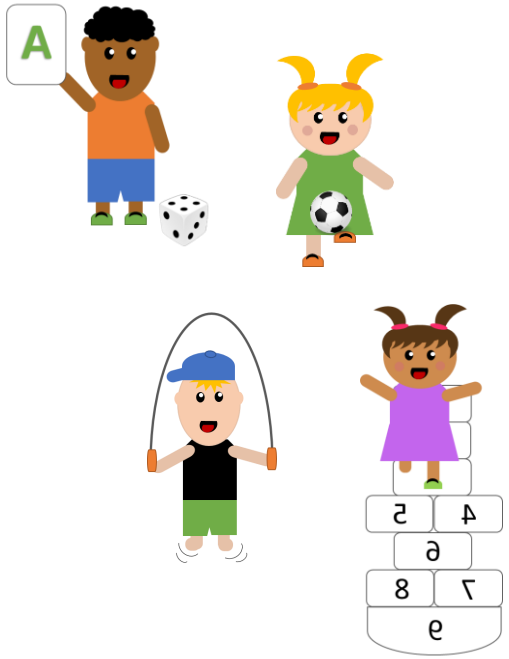
Intervention research to promote physical activity during the early years – what have we done and where are we heading?



5th Nordic Seminar on Technical Measurement of Physical Activity and Sedentary behavior, Trondheim 2.-3. June 2022

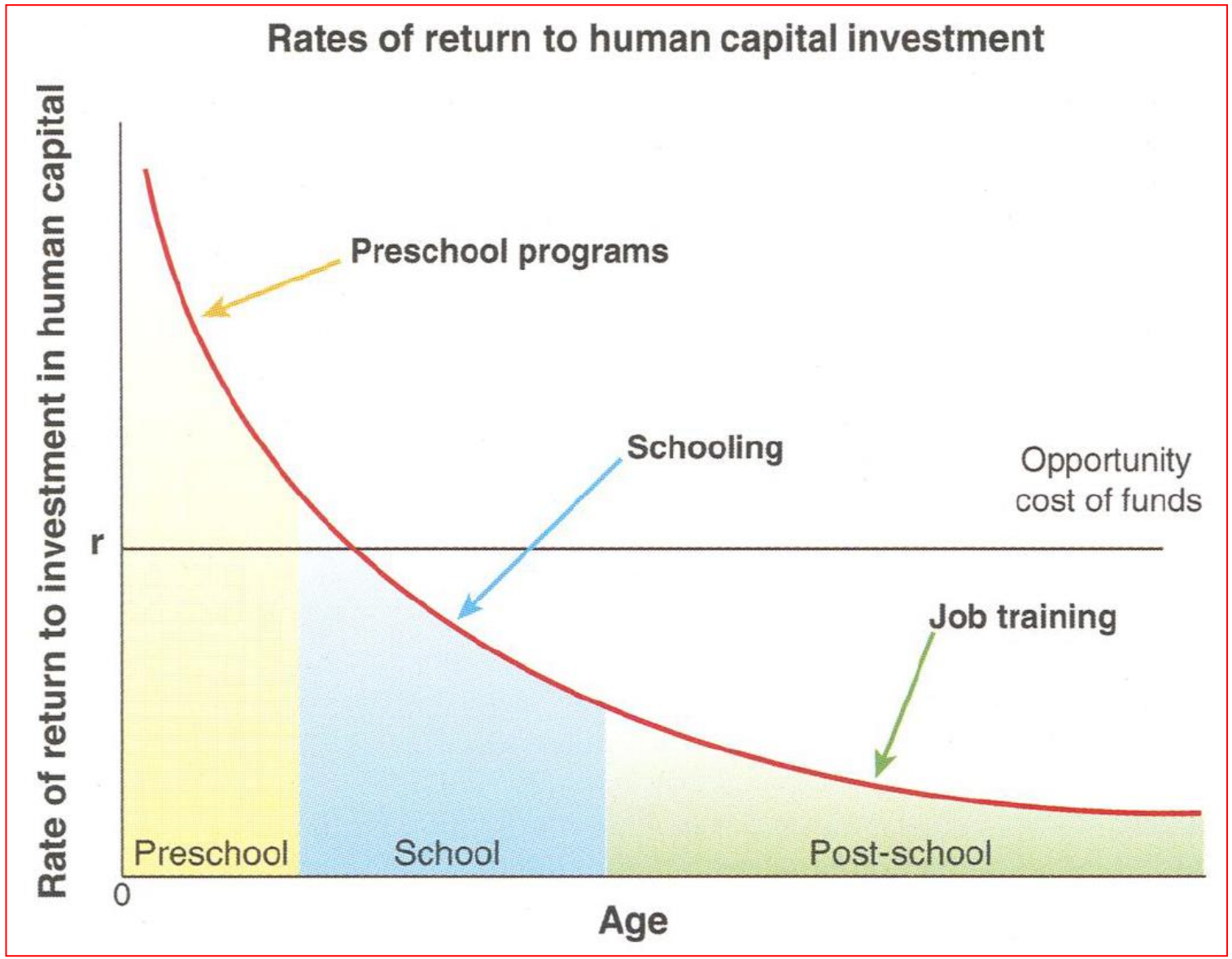
Eivind Aadland

Department of Sport, Food and Natural Sciences
Faculty of Education, Arts and Sports, Campus Sogndal

Western Norway University of Applied Sciences

Skill Formation and the Economics of Investing in Disadvantaged Children

James J. Heckman



Economics and Human Biology 7 (2009) 1–6

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Economics and Human Biology

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Investing in early human development: Timing and economic efficiency

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ABSTRACT

Policy discussions to ameliorate socioeconomic (SES) inequalities are increasingly focused on investments in early childhood. Yet such interventions are costly to implement, and clear evidence on the optimal time to intervene to yield a high economic and social return in the future is meagre. The majority of successful early childhood interventions start in the preschool years. However socioeconomic gradients in cognitive skills, socio-emotional functioning and health can be observed by age three, suggesting that preventative programmes starting earlier in childhood may be even more effective. We discuss the optimal timing of early childhood intervention with reference to recent research in developmental neuroscience. We motivate the need for early intervention by providing an overview of the impact of adverse risk factors during the antenatal and early childhood periods on outcomes later in life. We provide a brief review of the economic rationale for investing early in life and propose the "antenatal investment hypothesis". We conclude by discussing a suite of new European interventions that will inform this optimal timing debate.

1. Introduction

Inequalities in health, cognitive development, and socio-emo... subsequen... nancy, lov... to an adve... suggests t... aimed at ... an effecti... early chil... for risk fa...

stages of early development. Pioneering experimental studies, such as the Carolina Abecedarian programme (Ramey et al., 2000), High/Scope Perry Preschool ...o Par- ...nd the ...e long ...ood in ...ersonal ... social ..., social ...mment ...welfare spending), associated with intervening early in a child's life clearly outweigh the costs (Karoly et al., 2005). Investment in the early years is subsequently increasing, yet the question of the optimal age to intervene remains. This article describes the risk factors that motivate early

The majority of successful early childhood interventions start in the preschool years

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SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

GUIDELINES ON PHYSICAL ACTIVITY, SEDENTARY BEHAVIOUR AND SLEEP | FOR CHILDREN UNDER 5 YEARS OF AGE

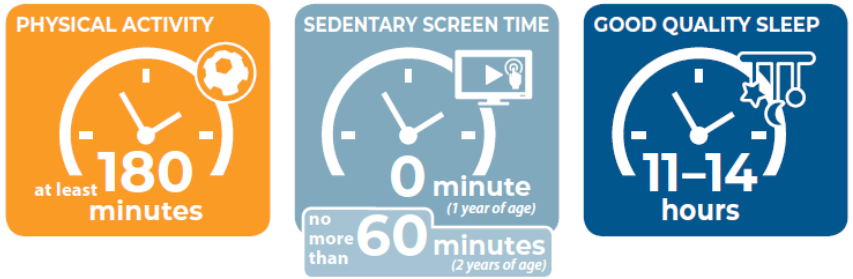
World Health Organization

children 1–2 years of age should:

Spend at least 180 minutes in a variety of types of physical activities at any intensity, including moderate- to vigorous-intensity physical activity, spread throughout the day; more is better.

Not be restrained for more than 1 hour at a time (e.g. prams/strollers, high chairs, or strapped on a caregiver's back) or sit for extended periods of time. **For 1-year-olds, sedentary screen time (such as watching TV or videos, playing computer games) is not recommended. For those aged 2 years, sedentary screen time should be no more than 1 hour; less is better.** When sedentary, engaging in reading and storytelling with a caregiver is encouraged.

Have 11–14 hours of good quality sleep, including naps, with regular sleep and wake-up times.

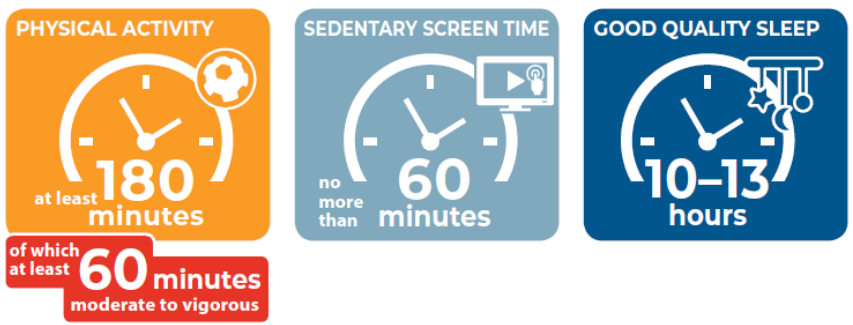


children 3–4 years of age should:

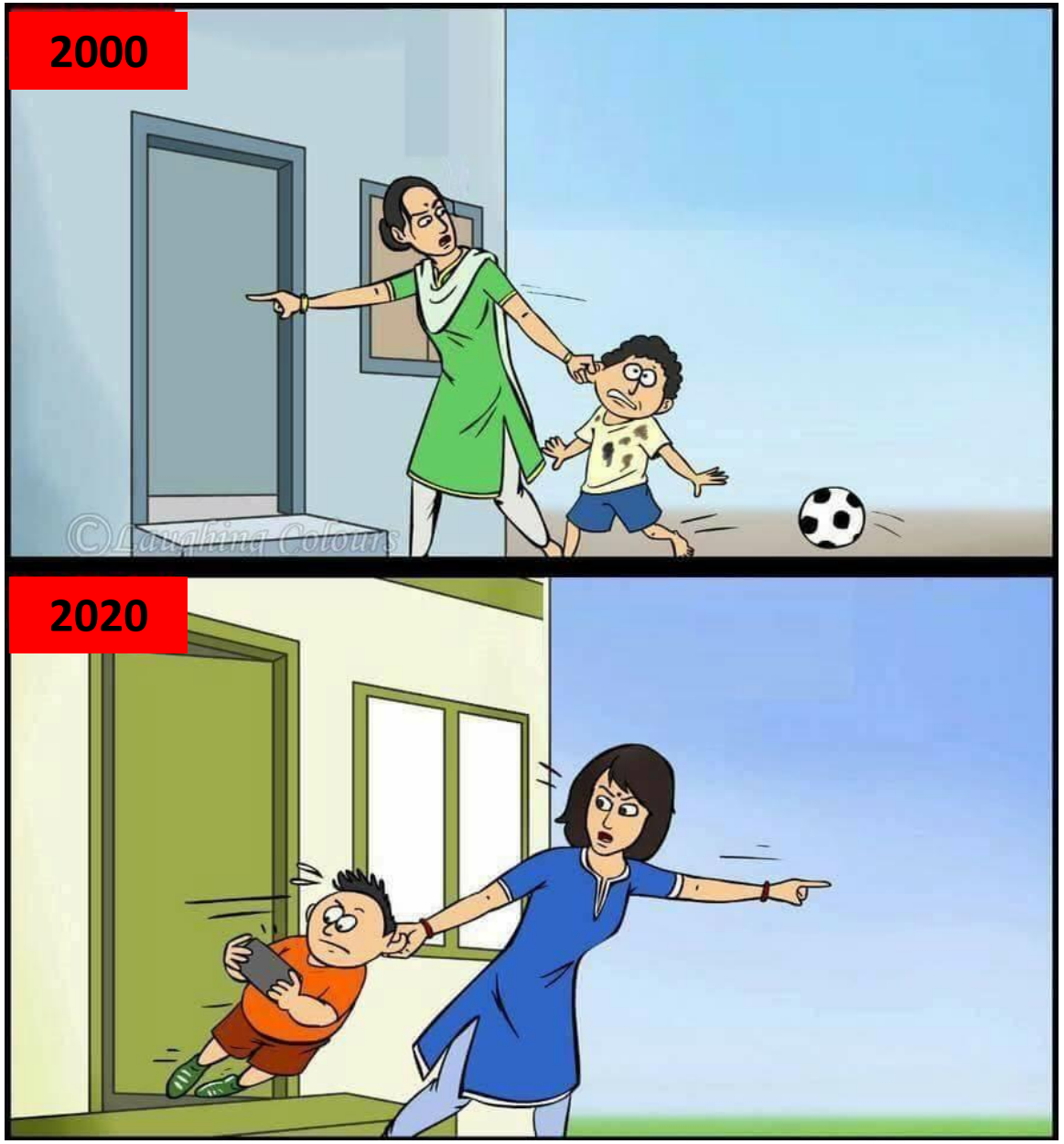
Spend at least 180 minutes in a variety of types of physical activities at any intensity, of which at least 60 minutes is moderate- to vigorous-intensity physical activity, spread throughout the day; more is better.

