

# Ronde Tafel maart 2017

## Cognition & Gait

Anatomical Research and Clinical studies  
Stijn Vantiegghem

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# Body composition

Anatomical Research and Clinical studies  
Stijn Vantiegghem, Steven Provyn



# Changes in Body composition after 6 and 10 months measured by DXA

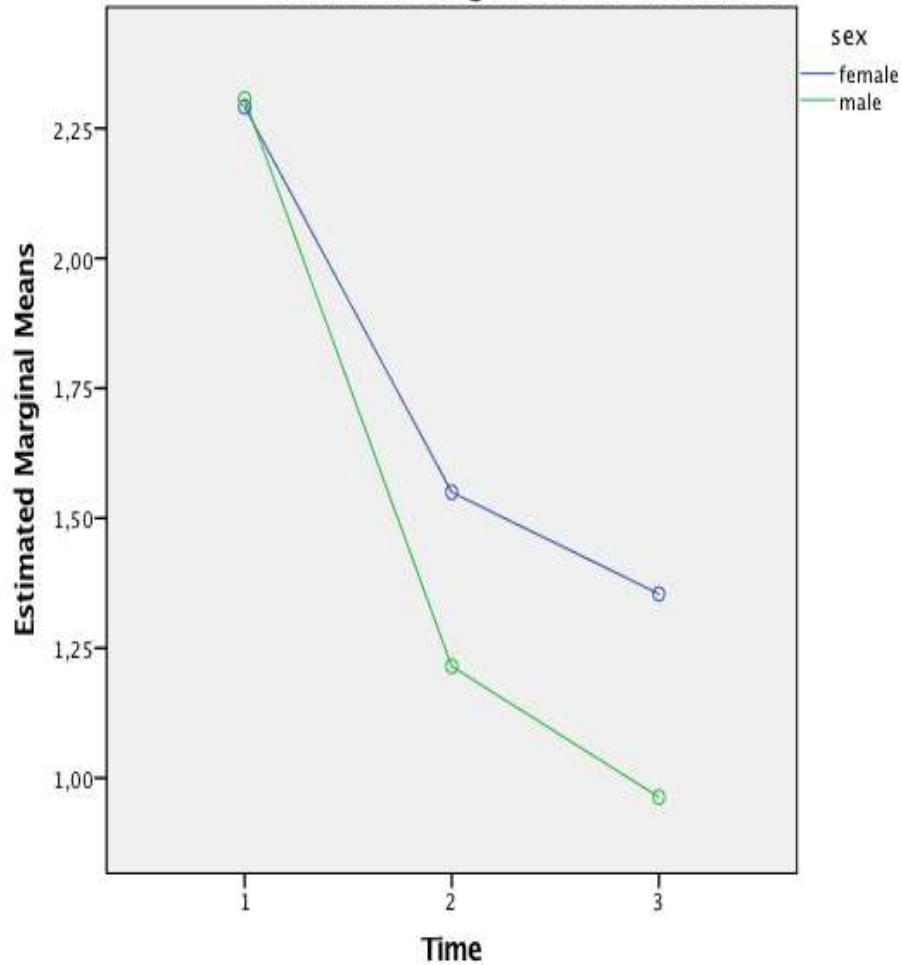
## Extremities (ANOVA: intervention, sex)

Intervention effect: Arm **fat** mass\*\*  
Arm **fat** percentage\*\*  
Leg **fat** mass\*\*  
Leg **fat** percentage\*\*

Intervention\*Sex effect: Arm **fat** mass\*\*  
Arm **fat** percentage\*\*  
Leg **fat** mass\*\*  
Leg **fat** percentage\*\*

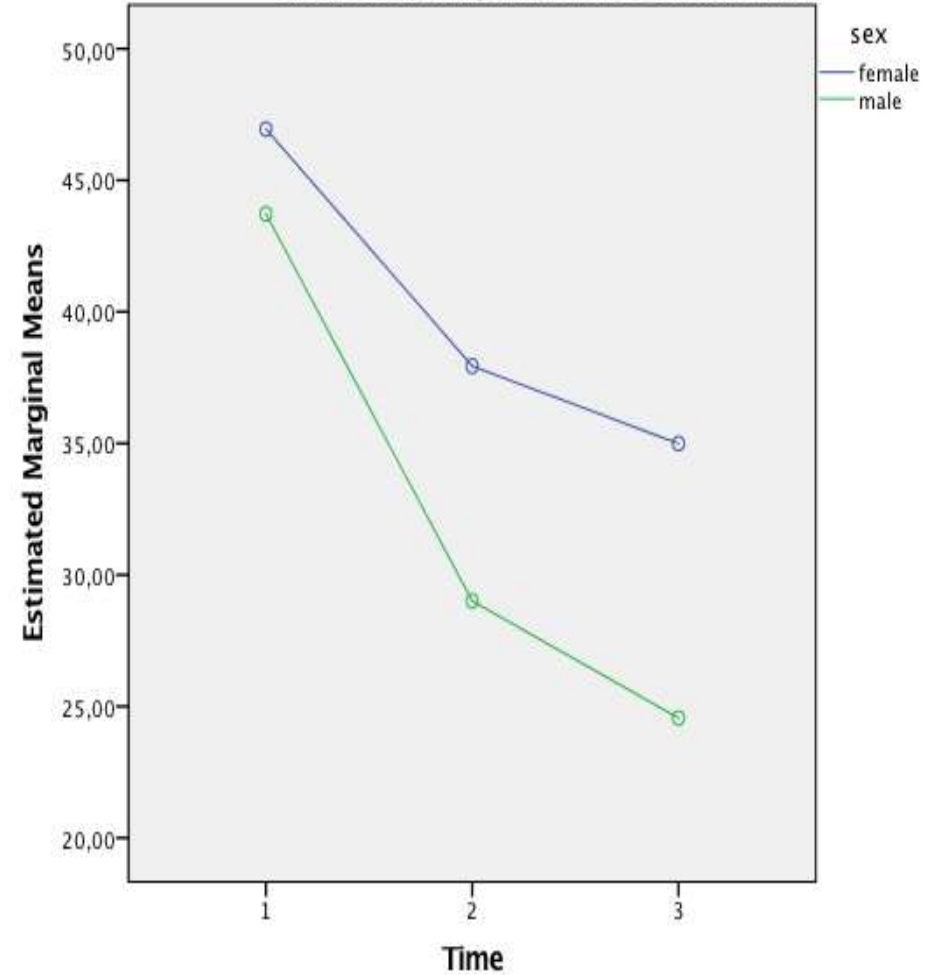
# Changes in Body composition after 6 and 10 months by DXA

