

# **Does an aerobic exercise worksit intervention reduce cardiovascular risk factors?**

**- A RCT among cleaners**

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**No conflict of interest - Nothing to disclose**



NATIONAL RESEARCH CENTRE  
FOR THE WORKING ENVIRONMENT



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# Background

## - Occupational physical activity in relation to CVD risk



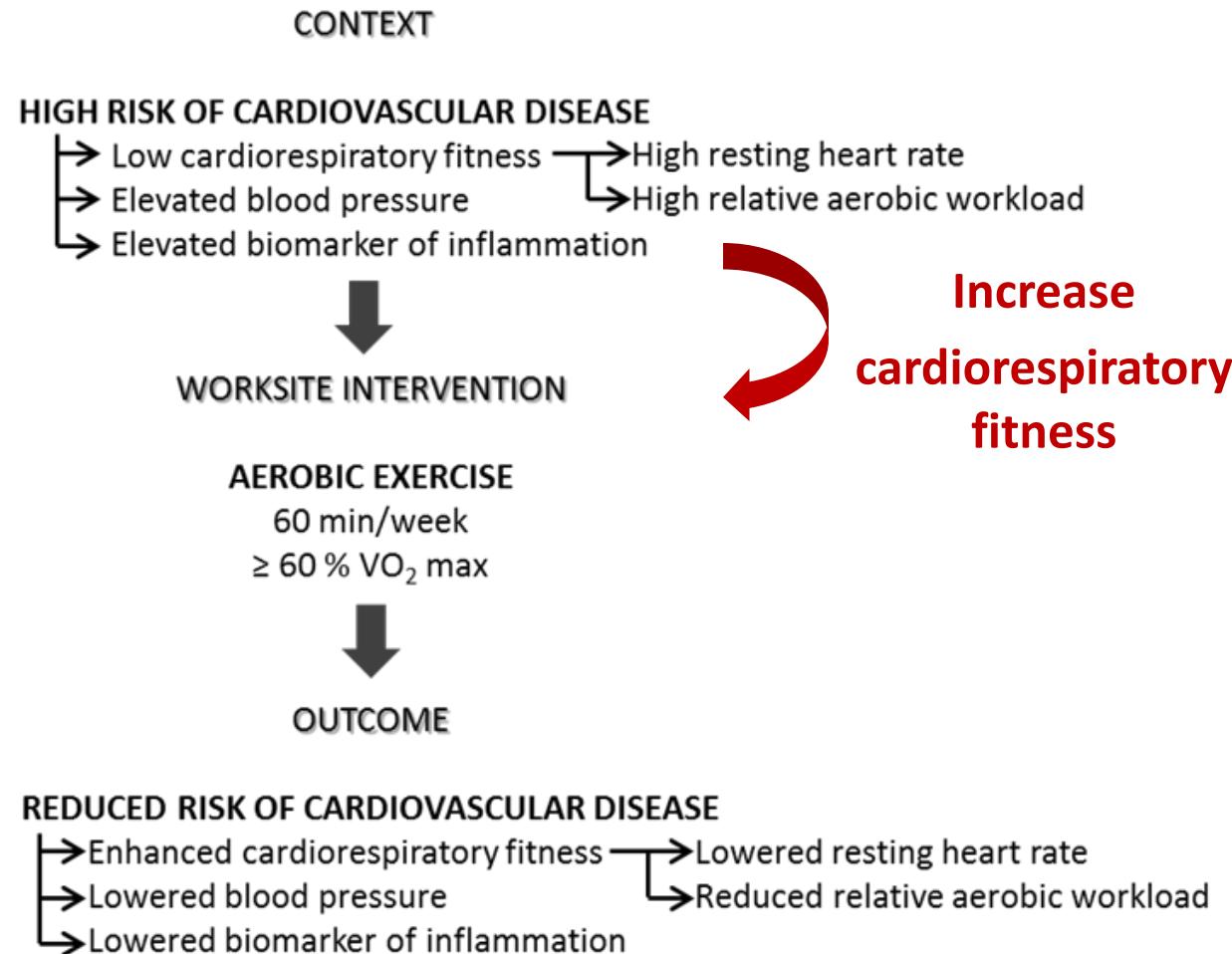
### Cleaners

- High level occupational physical activity
- Low cardiorespiratory fitness



**Increased risk for CVD**

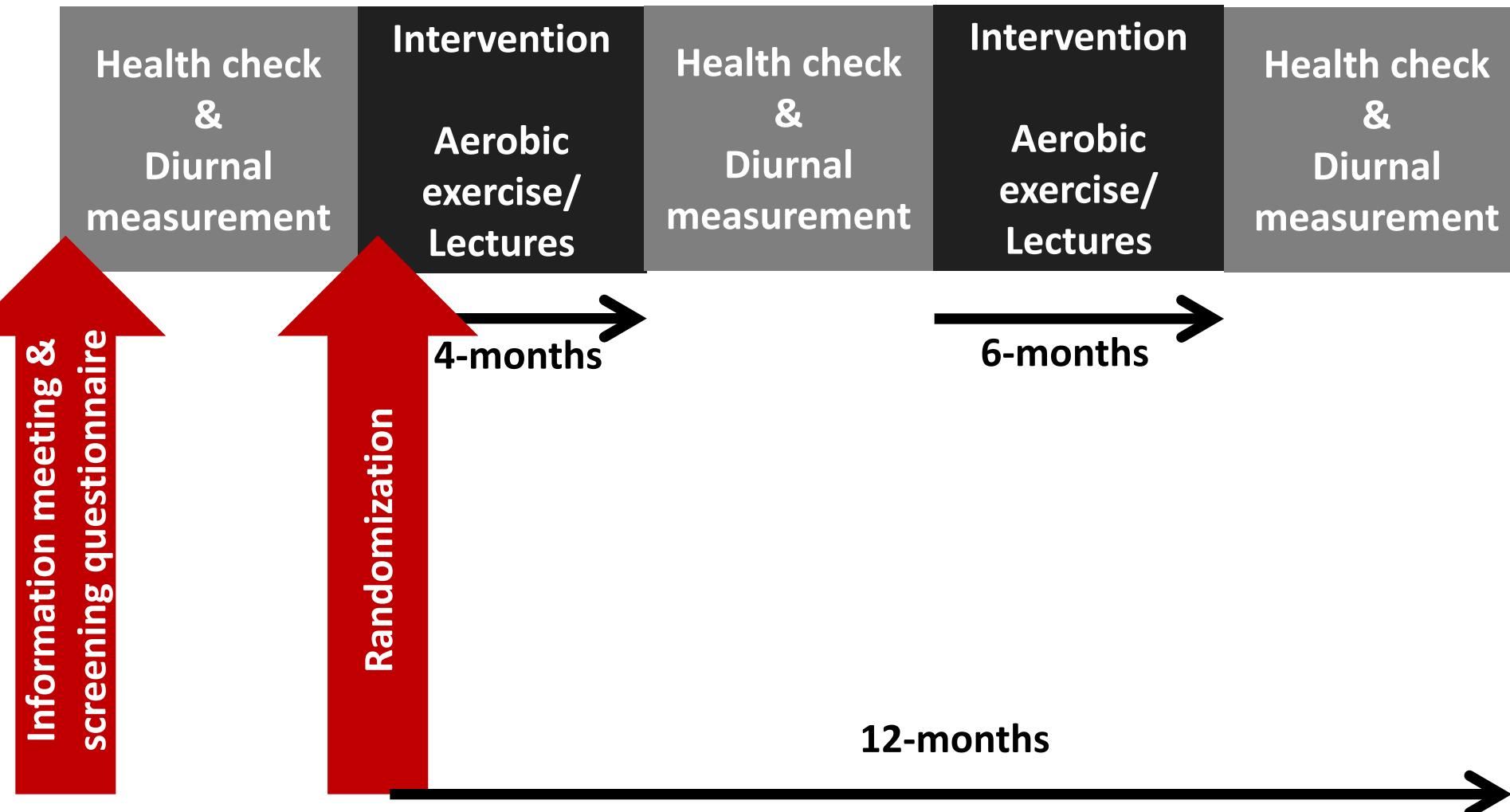
# Conceptual model



# METHODS

- HOW WAS THIS  
INVESTIGATED?