Not be restrained for more than 1 hour at a time (e.g. prams/strollers) or sit for extended periods of time. **Sedentary screen time should be no more than 1 hour; less is better.** When sedentary, engaging in reading and storytelling with a caregiver is encouraged.

Have 10–13 hours of good quality sleep, which may include a nap, with regular sleep and wake-up times.



WHO, 2019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www.jshs.org.cn

Opinion

Encouraging kids to hop, skip, and jump: Emphasizing the need for higher-intensity physical activity in childcare

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1. Introduction

Daily physical activity (PA) participation is crucial to the health and well-being of young children. Along with total physical activity (TPA; all-intensity), moderate-to-vigorous physical activity (MVPA), or energetic play, is associated with greater health benefits, particularly for preschoolers (3–4 years), including but not limited to improved bone and skeletal properties and cognitive and psychosocial health.[1] Centered on this, both Canada and Australia have recently established 24-Hour Movement Guidelines for the Early Years, recommending that children 2–4 years engage in at least 180 min of any-intensity activity per day, with children 3 years and older spending a minimum of 60 min of this time in higher-intensity energetic play.[2,3] To date, activity promotion among this cohort has focused on increasing movement at *any* intensity. In light of the recent shift in focus to higher-intensity activity, steps are warranted to augment time spent in developmentally appropriate energetic play, focusing on a variety of unstructured (e.g., active free play)[4] and structured aerobic activities (e.g., dance) for optimal health.[1] Introducing regular, higher-intensity activity from a young age will set children on the right track to meeting PA guidelines across the lifespan.

2. The current landscape

A growing number of children (39% of 2 year olds, 78% of 3 year olds, and 87% of 4 year olds) are enrolled in early childhood education programs across the Organization for Economic Cooperation and Development (OECD) countries, spending upward of 40 h per week in these settings.[5] Research underscores the significant influence the childcare setting has on young children's PA levels, accounting for approximately 50% of the variation in this behavior.[6] Despite this environment's potential to afford PA opportunities, researchers have suggested that the childcare setting does not appropriately support higher-intensity PA.[7,8] For example, Vanderloo et al.[7] and Copeland et al.[8] reported levels of energetic play as low as 1.5 min/h and 2.4 min/h among young children in Canada and the United States, respectively. In an 8-h day in childcare, this translates to an accumulation of approximately 12–19 min of energetic play. Given the large number of children enrolled in these facilities, and the low levels of higher-intensity PA observed, these findings are concerning and warrant attention. By targeting the childcare environment to support the PA levels of young children in care, particularly higher-intensity energetic play, the physical health, and mental well-being of this population may be positively affected.[1,9]

3. A call to action

The recent release of the Canadian 24-Hour Movement Guidelines for the Early Years,[3] and the process undertaken by Australia to adapt and adopt these guidelines,[2] may serve as a committed convergence by countries to support activity levels in young children. Both the Canadian and Australian guidelines underscore specific time allotments for energetic play among the preschool cohort (i.e., 60 min/day).[2,3] Therefore, we put forth a call to action to increase daily opportunities for higher-intensity PA among young children in childcare. Specifically, it is critical that administrators and staff of childcare organizations give purposeful thought to how they will enact these new guidelines. We suggest that, for children enrolled in full-time care, programming and policy efforts translate into a minimum of 40 min/day of energetic play (two-thirds of the daily recommendation) during childcare hours with the remaining time obtained at home. To achieve this, we propose targeting setting-specific characteristics that have been shown to positively affect higher-intensity PA. Such characteristics include (1)

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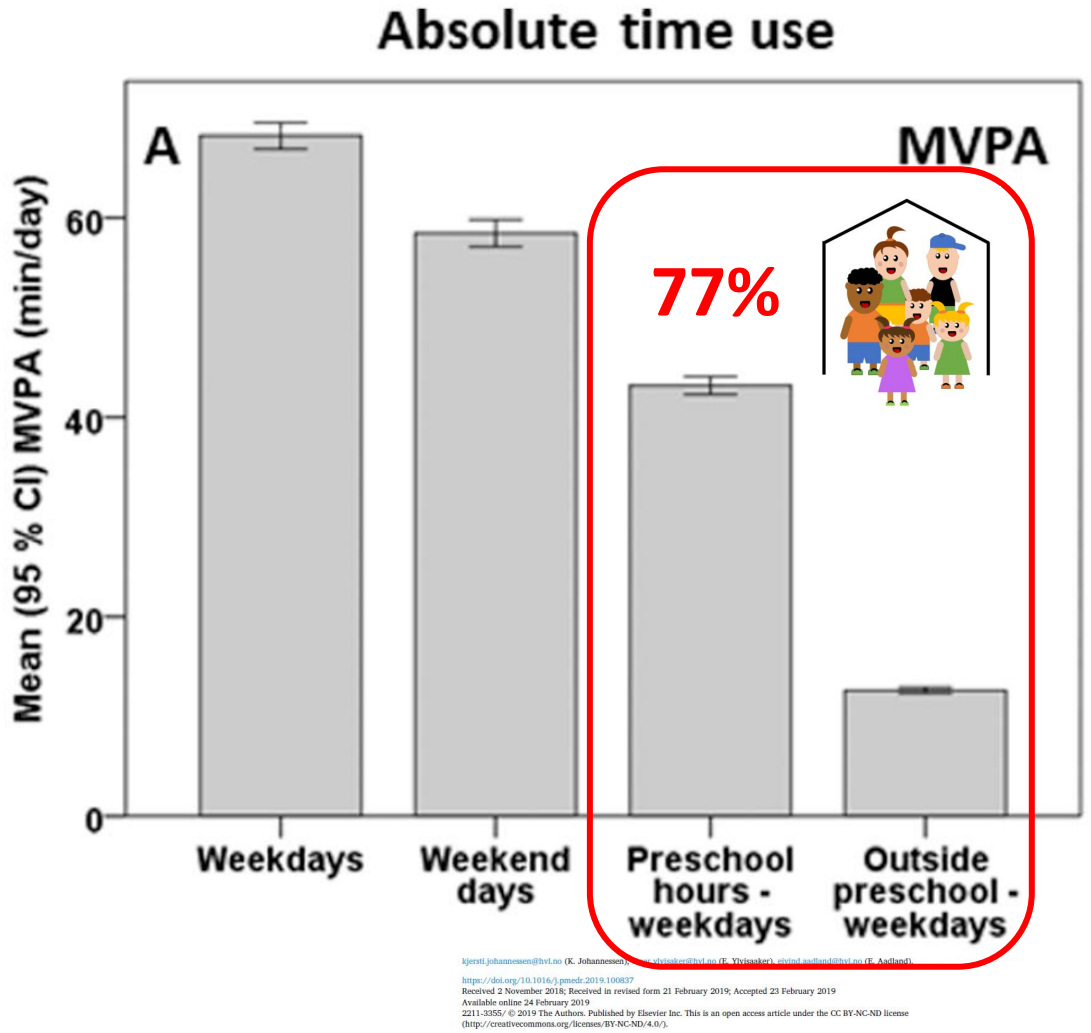
Sogn og Fjordane PRESPAS
Fysisk aktivitet hjå barnehagebarn

Aktivitetsmålingar gir nye svar: Berre halvparten av barna er aktive nok

SOGNDAL (NRK): Berre litt over halvparten av barna er så fysisk aktive som Helsedirektoratet meiner dei bør vere. Barna er mindre aktive heime enn i barnehagen.

MÅLER AKTIVITET: Doktorgradsstipendiat Ada Kristine Ofrim Nilsen festar måleinstrument på barna for å måle aktivitetsnivået deira. 1300 barn har hatt instrumentet på seg i 14 dagar i strekk.



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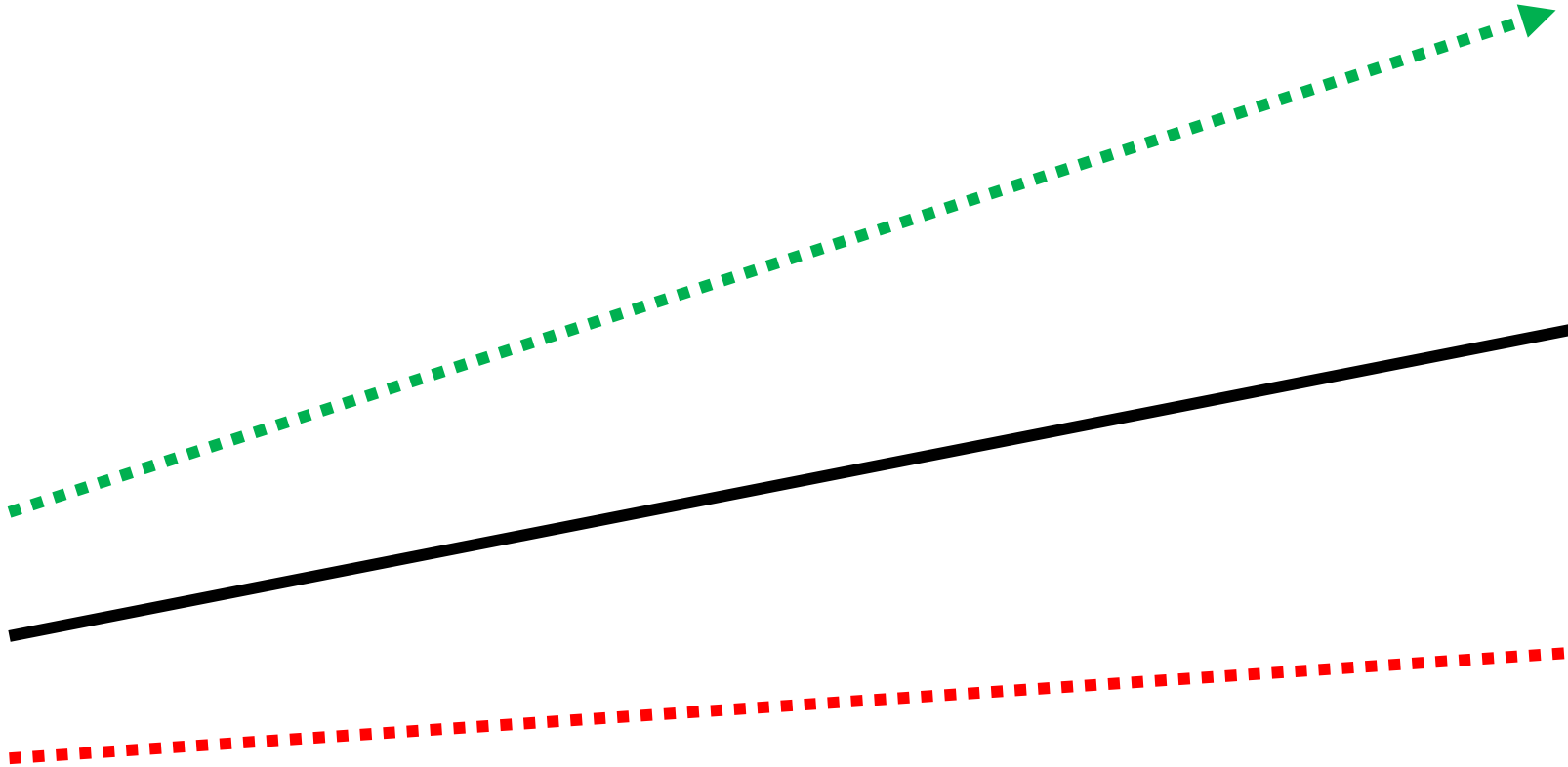
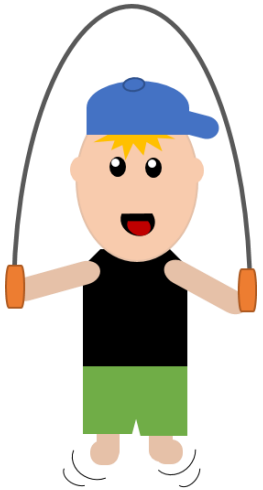
Available online 24 February 2019

