Effect of motivational interviewing on adherence to wearing orthopedic shoes:

a multicentre cluster-randomized controlled trial

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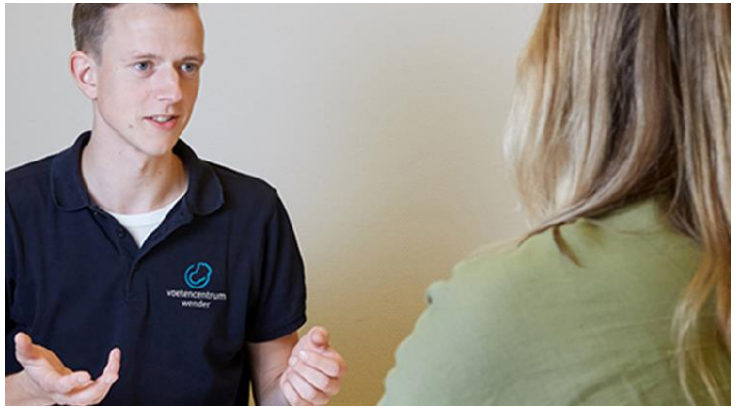
Problem

Adherence to orthopedic shoes is rather low, but to prevent re-ulcerations protective footwear is essential. *(Bus et al., 2013; Bus et al., 2016; Waaijman et al., 2013)*

higher patient satisfaction with the communication with their healthcare provider was associated with increased long-term use of orthopedic shoes *(Van Netten et al., 2010)*

Training podiatrists in Motivational Interviewing (MI) has potential. Podiatrist were able to apply MI at a solid beginner level while untrained podiatrists did not reach this level
(Kaczmarek et al., 2021, Jongebloed-Westra et al, 2022)



Keukenkamp et al. (2018) presented very good one-week-effect of MI for wearing shoes at home (49% to 84%). Unfortunately, the effects were reduced to baseline level after 3 months (40%).

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Goal

Evaluate the effectiveness of MI performed by a MI-trained podiatrist,
in improving adherence to wearing orthopedic shoes in comparison to usual care.

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Method

Participants

Inclusion	Diabetes type 1 or 2 ≥18 years IWGDF 2019 Risk Categories 1-3 Receiving orthopedic shoes
Exclusion	Current foot ulcer *(As a result of which no OSA could be worn at the time of inclusion)* Active Charcot's neuro-arthropathy Foot infection Unable to walk Unable to read or understand study

Research protocol *(Jongebloed-Westra et al., 2021)*

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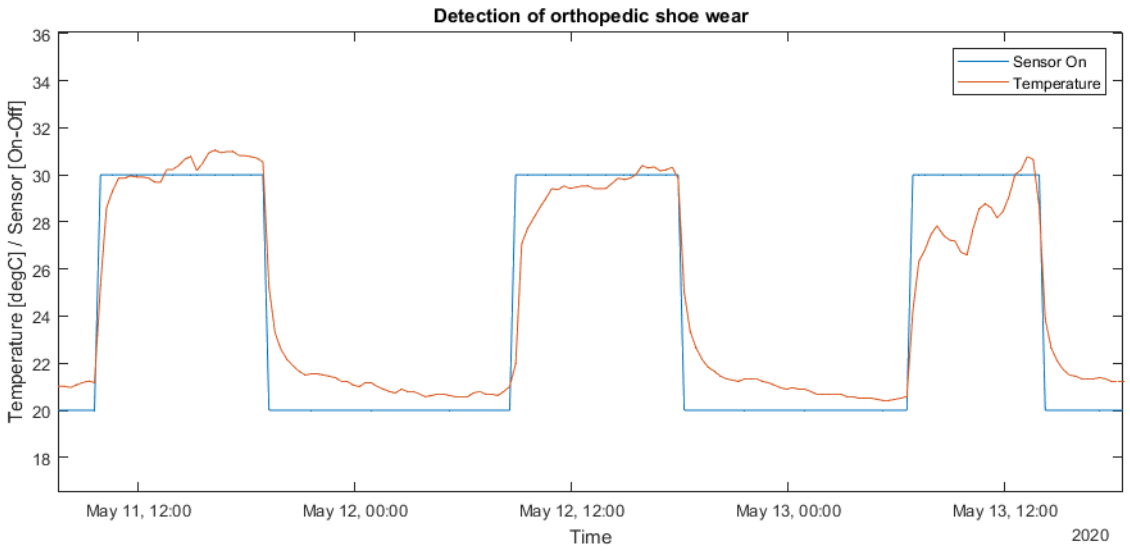
Method

