Exercise Can Seriously Improve Your Mental Health: Fact or Fiction

Professor Marie Donaghy
£55m-a-year antidepressant habit in Scotland

- 3.5 Million prescriptions for anti-depressants in 2005
- Three times more than 13 years ago
- 40% more per head of population than rest of the UK
- England £365m in same year
Mental health is a public health issue

• WHO has predicted that depression will create the greatest burden of disease by 2020
Plan for the presentation

To explore the:
- Case for exercise
- Evidence for prevention
- Evidence for intervention

To consider:
- How exercise works
- The interplay between Mind, Brain and Body
- The way forward
Mind Body Link
National Consensus Statements

• Support for a causal link between exercise and decreased depression
• Exercise has a low to moderate anxiolytic and stress reduction effect
• Exercise is associated with positive mood
• Exercise can improve cognitive function in fit older adults
• Positive effects of exercise on physical self perceptions and body image
<table>
<thead>
<tr>
<th>Authors</th>
<th>Participants</th>
<th>Length of follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer et al 1988 USA</td>
<td>1497</td>
<td>8 year</td>
</tr>
<tr>
<td>Camacho et al 1991 USA</td>
<td>8, 023</td>
<td>9 and 18 years</td>
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<tr>
<td>Paffenbarger et al 1994 USA</td>
<td>10, 201 men only</td>
<td>23-27 years</td>
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<td>Mobily et al 1996 USA</td>
<td>2,084 older adults</td>
<td>3 years</td>
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<tr>
<td>Strawbridge et al 2002 USA</td>
<td>1,947 (age 50-94)</td>
<td>5 years</td>
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<tr>
<td>van Gool et al., 2003 EU</td>
<td>1,280 older adults</td>
<td>6 years</td>
</tr>
<tr>
<td>Motl et al 2004 USA</td>
<td>4594 adolescents</td>
<td>2 years</td>
</tr>
<tr>
<td>Bernaards et al., 2006 EU</td>
<td>1747 workers</td>
<td>3 years</td>
</tr>
<tr>
<td>Lampinen et al 2006 EU</td>
<td>1124 older adults</td>
<td>8 years</td>
</tr>
<tr>
<td>Harris et al 2006 EU</td>
<td>424 depressed adults</td>
<td>1, 4 and 10 years</td>
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1965 activity level and 1974 depression

<table>
<thead>
<tr>
<th></th>
<th>Low Activity</th>
<th>Moderate Activity</th>
<th>High Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men Odds Ratio</td>
<td>1.9</td>
<td>1.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Women Odds Ratio</td>
<td>0.9</td>
<td>1.1</td>
<td>1.3</td>
</tr>
</tbody>
</table>
Evidence for Intervention

- 29 Randomised Controlled Studies
- 116 experimental designs
- 4 meta-analysis
- 29 non-systematic reviews
BDI scores pre and post 16 weeks of treatment (from Blumenthal et al, 1999) and 6 month follow up (Babyak et al, 2000)
Lawlor and Hopker 2001  BMJ 322 1-8

Study (No of weeks of intervention)

Mutrie\textsuperscript{78}(4)
McNeil et al\textsuperscript{77}(6)
Reuter et al\textsuperscript{86}(8)
Doyne et al\textsuperscript{79}(8)
Hess-Homeier\textsuperscript{87}(8)
Epstein\textsuperscript{81}(8)
Martinsen et al\textsuperscript{82}(9)
Singh et al\textsuperscript{74}(10)
Klein et al\textsuperscript{84}(12)
Veale et al\textsuperscript{75}(12)

Combined

Favours Exercise
Favours Control

\[ \text{Standardised mean difference in effect size} \]

Model  Study

- Klein et al. (1985)
- Doyne et al. (1987)
- Sexton et al. (1989)
- McNeil et al. (1991)
- Veale et al. (1992)
- Bosscher (1993)
- Singh et al. (1997)
- Pinchasov et al. (2000)
- Armstrong et al. (2003)
- Dunn et al. (2005)
- Singh et al. (2005)

Fixed combined (11)
Random combined (11)

Hedges’ g and 95% CI

Favours Control  Favours Exercise
Structured exercise is recommended as treatment option for patients with mild to moderate depression.
Coronary Heart Disease

Depression is linked to:
• increased mortality following MI  (Dickens et al 2008, Marten et al 2008) and CABG  (Low and Hubley 2007)

Exercise in cardiac rehab is linked to:
• Better mental health - maintained at 8 months  (Birks et al 2004)
Interventions for MENTAL HEALTH

An Evidence-based Approach for Physiotherapists and Occupational Therapists

Edited by
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MARIE DONAGHY
SALLY FEEVER
Aerobic fitness pre-post treatment, follow-up at 2 and 5 months (Donaghy 1997)
Perceived fitness pre-post treatment, follow-up at 2 and 5 months (Donaghy 1997)
Strength pre-post treatment, follow-up at 2 and 5 months (Donaghy 1997)
Perceived physical strength pre-post treatment, follow-up at 2 and 5 months
(Donaghy 1997)
Physical Self Worth pre-post treatment, follow-up at 2 and 5 months (Donaghy 1997)
GLOBAL SELF-ESTEEM

Physical Self-worth

- Sports Competence
- Attractive Body
- Physical Strength
- Physical Condition
Mind Body Link
DELIVERING FOR mental health

healthier scotland SCOTTISH EXECUTIVE

Queen Margaret University
EDINBURGH
www.qmu.ac.uk
Do people with mental health problems want to exercise?
How does exercise help in preventing and alleviating mental health problems?
Emotions and Feelings
Descartes Error

“Cogito ergo sum”

“I think therefore I am”
What do we need to do?

• Convince the public, GPs, healthcare workers about the mental health benefits of exercise
• Enlist a celebrity to act as an exercise champion
• Increase the exercise referral scheme
• Provide training in health coaching techniques for nurses, physiotherapists, occupational therapists and exercise specialists
Fact - Exercise can seriously improve your mental health! Make a start now.
Full paper of this work which includes a review of the literature is available

Reference


**Stathopoulou et al: 2005**: Exercise interventions for Mental Health: A Quantitative and Qualitative Review. American Psychological Association 2005