

Effects of balance training on balance performance in healthy children

Submission date 25/03/2021	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 12/04/2021	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 30/12/2021	Condition category Other	<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Improvements in balance performance through balance training (BT) programs in children have been reported in several studies. However, the influence of BT modalities (e.g., training period, frequency, volume) on the training effectiveness has not yet been studied. To address this shortfall, the present study investigated the effects of balance training duration (i.e., 4 versus 6 weeks) on measures of static and dynamic balance performance in healthy children aged 10 years.

Who can participate?

Healthy children aged 10 years.

What does the study involve?

Balance training programs were conducted for four or six weeks with two sessions per week (30 minutes per session) at a school gym.

What are the possible benefits and risks of participating?

Possible benefits of participating were improved postural control; possible risks of participating were fatigue-related decrements in balance performance

Where is the study run from?

University of Duisburg-Essen (Germany)

When is the study starting and how long is it expected to run for?

November 2018 to September 2019

Who is funding the study?

Open Access Publication Fund of the University of Duisburg-Essen (Germany)

Who is the main contact?

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Contact information

Type(s)

Scientific

Contact name

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Additional identifiers**Study information****Scientific Title**

Effects of balance training on static and dynamic balance performance in healthy children: role of training duration

Study objectives

1. Both training durations lead to improvements in balance performance
2. A longer exposure to the training stimuli would lead to greater improvements after six instead of four weeks of training

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 10/07/2017, Human Ethics Committee at the University of Duisburg-Essen, Faculty of Educational Sciences (Universitätsstraße 2, 45141 Essen; +49 2011837237; ethik-psychologie@uni-due.de), ref: none provided

Study design

Interventional randomized controlled trial

Primary study design

Interventional

Study type(s)

Prevention

Health condition(s) or problem(s) studied

Prevention of fall-related injuries in primary school children

Interventions

Standardized balance training programs were conducted for four and six weeks with two sessions per week (30 minutes per session) at a school gym. This led to a total training volume of 240 minutes (BT-4wk) and 360 minutes (BT-6wk), respectively. The training was supervised by graduate students. A 5-10-minute warm-up and a 5-minute cool-down marked the start and end of each session. In between, 5-7 balance exercises (3 sets of 30-40 s per exercise) addressing static steady-state (i.e., standing exercises), dynamic steady-state (i.e., walking exercises), proactive (i.e., weight shifting while standing), and reactive (i.e., perturbed standing) balance were performed; Randomization process: using Research Randomizer (www.randomizer.org)

Intervention Type

Behavioural

Primary outcome(s)

At baseline and after the intervention:

1. Static balance was assessed using the one-legged stance
2. Dynamic balance performance was assessed using the Lower Quarter Y-Balance Test (YBT-LQ)

Key secondary outcome(s)

There are no secondary outcome measures

Completion date

30/09/2019

Eligibility

Key inclusion criteria

1. Age 9 - 11 years
2. Free of any known neurological or orthopedic diseases

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Child

Lower age limit

9 years

Upper age limit

11 years

Sex

All

Total final enrolment

29

Key exclusion criteria

Does not meet inclusion criteria

Date of first enrolment

01/12/2018

Date of final enrolment

31/12/2018

Locations**Countries of recruitment**

Germany

Study participating centre**University of Duisburg-Essen**

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Sponsor information**Organisation**

University of Duisburg-Essen

ROR

<https://ror.org/04mz5ra38>

Funder(s)**Funder type**

University/education

Funder Name

Universität Duisburg-Essen

Alternative Name(s)

University of Duisburg-Essen, Uni Duisburg-Essen, The University of Duisburg-Essen, University of Duisburg, University of Essen, Gerhard Mercator University of Duisburg, UDE

Funding Body Type

Government organisation

Funding Body Subtype

Universities (academic only)

Location

Germany

Results and Publications

Individual participant data (IPD) sharing plan

The current data sharing plans for this study are unknown and will be available at a later date.

IPD sharing plan summary

Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		23/12/2021	30/12/2021	Yes	No