# Time line



# Diurnal measurements



SCIENCEphotOLIBRARY

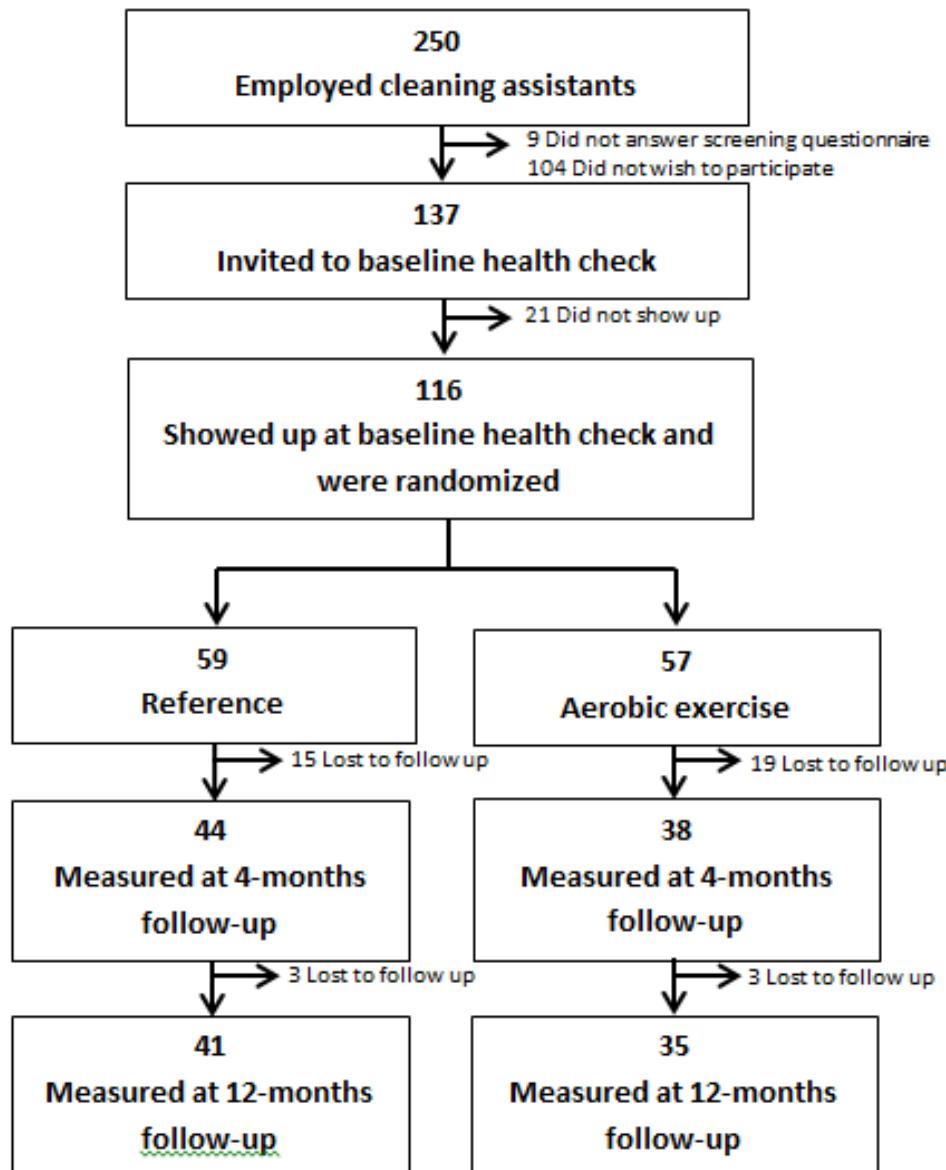


Korshøj et al 2012, BMC Public Health

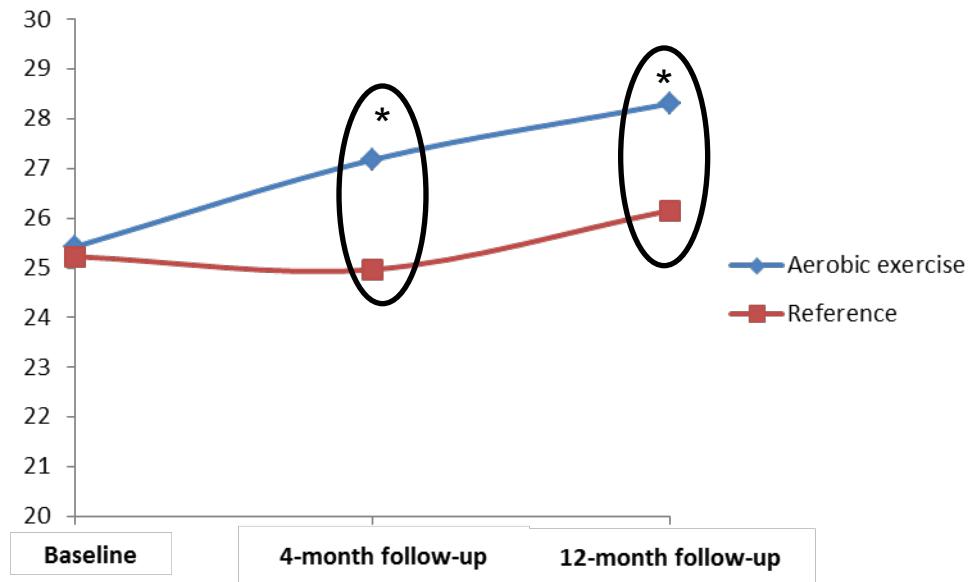
# RESULTS

- DID IT WORK?

# Flow - baseline to 12-months follow-up

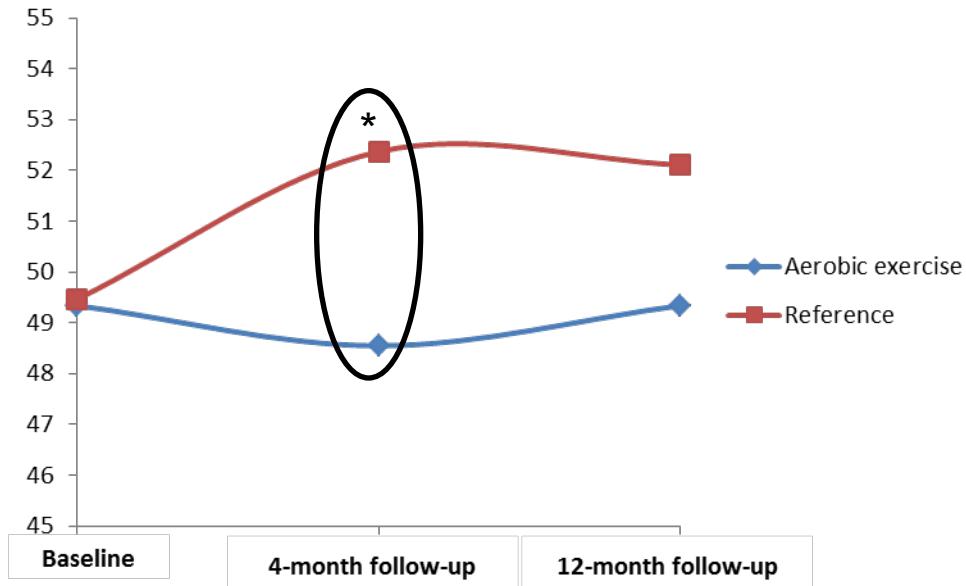


# Cardiorespiratory fitness ( $\text{mLO}_2/\text{min/kg}$ )



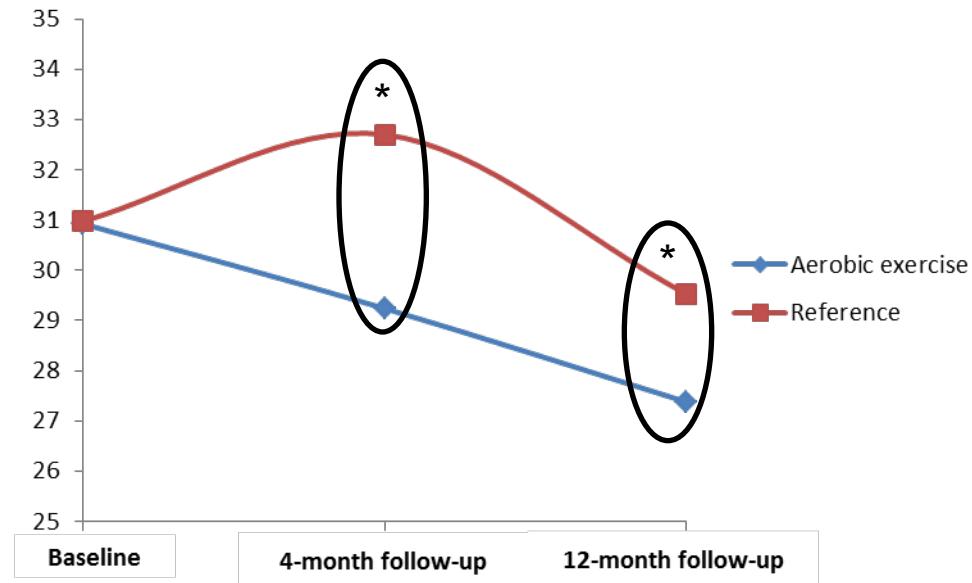
Fitness ( $\text{mLO}_2/\text{min/kg}$ )	$\Delta$	SE	95% CI	p	n
4-month follow-up	2.21	0.79	0.64 to 3.78	<0.01	85
12-month follow-up	2.15	1.03	0.11 to 4.19	0.04	80

