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.

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
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 ± 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
Systolic Blood Pressure % Change

Diastolic Blood Pressure % Change

Resting Heart Rate % Change

Predicted VO2 % Change
### Base Line VO2 Quartiles

<table>
<thead>
<tr>
<th>Quartile</th>
<th>Mean VO2max</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25.39 ml/kg/min</td>
</tr>
<tr>
<td>2</td>
<td>32.58 ml/kg/min</td>
</tr>
<tr>
<td>3</td>
<td>37.45 ml/kg/min</td>
</tr>
<tr>
<td>4</td>
<td>46.83 ml/kg/min</td>
</tr>
</tbody>
</table>
\[ R^2 = 0.2825 \]
\[ R^2 = 0.1236 \]
\[ R^2 = 0.8282 \]

Week Number

Weekly METS

PA
FREE
STRUC
Linear (PA)
Linear (FREE)
Linear (STRUC)

\[ R^2 = 0.2825 \]
\[ R^2 = 0.1236 \]
\[ R^2 = 0.8282 \]
Pilot Study

• Pilot study before large scale intervention:
  – Recruitment
  – Method
  – Results
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