

Clinical Practice Guideline for the Evaluation and Management of Facial Nerve Palsy

Running title: Korean CPG for Facial Nerve Palsy

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CONFLICT OF INTEREST

All members of the guideline development committee submitted conflict of interest disclosure forms prior to participation. Committee members with potential conflicts of interest related to specific recommendations were excluded from the discussion and consensus process for those recommendations. The development committee operated independently in evaluating evidence and formulating recommendations.

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HIGHLIGHTS

- First evidence-based clinical practice guideline for facial nerve palsy developed for the Korean healthcare system using GRADE methodology and structured expert consensus ($\geq 70\%$ agreement).
- A multidisciplinary panel of 15 experts (otolaryngologists, a neurologist, a neurosurgeon, a rehabilitation medicine specialist, an ophthalmologist, a plastic surgeon, and a methodology expert) developed 10 recommendations across nine key clinical questions addressing evaluation, pharmacotherapy, surgery, rehabilitation, and long-term management.
- Oral corticosteroids within 72 hours of symptom onset are strongly recommended (Grade A) as first-line acute therapy; the House–Brackmann grading system is recommended as the standard assessment tool (Grade A).
- Rehabilitation therapy, botulinum toxin injection for synkinesis, reconstructive surgery for chronic palsy, and multidisciplinary care are conditionally recommended (Grade B) for patients with incomplete recovery or persistent sequelae.
- Korean National Health Insurance coverage, regional accessibility, cost considerations, and patient preferences ($n = 51$) were integrated into the Evidence-to-Decision framework for each recommendation.

ABSTRACT

Objective: To develop evidence-based clinical practice guidelines for evaluating and managing peripheral facial nerve palsy within the Korean healthcare system.

Methods: A multidisciplinary guideline committee—comprising otolaryngologists, a neurologist, a neurosurgeon, a rehabilitation medicine specialist, an ophthalmologist, a plastic surgeon, and a methodology expert—conducted de novo systematic reviews. Literature searches were performed in MEDLINE, Embase, the Cochrane Library, and KoreaMed through November 30, 2024. Evidence was appraised using the GRADE methodology, and nine key clinical questions (KQs) were formulated using the PICO framework. Recommendations were finalized through structured consensus requiring at least 70% agreement. A patient preference survey (n = 51) informed value considerations. The draft guideline underwent external review by seven independent experts.

Results: Ten recommendations addressing nine KQs were developed. The House–Brackmann grading system is recommended as the standard assessment tool (Grade A). Routine testing is unnecessary for typical Bell’s palsy; selective testing is advised for atypical features (Grade B). Electrodiagnostic studies may be used for prognostic evaluation in severe cases (Grade B). Oral corticosteroids are strongly recommended within 72 hours of symptom onset (Grade A). Antivirals may be added based on clinical judgment and patient preference (Grade B). Facial nerve decompression may be considered in selected patients with severe degeneration (Grade B). Rehabilitation therapy, surgery for chronic palsy, botulinum toxin injection for synkinesis, and multidisciplinary management are conditionally recommended (Grade B).

Conclusion: This guideline provides an evidence-based framework for managing facial nerve palsy in Korea. It integrates systematic evidence, patient preferences, and healthcare system

factors, including National Health Insurance coverage and regional accessibility.

Keywords: Facial nerve palsy; Bell's palsy; Clinical practice guideline; GRADE methodology; Corticosteroids; Facial nerve decompression; Rehabilitation; Korea

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INTRODUCTION

Facial nerve palsy is a common neurologic condition encountered in clinical practice, particularly in otolaryngology. The annual incidence of idiopathic facial nerve palsy ranges from approximately 15 to 30 cases per 100,000 individuals [1,2]. Although many patients recover spontaneously, a substantial proportion experience incomplete recovery or persistent sequelae, such as facial asymmetry, synkinesis, or functional impairment [1,2]. These complications can significantly affect facial expression, communication, and quality of life.

Accurate assessment and appropriate management are therefore essential. Various clinical grading systems are used to evaluate facial nerve function, and multiple diagnostic and therapeutic approaches have been proposed [3]. However, selection of evaluation tools, diagnostic tests, and treatment strategies varies across clinicians and institutions [2,3]. Differences commonly involve the use of electrodiagnostic testing, indications for imaging, pharmacologic therapy, and management of chronic sequelae.

Several clinical practice guidelines have addressed facial nerve palsy management [2,4–6]. However, many were developed more than a decade ago, and substantial new evidence has emerged since publication [2,4]. A domestic guideline issued by the Korean Otological Society in 2010 also requires updating to reflect evolving evidence and practice patterns [7]. In addition, international guidelines may not fully reflect Korea's healthcare environment and clinical practice patterns [2,3].

This guideline was developed to provide evidence-based recommendations for evaluating and managing acute peripheral facial nerve palsy in Korea. It addresses key clinical questions (KQs) related to diagnostic evaluation, medical treatment, rehabilitation, surgical management, and long-term sequelae. Recommendations were formulated through de novo systematic review

and structured expert consensus among specialists in otolaryngology and related disciplines. The goal is to promote consistent clinical decision-making and improve care quality by providing evidence-based guidance for clinicians in Korea.

MATERIALS AND METHODS

Target Population

This guideline addresses the evaluation and management of peripheral facial nerve palsy in adults with acute or chronic disease of various etiologies, including idiopathic facial nerve palsy (Bell's palsy), Ramsay Hunt syndrome, traumatic facial nerve injury, and other peripheral causes.

It covers initial clinical assessment using standardized grading systems, diagnostic testing to identify underlying etiologies, and electrodiagnostic studies for prognostic evaluation when indicated. Recommendations are provided for acute pharmacologic therapy, including corticosteroids and combination antiviral treatment, as well as facial nerve decompression in selected patients. Rehabilitation therapy, management of chronic palsy with persistent weakness or synkinesis, and multidisciplinary care are also addressed.

Central facial paralysis due to intracranial disorders, such as stroke or brain tumors, is excluded. Progressive, recurrent, or tumor-related conditions require disease-specific evaluation. Congenital or hereditary facial nerve disorders are outside the primary scope. Pediatric facial nerve palsy is addressed only briefly because most available evidence derives from adult populations.

Organization of the Committee

This clinical practice guideline was developed collaboratively by the Korean Otological Society and the Korean Facial Nerve Society. The development process was supervised by both societies to ensure multidisciplinary perspectives in facial nerve palsy management.

A guideline committee was established, primarily comprising otolaryngologists with expertise in otology, neurotology, and facial nerve disorders. Given the multidisciplinary nature of this condition, input from related specialties—including neurology, neurosurgery, rehabilitation medicine, and ophthalmology—was incorporated during development.

The committee defined KQs, reviewed the evidence, and drafted recommendations. Working group members conducted systematic reviews and prepared evidence summaries for each question. Draft recommendations were discussed and refined during regular meetings.

Methodological support for evidence appraisal and recommendation formulation was provided by a methodology expert in accordance with the GRADE framework and the Reporting Items for Practice Guidelines in Healthcare (RIGHT) statement.

Literature Search and Quality Assessment

KQs were selected based on common decision points in facial nerve palsy evaluation and management and refined through committee discussion. Nine questions were formulated using the PICO framework.