55% of preschoolers achieve the guideline amount of MVPA

Physical activity
– large variation, which increases over time

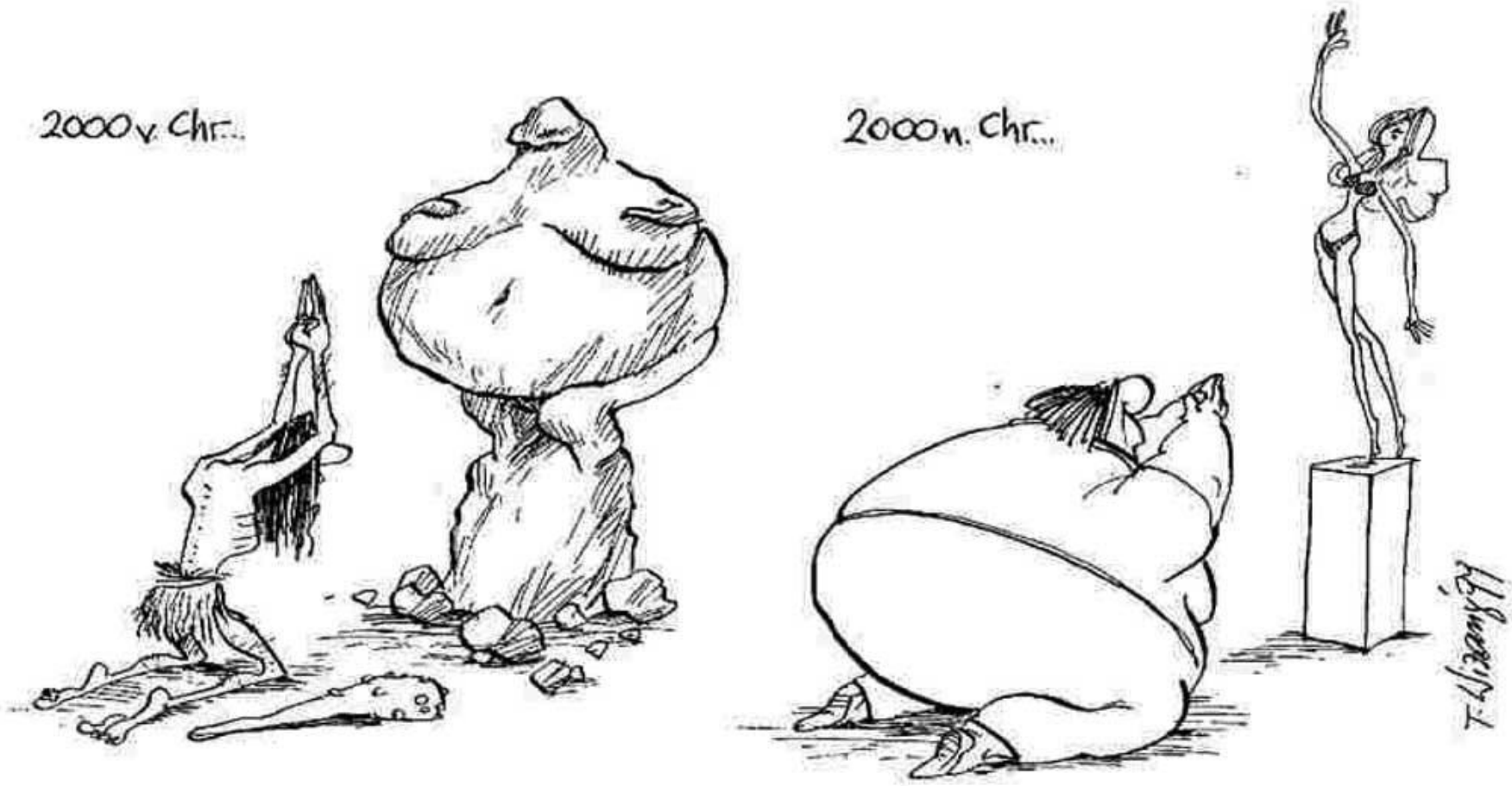




3 years

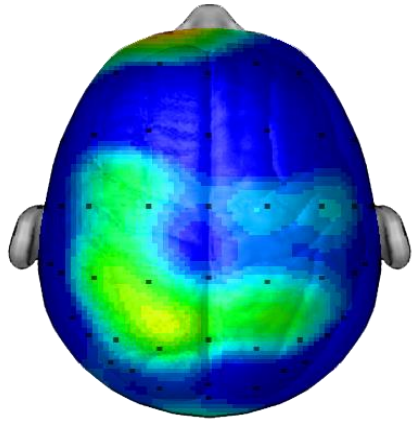
6 years

Sogn og Fjordane
PRESPAS
Fysisk aktivitet hjå barnehagebarn

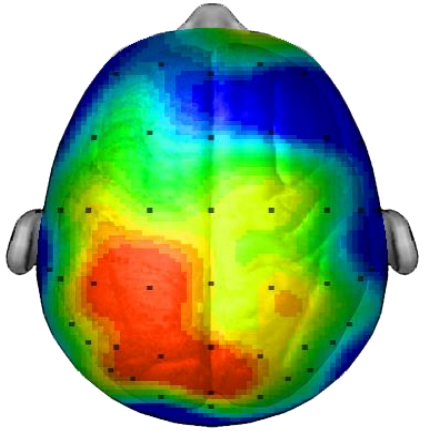


EVOLUTION...

Sedentary



Walking



http://www.sciencedirect.com/science/article/pii/S0306452209001171?via%3Dihub

Physical activity and executive functions; 3 different pathways

The dose

The aerobic fitness hypothesis

The type

The cognitive demands hypothesis

The motor skill hypothesis

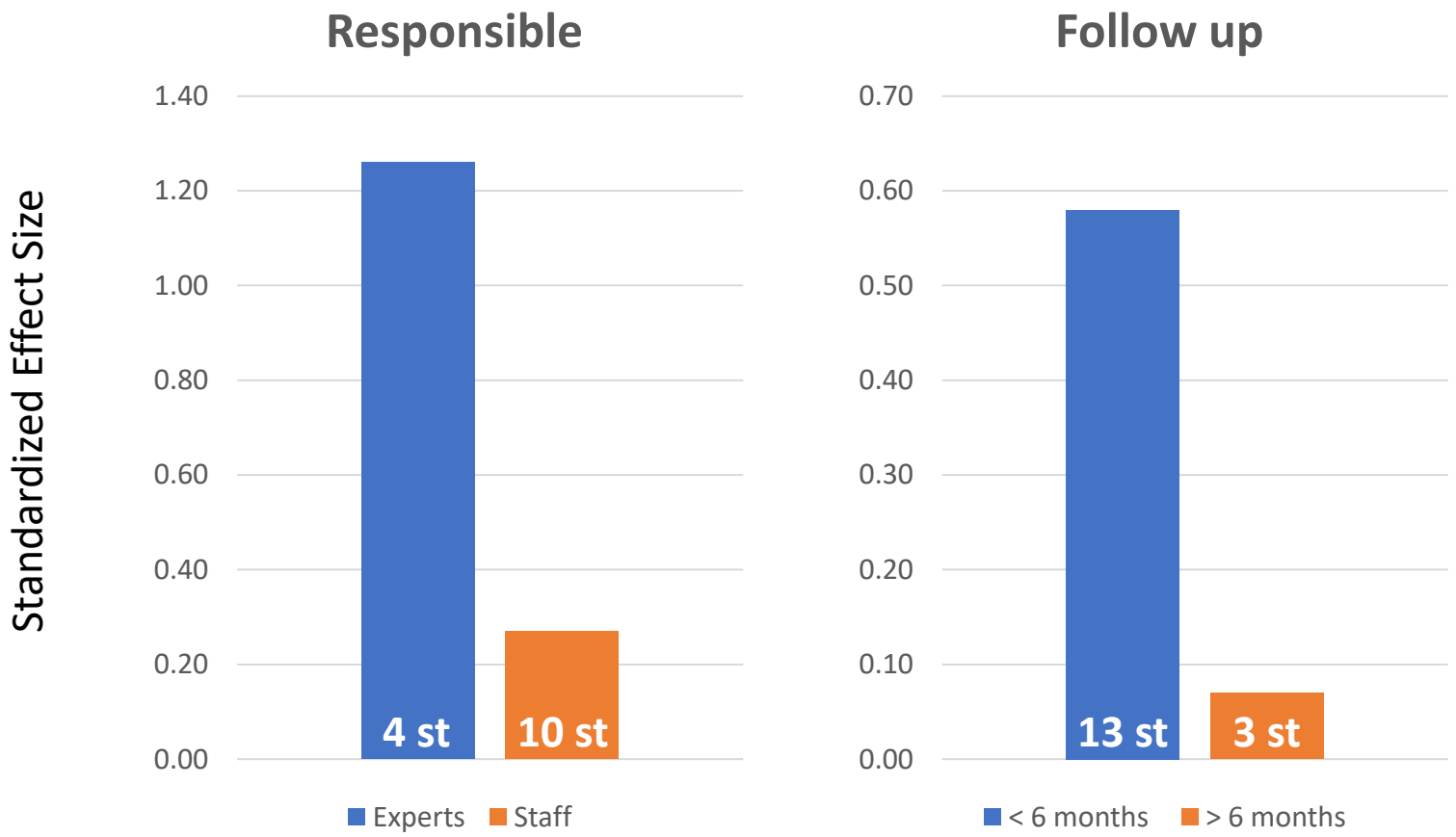
Best, 2010; Cameron et al., 2016; Carlson et al., 2015; Chaddock-Heyman et al., 2014; Colcombe & Kramer, 2003; Diamond, 2000; Etnier, Shih, & Peipmeier, 2016; Haapala, 2013; Khan & Hillman, 2014; Koziol, Budding, & Chidekel, 2012; Pesce, 2012; Schmidt et al., 2015; Tomporowski et al., 2011; 2015; van der Fels, 2015; van der Niet et al., 2016; Voss, 2016.

Current evidence

Have interventions to promote physical activity and motor skills in preschool children been effective?

Effects of preschool interventions to increase physical activity

Systematic review and meta-analysis of 16 studies using objective measures



obesity reviews doi: 10.1111/obr.12392

Pediatric Obesity/Prevention

Effectiveness of centre-based childcare interventions in increasing child physical activity: a systematic review and meta-analysis for policymakers and practitioners

M. Finch,[1,2] J. Jones,[2] S. Yoong,[2] J. Wiggers[1,2,3] and L. Wolfenden[1,2,3]

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Received 7 November 2015; revised 27 January 2016; accepted 28 January 2016

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Summary

Context: The review describes the effectiveness of physical activity interventions implemented in centre-based childcare services and (i) examines characteristics of interventions that may influence intervention effects; (ii) describes the effects of pragmatic interventions and non-pragmatic interventions; (iii) assesses adverse effects; and (iv) describes cost-effectiveness of interventions

Methods: Data sources were Cochrane Central Register of Controlled trials, MEDLINE, EMBASE, PsycINFO, ERIC, CINAHL, SCOPUS and SPORTDISCUS. Studies selected included randomized controlled trials conducted in centre-based childcare including an intervention to increase objectively measured physical activity in children aged less than 6 years. Data were converted into standardized mean difference (SMD) and analysed using a random effects model.

Results: Overall interventions significantly improved child physical activity (SMD 0.44; 95% confidence interval [CI]: 0.12–0.76). Significant effects were found for interventions that included structured activity (SMD 0.53; 95% CI: 0.12–0.94), delivery by experts (SMD 1.26; 95% CI: 0.20–2.32) and used theory (SMD 0.76; 95% CI: 0.08–1.44). Non-pragmatic (SMD 0.80; 95% CI: 0.12–1.48) but not pragmatic interventions (SMD 0.10; 95% CI:−0.13–0.33) improved child physical activity. One trial reported adverse events, and no trials reported cost data.

