

# **EFFECT OF EXERCISE AND PHYSICAL ACTIVITY COUNSELLING ON CARDIOVASCULAR RISK FACTORS**

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# The Problem

- There is a large and increasingly indisputable body of evidence demonstrating the improvement and even prevention cardiovascular conditions with increased physical activity.
- Despite this research evidence however, many public health initiatives aimed at increasing physical activity have failed to demonstrate clinically relevant effects.

# Exercise Referral

## Gym sessions on NHS 'are just a waste of money' – Daily Mail 2011

- **Conclusions:** Considerable uncertainty remains as to the effectiveness of exercise referral schemes for increasing physical activity, fitness, or health indicators, or whether they are an efficient use of resources for sedentary people with or without a medical diagnosis.



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Pavey, T. G., Taylor, A. H., Fox, K. R., Hillsdon, M., Anokye, N., Campbell, J. L., ... & Taylor, R. S. (2011). Effect of exercise referral schemes in primary care on physical activity and improving health outcomes: systematic review and meta-analysis. *BMJ: British Medical Journal*, 343.



# Evidence Gap

- Clinical research unit
- Human performance laboratory
- Clinical centre
- Outpatient clinic
- University medical centre
- Biomedical research centre
- University research centre
- Applied physiology section of a university exercise facility

# Pilot Study Review



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# Key Outcomes

- Impact of 12 weeks Fitness Centre Based Exercise (Free or Structured) and Physical Activity Counselling upon cardiovascular risk factors
- Pilot study before large scale intervention:
  - Recruitment
  - Method
  - Results

# Participants

- n = 105
- Recruited through fitness centre and local community
- Aged between 35 and 45 years
- Mean age 43 years  $\pm$  5
- Free from chronic disease
- Untrained (i.e., had not attended a fitness centre for more than 30 days and not part of a structured exercise programme)

# Participants

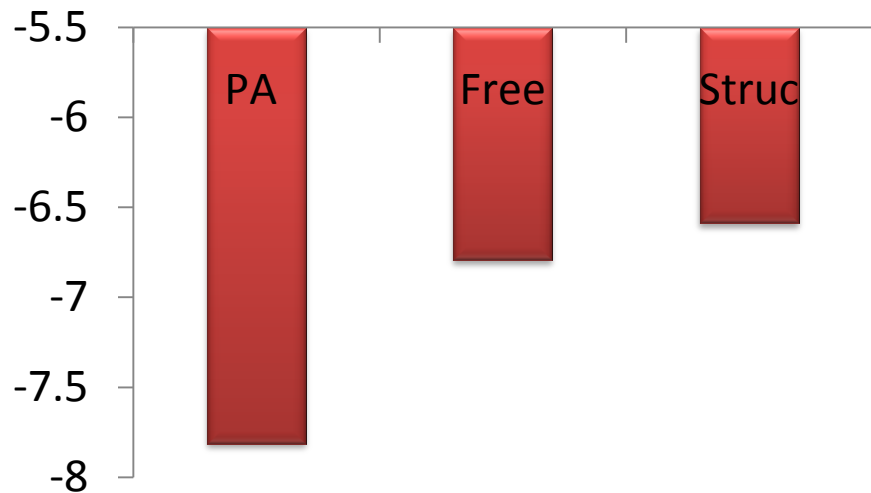
- BMI – 29.08
- Fat Mass - 31.15kg
- Body Fat % - 36.31
- Total Cholesterol – 4.72mmol/L
- Blood Pressure – 133/78
- VO2max – 35.1 ml/kg/min



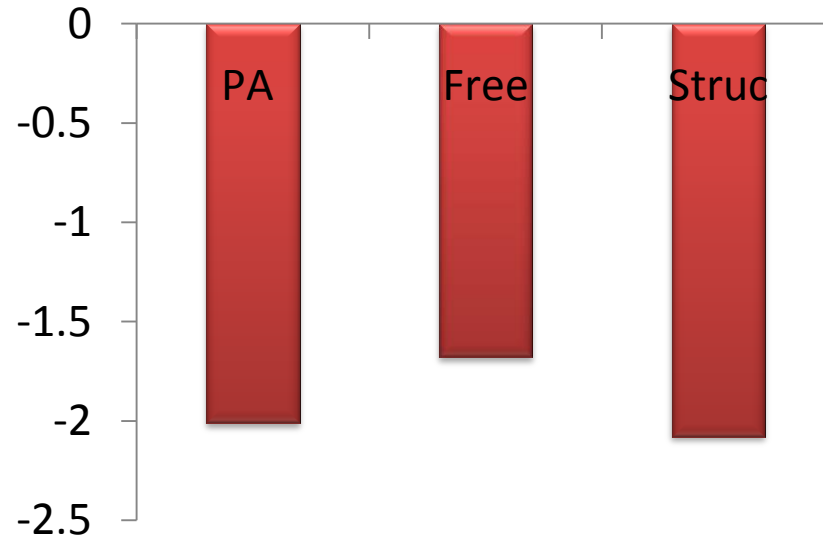
# Intervention Groups

- Structured exercise programme
- Unstructured fitness centre use
- Physical activity counselling

