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# Effects of a structured and individualized exercise program on fatigue and health-related quality of life in patients with metastatic breast cancer: the multinational randomized controlled PREFERABLE-EFFECT study

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# Disclosure Information

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## Anne May

I have the following relevant financial relationships to disclose:

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## Participating centers



## In collaboration with



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# Introduction – effects of exercise during cancer treatment

## Exercise, Diet, and Weight Management During Cancer Treatment: ASCO Guideline

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**RESULTS** - Exercise during **adjuvant** cancer treatment leads to improvements in cardiorespiratory fitness, strength, fatigue, and other patient-reported outcomes.

**RECOMMENDATION** - Oncology providers should recommend regular aerobic and resistance exercise during active treatment **with curative intent**.

**FUTURE RESEARCH** - Studies are needed in ... **those with metastatic disease**.

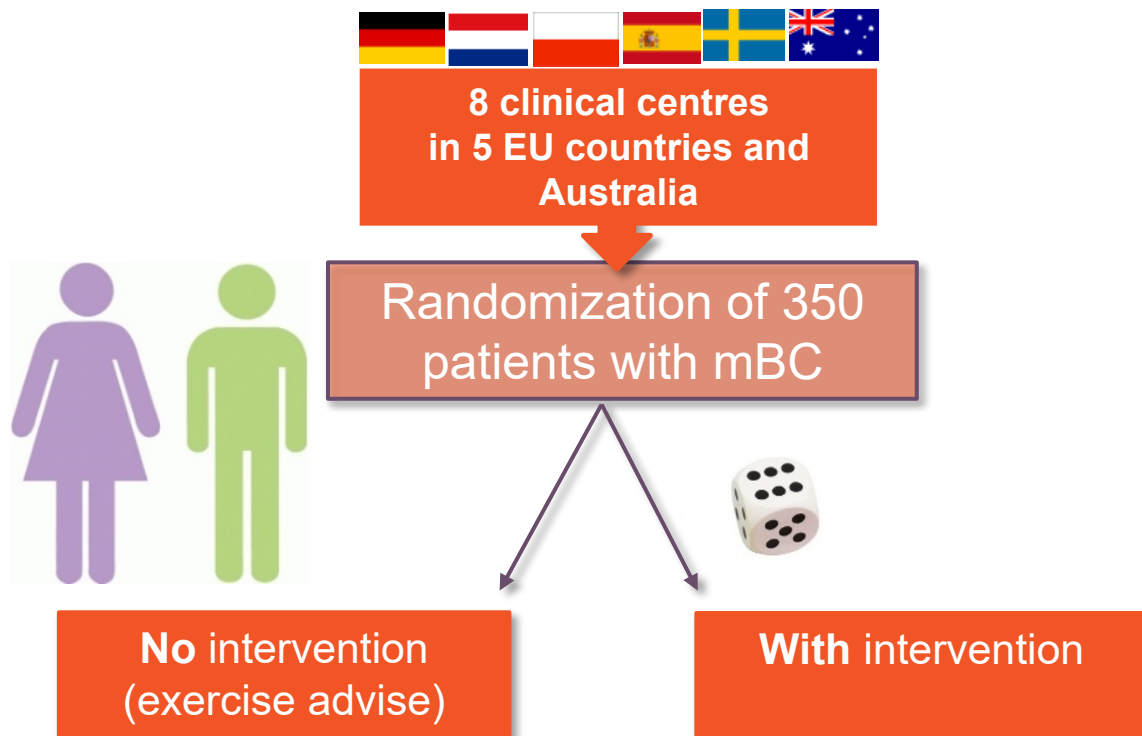
# Aim – PREFERABLE-EFFECT trial

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To investigate the effects of **supervised** and individualized **exercise** in patients with **metastatic breast cancer** on **fatigue** and **quality of life**.