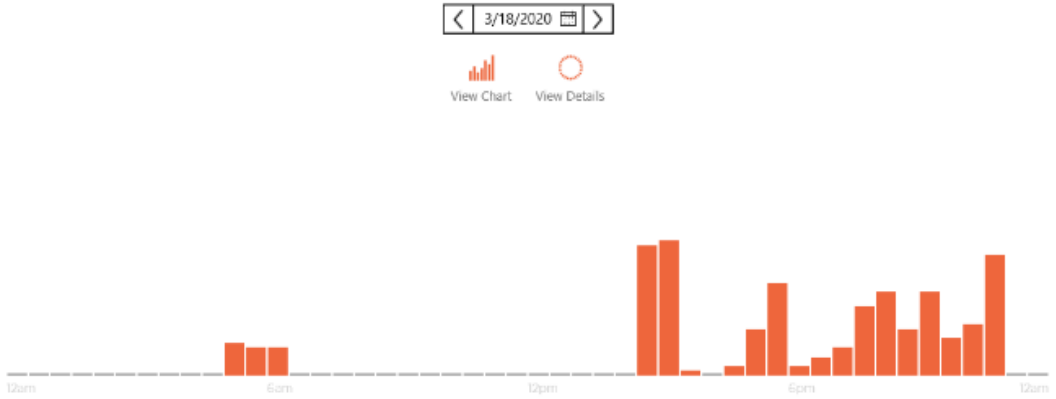
Instrumentation

Orthotimer temperature sensor



Groningen algorithm - version 2 (GitHub; C.M. Hulshof, S.H. Exterkate, 2022)

Misfit Shine 2™



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Method

Definition

$$\textbf{Adherence*} = \frac{\Sigma\ steps\ wearing\ orthopedic\ shoes}{\Sigma\ steps} * 100\%$$ *(Waaijman et al., 2013)*

**criterium: At least 4 days of monitoring were required with at least one weekend day (Matthews et al., 2002, van Schooten et al., 2015)*

