

Development of the MIND-TD Questionnaire as a Screening Tool for Tardive Dyskinesia

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ABSTRACT DESCRIPTION

The MIND-TD questionnaire was developed to facilitate clinician-patient dialogues about the risks, symptoms, and impact of tardive dyskinesia (TD). Part 1 is a screening tool with questions about **M**ovement, **I**mpact, **N**otice, and **D**aily Activities. Part 2 includes a **T**horough Interview and a **D**ifferentiation checklist to elicit more information about abnormal movements.

INTRODUCTION

- MIND-TD is a collaboration of healthcare professionals (HCPs) who are committed to raising awareness of TD,¹ a persistent and potentially disabling movement disorder associated with prolonged exposure to antipsychotics and other dopamine-receptor blocking agents²
- All patients taking an antipsychotic should be monitored regularly for TD, per American Psychiatric Association guidelines³
- The MIND-TD questionnaire was developed to help HCPs screen for TD and facilitate discussion about abnormal movements with patients

OBJECTIVES

- Demonstrate understanding of MIND-TD, a new screening questionnaire that can be routinely administered in person or via telehealth to patients at risk of developing TD
- Identify and differentiate key features of TD from those of other drug-induced movement disorders (DIMDs) using the MIND-TD questionnaire
- Recognize that TD should be treated with an approved vesicular monoamine transporter 2 (VMAT2) inhibitor, not anticholinergics, which do not improve and may even worsen TD symptoms

METHODS

- An expert panel of 13 HCPs (4 psychiatrists, 6 neurologists/movement disorder specialists [MDSs], 3 advanced practice providers [APPs]), met virtually in August 2020 to discuss potential screening questions for TD
 - 4 of these panelists (1 psychiatrist, 2 neurologists/MDSs, 1 APP) drafted potential screening questions related to the following topics: **M**ovement, **I**mpact, **N**otice, **D**aily Activities (**MIND-TD**)
 - They then tested these questions in clinical practice for revision and refinement
- 2 additional sections were developed to elicit more information from patients with abnormal movements that could be related to TD
 - These included a **T**horough Interview and a **D**ifferentiation checklist (**MIND-TD**), which can help clinicians distinguish TD from other DIMDs
- The MIND-TD questionnaire was further refined using practices from speech language pathologists (e.g., diadochokinetics) to facilitate telehealth screening for TD, including audio-only interactions

RESULTS

MIND-TD QUESTIONNAIRE PART 1 (FIGURE 1)

- Routine administration of the 4 “MIND” screening questions is suggested in all patients at risk for developing TD or who have a current diagnosis of TD
- Any trained medical staff can administer Part 1, either in person or via telehealth (video or audio-only)
- If patients respond “yes” to any of these questions, follow-up questions and discussion are recommended

Figure 1. MIND-TD Questionnaire Part 1

Use this questionnaire as part of a routine visit for a patient with any of the following:

- Patients who are taking or have ever taken an antipsychotic medication (1st or 2nd generation)
- Patients who are taking anticholinergic medications, such as bupropion or trihexyphenidyl, in conjunction with current or past antipsychotic usage
- Patients who have a current diagnosis of tardive dyskinesia

Section	Question	Yes	No
M Movement	Do you have extra or unwanted movements in your body?	<input type="checkbox"/>	<input type="checkbox"/>
I Impact	Do you feel embarrassed or self-conscious about movements in your body?	<input type="checkbox"/>	<input type="checkbox"/>
N Notice	Has someone else seen extra movements in your body?	<input type="checkbox"/>	<input type="checkbox"/>
D Daily Activities	Do any movements cause problems during your daily routine?	<input type="checkbox"/>	<input type="checkbox"/>

Potential follow-up questions:

- Where in your body are those movements? Can you describe the movements?
- Can you tell me about a time you felt embarrassed about your movements?
- Can you tell me about what they mentioned?
- Can you give me a recent example?

If you suspect possible abnormal movements that could be related to TD, see Part 2 of this questionnaire for next steps.

MIND-TD QUESTIONNAIRE PART 2 (FIGURE 2)

- The “TD” sections should be administered by the treating HCP in patients who have abnormal movements that may be related to TD
- The **T**horough Interview can be conducted either in person or via telehealth (video or audio-only)
 - It includes 9 items related to physical/functional difficulties and 3 simple instructions for speech difficulties
- The **D**ifferentiate section requires visual observation of the patient, either in person or via video
 - It includes checklists of characteristic movements for TD and drug-induced parkinsonism, an item related to akathisia, and suggestions for observing abnormal or involuntary movements
 - Some tips for differentiating TD from other DIMDs during telehealth visits include modeling the movements for patients to try and directing patients where to point the camera

Figure 2. MIND-TD Questionnaire Part 2

T Thorough Interview

Ask patient about:

- Problems with eating, drinking, or swallowing
- Sores in the mouth, teeth grinding or dental issues, mouth noises (for example, lip smacking, tongue clicking)
- Problems speaking or involuntary grunting
- Difficulty gripping objects (for example, a zipper, buttons, silverware, cup, toothbrush)
- Change in handwriting or difficulty typing
- Foot tapping or fidgeting movement of the legs
- Difficulty walking or loss of balance
- Do they notice their big toe goes up in the air when they have their socks off?
- Do their legs move or twist, or do their knees knock when they sit?