Conclusions: Intervention effectiveness varied according to intervention and trial design characteristics. Pragmatic trials were not effective, and information on cost and adverse effects was lacking. Evidence gaps remain for policymakers and practitioners regarding the effectiveness and feasibility of childcare-based physical activity interventions.

Keywords: Childcare, intervention, physical activity, pragmatic, systematic review.

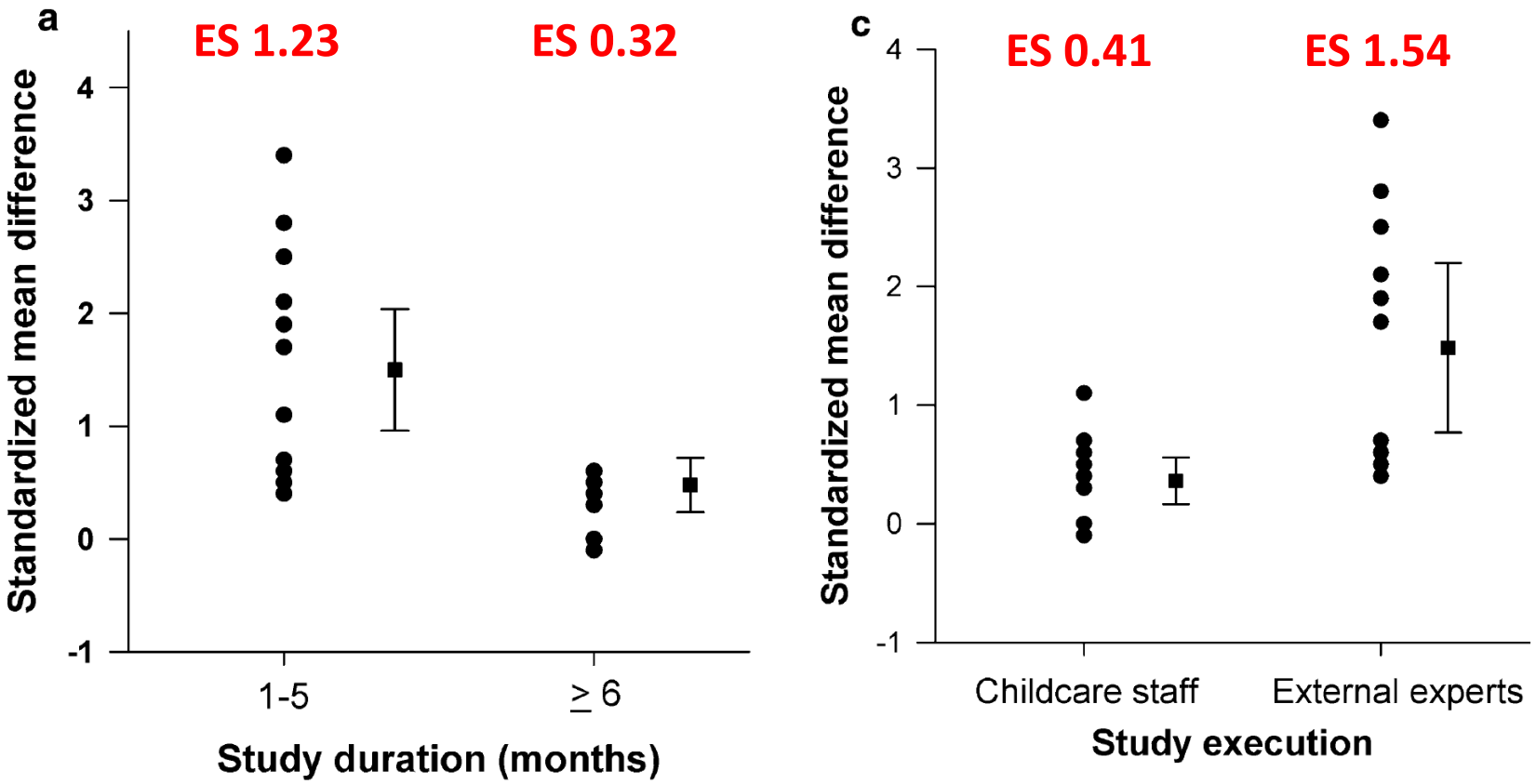
obesity reviews (2016) **17**, 412–428

Introduction

Participation in adequate physical activity is associated with lower prevalence of overweight and obesity in preschool age children and may contribute to sustaining a healthy body weight in later childhood. A number of cross-sectional studies conducted with preschool age children have reported positive associations between child participation in physical activity and lower levels of body fat and body mass index (1–5). Longitudinal studies have also found that participation in adequate physical activity in preschool age can protect against development of overweight and obesity in later childhood (1,6,7).

Effects of preschool interventions to increase motor skills

Systematic review and meta-analysis of 30 studies



Sports Med (2017) 47:2045–2068
DOI 10.1007/s40279-017-0723-1

SYSTEMATIC REVIEW

Interventions to Promote Fundamental Movement Skills in Childcare and Kindergarten: A Systematic Review and Meta-Analysis

Kristin Wick[1,2] · Claudia S. Leeger-Aschmann[3] · Nico D. Monn[3] · Thomas Radtke[3] · Laura V. Ott[3] · Cornelia E. Rebholz[3] · Sergio Cruz[3] · Natalie Gerber[3] · Einat A. Schmutz[3] · Jardena J. Puder[4,5] · Simone Munsch[6] · Tanja H. Kakebeeke[7] · Oskar G. Jenni[7] · Urs Granacher[1] · Susi Kriemler[3]

Published online: 6 April 2017

Abstract

Background Proficiency in fundamental movement skills (FMS) lays the foundation for being physically active and developing more complex motor skills. Improving these motor skills may provide enhanced opportunities for the development of a variety of perceptual, social, and cognitive skills.

Objective The objective of this systematic review and meta-analysis was to assess the effects of FMS interventions on actual FMS, targeting typically developing young children.

Method Searches in seven databases (CINAHL, Embase, MEDLINE, PsycINFO, PubMed, Scopus, Web of Science) up to August 2015 were completed. Trials with children (aged 2–6 years) in childcare or kindergarten settings that applied FMS-enhancing intervention programs of at least 4 weeks and meeting the inclusion criteria were included. Standardized data extraction forms were used. Risk of bias was assessed using a standard scoring scheme (Effective Public Health Practice Project—Quality Assessment Tool for Quantitative Studies [EPHPP]). We calculated effects on overall FMS, object control and locomotor subscales (OCS and LMS) by weighted standardized mean differences ($SMD_{between}$) using random-effects models. Certainty

Kristin Wick and Claudia S. Leeger-Aschmann are the co-first authors and Urs Granacher and Susi Kriemler are the co-last authors.

Electronic supplementary material The online version of this article (doi:10.1007/s40279-017-0723-1) contains supplementary material, which is available to authorized users.

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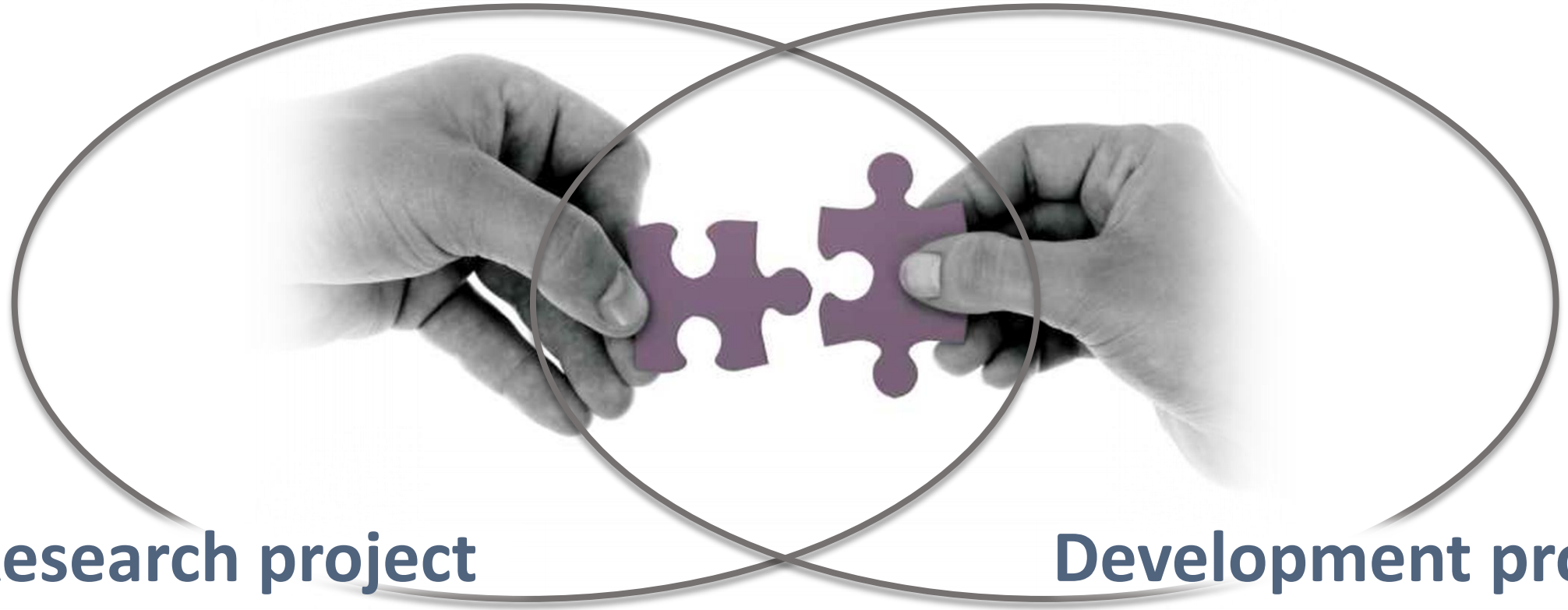
«..the evidence base is low and we have little confidence in the effect estimate. ..»

Why science teachers should not be given playground duty.

Collaboration and co-creation is fundamental



Research project **Development project**

frontiers in Psychology

STUDY PROTOCOL
published: 03 July 2020
doi: 10.3389/fpsyg.2020.01382

https://www.hvl.no/actnow/

Active Learning Norwegian Preschool(er)s (ACTNOW) – Design of a Cluster Randomized Controlled Trial of Staff Professional Development to Promote Physical Activity, Motor Skills, and Cognition in Preschoolers