# Sleeping heart rate (bpm)



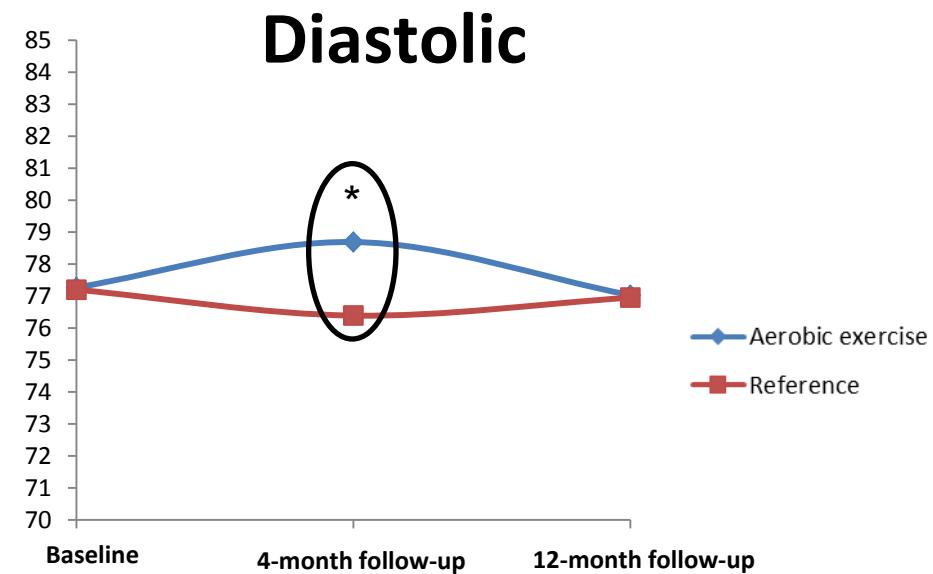
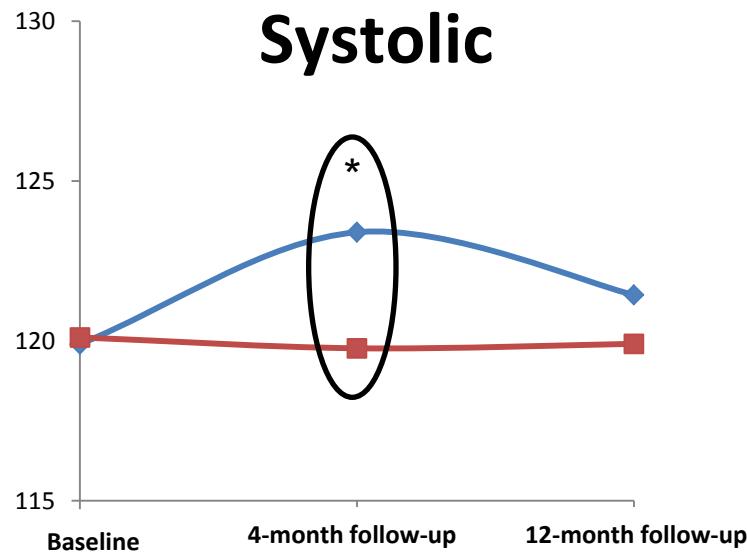
Sleeping heart rate (beat/min)	$\Delta$	SE	95% CI	p	n
4-month follow-up	-3.82	1.05	-5.91 to -1.73	<0.01	63
12-month follow-up	-1.37	1.09	-3.54 to 0.81	0.22	67

