

Generative music processes in Parkinson's disease: facilitation of motor behavior by internally generated stimuli.

Published: 15-04-2011

Last updated: 27-04-2024

Obtaining fundamental insight into sensorimotor integration in Parkinson's disease, targeted on (i) the relationship between cognitive deficits and prosodic anomalies, and (ii) the effect of music on the motor aspects of speech production.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Movement disorders (incl parkinsonism)
Study type	Observational non invasive

Summary

ID

NL-OMON36538

Source

ToetsingOnline

Brief title

Music processes in Parkinson's disease.

Condition

- Movement disorders (incl parkinsonism)

Synonym

Parkinson's disease

Research involving

Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen

Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Music, Parkinson's disease, singing, stimuli

Outcome measures

Primary outcome

Differences between the groups concerning mean pitch and mean inter-onset interval within familiar melodies and statistical distribution of scale tones within improvised tunes.

Secondary outcome

nvt

Study description

Background summary

Prosodic anomalies in the speech of patients suffering from Parkinson's disease (PD) are generally attributed to rigidity and brady- and hypokinesia, especially of the laryngeal musculature. However, the inability of patients to recognize or produce prosodic distinction between questions and statements points at impairment of higher cognitive function implicated in language. Recently, a similar inability of congenital amusics to recognize prosodic distinction has been demonstrated, suggesting that musical pitch discrimination and prosodic discrimination in speech are interrelated.

Musical stimuli are known to facilitate motor behavior such as gait in PD. Similarly, one could expect music to facilitate other forms of motor behavior, for example speech. Indeed, singing and rhythmic tapping have been used to facilitate speech in the treatment of expressive aphasia (Melodic Intonation Therapy). In the first case, music functions as an external cue, in the second as an internal cue.

If in PD, as in expressive aphasia, the impairment of verbal expression is restricted to the language domain, generative music ability might remain intact. In that case, whistling a familiar or improvised tune might still reveal regularity of pitch level and a normal statistical distribution of scale tones. The possible dissociation of speech and music production in PD patients would provide insight into the role of music as an internally generated

stimulus in cerebral motor control. Alternatively, if such dissociation cannot be demonstrated, one may infer the existence of a common musical-linguistic neuronal source.

Study objective

Obtaining fundamental insight into sensorimotor integration in Parkinson's disease, targeted on (i) the relationship between cognitive deficits and prosodic anomalies, and (ii) the effect of music on the motor aspects of speech production.

Study design

PD patients and healthy controls will be given the following tasks:

1. State overlearned autobiographic data such as name, address, place of residence, date of birth and birthplace in a normal speaking voice.
2. Recite the lyrics of a familiar tune, speaking in the rhythm of the song.
3. Sing the song with lyrics.
4. Hum or whistle the melody of a familiar theme from radio or CD
5. Hum or whistle a continuation to the interrupted phrase of an unfamiliar melody.

Study burden and risks

nvt

Contacts

Public

Universitair Medisch Centrum Groningen

hanzeplein 1 (postbus 30.001)
9700 RB Groningen
NL

Scientific

Universitair Medisch Centrum Groningen

hanzeplein 1 (postbus 30.001)
9700 RB Groningen
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age

Adults (18-64 years)

Elderly (65 years and older)

Inclusion criteria

Both Parkinson patients with a recent diagnosis as patients with more advanced symptoms will be selected. There is no age limit (given this disease, participants have to be older than 18 yrs.)

Patients will be tested, either without taking Parkinson medication since onset of the day of testing or at end of dose, i.e. just before next dose of medication is regularly taken.;Healthy controls ($n \leq 15$) with similar age and gender will be recruited.

Exclusion criteria

Neurological diseases other than Parkinson; absolute deafness, congenital amusia.

Study design

Design

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

Recruitment

NL
Recruitment status: Recruitment stopped
Start date (anticipated): 28-09-2011
Enrollment: 30
Type: Actual

Ethics review

Approved WMO
Date: 15-04-2011
Application type: First submission
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	NL35261.042.11