

a guide to understanding  
**facial palsy**

a publication of children's craniofacial association

# a guide to understanding facial palsy

**t**his parent's guide to facial palsy is designed to answer questions that are frequently asked by parents of a child with facial palsy. It is intended to provide a clearer understanding of the condition for patients, parents and others.

The information provided here was written by a member of the Medical Advisory Board of the Children's Craniofacial Association and edited by Carolyn Johnson, M.S.Ed.

This booklet is intended for information purposes only. It is not a recommendation for treatment. Decisions for treatment should be based on mutual agreement with the craniofacial team. Possible complications should be discussed with the physician prior to and throughout treatment.

Design and Production by Robin Williamson, Williamson Creative Services, Inc., Carrollton, TX.

## what is facial palsy?

**f**acial Palsy is a congenital deformity, which dates from birth, or an acquired deformity, which causes complete or partial paralysis of the facial motion. The act of facial motion starts in the brain and travels through the facial nerves to the muscles in the face. These muscles then contract in response to a stimulus. Inside the skull, the facial nerve is a single nerve. Once the nerve is traced outside the skull, it branches into many smaller limbs that go to many different facial muscles. These muscles control facial expression. The coordinated activity of this nerve and these muscles causes motions such as smiling, blinking, frowning, and a full range of normal facial motions. Diseases or injuries affecting the brain, the facial nerve or the muscles of the face can cause facial palsy.

## are there other names for this condition?

**f**acial palsy is also called paresis. Paresis suggests a weakness in facial motion. Palsy is usually a complete lack of motion. Moebius syndrome is a subtype of facial palsy. This syndrome involves a weakness of the muscles responsible for facial expression and side-to-side eye movement. Moebius syndrome may also involve abnormalities of the limbs.

## what causes facial palsy?

a variety of things can cause facial palsy. Congenital facial palsy is a condition present at birth. Moebius syndrome is a congenital condition. In most cases the exact cause of congenital palsy is uncertain. A lack of proper nerve and/or muscle development causes some cases of congenital palsy. The reason for this is unknown. Other palsies may result from stretching of the muscles or nerves during the birthing process. Most congenital palsies involve one side of the face with the exception of Moebius, which is typically bilateral. This means that it affects both sides of the face. A large number of cases of facial palsy develop when a weakness or complete palsy occurs later in life despite a normal facial movement at birth. This group is called the acquired group. Causes of acquired palsy include trauma to the facial nerve and muscle, certain inflammatory or infectious diseases such as Lyme disease, and tumors in and around the regions of the head and neck.

## what are the chances of producing a child with this condition?

**t**he incidence of facial palsy is rare. The chance of producing a child with Moebius syndrome is very rare. The incidence of other forms of congenital facial palsy is approximately 2 in every 1000 births. Most congenital facial palsies have no apparent cause but can occasionally be associated with syndromes of the head and neck.

## does facial palsy ever improve?

**i**n most cases, other than Moebius syndrome, the condition does improve. However, the return of function is usually only a partial one. In most cases of congenital palsy, the weakness is incomplete, and some motion is present. Moebius syndrome is usually an incomplete palsy, and some patients have movement of the lower face and the lip region. It does not improve with time. However, 90 percent of the other congenital palsy patients can expect an improvement. With acquired facial palsy, patients may experience improvement if the cause of the palsy is trauma to the nerve or muscle, or if the pressure from a tumor on the nerve can be treated.

## what are problems caused by facial palsy?

**W**ith children there are no immediate effects. This is due to the normal elastic skin tone. Therefore, the structures of the face do not sag. With adults, however, the sudden onset of facial palsy generally results in a significant loss of tone in the tissues and considerable facial sagging. One of the most important functions of the facial nerves and muscles is helping the eyelid to close. If the eyelid does not close, the eye is more prone to injury such as scratches. Injury can then result in scarring and visual loss. It is critical for young children with this condition to be evaluated by an ophthalmologist so that appropriate eye protection and lubrication can be started.

