Clinical Practice Guideline Summary: Bell's Palsy

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This month, the American Academy of Otolaryngology—Head and Neck Surgery Foundation (AAO-HNSF) published its latest clinical practice guideline, Bell's Palsy, as a supplement to *Otolaryngology–Head and Neck Surgery*. Recommendations developed encourage accurate and efficient diagnosis and treatment and, when applicable, facilitating patient follow-up to address the management of long-term sequelae, or evaluation of new or worsening symptoms not indicative of Bell's palsy. The guideline was developed using the *a priori* protocol outlined in the *AAO-HNS Clinical Practice Guideline Development Manual*.[1] The complete guideline is available at http://oto.sagepub.com.

To assist in implementing the guideline recommendations, this article summarizes the rationale, purpose, and key action statements. Recommendations in a guideline can be implemented only if they are clear and identifiable. This goal is best achieved by structuring the guideline around a series of key action statements, which are supported by amplifying text and action statement profiles. For ease of reference only the statements and profiles are included in this brief summary. Please refer to the complete guideline for the important information in the amplifying text that further explains the supporting evidence and details of implementation for each key action statement.

For more information about the AAO-HNSF's other quality knowledge products (clinical practice guidelines and clinical consensus statements), our guideline development methodology, or to submit a topic for future guideline development, please visit http://www.entnet.org/guidelines.

Introduction

Bell's palsy, named after the Scottish anatomist, Sir Charles Bell, is the most common acute mononeuropathy, or disorder affecting a single nerve, and is the most common diagnosis associated with facial nerve weakness/paralysis.[1] Bell's palsy is a rapid unilateral facial nerve paresis (weakness) or paralysis (complete loss of movement) of unknown cause. The condition leads to the partial or complete inability to voluntarily move facial muscles on the affected side of the face. Although typically self-limited, the facial paresis/paralysis that occurs in Bell's palsy may cause significant temporary oral incompetence and an inability to close the eyelid, leading to potential eye injury. Additional long-term poor outcomes do occur and can be devastating to the patient. Treatments are generally designed to improve facial function and facilitate recovery.

The myriad treatment options for Bell's palsy include medical therapy (steroids and antivirals, alone and in combination),[2-4] surgical decompression,[5-8] and complementary and alternative therapies such as acupuncture. Some controversy exists regarding

Bell's Palsy Guideline

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the effectiveness of several of these options and there are consequent variations in care. Additionally, there are numerous diagnostic tests available that are used in the evaluation of Bell's palsy patients. Many of these tests are of questionable benefit in Bell's palsy, including laboratory testing,[9,10] diagnostic imaging studies, and electrodiagnostic tests.[10-12] Furthermore, while Bell's palsy patients enter the healthcare system with facial paresis/paralysis as a primary complaint, not all patients with facial paresis/paralysis have Bell's palsy. It is a concern that patients with alternative underlying etiologies may be misdiagnosed or have unnecessary delay in diagnosis. All of these quality concerns provide an important opportunity for improvement in the diagnosis and management of patients with Bell's palsy.

When evaluating a patient with facial weakness/paralysis for Bell's palsy, the following should be considered:

- Bell's palsy is rapid in onset (<72 hours).
- Bell's palsy is diagnosed when no other medical etiology is identified as a cause of the facial weakness.
- Bilateral Bell's palsy is rare.[13,14]
- Currently, no cause for Bell's palsy has been identified.
- Other conditions may cause facial paralysis, including stroke, brain tumors, tumors of the parotid gland or infratemporal fossa, cancer involving the facial nerve, and systemic and infectious diseases including zoster, sarcoidosis, and Lyme disease.[1,15-17]
- Bell's palsy is typically self-limited.
- Bell's palsy may occur in men, women, and children, but is more common in those 15-45 years old; those with diabetes, upper respiratory ailments, or compromised immune systems; or during pregnancy.[1,6,18]

The guideline development group (GDG) recognizes that Bell's palsy is a diagnosis of exclusion requiring the careful elimination of other causes of facial paresis or paralysis. Although the literature is silent on the precise definition of what constitutes acute onset in facial paralysis, the GDG accepted the definition of "acute" or "rapid onset" to mean that the occurrence of paresis/paralysis typically progresses to its maximum severity within 72 hours of onset of the paresis/paralysis. This guideline does not focus on facial paresis/paralysis due to neoplasms, trauma, congenital or syndromic problems, specific infectious agents, or post-surgical facial paresis or paralysis; nor does it address recurrent facial paresis/paralysis. For the purposes of this guideline, Bell's palsy is defined as: Acute unilateral facial nerve paresis or paralysis with onset in less than 72 hours and without an identifiable cause.

Literature cited throughout this guideline often uses the House-Brackmann facial nerve grading scale. This is a commonly used scale designed to systematically quantify facial nerve functional recovery after surgery that puts the facial nerve at risk, but has been used to assess recovery after trauma to the facial nerve, or Bell's palsy.[19] It was not designed to assess initial facial nerve paresis or paralysis of Bell's palsy. The House-Brackmann facial nerve grading system is described in **Table 1**.

While a viral etiology is suspected, the exact mechanism of Bell's palsy is currently unknown.[21] Facial paresis or paralysis is thought to result from facial nerve inflammation and edema. As the facial nerve travels in a narrow canal within the temporal bone, swelling may lead to nerve compression and result in temporary or

Table 1. House-Brackmann Facial Nerve Grading System[20]

Grade		Defined by
1	Normal	Normal facial function in all areas.
2	Mild dysfunction	Slight weakness noticeable only on close inspection. At rest: normal symmetry of forehead, ability to close eye with minimal effort and slight asymmetry, ability to move corners of mouth with maximal effort and slight asymmetry. No synkinesis, contracture, or hemifacial spasm.
3	Moderate dysfunction	Obvious, but not disfiguring difference between two sides, no functional impairment; noticeable, but not severe synkinesis, contracture, and/or hemifacial spasm. At rest: normal symmetry and tone. Motion: slight to no movement of forehead, ability to close eye with maximal effort and obvious asymmetry, ability to move corners of mouth with maximal effort and obvious asymmetry. Patients who have obvious, but no disfiguring synkinesis, contracture, and/or hemifacial spasm are grade III regardless of degree of motor activity.
4	Moderately severe dysfunction	Obvious weakness and/or disfiguring asymmetry. At rest: normal symmetry and tone. Motion: no movement of forehead; inability to close eye completely with maximal effort. Patients with synkinesis, mass action, and/or hemifacial spasm severe enough to interfere with function are grade IV regardless of motor activity.
5	Severe dysfunction	Only barely perceptible motion. At rest: possible asymmetry with droop of corner of mouth and decreased or absence of nasal labial fold. Motion: no movement of forehead, incomplete closure of eye and only slight movement of lid with maximal effort, slight movement of corner of mouth. Synkinesis, contracture, and hemifacial spasm usually absent.
6	Total paralysis	Loss of tone; asymmetry; no motion; no synkinesis, contracture, or hemifacial spasm.

permanent nerve damage. The facial nerve carries nerve impulses to muscles of the face, and also to the lacrimal glands, salivary glands, stapedius muscle, taste fibers from the anterior tongue, and general sensory fibers from the tympanic membrane. Accordingly, patients with Bell's palsy may experience dryness of the eye or mouth, taste disturbance or loss, hyperacusis, and sagging of the eyelid or corner of the mouth.[13,18] Ipsilateral pain around the ear or face is not an infrequent presenting symptom.[21,22]

Numerous diagnostic tests have been used to evaluate patients with acute facial paresis/paralysis for identifiable causes, or aid in predicting long-term outcomes. Many of these tests were considered in the development of this guideline, including:

- Imaging—Computed tomography (CT) or magnetic resonance imaging (MRI)—to identify potential infection, tumor, fractures, or other potential causes for facial nerve involvement;
- Electrodiagnostic testing to stimulate the facial nerve to assess the level of facial nerve insult;
- Serologic studies to test for infectious causes;
- Hearing testing to determine if the cochlear nerve or inner ear has been affected;
- Vestibular testing to determine if the vestibular nerve is involved; and
- Schirmer's tear testing to measure the eye's ability to produce tears.