OPEN ACCESS

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United States

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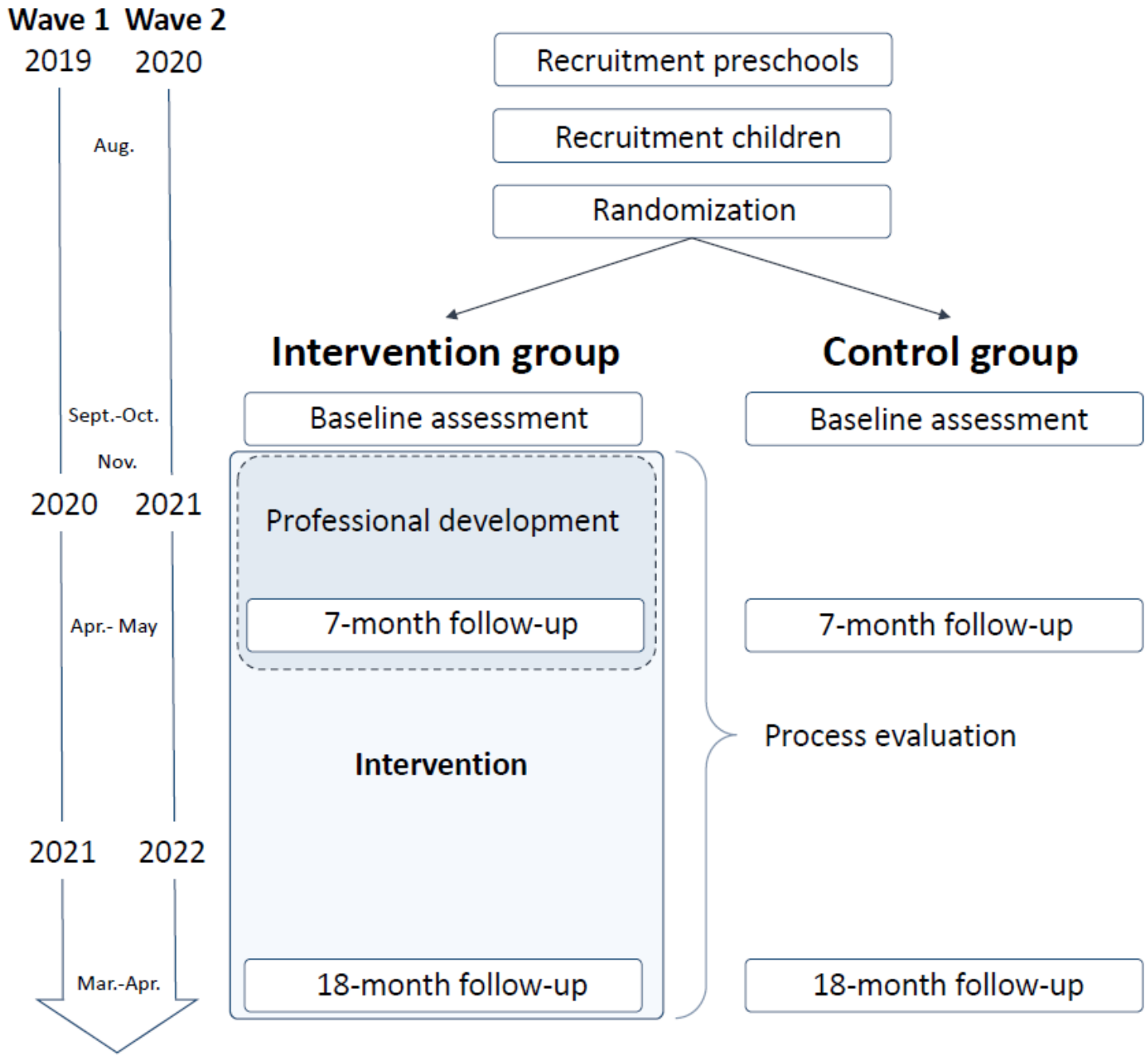
Wave 1 Wave 2
2019 2020
Aug.
Recruitment preschools
Recruitment children
Randomization
Intervention group
Control group
Sept.-Oct.
Baseline assessment
Baseline assessment
Nov.
2020 2021
Professional development
Apr.- May
7-month follow-up
7-month follow-up
Process evaluation
Intervention
2021 2022
Mar.-Apr.
18-month follow-up
18-month follow-up


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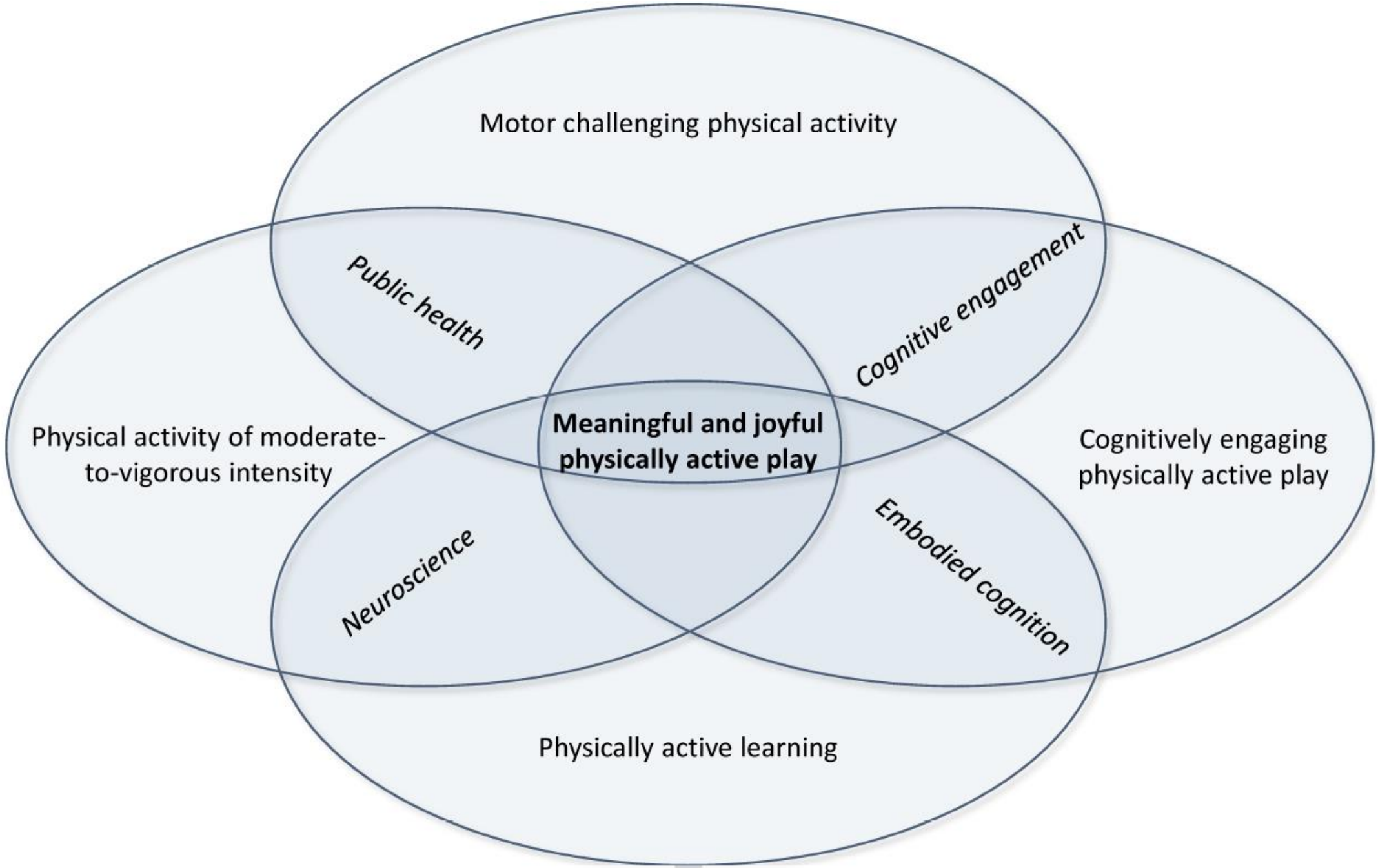

Motor challenging physical activity
Public health
Cognitive engagement
Physical activity of moderate-to-vigorous intensity
Meaningful and joyful physically active play
Cognitively engaging physically active play
Neuroscience
Embodied cognition
Physically active learning

Rammeplan for barnehagen

→ innhald og oppgåver

✳ Gjeld frå **01.08.17**

Intervention model ACTNOW – Cluster RCT 2019-2022

Preschool level

LOGIC MODEL

Professional development → Changed preschool practice

INTERVENTION

Development work

7-month professional development
Aimed to raise staffs' competence to
- deliver the intervention's core components
- lead a development process in the staff group

Tools
Web-based physical activity toolbox
Portable movement and learning equipment

18-month support for organizational development

EVALUATION

Implementation and process evaluation

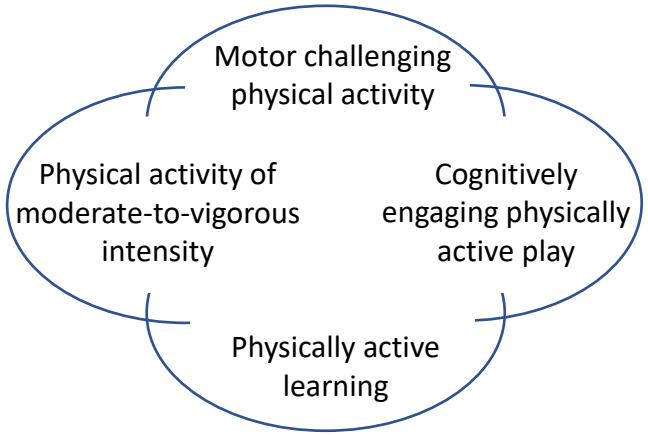
Research notes
Written plans
Interviews
Reflection papers

Standardized observation of the movement environments (MOVERS)
Objective physical activity monitoring

Child level

Increased child physical activity → Child developmental effects

Core components



Hypothesis under study
The intervention will improve child physical, socio-emotional, and cognitive development, and reduce social inequality in health and human capital.

Engagement

Objective physical activity monitoring
Observations

Outcomes

Physical development
-physical fitness
-motor skills
-weight status

Socio-emotional and cognitive development
-self-regulation
-executive function
-learning

Participants ACTNOW

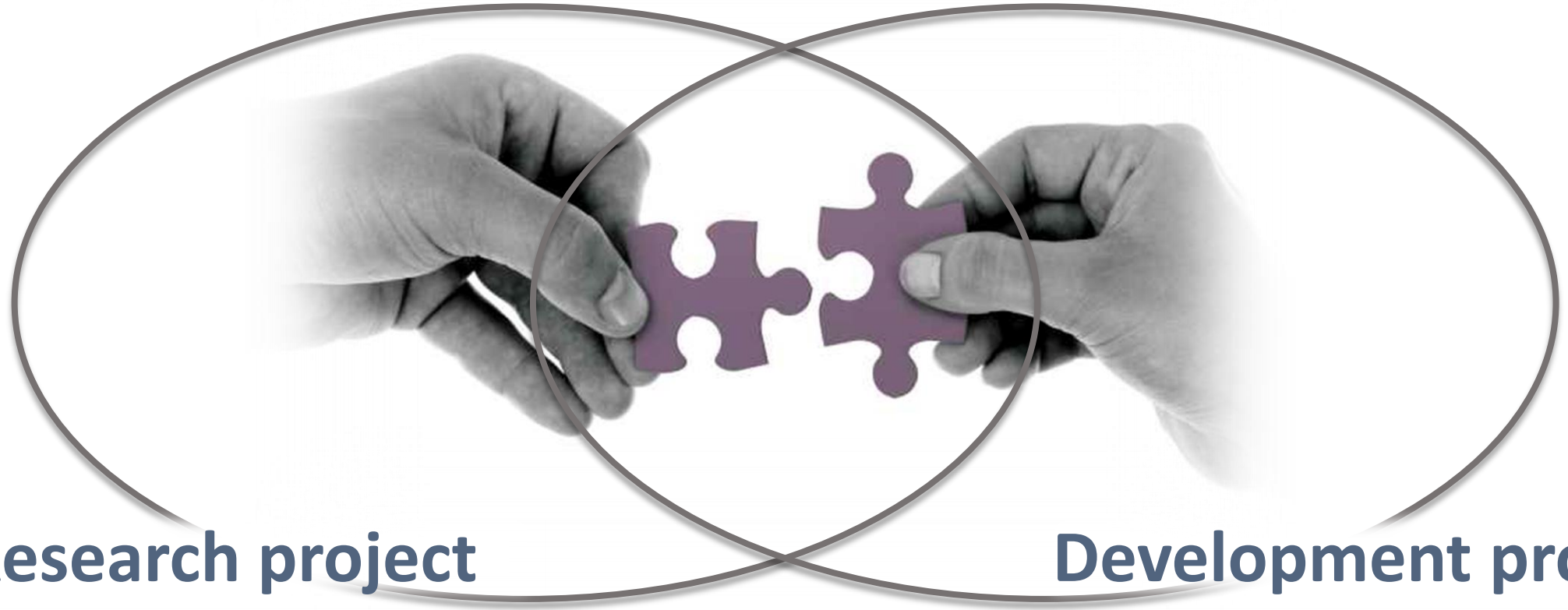
Intervention

Control

In total, 46 preschools, 1265 children, and 333 staff (1597 participants alltogether)

Intervention group: 23 preschools (8 v1, 15 v2), 77 staff take part in CPD (26 v1, 51 v2), 16 completed with credits

Collaboration and co-creation is fundamental



Research project **Development project**

3 ways to increase physical activity in preschool

Can you add something?
(Expand)

Can you do more of something?
(Extend)

Can you improve quality?
(Enhance)


HOKUS POKUS
HOKUS POKUS


Fysisk aktivitet med moderat til hög intensitet
Kognitiv engasjerande fysisk aktiv lek
Fysisk aktiv læring
A

Professional development, optional 15 credits

November → December → January → February → March → April → May → June

15 credits

Professional development

seminars, online webinars, everyday action in the preschool

Aktiv i barnehagen

Norsk Bokmål

TEMA RESSURSER OM AKTIV I BARNEHAGEN KONTAKT

Velkommen til din verktøykasse for fysisk aktivitet i barnehagen!