# Aerobic workload (%HRR)



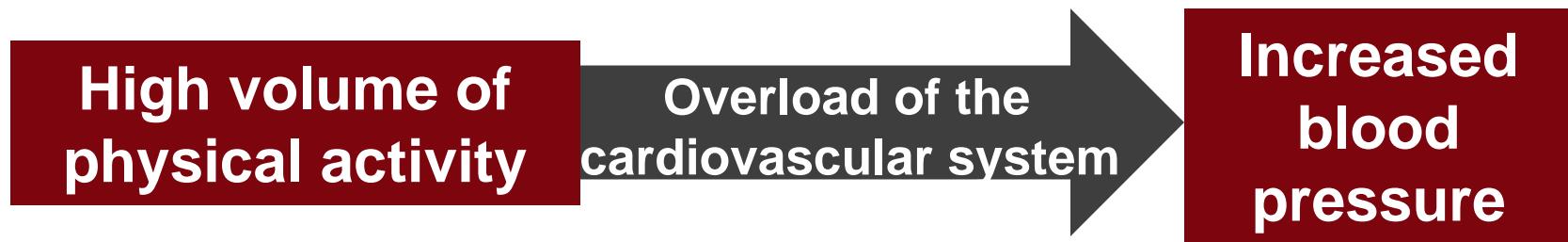
Aerobic workload (% HRR)	$\Delta$	SE	95% CI	p	n
4-month follow-up	-3.46	1.23	-5.92 to -1.00	<0.01	61
12-month follow-up	-2.15	1.06	-4.28 to -0.03	<0.05	60

# 24-hour blood pressure (mmHg)



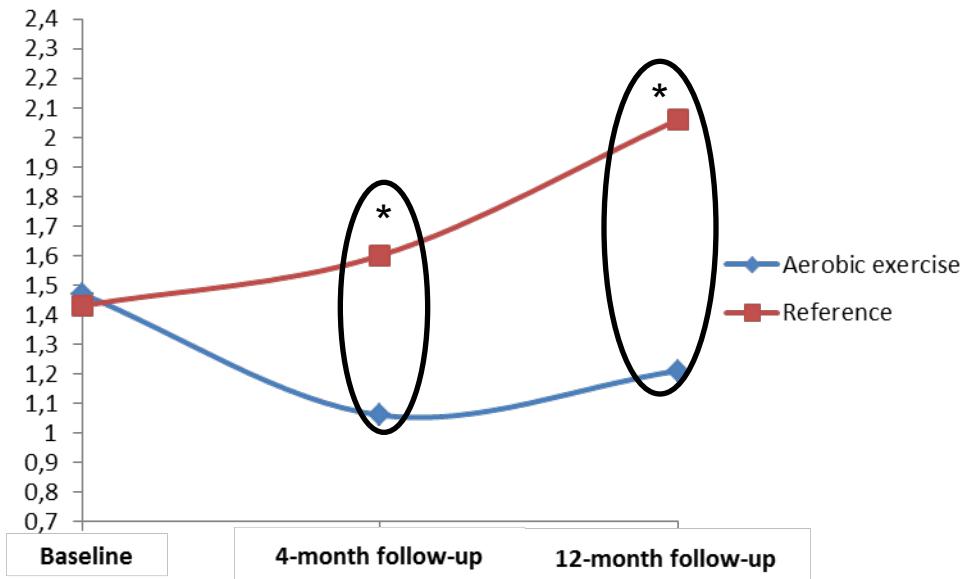
24-hour blood pressure (mmHg)	Systolic				Diastolic				p	n
	Δ	SE	95% CI	p	Δ	SE	95% CI	p		
4-month follow-up	3.60	1.00	-1.60 to 5.70	<0.01	2.30	0.70	0.90 to 3.80	<0.01	79	
12-month follow-up	1.53	1.52	-1.61 to 4.66	0.33	0.08	1.05	-2.08 to 2.25	0.94	30	