# Methods



## **Inclusion criteria:**

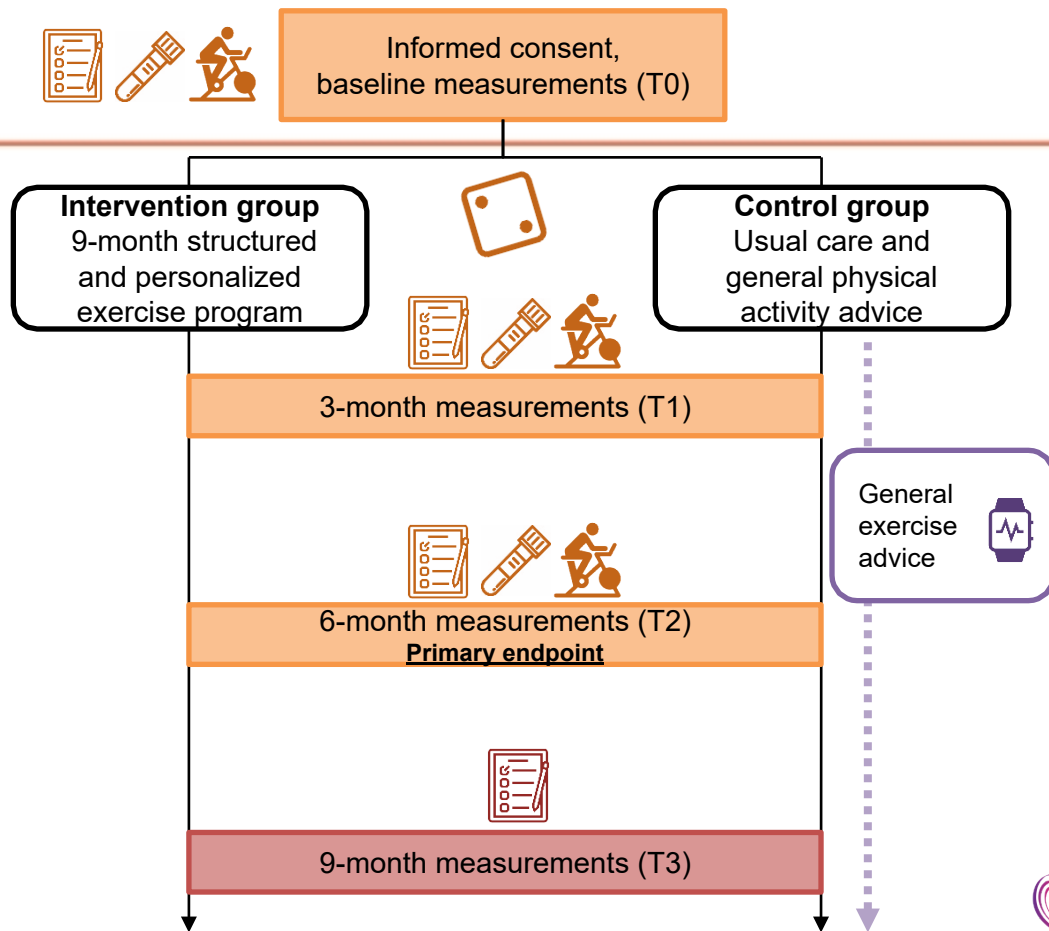
- Age  $\geq 18$  years
- Diagnosis of breast cancer stage IV
- ECOG performance status  $\leq 2$
- Life expectancy of  $\geq 6$  months

## **Exclusion criteria:**

- Contraindication for exercise
- Unstable bone metastases
- Too physically active ( $>210$  min/wk)



# Methods



# Methods



Informed consent,  
baseline measurements (T0)

**Intervention group**  
9-month structured  
and personalized  
exercise program

**Control group**  
Usual care and  
general physical  
activity advice

**Aerobic training**  
moderate-intensity & high-intensity  
interval training  
**Resistance Training**  
major lower and upper body  
muscles  
**Balance training**

Supervised exercise:  
2x p.w. 60 min



Exercise  
advice

Supervised exercise:  
1x p.w. 60 min  
Unsupervised exercise:  
1x p.w. 60 min



3-month measurements (T1)