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Method

Start

Inclusion

3 month

6 month

9 month

12 month

MI

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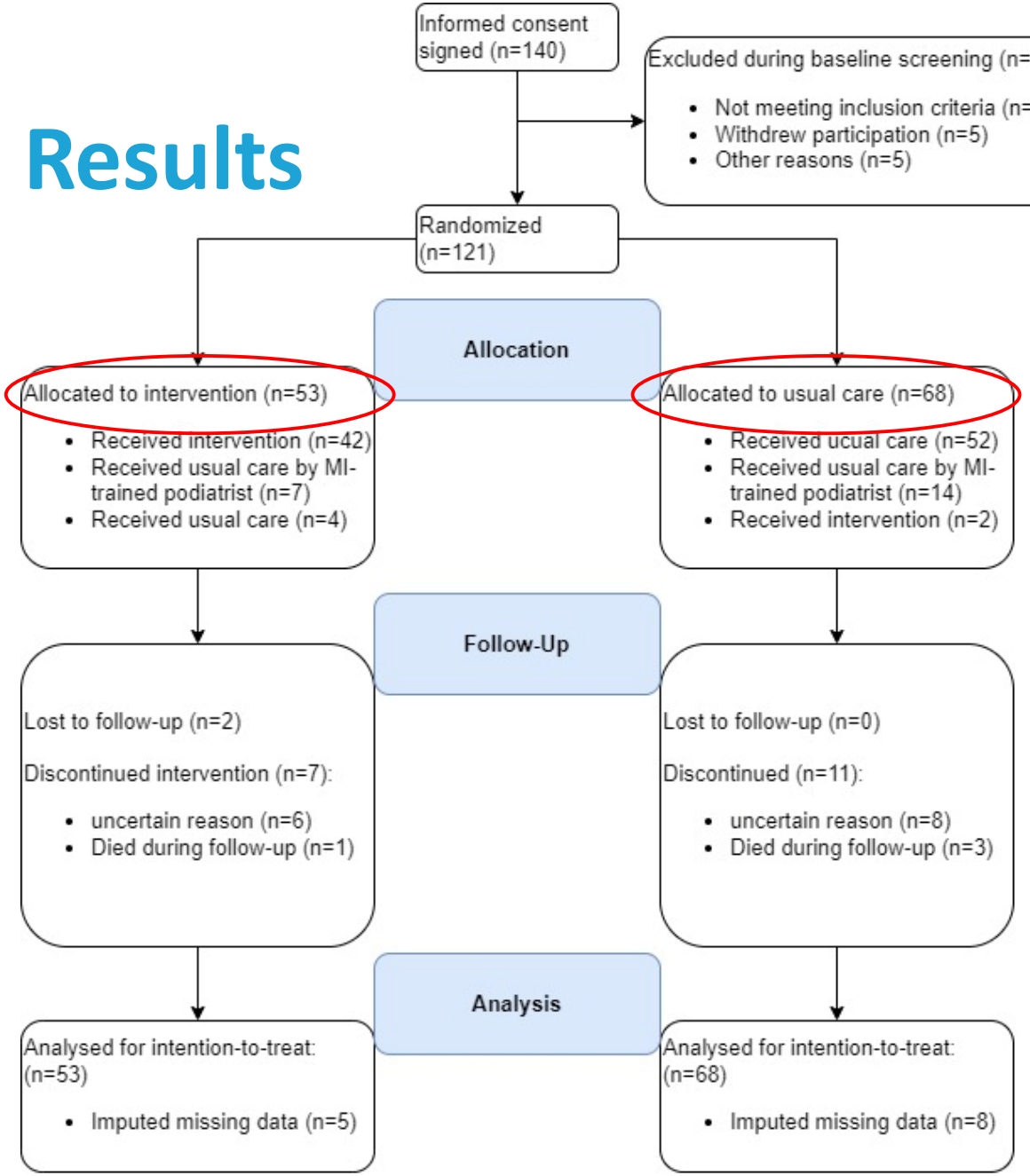
Results



Characteristic	All (n=121)	Intervention	Usual care	p-value
Age mean ± SD (years)	68.5±8.3	68.8±9.5	68.2±7.2	0.743
Sex				
Male N(%)	83 (68.6%)	36 (67.9%)	47 (69.1%)	0.888
Female (N%)	38 (31.4%)	17 (32.1%)	21 (30.9%)	
Diabetes type				
Type 1 N(%)	12 (9.9%)	5 (9.4%)	7 (10.3%)	0.875
Type 2 N(%)	109 (90.1%)	48 (90.6%)	61 (89.7%)	
Diabetes duration mean ± SD (years)	17.8±12.4	17.9±13.8	17.7±11.3	0.587
Mean ± SD, BMI (kg/m^2)	30.7±5.2	30.7±4.8	30.7±5.6	0.738

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Results

Proportion of participants who sufficiently adhered (≥80%) to wearing their orthopedic shoes

	Intervention group	Control group	p-values
Short-term ITT (3 months)	15.1% (8/53)	30.9% (21/68)	0.044*
Long-term ITT (6 months)	13.2% (7/53)	22.1% (15/68)	0.210

Adherence (%) to orthopedic shoes

	Intervention group		Control group		p-values
	Mean	95% CI	Mean	95% CI	
3 months	50.9	43.8 - 57.9	60.9	55.0 - 66.8	0.029*
6 months	49.5	42.2 - 56.9	59.9	54.3 - 65.6	0.025*