Most patients with Bell's palsy show some recovery without intervention within two to three weeks after onset of symptoms, and completely recover within three to four months.[1] Moreover, even without treatment, facial function is completely restored in nearly 70 percent of Bell's palsy patients with complete paralysis within six months, and as high as 94 percent of patients with incomplete paralysis; accordingly, as many as 30 percent of patients do not recover completely.[23,24] Given the dramatic effect of facial paralysis on patient appearance, quality of life, and psychological well-being, treatment is often initiated in an attempt to decrease the likelihood of incomplete recovery. Corticosteroids and antiviral medications are the most commonly used medical therapies. New trials have explored the benefit of these medications. The benefit of surgical decompression of the facial nerve remains relatively controversial.[23,25]

There are both short- and long-term sequelae of Bell's palsy, including an inability to close the eye, drying and corneal ulceration of the eye, and vision loss. These can be prevented with appropriate eye care. The short-term sequelae, such as inability to close the eye and drying of the eye warrant careful management, but treatment results can be favorable. Long-term, the disfigurement of the face due to incomplete recovery of the facial nerve can have devastating effects on psychological well-being and

quality of life. With diminished facial movement and marked facial asymmetry, patients with facial paralysis can have impaired interpersonal relationships and may experience profound social distress, depression, and social alienation.[26] There are a number of rehabilitative procedures to normalize facial appearance, including eyelid weights or springs, muscle transfers and nerve substitutions, static and dynamic facial slings, and botulinum toxin injections to eliminate facial spasm/synkinesis.[27-31] This guideline will, however, focus more on the acute management of Bell's palsy and will not address these interventions in detail.

Purpose

The primary purpose of this guideline is to improve the accuracy of diagnosis for Bell's palsy, to improve the quality of care and outcomes for Bell's palsy patients, and to decrease harmful variations in the evaluation and management of Bell's palsy. This guideline addresses these needs by encouraging accurate and efficient diagnosis and treatment and, when applicable, facilitating patient follow-up to address the management of long-term sequelae, or evaluation of new or worsening symptoms not indicative of Bell's palsy. The guideline is intended for all clinicians in any setting who are likely to diagnose and manage patients with Bell's palsy. The target population is inclusive of both adults and children presenting with Bell's palsy.

This guideline is intended to focus on a limited number of quality improvement opportunities deemed most important by the GDG, and is not intended to be a comprehensive guide for diagnosing and managing Bell's palsy. The recommendations outlined in this guideline are not intended to represent the standard of care for patient management, nor are the recommendations intended to limit treatment or care provided to individual patients. The guideline is not intended to replace clinical judgment for individualized patient care. Our goal is to create a multidisciplinary guideline with a specific set of focused recommendations based upon an established and transparent process that considers levels of evidence, harm-benefit balance, and expert consensus to resolve gaps in evidence. These specific recommendations are designed to improve quality of care and may be used to develop performance measures.

Key Action Statements

STATEMENT 1. PATIENT HISTORY AND PHYSICAL EXAMINATION:

Clinicians should assess the patient using history and physical examination to exclude identifiable causes of facial paresis or paralysis in patients presenting with acute onset unilateral facial paresis or paralysis. *Strong recommendation based on observational studies of alternative causes of facial paralysis and reasoning from first principles, with a preponderance of benefit over harm.*

Action Statement Profile

- Aggregate Evidence Quality: Grade C
- Level of confidence in evidence: High
- Benefit: Identification of other causes of facial paresis/paralysis, enabling accurate diagnosis; avoidance of unnecessary testing and treatment; identification of patients for whom other testing or treatment is indicated; opportunity for appropriate patient counseling
- Risks, harms, costs: None
- Benefit-Harm Assessment: Preponderance of benefit
- Value judgments: The GDG felt that assessment of patients cannot be performed without a history and physical examination, and that it would not be possible to find stronger evidence, as studies excluding these steps cannot ethically be performed. Other causes of facial paresis/paralysis may go unidentified; a thorough history and physical examination will help avoid missed diagnoses or diagnostic delay.
- Intentional vagueness: None
- Role of patient preferences: None
- Exceptions: None
- Policy level: Strong recommendation
- Differences of opinion: None

STATEMENT 2. LABORATORY TESTING:

Clinicians should not obtain routine laboratory testing in patients with new onset Bell's palsy. *Recommendation (against) based on observational studies and expert opinion with a preponderance of benefit over harm.*