# Volume of physical activity and risk for CVD



- Low cardiorespiratory fitness
- High level of OPA
- High aerobic workload

# High sensitive C-reactive protein

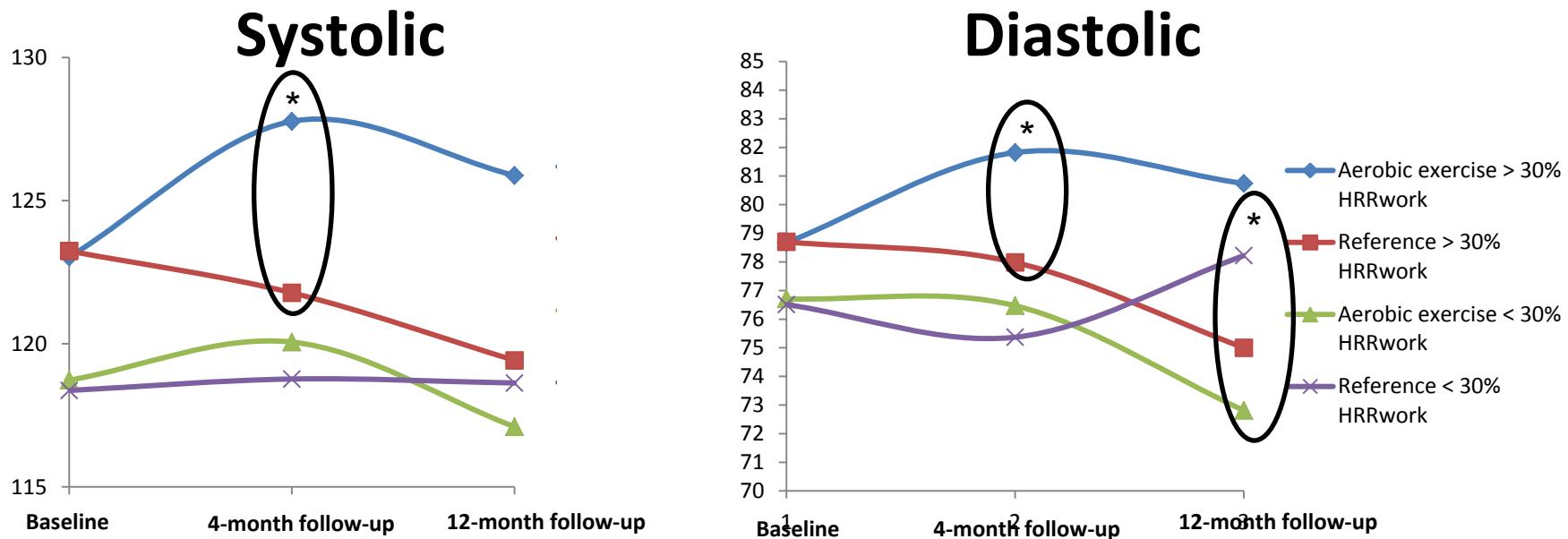


hsCRP (µg/ml)	Δ	SE	95% CI	p	n
4-month follow-up	-0.54	0.20	-0.94 to -0.14	<0.01	93
12-month follow-up	-0.65	0.24	-1.12 to -0.19	<0.01	87

# Volume of physical activity and risk for CVD



# 24-hour blood pressure Stratified on aerobic workload



24-hour blood pressure	Systolic – HIGH				Diastolic – HIGH			
	Δ	SE	95% CI	p	Δ	SE	95% CI	p
4-month follow-up, n= 31	6.00	1.80	2.40 to 9.60	<0.01	3.80	1.30	1.30 to 6.40	<0.01
12-month follow-up, n=13	6.46	4.37	-7.16 to 20.08	0.23	5.74	6.12	-13.47 to 24.95	0.42
	Systolic – LOW				Diastolic – LOW			
	1.30	1.50	-1.70 to 2.40	0.38	1.10	1.10	-1.20 to 3.30	0.33
4-month follow-up, n=35	-3.35	2.95	-11.54 to 4.83	0.32	-6.33	1.46	-9.86 to -2.79	<0.01
12-month follow-up, n=11								

# PERSPECTIVES

- SHOULD WE RECOMMEND  
AEROBIC EXERCISE  
WORKSITE INTERVENTIONS  
AMONG CLEANERS?



# Perspectives

# YES!

- Aerobic exercise are beneficial for cleaners exposed to high occupational physical activity.
- But, aerobic workload seems to modify the beneficial health effects.

**THEREFORE...**

- Individual tailoring of both aerobic workload and exercise and/or multifaceted targeting of high aerobic workloads should be considered.

# Acknowledgements



Thank you!