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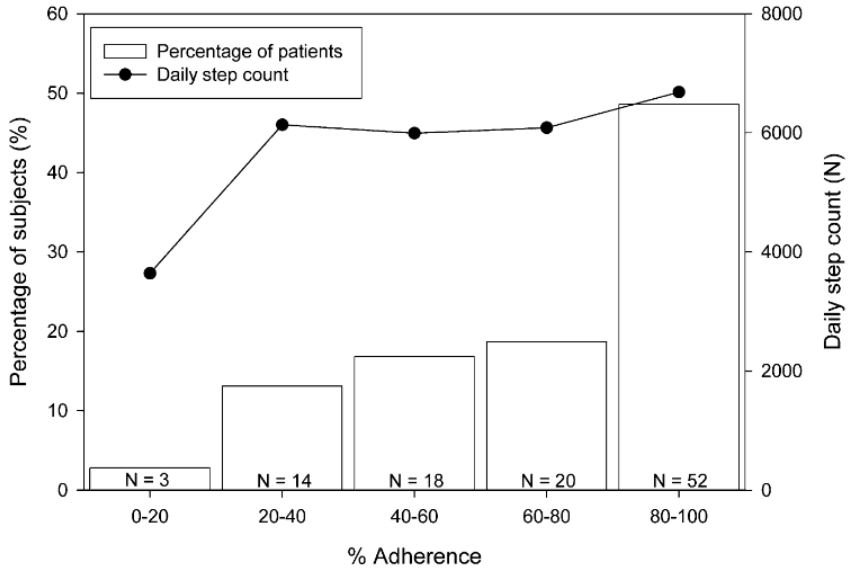
Conclusion & Discussion

- *The proportion adhered (≥80%) is lower than previous study.*
  - 48.6% (52/107) *(Waaijman et al., 2013)*
- *On the basis of intention-to-treat, MI did not result in higher adherence to wearing OS in comparison to usual care*



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Further research

- *Per protocol analyses*
- *Differences between podiatrists participants*

Orthotimer

Activity Tracker (MisFit)

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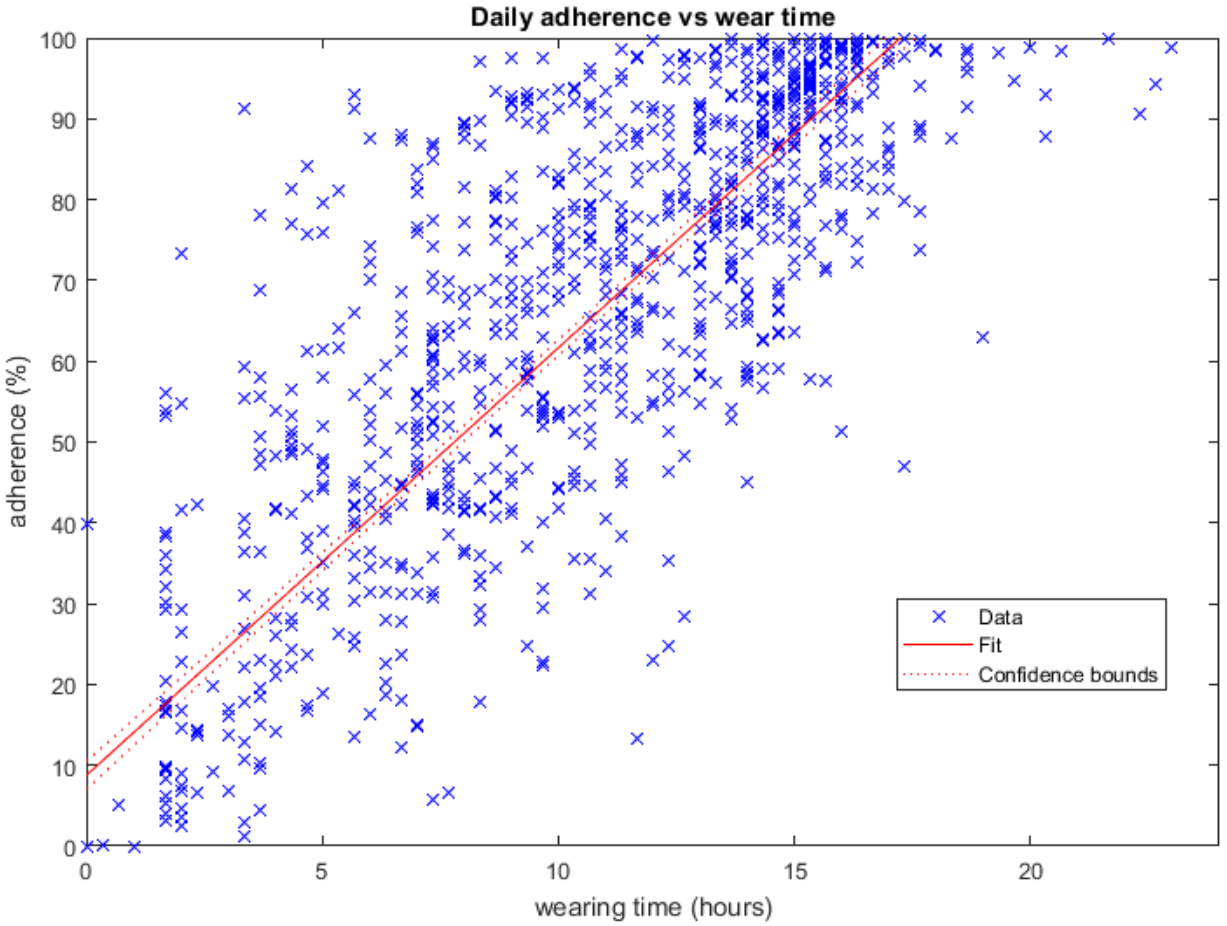
Correlation wearing time - adherence