6-month measurements (T2)  
**Primary endpoint**



General  
exercise  
advice



9-month measurements (T3)





# Methods - Outcomes

## Primary endpoints:

- Cancer-related **physical fatigue**
- Health-related **QoL**

## Secondary endpoints include:

- Pain, breast cancer specific symptoms, anxiety, depression
- Polyneuropathy, sleep
- Treatment related toxicities
- **Physical fitness**/performance, body composition
- Biomarkers
- Physical activity
- QALYs and direct and indirect costs



- EORTC-FA-12
- EORTC-QLQ-30 **summary** score

**Trial successful if either or both are statistically significant.\***




- Steep ramp test (maximal short exercise capacity (MSEC))


\*At 6-month post baseline, using mixed effect models adjusted for baseline and stratification factors (Bonferroni correction).





# Results – Baseline characteristics


## Intervention group (n=178)

 Age (years)  
54.9 ± 11.6


 Female  
99.4%


 Higher education degree  
73.6%


 Married/living together  
68.0%


 BMI  
25.9 ± 5.1


## Control group (n=179)

 Age (years)  
55.9 ± 10.7

 Female  
99.4%

 Higher education degree  
76.0%

 Married/living together  
65.4%


 BMI  
26.6 ± 5.3




# Results – Baseline characteristics

## Intervention group (n=178)


 Age (years)  
54.9 ± 11.6

 Recurrent disease  
65.1%


 Female  
99.4%

 1st/2nd line treatment  
75.3%


 Higher education degree  
73.6%

 **HR+/HER2-: 60.7%**  
HER2+: 23.6%  
Triple negative: 7.3%

 Married/living together  
68.0%


 Bone metastases  
65.2%

 BMI  
25.9 ± 5.1


 Endocrine treatment  
>50%

## Control group (n=179)


 Age (years)  
55.9 ± 10.7

 Recurrent disease  
62.1%


 Female  
99.4%

 1st/2nd line treatment  
74.3%


 Higher education degree  
76.0%

 **HR+/HER2-: 59.2%**  
HER2+: 22.9%  
Triple negative: 12.3%

 Married/living together  
65.4%

 Bone metastases  
69.8%

 BMI  
26.6 ± 5.3

 Endocrine treatment  
>50%

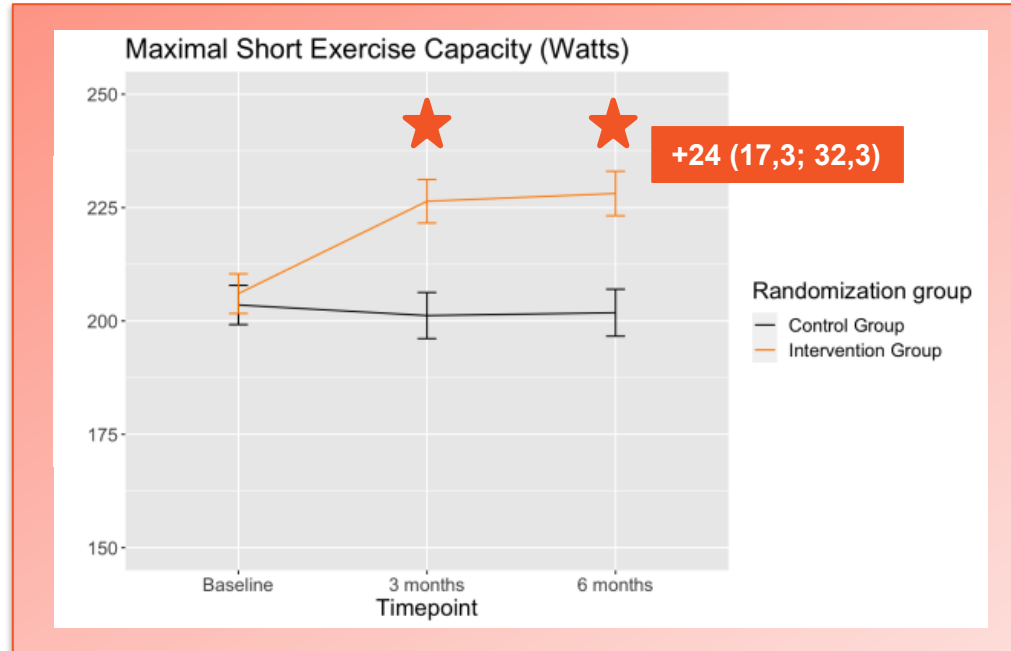


# Results – Attendance, SAEs & physical fitness outcome



Median **attendance**  
[IQR] = 77% [48-92]