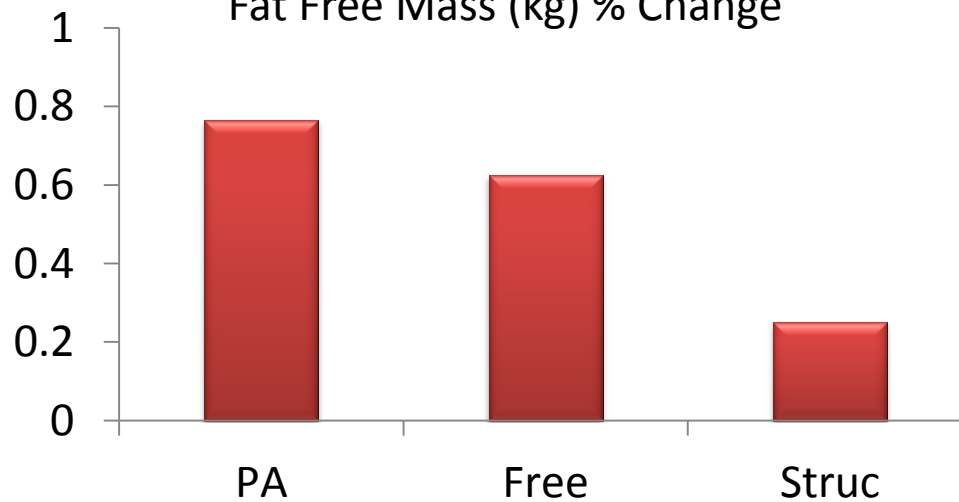
### Fat Mass (kg) % Change



### Body Mass (kg) % Change



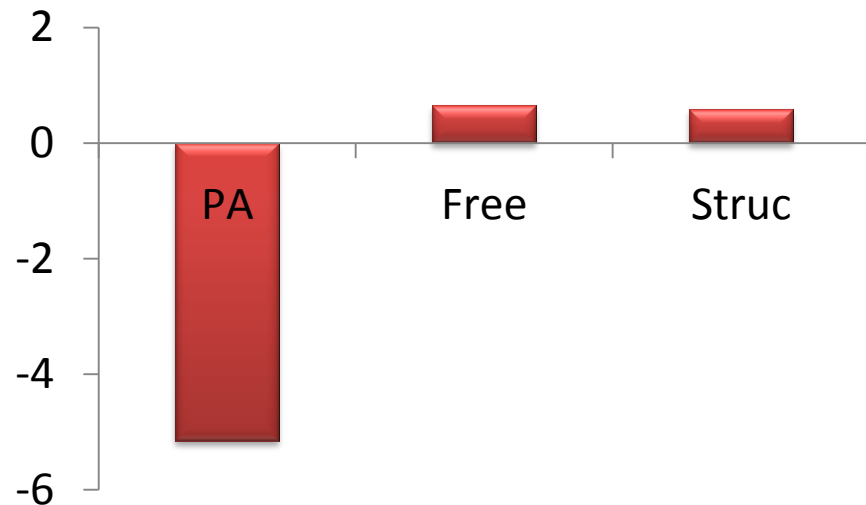
### Fat Free Mass (kg) % Change



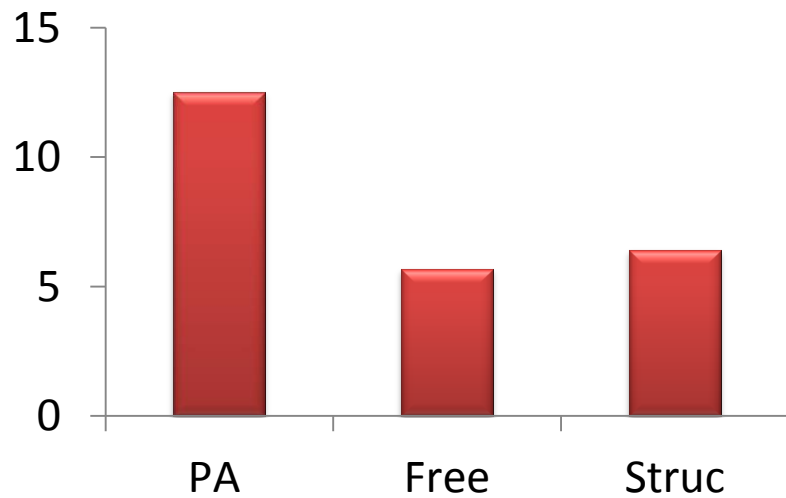
### Total Cholesterol % Change



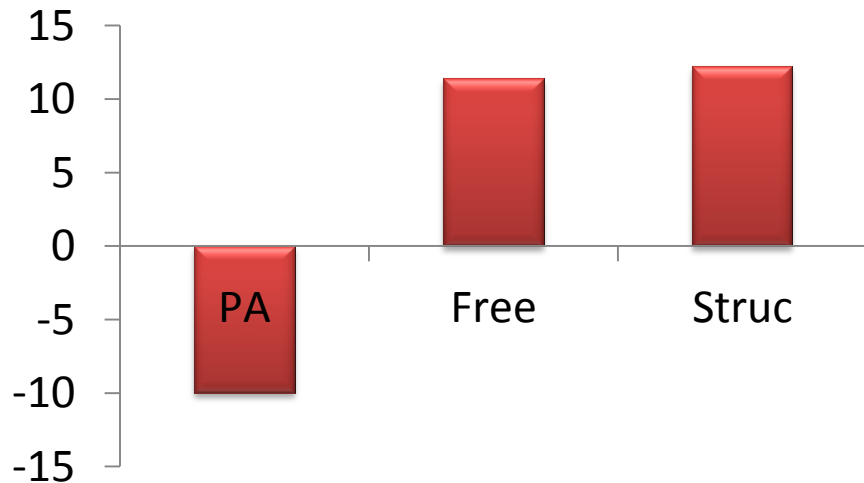
### LDL Cholesterol % Change



### HDL Cholesterol % Change



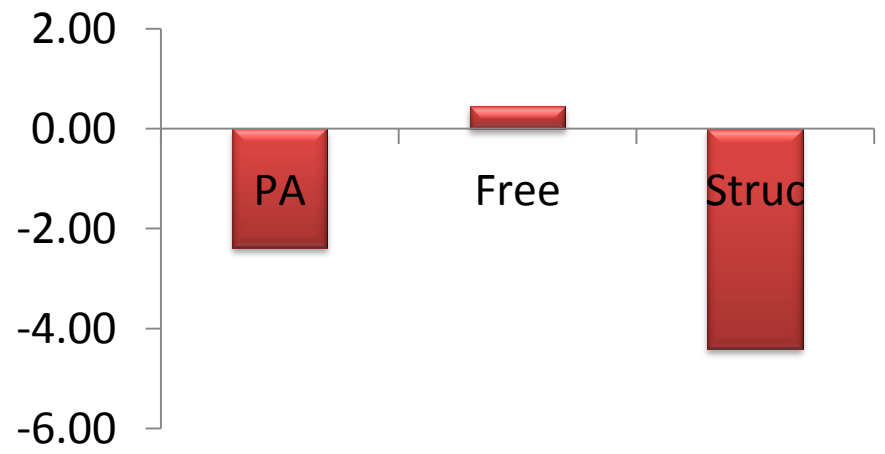
### Triglycerides % Change



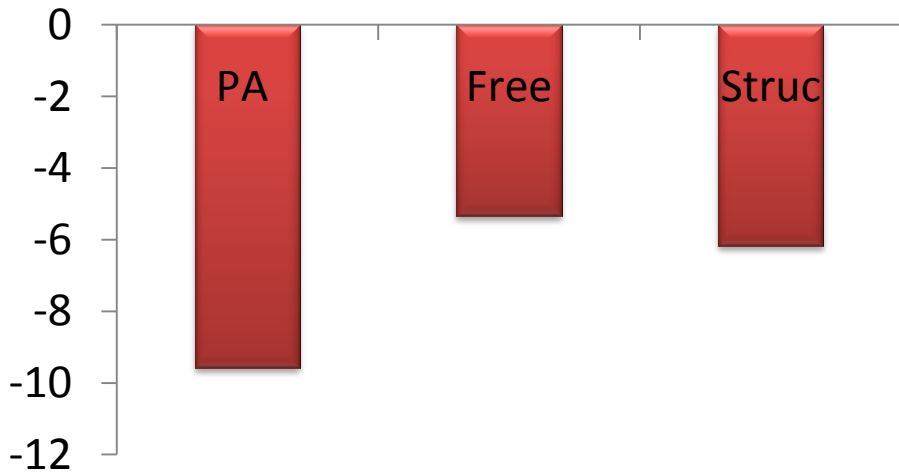
### Systolic Blood Pressure % Change



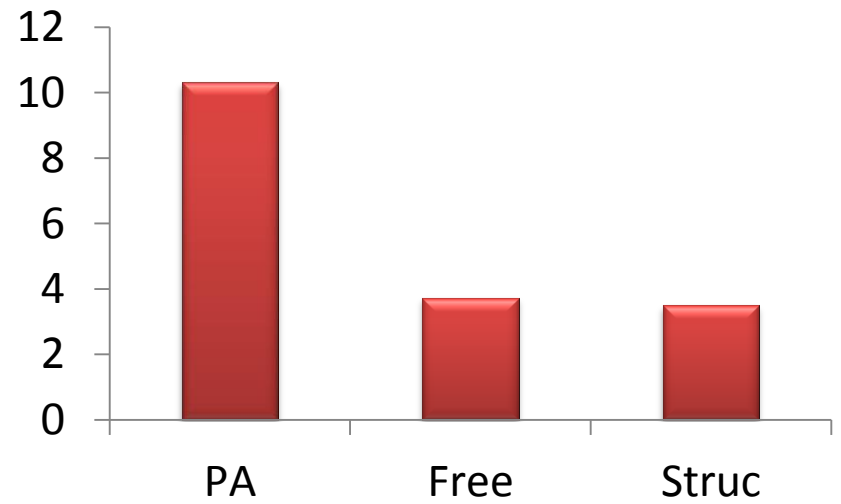
### Diastolic Blood Pressure % Change

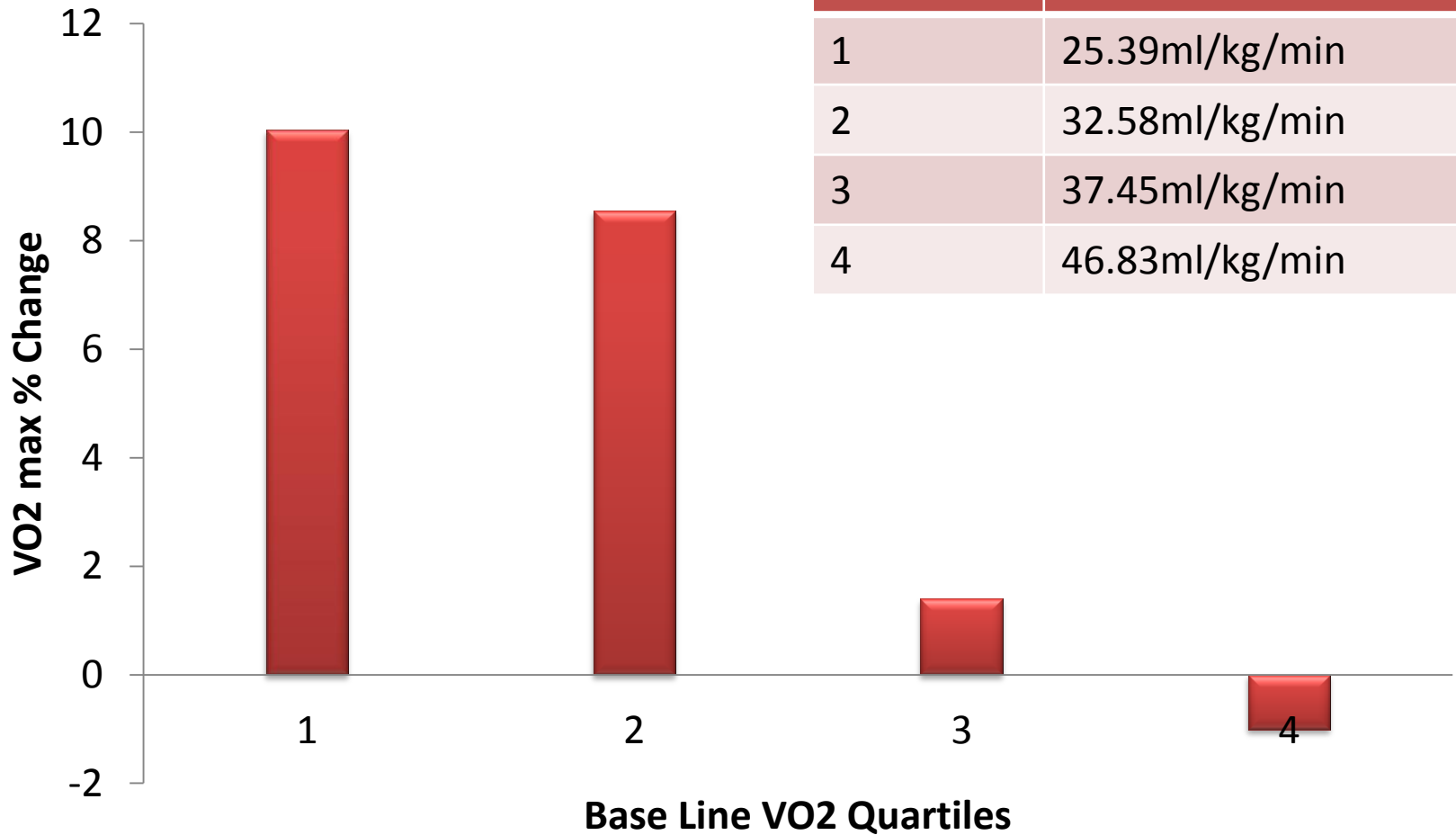