Variert fysisk aktivitet fremmer barns helhetlige utvikling, helse og trivsel. Her finner du oversikt over aktiviteter, opplegg og ressurser for en fysisk aktiv barnehagehverdag!

Skriv inn aktivitet..

Alder

- [ ] 0 - 2 år
- [ ] 3 - 5 år

Bevegelsesmiljø

- [ ] Stor plass
- [ ] Liten plass

Motorisk ferdighet

ALLE

Fagområde

ALLE

Type aktivitet

ALLE

SØK

HAR DU SPØRSMÅL ELLER INNSPILL?

Ta kontakt med oss på **e-post**

Høgskulen på Vestlandet

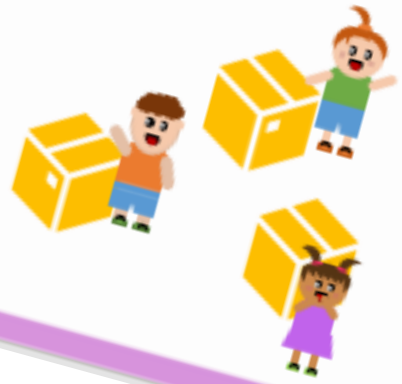
Nasjonalt senter for mat, helse og fysisk aktivitet

FYSISK AKTIV LÆRING

POSTKASSAR

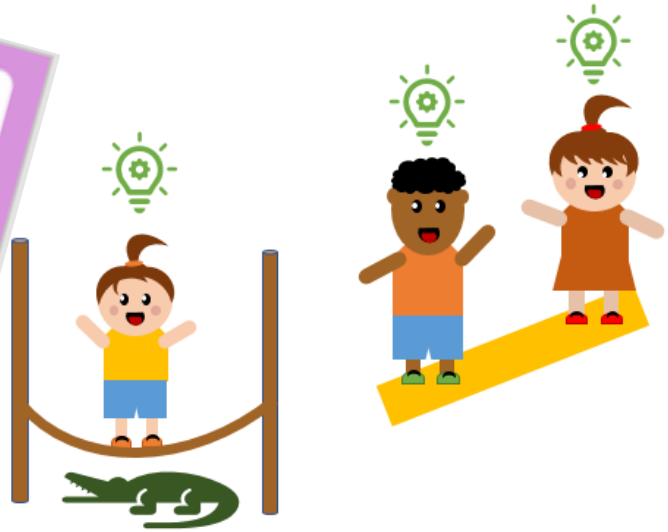
FOR DEI YNGSTE BARNA

LEIK MED STORE ESKER



KOGNITIV UTFORDRANDE LEIK

Å KRYSSE BRUER



MOTORISK UTFORDRANDE AKTIVITET

MARSHMALLOW-TUR

MODERAT/HØG INTENSIV LEIK

BONDEN OG HØNENE

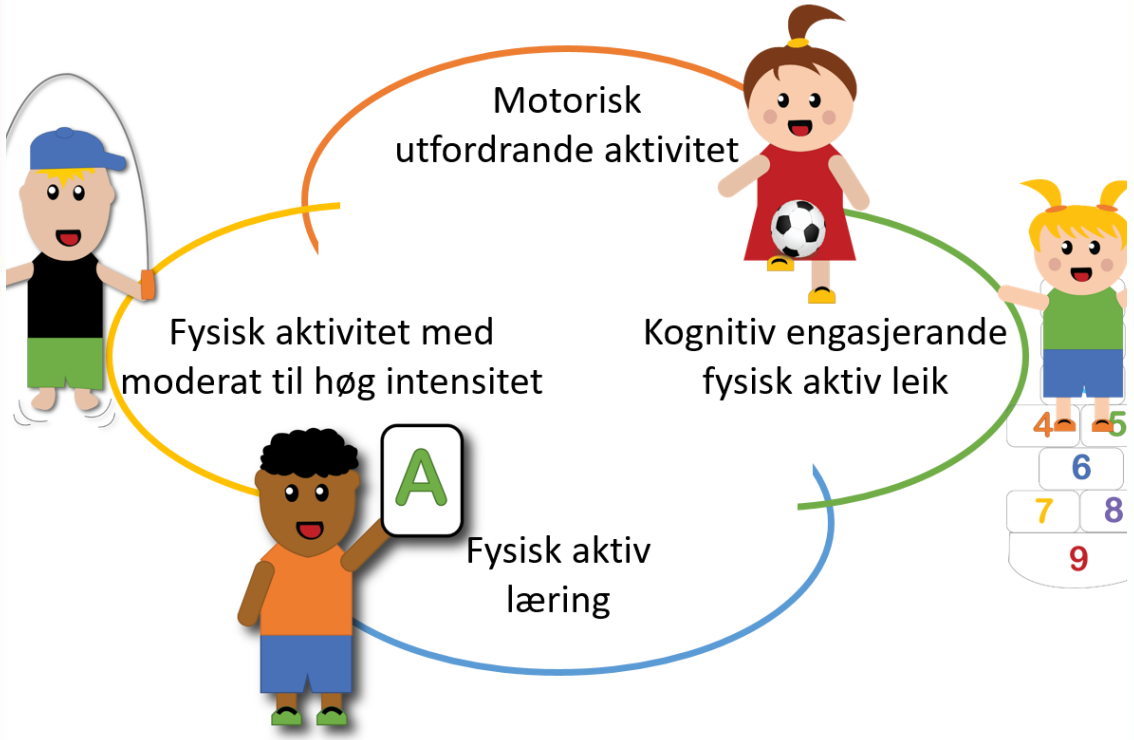
e-learning resource

Moderat/høy intensiv lek

Aktiviteter av moderat til høy intensitet er aktiviteter som fører til en vesentlig økning i barns energiforbruk. Med andre ord er dette aktiviteter som fører til at barna blir andpustne, varme og slitne. Eksempler på aktiviteter og leker av moderat til høy intensitet er grovmotoriske aktiviteter der de store muskelgruppene brukes, som ved løping, hopping og hinking. Aktiviteter som øker energiforbruket, gjør at musklene krever mer næringsstoff og oksygen. Dette fører til ulike positive treningseffekter i musklene, i hjertet og respirasjonssystemet, i nervesystemet og i hjernen. Aktivitetene kan gjennomføres inne og ute, og organiseres på mange ulike måter, med stor variasjon. Norske og internasjonale retningslinjer gir råd om at barnehagebarn får 60 minutter daglig i moderat til høy intensitet.

Motorisk utfordrende aktivitet

Motorisk utfordrende aktiviteter er ulike aktiviteter som krever at barna må strekke seg og konsentrere seg for å gjennomføre aktiviteten. Dette gjør at barna lærer nye og vanskeligere bevegelsesmønster. Viktige motoriske ferdigheter er ulike grovmotoriske bevegelsesmønster som gjerne deles i tre områder; forflytning, objektkontroll og balanse, i tillegg til koordinasjon og rytme. Aktiviteter som utfordrer forflytning er for eksempel løping, hopping og hinking. Aktiviteter som utfordrer objektkontroll er kast, spark og mottak av for eksempel ball, ertepose eller lignende. Aktiviteter som utfordrer balanse vil være å gå på linje, stå på en fot, hinke og lignende. Mange bevegelsesmønstre vil kreve god øye-hånd og øye-fot koordinasjon, og de ulike områdene vil også overlappe i ulike sammensatte aktiviteter og leker, som for eksempel fotball. Læring av nye bevegelsesmønstre skjer gjennom at barna blir utfordret i ulike aktiviteter, enten ved økt vanskelighetsgrad i kjente bevegelsesmønstre eller gjennom å introduseres for nye bevegelsesmønstre. I motsetning til aktiviteter av moderat til høy intensitet, der intensitet og kvantitet (hvor mye) er viktig, er kvaliteten på bevegelsesmønsteret som regel viktigere for å skape motoriske utfordringer.



Kognitiv engasjerende lek

Kognitiv engasjerende fysisk aktiv lek er leker og aktiviteter som barna syns er meningsfulle og engasjerende, og som ofte er komplekse å gjennomføre. Typiske eksempler er ulike typer av regelleker, jage- og fangeleker og lagspill der en må handle etter regler, i tillegg til med- og motspillere. Slike aktiviteter krever at en må huske informasjon (regler) og deretter handle etter informasjon som en tilegner seg underveis, for eksempel hva andre gjør, hvor de forflytter seg, og hva som er lurt å gjøre for å nå målet, skåre eller fange noen. Regler kan varieres for å endre premissene for aktiviteten og dermed gjøre leken mer krevende. Slike aktiviteter setter krav til barnas kognitive funksjon, inkludert det å huske informasjon, gjøre valg, hemme planlagte bevegelser, være fleksibel og strategisk. Slik kan aktivitetene utfordre barnas selvregulering både knyttet til fysiske handlinger og adferd, planlegging og valg, og tanker og følelser, og slik sett fremme både kognitiv og sosio-emosjonell selvregulering.

Fysisk aktiv læring

Fysisk aktiv læring er fysisk aktivitet koblet med andre fagområder i Rammeplanen. Målet med aktiviteten er tosidig, både å være mer i aktivitet gjennom barnehagedagen uten å redusere annet innhold, og samtidig fremme læring gjennom en kroppsliggjøring og konkretisering av innhold. I tillegg kan det å være i fysisk aktivitet mens en arbeider med tema øke konsentrasjonsevnen. Slik er fysisk aktiv læring en metode for lek og læring som kan brukes i arbeidet med andre aktiviteter for eksempel koblet til språkutvikling, forståelse av tall, rom og form, eller naturkjennskap. Noen aktiviteter kan foregå parallelt med annen læring (uten å være integrert med læringsmålet), for eksempel ved bruk av stafetter i kombinasjon med læring av ord/begrep, der løping ikke direkte er koblet til ordene/begrepene som skal læres. Andre aktiviteter kan være integrerte med andre læringsmål, som for eksempel ved å forme bokstaver og tall med kroppen, hoppe eller hinke med et spesifikt antall repetisjoner for å lære tallrekken, eller ved å måle og bevisstgjøre mengde og rom ved bruk av kroppen. Fysisk aktiv læring kan være en god måte å gjøre læring i barnehagen mer lekpreget, meningsfull og morsom.

Move-play-explore in Early Childhood Education

MoveEarly

-a large-scale interdisciplinary research and development project

https://www.hvl.no/moveearly

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Høgskulen på Vestlandet

Forskningsrådet

BERGEN KOMMUNE

MoveEarly in a nutshell

- MoveEarly target two worrisome trends that are counterproductive to child development, well-being and life opportunities
  - Increased levels of **physical inactivity** in young children
  - **"Schoolification"** within early childhood education (ECE)
  - ***Curtail young children's natural inclination to move, play, and explore***

- *Aim:* *Design and test a **responsive education** to **promote movement, play, and exploration in ECE***

Early Childhood Education (ECE)

«Baby-Pisa»