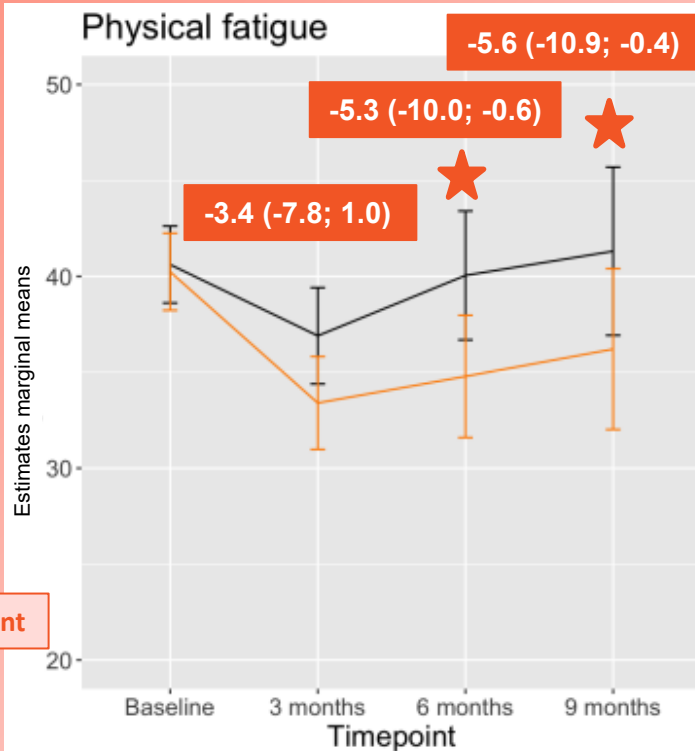
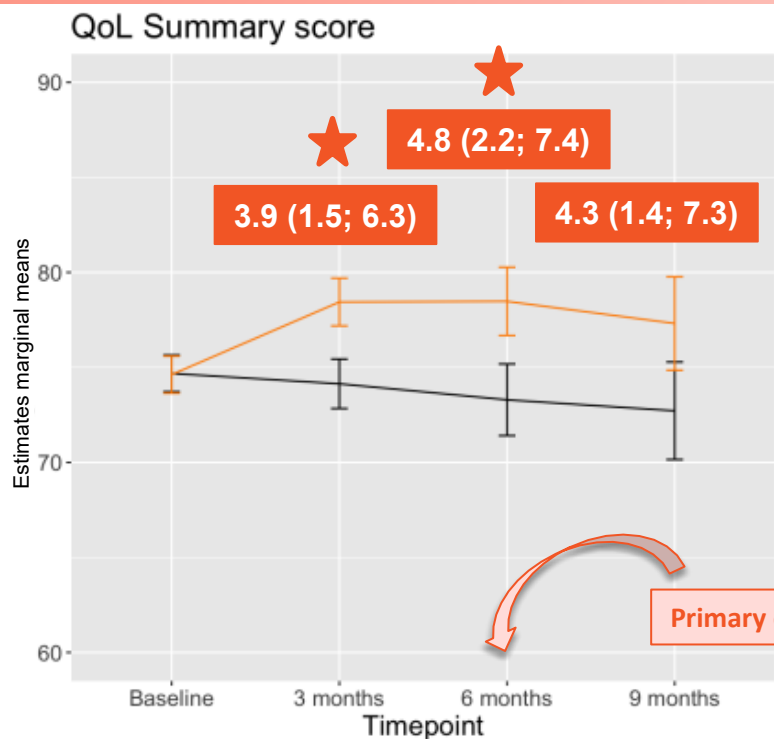
6-month post-BL:  
18% **discontinuation**  
• 44% due to death



