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The ‘obesity epidemic’
The ‘obesity epidemic’

- Rapid Loss 10 Day Variety Pack
- The Biggest Loser
- 13 Reasons You Aren’t Losing Any Weight
- Michelle Bridges Total Body Transformation
- Keeping the Body in Mind
- UNSW Australia
The epidemic of *physical inactivity*

- 70% of Australians are sedentary or engage in low levels of PA
- Less than 1 in 5 Australian adults achieves >10,000 steps per day
- 1/3 Australian children sufficiently active
- Sedentary behaviour and cardiorespiratory fitness (CRF) are independent risk factors for chronic disease

Australia’s biggest killer is sitting in your house

*Australian Health Survey 2011-12; Thorpe et al 2011 A J Prev Med; Kodoma et al 2009 JAMA*
Impact of physical inactivity

- 9% of premature mortality
- more than 5.3 million deaths in 2008 worldwide
- 6% of the global burden of disease from heart disease
- 7% type 2 diabetes
- 10% breast and colon cancers
- 25% reduction inactivity would prevent 1.3 million deaths per year
Quit the Sit!

- Risk for premature mortality significantly increases when adults sit for more than 7 hours per day

- 34% higher mortality risk for adults sitting 10h/day after controlling for PA
Physical activity or exercise?

- **Physical activity**
  - **Structured exercise**
    - **Aerobic**
    - **Resistance**
  - **Daily activity**

- **Moderate intensity**
  - 130 mins/week
  - 40-59% VO2R
  - 55-69% HRmax
  - RPE 12-13
  - OR
  - **Vigorous intensity**
  - 75 mins/week
  - 60-84% VO2R
  - 70-89% HRmax
  - RPE 14-16

- **Moderate to vigorous**
  - 2 or more times/week
  - Multi-joint (compound)
  - Progressive
  - 8-10 exercises
  - 2-4 sets
  - 8-10 reps
  - 1-2 mins rest
Physical inactivity in people with intellectual disabilities

- Children with ID significantly less physically active
- None of the sample met recommendations for MVPA vs. 40% controls
- 40% less active overall
  - 44% less active during week
  - 25% less active during weekend
Fitness over fatness in mental illness

Fig. 1. Relationship between the distance walked on the 6 minute walk test (6MWT) and the global assessment of functioning (GAF) score.

Global Assessment of Functioning (GAF)

Spearman’s rho = 0.7, p < 0.01
Cardiorespiratory fitness in intellectual disabilities

- CRF significantly decreased by adolescence
- Reduced muscular strength and endurance
- Poor balance

<table>
<thead>
<tr>
<th>Table 1</th>
<th>EUROFIT test performance in boys and girls with intellectual disabilities</th>
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<tbody>
<tr>
<td></td>
<td>Boys(^1)</td>
</tr>
<tr>
<td></td>
<td>(N = 48)</td>
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<tr>
<td>Laps in 20 m shuttle run (stages)</td>
<td>(4.19 \pm 1.99^{***} (N = 46)^3)</td>
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<tr>
<td>(\text{VO}_2\text{max} ,(\text{mL/kg/min}))</td>
<td>(40.17 \pm 5.6^{***} (N = 46)^3)</td>
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<tr>
<td>Plate tapping (s)</td>
<td>(17.11 \pm 5.0^{***})</td>
</tr>
<tr>
<td>Standing broad jump (cm)</td>
<td>(140.72 \pm 35.9^{***})</td>
</tr>
<tr>
<td>Sit-and-reach (cm)</td>
<td>(10.04 \pm 12.5^{***})</td>
</tr>
<tr>
<td>Sit-ups (numbers)</td>
<td>(14.62 \pm 5.1^{***})</td>
</tr>
<tr>
<td>10(^{5}) agility shuttle run (s)</td>
<td>(21.69 \pm 2.9^{***})</td>
</tr>
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</table>

\(^1\)For significantly difference versus ordinary: \(^{***}P < 0.0001; ^{**}P < 0.001; ^{*}P < 0.05.\)

\(^2\)For significantly difference between genders: \(^{###}P < 0.0001; ^{##}P < 0.01; ^{*}P < 0.05.\)

\(^3\)Five adolescents had not reached the threshold values during the test, only 46 boys and 36 girls were and \(\text{VO}_2\text{max}\) analysis.
Cardiorespiratory fitness in severe mental illness

- CRF is significantly reduced in people with schizophrenia (SMD -0.96) compared to controls.
- Negative symptoms, BMI & female gender negatively associated with CRF.