Figure 5.3 **Distribution of self-regulation scores, by country**

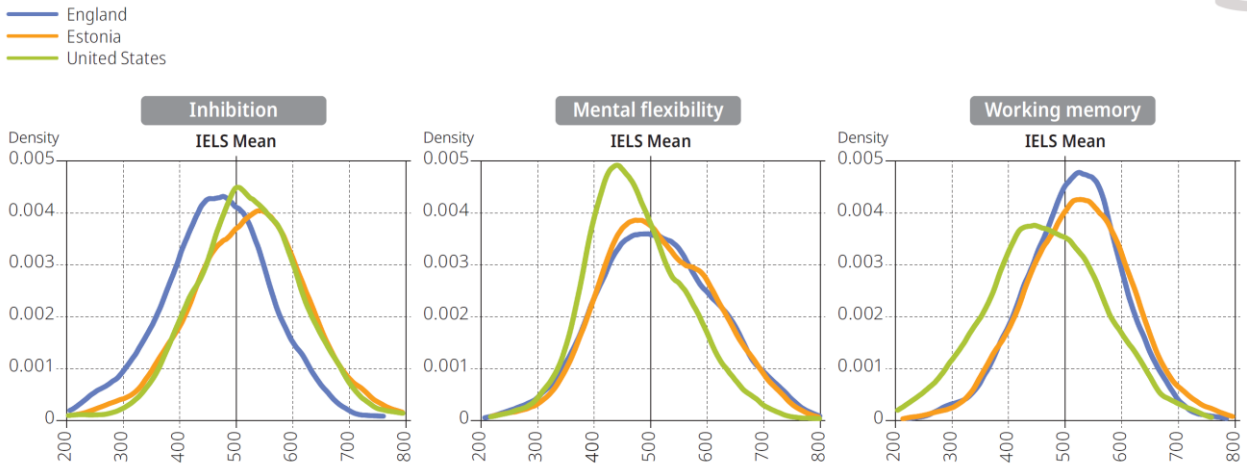
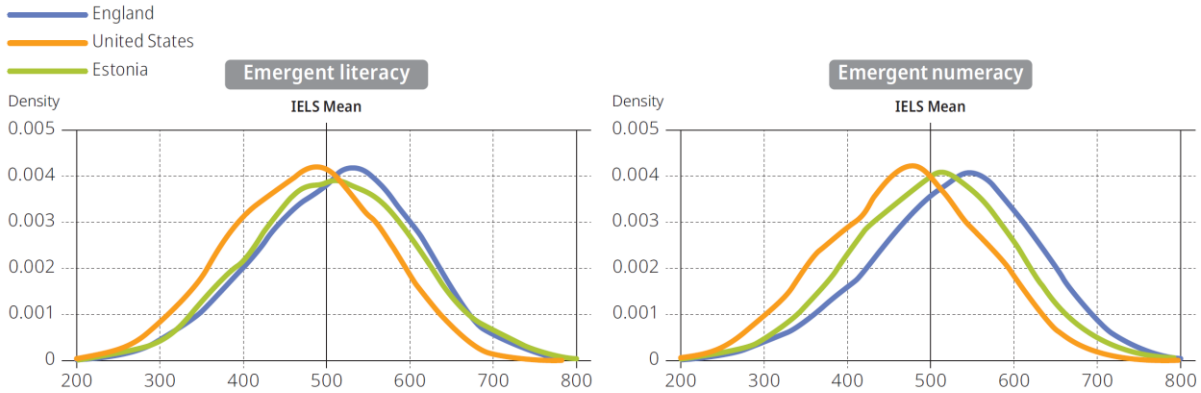
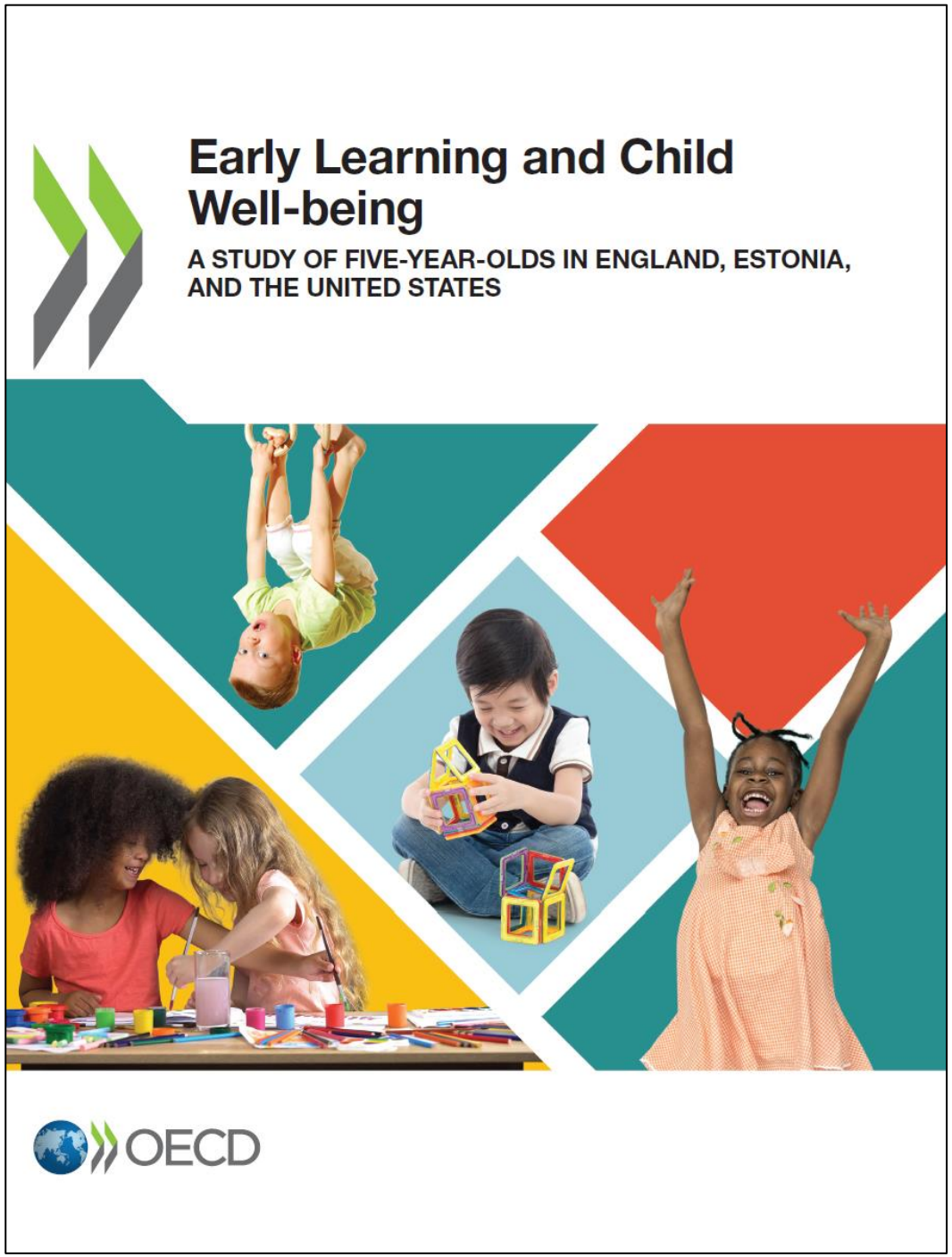


Figure 6.2 **Distribution of emergent literacy and emergent numeracy scores by country**

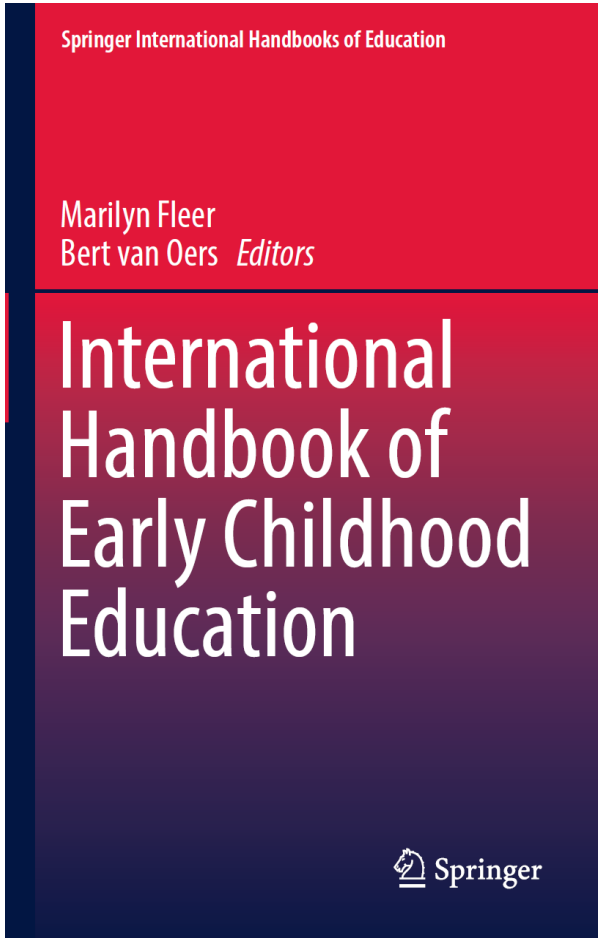




Where are we heading with OECD in ECE?

- Kindergarten characterized by increased comparison and increased pressure to deliver on learning outcomes
- Leads to a very narrow understanding of learning
  - More instructional approaches
  - Less room for taking the cultural-historical context into account
  - Less room for movement, play, and exploration

Schoolification of ECE



Chapter 15
School Readiness in Europe: Issues and Evidence

Sue Bingham and David Whitebread

Abstract The issue of 'school readiness' has become a topic of considerable debate and controversy within Western Europe over the last few years. This is interpreted in widely different ways and includes debates on what capabilities a young child needs in order to successfully commence their schooling; what type of institutional and pedagogical provision constitutes 'schooling', as opposed to pre-school, kindergarten or nursery; and what is the appropriate age at which children should be expected to make the transition from home and pre-school into their primary school?

Keywords 'School readiness' • Teaching-learning methodologies • Primary education • 'Schoolifying' • Early childhood education

15.1 Introduction

This chapter examines the influence of schools upon children as their 'schooling' commences within a range of countries in Western Europe. In the main, no child is considered to require 'schooling' until they are at least 6 (and in some cases 7) years of age, and all member countries offer some form of early publicly financed programmes for children before the start of compulsory schooling. However, the diversity of children's home environments and early learning experiences, the age at which children may access early childhood education and care (ECEC) programmes, the length of time they attend and the nature of the provision are subject to significant cross national differences. Such diversity naturally has a huge impact upon the

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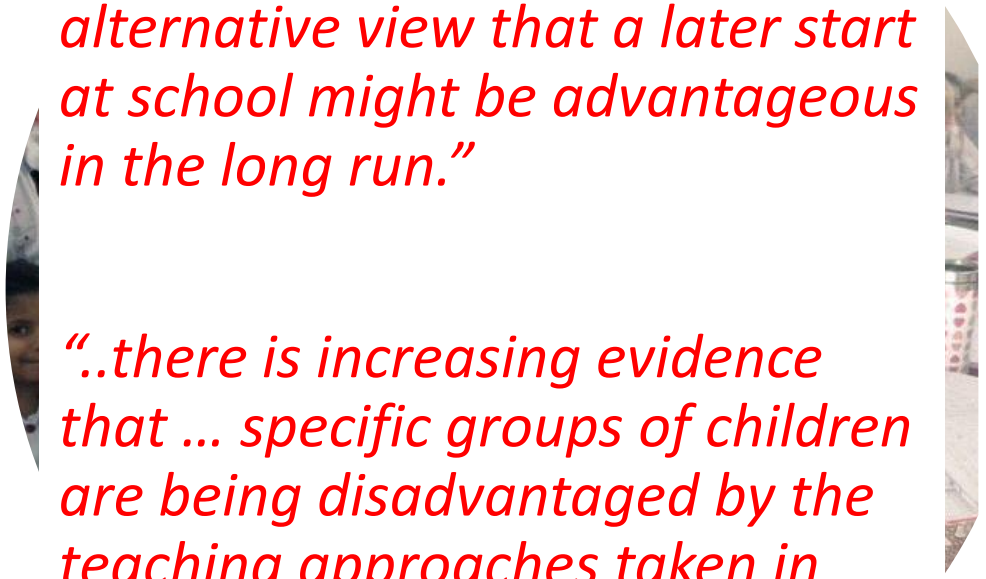
M. Fleer, B. van Oers (eds.), *International Handbook of Early Childhood Education*, Springer International Handbooks of Education,
DOI 10.1007/978-94-024-0927-7_15

"..there is no serious evidence to support the 'earlier is better' position and a very significant body of evidence to support the alternative view that a later start at school might be advantageous in the long run."



"..there is increasing evidence that ... specific groups of children are being disadvantaged by the teaching approaches taken in educational settings at early points in a child's life."