A systematic search was conducted in MEDLINE, Embase, the Cochrane Library, and KoreaMed. Search strategies were developed with methodology experts to ensure adequate sensitivity. No restrictions were applied regarding publication year or language. The final

search was completed on November 30, 2024.

Two independent reviewers screened titles and abstracts and assessed full texts according to predefined inclusion and exclusion criteria. Disagreements were resolved through discussion; unresolved cases were adjudicated by a methodology expert.

Quality of Evidence and Grading of Recommendations

Risk of bias was assessed using design-specific tools. Randomized controlled trials were evaluated with the Cochrane Risk of Bias tool version 2 (RoB 2), nonrandomized studies with ROBINS-I, diagnostic accuracy studies with QUADAS-2, and prevalence studies with the AXIS tool.

For the purposes of this guideline, "complete recovery" is defined as HB grade I, and "favorable recovery" is defined as HB grade I or II. Where individual studies used alternative outcome definitions, these are specified alongside the relevant citation.

Evidence synthesis considered clinical and methodological heterogeneity. When studies were sufficiently homogeneous in population, intervention, comparator, and outcome, quantitative synthesis was performed using a random-effects model. Statistical heterogeneity was quantified using the I^2 statistic. When meta-analysis was not feasible due to clinical or methodological heterogeneity, or an insufficient number of comparable studies, narrative synthesis was conducted with findings summarized descriptively according to direction and consistency of effect across studies. KQs for which narrative synthesis was applied included KQ6 (facial nerve decompression) and KQ8-1 (surgical treatment for chronic palsy), where heterogeneity in surgical technique, patient selection, and outcome definitions precluded pooling.

Certainty of evidence for each question was evaluated using the GRADE approach, incorporating risk of bias, inconsistency, indirectness, imprecision, and publication bias. Recommendations were presented using an action-oriented grading system (Grades A–D and I) reflecting recommendation direction and strength (Table 1).

Consensus Development and Patient Preferences

Patient values and preferences were systematically assessed during guideline development. Data were derived from a cross-sectional survey conducted separately and published independently (Joo HA and Lee HY et al., in press). In brief, 51 adults with peripheral facial nerve palsy (35 women and 16 men; mean age, 43.1 ± 12.4 years) attending a secondary referral hospital clinic were surveyed between June and July 2025 using a structured 21-item questionnaire developed in accordance with STROBE guidelines. The questionnaire evaluated preferences regarding diagnostic approaches, pharmacologic and surgical treatments, rehabilitation, multidisciplinary care, communication with healthcare providers, and recovery concerns. Internal consistency was assessed using Cronbach's alpha ($\alpha = 0.548$). Although below the conventional threshold of 0.70, this is expected for a multidimensional instrument covering conceptually distinct clinical domains not intended to measure a single underlying construct. Results were incorporated into the Evidence-to-Decision (EtD) framework for each key question alongside evidence quality, benefit–harm balance, and resource considerations.

Recommendation direction and strength were determined by considering desirable and undesirable outcomes, certainty of evidence, patient preferences, resource implications, and clinical feasibility.

Recommendations were formulated through face-to-face meetings and structured consensus

procedures within the committee. At least 70% agreement was required to achieve consensus. When consensus was not reached, recommendations were revised and re-discussed until agreement was obtained.

External Review

Before publication, the draft guideline underwent structured external review. Seven independent experts not involved in development evaluated the recommendations. The panel included three members nominated by the Korean Otological Society, three by the Korean Facial Nerve Society, and one primary care physician, representing academic and community settings.

Reviewers completed a written questionnaire using a 1–9 Likert scale and provided open-ended comments. Evaluation domains included agreement with recommendation direction and grade, validity of benefit–harm indicators, clinical applicability, potential for quality improvement, implementation barriers, patient-centeredness, and alignment with current evidence. The committee reviewed all comments and revised recommendation wording, applicability conditions, implementation tools (clinical algorithms and checklists), and explanatory text accordingly.

SUMMARY OF RECOMMENDATIONS

Table 1 presents all recommendations with corresponding grades and certainty of evidence. The recommendation grade (A–D, I) reflects direction and strength, and certainty of evidence was assessed using the GRADE methodology.

CLINICAL ALGORITHM (Figure 1)

Step 1 — Initial Evaluation: At presentation, clinicians should grade facial nerve function using the House–Brackmann (HB) system, with supplementary use of the Sunnybrook or FNGS 2.0 when detailed regional assessment is required (KQ1). Central and peripheral causes should be differentiated. If central paralysis is suspected, referral to neurology or neurosurgery is indicated. When diagnoses other than Bell’s palsy are suspected, targeted evaluation should be performed (KQ2).

Step 2 — Acute Treatment: Oral corticosteroids are recommended as first-line therapy (KQ4). Combination therapy with corticosteroids and antivirals may be considered based on clinical judgment and patient preference (KQ5). Eye protection should be initiated, and ophthalmology consultation considered in patients with lagophthalmos.

Step 3 — Prognostic Evaluation: Electrodiagnostic testing (ENoG/EMG) may be performed within 2 weeks of symptom onset to assess nerve degeneration (KQ3). In patients with severe or complete paralysis and extensive degeneration, facial nerve decompression may be considered (KQ6).

Step 4 — Recovery Phase: Rehabilitation therapy, including mirror therapy, mime therapy, neuromuscular reeducation, and EMG biofeedback, may be considered according to patient condition and preference (KQ7). Follow-up assessment at 6 months is recommended; if recovery is adequate, treatment may be concluded.

Step 5 — Chronic Phase Management: For incomplete recovery or sequelae beyond 6 months, multidisciplinary collaboration with plastic surgery, otolaryngology, and rehabilitation medicine is recommended (KQ9). Surgical reconstruction, including local or free flap and muscle transfer, may be considered (KQ8-1). Botulinum toxin injection may be considered for

synkinesis (KQ8-2).

GUIDELINES FOR THE MANAGEMENT OF FACIAL NERVE PALSY

Q1. What grading systems are recommended for clinical assessment of facial nerve palsy?

Accurate and reproducible assessment of facial nerve function is essential to determine severity, monitor recovery, and evaluate treatment outcomes. Several grading systems are used, including the HB scale, the Sunnybrook Facial Grading System, and the Facial Nerve Grading System 2.0 (FNGS 2.0).

This recommendation is based on studies comparing correlations among commonly used grading systems in acute peripheral facial nerve palsy. The HB scale, widely applied for global assessment, was selected as the reference standard. Studies evaluating correlations between HB and FNGS 2.0 or Sunnybrook were included in the synthesis.

The review identified few studies directly analyzing correlations with HB. Among ten retrospective observational studies, four evaluating FNGS 2.0 (166 patients) and four evaluating Sunnybrook (312 patients) were included in meta-analysis [8–14]. Studies were conducted in Korea, Japan, Finland, Sweden, Australia, Türkiye, and Italy. Most were single-center studies with sample sizes ranging from 8 to 83 participants; several included repeated follow-up assessments.

Meta-analysis showed a high correlation between FNGS 2.0 and HB. The pooled Spearman coefficient was 0.91 (95% confidence interval [CI], 0.87–0.95), and the pooled Pearson coefficient was 0.91 (95% CI, 0.79–0.96). Agreement was substantial, with a pooled kappa of 0.69 (95% CI, 0.51–0.81). Individual studies consistently reported strong correlations.