Estimated Marginal Means of Arm Fat



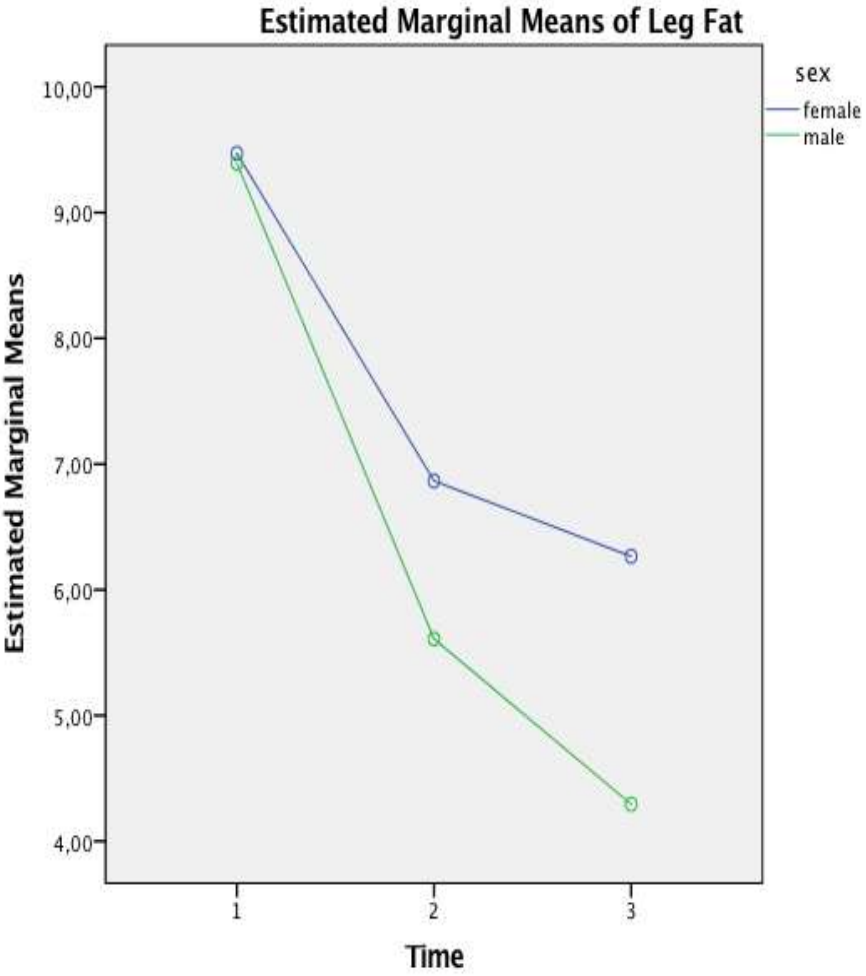
ES: Intervention > Intervention\*sex

Estimated Marginal Means of Arm Fat%

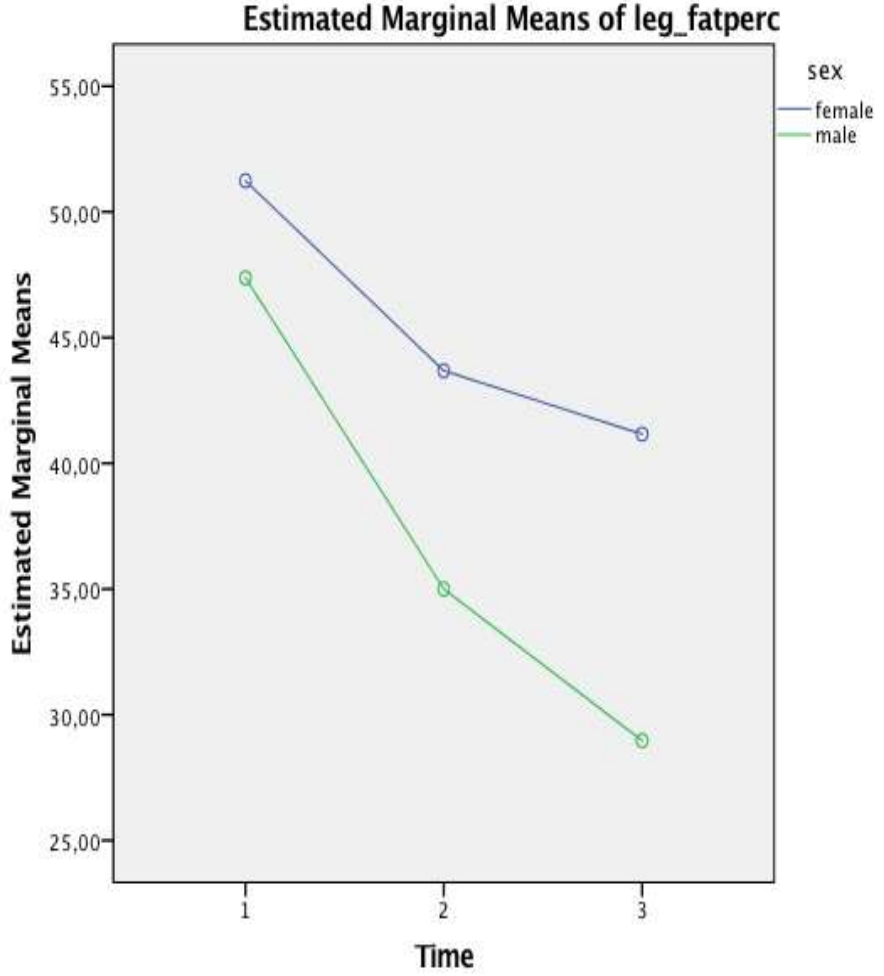


ES: Intervention > Intervention\*sex

# Changes in Body composition after 6 and 10 months by DXA



ES: Intervention > Intervention\*sex



ES: Intervention > Intervention\*sex

# Changes in Body composition after 6 and 10 months by DXA

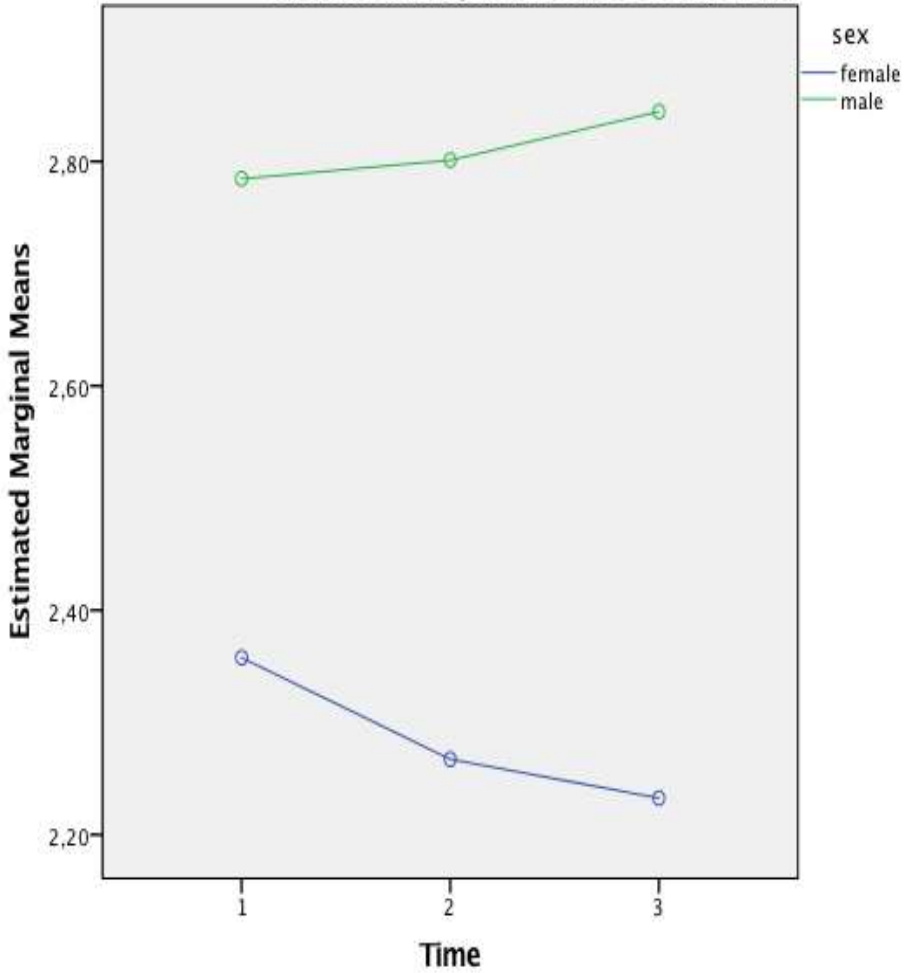
## Extremities (ANOVA: intervention, sex)

Intervention effect: Arm **lean** mass\*  
Arm **lean** percentage\*\*  
Leg **lean** mass\*\*  
Leg **lean** percentage\*\*

Intervention\*Sex effect: Arm **lean** mass\*\*  
Arm **lean** percentage\*\*  
Leg **lean** mass\*  
Leg **lean** percentage\*\*

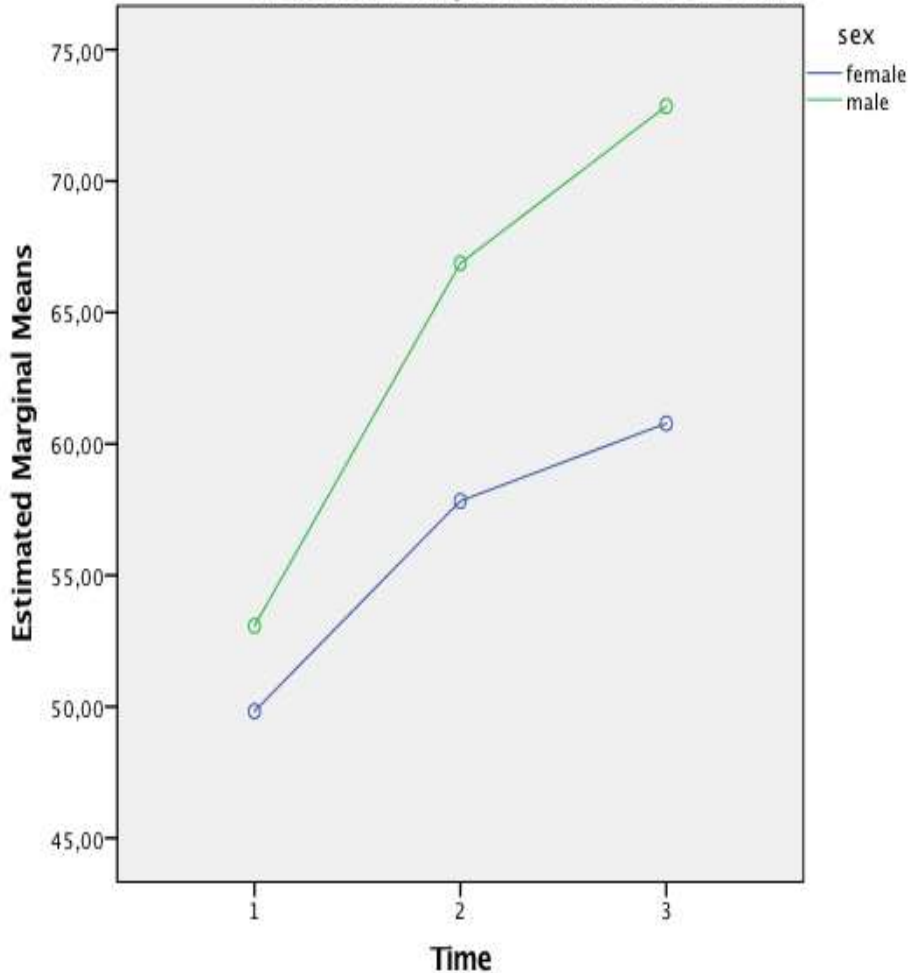
# Changes in Body composition after 6 and 10 months by DXA

Estimated Marginal Means of Arm Lean



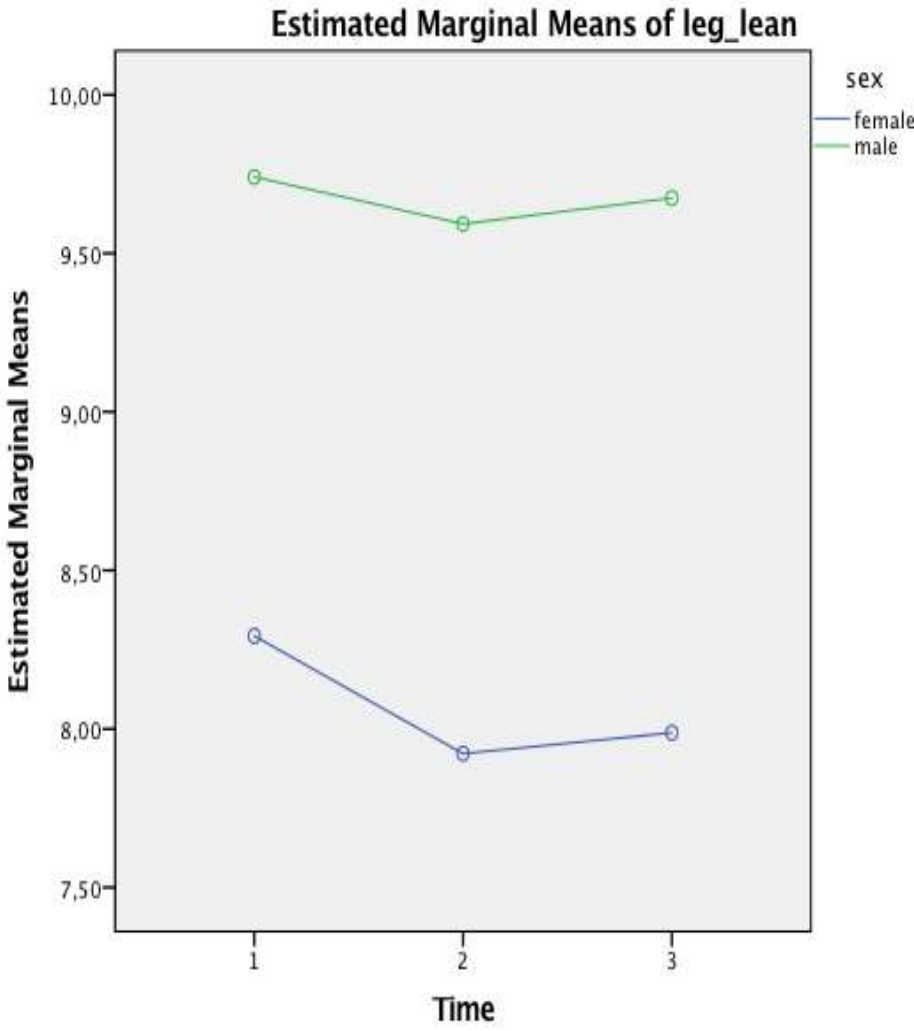
ES: Intervention < Intervention\*sex

Estimated Marginal Means of Arm Lean%

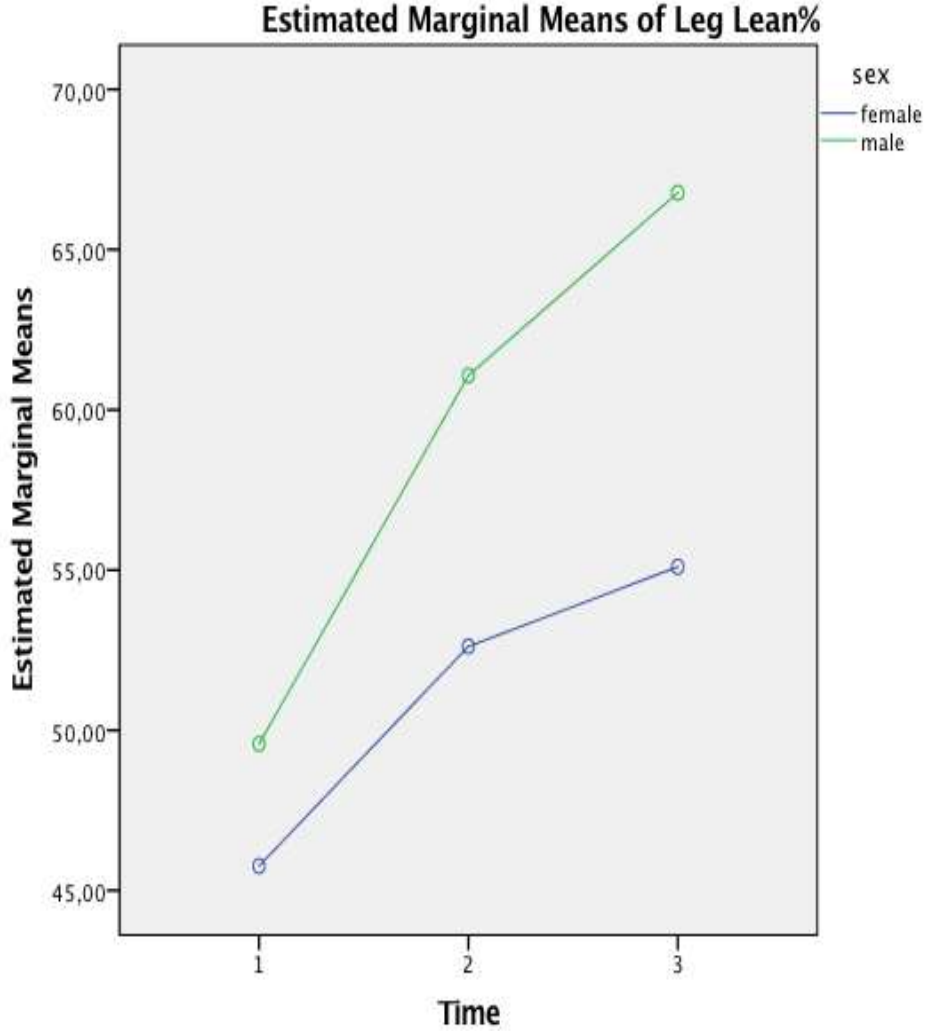


ES: Intervention > Intervention\*sex

# Changes in Body composition after 6 and 10 months by DXA



ES: Intervention > Intervention\*sex



ES: Intervention > Intervention\*sex



# Changes in Body composition after 6 and 10 months by DXA

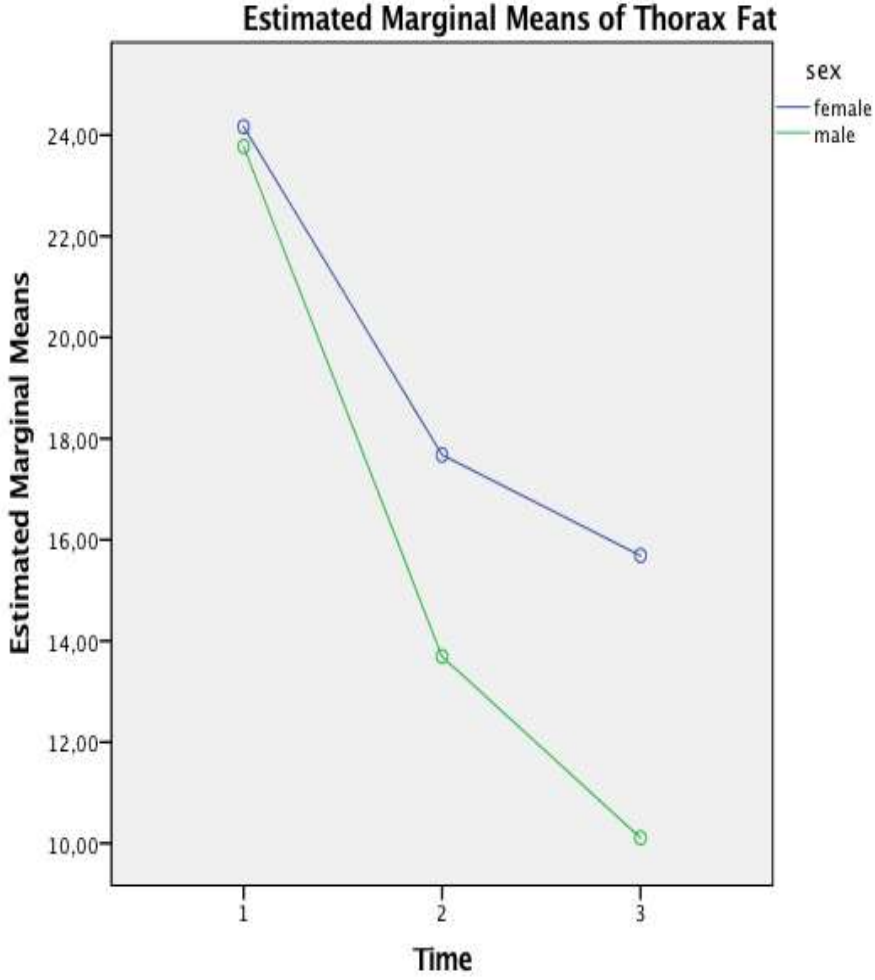
## Thorax and total (ANOVA: intervention, sex)

