OROFACIAL

OBSERVATION CHART

MANUAL
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EXTRAORAL

**Reduced neck stability**
*Description:* Manifest difficulty or inability to keep head upright or to raise head.

*Common cause:* Weak, slack or spastic neck muscles due to neuromuscular or neurological disease/damage

**Craniofacial deformation**
Craniosynostosis
Achondroplasia
Crouzon syndrome
Apert syndrome
Pfeiffer syndrome
Saethre-Chotzen syndrome
Craniofrontonasal syndrome
Carpenter syndrome
Greig Cephalopolysyndactyly syndrome
Antley-Bixler syndrome
Baller-Gerold syndrome
Jackson-Weiss’ syndrome

Mandibulafacial dyostosis (Treacher Collins syndrome)

Choanal atresia: Total blocking (atresia) or stricture (stenosis) of the rear nasal apertures – the connection between nose-throat. May be bony or membranous, unilateral or bilateral. Often occurs together with small nostrils.
*Common symptom of CHARGE syndrome*

**Lip, jaw and palatal fissure**
*Diagnosis:*
Submucous cleft soft palate
Sub-totally cleft soft palate
Totally cleft soft palate
Cleft uvula
Cleft lip (/jaw) bilaterally or unilaterally
Cleft soft palate with bilaterally cleft lip or lip/jaw
Cleft soft palate with unilaterally cleft lip
Cleft soft and hard palate with bilaterally cleft lip or lip/jaw
Cleft soft and hard palate with unilaterally cleft lip or lip/jaw

Facial cleft

**Facial asymmetry – skeletal**
*Description:* Frontal view. Manifest lateral deviations starting from the midline of the face, particularly if nose or jaw deviates in some direction. Describe the asymmetry – direction and what deviates.

*Common cause:* Hemifacial microsomia and macrosomia, trauma, tumours, unilateral collumhyperplasia, uncorrected crossbite and fibrous dysplasia

**Facial palsy**
*Description:* Paralysis of muscles innervated by cranial nerve VII, the facial nerve. Weak muscles due to muscular disease should not be indicated here.
In the case of central unilateral palsy, only the lower half of the face is affected. The upper half of the face is doubly innervated which means that the healthy hemisphere of the brain can compensate for damage on the corresponding side. Peripheral damage as a rule affects the whole half of the face but if the nerve damage is localised to one of the facial nerve’s subdivisions, individual muscles are paralysed.

Pseudobulbar palsy, which occurs in the case, for example, of cerebral palsy, perisylvian syndrome and inherited brain damage, is often bilateral.

Congenital peripheral bilateral facial palsy is seen in Möbius sequence.

Profile
- **Normal**
  - Normal = straight to slightly convex. This indicates a normal relationship between the jaws. It should be noted that until the growth spurt in adolescence (primary bite and mixed bite) children normally have a slightly convex profile – and it should then be described as “normal”). Note down only obvious deviations.
- **Convex**
  - Convex = indicates a Class II bite.
- **Concave**
  - Concave = indicates a Class III bite.

Tilt of the mandible
*Description:* Normal/increased/reduced tilt. The tilt may be clinically assessed in relation to the Frankfurt horizontal plain (ear aperture – lower boundary of the eye-socket).

Normal tilt is about 25 degrees. You may use a “protractor” for measuring.

Open mouth at rest
*Description:* The patient has a habit of walking with an open mouth. The mouth may be completely open or the lips only slightly apart. It should be more often open than closed for it to be noted.

Common cause: Mouth breathing, for example due to enlarged adenoids. Loose (hypotonic) or weak orofacial muscles due to neuromuscular or neurological disease/damage.

Facial palsy. Bite deviation

Mentalis overactive
*Description:* Bottom lip pushes up. Common compensation pattern in the case of incompetent lip closure. May affect the tilt of the front teeth in the lower jaw.

Strained lip closure
Strains to close lips. Sometimes unable to close lips. Deviations from normal lip seal, for example bottom lip contacting palatal to the upper incisors.

(For example horizontal overbite, proclined incisors, short upper lip, large frontal open bite).