Table 2. Abbreviations and Definitions of Common Terms

Term	Definition
Acute	Occurring in less than 72 hours
Bell's palsy	Acute unilateral facial nerve paresis or paralysis with onset in less than 72 hours and without identifiable cause
Electromyography (EMG) testing	A test in which a needle electrode is inserted into affected muscles to record both spontaneous depolarizations and the responses to voluntary muscle contraction
Electroneuronography (ENoG) testing (neurophysiologic studies)	A test used to examine the integrity of the facial nerve, in which surface electrodes record the electrical depolarization of facial muscles following electrical stimulation of the facial nerve
Facial paralysis	Complete inability to move the face
Facial paresis	Incomplete ability to move the face
Idiopathic	Without identifiable cause

Action Statement Profile

- Aggregate evidence quality: Grade C
- Level of confidence in evidence: High
- Benefit: Avoidance of unnecessary testing and/or treatment, avoidance of pursuing false positives, cost savings
- Risks, harms, costs: Potential missed diagnosis
- Benefit-harm assessment: Preponderance of benefit
- Value judgments: While the GDG felt that there are circumstances where specific testing is indicated in at-risk patients (such as Lyme disease serology in endemic areas) these patients can usually be identified by history.
- Intentional vagueness: We used the word "routine" to specify that under certain circumstances, laboratory testing may be indicated.
- Role of patient preferences: Small (there is an opportunity for patient education)
- Exceptions: None
- Policy level: Recommendation (against)
- Differences of opinion: None

STATEMENT 3. DIAGNOSTIC IMAGING:

Clinicians should not routinely perform diagnostic imaging for patients with new onset Bell's palsy. *Recommendation (against) based on observational studies with a preponderance of benefit over harm.*

Action Statement Profile

- Aggregate evidence quality: Grade C
- Level of confidence in evidence: High
- Benefit: Avoidance of unnecessary radiation exposure, avoidance of incidental findings, avoidance of contrast reactions, cost savings
- Risks, harms, costs: Risk of missing other cause of facial paresis/paralysis
- Benefit-harm assessment: Preponderance of benefit
- Value judgments: None
- Intentional vagueness: The word "routine" was used to indicate there may be some clinical findings that would warrant imaging
- Role of patient preferences: Small, however there is an opportunity for patient education/counseling
- Exceptions: None
- Policy level: Recommendation (against)
- Differences of opinion: None

STATEMENT 4. ORAL STEROIDS:

Clinicians should prescribe oral steroids within 72 hours of symptom onset for Bell's palsy patients 16 years and older. *Strong recommendation based on high-quality randomized controlled trials with a preponderance of benefit over harm.*

Action Statement Profile

- Aggregate evidence quality: Grade A
- Level of confidence in evidence: High
- Benefit: Improvement in facial nerve function, faster recovery
- Risks, harms, costs: Steroid side effects, cost of therapy
- Benefit-harm assessment: Preponderance of benefit
- Value judgments: None
- Intentional vagueness: None
- Role of patient preferences: Small
- Exceptions: Diabetes, morbid obesity, previous steroid intolerance, and psychiatric disorders. Pregnant women should be treated on an individualized basis.
- Policy level: Strong recommendation
- Differences of opinion: None

STATEMENT 5A. ANTIVIRAL MONOTHERAPY:

Clinicians should not prescribe oral antiviral therapy alone for patients with new onset Bell's palsy. *Strong recommendation (against) based on high-quality randomized controlled trials with a preponderance of benefit over harm.*

Action Statement Profile

- Aggregate evidence quality: Grade A
- Level of confidence in evidence: High
- Benefit: Avoidance of medication side effects, cost savings
- Risks, harms, costs: None
- Benefit-harm assessment: Preponderance of benefit
- Value judgments: None
- Intentional vagueness: None
- Role of patient preferences: Small
- Exceptions: None
- Policy level: Strong recommendation (against)
- Differences of opinion: None

STATEMENT 5B. COMBINATION ANTIVIRAL THERAPY:

Clinicians may offer oral antiviral therapy in addition to oral steroids within 72 hours of symptom onset for patients with Bell's palsy. *Option based on randomized controlled trials with minor limitations and observational studies with equilibrium of benefit and harm.*

