Physical activity for people with ID

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The ‘obesity epidemic’

The ‘biggest loser’

10/08/2015
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

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!

Daily Sitting Time and All-Cause Mortality: A Meta-Analysis


• 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
  - Daily activity
- **Aerobic**
- **Resistance**

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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

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Fitness over fatness in mental illness

- 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

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<tr>
<th>Test</th>
<th>CRF of boys</th>
<th>CRF of girls</th>
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<tbody>
<tr>
<td>10 m Sprint</td>
<td>9.4 s ± 1.1 s</td>
<td>9.3 s ± 1.3 s</td>
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<tr>
<td>Standing long jump</td>
<td>186.3 cm ± 12.7 cm</td>
<td>185.8 cm ± 12.2 cm</td>
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<tr>
<td>Hand grip</td>
<td>11.4 kg ± 2.6 kg</td>
<td>11.1 kg ± 2.5 kg</td>
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| Sit-ups | 15.6 ± 3.1

Salun & Alunda 2012 JARID
Lahtinen 2007 APAQ

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 cardiopulmonary 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 role of perceived exertion during physical activity may be an important consideration when designing appropriate physical activity interventions.
- Exploiting mental and physical health benefits of regular physical activity participation and determining which benefits are most salient to each patient is essential.

Lahtinen et al 2017 Acta Psychiatric
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)

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
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; BJPsych (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

Thank you!
Physical activity recommendations

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<td>Avoid physical inactivity. Some is better than none</td>
<td>Be active on most, preferably all days every week. Minimise amount of time spent in prolonged sitting</td>
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| Amount and intensity   | 150 minutes per week moderate intensity physical activity Or 75 minutes of moderate vigorous physical activity per week | 150-300 mins of moderate intensity physical activity Or 75-150 minutes vigorous activity Or Combination of both |

| Resistance training    | Muscle strengthening activities on at least 2 days per week | Muscle strengthening activities on at least 2 days per week |

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

Resistance Training- Arm Curl

- 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
Resistance Training- Sit-to-stand

- 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 all bending comes from the hips and knees

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