Correlation between Sunnybrook and HB was also high but slightly lower than for FNGS 2.0. The pooled Spearman coefficient was 0.82 (95% CI, 0.77–0.88), and pooled Cramer's V was 0.97 (95% CI, 0.95–0.98). Reported correlation coefficients ranged from 0.76 to 0.97 depending on assessment timing and patient characteristics.

The HB grading system is simple and rapid, facilitating standardized documentation and communication among clinicians [15]. However, it reflects global facial function and does not provide detailed assessment of regional movement or synkinesis. In contrast, FNGS 2.0 and the Sunnybrook Facial Grading System quantify regional movement and synkinesis, enabling detection of subtle changes during recovery and longitudinal follow-up in rehabilitation or research settings [8,10,14,16].

All three systems are noninvasive and observation-based, and no adverse events were reported in the included studies. Practical considerations relate mainly to examination time and evaluator training. HB requires minimal time and resources, whereas Sunnybrook and FNGS 2.0 require more detailed assessment and trained evaluators.

Most institutions can readily apply HB without additional resources. Implementation of Sunnybrook or FNGS 2.0 may be limited in some settings because standardized protocols and trained personnel are necessary. From the patient perspective, detailed functional assessment is generally preferred, particularly when secondary sequelae such as synkinesis are present. In a preference survey, standardized tools such as HB or Sunnybrook were most commonly preferred (42.3%), followed by visual comparison using photographs or video (32.1%); subjective clinical observation alone was preferred by only 5.9%. When asked to identify the most important assessment factor, 58.8% prioritized objective monitoring of recovery and 25.5% emphasized assessment accuracy. These findings support standardized, validated grading systems as the foundation of facial nerve assessment.

Considering clinical utility and feasibility, maintaining HB as the standard reporting scale while allowing selective use of Sunnybrook or FNGS 2.0 for detailed evaluation was considered the most practical approach. Aggregate evidence quality was moderate to low (FNGS 2.0: Moderate [$\oplus\oplus\oplus\ominus$]; Sunnybrook: Low [$\oplus\oplus\ominus\ominus$]), based on cross-sectional validation studies assessed with QUADAS-2.

Q2. What is the role of diagnostic evaluation in facial nerve palsy?

The etiology of acute peripheral facial nerve palsy is diverse. In the reviewed studies, Bell's palsy was the most common cause, accounting for approximately 57% of cases [17–25]. Other causes included infection (13%), trauma (11%), iatrogenic injury (8%), Ramsay Hunt syndrome (7%), tumors (7%), Lyme disease (5%), autoimmune disorders (2%), and otitis media (1%). Although less frequent, these conditions are clinically important because management differs substantially, including surgical, antimicrobial, or immunologic treatment. Most included studies were cross-sectional or single-arm observational designs. Direct evidence that diagnostic testing improves outcomes is therefore limited. However, several studies reported that identifying the underlying etiology often altered clinical management. Using the AXIS tool, overall risk of bias was high and heterogeneity substantial; consequently, certainty of evidence was judged very low ($\oplus\ominus\ominus\ominus$), based on nonrandomized single-arm studies assessed with AXIS and downgraded for risk of bias and imprecision.

Considering the severity of potential underlying conditions, the possibility of early therapeutic intervention, and the harms and costs of testing, routine diagnostic evaluation for all patients with acute facial nerve palsy is not recommended. Imaging studies such as magnetic resonance imaging (MRI) or computed tomography (CT) are costly and may involve contrast-related

adverse effects, radiation exposure, or patient discomfort. Laboratory and specialized tests may also cause physical discomfort and psychological burden.

However, failure to investigate when alternative causes are suspected may delay diagnosis of clinically important conditions. Although uncommon, tumors, Lyme disease, or autoimmune disorders may result in worse outcomes if diagnosis and treatment are delayed. Therefore, when clinical features suggest an etiology other than Bell's palsy, selective testing tailored to the suspected cause may provide meaningful benefit despite low certainty of evidence.

Patient preference should also inform the diagnostic approach. In surveys of patients with acute facial nerve palsy, most preferred a tailored strategy based on individual circumstances (52.9%), indicating general support for selective rather than routine comprehensive testing. However, 39.2% favored extensive testing to identify all possible causes, reflecting concern about missing serious conditions. Diagnostic accuracy and reliability were the most important factors (70.6%), followed by rapid result availability (17.6%), safety and minimization of adverse effects (5.9%), and cost (3.9%).

Accessibility of diagnostic testing varies across healthcare settings and regions. Advanced imaging and specialized laboratory tests, such as Lyme serology, may not be available in all institutions, and insurance policies may further limit access. Although targeted testing requires additional resources, early identification of clinically important etiologies may enable timely treatment and reduce long-term costs by preventing complications and disease progression.

Overall, available evidence supports a selective diagnostic approach based on clinical suspicion rather than routine testing for all patients with acute peripheral facial nerve palsy. The following red flag features should prompt further investigation:

- Slowly progressive onset (>3 weeks) or absence of improvement by 3 months

- Recurrent ipsilateral or bilateral facial palsy
- Additional cranial nerve deficits or other neurologic signs
- Parotid or neck mass on examination
- Skin vesicles in the external ear or palate (suggestive of herpes zoster)
- Systemic symptoms suggesting malignancy, autoimmune disease, or infection (e.g., Lyme disease in endemic areas)
- History of head and neck malignancy, trauma, or recent otologic surgery

When one or more of these features are present, targeted evaluation—including imaging (MRI or CT) and relevant laboratory studies—should be performed to identify the underlying etiology.

Q3. What is the role of electrodiagnostic testing in facial nerve palsy?

Electrodiagnostic studies—primarily ENoG and EMG—are used to estimate axonal degeneration severity and predict recovery in acute peripheral facial nerve palsy. A degeneration rate $\geq 90\%$ on ENoG is widely used as the threshold for severe injury. Clinical recovery is defined as improvement to HB grade I or II.

Nine studies (1,252 patients) consistently showed that higher ENoG degeneration rates were associated with poorer functional outcomes [26–34]. Across studies, reduced CMAP amplitudes independently predicted unfavorable recovery at 3–6 months. Pooled sensitivity was 0.87 (95% CI, 0.78–0.92) and specificity 0.78 (95% CI, 0.65–0.87). However, certainty of evidence is low, as studies were largely observational and varied in timing, patient selection,

and outcome definitions. Even with degeneration >90%, poor recovery is not inevitable.

The procedure is safe and noninvasive. Most patients (70.6%) considered electrodiagnostic testing useful for prognostic decision-making, and 78.4% preferred quantitative recovery estimates. However, access varies by institution; routine testing is not feasible in all settings.

Overall, electrodiagnostic testing may provide meaningful prognostic information and is recommended in patients with HB grade V–VI (complete or near-complete) paralysis presenting within 2 weeks of onset. ENoG is most informative when performed between days 3 and 14 after symptom onset, once Wallerian degeneration has progressed sufficiently for reliable amplitude measurement. EMG for detection of voluntary motor unit potentials is most informative after day 10–14. ENoG degeneration $\geq 90\%$ (defined as <10% CMAP amplitude compared with the unaffected side) should be interpreted as follows to guide subsequent management:

- **ENoG degeneration <90%:** Prognosis is generally favorable; standard medical management and routine follow-up are continued without escalation.
- **ENoG degeneration $\geq 90\%$ with absent voluntary motor unit potentials on EMG:** Poor prognosis for spontaneous complete recovery; multidisciplinary discussion regarding surgical decompression candidacy (KQ6) and early referral for rehabilitation (KQ7) are recommended.