Action Statement Profile

- Aggregate evidence quality: Grade B
- Level of confidence in evidence: Medium, because the studies cannot exclude a small effect
- Benefit: Small potential improvement in facial nerve function
- Risks, harms, costs: Treatment side effects, cost of treatment
- Benefit-harm assessment: Equilibrium of benefit and harm
- Value judgments: Although the data were weak, the risks of combination therapy were small
- Intentional vagueness: None
- Role of patient preferences: Large; significant role for shared decision making
- Exceptions: Diabetes, morbid obesity, and previous steroid intolerance. Pregnant women should be treated on an individualized basis.
- Policy level: Option
- Differences of opinion: None

STATEMENT 6. EYE CARE:

Clinicians should implement eye protection for Bell's palsy patients with impaired eye closure. *Strong recommendation based on expert opinion and a strong clinical rationale with a preponderance of benefit over harm.*

Action Statement Profile

- Aggregate evidence quality: Grade X
- Level of confidence in evidence: High. Eye protection has been the standard of care, and comparative studies with a no treatment arm are unethical.
- Benefit: Prevention of eye complications
- Risks, harms, costs: Cost of eye protection implementation, potential side effects of eye medication

- Benefit-harm assessment: Preponderance of benefit over harm
- Value judgments: None
- Intentional vagueness: None
- Role of patient preferences: Small
- Exceptions: None
- Policy level: Strong recommendation
- Differences of opinion: None

STATEMENT 7A. ELECTRODIAGNOSTIC TESTING WITH INCOMPLETE PARALYSIS:

Clinicians should not perform electrodiagnostic testing in Bell's palsy patients with incomplete facial paralysis. *Recommendation (against) based on observational studies with a preponderance of benefit over harm.*

Action Statement Profile

- Aggregate evidence quality: Grade C
- Level of confidence in evidence: High
- Benefit: Avoidance of unnecessary testing, cost savings
- Risks, harms costs: None
- Benefit-harm assessment: Preponderance of benefit over harm
- Value judgments: None
- Intentional vagueness: None
- Role of patient preferences: None
- Exceptions: None
- Policy Level: Recommendation (against)
- Differences of opinion: None

STATEMENT 7B. ELECTRODIAGNOSTIC TESTING WITH COMPLETE PARALYSIS:

Clinicians may offer electrodiagnostic testing to Bell's palsy patients with complete facial paralysis. *Option based on observational trials with equilibrium of benefit and harm.*

Action Statement Profile

- Aggregate evidence quality: Grade C
- Level of confidence in evidence: Medium due to variations in patient selection, study design, and heterogeneous results
- Benefit: Provide prognostic information for the clinician and patient, identification of potential surgical candidates
- Risks, harms, costs: Patient discomfort, cost of testing
- Benefit-harm assessment: Equilibrium of benefit and harm
- Value judgments: None
- Intentional vagueness: None
- Role of patient preferences: Large role for shared decision making, as electrodiagnostic testing may provide only prognostic information for the patient
- Exceptions: None
- Policy level: Option
- Differences of opinion: None

STATEMENT 8. SURGICAL DECOMPRESSION:

No recommendation can be made regarding surgical decompression for Bell's palsy patients. *No recommendation based on low-quality, non-randomized trials and equilibrium of benefit and harm.*

Action Statement Profile

- Aggregate evidence quality: Grade D
- Level of confidence in evidence: Low due to insufficient number of patients and poor quality of studies. Low confidence in the evidence led to a downgrade of the aggregate evidence quality from C to D.
- Benefit: Improved facial nerve functional recovery
- Risks, harms, costs: Surgical risks and complications, anesthetic risks, direct and indirect costs of surgery
- Benefit-harm assessment: Equilibrium of benefit and harm
- Value judgments: Although the data supporting surgical decompression are not strong, there may be a significant benefit for a small subset of patients who meet eligibility criteria and desire surgical management
- Intentional vagueness: None
- Role of patient preferences: Large. The psychological impact of facial paralysis is significant but varies among patients. Concern about the facial deformity may make some patients willing to pursue a major operation for a small increase in the chance of complete recovery while others may be more willing to accept the chance of poorer outcome to avoid surgery.
- Exceptions: None
- Policy level: No recommendation
- Differences of opinion: Major. The group was divided as to whether the evidence supported no recommendation, or an option for surgery. This difference of opinion derived from controversy regarding the strength of evidence (C level evidence vs. D level evidence.)