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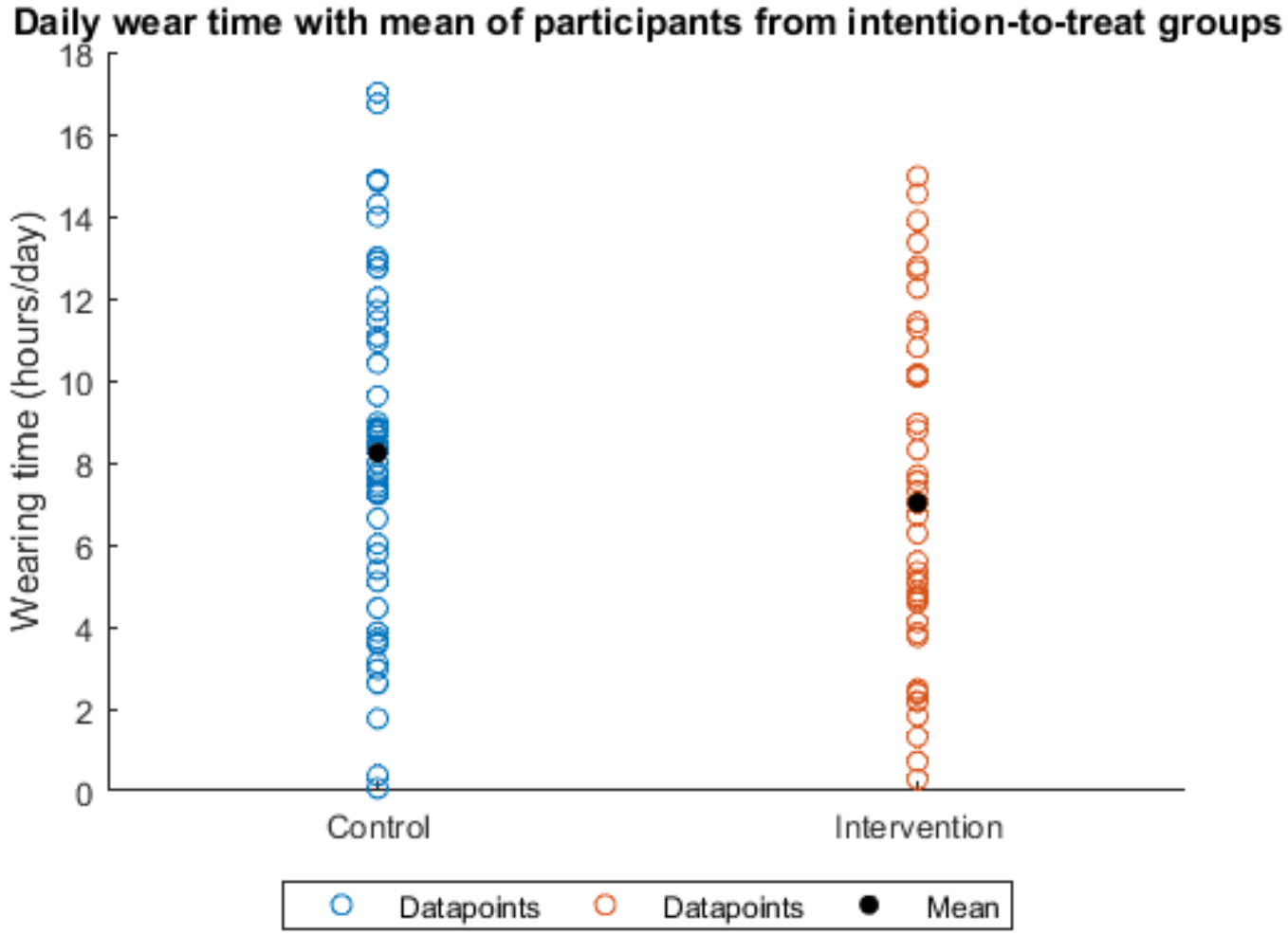
Wearing time difference
(intervention – after MI)



