Clinical Practice Guideline: Bell’s Palsy
Executive Summary

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Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

Abstract

The American Academy of Otolaryngology—Head and Neck Surgery Foundation (AAO-HNSF) has published a supplement to this issue featuring the new Clinical Practice Guideline: Bell’s Palsy. To assist in implementing the guideline recommendations, this article summarizes the rationale, purpose, and key action statements. The 11 recommendations developed encourage accurate and efficient diagnosis and treatment and, when applicable, facilitate patient follow-up to address the management of long-term sequelae or evaluation of new or worsening symptoms not indicative of Bell’s palsy. There are myriad treatment options for Bell’s palsy; some controversy exists regarding the effectiveness of several of these options, and there are consequent variations in care. In addition, there are numerous diagnostic tests available that are used in the evaluation of patients with Bell’s palsy. Many of these tests are of questionable benefit in Bell’s palsy. Furthermore, while patients with Bell’s palsy are more likely to present with Bell’s palsy, patients with alternative underlying etiologies may be misdiagnosed or have an 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.

Keywords

Bell’s palsy, facial nerve disorder, facial nerve pathophysiology, idiopathic facial nerve paralysis, idiopathic facial nerve paresis, otolaryngology

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The Clinical Practice Guideline: Bell’s Palsy 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. The guideline’s target audience includes specialists, primary care clinicians, and allied health professionals, as represented by this multidisciplinary guideline development group. Recommendations were developed to encourage accurate and efficient diagnosis and treatment and, when applicable, facilitate patient follow-up to address the management of long-term sequelae or evaluation of new or worsening symptoms not indicative of Bell’s palsy. 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 important information in the amplifying text that further explains the supporting evidence and details of implementation for each key action statement.1

Background

Bell’s palsy is a relatively uncommon condition but one that affects people across the age and gender spectrum, with incidence ranging from 11.5 to 53.3 per 100,000 person years in different populations.2-6 Notably, Bell’s palsy is seen in the pediatric population, with one study citing an incidence of approximately 6.1 in 100,000 in children 1 to 15 years of age.7 In one integrated health system, the incidence of Bell’s palsy in children 18 years or younger was 18.8 per 100,000 person-years in a 5-year study.8 In that study, the incidence rate increased by age and was higher in females than males across
all age strata. Although Bell’s palsy is seen in patients across a large age spectrum, the incidence was noted to be highest in the 15- to 45-year-old age group.9

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 (Table 1). This guideline does not focus on facial paresis/paralysis due to neoplasms, trauma, congenital or syndromic problems, specific infectious agents, or postsurgical 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” (Table 1).

While a viral etiology is suspected, the exact mechanism of Bell’s palsy is currently unknown.10 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 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 and posterior ear canal. 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.11,12 Ipsilateral pain around the ear or face is not an infrequent presenting symptom.10,13

Most patients with Bell’s palsy show some recovery without intervention within 2 to 3 weeks after onset of symptoms and completely recover within 3 to 4 months.7 Moreover, even without treatment, facial function is completely restored in approximately 70% of Bell’s palsy patients with complete paralysis within 6 months and as high as 94% of patients with incomplete paralysis; accordingly, as many as 30% of patients do not recover completely.14 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.15

There are several known risk factors for Bell’s palsy, including pregnancy. In a study of pregnant women, of 242,000 deliveries, 0.17% of expectant mothers were diagnosed with Bell’s palsy.16 Obesity, chronic hypertension, and severe preeclampsia also increased the risk. Diabetes is also a risk factor, and hypertension may be independently associated with an increased risk of Bell’s palsy.17 Risk factors for Bell’s palsy include:

- Pregnancy
- Severe preeclampsia

Table 1. Abbreviations and definitions of common terms.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Acute</td>
<td>Occurring in less than 72 h</td>
</tr>
<tr>
<td>Bell’s palsy</td>
<td>Acute unilateral facial nerve paresis or paralysis with onset in less than 72 h and without identifiable cause</td>
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<tr>
<td>Electromyography testing</td>
<td>A test in which a needle electrode is inserted into affected muscles to record both spontaneous depolarizations and the responses to voluntary muscle contraction</td>
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<tr>
<td>Electroneuronography testing (neurophysiologic studies)</td>
<td>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</td>
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<tr>
<td>Facial paralysis</td>
<td>Complete inability to move the face</td>
</tr>
<tr>
<td>Facial paresis</td>
<td>Incomplete ability to move the face</td>
</tr>
<tr>
<td>Idiopathic</td>
<td>Without identifiable cause</td>
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</tbody>
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Obesity
Hypertension and chronic hypertension
Diabetes
Upper respiratory ailments

The psychological burden of facial paralysis can be tremendous. Facial expression is fundamental to one’s sense of well-being and ability to integrate into a social network. With diminished facial movement and marked facial asymmetry, patients with facial paralysis can have impaired interpersonal relationships and experience profound social distress, depression, and social alienation. Recent data show that patients with facial paralysis are perceived by casual observers as emoting negatively when compared with individuals without paralyzed faces and that they are considered significantly less attractive. There are links between diminished attractiveness and depression, and these data may suggest that patients with paralyzed faces are at risk for depression, which can lead to decreased productivity and increased health care expenses.

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. A comprehensive list of the topics and issues considered by the GDG is available in Table 2. 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 on 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.

Methods
This guideline was developed using an explicit and transparent a priori protocol for creating actionable statements based on supporting evidence and the associated balance of benefit and harm. Members of the panel included otolaryngology–head and neck surgery, neurology, facial plastic and reconstructive surgery, neurotology, emergency medicine, primary care, otology, nursing, physician assistants, and consumer advocacy. For additional details on methodology, please refer to the complete text of the guideline. The 11 guideline recommendations are summarized in Table 3, with the corresponding action statements and profiles reproduced below. Supporting text and complete citations can be found in the guideline proper.

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Table 2. Topics and issues considered in Bell’s palsy guideline development.

<table>
<thead>
<tr>
<th>Alternative/complementary medicine</th>
<th>Pain management</th>
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<tbody>
<tr>
<td>Combination therapy vs monotherapy</td>
<td>Patient presentation</td>
</tr>
<tr>
<td>Comorbidities</td>
<td>Patient referral</td>
</tr>
<tr>
<td>Dental hygiene</td>
<td>Physical therapy</td>
</tr>
<tr>
<td>Differential diagnosis</td>
<td>Physiologic testing</td>
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<tr>
<td>Electrodiagnostic testing</td>
<td>Predictors of return of nerve function</td>
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<tr>
<td>Eye care</td>
<td>Prognostic indicators</td>
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<tr>
<td>House-Brackmann scale</td>
<td>Reconstructive options</td>
</tr>
<tr>
<td>Hyperbaric oxygen therapy</td>
<td>Steroid/antiviral therapy</td>
</tr>
<tr>
<td>Imaging</td>
<td>Surgical decompression</td>
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</tbody>
</table>

This list was created by the guideline development group to refine content and prioritize action statements; not all items listed were ultimately included or discussed in the guideline.
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.
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 in which 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
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: None
- 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: 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: 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: 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 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: None
- 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 3 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, most patients will show complete recovery 3 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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Disclosures

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