

Clinical Evidence Handbook

A Publication of BMJ Publishing Group

Bell Palsy

JULIAN HOLLAND, *University Hospitals Bristol (NHS) Trust, Bristol, United Kingdom*

JONATHAN BERNSTEIN, *Manchester Royal Infirmary, Manchester, United Kingdom*

This is one in a series of chapters excerpted from the *Clinical Evidence Handbook*, published by the BMJ Publishing Group, London, U.K. The medical information contained herein is the most accurate available at the date of publication. More updated and comprehensive information on this topic may be available in future print editions of the *Clinical Evidence Handbook*, as well as online at <http://www.clinicalevidence.bmj.com> (subscription required). Those who receive a complimentary print copy of the *Clinical Evidence Handbook* from United Health Foundation can gain complimentary online access by registering on the Web site using the ISBN number of their book.



This clinical content conforms to AAFP criteria for evidence-based continuing medical education (EB CME). See CME Quiz on page 876.

A collection of *Clinical Evidence Handbook* published in AFP is available at <http://www.aafp.org/afp/bmj>.

Bell palsy is an idiopathic, unilateral, acute paresis or paralysis of facial movement caused by dysfunction of the lower motor neuron. Up to 30 percent of persons with acute peripheral facial palsy have an alternative cause diagnosed at presentation or during the course of their facial palsy. Alternative causes are higher in children (more than 50 percent), warranting specialist evaluation at presentation. Severe pain, vesicles (ear or oral), and hearing loss or imbalance suggest Ramsay Hunt syndrome caused by herpes zoster virus infection, which requires specialist management.

- Most persons with paresis (partial weakness) make a spontaneous recovery within three weeks. Up to 30 percent of persons, typically those with paralysis (complete palsy), have a delayed or incomplete recovery.

Corticosteroids alone improve the rate of recovery, increase the proportion of persons who make a full recovery, and reduce cosmetically disabling sequelae, motor synkinesis, and autonomic dysfunction compared with placebo or no treatment.

Antiviral treatment alone is no more effective than placebo and is less effective than corticosteroid treatment at improving recovery of facial motor function and at reducing the risk of disabling sequelae.

For persons with paresis at presentation (approximately 70 percent), there is no evidence of a clinically important effect of adding antivirals to corticosteroid therapy.

- For persons who develop paralysis (approximately 30 percent), and who may demonstrate a trend toward complete degeneration on electrophysiologic testing, it is unknown whether adding antiviral treatment to corticosteroid therapy has a significant additive or synergistic effect.

Hyperbaric oxygen therapy may improve time to recovery and the proportion of persons who make a full recovery, compared with corticosteroids; however, the evidence for this is weak.

We do not know whether facial nerve decompression surgery is beneficial in the treatment of Bell palsy.

Facial retraining may improve recovery of facial motor function scores, including stiffness and lip mobility, and may reduce the risk of motor synkinesis in Bell palsy, but the evidence is too weak to draw conclusions.

Definition

Bell palsy is an idiopathic, acute, unilateral paresis or paralysis of the face in a pattern consistent with peripheral facial nerve dysfunction. The paralysis may be partial or

Clinical Questions

What are the effects of drug treatments for Bell palsy in adults and children?

Likely to be beneficial	Corticosteroids
	Corticosteroids plus antiviral treatment
Unknown effectiveness	Hyperbaric oxygen therapy
Unlikely to be beneficial	Antiviral agents alone

What are the effects of surgical treatments for Bell palsy in adults and children?

Unknown effectiveness	Facial nerve decompression surgery
-----------------------	------------------------------------

What are the effects of physical treatments for Bell palsy in adults and children?

Unknown effectiveness	Facial retraining
-----------------------	-------------------

complete, occurring with equal frequency on the right and left sides of the face. There is evidence that Bell palsy is caused by herpes viruses. Additional symptoms of Bell palsy may include mild pain in or behind the ear, oropharyngeal or facial numbness, impaired tolerance to ordinary levels of noise, and disturbed taste on the anterior part of the tongue. Severe pain is more suggestive of herpes zoster virus infection (shingles) and possible progression to Ramsay Hunt syndrome, but other causes should be carefully excluded.

Up to 30 percent of persons with an acute peripheral facial palsy will not have Bell palsy; other causes may include stroke, tumor, trauma, middle ear disease, and Lyme disease. Features such as sparing of movement in the upper face (central pattern) or weakness of a specific branch of the facial nerve (segmental pattern) suggest an alternative cause. Bell palsy is less commonly the cause of facial palsy in children younger than 10 years (less than 50 percent), so an alternative cause should be carefully excluded. The assessment should identify acute suppurative ear disease (including mastoiditis), a parotid tumor, or Lyme disease in endemic areas.

Incidence and Prevalence

The incidence of Bell palsy is approximately 20 out of 100,000 persons per year, or about one out of 60 persons in a lifetime. The incidence of Bell palsy peaks between 15 and 40 years of age. Men and women are equally affected, although the incidence may be higher in pregnant women.

Etiology and Risk Factors

The cause of Bell palsy is unknown, but it is thought that reactivated herpes viruses from the geniculate ganglion of the facial nerve may play a key role in the development of this condition. Herpes simplex virus type 1 has been detected in up to 50 percent of cases by some researchers; however, one study demonstrated viral replication (herpes simplex virus, herpes zoster virus,

or both) in less than 20 percent of cases. Herpes zoster–associated facial palsy more often presents as zoster sine herpette (without vesicles), although 6 percent of persons will subsequently develop vesicles (Ramsay Hunt syndrome). Thus, treatment plans for the management of Bell palsy should recognize the high incidence of herpes zoster virus, which is associated with worse outcomes. Inflammation of the facial nerve initially results in reversible neurapraxia, but Wallerian degeneration may occur.

Prognosis

Overall, Bell palsy has a fair prognosis without treatment. Clinically important improvement occurs within three weeks in 85 percent of persons and within three to five months in the remaining 15 percent. Those who do not show signs of improvement by three weeks may have severe degeneration of the facial nerve, or may have an alternative diagnosis that requires identification by specialist examination or investigations, such as computed tomography or magnetic resonance imaging. Overall, 71 percent of persons will recover full facial muscle function (61 percent with complete palsy, 94 percent with partial palsy). The remaining 29 percent are left with mild to severe residual facial muscle weakness, 17 percent with contracture, and 16 percent with hemifacial spasm or synkinesis. Incomplete recovery of facial expression may have a long-term impact on quality of life. The prognosis for children with Bell palsy is generally good, with a high rate (more than 90 percent) of spontaneous recovery, in part because of the high prevalence of partial paralysis in this population. However, children with complete palsies may have poor outcomes as often as adults.

SEARCH DATE: June 2010.

Author disclosure: No relevant financial affiliations to disclose.

Adapted with permission from Holland J, Bernstein J. Bell's palsy. *Clin Evid Handbook*. June 2011:433-434. Visit <http://www.clinicalevidence.bmj.com> for full text and references. ■