Routine electrodiagnostic testing for all patients is not recommended.

Q4. Are corticosteroids effective for treating acute peripheral facial nerve palsy?

Corticosteroids are the primary pharmacologic treatment for acute peripheral facial nerve palsy

[2]. Their use is based on the pathophysiology of facial nerve edema and inflammation within the narrow facial canal of the temporal bone [35]. Anti-inflammatory effects may reduce nerve swelling, improve microvascular circulation, and prevent ischemic injury, thereby facilitating recovery [36].

Several randomized controlled trials have evaluated corticosteroid efficacy in acute facial nerve palsy. In a multicenter trial, Sullivan et al. reported that prednisolone significantly improved recovery compared with placebo in patients with Bell's palsy [36]. Patients treated within 72 hours of onset had higher complete recovery rates at 3 and 9 months. Similarly, Engström et al. demonstrated that early prednisolone significantly increased the likelihood of favorable recovery compared with placebo [37].

Meta-analyses of randomized controlled trials consistently show that corticosteroids improve outcomes in acute facial nerve palsy. Pooled analyses indicate higher complete recovery rates with corticosteroids than with placebo or no treatment. In several analyses, complete recovery (HB grade I) occurred in approximately 78% in the corticosteroid group compared with about 67% in the control group, corresponding to a relative risk of 1.17 (95% CI, 1.10–1.25). This represents about 113 additional recoveries per 1,000 patients (from 668 to 781 per 1,000), indicating a clinically meaningful effect.

The benefit appears greatest when therapy is initiated early. Most trials enrolled patients within 72 hours of onset, and delayed treatment may reduce efficacy. Therefore, early recognition and prompt corticosteroid initiation are essential components of management.

Short-course corticosteroids are generally well tolerated. Reported adverse effects are typically mild and include transient hyperglycemia, gastrointestinal discomfort, mood changes, and sleep disturbance. Serious events are rare with limited-duration therapy. In randomized trials,

adverse event rates were comparable to placebo, although steroid-related effects such as hyperglycemia and gastrointestinal symptoms may occur depending on comorbidities. Clinicians should consider patient-specific factors, including diabetes mellitus, hypertension, pregnancy, and immunosuppression, when prescribing corticosteroids.

From the patient perspective, early pharmacologic treatment that maximizes recovery likelihood is strongly preferred. In the preference survey, 82.4% favored active corticosteroid therapy, and none were unwilling to receive steroids. The most common concern was long-term adverse effects, such as immunosuppression or osteoporosis (42.1%), followed by short-term effects including gastrointestinal discomfort, insomnia, and hyperglycemia (21.1%). Notably, 19.6% reported no concerns. Maximizing treatment efficacy was the dominant priority (90.2%). Overall acceptance suggests that most patients perceive the benefit of preventing permanent sequelae to outweigh the risk of generally mild, transient adverse effects. These findings support shared decision-making: clinicians should acknowledge concerns about long-term risks, emphasize their typically transient nature, and contrast them with the greater risk of incomplete recovery that corticosteroids help mitigate.

Given consistent randomized trial evidence, a favorable benefit–harm balance, and broad feasibility, early corticosteroid therapy is strongly recommended for acute peripheral facial nerve palsy. Aggregate evidence quality was low ($\oplus\oplus\ominus\ominus$), based on randomized controlled trials assessed with RoB 2 and downgraded for risk of bias and imprecision. A strong recommendation (Grade A⁺) was adopted based on the EtD framework, reflecting substantial net benefit, patient values, and clinical feasibility.

Q5. Does combination therapy with corticosteroids and antiviral agents improve outcomes in

acute peripheral facial nerve palsy?

The potential benefit of antiviral therapy in acute peripheral facial nerve palsy has been investigated based on the hypothesis that viral reactivation, particularly herpes simplex virus type 1, contributes to Bell's palsy pathogenesis [38]. Antiviral agents such as acyclovir, famciclovir, and valacyclovir have therefore been evaluated as adjuncts to corticosteroids.

Thirteen randomized controlled trials (2,377 patients) compared corticosteroid monotherapy with corticosteroid plus antiviral combination therapy [36,37,39–49]. Antivirals evaluated included acyclovir, valacyclovir, and famciclovir; follow-up ranged from 2 to 12 months.

Favorable recovery (HB grade I–II) was significantly higher with combination therapy (87.4%; pooled RR 1.17, 95% CI 1.09–1.26). However, complete recovery (HB grade I) did not differ significantly between groups (87.3% vs. 85.6%; RR 1.02, 95% CI 0.96–1.07). Adverse events were minimal across studies. Antivirals are typically prescribed for 5–7 days at low cost and do not impose substantial resource burden.

Patient preferences support consideration of combination therapy: 74.5% of surveyed patients favored it to maximize recovery, and 90.2% prioritized efficacy over other factors. In Ramsay Hunt syndrome, where viral etiology is established, combination therapy should be more strongly considered. Special populations (pregnant women, pediatric patients) require individualized assessment given limited evidence.

Given modest effect size for favorable recovery but lack of significant benefit for complete recovery, antivirals may be considered as adjuncts in patients with severe or complete palsy (HB grade V–VI), Ramsay Hunt syndrome, or those presenting within 72 hours with high functional recovery priority. Routine antiviral addition in mild-to-moderate Bell's palsy without specific risk factors is less supported by current evidence.

Q6. Does facial nerve decompression surgery improve outcomes in acute peripheral facial nerve palsy?

Facial nerve decompression has been proposed for patients with severe acute palsy and extensive degeneration, based on the rationale that mechanical compression within the facial canal contributes to injury. Multiple observational studies (retrospective and prospective) were identified, including transmastoid, middle cranial fossa, and combined approaches [50–61].

Studies suggesting benefit consistently involved patients with ENoG degeneration >90% and absence of voluntary EMG potentials, treated within 14 days of onset. Gantz et al. reported favorable recovery (defined as HB grades I–II) in approximately 90% of surgically treated patients under these criteria. However, benefit was not demonstrated in studies with delayed surgery (>2 months) or heterogeneous patient selection, and several retrospective studies found no significant long-term advantage over conservative management [55]. Certainty of evidence is very low to low across outcomes, owing to risk of bias, heterogeneity in technique and timing, and absence of randomized controlled trial data.

Surgical risks include hearing loss, vestibular dysfunction, cerebrospinal fluid leakage, and facial nerve injury; complication rates are low in experienced centers. Patient attitudes were cautious: 47.1% regarded decompression as a last resort, and functional recovery was the primary priority (80.4%). Given the invasiveness and specialized expertise required, access is limited outside tertiary centers.