Intervention effect: Thorax **fat** mass\*  
Thorax **fat** percentage\*\*  
Total **fat** mass\*\*  
Total **fat** percentage\*\*

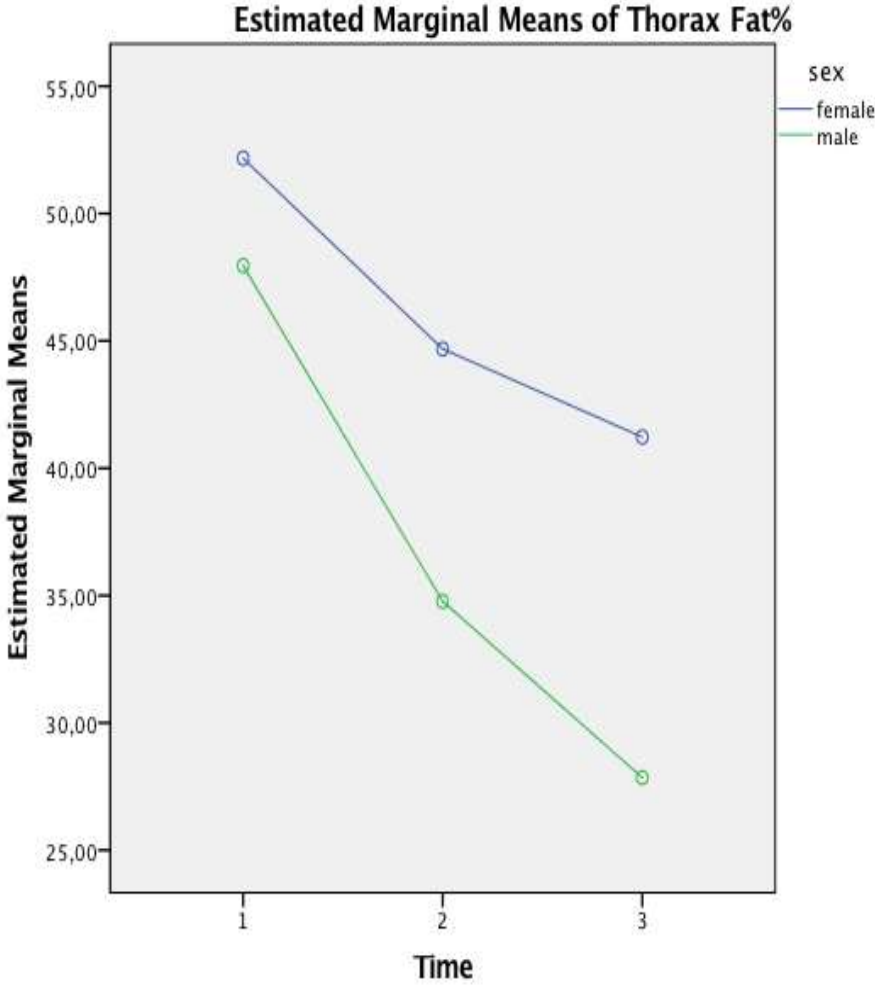
Sex effect: Thorax **fat** mass\*\*  
Thorax **fat** percentage\*\*  
Total **fat** mass\*\*  
Total **fat** percentage\*\*

Effect size intervention > sex;

# Changes in Body composition after 6 and 10 months

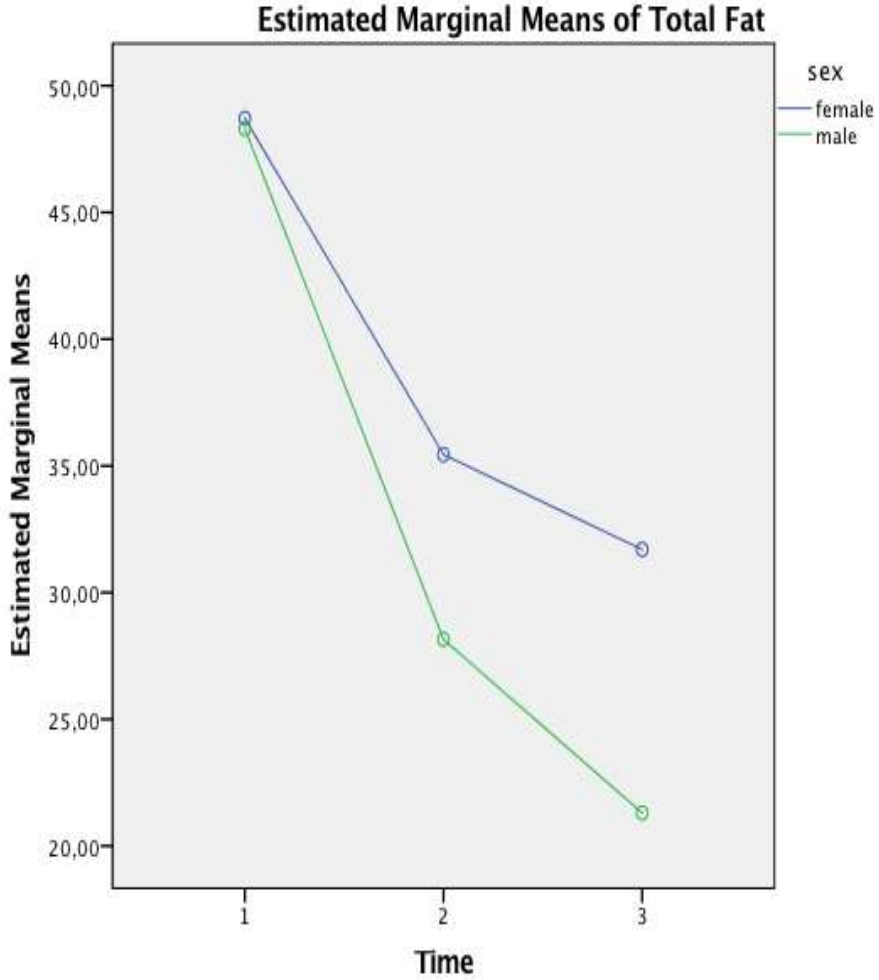


ES: Intervention > Intervention\*sex

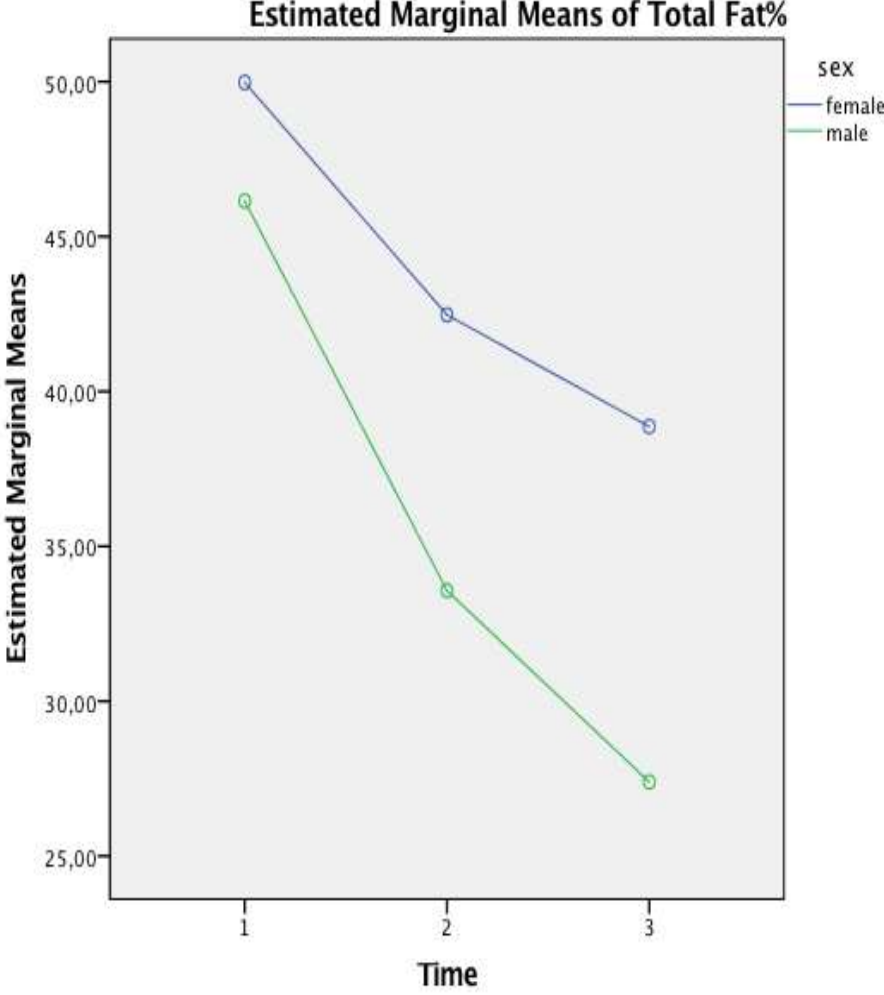


ES: Intervention > Intervention\*sex

# Changes in Body composition after 6 and 10 months



ES: Intervention > Intervention\*sex



ES: Intervention > Intervention\*sex

# Changes in Body composition after 6 and 10 months by DXA

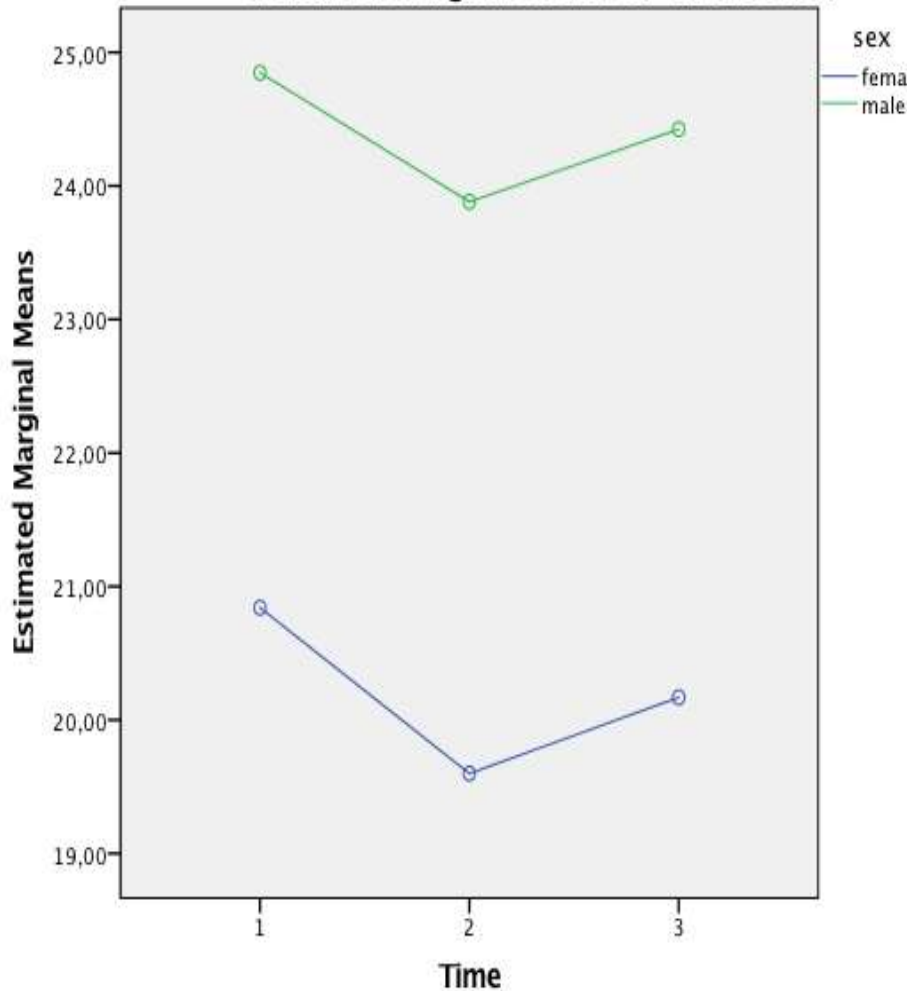
## Thorax and total (ANOVA: intervention, sex)