Instruct patient to say:

- LaLaLaLaLaLaLaLaLaLaLaLaLaLaLa
- KaKaKaKaKaKaKaKaKaKaKaKaKaKaKa
- MaMaMaMaMaMaMaMaMaMaMaMaMaMa

Listen for articulation problems.

D Differentiate (This section requires visual observation of the patient, either in person or via video telehealth.)

Look for movements in the face:

Tardive dyskinesia	Drug-induced parkinsonism
<input type="checkbox"/> Increased blinking	<input type="checkbox"/> Decreased blinking/reptilian stare
<input type="checkbox"/> Brow wrinkling	<input type="checkbox"/> Tremor in jaw or tongue
<input type="checkbox"/> Chewing/sucking	<input type="checkbox"/> Decreased facial expression
<input type="checkbox"/> Mouth opening/closing	<input type="checkbox"/> Mouth hanging open
<input type="checkbox"/> Grimacing	<input type="checkbox"/> Drooling
<input type="checkbox"/> Tongue protrusion/darting	
<input type="checkbox"/> Bonbon sign	
<input type="checkbox"/> Teeth grinding	

Look for movements in the neck and trunk:

Tardive dyskinesia	Drug-induced parkinsonism
<input type="checkbox"/> Rocking/jerking	<input type="checkbox"/> Stooped posture
<input type="checkbox"/> Arching backward	<input type="checkbox"/> Shuffling gait
<input type="checkbox"/> Head nodding/drooping	<input type="checkbox"/> Slowness
<input type="checkbox"/> Irregular respiration	<input type="checkbox"/> Muscle rigidity

Look for movements in the extremities:

Tardive dyskinesia	Drug-induced parkinsonism
<input type="checkbox"/> Piano/guitar-playing fingers	<input type="checkbox"/> Tremor
<input type="checkbox"/> Wriggling	<input type="checkbox"/> Muscle rigidity
<input type="checkbox"/> Tapping	<input type="checkbox"/> Slowed finger-to-thumb movements
<input type="checkbox"/> Sustained postures	

Ask about akathisia:

- Do you feel the need to move, get up, and march in place?

Look for movements during distraction - select 1 or 2 (demonstrate for the patient):

- Instruct the patient to raise their right hand and repeatedly tap their thumb with each finger and then repeat with the left hand (make sure the hands are in the video frame)
- Instruct the patient to recite the alphabet backwards or count backwards from 100
- Instruct the patient to rapidly pronate/supinate their right hand and then their left hand as if turning a door knob

Consider a modified Abnormal Involuntary Movement Scale (AIMS) assessment:

- Instruct patient to extend their arms out in front of them toward the camera
- Instruct the patient to open their mouth for 10 seconds
- Instruct the patient to stick out their tongue for 10 seconds

TIP: Confirm patient is not chewing any gum or candy

TIP: For telehealth visits, direct patient to sit about arms length away and how to tilt the camera

TIP: Ask patients to take off their shoes and socks to see their toes

TIP: For telehealth visits, direct patient to walk away from and then back towards the camera

TIP: Look for movements in other body areas such as the jaw, face, and neck/trunk while the patient is performing the activation maneuver

TIP: Model the movements that you want patients to try

- Distinguishing between TD and drug-induced parkinsonism is critical because each requires its own treatment strategy (Figure 3)⁴

Figure 3. Treatment Recommendations for TD

	APA Recommendations for the Treatment of TD ¹	Benztropine Package Insert ²
VMAT2 Inhibitors	<input checked="" type="checkbox"/> It is recommended that patients who have moderate to severe or disabling TD associated with antipsychotic therapy be treated with a reversible inhibitor of VMAT2	<ul style="list-style-type: none">Benzotropine is indicated as an adjunct in the treatment of all forms of parkinsonism and is useful in the control of extrapyramidal disorders (except TD) due to neuroleptic drugs
Anticholinergics	<input checked="" type="checkbox"/> Anticholinergic medications do not improve and may even worsen TD	<ul style="list-style-type: none">Benzotropine is not recommended for use in patients with TDAntiparkinsonism agents do not alleviate the symptoms of TD, and in some instances aggravate them

Sources: ¹APA. The American Psychiatric Association Practice Guideline for the Treatment of Patients With Schizophrenia. APA; 2020. ²Benzotropine mesylate (package insert). Lake Forest, IL: Akorn; 2017. APA, American Psychiatric Association; TD, tardive dyskinesia; VMAT2, vesicular monoamine transporter 2.

CONCLUSIONS

- MIND-TD is a questionnaire that can facilitate dialogue between HCPs and patients about the risks, symptoms, and impact of TD
- The “MIND” screening questions can stand alone and are compatible with both in person and telehealth visits (video or audio-only)
- The more in-depth “TD” sections can be used to gather additional information about a patient’s abnormal movements
- This information can be used to help differentiate TD from other DIMDs so that appropriate treatment decisions can be made

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Disclosures: This study was supported by Neurocrine Biosciences, Inc. Editorial assistance was provided by Prescott Medical Communications Group, Chicago, IL. Please contact medinfo@neurocrine.com with any questions.

PRESENTED AT THE NEUROSCIENCE ADVANCED PRACTICE PROVIDER EDUCATIONAL CONFERENCE JANUARY 5-8, 2022; SAN DIEGO, CA



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