Overview
This document is a summary of the American Academy of Neurology (AAN) DRAFT practice guideline “The Treatment of Tics in People with Tourette Syndrome and Chronic Tic Disorders.” The aim of this guideline is to offer guidance about use of different treatments for tics that people experience when they have Tourette syndrome or a chronic tic disorder.

Tourette syndrome is a brain disorder that begins in childhood, when the brain is developing. It affects more males than females. People with Tourette syndrome experience urges to make purposeless, repetitive body movements called motor tics. These include movements like forceful or frequent blinking, eye movements, facial grimacing or movements of the head or limbs. They also make repetitive sounds with their mouths or noses called vocal tics. These include:

- Sniffing
- Coughing
- Clearing your throat

In people with chronic motor tic disorder, the person has motor tics but no vocal tics; in chronic vocal tic disorder, the person has vocal tics but no motor tics.

Tourette syndrome and tic disorders are considered chronic if the person experiences the tics for at least one year. Tic symptoms differ from person to person. Sometimes the tics come and go for days, weeks, or months. For most children with tics, tics are at their peak severity between the ages of 10 and 12 years. However, for many children, tics lessen or go away during their late teenage years.

The authors of this guideline use information from the best available studies to find out which treatments help improve tics in people with Tourette syndrome or chronic tic disorders. Then they offer guidance to clinicians and to patients and their families who may consider using these treatments.

What is a practice guideline?
Guidelines are summaries of what we know about different tests and treatments for health problems.

Guidelines are based on research. When we develop guidelines, we include steps for others to weigh in. These include experts like doctors, patients, and other health providers.

Because no two people are the same, guidelines do not tell doctors the best way to treat any one person.
This guideline is still a draft and is still being changed. This draft has not yet been reviewed or approved by the AAN Board of Directors and therefore does not represent the official position of the AAN.

This information helps doctors and patients to weigh what might be good or bad about choices for care. It helps the doctor and patient to work together to make the best decision.

**What are guideline recommendations?**

Guideline recommendations help guide health providers when they are working with patients, or with patients and families, to make decisions about health care.

When guideline authors write recommendations, they look at several things:
- the best medical studies
- the balance of possible benefit and possible harm from following the recommendation
- what they can expect will result from following the recommendation, or the importance of that result
- the cost or availability of the recommended test or therapy
- what patients value and prefer when they look for medical care

**Terms Used in This Guideline**

**Clonic tics**—quick, sudden movements that look like “jerks”

**Comprehensive Behavioral Intervention for Tics, or CBIT**—an eight-session program for treating tics. It has three parts: 1) training to improve tics, 2) training to relax, and 3) behavior exercises to help in situations when tics are worse

**Dystonic tics**—muscle movements that last longer than clonic tics

**Motor tics**—tics involving movements of the body

**Stereotypic tics**—muscle movements that are repeated in the exact same way every time

**Tics**—movements you make or sounds you make.

**Tonic tics**—muscle movements where the muscles tighten

**Vocal tics**—tics that produce sound through the mouth or nose

**What the Research Shows**
The next sections summarize most of the recommendations. For the complete list of recommendations, see the full guideline at AAN.com/practice-guidelines/home/public-comments. The strength of the recommendations is based on the information listed in Table 1.

**Understanding Tourette Syndrome and Chronic Tic Disorders**

For children with tics, clinicians must tell the children and their parents about how tics improve over time (Level A). For some children, tics make it hard to function in daily life. If tics are not causing any problems in daily life, watching and waiting is acceptable rather than treating the tics. (Level B).

The teachers and peers of people with Tourette syndrome may not understand tic symptoms. Clinicians should refer the person with Tourette syndrome to organizations that can help the person’s teachers and peers understand the disorder (Level B).

**Testing for and Treating Other Behavior Disorders in Children with Tic Disorders**

Children with Tourette syndrome often also have other disorders that can affect their behavior. These include attention-deficit/hyperactivity disorder (ADHD), obsessive/compulsive disorder, and other brain disorders that affect feelings and behavior.

Clinicians should be sure people with tics get tested for these disorders (Level B). If the person has one or more of these disorders, the clinician should be sure the person gets the right treatment (Level B).

Some of these disorders can lead to thoughts of harming or killing oneself. For their patients with these disorders, clinicians must ask whether these thoughts come up, and if so, whether they have acted on them before (Level A). The clinician must refer the person to places that can give the person the right care (Level A).

**What to Expect from Treating Tics**

For someone with a tic disorder, treatments can help lessen how often tics happen but rarely eliminate all tics entirely. Clinicians must discuss this with their patients with tic disorders (Level A).

**Treatments for Tourette Syndrome and Chronic Tic Disorders**

Many types of treatments are available for people with tic disorders. The information below summarizes the recommendations for these treatments.

*Treating Tics by Changing Behaviors*

For people with tics who have access to CBIT, clinicians should offer CBIT sessions as a first treatment choice instead of medicines or other treatments based on changing behavior (Level B).
If a patient care center does not offer face-to-face treatment, clinicians may offer CBIT by phone or by a visit shown on video over the computer (Level C).

*Treating Tics by Using Medicines*

For people with tics and ADHD, doctors should tell them that treating with either of the medicines clonidine or guanfacine may help lessen symptoms of both conditions (Level B). Also, when there is more benefit than risk, doctors should prescribe one of these medicines for tics (Level B).

Clonidine and guanfacine may have serious side effects. Thus, doctors must discuss possible side effects, including sleepiness (Level A). They also must regularly check the heart rate and blood pressure of people given these medicines (Level A). Doctors prescribing guanfacine extended release must check the QTc interval in patients with a history of heart problems (Level A). For patients who plan to stop their medicine, doctors must slowly lower the dose to prevent blood pressure from rising suddenly (Level A).

When there is more benefit than risk, doctors may prescribe a type of medicine called antipsychotics to treat tics (Level C). Doctors must discuss possible side effects with patients, including effects on muscles, hormones, and metabolism (Level A). To lower the risk of side effects, doctors who prescribe a type of medicine called antipsychotics for tics must prescribe the lowest dose that is effective (Level A). They also should regularly check the patient in case these side effects happen (Level B). For patients who plan to stop their medicine, doctors should slowly lower the dose to prevent problems with muscle movements that cannot be controlled (Level B).

Botulinum toxin is a medicine that is given by injection into the muscles that produce tics. When there is more benefit than risk, doctors may prescribe botulinum toxin for older adolescents and adults with motor tics (Level C). When there is more benefit than risk, doctors may prescribe botulinum toxin for older adolescents and adults with severe vocal tics (Level C). Doctors prescribing this medicine must discuss with their patients that this medicine may cause weakness and loss of voice for a short time (Level A).

When there is more benefit than risk, doctors should prescribe topiramate for treating tics (Level B). Doctors also must tell patients about possible side effects (Level A). These include problems with thinking, memory, language, sleepiness, weight loss, and kidney stones.

Some people with Tourette syndrome treat their tics on their own by using cannabis, or marijuana. Because there are risks of using cannabis, doctors who provide medical care for these patients must offer to direct them to a doctor who can supervise their use of cannabis for treatment of Tourette syndrome, in places where cannabis is legal (Level A). Doctors who prescribe cannabis in places where cannabis is legal must start with a low dose to lower the risk...
of side effects (Level A). Also, doctors must tell patients using cannabis that it may lessen the
ability to drive (Level A).

Deep brain stimulation, or DBS, is a treatment that requires an operation to put a device in the
brain. Doctors may consider DBS for people with Tourette syndrome whose tics are severe and
could cause serious harm to the body (Level C). Before prescribing DBS for tics in Tourette
syndrome, doctors must confirm that several other treatments have been tried and have not
helped (Level A). Doctors also must first check that patients do not have an emotional disorder
or thoughts of killing themselves (Level A).

Table 1. Definitions for Recommendation Levels

<table>
<thead>
<tr>
<th>Recommendation Level</th>
<th>Definition</th>
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<tbody>
<tr>
<td>A (Strong)</td>
<td>There are very strong and compelling reasons to follow this recommendation, it is generally possible to follow this recommendation in almost all circumstances, and in almost all circumstances, patients would want the course of action described in the recommendation to be followed.</td>
</tr>
<tr>
<td>B (Moderate)</td>
<td>There are good and compelling reasons to follow this recommendation, it is generally possible to follow this recommendation, and in most circumstances, patients would want the course of action described in the recommendation to be followed.</td>
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<tr>
<td>C (Weak)</td>
<td>There are reasons to follow this recommendation, but the research supporting this recommendation is weak, the benefits relative to the risks is less certain, the test or treatment is costly, or only some patients would want the course of action described in the recommendation to be followed. Recommendations can be “weak” for a variety of reasons, and these reasons are described in the complete guideline.</td>
</tr>
<tr>
<td>U (None Made)</td>
<td>There is not enough research to make a recommendation and/or the balance of the benefits, harms, and costs is unknown.</td>
</tr>
<tr>
<td>R (Research Setting Only)</td>
<td>There is not enough research to make a recommendation and/or the balance of the benefits, harms, and costs is unknown, but there is a good</td>
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reason to think that more research should be done. Only patients in a research study would receive the course of action.

This summary was created as a tool for people without a medical background to better understand the information in the full document. People can refer to this summary when they provide their feedback during the public comment period for this draft practice guideline. The complete draft practice guideline is available at www.aan.com/practice-guidelines/home/public-comments.

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