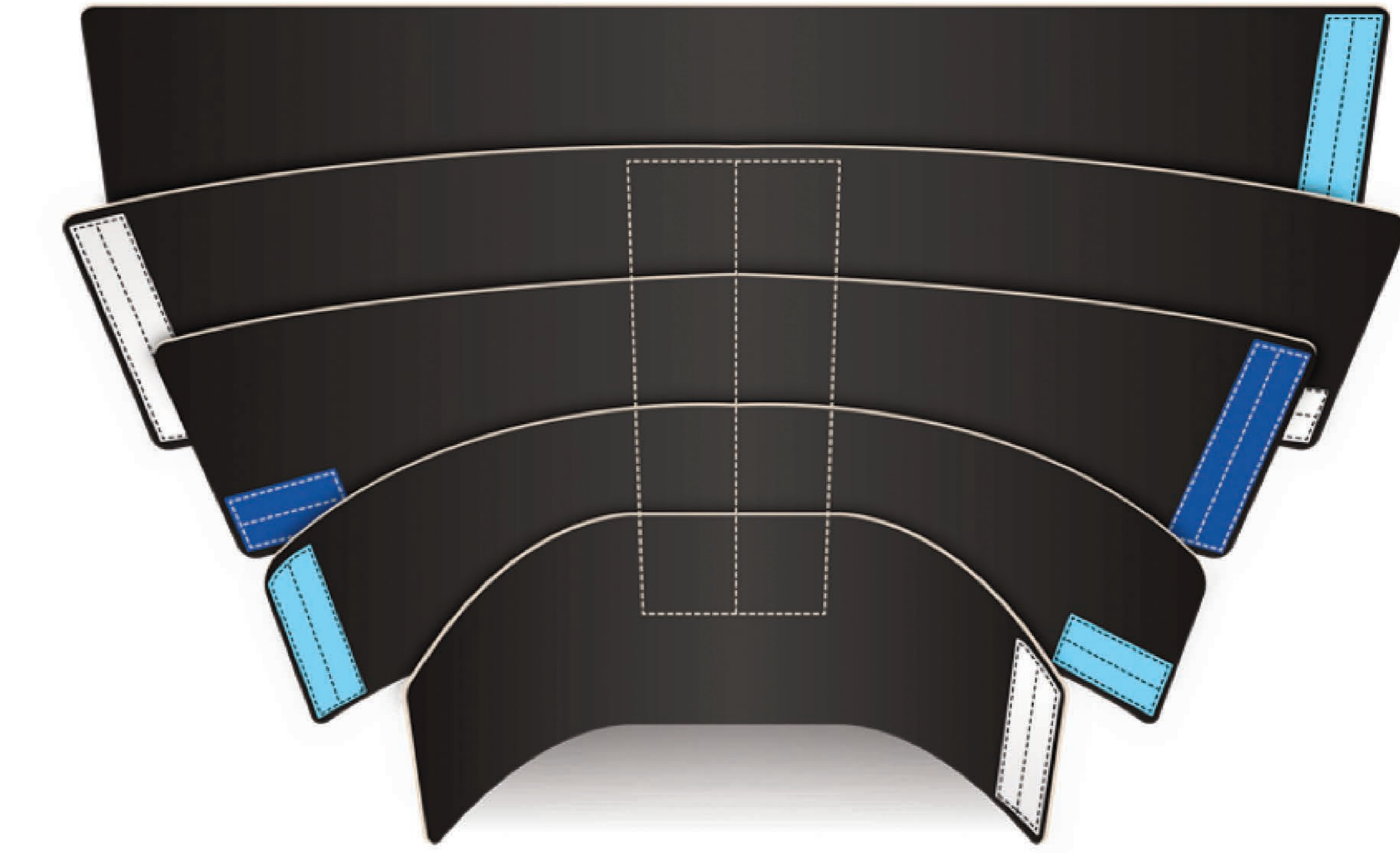
Suzie Ehmann DPT CWS CLT-LANA  
CHS Stanly  
Albemarle, NC USA



Carolinus HealthCare System

## Aim

- Compression is the gold standard for treatment of swelling and venous leg ulcers
- There is little evidence in the literature on the **impact of compression and reduced edema with compression** on ankle range of motion (ROM) and overall functional level
- This case series demonstrates the impact of effective edema management using an adjustable Velcro® compression wrap\* on ankle ROM and functional level



\*ReadyWrap™, Lohmann and Rauscher, Germany

## Method

3 ambulatory residents from a local nursing home presenting with lower extremity (LE) edema were fitted with the adjustable Velcro® compression wrap\* for the leg and foot.

