

Jaw Patterns

Normal Jaw Patterns

The following normal jaw patterns are presented from less to more controlled. In normal development, these patterns do not develop linearly. In the same person, more primitive patterns may be observed with easy to chew foods, (i.e., a cookie) and more mature patterns may be observed with harder to chew items (i.e., steak). The primitive patterns do not disappear. More mature patterns are used with foods requiring grinding, while more primitive patterns are used with less viscous foods. No lateral jaw movement is observed with the following five patterns. A person with these patterns would not be able to grind up fibrous foods. Soft, lumpy foods and ground meats are usually the diet tolerated with these patterns.

◆ **Close and hold**

May also be called normal bite reflex. Jaw stability and strength are adequate to close around the item with normal muscle tone, but not yet strong enough to allow dynamic, durational, up and down jaw movement around the item. This is static jaw strength. Do not confuse this normal pattern with tonic bite.

◆ **Wide jaw excursion**

This early pattern is characterized by poor jaw grading in which downward jaw displacement is exaggerated, but not associated with abnormal tone. It is associated with poor internal jaw stability. It may occur during suckling, sucking and chewing. It is often seen during nursing, and then again when cup drinking is introduced. As the jaw gains greater internal stability, better control of jaw movement occurs with improved grading and wide jaw excursions decrease.

◆ **Phasic biting**

This primitive normal jaw pattern is characterized by rapid rhythmical up and down movement of the jaw. No lateral movement of the jaw is seen. It may occur following stimulation of cheek, gums, or molars. It is usually limited in power. The rate of closure is faster than one per second.

◆ **Non-stereotypic vertical movements**

In this beginning chewing pattern, the jaw moves up and down with easy contact and release. Only vertical movement has developed, so that only food coming between the teeth is broken up. When the item is placed and held between the molars, the rate of movement is approximately one per second.

◆ **Munching**

This early chewing pattern combines phasic biting and some non-stereotypic vertical movements of the jaw with tongue movement to the hard palate. This pattern would be used to describe a combination of movements of lips, jaw and tongue during eating. Each of these normal patterns may be accompanied by significant muscle weakness. The pattern is observed but is not efficient for more textured foods due to lack of strength for closing the jaw.

◆ **Lateral jaw shift**

This is a lateral (side to side) movement of the jaw with no downward displacement of the jaw. Might also be called a gnawing pattern.

◆ **Diagonal movement**

This is a lateral, downward movement of the jaw to either side with easy contact and release. It aids in the placement of food between molars for chewing. There is no grinding movement, and no movement of the jaw across midline. It may occur in conjunction with vertical jaw movement.

◆ **Diagonal rotary movement**

There is a lateral, downward movement with upward, horizontal sliding movements for grinding foods between molars. The jaw moves to one side or the other, without crossing midline. It may accompany lateral movement of food from the center of the tongue to the teeth.

◆ **Circular rotary movement**

This is the most mature chewing pattern, with jaw movement laterally, downward, across the midline to the other side and upward to close. It may occur either clockwise or counterclockwise. It may accompany transfer of food from one side of the mouth across the midline to the other side of the mouth

Abnormal Jaw Patterns

Abnormal jaw patterns interfere with eating, drinking and speech. Controlled movement is interrupted by these abnormal jaw patterns. Sometimes these patterns are interpreted by the caregiver as volitional, resulting in an inappropriate response by the caregiver. When these patterns are present, mealtimes take longer. There will be poor control of items placed in the mouth with loss of foods, fluids, medications and saliva. Oral hygiene becomes more challenging to provide, often resulting in poor oral hygiene and resulting in gum problems, plaque buildup, tooth decay, increased aspiration pneumonia and loss of teeth. Appropriate handling techniques for mealtime and oral hygiene are needed.

◆ **Jaw clonus**

Rapid, rhythmical movement of the jaw upon closure, indicating weakness or fatigue. May be observed in infants at the end of feeding.

◆ **Tonic bite reflex**

This is jaw closure accomplished by forceful, sustained upward movement of the mandible. It occurs following stimulation of the teeth or gums. It is accompanied by increased abnormal tone in the jaw muscles. It is difficult to release. Damage to the teeth or to the object placed in the mouth may occur. The tonic bite increases if the item is pulled. (Note: Do not confuse this pattern with a bite reflex which results in closing or approximation of closing following stimulation to the lips, gums or teeth. This normal reflex becomes integrated before age two and is not associated with abnormally increased muscle tone.)

◆ **Jaw thrust**

The jaw opens through forceful, sustained downward and outward movement of the jaw (mandible). It occurs following presentation of foods for biting. It may also occur as part of a total body extension pattern. It is accompanied by increased abnormal tone in jaw muscles. Do not confuse this pattern with wide jaw excursions (poor jaw grading), often seen in normal infants. Pressing up on the jaw increases the jaw thrust.

◆ **Jaw retraction**

There is a forceful, sustained movement of the lower jaw, carrying it up and toward the back so that the alignment of the molars is displaced. It is associated with an abnormal increase in jaw muscle tone. It may occur following a change in body position, or following the presentation of foods, liquids, or medications into the mouth. It may also occur in conjunction with abnormal muscle tone and abnormal patterns of movement. There is less room in the back of the mouth, so swallowing and breathing are more difficult. Gagging may increase.

◆ **Micrognathia**

A structural problem, in which the mandibular growth is impaired so that the lower jawbone is smaller than the upper jawbone.

◆ **Dystonic jaw movement**

An abnormal pattern characterized by rhythmical, nonfunctional movement of the jaw associated with Parkinson's or Parkinson's like symptoms. The ability to interrupt the movement is related to the severity of the disease. With less severe involvement, the pattern can be interrupted during functional activities, such as eating and speech, and will not be observed during sleep. The two patterns observed most often include small movements that sound as if the teeth are continuously clicking together, or a rapid lateral jaw shift that occurs continuously.

◆ **Bruxism**

Bruxism, or tooth grinding, may occur for a variety of reasons. In individuals with abnormal oral motor patterns, bruxism may be associated with muscle weakness or with abnormally increased muscle tone. Pressure to the outside of the face is not effective in reducing bruxism. Emphasis on increased internal jaw stability with increased opportunities for closing the molars around chewy objects has been helpful in reducing the incidence of bruxism. Bruxism may increase when an ear infection or fluid in the middle ear occurs. It may also increase with headaches or when there is pain due to gum or tooth disease, or pain elsewhere in the body