Speech development in children with Duchenne Muscular Dystrophy

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To investigate lingual articulation and coarticulation as well as variability of speech in children with DMD, as compared to their healthy peers. This information will lead to a better understanding of how speech is impacted by DMD and will...

Ethical review	Approved WMO
Status	Pending
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON48330

Source
ToetsingOnline

Brief title
Speech development in children with DMD

Condition

- Other condition
- Musculoskeletal and connective tissue disorders congenital
- Muscle disorders

Synonym
Duchenne Muscular Dystrophy - dystrophinopathy

Health condition

speech deterioration

Research involving
Human

Sponsors and support

Primary sponsor: Rijksuniversiteit Groningen
Source(s) of monetary or material Support: De Jonge Akademie

Intervention

Keyword: children, coarticulation, speech, ultrasound

Outcome measures

Primary outcome

The main study parameters are tongue movements during the production of speech.

Anticipatory coarticulation will be analysed.

Secondary outcome

Secondary study parameters include the analysis of syllable duration, syllable

periods, and peak intensity as well as formants.

Study description

Background summary

Due to a lack of a protein called dystrophin, DMD patients suffer from progressive muscle degeneration. As speech requires subtle motor movements and muscle coordination, it is commonly found to be affected in DMD patients. These language and speech issues are recognizable from a very early age, and in some cases, children with DMD were diagnosed due to speech therapy referral. It has also been shown that older DMD patients suffer from articulation issues and enlargement of the tongue. Previous studies have pinpointed the breakdown of oral muscles at the age of 8 but the exact start of articulation difficulties is yet unknown. This pilot study aims to examine the effect of age on speech development in DMD children in order to determine how the development differs from that of healthy children. This could highlight the potential role of speech in the diagnosis of DMD and, in the long term, help improve speech therapies.

Study objective

To investigate lingual articulation and coarticulation as well as variability

of speech in children with DMD, as compared to their healthy peers. This information will lead to a better understanding of how speech is impacted by DMD and will ultimately aid in improving speech therapy for DMD patients

Study design

The participants will perform several speech tasks. During these tasks, tongues movements will be recorded using ultrasound tongue imaging (UTI). The data from the DMD patients will be compared to the data from non-speech disturbed controls

Study burden and risks

No known risks or benefits are associated with participation in this study. Participants will be tested during the annual Duchenne Congress in May 2020. Before the experiment takes place, a full explication and consent form will be described to the parents and the child participating. Subsequently, the researcher will place the helmet of the UTI on the participant*s head and position the UTI probe under the chin. Setting up the equipment will take approximately 5 minutes. The participants will then be asked to produce words and non-words during four speech tasks, taking approximately 25 minutes.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Children (2-11 years)

Inclusion criteria

-Mother tongue speaker of Dutch
-Between 4 and 12 years old

Only for the DMD group:
-Duchenne Muscular Dystrophy diagnosis.

Only for the healthy control group:
-No history of speech problems

Exclusion criteria

-Younger than 4 years of age / older than 11 years of age
-Severe swallowing problems
-Participants who are not able to follow directions due to severely compromised cognitive abilities.
-Participants with severe hearing problems will not do the shadowing task of words and non-words.

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)

Primary purpose: Diagnostic

Recruitment

NL
Recruitment status: Pending

Start date (anticipated):	01-06-2020
Enrollment:	20
Type:	Anticipated

Ethics review

Approved WMO Date:	07-05-2020
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)
Approved WMO Date:	31-03-2021
Application type:	Amendment
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL71147.042.19