**Two SAEs:** 1 wrist fracture and 1 sacral stress fracture, none related to bone metastases.



# Results – Primary outcomes



Randomization group

— Control Group  
— Intervention Group

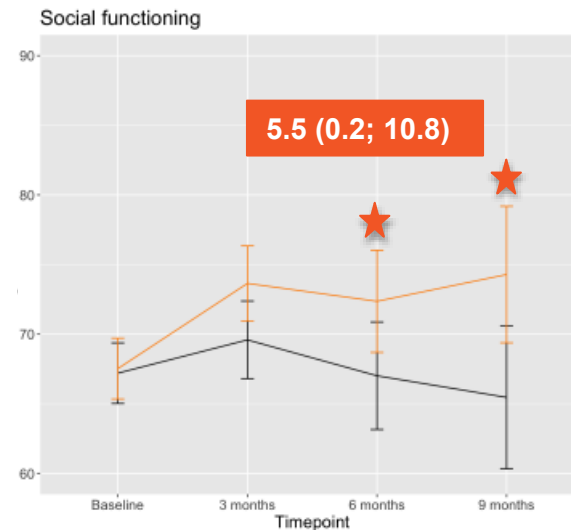
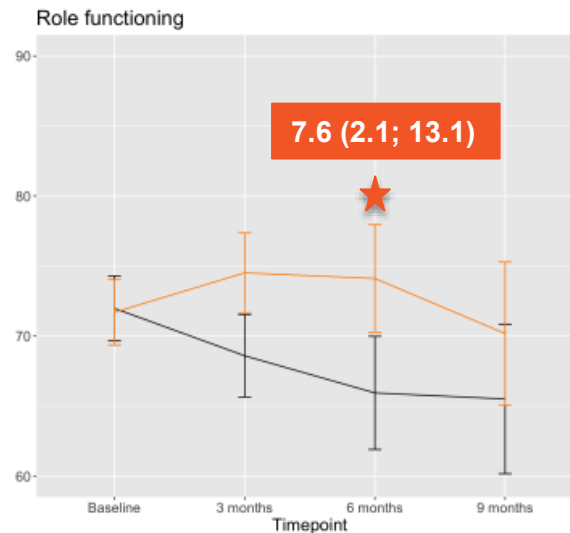
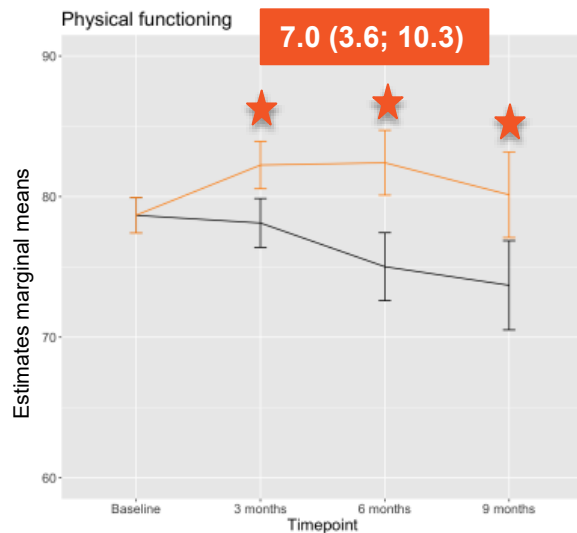
★ Significant between-group differences