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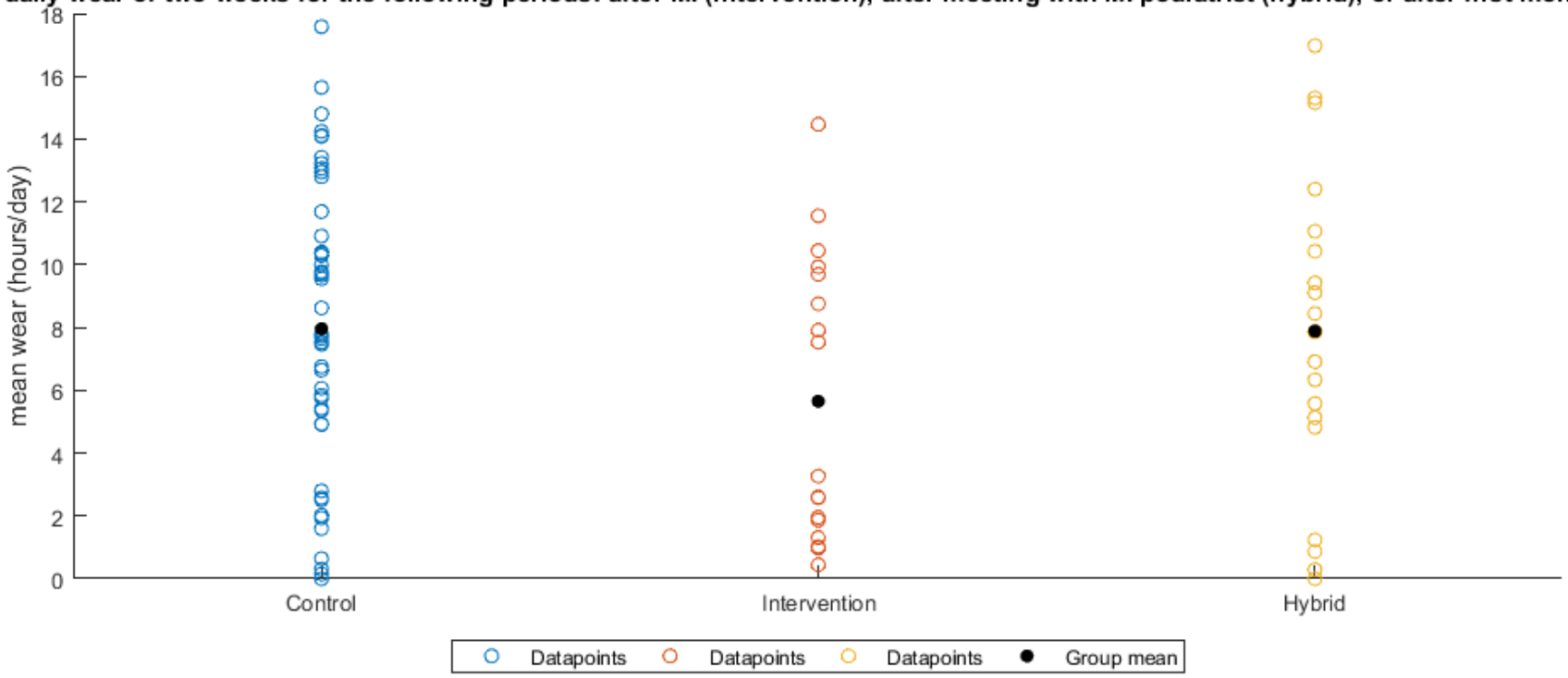
Mean daily wear of two weeks for the following periods: after MI (intervention), after meeting with MI podiatrist (hybrid), or after first month (control)