Intervention effect: Thorax **lean** mass\*  
Thorax **lean** percentage\*\*  
Total **lean** mass\*\*  
Total **lean** percentage\*\*

Sex effect: Thorax **lean** mass\*\*  
Thorax **lean** percentage\*\*  
Total **lean** mass\*\*  
Total **lean** percentage\*\*

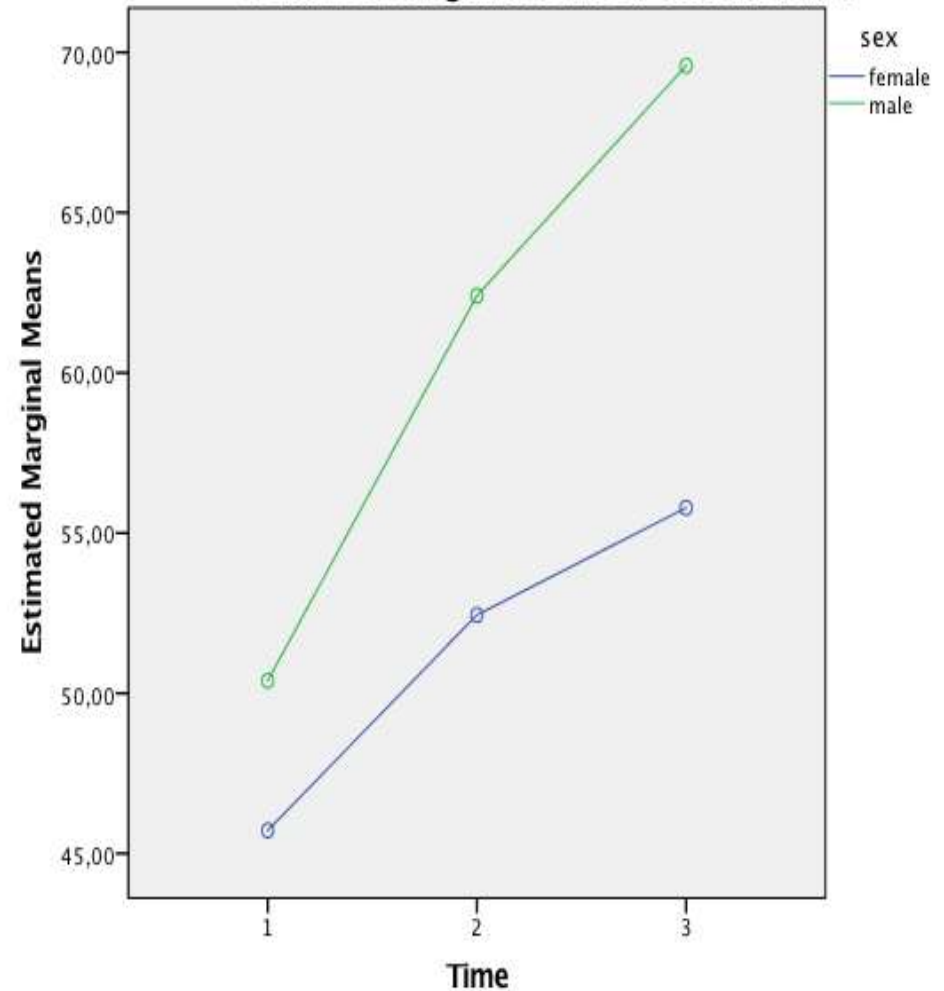
# Changes in Body composition after 6 and 10 months by DXA