Clinical recommendations:

- Promoting physical activity to improve cardiorespiratory fitness and overall health should be considered a central feature in the multidisciplinary team management of people with schizophrenia across the disease spectrum.
- Physical therapists or exercise physiologists should screen high-risk persons with schizophrenia following the American College of Sports Medicine guidelines before promoting physical activity.
- For people with schizophrenia who often suffer from fatigue and low motivation, the rate of perceived exertion during physical activity may be an important consideration when designing appropriate physical activity interventions.
- Exploring mental and physical health benefits of regular physical activity participation and determining which benefits are most salient to each patient is essential.
It is time to bust the myth of physical inactivity and obesity: you cannot outrun a bad diet

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Weight loss in SMI is possible

- N=279 overweight / obese outpatients
- Tailored group and individual weight-management sessions and group exercise sessions
- Mean between-group difference in weight −3.2 kg (−7.0 lb, P=0.002)

Figure 2. Mean Weight Change, According to Study Group.
The model-based estimates of the mean difference in changes in weight (the change in the intervention group minus the change in the control group) between the two groups at 6, 12, and 18 months were −1.5 kg (95% CI, −2.6 to −0.4; P=0.007), −2.5 kg (95% CI, −4.1 to −0.8; P=0.004), and −3.2 kg (95% CI, −5.1 to −1.2; P=0.002), respectively. To convert values for weight to pounds, multiply by 2.2.

Daumit et al 2014 New England Journal Medicine
Weight loss in SMI is possible

Bartels et al 2014 American Journal Psychiatry
Components of effective physical activity interventions

- Personalized and tailored to each individual
  - Combination of supervised and group based sessions and physical activity counseling is more effective
- Longer duration with more frequent face-to-face contact
- Use of multi-disciplinary teams (allied health practitioners)
  - Physiotherapists - IOPTMH
  - Exercise physiologists

Ward et al 2015 Journal of Clinical Psychiatry;
Stubbs et al 2014 Physiotherapy; Vancampfort et al 2012 Physical Therapy;
Stanton et al 2013 Community Health
Physical activity and mental illness

Depression in mental illness: large pooled effect, SMD=0.80; N=20

- 10 trials with reduced risk of bias (PEDro≥6), moderate effect SMD=0.39 vs 1.35

Schizophrenia: large pooled effect, SMD=1.0, N=8

Considerable heterogeneity among interventions
What types of interventions (don’t) work?

Chalder et al 2012; BMJ (N=361)
Up to 3 face to face sessions & 10 telephone calls with a physical activity facilitator over 8 month period
No improvement in mood despite increases in self-reported physical activity
*use of self-report prone to over-reporting*
>*25% participants already met recommended PA guidelines*

Mather et al 2002; BJPych (N=86)
10 weeks of twice weekly 45min group exercise
Modest reduction depressive symptoms
*55% intervention group vs. 33% control group experienced >30% decline in depression score*
*59% attendance rate*
You know, just 30 minutes of exercise a day can reduce depression by 50%.

Just give me the drugs!!
Physical activity recommendations

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<td><strong>General</strong></td>
<td>Avoid physical inactivity. Some is better than none</td>
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<tr>
<td><strong>Amount and intensity</strong></td>
<td>150 minutes per week moderate intensity physical activity Or 75 minutes of moderate-vigorous physical activity per week</td>
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<tr>
<td><strong>Resistance training</strong></td>
<td>Muscle strengthening activities on at least 2 days per week</td>
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Vancampfort et al 2012 *Disability & Rehabilitation*

Editorials

Developing healthcare systems to support exercise: exercise as the fifth vital sign

Editor’s choice

Robert Sallis
Why is measuring physical activity important?

- Measure prevalence of physical inactivity
- Determine effectiveness of interventions
- Determine relationship between physical activity and other clinical outcomes
- Increase clinician interest in physical activity – ‘exercise as a vital sign’
The Simple Physical Activity Questionnaire (SIMPAQ)

• Representation from 15 countries
  – Australia, Belgium, Brazil, Canada, China (SAR), Denmark, England, Finland, Iceland, Italy, Nigeria, Norway, Sweden, Switzerland, USA

• Range of disciplines representing psychiatry, physical therapy, exercise physiology, epidemiology, nursing, exercise psychology, public health, clinical neuro-exercise science

• Two international meetings: Padua, Italy April 2014 & London, UK June 2015 (www.simpaq.org)

• Validation to occur throughout 2016
Resistance Training - Chest Press

- Begin with band wrapped around your back
- Grasp both ends of band with elbows bent and thumbs pointing upwards
- Exhale & push band forward extending your elbows to shoulder level
- Inhale & slowly return to starting position
  - Keep your back and neck straight & don't shrug your shoulders
• Stand on the band
• Keep the upper arm still and in close to the body
• Exhale and bend the elbow raising the lower arm
• Inhale and return to starting position
• Position legs shoulder-width or slightly wider than shoulder-width apart with a seat just behind you
• Inhale, bend the knees flex forward at the hips to lower your buttocks down to touch the seat
• Do not actually sit down
• Exhale and extend the hips and knees to stand upright
• Ensure back is kept neutral (straight) and that all bending comes from the hips and knees
If being active was a pill we would be rushing to prescribe it. Physical activity is essential for health and reduces the risk of many preventable diseases and conditions from cancer to depression.

Public Health England

Everybody Active, Every Day

Cross sector approach for national and local action
Conclusion

• The best physical activity intervention is one that the person will engage with and maintain over time

• Physical activity can improve both mental and physical health outcomes for people experiencing various mental disorders