Facial palsy can cause problems with normal sucking and chewing. Drooling may also be a problem. Appearance is a major concern. Asymmetry of the face can cause the face to be significantly distorted. Occasionally a child discovers that smiling frequently causes facial imbalance. For that reason, he may avoid smiling altogether.

## what can be done surgically to correct this condition?

**f**or infants with newly diagnosed facial palsy, eye protection is the primary concern. Lubricants are usually sufficient to prevent injury to the eye. When lubrication is not adequate, then the eyelids are partially sewn shut. This procedure called tarsorrhaphy does not block the child's vision.

A watchful, conservative approach is usually best for a child with congenital facial palsy. Since many children improve, treatment should not start before the age of five or six except in the case of the eye as mentioned above. Once the child has reached the age of five or six, there are several treatment options available.

Two methods of treatment are static slings and dynamic muscle transfers. Static slings involve procedures in which a patient's own tissue is used to elevate the sagging portions of the face. These slings may be applied to the portion of the face that produces a smile, as well as the eyelid region. These static slings improve facial balance and eyelid closure. Dynamic procedures include muscle transfers and man-made devices to improve lid closure. Muscle transfers involve moving locally available muscles, such as those for chewing, to substitute for non-functioning or absent facial muscles. Once the transfer is made, the patient relies on the act of

biting to contract and bring on a smile or to cause the eyelid to close.

Very sophisticated methods of muscle transfers have been developed. The “gold standard” at the present is a two-staged procedure. Nerves are first transferred from “the good side of the face” to the paralyzed side of the face. After this, a muscle transfer is done to reproduce a smile effect. Using a microscope, this muscle is transferred and hooked up to the nerve grafts. If this is successful, nerve activity from the “good side of the face” travels instantly through the nerve grafts to the new muscle on the opposite side. This can then cause a motion. However, this motion is, at best, unrefined because a few nerves and one muscle are being asked to take the place of many muscles that work together during normal facial expression.

When there is not a side of the face with normal motion as in the case of Moebius syndrome or bilateral facial palsy, muscles can be transferred using a microscopic technique. They are then connected to nerves that activate biting muscles if done in a sequence on both sides. Facial motion can be restored, but the patient must bite in order to activate the muscles. Procedures have also been developed to improve eyelid closure. One method involves placing gold weights in the upper eyelid to help it close when the lid is relaxed. The use of surgical springs can accomplish the same thing.

## how successful are the surgeries?

**t**he success of the operations varies from patient to patient. The success is dictated by the severity of the facial weakness. Normal, facial motion depends on multiple facial muscles and nerves working together to produce a full spectrum of motion. Presently, procedures result in a replacement of a portion of this facial activity. Complete normalization of the facial motion is rarely possible. Due to the many microscopic techniques, there is a chance that nerve growth may not be complete or that circulation to the transferred muscle may fail. This can result in no marked improvement. This occurs in 5%-10% of patients.

## if my child needs surgery, when is the best time?

**g**enerally, early surgery is not necessary unless eye exposure is a problem. In this case, surgery can be done at any age. The most complicated muscle transfers and static slings require a high degree of patient cooperation. This is true during the surgery and the rehabilitation process. For that reason, these procedures are best accomplished after the age of five or six.

## where should my child go for treatment?

**S**urgeons who are familiar with facial nerve paralysis are frequently a part of a craniofacial team. There are a number of microsurgeons in the United States who have a great deal of experience with facial paralysis. A craniofacial team can guide you to the appropriate physician. Facial reanimation procedures are extremely complex. It is important to seek care from a team of surgeons specialized and experienced in the area of facial palsy.

## how can children's craniofacial association (cca) benefit my family?

**C**CA understands that when one family member has a craniofacial condition, each person in the family is affected. We provide programs and services designed to address these needs. A detailed list of CCA's programs and services may be found on our Web site at [www.ccakids.com](http://www.ccakids.com) or call us at 800.535.3643.

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## children's craniofacial association

13140 Coit Road, Suite 307 • Dallas, TX 75240

VOICE 214-570-9099

FAX 214-570-8811

TOLL-FREE 800-535-3643

[CCAkids.com](http://CCAkids.com)

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