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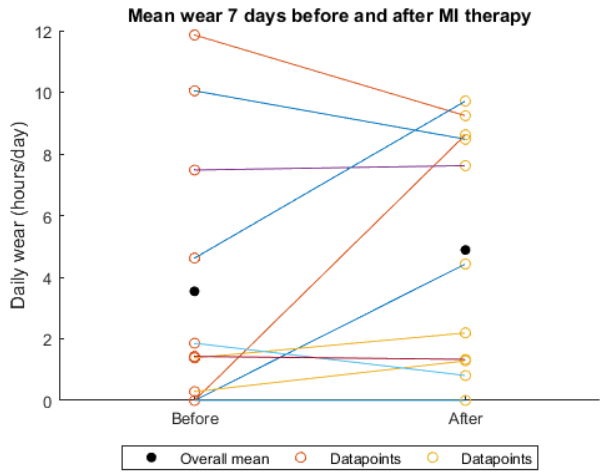
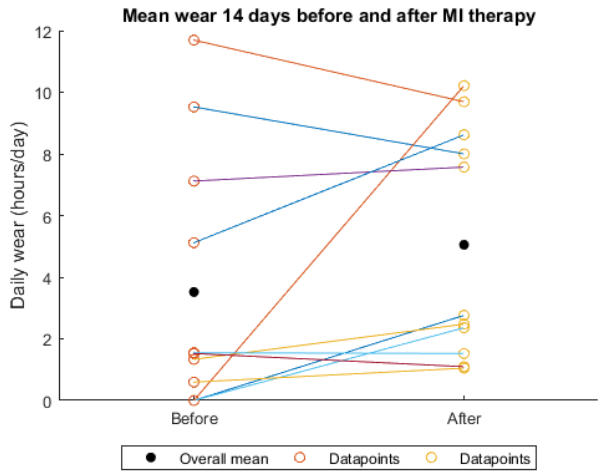
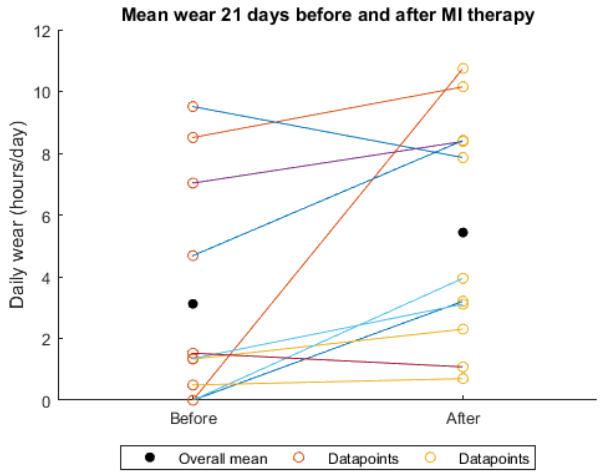
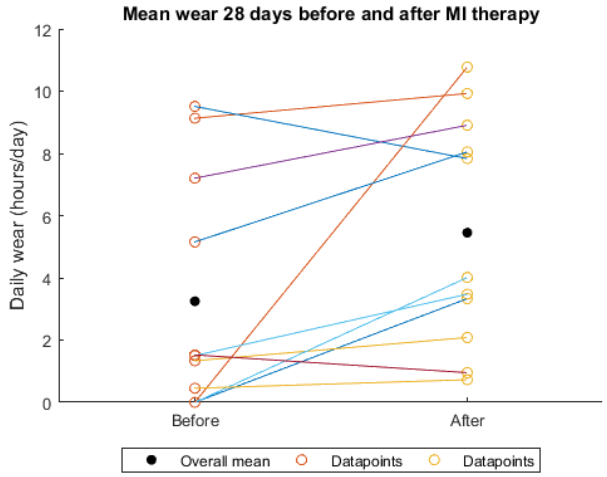
Within subject (intervention)