# Results – QoL functional scales

Randomization group

- Control Group
- Intervention Group



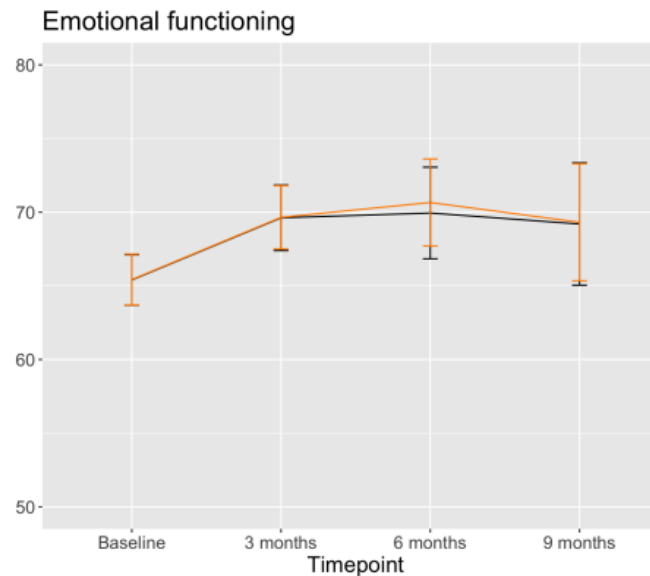
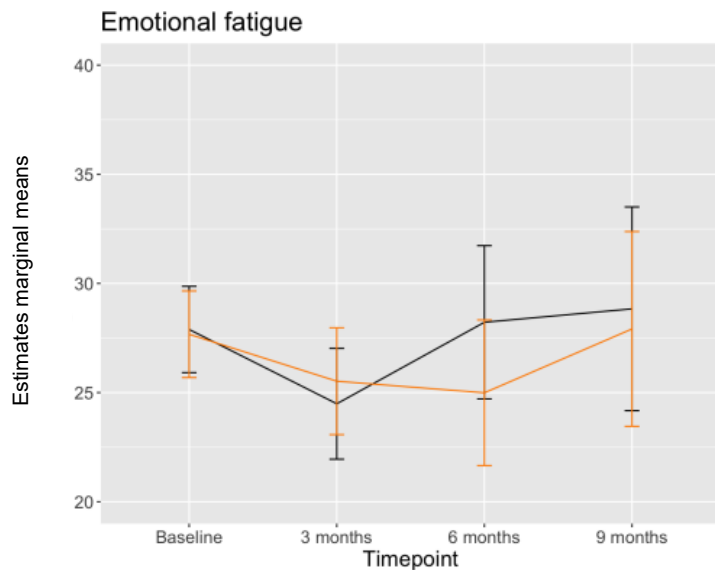
★ Significant between-group differences



# Results – Emotional fatigue and functioning

Randomization group

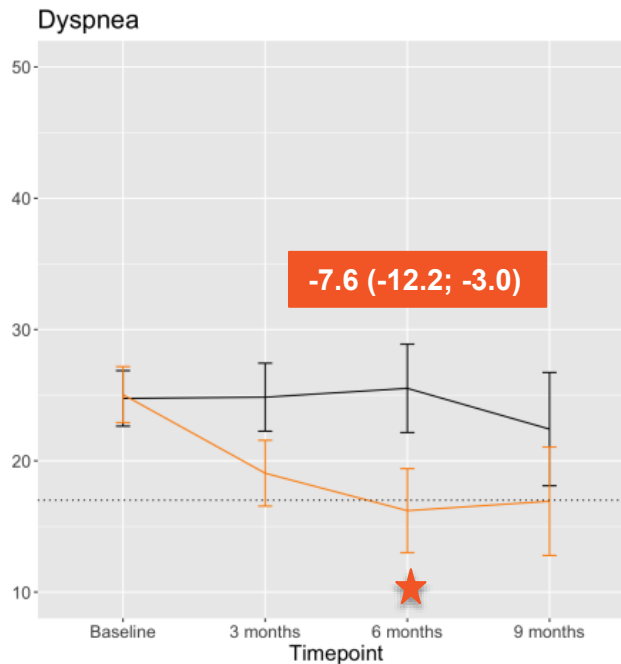
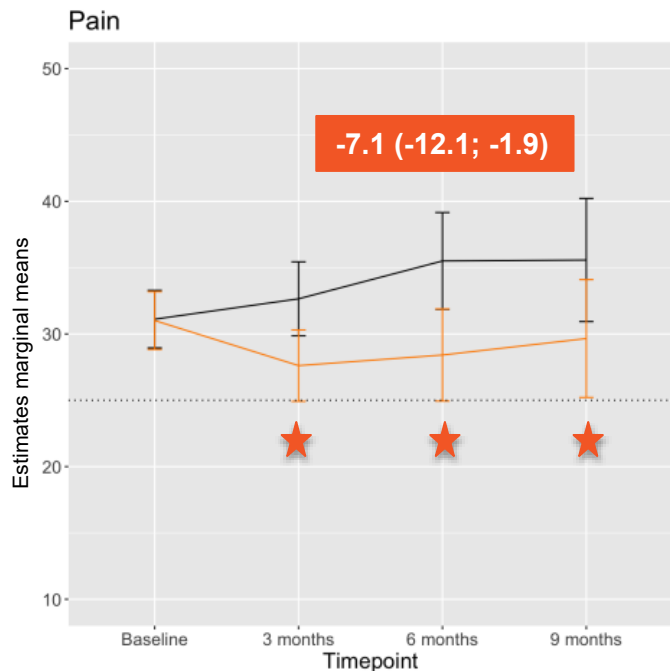
- Control Group
- Intervention Group