- The staff were trained with use/care of bandage alternatives, written instructions were issued
- The device\* was worn during waking hours and removed at night

### Outcome measures monitored:

- Change in volume
- Range of motion of the ankle
- Functional performance on basic Timed Up and Go (TUG) test

Also, included two residents who were Non-ambulatory but struggled with LE edema

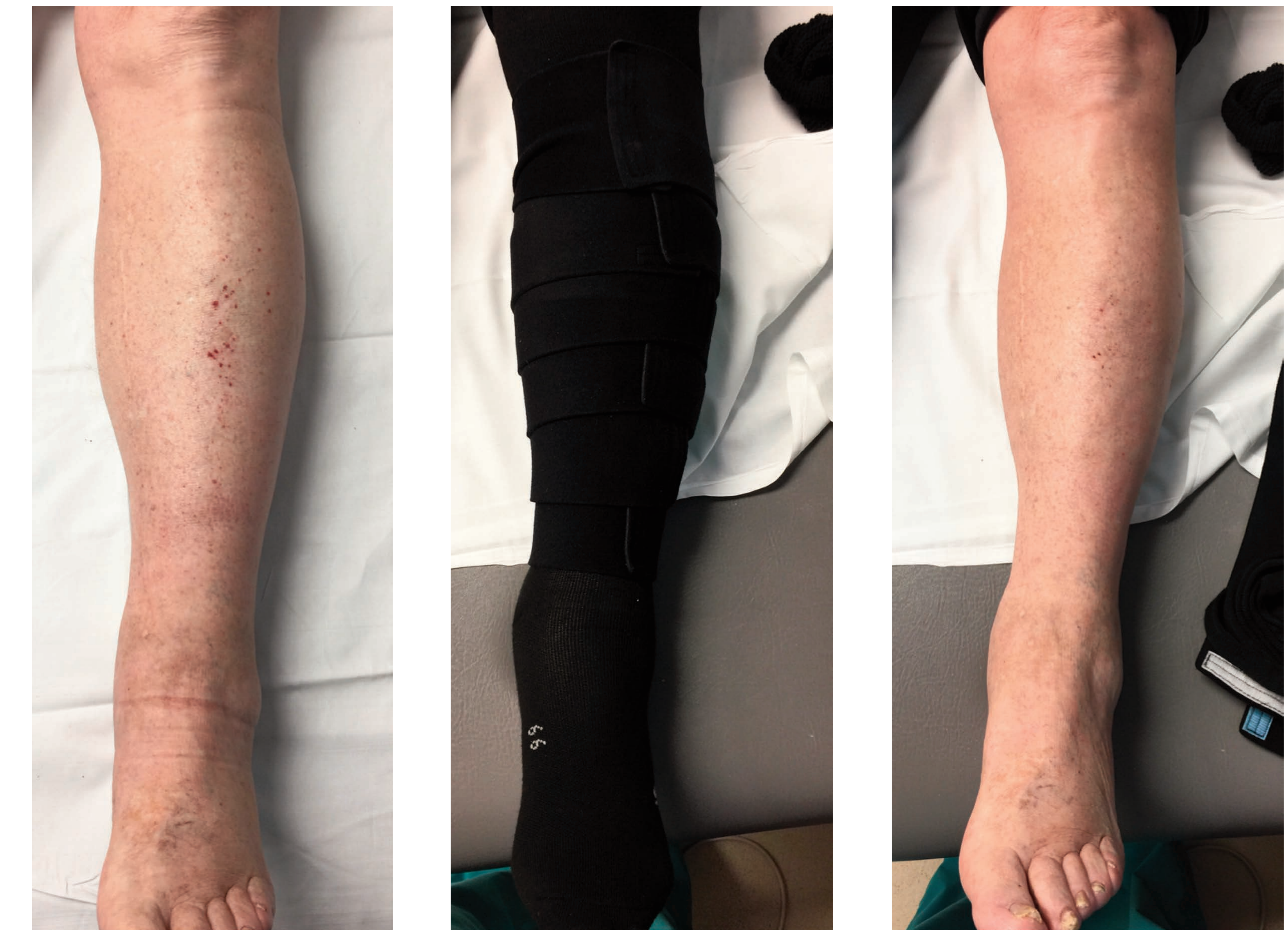


Photo before

With the wrap\* in place as applied by staff

Post one week

Previously, although there was not an obvious excessive amount of swelling, the patient had complained of leg heaviness and difficulty with the shoe fit.

