

# 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.

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**Web page address**

## Person responsible for scientific inquiries

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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*