Estimated Marginal Means of Thorax Lean



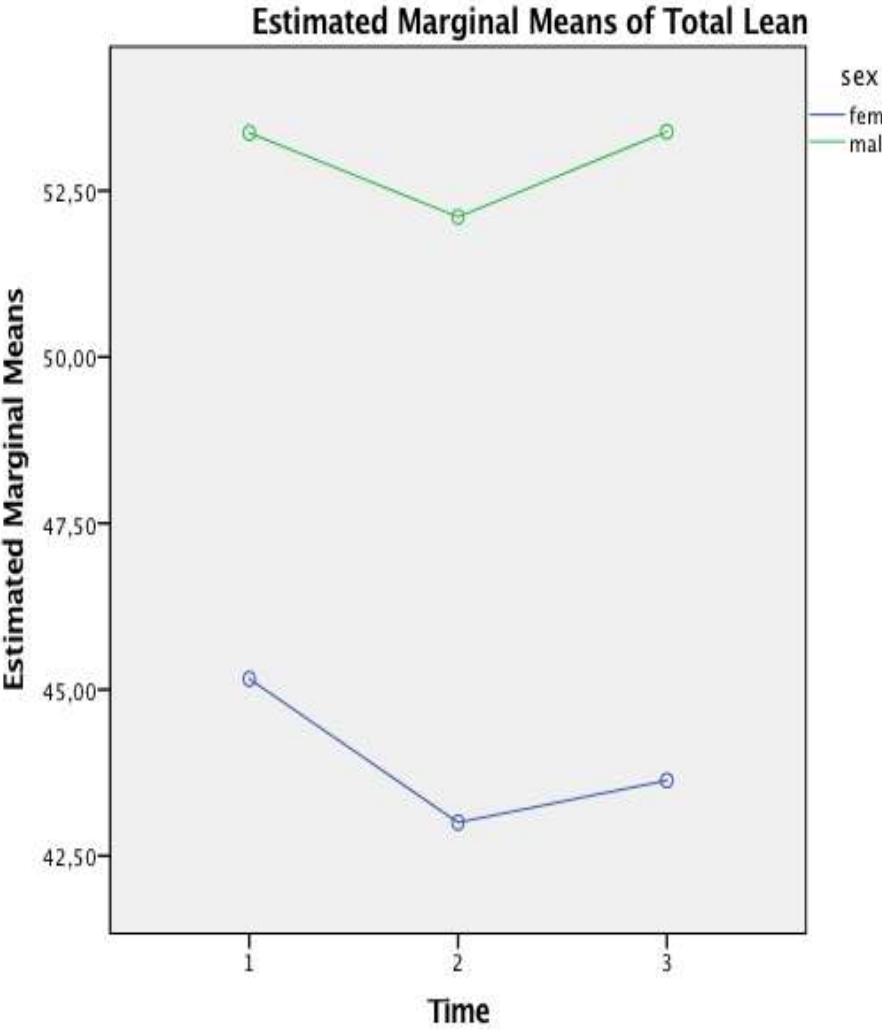
ES: Intervention > Intervention\*sex

Estimated Marginal Means of Thorax Lean%

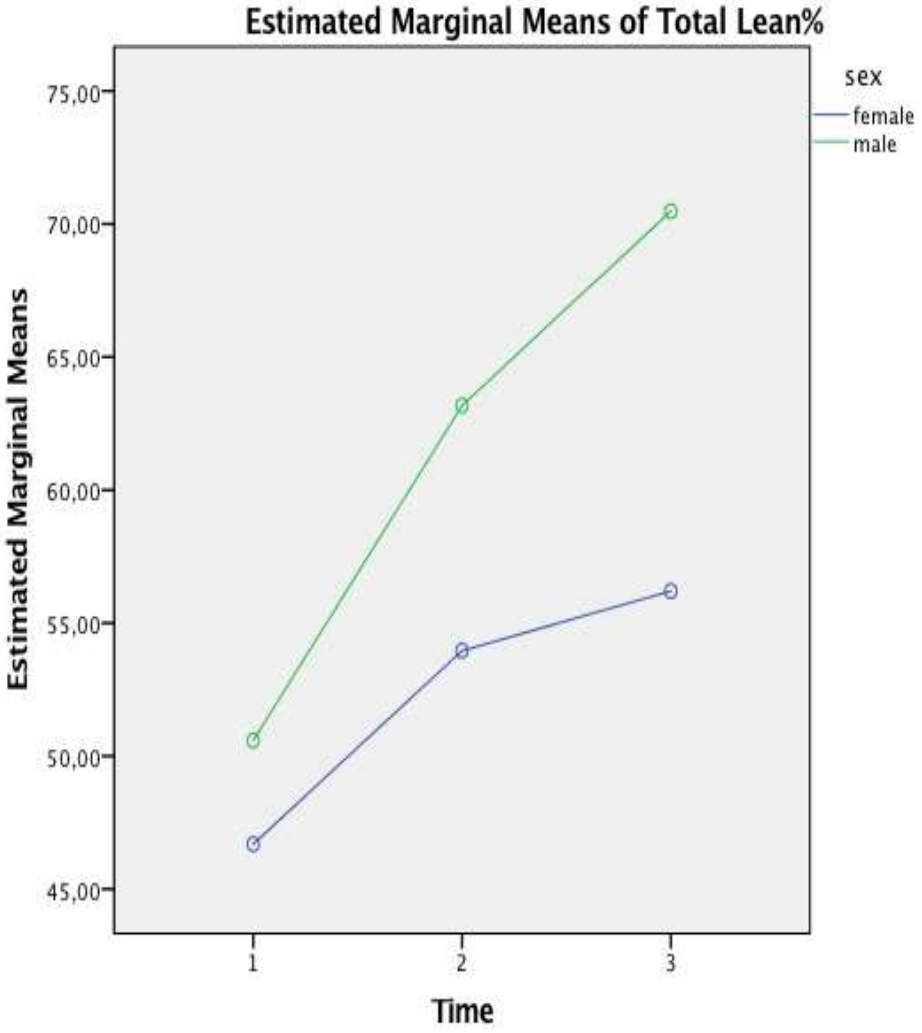


ES: Intervention > Intervention\*sex

# Changes in Body composition after 6 and 10 months by DXA



ES: Intervention > Intervention\*sex



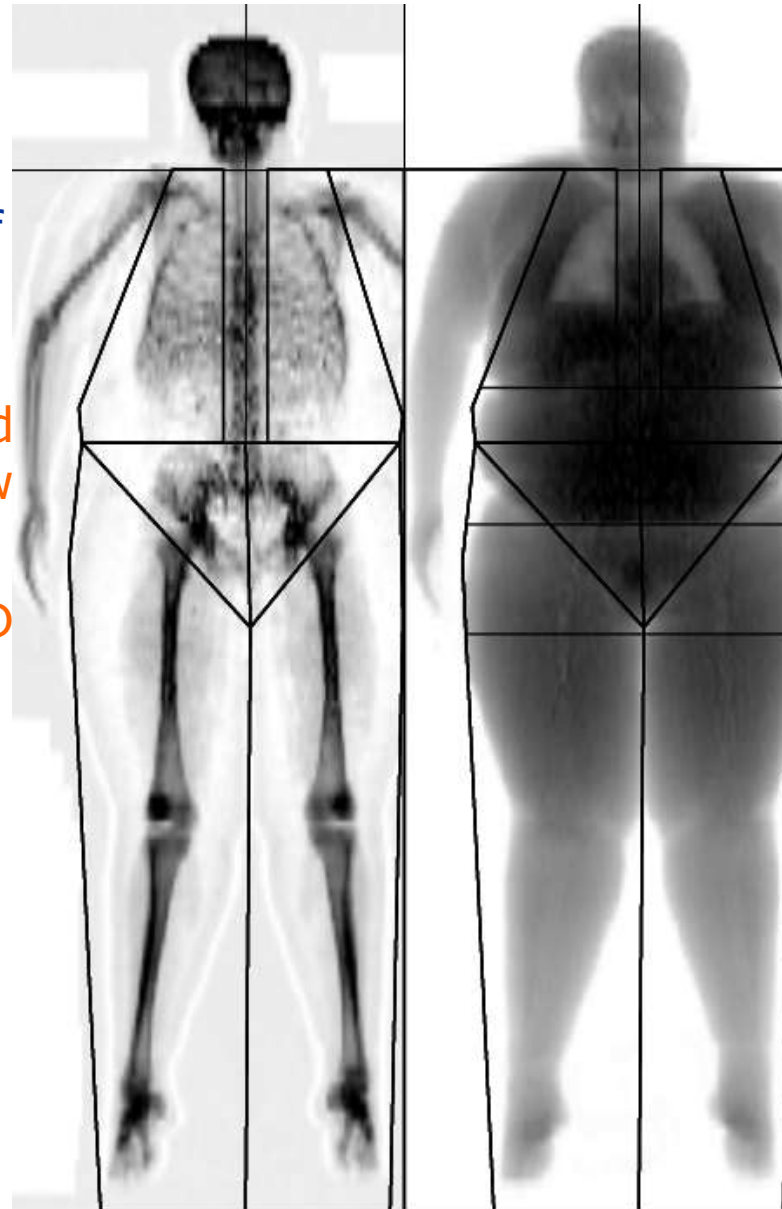
ES: Intervention > Intervention\*sex

# Body composition by DXA

The duration of fat mass

Lean mass tend to recover betw

Limitations of D



tance to reduce

months but seems

ation

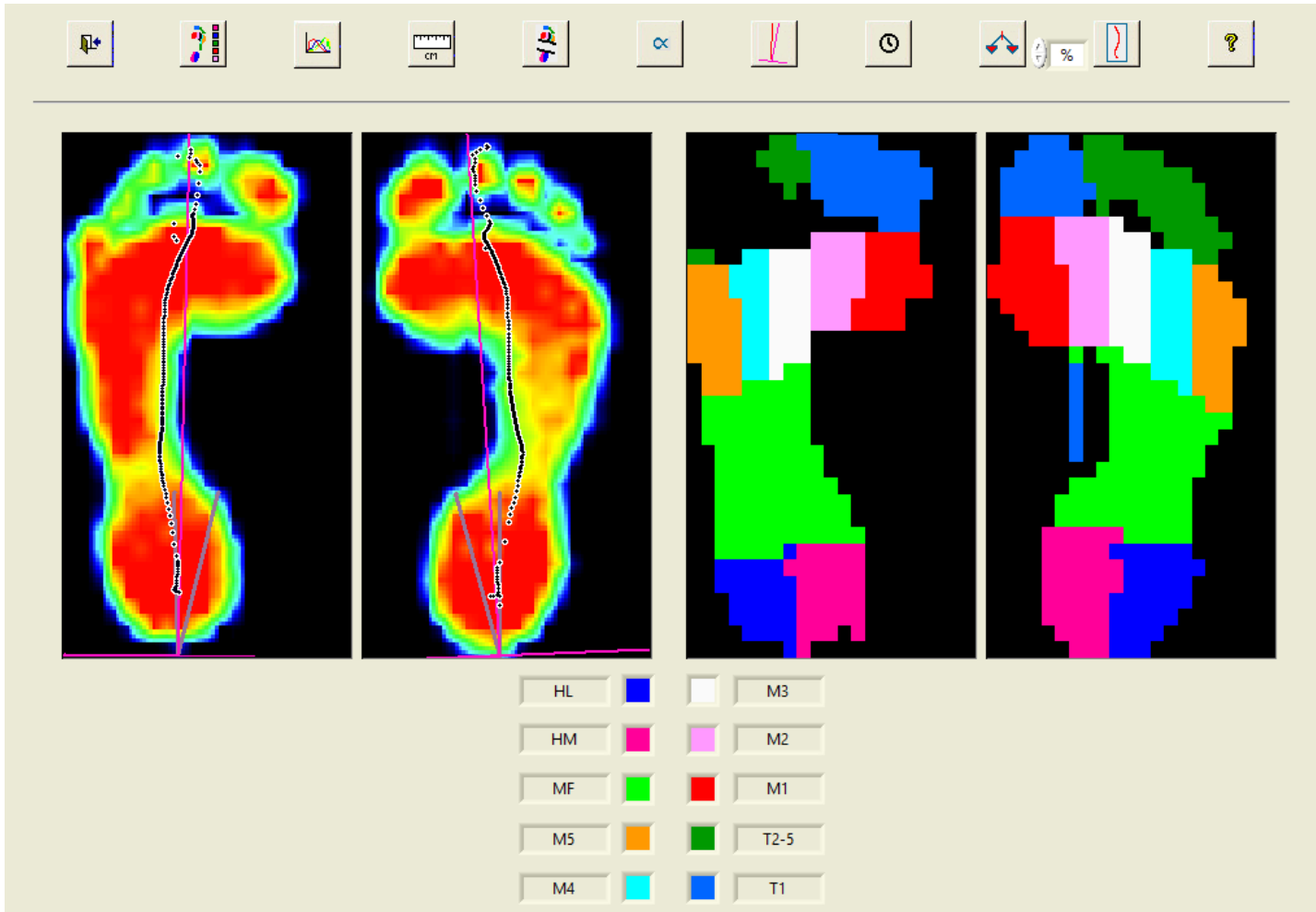
# Gait

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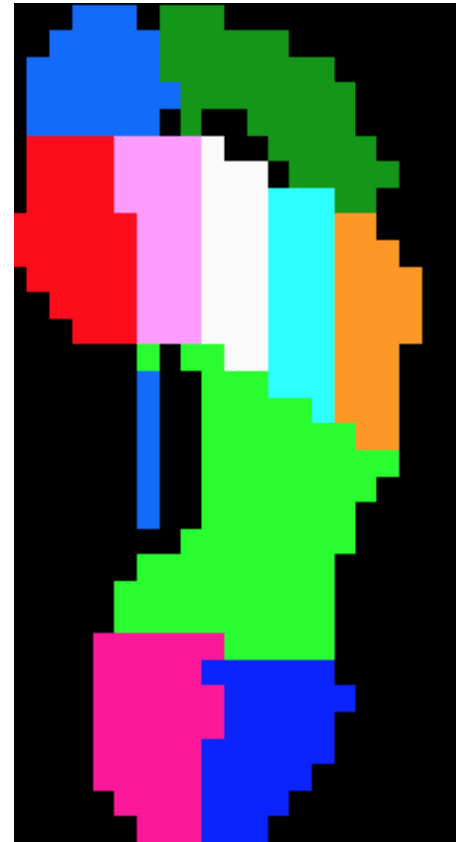
# Gait analyses



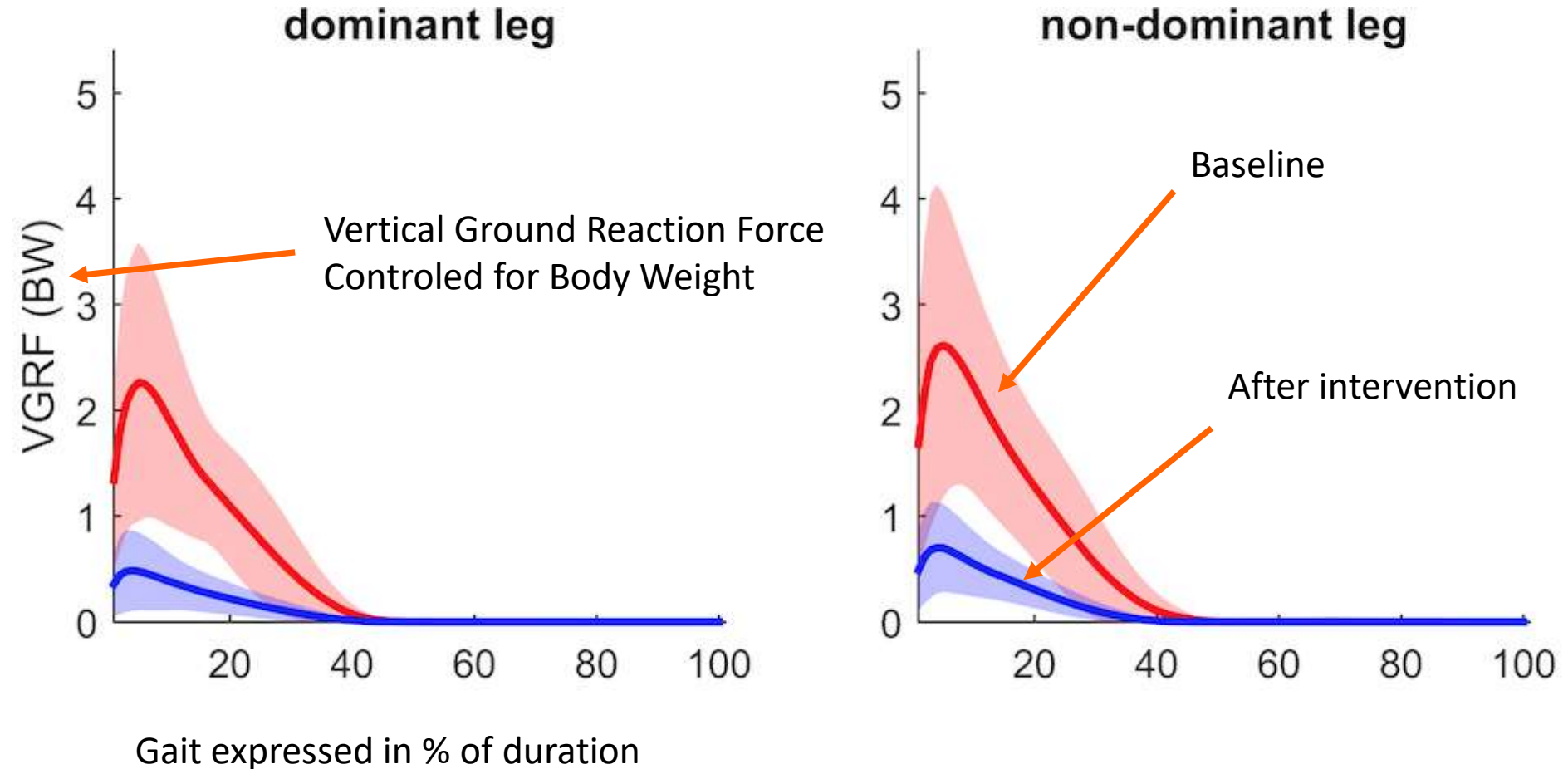
# Gait analyses at baseline and after 6 month intervention

## Parameters

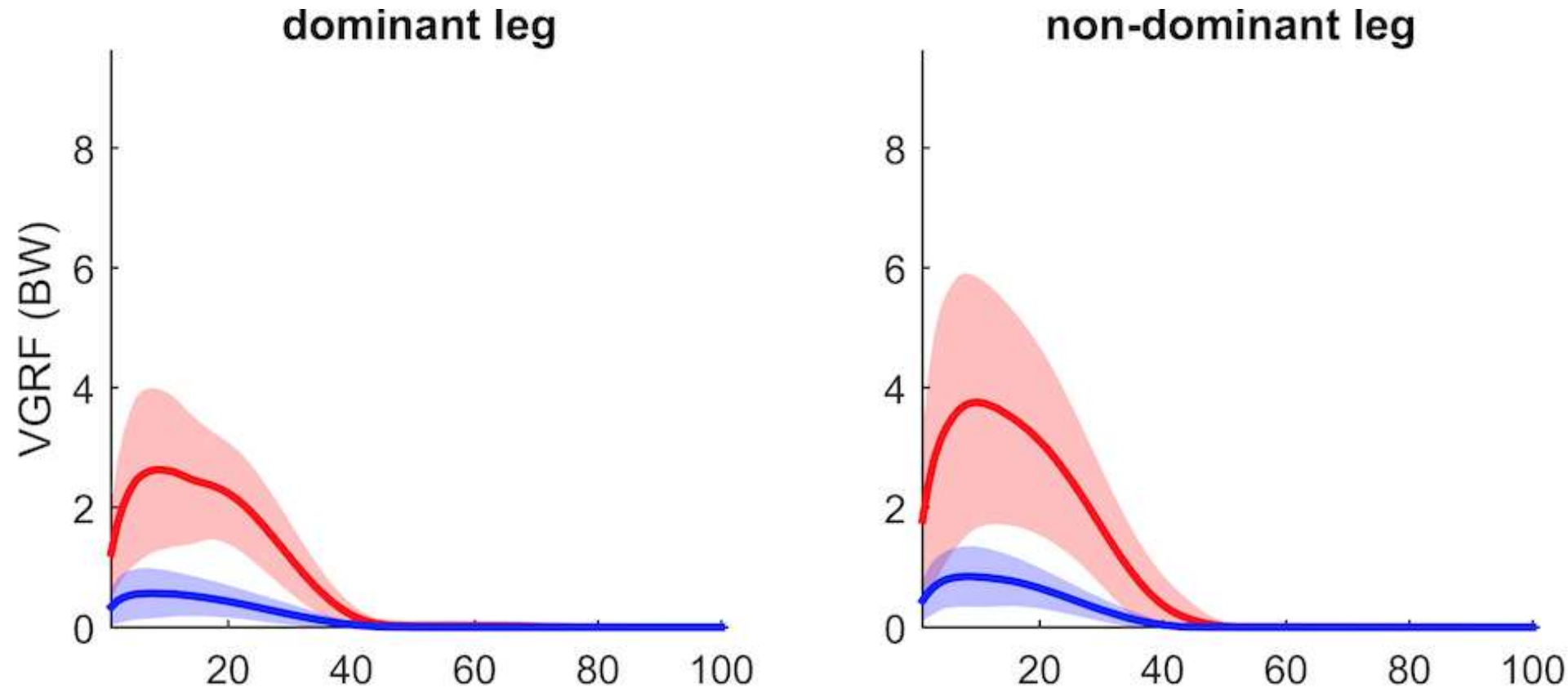
<b>HL</b>	<b>Heel Lateral</b>
<b>HM</b>	<b>Heel Medial</b>
<b>M1</b>	<b>Metatarsal 1</b>
<b>M2</b>	<b>Metatarsal 2</b>
<b>M3</b>	<b>Metatarsal 3 (White)</b>
<b>M4</b>	<b>Metatarsal 4</b>
<b>M5</b>	<b>Metatarsal 5</b>
<b>T1</b>	<b>Toe 1</b>