Facial nerve decompression may be considered selectively in patients meeting all of the following criteria: (1) HB grade VI complete paralysis; (2) ENoG degeneration >90% with absent voluntary motor unit potentials on EMG; (3) absence of clinical improvement after

optimal medical therapy; and (4) symptom onset within 14 days. Surgery should be performed within 14 days of onset, as benefit markedly declines with longer delays; decompression beyond 2 months is not supported by current evidence. Surgery should be performed by experienced otologic surgeons at tertiary centers.

Q7. Does rehabilitation therapy improve recovery in facial nerve palsy?

Facial rehabilitation therapy has been proposed as a noninvasive approach to improve symmetry, enhance neuromuscular control, and reduce long-term complications such as synkinesis. Strategies include facial exercises, mime therapy, neuromuscular re-education, mirror therapy, and electromyographic biofeedback.

Several randomized controlled trials have evaluated rehabilitation efficacy in facial nerve palsy. Beurskens and Heymans conducted a randomized trial of mime therapy in patients with chronic facial paresis and demonstrated significant improvement in facial symmetry compared with conventional therapy [62]. Similarly, Manikandan reported that neuromuscular re-education significantly improved symmetry and motor function in Bell's palsy [63].

More recent studies have evaluated structured rehabilitation protocols in early facial nerve palsy. Martineau et al. assessed the "Mirror Effect Plus" protocol in a randomized longitudinal study and reported greater improvement in facial function with structured rehabilitation than with standard care alone [64].

Meta-analyses indicate that facial rehabilitation improves objective function scores [62–67]. In pooled analyses, the Sunnybrook score increased by approximately 11.9 points (95% CI, 6.73–17.13), exceeding the minimal clinically important difference of 10 points. HB grades also improved, and biofeedback-based approaches were associated with reduced synkinesis.

Aggregate evidence quality was very low to moderate (Sunnybrook: Very Low [$\oplus\ominus\ominus\ominus$]; HB grade: Moderate [$\oplus\oplus\oplus\ominus$]; FDI: Low [$\oplus\oplus\ominus\ominus$]), based on nonrandomized studies assessed with ROBINS-I.

Rehabilitation therapy is generally safe and noninvasive. No serious adverse events have been reported. From the patient perspective, participation is strongly favored: 82.4% supported active rehabilitation and none declined. The most preferred modality was one-to-one sessions with a trained specialist (51.4%), followed by home-based exercises (18.1%). Access to structured programs varies by setting; simplified home exercise programs may be provided where specialist services are unavailable.

Facial rehabilitation may be initiated as early as the acute phase (within the first 1–2 weeks of onset). Formal structured programs are recommended once spontaneous recovery plateaus or in patients with HB grade IV or worse at 3 weeks. Rehabilitation is particularly recommended for patients with persistent weakness or incomplete recovery beyond 3 months.

Q8-1. Is surgical treatment effective in chronic facial nerve palsy?

Surgical reconstruction for chronic facial nerve palsy (persisting >6 months) aims to restore functional movement and facial symmetry when conservative management has failed. Evaluated interventions included local flap, free flap, and muscle transfer procedures. The evidence base comprises primarily small retrospective studies with one prospective observational design, indicating limited overall certainty.

Static and dynamic reanimation procedures involving the temporalis muscle showed consistent functional gains. Andrews et al. reported significant improvement in both objective and subjective outcomes after minimally invasive temporalis tendon transposition [68], and

Holtmann et al. observed improvements in oral commissure symmetry, eyelid closure, brow position, and nasal symmetry following graduated minimally invasive facial reanimation [69].

Free flap and muscle transfer procedures also demonstrated favorable outcomes. Lee et al. confirmed efficacy of free functional gracilis flap transfer even in older patients with low morbidity [70], and Panciera et al. found that lengthening temporalis myoplasty significantly improved oral commissure excursion, smile angle, and facial disability scores [72]. Reported harms across studies were infrequent and manageable, including postoperative hematoma, flap disinsertion, and sialocele.

Patient attitudes toward surgery were cautious: 51.0% preferred continued nonsurgical rehabilitation, while only 9.8% expressed preference for surgical treatment. Functional movement restoration was the dominant priority (72.5%), underscoring the need for shared decision-making and structured preoperative counseling.

These procedures are available only in centers with specialized reconstructive expertise and facial nerve monitoring capability, limiting access outside tertiary institutions.

Certainty of evidence is very low ($\oplus\ominus\ominus\ominus$), based on nonrandomized single-arm studies downgraded for risk of bias and imprecision. Reconstructive surgery may be considered selectively in patients with persistent impairment >6 months after careful evaluation of expected benefit, patient preference, and procedural feasibility.

Q8-2. Is botulinum toxin injection effective for synkinesis after facial nerve palsy?

Synkinesis is a common sequela of facial nerve palsy that typically develops during recovery. It is characterized by involuntary facial movements occurring with voluntary actions, most often ocular–oral or oral–ocular synkinesis. These abnormal movements may cause functional

discomfort, facial asymmetry, and psychological distress.

Botulinum toxin injection is widely used to reduce synkinetic muscle activity and improve facial symmetry in chronic facial nerve palsy. Clinical studies have shown that targeted injections decrease involuntary contraction and enhance symmetry at rest and during voluntary movement [73-76]. Improvements in patient-reported symptoms and functional outcomes have also been reported.

The therapeutic effect results from temporary chemodenervation of hyperactive muscles, reducing abnormal co-contraction and promoting more balanced movement. Because the effect is transient, repeated injections are often required to maintain control.

Adverse effects are generally mild and transient, including temporary weakness of adjacent muscles, local discomfort, or mild asymmetry. Serious complications are rare when injections are performed by experienced clinicians.

From the patient perspective, synkinesis may substantially affect appearance and quality of life even after partial recovery. Many patients therefore seek treatment to reduce abnormal movement and improve symmetry. Although the preference survey did not include a specific item on botulinum toxin, contextual data are informative. Among patients with chronic palsy, restoration of facial movement was the primary priority (72.5%), indicating strong preference for interventions that reduce abnormal movement. The overall preference for active treatment and high willingness to pursue low-risk options further support botulinum toxin injection when clinically indicated.

Adjunctive treatments such as facial neuromuscular retraining may be combined with botulinum toxin therapy. Rehabilitation may enhance voluntary muscle control and reduce abnormal movement patterns.

Treatment feasibility depends on availability of clinicians experienced in facial nerve rehabilitation and botulinum toxin injection. Access to specialized care may vary across institutions.

Overall, available evidence suggests that botulinum toxin injection may reduce synkinetic movement and improve functional and aesthetic outcomes in selected patients with chronic facial nerve palsy. In practice, botulinum toxin is typically initiated when synkinesis becomes symptomatic, usually after 3–6 months from onset. Repeat injections are required at intervals of approximately 3–4 months to maintain effect. Combined neuromuscular retraining is recommended as an adjunct to enhance voluntary muscle control. However, certainty of evidence remains limited because most studies are observational and involve small populations.

Aggregate evidence quality was low ($\oplus\oplus\ominus\ominus$), based on a randomized controlled trial assessed with RoB 2 (Sunnybrook synkinesis score) and downgraded for risk of bias and imprecision.

Q9. Is multidisciplinary management beneficial in facial nerve palsy?

Facial nerve palsy affects multiple functional domains, including facial movement, eye protection, speech articulation, oral competence, and psychological well-being. Accordingly, patients may require evaluation and management across several specialties depending on severity, etiology, and recovery status.

