Physical activity interventions for smoking cessation during pregnancy

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Today I will present:

- Arguments for using physical activity as an aid to smoking cessation during pregnancy
- Survey of pregnant smokers' attitudes to exercise
- Pilot study
- RCT
Why might physical activity aid smoking cessation during pregnancy?

- Increases quit rates in non-pregnant women smokers
- Reduces cravings/withdrawal
- Weight control
- Exercise recommended in pregnancy
- Alternative to NRT

Ussher et al 2012 Exercise interventions for smoking cessation. Cochrane Review.
Cross-sectional survey

- 88 pregnant smokers
- Assessing physical activity (PA) levels and psychosocial variables

Results

- 88% agreed physical activity important in pregnancy
- 60% very/extremely interested in exercising to help them quit
- Main barriers:
  - Fatigue: 48%
  - Time: 18%
  - Exercise uncomfortable: 11%
  - Not sure what to do: 11%
- None or little social support: 71%
- Low self-efficacy for exercise: 58%
Conclusions

• Potential for using physical activity interventions with pregnant smokers

• PA intervention needs to address barriers to exercise and low social support and self-efficacy
Title: Physical activity as an aid to smoking cessation during pregnancy: Two feasibility studies.

Ussher et al., 2008, BMC Public Health
Aim

To assess the feasibility of a PA intervention combined with behavioural support for smoking cessation during pregnancy.
Methods

Participants:
• 18 yrs+
• Motivated to quit
• 12-20 weeks gestation
• smoking \( \geq 1 \) cig/day
Methods

• Pilots 1 & 2: 6 weekly sessions cessation support

• Pilot 1: n=10, 6 weekly supervised exercise sessions (walking)

• Pilot 2: n=22, 15 supervised exercise sessions over 9 weeks (walking/cycling/DVD)
Main Findings

- Overall: 8/32 (25%)
- Pilot 1: 5/10 abstinent
- Pilot 2: 3/22 abstinent

- 10% of women recruited
- Women receptive to intensive intervention.
- Desire to smoke reduced (further study in progress)
- Women prefer hospital to home setting
Conclusions

Feasible to recruit pregnant smokers to exercise intervention for smoking cessation
LEAP

A pragmatic randomized controlled trial of physical activity as an aid to smoking cessation during pregnancy

Collaborators: Paul Aveyard, Isaac Manyonda, Sarah Lewis, Robert West, Beth Lewis, Bess Marcus, Adrian Taylor, Pelham Barton, Tim Coleman

Funded by National Institute for Health Research (NIHR) Health Technology Assessment Program
Aim of study

To compare quit rates at end of pregnancy for:

1. Individual behavioural support plus a physical activity intervention
   versus

2. Individual behavioural support alone
Who is eligible?

- Motivated to quit
- Age 16+
- Smoking $\geq 1$ cig/day & at least 5 cig/day before pregnancy
- 10-24 weeks gestation
- NRT not permitted at the outset
Approximately 9000 pregnant smokers invited to join study at 10-24 weeks gestation.

Screened for eligibility and 866 women recruited and randomised at their first visit.

Physical activity intervention group:
- Smoking cessation support once a week for six weeks
- 14 sessions of supervised exercise: twice a week for six weeks and once a week for two weeks
- 9 exercise consultations over 8 weeks

N= 433

Control group:
- Smoking cessation support once a week for six weeks

N= 433

Primary outcome: continuous abstinence at end of pregnancy.
Physical activity intervention

- Treadmill walking
- Physical activity consultation (e.g. goal setting, self-monitoring, Relapse prevention planning)
Recruitment

• Direct calling
• Midwife referral
• Flyers/posters

Target: recruit 10% of pregnant smokers
Current: 10% (685/6927)
## Reasons for exclusion

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<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
<th>Number</th>
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<tbody>
<tr>
<td>Not interested</td>
<td>30%</td>
<td>(1344/4443)</td>
</tr>
<tr>
<td>First visit not attended</td>
<td>14%</td>
<td>(606/4443)</td>
</tr>
<tr>
<td>&lt;1cig/day</td>
<td>14%</td>
<td>(628/4443)</td>
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<tr>
<td>Gestation &gt;24 wks</td>
<td>13%</td>
<td>(583/4443)</td>
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<tr>
<td>Unable to attend all visits</td>
<td>7%</td>
<td>(308/4443)</td>
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<tr>
<td>Wants to use NRT</td>
<td>6%</td>
<td>(255/4443)</td>
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## Participant characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean (SD)</th>
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<tr>
<td>Age</td>
<td>27.5 (6.5) years</td>
</tr>
<tr>
<td>Gestation</td>
<td>15.7 (3.3) weeks</td>
</tr>
<tr>
<td>Cigarettes per day (now)</td>
<td>9.8 (5.5)</td>
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<tr>
<td>Cigarettes per day (before pregnancy)</td>
<td>17.5 (5.1)</td>
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<tr>
<td>Achieving 150 mins/week of moderate Intensity Physical Activity (mins)</td>
<td>73%</td>
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<tr>
<td>Walking as main activity</td>
<td>79%</td>
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<tr>
<td>Caucasian</td>
<td>77%</td>
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</table>
Follow-up at end of pregnancy

- Between 36 weeks gestation and 10 weeks after birth
- Continuous abstinence: have smoked 5 or less cigarettes since quit day
- Validated by expired CO and/or cotinine
Adherence and abstinence

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<thead>
<tr>
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<th>Exercise Group</th>
<th>Control Group</th>
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<tbody>
<tr>
<td>Mean no of sessions attended by</td>
<td>5.2 out of 14 sessions (37%)</td>
<td>3.5 out of 6 sessions (59%)</td>
</tr>
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- Abstinence rate at end of pregnancy: 9% (49/546)
Progress

- Recruitment started in April 09
- 685 women recruited so far
- Recruitment ends Nov 2012