Low muscle tone in lips
*Description:* The lip is flaccid and is predominantly inactive. Examination is effected both by observation and by palpating the lip muscles. In the case of low tone in the upper lip, the lip is often pulled back, rounded in the middle and thin on the sides, which means the mouth may acquire a triangular or tent-formed appearance. In the case of low tone in the lower lip, it is common for mentalis to become overactive to assist in closing the lips. This compensatory pattern contributes to the lower lip rotating outwards and the corners of the mouth drooping. Mouth closure is poor and dribbling commonly occurs.

Common cause: Neuromuscular or neurological disease/damage. Common symptom in the case of several genetic syndromes.
High muscle tone in lips
Description: The lip is immobile and tense. Examination is both by observation and by palpating the lip muscles. Tone in the lips changes. Indication is made if the patient is predominantly spastic/tense.

Common cause: -spastic tetraplegia and other congenital or inherited neurological disease/damage. Uncommon in the case of diagnoses with a genetic cause.

SPEECH

Speech difficulties
In assessing speech, consideration must be given to age. Leave the question unanswered in the case of uncertainty if the child is younger than three years. Dysfluency such as stammering and rapid speech as well as open and closed nasalising are also counted as speech difficulties. Deviant use of voice should also be noted and vocal tics (other details).

Lacks speech
Indication is made if the patient does not speak at all or uses less than five spoken words.

Very unintelligible speech
The patient tries to express himself/herself in speech but has great difficulty in making himself/herself understood. Communication is markedly affected and an alternative form of communication needs to be used as a complement to speech.

Unintelligible speech
The patient chiefly communicates by speaking but misunderstandings commonly occur.

Slightly indistinct speech
Speech deviations that do not directly affect intelligibility.

INTRAORAL

Deviations in form, structure, mobility, tone, etc.

Low muscle tone in tongue
Description: A hypotonic tongue lacks elasticity and feels “spongy”. It is placed low in the oral cavity, does not rest against the roof of the mouth. It is common for the tip of the tongue to lie between the front teeth.

Common cause: Occurs in connection with general muscle hypotonia, muscle diseases and tongue paralysis.

High muscle tone in tongue
Description: A hypertonic tongue is narrowed and hard (“loaf shaped”) and is pressed forward.

Common cause: Occurs in connection with suprabulbar palsy and is mainly associated with cerebral pares.

Reduced tongue mobility
Description: Development of tongue mobility according to Suzanne Evans Morris (1978)
0-6 months: licking and sucking movements
6 months: vertical (undifferentiated) movements. Lateral movements may occur when touching the edges of the tongue (tongue reflex)
7 months: Lateral movements of the tongue become increasingly common. The whole tongue moves as a block.
9 months: Lateralisation of the tongue from the centre to the side.
12 months: Lateralisation from the centre to each side.
24 months: Lateralisation from side to side across the midline.
24 + : Well developed lateralising movements. The tip of the tongue can be lifted.
Extension-retraction movements no longer occur in the food situation.

At the age of three it may be expected that a child can lick its lips and move its tongue from one corner of its mouth to the other and out and in. Older preschool children can perform the movements relatively quickly and with good precision (Holmberg E. And Bergström A, 1996). Children under 3 are mostly not able to take part in oral motor tests. Assessment must be made during observation.

**Short tongue frenulum**
*Description:* Difficulty in licking lips. When tongue outstretched, the tip of the tongue becomes heart-shaped.

*Classification according to Lawrence A. Kotlow (1999):*
1. Clinically acceptable, normal tongue movement. Tip of tongue > 16 mm. Measured from the anchor of the tongue frenulum to the tip of the tongue
2. Class !: Mild ankyloglossia: 12 – 16 mm.
3. Class II: Moderate ankyloglossia: 8 – 11mm.
5. Class IV: Total ankyloglossia: < 3 mm.

**Tongue asymmetry**
*Description:* Note the occurrence of obvious asymmetry at rest

**Macroglossia**
*Description:* Note markedly large tongue.

**Microglossia**
*Description:* Note markedly small tongue.

**High/narrow arched palate**
*Description:* Until further notice subjective assessment.

**Enlarged tonsils**
*Description:* Note only if there are also symptoms or if the tonsils meet at the midline.

Examples of symptoms:
1. “Thick” speech
2. Sleep apnea-related: snoring, cessation of breathing, etc.
3. Difficulty in swallowing

It should not be noted if the patient recently had tonsillitis since the tonsils may still be enlarged and it may take a few months before they return to normal size. The lymphoid tissue grows in size from birth to reach its peak at about 10-11 years of age. There is subsequently a gradual decline.