# Gait analyses at baseline and after 6 month intervention **HL**



# Gait analyses at baseline and after 6 month intervention **HM**



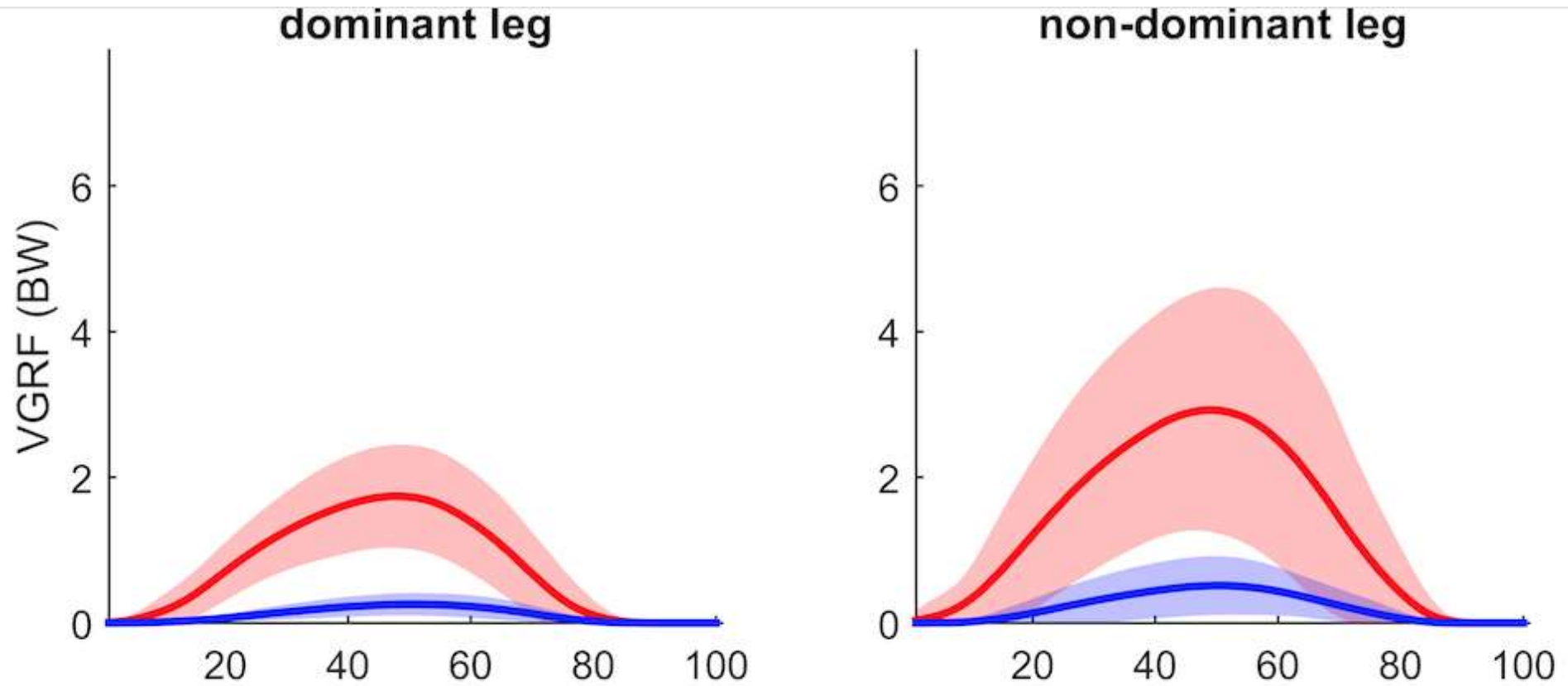
# Gait analyses at baseline and after 6 month intervention HL and HM

Sign difference after intervention

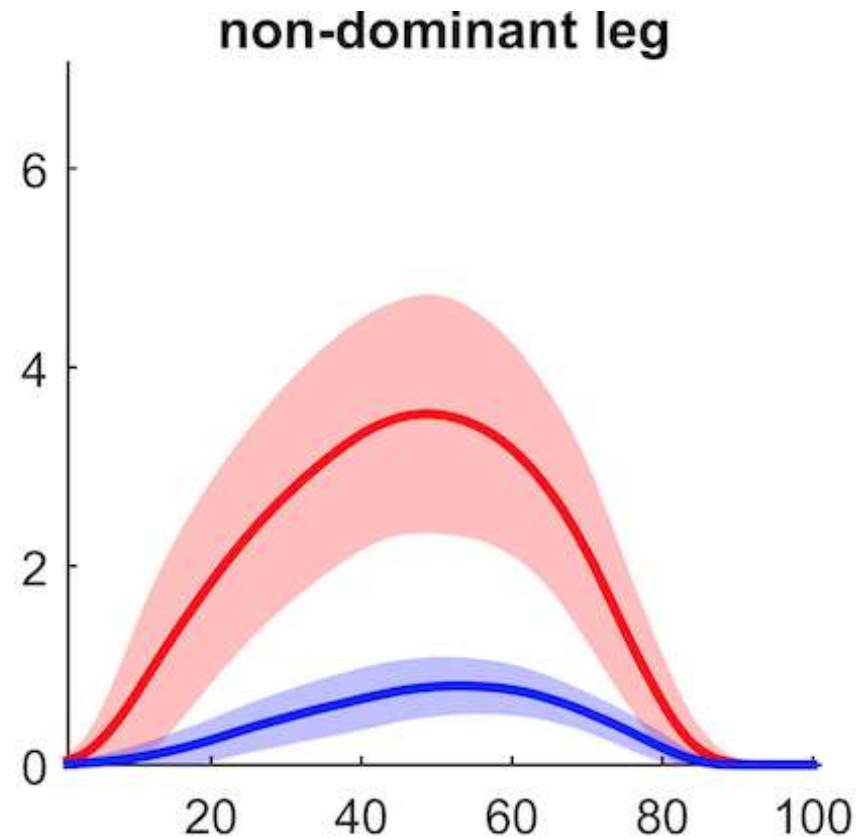
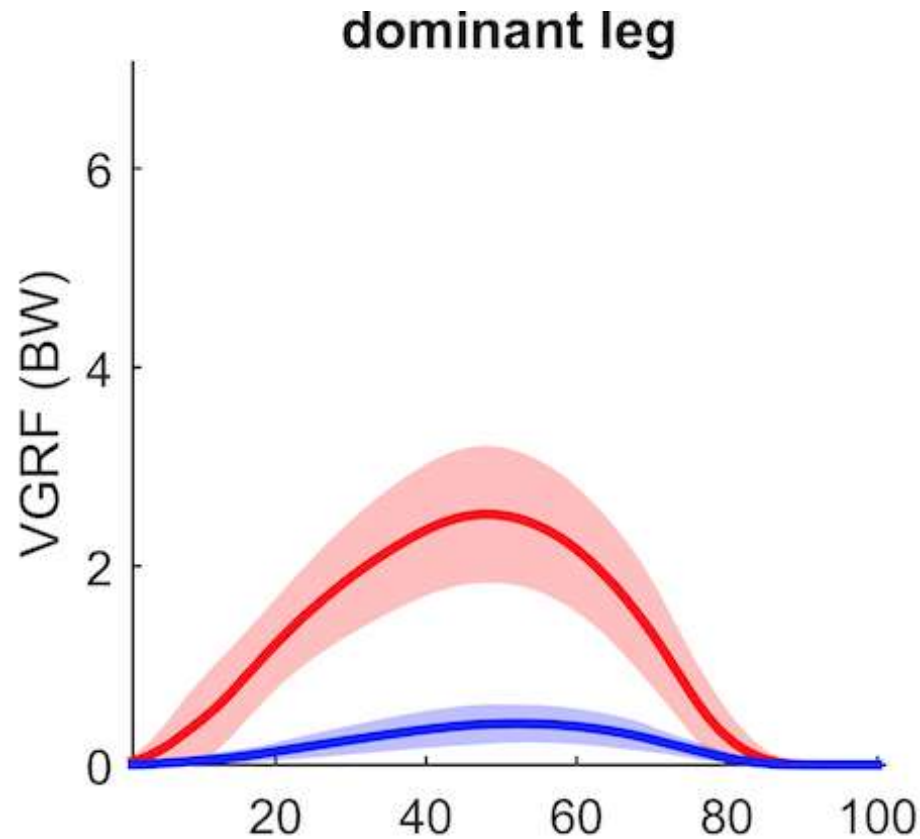
From time 0 until 45% of gait duration

No sign difference between legs

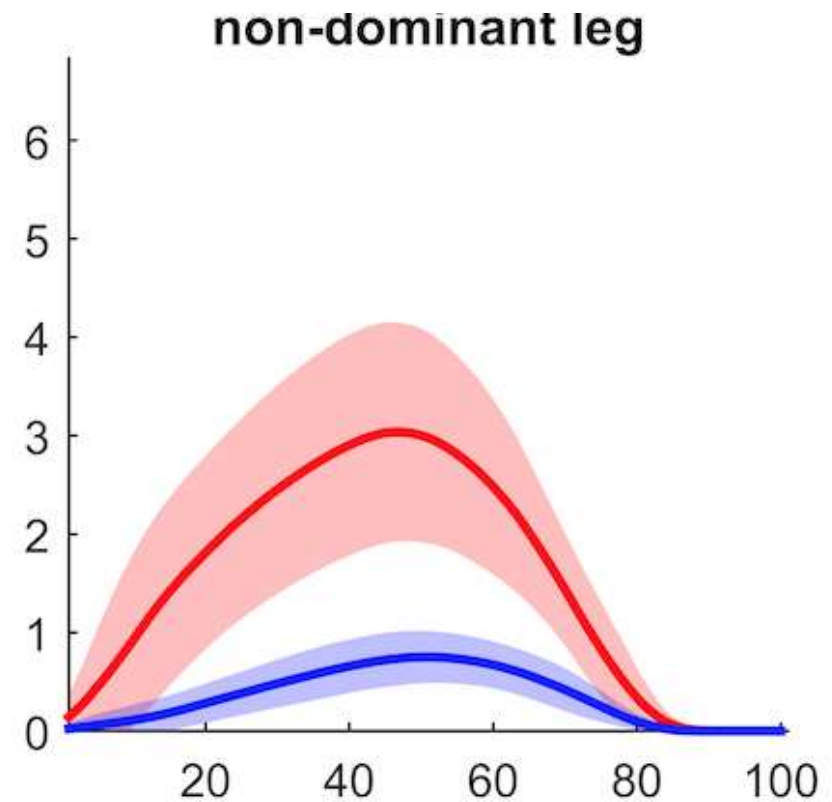
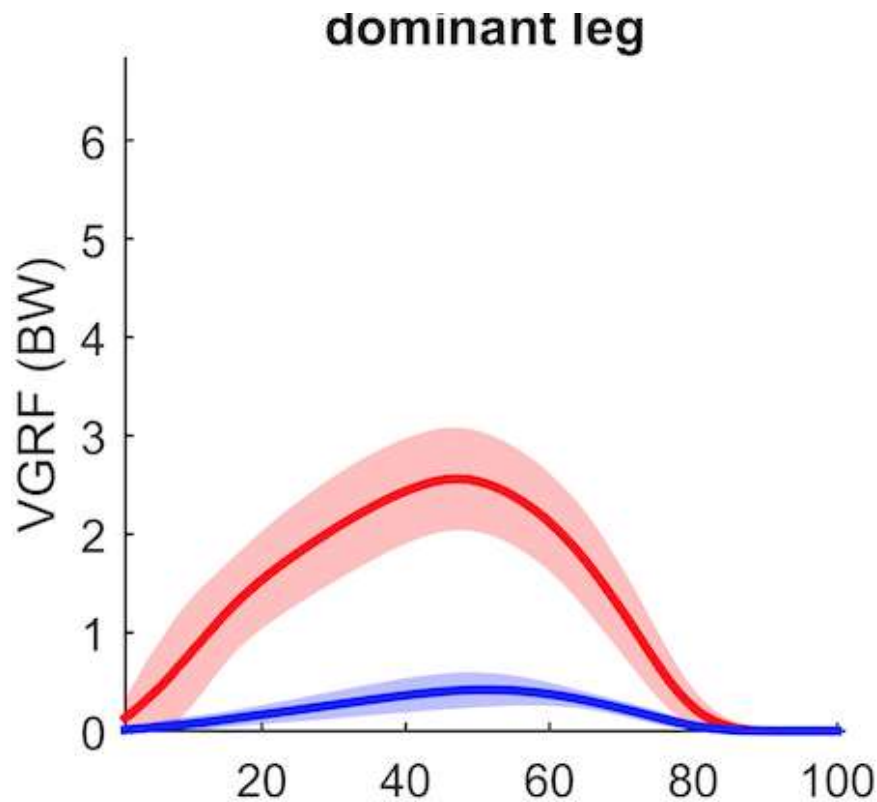
# Gait analyses at baseline and after 6 month intervention **M1**