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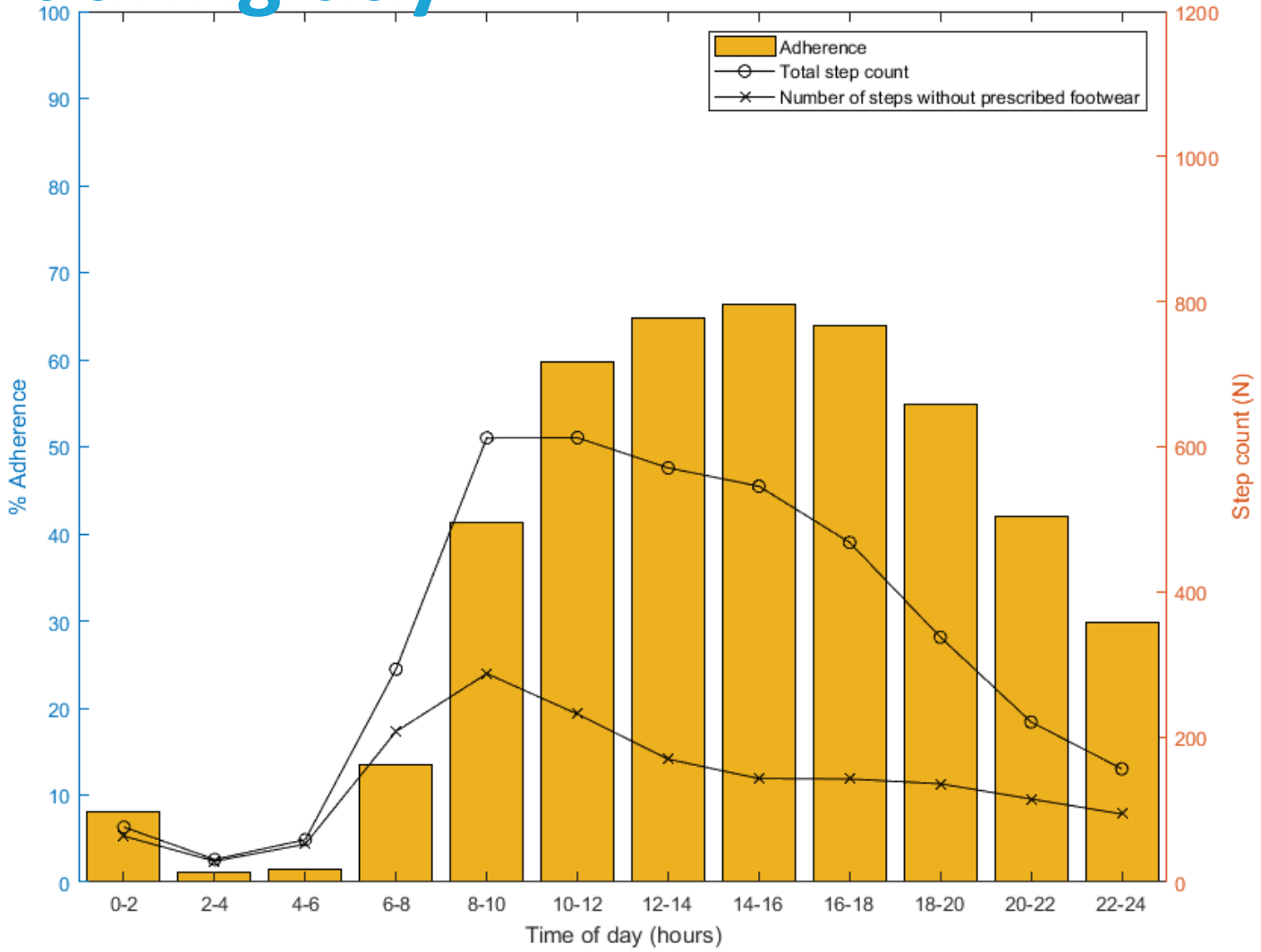
Adherece during day



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