In the acute stage, otolaryngologists typically lead diagnosis and initial management. Additional specialist evaluation may be required in selected cases. Neurologists or neurosurgeons may be involved when central nervous system pathology or other neurologic disorders are suspected. Ophthalmologic assessment is essential in patients with incomplete

eye closure to prevent exposure keratopathy and related complications.

During recovery and the chronic stage, rehabilitation specialists may provide neuromuscular retraining and functional therapy. Patients with persistent asymmetry, synkinesis, or functional impairment may also benefit from consultation with surgeons experienced in facial reanimation.

Although direct comparative studies of multidisciplinary care are limited, clinical experience and observational reports suggest that coordinated management across specialties may improve functional outcomes and address diverse complications of facial nerve palsy [77-80]. Feasibility depends on availability of relevant specialists and institutional resources; establishing coordinated care pathways may improve access to appropriate evaluation and treatment.

From the patient perspective, multidisciplinary care is generally favored. In the survey, 60.8% preferred comprehensive evaluation and treatment involving multiple specialists, and 35.3% were willing to follow multidisciplinary referrals based on physician judgment. The most important factor was consistent treatment direction across specialists (56.9%), followed by effective interprovider communication (33.3%). These preferences support the rationale for multidisciplinary care and its role in improving coordination. For patients with incomplete recovery, a structured follow-up approach is recommended: clinical assessment at 1, 3, and 6 months using HB grading; referral for multidisciplinary evaluation when HB grade IV or worse persists at 3 months; and consideration of surgical reconstruction (KQ8-1) or botulinum toxin therapy (KQ8-2) when meaningful recovery is absent at 6 months. Aggregate evidence quality was very low ($\oplus\ominus\ominus\ominus$), based on nonrandomized single-arm studies assessed with ROBINS-I and downgraded for risk of bias, imprecision, and indirectness.

COMPARISON WITH INTERNATIONAL GUIDELINES

Several international clinical practice guidelines for facial nerve palsy have been published over the past two decades. The present Korean guideline was developed through de novo systematic review and incorporates healthcare system considerations specific to Korea (Table 2).

Compared with existing international guidelines, this guideline has several distinguishing features. First, it was developed as a comprehensive de novo guideline using the GRADE methodology, covering the full spectrum of management from initial evaluation to long-term care, including rehabilitation and multidisciplinary management, which are not addressed in many Western guidelines. Second, it systematically integrates patient preferences derived from a Korean survey ($n = 51$) into the EtD framework. Third, it considers Korea-specific factors, including National Health Insurance (NHI) coverage, regional accessibility, and cost. Finally, the Japanese guideline (JSFNR 2023) shares several recommendations, reflecting similar healthcare systems and practice patterns in East Asia, although scope and methodology differ.

CONSIDERATIONS FOR THE KOREAN HEALTHCARE SYSTEM

Guideline implementation must account for characteristics of the local healthcare system. Several features of the Korean system are relevant to these recommendations.

NHI Coverage

Korea operates a universal NHI system covering most diagnostic and therapeutic services for facial nerve palsy. Key pharmacologic treatments, including oral corticosteroids and antiviral

agents (acyclovir, valacyclovir), are reimbursed. Diagnostic evaluations, including laboratory tests, imaging (CT, MRI), and electrodiagnostic testing (ENoG, EMG), are also reimbursable when clinically indicated. Facial nerve decompression surgery is covered.

However, some services have limited or no NHI coverage. Facial rehabilitation, including mime therapy and neuromuscular reeducation, may not be fully reimbursed depending on setting and provider. Botulinum toxin injection for postparalytic synkinesis is not consistently covered, potentially resulting in substantial out-of-pocket costs (approximately 200,000–500,000 KRW per session). These limitations may affect accessibility and adherence.

Regional Accessibility

Korea's healthcare system is characterized by concentration of tertiary centers and subspecialty services in metropolitan areas, particularly Seoul and other major cities. Although initial evaluation and pharmacologic treatment can be provided at primary and secondary facilities nationwide, specialized services may be limited in rural or underserved regions. These include electrodiagnostic testing by experienced neurophysiologists, facial nerve decompression by otologic surgeons, comprehensive rehabilitation programs, and multidisciplinary facial nerve clinics.

To mitigate disparities, this guideline provides clear referral criteria to facilitate timely transfer to tertiary centers when specialized evaluation or treatment is required. Primary care physicians play a key role in early recognition, prompt corticosteroid initiation, and appropriate referral of patients with severe or atypical presentations.

Cost Considerations

Cost-effectiveness varies across recommended interventions. Oral corticosteroids, the most strongly recommended treatment, are highly cost-effective because of low cost and substantial benefit. Electrodiagnostic testing and imaging involve moderate costs and are justified when clinically indicated. Surgical interventions, including decompression and reconstructive procedures, incur higher costs but are reserved for patients meeting specific criteria. Survey data indicated that treatment cost and insurance coverage influence decision-making, particularly in long-term management of chronic sequelae.

DISCUSSION

This guideline represents the second comprehensive, evidence-based clinical practice guideline for peripheral facial nerve palsy developed for the Korean healthcare system since 2010. Ten recommendations addressing nine KQs were formulated through de novo systematic review, GRADE appraisal, and structured expert consensus. The guideline spans the full clinical spectrum—from initial assessment and acute pharmacotherapy to rehabilitation, surgical intervention, and long-term sequelae—while integrating patient preferences and healthcare system considerations.

First, standardized grading of facial nerve function is essential for consistent communication, prognostic assessment, and monitoring of treatment response. The HB system is recommended as the standard tool (Grade A), supported by meta-analytic evidence demonstrating strong correlation with the Facial Nerve Grading System 2.0 (FNGS 2.0; pooled Spearman $r = 0.91$, 95% CI 0.87–0.95) and the Sunnybrook system (pooled Spearman $r = 0.82$, 95% CI 0.77–0.88). Although the HB scale is simple and practical, it does not capture regional movement or

synkinesis. Complementary use of the Sunnybrook system or FNGS 2.0 is therefore conditionally recommended when detailed regional evaluation is required, such as during rehabilitation or in research settings. This tiered approach reflects both evidence and patient preferences: 42.3% favored objective grading tools, and 58.8% prioritized objective monitoring of recovery.

Second, corticosteroid therapy initiated within 72 hours of onset is strongly recommended (Grade A[†]) as the cornerstone of acute management. This aligns with major international guidelines, including AAO-HNSF 2013 (strong), AAN 2012 (Level A), and CMAJ 2014 (strong). Meta-analyses show that corticosteroids increase complete recovery by approximately 11 percentage points (approximately 78% vs. 67% in controls; relative risk approximately 1.17, 95% CI 1.10–1.25), with greatest benefit when started early. Although aggregate certainty was rated very low ($\oplus\ominus\ominus\ominus$) because of risk of bias, inconsistency, and imprecision across trials, a strong recommendation was adopted based on the EtD framework. The substantial net benefit, favorable short-term safety profile, and strong patient preference for early treatment (82.4%) support this decision. This application of GRADE principles illustrates that strong recommendations may be appropriate despite low certainty when benefits clearly outweigh harms and clinical consensus is consistent.

Patient-specific factors—including diabetes mellitus, hypertension, peptic ulcer disease, and pregnancy—should be considered before prescribing corticosteroids, and individualized shared decision-making is endorsed.