### Resting Heart Rate % Change



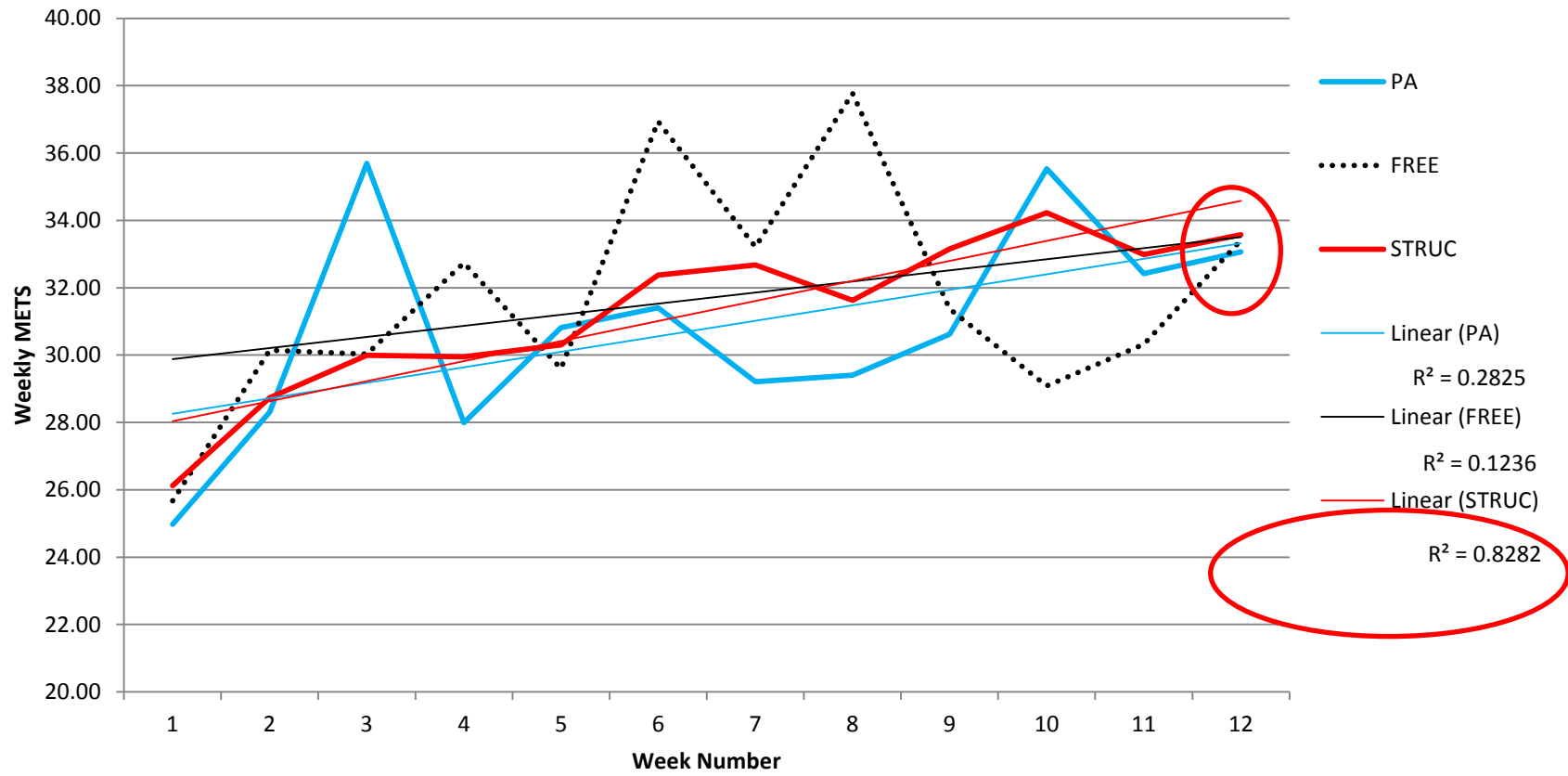
### Predicted VO2 % Change





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# Pilot Study

- Pilot study before large scale intervention:
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# Project get ukactive

- Longitudinal – 24 week and 48 week data collection points
- Multi – Centre – 26 locations around UK
- Randomised – STRUC vs FREE // PAC vs CON
- $n > 1125$
- Led by exercise professionals in situ





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