**Hypersensibility**
*Description:* Rough assessment. Indication is made when the patient overreacts when the face or mouth is touched.

*Common cause:* Neurological disease/damage. Intraoral understimulation in connection with long-term tube-feeding.
BITE FUNCTION

Reduced ability to open wide
*Description:* Maximum incisor distance + vertical overbite. Normally both rotation and translation are palpated with extraoral palpation of TMJ joints. The patient should be able to move his/her lower jaw when opening mouth, laterotrusion left/right and protrusion.
Reference value: for children 3-10 years <30 mm, from 11 years <40 mm.

*Common cause:* Difficulty in moving lower jaw due to reduced function in muscles and/or TMJ joints resulting in restriction of the mobility of the lower jaw. May occur in connection with neuromuscular and rheumatic diseases.

Overactive temporomandibular joint
*Description:* Poor stability and function in the TMJ joint. Spontaneous luxation of one or both joints is common.
*Common cause:* Common in the case of Marfan syndrome, Ehlers-Danlos syndrome and Downs syndrome.

Low tone in muscles of mastication
*Description:* The muscles are often thin and weak on palpation. Open mouth, loose jaw at rest.

*Common cause:* Cerebral/neurological damage and in connection with certain conditions producing weakness in muscles.

High tone in muscles of mastication
*Description:* Tense, occasionally spastic muscles of mastication (trismus). May be combined with tonic bite reflex or some form of hyperfunction.
*Common cause:* Neurological damage such as for example cerebral pares or acquired brain damage.

BITE CONDITIONS

Neutral bite

Post normal bite

Pre normal bite

Edge-to-edge bite

Frontal inversion
*Description:* With or without forced bite?

Vertical overbite
*Description:* Measured in mm.

Horizontal overbite
*Description:* Measured in mm.

Deep bite with gingival contact

Open bite only frontal
*Description:* Measured in mm (in the case of fully erupted incisors).
Open bite only lateral
_Description: NB! Not teeth in infra occlusion or erupted teeth.

Lateral open bite only contact the molars

Anticipated lack of space
_Description: Depending on age. Some crowding at the front is normal in the cross-bite. In the cross-bite pay, for example, attention to mesial movement of 6s.

Crowding
_Description: More than 2 mm crowding in a segment (front or lateral). State which region.
Frontal irregularity

Open spacing
_Description: Depending on age. Some open spaces in the milk tooth bite is normal.

Hyperplastic alveolar offshoots

TEETH AND GINGIVA

Enamel change, hypoplasia
_Description: Macroscopic observable defect on the enamel surface. Reduction of the enamel’s thickness in which the edges are rounded with distinct limitations. Pits, horizontal/vertical striations or grooves. No enamel collapse or tooth wear.

Enamel change, hypomineralisation
_Description: Enamel with low degree of mineralisation. Surface area may be normal, dull or show a loss of substance. Examples: opacity with intact external surface; hypomineralisation with dull surface - fluorosis, mild form of hypomineralised 6s; hypomineralisation with loss of substance – as the underlying enamel has been extremely porous the external surface has collapsed, always uneven, fractured edges/limitation.

Other tooth malformations
_Description: For example deviations in form – “peg tooth” peg shaped (other than upper jaw laterals), taurodontism, double formations, dens confusi/geminati, enamel pearls, talon cusp, root anatomy.

Gingiva hyperplasia
_Description: Enlargement, hyperplasia, of gingiva.

Common cause: Medication

Mucous membrane changes, examples
_Papillary atrophy on the tongue
_Description: Areas of the tongue lack papillae. Glossy, smooth surface on tongue.

_Lingua geografica
_Description: clearly delimited red areas with papillary atrophy (atrophy of papillae filiformis) on the tongue the location of which may change. Also called geographic tongue.