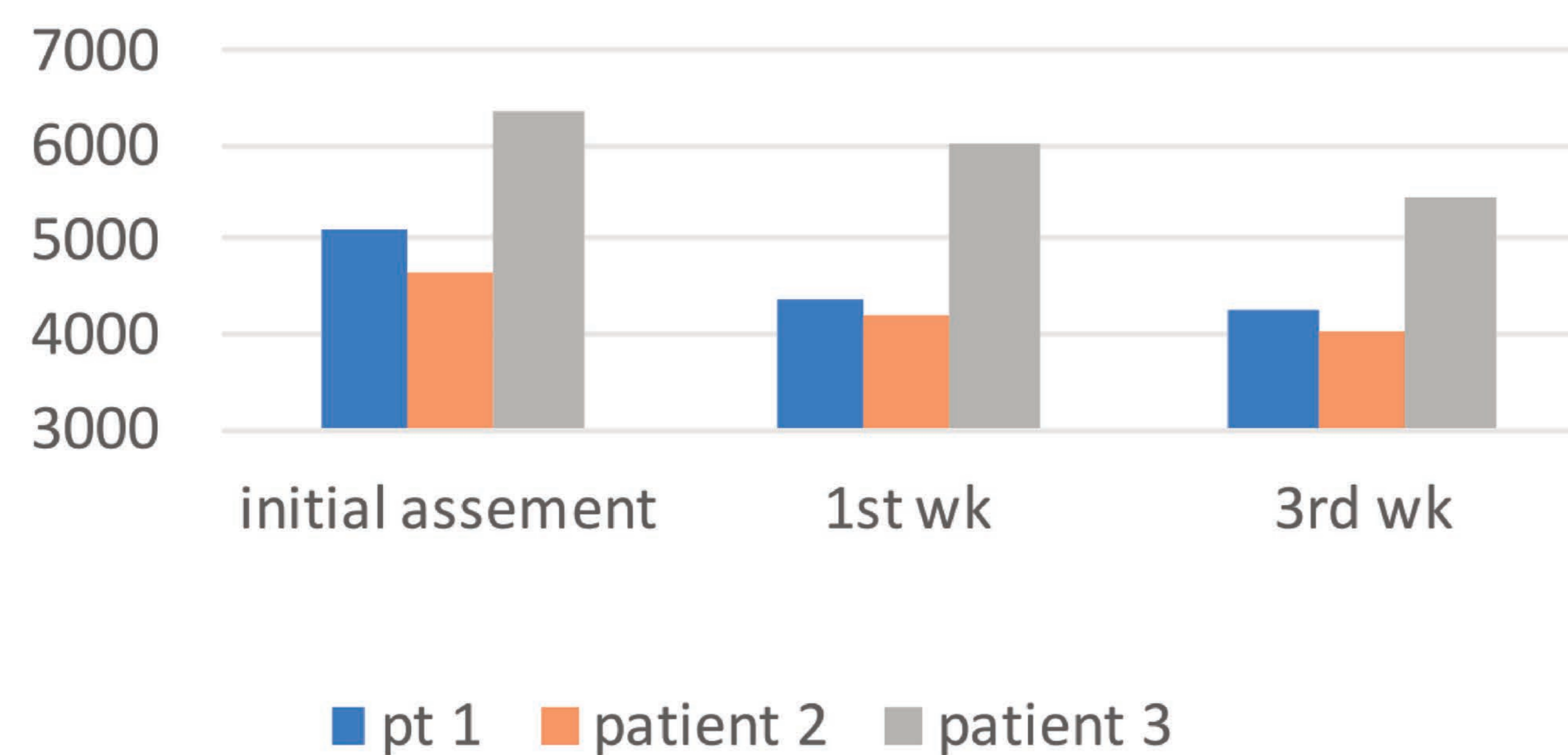
One week later there is an improvement.