1. The Antiviral Controversy: Reconciling Evidence and Clinical Judgment

The role of antiviral agents combined with corticosteroids remains one of the most debated issues in facial nerve palsy management, and major international guidelines have offered

differing recommendations. The AAN 2012 update classified combination therapy as Level C (possibly effective, RD <7%), the AAO-HNSF 2013 guideline considered it optional with modest benefit, and the CMAJ 2014 guideline issued a weak recommendation for patients with severe or complete paresis. This variation reflects persistent uncertainty in the evidence base.

This systematic review, including 13 RCTs (2,377 patients), found that combination therapy significantly increased satisfactory recovery (HB grades I–II: 87.4%; relative risk 1.17, 95% CI 1.09–1.26), whereas benefit for complete recovery (HB grade I) was not significant (relative risk 1.02, 95% CI 0.96–1.07; moderate certainty). Accordingly, this guideline conditionally recommends combination therapy (Grade B), recognizing the modest benefit, favorable safety profile, and patient preference data indicating that 74.5% favored combination treatment and 90.2% prioritized maximizing efficacy.

Benefit may be greater in specific subgroups. Patients with Ramsay Hunt syndrome, in whom varicella-zoster virus reactivation is established, represent a distinct population for whom combination therapy is more strongly supported biologically and clinically. Although this guideline addresses peripheral facial nerve palsy broadly, this distinction warrants attention. The 2014 CMAJ guideline similarly recommended combination therapy for moderate-to-severe Bell's palsy but not for mild disease, consistent with the rationale underlying the present Grade B recommendation.

Third, electrodiagnostic testing (ENoG, EMG) is conditionally recommended (Grade B) for prognostic assessment in patients with severe facial paralysis, with ENoG providing the most clinically actionable information. A 90% degeneration threshold—defined as <10% CMAP amplitude compared with the unaffected side—identifies patients at high risk of incomplete spontaneous recovery and has traditionally guided selection for decompression surgery. This threshold requires cautious interpretation: prognostic accuracy is most robust when testing is

performed 3–14 days after onset, and electrode placement (nasolabial fold vs. orbicularis oculi) can substantially influence amplitude measurements.

Fourth, facial nerve decompression is conditionally recommended (Grade B) for carefully selected patients with extensive degeneration who do not respond to conservative therapy. Although evidence is largely observational, benefit appears greatest when surgery is performed within 14 days of onset. In the study by Gantz et al., middle cranial fossa decompression within this window resulted in HB grades I–II recovery in approximately 90% of patients with >90% ENoG degeneration. However, most supporting data derive from retrospective, nonrandomized studies susceptible to selection bias, and contemporary corticosteroid therapy may reduce the subgroup deriving incremental benefit. Randomized trials remain ethically and logistically challenging, and overall certainty is rated Very Low to Low ($\oplus\ominus\ominus\ominus$ to $\oplus\oplus\ominus\ominus$).

In Korea, decompression surgery by experienced otologic surgeons is largely limited to tertiary centers. This geographic concentration underscores the need for clear referral pathways, particularly for patients with complete paralysis and rapid progression who may require prognostic testing within the critical 14-day window.

Fifth, a distinguishing feature of this guideline compared with major Western guidelines is its comprehensive coverage of rehabilitation therapy, surgical management of chronic facial nerve palsy, botulinum toxin for synkinesis, and multidisciplinary care—areas not formally addressed by the AAO-HNSF 2013, AAN 2012, or CMAJ 2014 guidelines. This reflects the clinical reality that many patients experience incomplete recovery and long-term sequelae, and that chronic facial nerve palsy requires evidence-based guidance beyond the acute phase.

Facial rehabilitation therapy—including neuromuscular reeducation, mirror therapy, mime therapy, and EMG biofeedback—is conditionally recommended (Grade B) for patients with

incomplete recovery, supported by evidence demonstrating improved facial coordination and reduced synkinesis. Botulinum toxin injection is also conditionally recommended (Grade B) for post-paralytic synkinesis and hyperkinesis, now recognized as a key component of long-term management. The Japanese guideline (JSFNR 2023) similarly recommends rehabilitation and botulinum toxin, reflecting shared clinical priorities in East Asia.

Finally, several features of the Korean healthcare system directly affect implementation and warrant discussion.

First, although Korea's NHI covers core pharmacologic treatments (corticosteroids, antivirals) and diagnostic procedures (ENoG, EMG, CT, MRI), gaps remain in reimbursement for rehabilitation and long-term management. Facial rehabilitation therapy lacks consistent NHI coverage depending on provider and setting. Botulinum toxin for post-paralytic synkinesis—a Grade B recommendation—is not uniformly reimbursed, with out-of-pocket costs of approximately 200,000–500,000 KRW per session. These limitations may lead to underuse of evidence-based chronic management, particularly among patients with lower socioeconomic status. Policymakers and professional societies should consider expanding NHI coverage for rehabilitation services and botulinum toxin to better align reimbursement with evidence-based care.

Second, Korea's healthcare system is characterized by geographic concentration of subspecialty services in metropolitan areas, particularly tertiary centers in Seoul and other major cities. Specialized services—including electrodiagnostic testing by experienced neurophysiologists, facial nerve decompression, comprehensive rehabilitation programs, and multidisciplinary clinics—are limited in rural regions. This disparity is consequential because both electrodiagnostic prognostication and surgical decompression are time-sensitive; early referral is required to intervene within the 14-day window for potential surgical candidates.

Telemedicine consultation and structured referral pathways from primary and secondary facilities to tertiary centers may help reduce this access gap.

Third, patient preference data indicated that treatment cost and insurance coverage significantly influence decision-making, particularly in long-term management of chronic sequelae. Although patients prioritized maximizing efficacy (90.2%), cost remained a practical barrier. These findings underscore the need for transparent discussion of insurance coverage when considering rehabilitation or botulinum toxin and support efforts to better align NHI reimbursement with guideline recommendations.

This guideline has several methodological strengths. It was developed through de novo systematic review using the GRADE framework, with appraisal by a multidisciplinary panel comprising otolaryngologists, a neurologist, a neurosurgeon, a rehabilitation medicine specialist, an ophthalmologist, a plastic surgeon, and a methodology expert. It uniquely integrates patient preference data from a Korean cohort into the EtD framework and explicitly addresses implementation factors specific to Korea, including NHI coverage, regional accessibility, and cost. External review by seven independent experts further strengthens the recommendations.

Several limitations warrant consideration. The certainty of evidence was Low or Very Low for most recommendations, reflecting the largely observational and heterogeneous evidence base. Most included studies were conducted outside Korea, which may limit generalizability given differences in disease characteristics, comorbidities, and healthcare utilization. The guideline primarily addresses adults, and evidence for pediatric facial nerve palsy remains insufficient for specific recommendations. The patient preference survey, although informative, was conducted at a single institution and may not represent the full diversity of Korean patients. The overall Cronbach's alpha ($\alpha = 0.548$) was below conventional thresholds, reflecting the

multidimensional nature of the instrument rather than poor reliability per se; this limitation should be considered when interpreting preference data. As with all clinical practice guidelines, periodic updates will be required as new evidence emerges.

