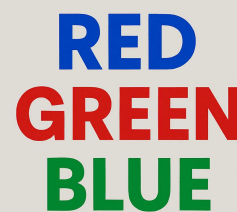


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Effect of Tetrabenazine on Stroop Interference in Huntington's Disease

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Protocol status: Working

We use this protocol and it's working

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Keywords: Huntington's disease, tetrabenazine, Stroop test, Stroop interference, stroop interference in huntington, effect of partial dopaminergic depletion, effect of tetrabenazine, tetrabenazine withdrawal study in patient, tetrabenazine withdrawal study, partial dopaminergic depletion, interfering visual stimuli, stroop interference score, stroop interference, huntington, interference, visual stimuli

Abstract

The protocol describes a tetrabenazine withdrawal study in patients with Huntington's disease which aims to understand the effect of partial dopaminergic depletion on masking out interfering visual stimuli. ON and OFF Stroop interference scores are measured. Golden's formula to calculate Stroop interference will be used.

Image Attribution

Image was created by ChatGPT OpenAI GPT-4o mini on 7/9/2025 at the following link

<https://chatgpt.com/share/686f0b89-b234-8000-8f5f-f05a640d21e5>

Guidelines

Researchers will adhere to all safety and training protocols required by the New York Medical College including but not limited to:

Collaborative Institutional Training Initiative (CITI program) certification

Materials

Subjects who are nursing home residents nursing home and have an established diagnosis of Huntington disease will be recruited by the principal investigator for participation in this study. Written informed consent will be obtained from the subjects and also from next of kin given cognitive disturbance in HD.

Safety warnings

! Side effect warnings of tetrabenazine listed in Prescribing Information apply.

Ethics statement

The study was registered at the National Institutes of Health Protocol Registration and Results system as NCT01834911 on April 15th, 2013. The study was approved by the New York Medical College Office of Research Administration Institutional Review Board under tracking number L-10,830. There was no funding support for the trial.



Methods

- 1 Stroop test was administered to patients in the morning to patients who are off tetrabenazine (de novo or three-day withdrawal). 12.5 mg of TBZ will be administered just after the first Stroop test and also 3 hours later. On Stroop test was to be administered 6 hours after the off Stroop test. The raw Stroop word reading, color reading, and interference scores were recorded and used for further analysis.

Inclusion Criteria

- 2 Study specific Inclusion Criteria
 - 2.1 1. Established diagnosis of Huntington disease by movement disorders expert
 - 2.2 2. Patients not currently taking tetrabenazine as well as those off tetrabenazine for at least three days
 - 2.3 3. Patients should not have taken dopamine receptor blocking medication for at least three days (as this has been shown to affect the Stroop score in normals).

Citation

Williams JH, Wellman NA, Geaney DP, Cowen PJ, Feldon J, Rawlins JNP. (1996) . Haloperidol reduces Stroop interference and increases negative priming in healthy people. Schizoph Res.

[https://doi.org/10.1016/0920-9964\(96\)85686-6](https://doi.org/10.1016/0920-9964(96)85686-6)

LINK

Protocol

2m 15s

- 3 Patient in OFF tetrabenazine state
Utilize official Stroop test booklet



Citation

Golden C, Freshwater SM, Golden Z (2002). Stroop Color and Word Test. [Database record]. APA PsycTests..

<https://doi.org/10.1037/t06065-000>

LINK

- 3.1  00:00:45 Administer Stroop Word test and obtain W raw score 45s
- 3.2  00:00:45 Administer Stroop Color test and obtain C raw score 45s
- 3.3  00:00:45 Administer Stroop Color-Word test and obtain CW raw score 45s
- 3.4 Calculate interference score using formula
Interference score = $CW - [(W \times C)/(W + C)]$
where C, W, and CW correspond to raw scores

Citation

Scarpina F, Tagini S (2017). The Stroop Color and Word Test.

<https://doi.org/10.3389/fpsyg.2017.00557>

LINK

- 4 Patient in ON tetrabenazine state
Utilize official Stroop test booklet



Citation

Golden C, Freshwater SM, Golden Z (2002). Stroop Color and Word Test. [Database record]. APA PsycTests..

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- 4.1  00:00:45 Administer Stroop Word test and obtain W raw score
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$$\text{Interference score} = CW - [(W \times C)/(W + C)]$$

where C, W, and CW correspond to raw scores

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LINK

5 Proposed statistical analysis

Given that a study examining effect on Stroop scores in the setting of low dose tetrabenazine administration has not been previously performed, the size of the potential effect is not known and hence direct power analysis is not possible.

The closest study from which to obtain effect size on Stroop test for power analysis is a three day withdrawal of steady state tetrabenazine.



Citation

Fekete R, Davidson A, Jankovic J (2012)

. Clinical assessment of the effect of tetrabenazine on functional scales in huntington disease: a pilot open label study.

<https://doi.org/pii:tre-02-86-476-4.10.7916/D8DN43SC>

LINK

Using Glass's delta formula:

$\text{delta} = | \text{averagea} - \text{averageb} | / \text{stdevcontrol}$

$\text{delta} = | 14.3 - 7.72 | / 7.5 = 0.8773$

$\alpha = 0.05$ for single tailed t test power = $1 - \beta$

error = 0.95 with sample size of 8 as calculated by G Power software.

Citation

Faul F, Erdfelder E., Lang, AG, Buchner A. (2007)

. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. .

Behavior Research Methods.

<https://doi.org/10.3758/bf03193146>

LINK



Protocol references

Fekete R, Davidson, A, Cohen HS, Ondo WG. Effects of tetrabenazine on computerized dynamic posturography in Huntington disease patients. *Park Rel Dis* Epub: May 2012 doi:10.1016/j.parkreldis.2012.04.029

Williams JH, Wellman NA, Geaney DP, et al. Haloperidol reduces Stroop interference and increases negative priming in healthy people. *Schizophr Res* **1996**, 18, 223.

Fekete R, Davidson A, Jankovic J. Clinical assessment of the effect of tetrabenazine on functional scales in Huntington disease: a pilot open label study. *Tremor Other Hyperkinet Mov* **2012**, 2, <http://tremorjournal.org/article/view/86>

Faul F, Erdfelder E., Lang, AG, Buchner A. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*. **2007**, 39, 175-91.



Citations

Step 2.3

Williams JH, Wellman NA, Geaney DP, Cowen PJ, Feldon J, Rawlins JNP. . Haloperidol reduces Stroop interference and increases negative priming in healthy people.

[https://doi.org/10.1016/0920-9964\(96\)85686-6](https://doi.org/10.1016/0920-9964(96)85686-6)

Step 3

Golden C, Freshwater SM, Golden Z. Stroop Color and Word Test

<https://doi.org/10.1037/t06065-000>

Step 3.4

Scarpina F, Tagini S. The Stroop Color and Word Test.

<https://doi.org/10.3389/fpsyg.2017.00557>

Step 4

Golden C, Freshwater SM, Golden Z. Stroop Color and Word Test

<https://doi.org/10.1037/t06065-000>

Step 4.4

Scarpina F, Tagini S. The Stroop Color and Word Test.

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Step 5

Fekete R, Davidson A, Jankovic J. Clinical assessment of the effect of tetrabenazine on functional scales in huntington disease: a pilot open label study.

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Step 5

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