\*ReadyWrap™, Lohmann and Rauscher, Germany

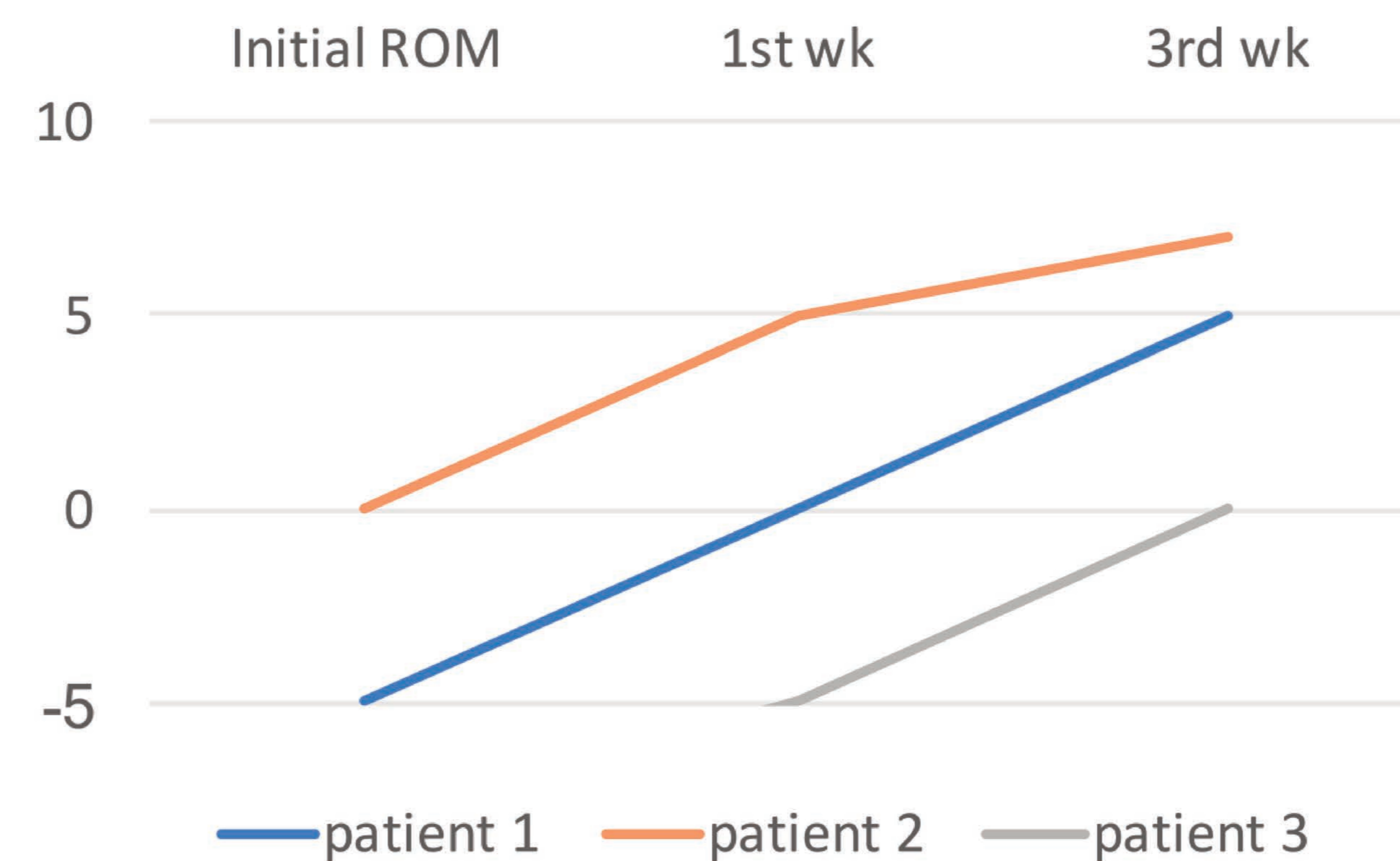
# Results

- The residents were able to wear their own shoes with the Velcro® Adjustable compression wraps\*
- Staff demonstrated the ability to don the wraps\* with minimal instruction
- Over a 3 week period the average outcome change observed:
  - Volume reduced 15%
  - Ankle ROM increased 5%
  - TUG score reduced 4.6sec
- Even non-ambulatory patients demonstrated increased 'functional' level by being able to sit at a table with their legs in a dependent position without swelling

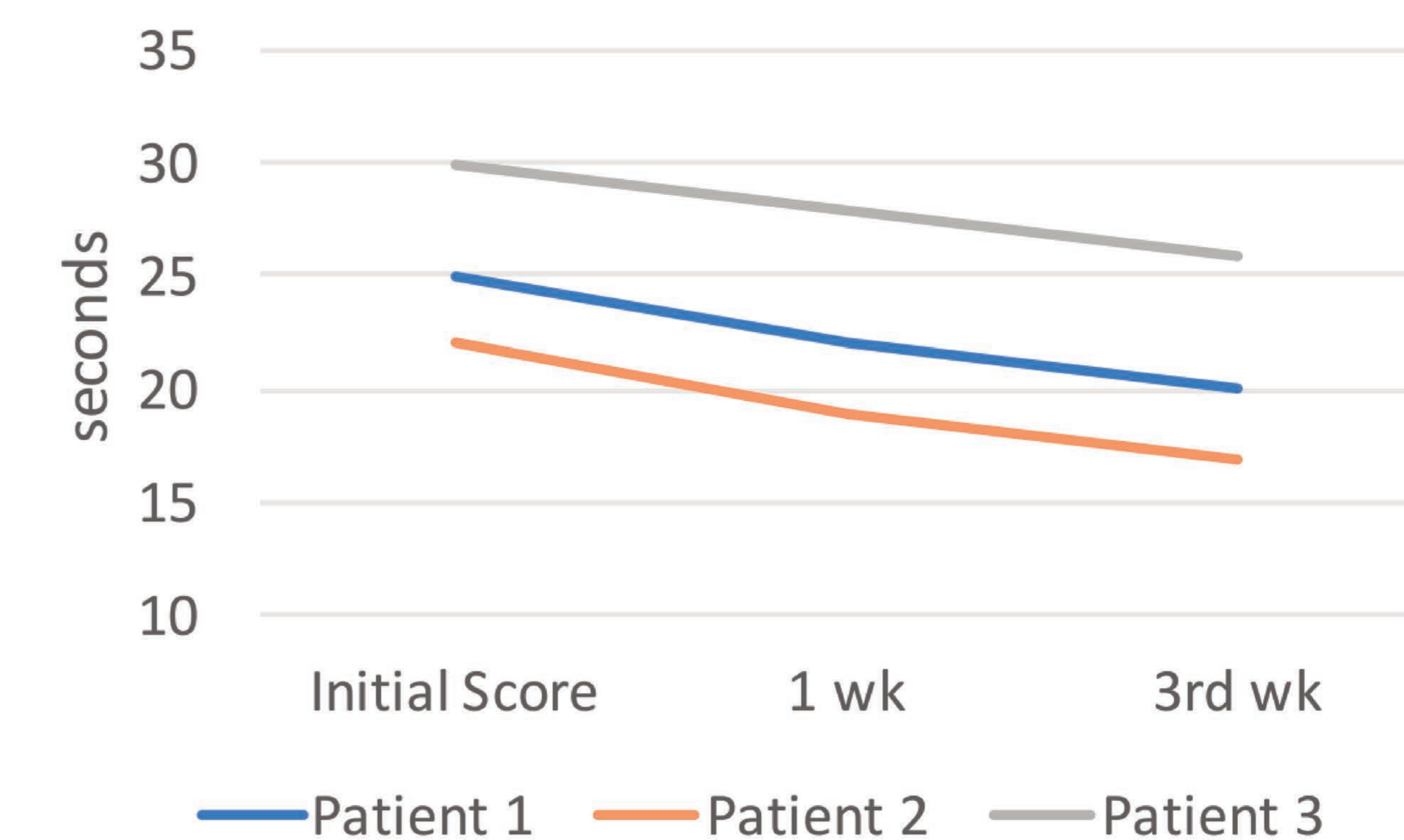
Left LE Circumferential Volume



Left Ankle ROM



Timed up and Go (TUG) Test



\*ReadyWrap™, Lohmann and Rauscher, Germany

## Conclusion

- Edema reduction had a positive impact on functional mobility and ROM even for those residents who were non-ambulatory
- Management of edema may have an impact on the risk of falls by managing swelling prophylactically
- Use of adjustable Velcro® compression wrap\* should be investigated regarding impact on QOL in non-ambulatory patients – as seen in this small case series, use of Velcro® adjustable wrap\* even in a non-ambulatory population was beneficial beyond the edema management perspective
- Additional study is warranted



Picture A

Staff used an elevating leg rest in attempts to control swelling (Picture A) – this limited the patient's ability to sit a dining table with other residents. With the Velcro® adjustable wrap\*, the resident was able to sit upright. (Picture B)



Picture B

Use of Velcro® adjustable wrap\* affords good edema management while allowing natural positioning of limbs.

Residents able to engage in activities of daily living.