# Results – Pain and dyspnea

Randomization group

- Control Group
- Intervention Group



**PREFERABLE-PERSPECTIVE**  
(questionnaire n=420):

Concerns that **pain** and **fatigue** worsens while exercising

(Sweegers et al. Sup. Care Can. 2023)

58%

% Scoring above clinical important threshold at baseline\*

57%

**Pain**

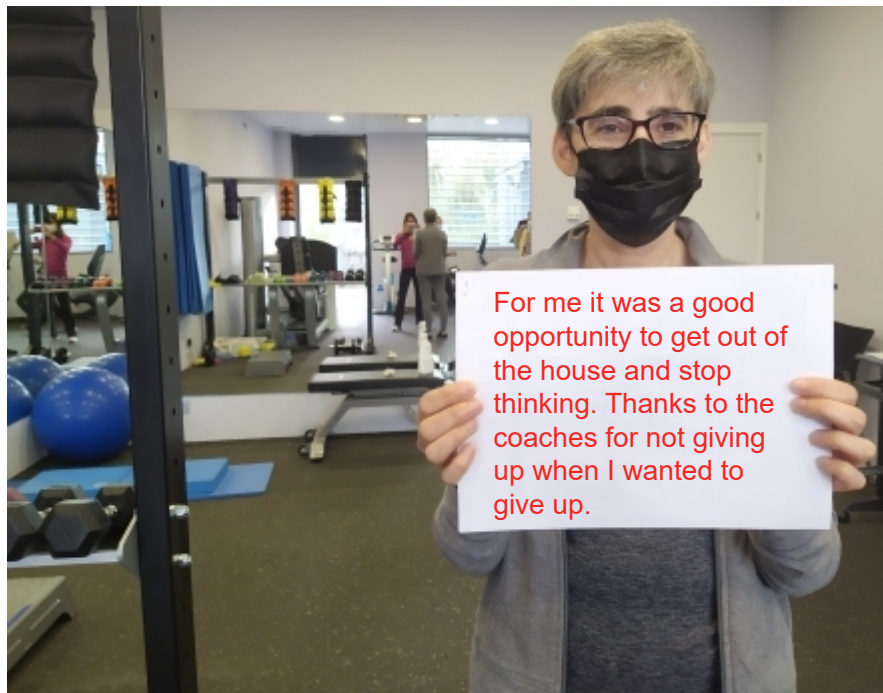
**Dyspnea**



\* Giesinger et al. J Clin Epidemiol. 2020



# Patient experience



# Conclusions

- A supervised resistance and aerobic exercise intervention resulted in beneficial effects on fatigue, HRQoL, and other clinically relevant outcomes of patients with mBC.
- We recommend supervised exercise as part of supportive care regimens during palliative treatment.