Several research priorities arise from these gaps. Prospective multicenter randomized controlled trials with standardized outcomes are needed for several interventions. These include decompression surgery, rehabilitation modalities, and botulinum toxin for synkinesis, all of which are currently supported mainly by observational data. Development and validation of a Korean-language patient-reported outcome measure would strengthen future research. Studies examining disease burden, treatment patterns, and outcomes in Korean populations—including analyses of NHI claims data—would provide population-level evidence to inform revisions. Emerging technologies such as artificial intelligence–based facial analysis systems show promise for objective quantitative assessment beyond current grading scales and warrant validation in clinical settings. Investigation of predictors of incomplete recovery using integrated biomarker approaches—including electrodiagnostic parameters, imaging markers, and neurophysiological metrics—may improve patient stratification and individualized treatment planning.

It is useful to distinguish recommendations that are broadly generalizable from those shaped by Korea-specific contextual factors. Recommendations likely applicable across healthcare systems include early corticosteroid initiation within 72 hours (Grade A), use of the HB grading system as the standard assessment tool (Grade A), selective electrodiagnostic testing in severe palsy (Grade B), and conditional antiviral use based on clinical judgment (Grade B); these are consistent with or complementary to existing international guidelines. In contrast, certain implementation aspects—including referral pathways for decompression, and access to

rehabilitation and botulinum toxin therapy given NHI reimbursement gaps—are specific to the Korean context, as discussed above.

This guideline was developed for the Korean clinical context and is intended to promote consistent, evidence-based management of facial nerve palsy across institutions. It complements, rather than replaces, international guidelines by providing recommendations adapted to Korea's clinical and healthcare system environment.

DISCLAIMER

These guidelines are intended to support clinical decision-making and do not replace individual clinical judgment. Recommendations should be interpreted in the context of each patient's clinical circumstances, preferences, and values. Patient-specific factors—including comorbidities, severity of presentation, and treatment goals—must be considered when applying these recommendations.

The absence of a specific diagnostic or treatment approach does not imply lack of clinical value but may reflect insufficient evidence at the time of development. These recommendations apply primarily to adults with acute or chronic peripheral facial nerve palsy and may not be appropriate for populations not addressed, including pediatric cases, congenital facial nerve disorders, or tumor-related paralysis.

The guideline development committee assumes no responsibility for clinical outcomes resulting from application or non-application of these recommendations. Clinicians should exercise professional judgment and consider available resources and local healthcare

conditions when making treatment decisions.

CONCLUDING REMARKS

Facial nerve palsy encompasses a broad spectrum of clinical presentations and outcomes, requiring careful assessment and individualized management. This guideline provides evidence-based recommendations for evaluation and treatment, addressing diagnostic assessment, pharmacologic therapy, rehabilitation, surgical management, and chronic sequelae.

The recommendations emphasize standardized assessment, appropriate diagnostic testing, and early pharmacologic treatment in acute palsy. The guideline also outlines management strategies for incomplete recovery, including rehabilitation therapy, selective surgical reconstruction, and botulinum toxin for synkinesis.

Although some recommendations are supported by moderate-quality evidence, certainty remains limited for several interventions, particularly surgical and long-term strategies. Further research using standardized outcomes and prospective designs is essential to strengthen the evidence base for facial nerve palsy management.

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Figure Legends

Figure 1. Clinical algorithm for evaluation and management of peripheral facial nerve palsy.

Accepted article

Table 1. Summary of recommendations with corresponding grade and certainty of evidence. Recommendation grade (A–D, I) reflects direction and strength, and certainty was assessed using the GRADE methodology.

KQ	Key Question	Recommendation	Grade	Certainty of Evidence
1	Clinical grading systems	HB recommended as standard; Sunnybrook or FNGS 2.0 for detailed regional assessment	A	Moderate to Low
2	Diagnostic evaluation	Routine testing not recommended for typical Bell's palsy; selective testing if atypical features are present	B	Very Low
3	Electrodiagnostic testing	ENoG/EMG may be considered for severity and	B	Low

		prognosis in severe palsy; not routine		
4	Corticosteroids	Oral corticosteroids recommended within 72 hours of onset	A†	Very Low
5	Corticosteroid + antiviral combination	Combination therapy may be considered; routine antiviral use not recommended	B	Moderate to Low
6	Facial nerve decompression	May be considered in selected patients with severe degeneration; not routine	B	Very Low to Low
7	Rehabilitation therapy	Facial rehabilitation may be considered,	B	Very Low to Moderate

		particularly for incomplete recovery		
8-1	Surgical treatment for chronic palsy	May be considered for persistent impairment >6 months; local or free flap or muscle transfer	B	Very Low
8-2	Botulinum toxin for synkinesis	May be considered for synkinesis in chronic palsy	B	Low
9	Multidisciplinary management	May be considered for severe paralysis, prolonged recovery, or persistent sequelae	B	Very Low

Grade A = Strong for; Grade B = Conditional for; Grade C = Conditional against; Grade D = Strong against; Grade I = Insufficient evidence. † Strong recommendation adopted despite variable certainty, based on overall Evidence-to-Decision (EtD) framework judgment. HB =

House–Brackmann; FNGS 2.0 = Facial Nerve Grading System 2.0; ENoG = electroneurography; EMG = electromyography. Certainty assessed using GRADE: High, Moderate, Low, Very Low.

Accepted article

Table 2. Comparison of key recommendations across major international guidelines.

Domain	This Guideline (Korea, 2026)	AAO-HNSF (USA, 2013)	AAN (USA, 2012)	CMAJ (Canada, 2014)	JSFNR (Japan, 2023)	Generalizability
Methodology	GRADE + de novo SR	AAO-HNS CPG methodology	AAN evidence classification	Systematic review	GRADE	—
Corticosteroids	Grade A; within 72 h	Strong; prednisolone 50 mg/d × 10 d or 60 mg/d × 5 d + taper	Level A; prednisolone 60 mg/d × 5 d + 5 d taper	Strong; total ≥450 mg prednisolone equivalent	Strong (standard dose); high dose: weak	Broadly generalizable
Antiviral combination	Grade B; conditional	Optional; modest benefit	Level C; possibly effective (RD <7%)	Not for mild; weak for severe/complete	Conditional; moderate–severe	Broadly generalizable

Electrodiagnosis	Grade B; severe cases	Option; ENoG $\geq 90\%$ predicts poor prognosis	Probably useful for prognosis	Not detailed	Recommended for prognosis	Broadly generalizable
Decompression surgery	Grade B; selected severe	Option; limited evidence	Insufficient evidence	Not routinely recommended	Conditional; refractory severe	Implementation Korea-specific (referral pathway)
Rehabilitation	Grade B; incomplete recovery	Not addressed	Not addressed	Not addressed	Recommended; mime therapy, NMR	Implementation Korea-specific (NHI gap)
Multidisciplinary care	Grade B; conditional	Not addressed	Not addressed	Not addressed	Recommended	Implementation Korea-specific (access)

AAO-HNSF = American Academy of Otolaryngology–Head and Neck Surgery Foundation;
AAN = American Academy of Neurology; CMAJ = Canadian Medical Association Journal;
JSFNR = Japanese Society of Facial Nerve Research; SR = systematic review; NMR = neuromuscular reeducation.

Figure 1.