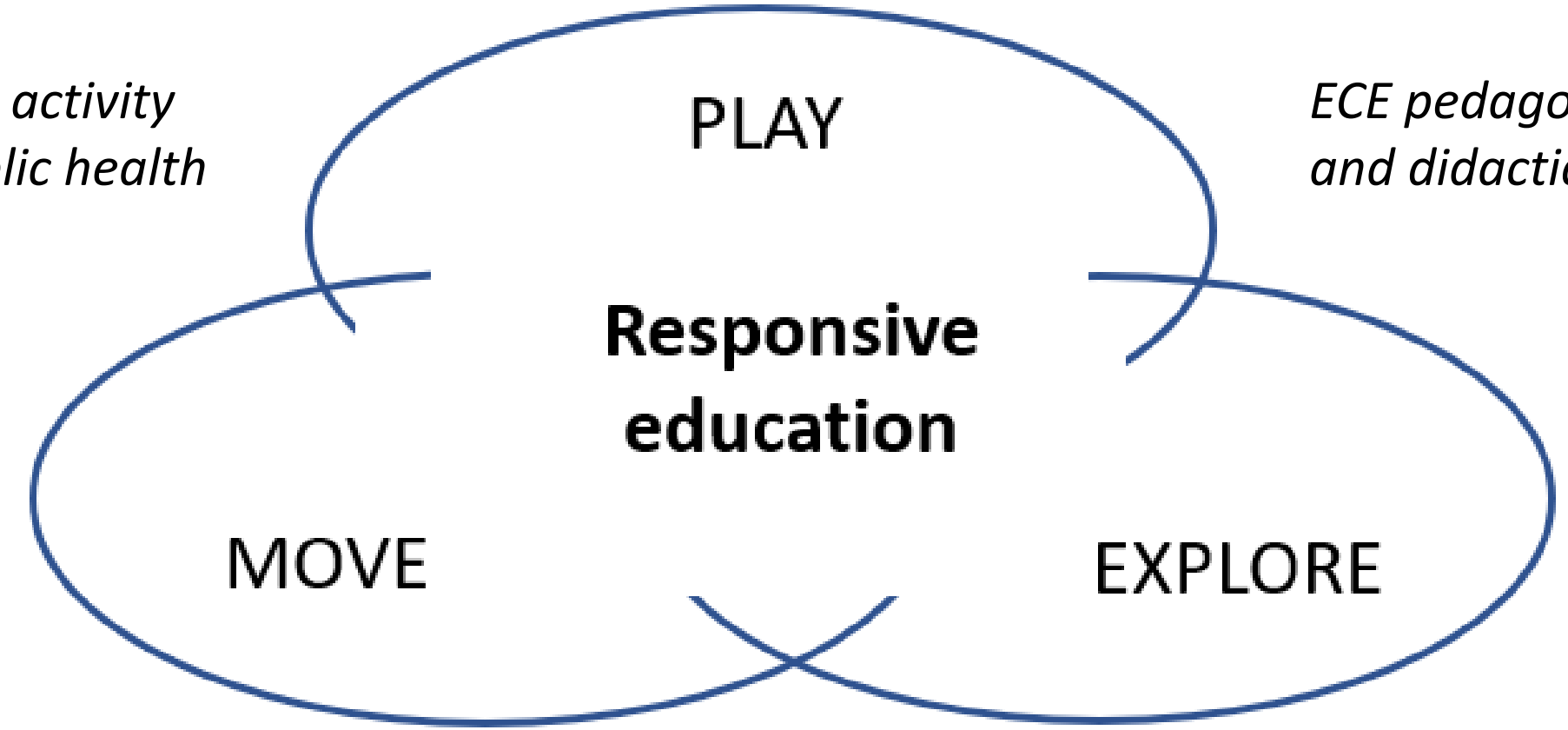


Potential for a more responsive approach

- **Movement**
- **Play**
- **Exploration**


P
L
L E A R N
Y

MoveEarly: Develop and test an ECE pedagogical approach that promotes



Intervention model MoveEarly – Cluster RCT 2024-2026

Kindergarten level

LOGIC MODEL

Professional development → Changed preschool practice

INTERVENTION

Development work

6-month professional development
Aimed to raise staffs' competence to
- deliver the intervention's core components
- lead a development process in the staff group

e-learning toolbox
Movement activities ideas bank
Didactic tools move-play-explore
Online webinars and work-shops

18-month support for organizational development

EVALUATION

Process evaluation

Written plans
Staff interviews
Staff observations
Staff survey

Standardized observation of the movement environments
Staff in-service objective physical activity monitoring

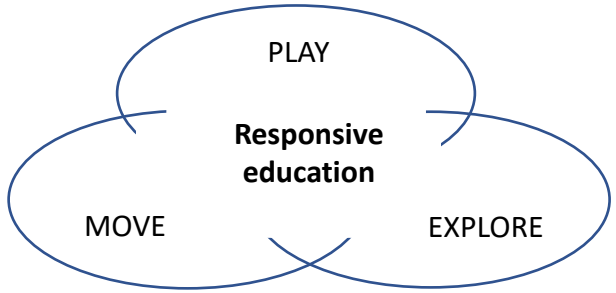
Child level

LOGIC MODEL

Increased child physical activity → Child developmental effects

INTERVENTION

Core components



Hypothesis under study
The intervention will improve child holistic development and reduce social inequality

EVALUATION

Child objective physical activity monitoring
Child interviews
Child observation

Outcome evaluation

Movement play competence & creativity
Physical fitness
Weight status

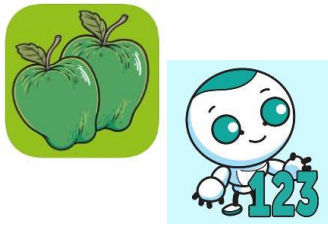
Self-regulation
Vocabulary & numeracy
Socio-emotional health & well-being

Physical fitness

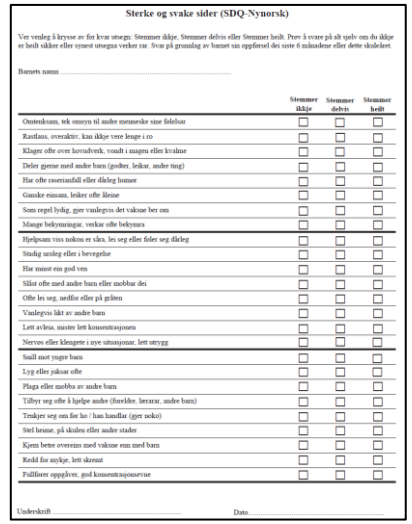
Body mass, height

Self-regulation
(direct measure and teacher report)

Learning



Physical activity



Sterke og svake sider (SDQ-Nynorsk)

Ver venleg å krysse av for kvar utsegn. Stemmer ikkje, Stemmer delvis eller Stemmer heilt. Prøv å svare på alt sjølv om du ikkje er heilt sikker eller synest utsegna verker eit. Svar på grunnlag av barnet sin oppførsel dei siste 6 månadene eller dette skuleåret.

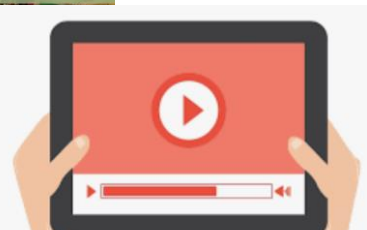
Barnets namn .....

	Stemmer ikkje	Stemmer delvis	Stemmer heilt
Omtenksam, tek omsyn til andre menneske sine følelsar	☐	☐	☐
Rastlaus, overaktiv, kan ikkje vere lenge i ro	☐	☐	☐
Klager ofte over hovudverk, vondt i magen eller kvalme	☐	☐	☐
Deler gjerne med andre barn (godter, leikar, andre ting)	☐	☐	☐
Har ofte raseriutfall eller dårleg humør	☐	☐	☐
Ganske einsam, leiker ofte åleine	☐	☐	☐
Som regel lydig, gjer vanlegvis det vaksne ber om	☐	☐	☐
Mange bekymringar, verkar ofte bekymra	☐	☐	☐
Hjelpsam viss nokon er såra, lei seg eller føler seg dårleg	☐	☐	☐
Stadig uroleg eller i bevegelse	☐	☐	☐
Har minst ein god ven	☐	☐	☐
Slåst ofte med andre barn eller mobbar dei	☐	☐	☐
Ofte lei seg, nedfor eller på gråten	☐	☐	☐
Vanlegvis likt av andre barn	☐	☐	☐
Lett avleia, master lett konsentrasjonen	☐	☐	☐
Nervøs eller klengete i nye situasjonar, lett utrygg	☐	☐	☐
Snill mot yngre barn	☐	☐	☐
Lyg eller juksar ofte	☐	☐	☐
Plaga eller mobba av andre barn	☐	☐	☐
Tilbyr seg ofte å hjelpe andre (foreldre, lærarar, andre barn)	☐	☐	☐
Tenkjer seg om før ho / han handlar (gjer noko)	☐	☐	☐
Stel heime, på skulen eller andre stader	☐	☐	☐
Kjem betre overeins med vaksne enn med barn	☐	☐	☐
Redd for nye ting, lett skremt	☐	☐	☐
Fullfører oppgåver, god konsentrasjonsevne	☐	☐	☐

Underskrift ..... Dato .....

Interview

Observation



Well-being

Movement competence and creativity
(direct measure and teacher report)

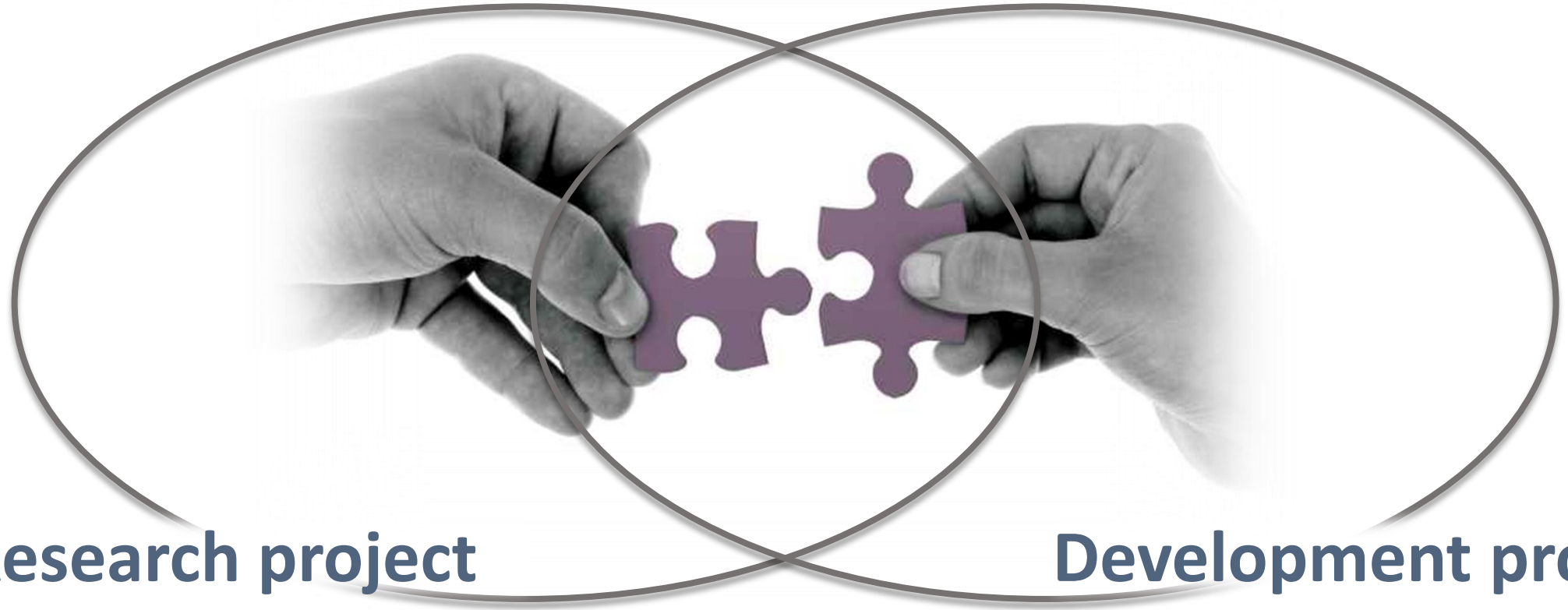
Objective of MoveEarly

- **The objective of MoveEarly is to develop and test a ECE pedagogical approach integrating movement, play, and exploration as conceptual cornerstones for improved child development. Implemented through a model of CPD for preschool staff, MoveEarly will provide new knowledge to pressing challenges in the field of ECE, movement sciences, and public health.**

MoveEarly will:

- ***Theorize on the move-play-explore nexus*** *as cornerstones for ECE pedagogy and derive didactic designs to advance and promote responsive educational practices*
- ***Develop new outcomes*** *of movement competence and creativity and well-being to capture effects of movement, play, and exploration interventions on the holistic development in young children*
- ***Promote movement, play, and exploration in a large number of preschools and children over 18 months*** *to enhance child holistic development*
- ***Work with staff to fully integrate move-play-explore*** *into their existing daily schedules and educational activities to allow for a strong implementation of the intervention over the long term*
- ***Use a RCT design*** *to allow for the strongest possible evaluation of effectiveness and acceptability, and evaluate how, for whom, and under what circumstances the intervention may work*

Collaboration and co-creation is fundamental



Research project **Development project**

Thank you for listening!

and thanks to partners and the NRC for making this research possible

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