_Hairy tongue
_Description: Hypertrophy of the filiform papilla on the upper surface of the tongue. Gives the tongue a hairy appearance. Often combined with discoloration.
**Fissured tongue**
*Description:* Tongue showing plenty of furrows on its upper surface

**Mucous membrane of the hard gum**
*Description:* Note divergent mucous membrane for example 1) hypertrophic mucous membrane 2) “cleft” gum

**Bite wounds**
*Description:* Give location, spread or other details. Note clear bite wounds regarding cheek, tongue, lips or other part.

**Other changes in the mucous membrane**
*Description:* For example red and white changes. The structure may be atrophic, erosive, plaque-formed, etc. Specific changes, for example reticular lichen planus, papilloma, fibroma. Note location, colour, size and structure.

**PERIODONTAL STATUS**
See oral status (use Ramfjord’s index teeth: 16, 12, 24, 36, 32 and 44).

**Calculus, supragingival**
*Description:* Tartar above the gum line. Common lingually at the front of the lower jaw and buccally in the molar area of the upper jaw. May also occur on occlusal surfaces.

**Calculus, subgingival**
*Description:* Tartar under the gum line, often dark. May be seen in connection with sandblasting of gingival pockets and on X-rays.

**Gingivitis**
*Description:* Bleeding/ no bleeding buccally (in connection with probing with a periodontal probe at the mouth of the pocket).

**Plaque**
*Description:* Plaque/no plaque

**Wear**
*Description:* Clear signs of teeth grinding and teeth clenching with or without muscular or other symptoms relating to function. The patient aware/unaware of the parafunction. Note, if possible, frequency and when in the day or night the patient bruxes. Often common in children especially in the milk tooth bite or cross-bite, without it necessarily being pathological. However, note should be made of it!

**Classification:**
Score 0: no wear or negligible wear of the enamel
Score 1: obvious wear of the enamel or abrasion through the enamel to the dentin in individual places
Score 2: abrasion of the dentin up to 1/3 of crown height
Score 3: abrasion of the dentin more than 1/3 of crown height, including abrasion of restorative material, bridges or crowns more than 1/3 of crown height

Permanent teeth, milk teeth or in cross-bite concerning obvious parafunctions. Classification is generally given in 6 segments.

**Common cause:** May be stress-related and may also occur in connection with cerebral damage. Other factors of importance may be gastroesophageal reflux and diet factors.
SUMMARY

Unintelligible speech/ lacks speech
Description: Put cross under ”yes” if, according to the observation chart under the heading SPEECH, the patient is assessed to have unintelligible/very unintelligible speech or lacks speech.

Eating and drinking difficulties
Description: Put cross under ”yes” if the answer to question 24 in the questionnaire is ”yes, to a high degree” or ”yes, to some extent”.

Constant drooling
Description: Put cross under ”yes” if the answer to question 43 in the questionnaire is heavy/very heavy drooling.

Ventilatory support
Description: Put cross under ”yes” if there is a marked need for ventilatory support in question 4 of the questionnaire.

Tooth grinding/clenching every day
Description: Put cross under ”yes” if the answer to question 23 in the questionnaire is ”every day”.

Bite deviations requiring treatment
Description: ”The objective of orthodontic treatment is to create a normal or a so-called ”ideal” bite which is morphologically stable, aesthetic and functionally well adapted. While preventive or interceptive measures are performed at an early stage, for example in order to cut short an unfavourable bite development, corrective measures mean treatment of established bites – or jaw deviations” (SBU report no 176, 2005, p. 26). ”Untreated deviations from a normal bite have been linked to deteriorated oral health and/or function, inter alia in the priority index. This together with risks of dissatisfaction in the case of clearly visible bite deviations have been judged to be essential treatment motivating factors. Untreated deviations have been related to an increased risk of trauma, caries damage, periodontitis, deteriorated speech and chewing functions, jaw function disturbances or psychosocial problems” (SBU report no 176, 2005, p.24). Consideration is given to age.

ACCEPTANCE  0-3

0 No acceptance
Description: The patient refuses treatment or agrees to attempts at treatment but reactions are so strong that it is practically impossible to carry out the treatment.

1 Negative acceptance
Description: The patient is not relaxed. Reactions are pronounced and treatment is markedly affected.

2 Reluctant acceptance
Description: The patient is fairly relaxed. Treatment can continue if it is adapted to the patient’s reactions.

3 Positive acceptance
Description: The patient is relaxed but minor reactions can be observed. Treatment can be carried out unhindered.