STATEMENT 9. ACUPUNCTURE:

No recommendation can be made regarding the effect of acupuncture in Bell's palsy patients. *No recommendation based on poor quality trials and an indeterminate ratio of benefit and harm.*

Action Statement Profile

- Aggregate evidence quality: Grade B
- Level of confidence in evidence: Low, due to significant methodological flaws in available evidence
- Benefit: Acupuncture may provide a potential small improvement in facial nerve function and pain
- Risks, harms, costs: Cost of acupuncture therapy, time required for therapy, therapy side effects, and delay in instituting steroid therapy
- Benefit-harm assessment: Unknown
- Value judgments: Due to the poor quality of the data and the inability to determine harm to benefit ratio, the GDG could not make a recommendation.
- Intentional vagueness: None
- Role of patient preferences: Large
- Exceptions: None
- Policy level: No recommendation
- Differences of opinion: Major. The GDG was divided regarding whether to recommend against acupuncture, or to make no recommendation.

STATEMENT 10. PHYSICAL THERAPY:

No recommendation can be made regarding the effect of physical therapy in Bell's palsy patients. *No recommendation based on case series and equilibrium of benefit and harm.*

Action Statement Profile

- Aggregate evidence quality: Grade D
- Level of confidence in evidence: Low, due to significant flaws in existing trials
- Benefit: Potential functional and psychological benefit
- Risks, harms, costs: Cost of therapy, time required for therapy
- Benefit-harm assessment: Equilibrium of benefit and harm

- Value judgments: Patients may benefit psychologically from engaging in physical therapy exercises
- Intentional vagueness: None
- Role of patient preferences: Large role for shared decision making
- Exceptions: None
- Policy level: No recommendation
- Differences of opinion: None

STATEMENT 11. PATIENT FOLLOW-UP:

Clinicians should reassess or refer to a facial nerve specialist those Bell's palsy patients with (1) new or worsening neurologic findings at any point, (2) ocular symptoms developing at any point, or (3) incomplete facial recovery three months after initial symptom onset. *Recommendation based on observational studies with a preponderance of benefit over harm.*

Action Statement Profile

- Aggregate evidence quality: Grade C
- Level of confidence in evidence: High
- Benefit: Reevaluation for alternate diagnoses of facial paralysis, discussion of therapeutic/reconstructive options, psychological support of patient
- Risks, harms, costs: Cost of visit, time dedicated to visit
- Benefit-harm assessment: Preponderance of benefit over harm
- Value judgments: The GDG sought to address the importance of identifying alternate diagnoses in the absence of recovery, and potential assessment for rehabilitative options. The GDG recognized a lack of established time for patient follow-up; however based on the natural history of Bell's palsy, the majority of patients will show complete recovery three months after onset.
- Intentional vagueness: There are several specialties that have the expertise to reevaluate these patients; therefore the term "facial nerve specialist" is used to indicate the clinician who could most appropriately assess new or worsening symptoms in these patients.
- Role of patient preferences: Small
- Exceptions: None
- Policy level: Recommendation
- Differences of opinion: None

Disclaimer

This clinical practice guideline is provided for informational and educational purposes only. It is not intended as a sole source of guidance in managing Bell's palsy. Rather, it is designed to assist clinicians by providing an evidence-based framework for decision-making strategies. The guideline is not intended to replace clinical judgment or establish a protocol for all individuals with this condition, and may not provide the only appropriate approach to diagnosing and managing this program of care. As medical knowledge expands and technology advances, clinical indicators and guidelines are promoted as conditional and provisional proposals of what is recommended under specific conditions, but they are not absolute. Guidelines are not mandates and do not and should not purport to be a legal standard of care.

The responsible physician, in light of all the circumstances presented by the individual patient, must determine the appropriate treatment. Adherence to these guidelines will not ensure successful patient outcomes in every situation. The American Academy of Otolaryngology—Head and Neck Surgery Foundation (AAO-HNSF) emphasizes that these clinical guidelines should not be deemed to include all proper treatment decisions or methods of care, or to exclude other treatment decisions or methods of care reasonably directed to obtaining the same results.

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