The effectiveness of *Multimove*:
a fundamental motor skill intervention for typically
developing young children

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INTRODUCTION

The bad news is.....

- Decrease in PA
- Increased prevalence of overweight and obesity
- Decrease in motor competence
INTRODUCTION

The bad news is....

Motor Quotients in Flemish boys and girls (2012-2013 according to the TGMD-2 reference values)

Categorisation of Flemish boys and girls according to the TGMD-2 cut-offs
But there is good news too!!

- we can turn the negative evolution
- we can convince policy makers

METHODS

Three parts in the MM project:
1. Development of an intervention package (book, newsletters, website, actions to change parents’ knowledge and attitudes)
2. Testing the effectiveness of the intervention package
3. Large-scale implementation

<table>
<thead>
<tr>
<th>Pre</th>
<th>Intervention</th>
<th>Post</th>
<th>Retention</th>
</tr>
</thead>
</table>
| • Sept/Oct 2012  
  • TGMD-2  
  • KTK  
  • MOT 4-6 | • May/June 2013  
  • TGMD-2  
  • KTK | • Sept/Oct 2013  
  • TGMD-2  
  • KTK | 

Website  
Monthly Newsletters  
Control group

Intervention group  
Control group  
N = 800  
422 boys / 358 girls  
243 boys / 228 girls  
3-8 years
METHODS

FMS program

- 12 FMS: locomotor (6) and object control (6)
- ~60 min / session
- 1x/week
- !!!embedded in the ‘normal’ activities of the child
- 25-30 weeks
- 1 trained teacher per 15 children
## METHODS

<table>
<thead>
<tr>
<th>TGMD-2</th>
<th>KTK</th>
<th>MOT 4-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locomotor and object control skills</td>
<td>Gross motor coordination</td>
<td>Gross and fine motor coordination</td>
</tr>
<tr>
<td>Process-oriented</td>
<td>Product-oriented</td>
<td>Product-oriented</td>
</tr>
</tbody>
</table>

**Multimove**

[Images of children playing sports]
RESULTS

<table>
<thead>
<tr>
<th>OUTCOME</th>
<th>$F_{\text{Time x Group}}$</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>TGMD-2</td>
<td>95.995</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>GMC</td>
<td>46.147</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Locomotor</td>
<td>56.876</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Object Control</td>
<td>56.876</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

The good news is...

Effect of the MM intervention
RESULTS

- No differential effects of PA, SES, sex, degree of urbanisation, education and expertise of the ‘coach’
- Multimove effect is more robust than these potential confounding factors
- Very cost-effective program:
  - No extra teachers or coaches involved
  - Program is embedded in existing organisations and initiatives: federations, sports clubs, cities, daycare initiatives, …
  - Workshops to allow coaches to become familiar with the program
  - (first year: financial incentive to the participating organisations)

Other test batteries in the same study: similar picture
RESULTS

Other test batteries in the same study: what are we actually measuring?

![Graph showing test results](image)

CONCLUSION

Does Multimove influence the MC of young children?

- Positive effect on locomotor & object control skills
- Without actions like MM a developmental delay threatens to increase with age
- Unclear to what extent the progression is transferrable to skills not included in the program
- Very cost-effective program
- Role of research with respect to convincing policy makers: Relate research data to what policy makers consider relevant: health care budget consequences, elite sport performance, exposure 😊...
Questions?

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National volleyball team
Bronze EC medallist 2013

Team stems from a selection 5 years earlier

What characteristics discriminate between elites and sub-elites 5 years earlier?

Jumping? NO
Spiking? NO
Technique? NO
Strength? NO
General motor competence (ie non volleyball specific)?
YES

GMC is part of the talent identification system of the volleyball federation today