# Gait analyses at baseline and after 6 month intervention **M2**

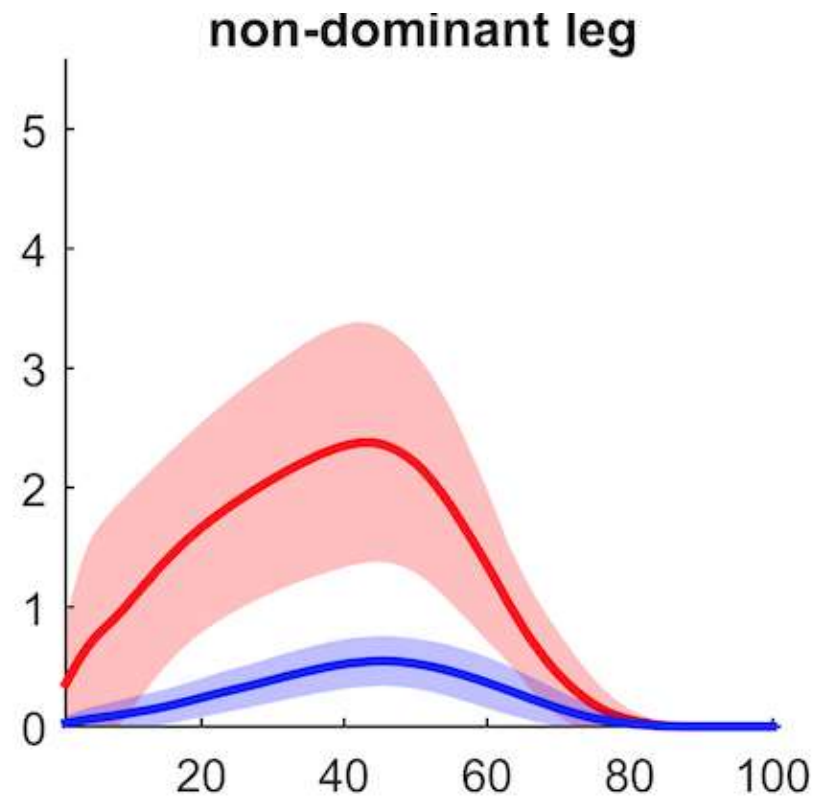
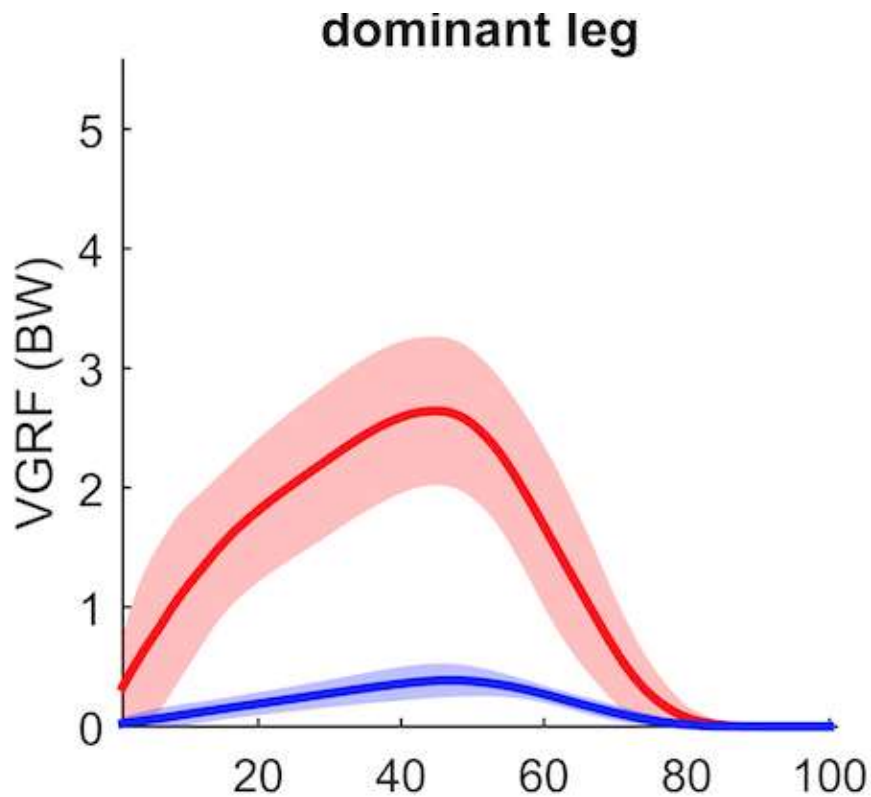


# Gait analyses at baseline and after 6 month intervention **M3**

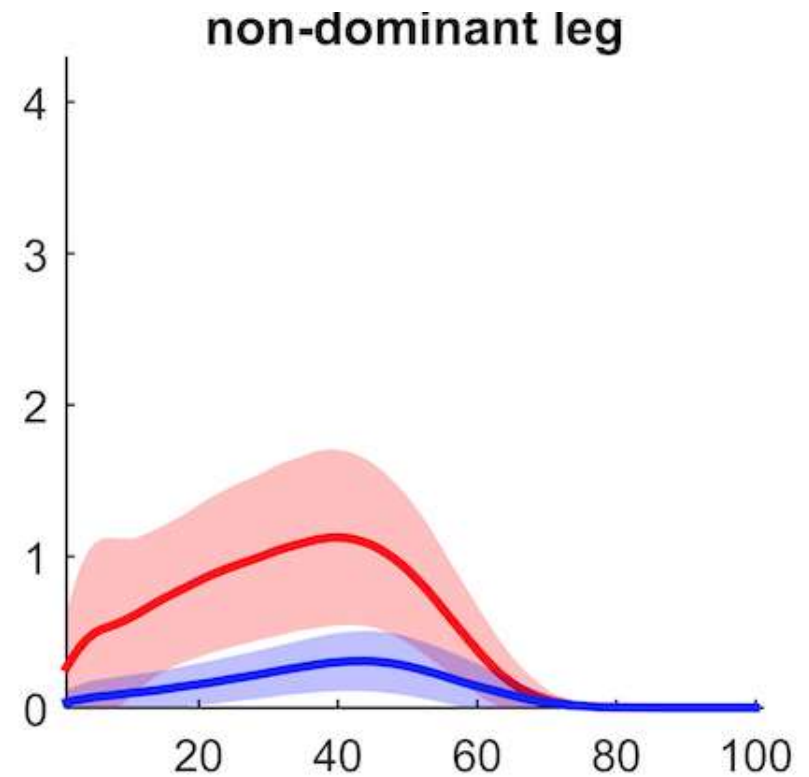
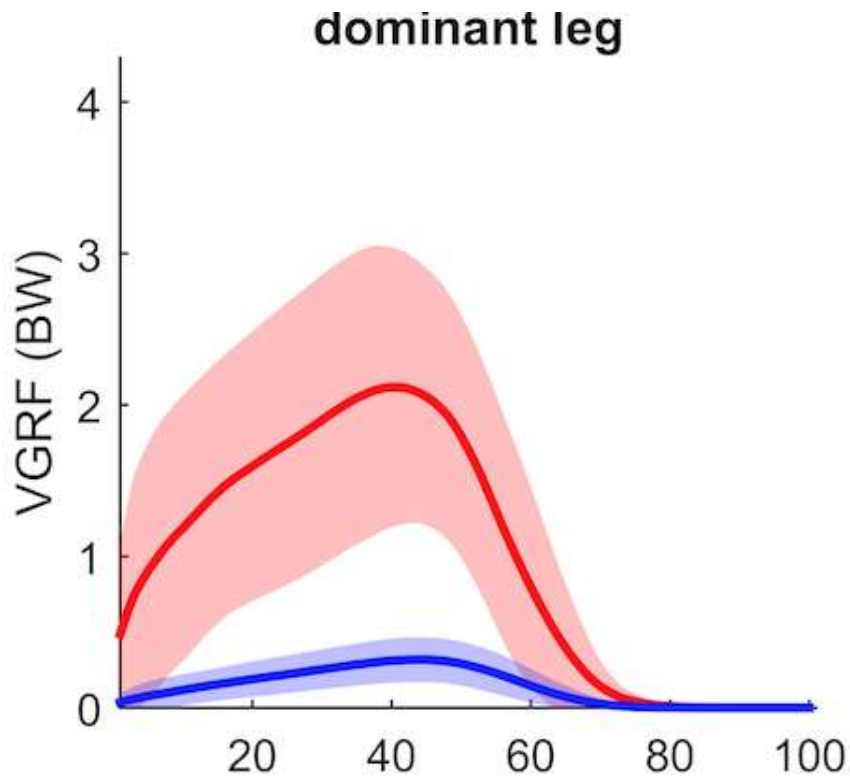




# Gait analyses at baseline and after 6 month intervention **M4**



# Gait analyses at baseline and after 6 month intervention **M5**



# Gait analyses at baseline and after 6 month intervention M1, M2, M3, M4, M5

Sign differences after intervention

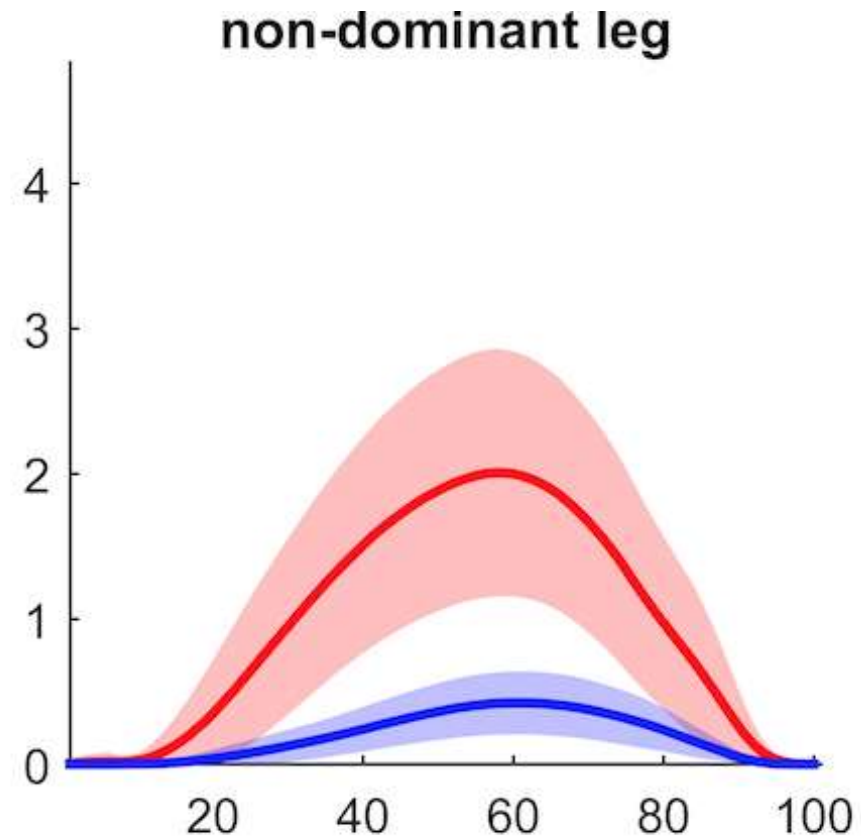
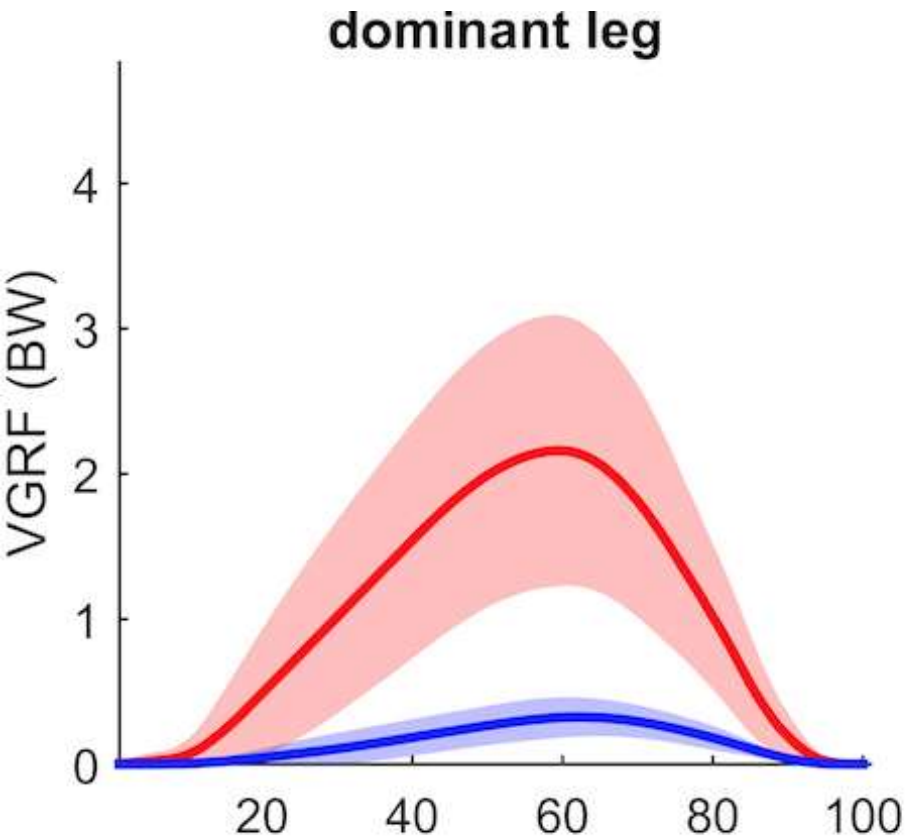
Sign difference between dominant and non-dominant leg

M2 and M5

Sign difference Intervention\*leg

M5

# Gait analyses at baseline and after 6 month intervention T1



# Gait analyses at baseline and after 6 month intervention T1

Sign differences after intervention

From 15% until 95% of gait duration

# Cognition

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# Stroop-test

Why: selective attention

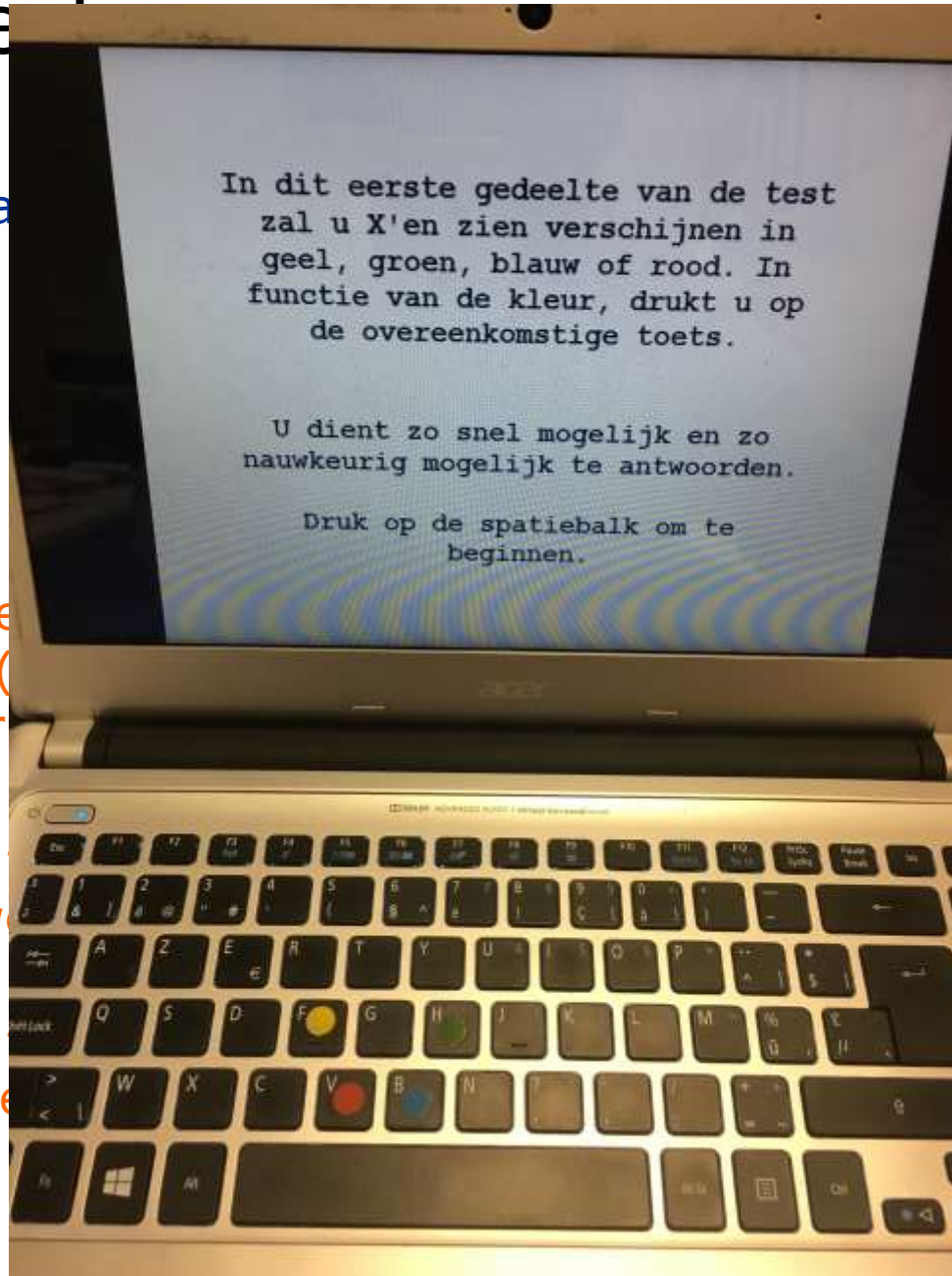
How: 3 parts

1: s RT

words yellow  
colours (red)  
(incongruent)

2: push  
words white

3: push  
the screen



matching  
colours

in which the

displayed on

# Stroop-test

Why: selective attention

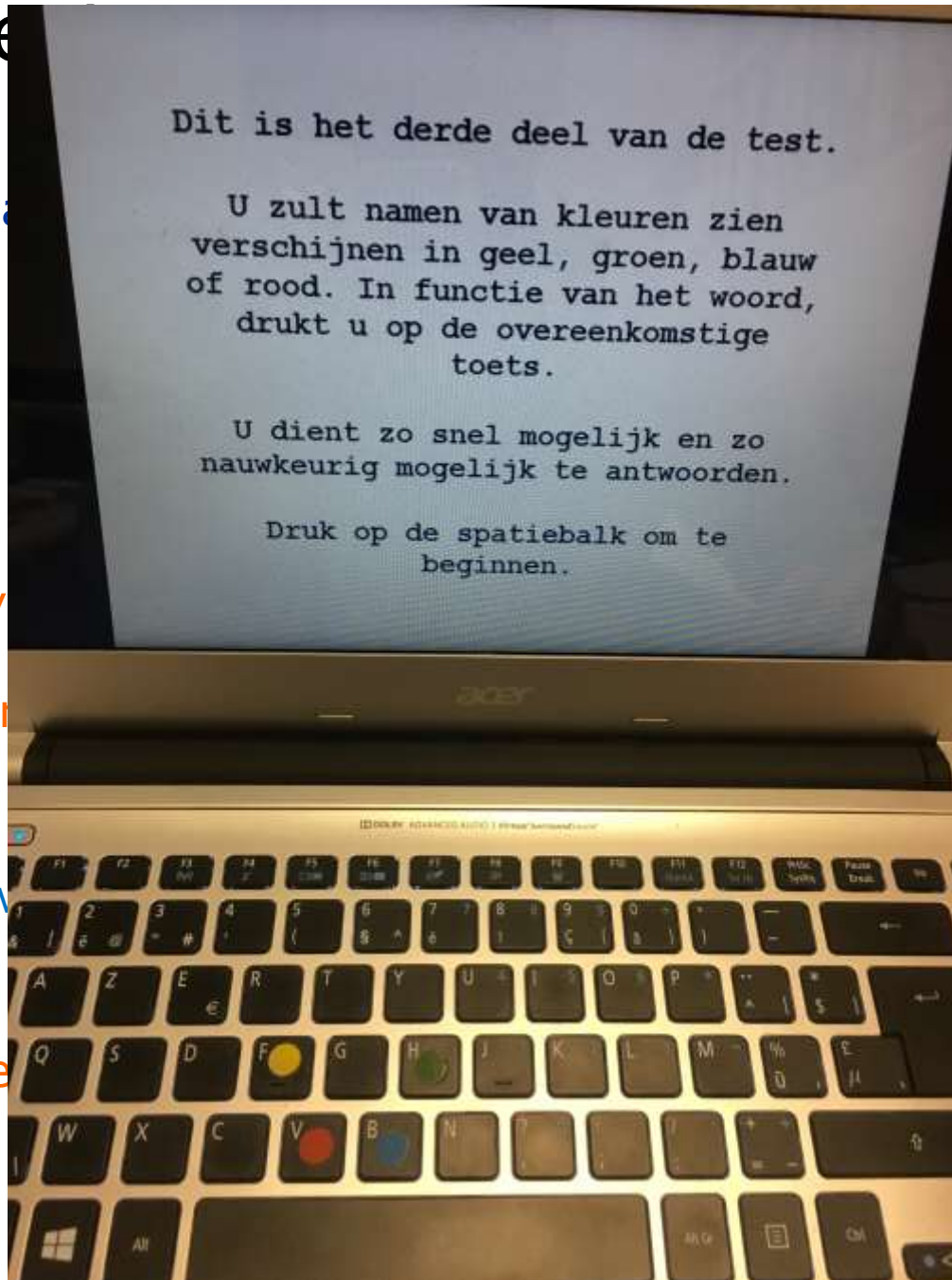
How: 3 parts

1: s RT

words y  
colours  
(incongru)

2: push  
words w

3: push  
the scre



matching  
colours

n which the

splayed on



# Stroop-t

Why: selective

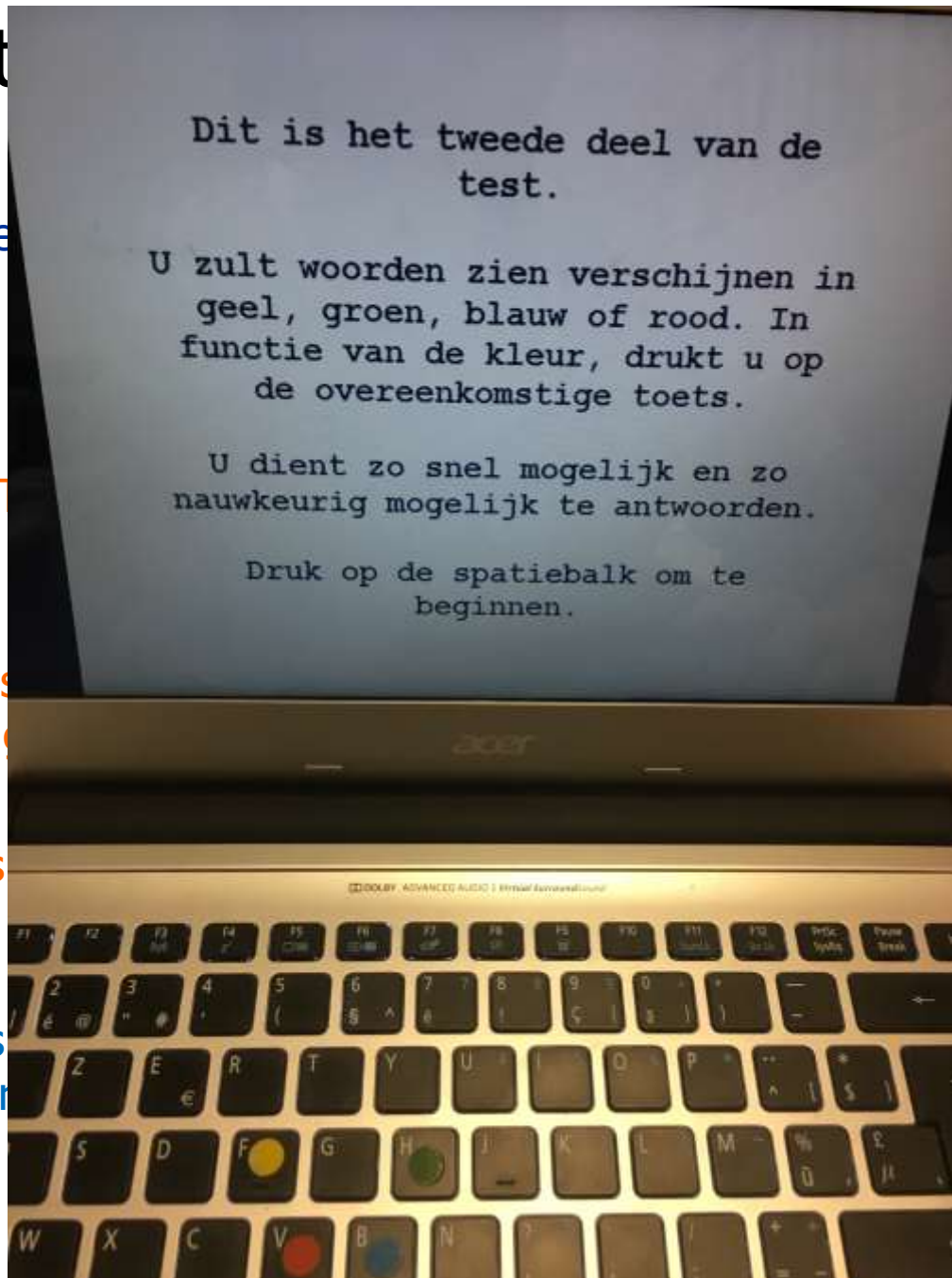
How: 3 parts

1: s RT

words  
colours  
(incon

2: pus  
words

3: pus  
the scr



n matching  
colours

n which the

isplayed on

# Stroop-test

## Accuracy

		Baseline (%)		6 months (%)	
		Mean	SD	mean	SD
color	congruent	98	4	97	3
	incongruent	92	3	89	16
word	congruent	97	4	96	6
	incongruent	88	9	86	11
sRT		97	3	95	5

# Stroop-test

## Accuracy

No Sign differences after intervention

No sign differences between sexes

No sign interaction effect

# Stroop-test

## Reaction-Time

		Baseline (ms)		6 months (ms)	
		mean	SD	mean	SD
color	congruent	766,24	126,69	714,87	145,37
	incongruent	882,36	170,86	832,36	194,88
word	congruent	819,22	133,00	732,21	135,52
	incongruent	956,88	163,68	851,35	164,17
sRT		699,76	122,11	644,43	118,62

# Stroop-test

## Reaction-Time

Intervention		F	p	Partial-eta2
colour	congruent	19,48	< 0,001	0,30
	incongruent	8,32	< 0,001	0,15
word	congruent	36,80	< 0,001	0,44
	incongruent	29,33	< 0,001	0,39
sRT		18,66	< 0,001	0,29

# Preliminary data analysis for gait & cognition