

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Jun 2026

Comparison of Explicit and Implicit Motor Learning with Dominant and Non Dominant Hand in Children with Autism Spectrum Disorder and Typical Matched Group

Protocol summary

Summary

Cerebral hemispheres functioning have been found to be abnormal in children with ASD. The role of lateralization in implicit and explicit motor learning has received little attention in ASD researches. In the present random clinical trial study, 30 boys with ASD aged 7-11, who were right-handed, were compared with 32 typical matched boys. Typical group and the ASDs, which were screened with ASSQ, were selected from elementary schools in Najafabad (Isfahan, Iran). The main goals of this study were comparing implicit and explicit motor learning and their consolidation with dominant and non dominant hand in children with ASD with their typical matched group and comparing intermanual transfer of explicit and implicit motor learning in children with ASD and their typical matched group. Participants performed a serial reaction time task (14 blocks) with each hand in implicit and explicit group with random allocation in the first day. And the second day, they performed a 4-block test with each hand. SRTT recorded reaction time and number of correct answers in each block. Using SPSS19, Repeated measure ANOVA was performed for data analysis.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2012091110816N1**
Registration date: **2012-10-27, 1391/08/06**
Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2012-10-27, 1391/08/06

Registrant information

Name

Sara Izadi Najafabadi

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 21 7754 2057

Email address

saraizadin@yahoo.com

Recruitment status

Recruitment complete

Funding source

Shahid Beheshti University of Medical Sciences

Expected recruitment start date

2012-05-21, 1391/03/01

Expected recruitment end date

2012-08-19, 1391/05/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of Explicit and Implicit Motor Learning with Dominant and Non Dominant Hand in Children with Autism Spectrum Disorder and Typical Matched Group

Public title

Explicit and implicit motor learning in children with autism spectrum disorder

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria : being male, aged from 7 to 11 years

old; not being left dominant using eddinburg hand inventory; no visual and auditory problem; lack of motor impairment in upper limb and neurological problems such as seizure. Exclusion criteria: not being able to finish the motor task and lack of cooperation and not participating in assessment session.

Age

From **7 years** old to **11 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **62**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Raftar cognitive neuroscience research center

Street address

Velenjak, Daneshjoo Blvd, Shahid beheshti university,
Psychology department

City

tehran

Postal code

Approval date

2012-04-08, 1391/01/20

Ethics committee reference number

831/1128/پ

Health conditions studied

1

Description of health condition studied

Autism spectrum disorder (High functioning autism and asperger syndrome)

ICD-10 code

F84

ICD-10 code description

Pervasive developmental disorders

Primary outcomes

1

Description

reaction time

Timepoint

2 alternative day, first day in 28 steps (blocks) and second day 8 steps

Method of measurement

1/1000 mili second using serial reaction time task

2

Description

correct responses

Timepoint

2 alternative days, first day in 28 steps and second day in 8 steps

Method of measurement

number, using serial reaction time task

Secondary outcomes

empty

Intervention groups

1

Description

experimental group: practice using serial reaction time task in 28 steps (blocks) 14 steps with right hand and 14 steps with left hand. in each step reaction time and correct responses were recorded and changes through the steps indicate learning.

Category

Other

2

Description

control group: practice using serial reaction time task in 28 steps (blocks) 14 steps with right hand and 14 steps with left hand. in each step reaction time and correct responses were recorded and changes through the steps indicate learning.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Elementary schools (for boys) in Najafabad, under supervision of Najafabad education and training or

Full name of responsible person

Street address

City

Najafabad

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahid Beheshty University of Medical Sciences

Full name of responsible person

Mohamad Rahmati Dudsary

Street address

Shahid Beheshty University of Medical Sciences,
Parvaneh st. Yaman Ave., Shahid Chamran Subway

City

Tehran

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Shahid Beheshty University of Medical Sciences

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin**Type of organization providing the funding**

empty

Person responsible for general inquiries

Contact**Name of organization / entity**

Isfahan University of Medical Sciences

Full name of responsible person

Sara Izadi-najafabadi

Position

Master of occupational therapy

Other areas of specialty/work**Street address**

No.44, Namdar alley, shariati Ave.

City

Najafabad

Postal code

8513666436

Phone

+98 33 1263 3499

Fax**Email**

saraizadin@yahoo.com

Web page address

Person responsible for scientific inquiries

Contact**Name of organization / entity**

Isfahan University of Medical Sciences

Full name of responsible person

Sara Izadi-najafabadi

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty