Monitoring and Evaluation: Physical Activity

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Presentation Aims

• To outline the reasons for monitoring/evaluating physical activity

• To consider physical activity versus physical fitness monitoring

• To explore some of the main methods, considerations and make recommendations for monitoring/evaluating physical activity
Why Monitor Physical Activity?

- Growing concerns over the lifestyles and physical activity levels of many young people and the links between physical activity and health
- Increased physical activity is a desired outcome of many programmes/interventions
- To establish the extent to which physical activity guidelines are being met
- Can provide a good deal of information to inform future programmes/interventions and practice
- A positive health behaviour which is achievable by all young people
- Is practical/manageable
- For pedagogical reasons
Physical Activity Versus Physical Fitness

• Physical activity = a behaviour (process); fitness = a parameter (product)

• Physical fitness = a set of attributes that a person has or achieves that relate to the ability to perform physical activity

• Fitness testing is common place in schools

• Attractive to many as an objective, well established and convenient measure

• Advocates claim fitness testing promotes active lifestyles, positive attitudes, knowledge and understanding, motivates children etc
But...

• Controversy surrounds fitness testing in children

• Numerous limitations with and assumptions concerning fitness testing

• Little evidence that fitness testing promotes/leads to positive outcomes

• Questions have been raised as to whether fitness tests are useful and serve their intended purposes
Some Limitations with Fitness Testing

• Issues relating to the appropriateness, validity, reliability of fitness tests with children

• A child’s activity level cannot be judged from his/her fitness level

• The relationship between children’s physical fitness and physical activity is low

• Results may be misleading
  – Consider an active child who scores poorly on a test versus an inactive child who scores well (Corbin, 2002)

• Some fitness tests do not reflect child friendly/ appropriate practice
## Factors Influencing Fitness Test Scores

<table>
<thead>
<tr>
<th>Heredity or genetic potential</th>
<th>Growth, maturation &amp; development</th>
<th>Anatomical &amp; physiological characteristics; response to training</th>
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</thead>
<tbody>
<tr>
<td>Routine activity, exercise</td>
<td>Dietary habits, nutrition</td>
<td>Motivation</td>
</tr>
<tr>
<td>Skill level</td>
<td>Environment/test conditions</td>
<td>Test protocol/practice</td>
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Limitations with Fitness Testing Cont...

• Simply determine the obvious:
  – distinguish the mature and motivated from the immature and de-motivated (Armstrong and colleagues)

• Possible negative outcomes/experiences:
  – repetitive and boring?
  – de-motivating and counterproductive?
  – uncomfortable, demeaning and embarrassing?
  – off putting for those children most at risk?
Does Fitness Testing have a Role?

• **YES** - but only if it is positive, personal and integrated within an educational programme which includes physical activity monitoring and a lifestyle orientation

• **NO** - if it is negative, dominates, makes unfair/unnecessary comparisons, lacks context and learning, puts children off physical activity

• **Note** - practitioners may need guidance and training in order to achieve affective, behavioural and cognitive objectives through fitness testing
Monitoring Physical Activity

Physical activity has multiple dimensions and domains

Dimensions = volume (how much), duration (how long), frequency (how often), intensity (how hard) and mode (what type)

Domains = transport to school, physical activity at school/out of school inc. PE, sport, active play, routine activities
Main Methods Include:

- Self-report - surveys/questionnaires; diaries; proxy reports
- Observation
- Motion sensors - pedometers; accelerometers
- Physiological - heart rate; energy expenditure; doubly labelled water
- All have strengths and limitations

- Recommended field measures include:
  - self-and/or proxy report
  - heart rate monitoring
  - pedometers and accelerometers
  - observation
Self-report

• **Strengths**
  – Convenient and easy to administer
  – Time and cost efficient
  – Measure a variety of variables and provide detailed information
  – Low burden, unobtrusive and non reactive

• **Limitations**
  – Accuracy, validity and reliability
  – Problems with recall, interpretation, misrepresentations, social desirability
  – Not as appropriate for all activity types (e.g., unstructured play)

• **Examples**
  – Previous Day Physical Activity Recall (PDPAR); Three-Day Physical Activity Recall (3DPAR); Physical Activity Questionnaire for Children/Adolescents (PAQ-C/PAQ-A); Youth Risk Behaviour Surveillance Survey (YRBS); Teen Health Survey (see Trost 2007; Biddle et al., 2011)
Pedometers/Accelerometers

Strengths
• Small, easy to use, unobtrusive, socially acceptable
• Permit freedom of movement
• Do not influence ‘normal’ activity patterns
• Recent advances have led to increased reliability and validity

Limitations
• Provide relatively limited activity information
• Not suitable for all types of activity
• Pedometers do not measure activity intensity
Choosing a Monitoring Method - Considerations

- Measures’ strengths and limitations
- Purpose of the assessment
- Scale/size of the intervention/project
- Age of children/participants
- Time
- Finance
- Accuracy-practicality ‘trade-off’
- Combination of methods
Recommendations

• Given the limitations of monitoring physical fitness as a model of physical activity promotion, place the emphasis on physical activity

• Promote, facilitate and monitor the process of being physically active and the product (of improved fitness and health) should take care of itself
For Further Information See:


