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HISTORY TAKING AND EXAMINATION

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Orthodontic diagnosis deals with the recognition of varies characteristics of malocclusion. It involves collection of pertinent data in a systemic manner to help in identifying the nature and cause of the problem.

Essential diagnostic aids

They include -

- History taking
  - Case history
  - Personal details
  - Chief complaints
  - Medical history
  - Dental history
  - Patient's personal history
  - Family history
  - Social history
- Clinical examination
  - General examination
  - Extra oral examination
  - Intra oral examination
  - Functional examination

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- Study model
- Certain radiographs
    - Periapical radiograph
    - Bite wing radiograph
    - Panoramic radiograph / Orthopantomograph

Supplemental diagnostic aids

They include -

- Specialized radiograph
    - Cephalometric radiograph
        * With teeth in occlusion
        * Mandible in resting position
        * Frontal projection
        * Functional records, end to end bite
        * Wide opening mouth
        * With radio opaque media
        * 45 degree lateral projection
    - Occlusal intra-oral films / Occlusal view
    - Selected lateral jaw views
    - Cone shift technique/ Clerk's method
    - T.M.J x-ray

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- 2. Electromyographic examination of muscle activity
- 3. Hand-wrist radiographs to asses bone age or maturation age
- 4. Endocrine test
- 5. Estimation of basal metabolic rate
- 6. Diagnostic setup
- 7. Physioprint
- 8. Occlusogram

A. History taking:

 # Case history:

It is the eliciting and recording all the relevant information from the patient and the parents that might be necessary for examination, diagnosis and treatment planning is known as case history.

 # Personal details:

Personal details or case history should be started with name, age, sex, address, height and weight, and occupation of the patient.

- ☐ **Name:** It helps in identification and location of the patient. Most patients like being called by their name.
- ☐ **Age, Sex, Height & Weight:** Helps us assessing the growth status of the patient.

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- ☐ **<u>Address & Occupation</u>:** Helps in evaluation of socio-economic status of the patient & parents. This helps us selection of an appropriate appliance.

 # Chief complaints:

The patient's chief complaint should be recorded in his or her own words. This helps the clinician in identifying the priorities & desires of the patient. Most patients seek orthodontic care for the reasons of either esthetic or impaired function. Occasionally patient might be referred from others practitioners for specific reason such as-

- ☐ Correcting occlusal prematurities,
- ☐ To maintain the space of lost deciduous teeth
- ☐ Re-alignment of tilting teeth
- ☐ Providing an occlusal sprint as part of orthodontic treatment.
- ☐ Surgical splint prior to orthodontic surgery.

 # Medical history:

Before orthodontic treatment is undertaken, a full medical history is recorded. Some conditions may require certain precaution taken prior to or during orthodontic treatment. For example-

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- ☐ Acute debilitating diseases like mumps, chicken pox should be allowed to recover before orthodontic treatment.
- ☐ History of repeated cold, allergic rhinitis, pneumonia, tonsillectomy, adenoidectomy should be examined for nasal obstruction before taking orthodontic treatment; especially with oral screen, activator which obstruct oral airway.
- ☐ Patient with history of allergy to acrylic resin might be managed with fixed appliance
- ☐ Epilepsy patient may impede orthodontic treatment.
- ☐ History of blood dyscrasias may need special management if extractions are planned.
- ☐ Diabetic patient can taken orthodontic treatment if it is control.
- ☐ Rheumatic fever or cardiac anomalies require antibiotic coverage.
- ☐ Severely handicapped child either mentally or physically may require special management.

 # Dental history:

It reveals nature of previous exposure & attitude of the patient towards dentistry.

 # Patient's personals details:

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It includes that details of patient's prenatal, at birth & early post natal life.

Prenatal history:

Nutritional disorder, drugs taken, diseases and accident of the mother during pregnancy.

- Uterine posture, fibroids in the mother, amniotic lesions etc. have been very small blamed for malocclusion.

- Drugs induced deformities such as –

- Thalidomide, injury and trauma may lead to oro-facial deformities.

- Tetracycline may cause brown staining of teeth

- German measles can cause cleft, lip and palate.

- Abnormal fetal position can lead to facial asymmetry.

At birth:

Injury to temperomandibular joint either due to intra- uterine pressure, or pressure due to forceps while delivery can result in ankylosis.

Early post natal life:

It includes duration if feeding, history of any habits, fracture of the jaw or teeth, and milestone of normal development.

❑ **Family history :**

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It is important cause malocclusion or any other oro-facial abnormalities present in family members which include parents, siblings and sometimes grandparents. Most of the number of skeletal class II & class III malocclusion are inherited and transmitted through a dominant gene. Congenital deformities like cleft, lip & palate are also transmitted.

❑ **Social history :**

This is taken to understand patient socio-economic condition and the concern about the treatment and patient co-operation.

■ **Clinical examination :**

In case of clinical examination the position of the patient should be such a way that Frankfurt horizontal plane is parallel to the floor.

General **examination:**

Height & weight:

They provide a clue to the physical growth & maturation of the patient which may have dento-facial correlation.

Gait:

It is the way a person walks. Abnormalities of gait are usually associated with neuromuscular disorder which may have a dental correlation.

Posture:

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Abnormal posture can cause to malocclusion due to alteration in maxillo-mandibular relationship.

Body built:

Classify the physique into three types –

Aesthetic: They have thin physique & usually narrow dental arches.

Pletoric: They have obese physique & generally large, square dental arches.

Athletic : They have normal physique & normal sized dental arches.

 # Extra oral examination:

Shape of the Head:

To see it stand behind the patient, and observe the shape of the head.

They are –

1. **Mesocephalic:** Average shape & size of the head. They have normal dental arches.
2. **Dolichocephalic:** Long & narrow shape of the head. They have narrow dental arches.
3. **Brachycephalic:** Broad & short shape of the head. They have broad dental arches.

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Facial Form:

It is seen by standing in front of the patient. They are –

1. **Mesoprosopic:** Average or normal face form (Normal dental arches).
2. **Dolichoprosopic:** Long & narrow face form (Long & narrow dental arches).
3. **Euryprosopic:** Broad & short face form (Broad & short dental arches).

 # Facial Asymmetry:

It is seen by standing in front of the patient and sees whether there is any gross asymmetry present or not.

May cause –

- Hemi facial hyperplasia
- Hemi facial hypertrophy
- Hemi facial atrophy
- First Arch syndrome
- Unilateral condylar hyperplasia / Condylar abnormality
- Congenital defect

Facial Profile

Examined site: Standing on the side of the patient.

Clinical evaluation of the facial profile, Three (3) soft tissue points are taken into consideration. They are –

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- **Nasion** **:** Bridge of the nose. (When two (2) nasal bones & frontal bone meet a point, this point is called Nasion.)
- **Point A** **:** Philtrum. (Deepest point of philtrum)
- **Pogonion:** highest point on the contour of the chin.

Depending upon the alignment of the 3 point, the profile can be

(A) Straight profile: When all the 3 points lie in the same vertical, the profile is said to be straight.

(B) Convex profile: It the pint A is ahead or the pogonion point is placed behind, then the profile said to be convex.

Seen in – Class II division 1 malocclusion.

(c) Concave profile: If the A point is placed behind or the pogonion is placed forward, the profile is said to be concave.

Seen in – Class III malocclusion.

Importance: Helps in diagnosing gross deviations in the maxillo-mandibular relationship.

 # Facial Divergence:

It is define as an angle called facial angle. This angle formed by a Frankfurt horizontal plane from the line connecting Orbitaly (deepest point of Orbit) to Porion (highest point of the tragus or external auditory meatus) and a soft tissue line connecting Nasion to Pogonion.

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It can be Orthognathic, anterior divergent, posterior divergent.

1. **Orthognathic face:** The facial angle is approximately 90 degree that is normal or class I type of malocclusion.

2. **Anterior divergent:** The facial angle is high or more than 90degree that is class III malocclusion (when mandible is protruded)

3. Posterior divergent: The facial angle is low or less than 90degree that is class II malocclusion maxilla is protruded & mandible is short.

Facial Height:

Facial height is two (2) types. They are –

- Upper facial height
- Lower facial height

Ideal proportion of Upper facial height is 45% of total facial height & Lower Facial height is 55% of total facial height.

Upper facial height:

Clinically it is form by the bridge of the nose to lower border of the nose. Cephalometrically it is form by the nasion to anterior nasal spine.

Lower facial height:

Clinically it is form by the lower border of the nose to lower border of the chin.

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Cephalometricaly it is form by the anterior nasal spine to menton (lowest point of the symphyseal outline of the chin.

Total facial height:

It is form by the clinically bridge of the nose to lower border of the chin & cephalometrically nasion to menton. (The UFH cannot be influenced or changed by orthodontic treatment.)

- **Causes of decrease Lower facial height ;**
  - Skeletal deep bite cases
  - Class II division 2 cases
  - Growing children
- **Causes of increase Lower facial height :**
  - Skeletal open bite cases
  - In long face syndrome

 # Assessment Skeletal Pattern:

It should be assessed both anteroposterior plane & vertical plane.

Anteroposterior plane:

Clinically it is assessed by two finger test. The fore finger is placed at a point corresponding to the point A & middle finger is placed at a point corresponding to the point B. In skeletal bases –

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a. Class I case – Fore finger is slightly ahead (2-3 mm) of the middle finger.

b. Class II case – Fore finger is considerably ahead of the middle finge

c. Class III case – Middle finger is ahead of the fore finger.

❑ **Vertical plane :**

Normally it is assessed by the distance a point between the eyebrows to the junction of the nose with the upper lip will be equal to the distance from the later point to the underside of the chin.

It can also be assessed by Frankfurt Mandibular plane angle is used to vertical relationship. This angle is formed by the Frankfurt horizontal plane & Mandibular plane.

The cases can be divided as –

a. Average FMA: Two (2) planes meet at occipital region. Usually angle is about 20- 30 degree.

b. Low FMA : Two (2) planes meet beyond the occipital region.

c. High FMA : Two (2) planes meet in the mastoid region or in front of the ear.

 # Evaluation of facial proportion:

Face can be divided in to three (3) equal vertical third by four (4) horizontal plane at the level of the hair line, the suborbital ridge, the base of

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the nose & the lower border of the chin. Upper lip occupies one third of the lower third of the face.

 # Lip:

Normally upper lip covers labial surface of upper anterior teeth except the incisal

2-3 mm. the lower lip covers the labial surface of lower anterior teeth & incisal third of the upper anterior teeth.

- ❑ Classification of Lips : Four types –

1. Competent lips: They touch each other lightly or there is inter labial gap about 0-1 mm when the muscle is relaxed in position.

2. Incompetent lips: Morphologically short lips which do not a lip seal in a relaxed position. (Lip seal only maintained by contraction of perioral & mentalis muscle).

3. Potentially competent lips: They are normal lips that fail to form a lip seal due to procline incisor.

4. Everted lips: They are hypertrophied lips with weak muscular tonicity.

Color & texture:

Normally both the lips are same color & texture.

Low active lips are chapped and light color.

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Heavy, reddish, smooth & moist lip, lower lip is trapped behind the upper anteriors.

- **Tonicity :**

  Normal lips : Minimal tonicity present.

  Hypertonic lips : Tends to firm & redder.

  Hypotonic lips : Tends to flaccid.

 # Nose:

- **Shape of the Nose / Nasal contour**

  1. Straight
  2. Convex (nasal bridge)
  3. Crooked nose (due to previous injury)

- **Size of the Nose :**

Length of the nose is about one third of the total facial height (from hair line to the lower border of the chin). In normal case vertical & horizontal length of the nose is 2:1.

- **Nostrils :**

They are oval in shape & bilaterally symmetrical. It is approximately 70% of length of the nose.

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 # Naso-labial angle:

It is the angle between the lower border of the nose to the upper lip. Normally naso-labial angle is about 90o – 110o degree.

- ❑ In case it is reduced the maxillary anterior teeth are proclined or prognathic maxilla.
- ❑ In case it is increased the maxillary anterior teeth are retroclined or retrognathic maxilla

 # Chin:

It can be - **a.** Normal

b. Recessive as in class II high angle cases

c. Prominent as in class III cases

 # Mento labial sulcus:

It is the region between the lower border of the lip and mentalis muscle. It can be –

- ■ Normal (seen in class I cases)
- ■ Deep (seen in class II division 1 cases)
- ■ Shallow (seen in bimaxillary protrusion cases)

 # Intra- oral Examination :

- ❑ **Oral Hygiene status:** Bad / Average / Good
- ❑ **Examination of gingiva:**

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It should be examined for inflammation, recession & other mucogingival lesions. Some causes are –

- Presence of poor oral hygiene causes generalized marginal gingivitis.
- Anterior marginal gingivitis in mouth breather due to dryness of the mouth causes by open lip posture.
- Presence of traumatic occlusion indicates localized gingival recession.
- Abnormally hyperplastic gingiva seen in patient using certain drugs like dilantin.

❑ **Examination of Frenal attachments** :

Types of Frenum –

a. Upper labial frenum

b. Lower labial frenum

c. Lower lingual frenum

Upper labial frenum :

Sometimes maxillary labial frenum can be thick, fibrous & attached relative low. Such an attachment prevent the two maxillary Central incisors from each other thereby causes midline diastema.

Abnormal frenal attachments are diagnosed by a blanch test where upper lip is stretched upwards & outwards for a period of time. The presence of

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blanching or whitish in the region of the inter-dental papilla is diagnosed of an abnormal labial frenum or high frenum.

Lower labial frenum:

An abnormally high attachment of the mandibular labial frenum causes recession of the gingival in that area.

Lower lingual frenum:

Lower lingual frenum is examined by asking the patient protrude the tongue. If the patient is unable to protrude the tongue due to abnormal lingual frenum & it is called Tongue tie or partial Ankyloglossia.

❑ **Examination of tongue:**

❖ **Normal position of tongue :**

Tongue rests at the occlusion level within the arches, dorsum touching the palate and the tip of the tongue rests against the lingual surface of the anteroirs.

Abnormalities of tongue can upset muscle balance & equilibrium leading to malocclusion.

- Excessive large tongue / macroglossia is indicated by -

☐ Presence of imprints of the teeth on the lateral margin of the tongue giving it a scalloped shape.

☐ Generalized tooth proclination or generalized spacing.

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- A patient whose tongue reaches the tip of the nose is said to have a long tongue.
- Examine for Tongue tie.

❖ **Abnormal function of tongue :**

Abnormal function of lip & facial muscle is seen in the cases of tongue thrust swallowing. Other common lip muscle abnormalities are sucking and biting of lower lip.

❑ **Examination of palate :**

The palate should be examined for following findings –

- Depth of the palate occurs in relation to variation of facial form. Most dolicofacial patients have deep palate.
- Presence of swelling in the palate indicates an impacted tooth, cysts or bony pathologies.
- Mucosal ulceration causes traumatic deep bite.
- Presence of cleft palate causes discontinuity of the palate.
- The third rugae are usually in line with the canines. This is useful for assessment of proclination of upper anterior teeth.

❑ **Examination of tonsils & adenoids :**

Abnormally inflamed tonsils cause alteration in tongue & jaw posture that causes the oro-facial imbalance leading to malocclusion.

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❑ **Assessment of the Dentition –**

The following details are –

- **Number of the teeth present in the oral cavity.**
- **Teeth missing.**
- **Teeth unerupted.**
- **Condition of the teeth presence :**

Caries, restoration, fractured, discolored malformed teeth etc.

- **Centric relation & centric occlusion.**
- **Angles classification :**

In centric relation the relation of molars, canines & incisors should be examined to classify it according to Angle's classification.

Over bite & over jet:

Over jet is measured from the labial surface of lower anterior to incisal edges of upper anterior. Normally over jet is 2-3 mm.

Over bite is measured by make a mark of the incisal edges of upper anterior teeth on the labial surface of lower anterior teeth. The distance between the incisal edge of lower incisor to the mark gives overbite in mms. Normally over bite is 2-3 mm

- **Transverse tooth mal-relations:** Cross bite or Scissor bite.

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- **Individual tooth irregularities such as rotation, displacements, intrusion & extrusion.**
- **Curve of spee :**

  It is measured by placing a flat surface touching the incisors & posteriorly up to the second molar. It can be flat or deep.

- **Flat curve of spee:** All the teeth touch the flat surface.
- **Deep curve of spee :** All the teeth do not touch the flat surface. The occlusal surfaces of posterior teeth from a curve which is more than a millimeter in depth.
- **Midline :**

Normally upper & lower midlines coincide. It is compare an imaginary mid facial line to see upper midline is deviated or the lower or both.

- **Upper & lower arch form :** Normal / narrow / broad.

 # Functional Examination:

- **Maximum protrusion :**

It is the extreme forward position of mandible. It is measured from the incisal edge of the lower anterior teeth to the labial surface of upper anterior teeth.

- **Assessment of postural rest position / Intra occlusal space :**

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At the postural rest poison, a space exists between the upper & lower jaws. This space is called inter- occusal clearance or freeway space. Normally freeway space is 2-3 mm in the canine region.

During examination the patient should be seated upright, with the back unsupported & asked to look straight ahead.

The following methods used to record the postural rest poison –

- **Phonetic method :**

The patient is asked to some repeat consonants like ‘M’ or ‘C’ or repeat a word like ‘Mississipi’. The mandible returns to the postural rest position 1-2 sec after the exercise.

- **Commend method :**

The patient is asked to perform certain function like swallowing. Mandible tends to return to rest position.

- **Non-commend method :**

The patient is observed as he speaks or swallows. This method taken some procedures

- **They are –**

- **Direct intra-oral procedure:** Vernier calipers used directly in the patient mouth in the canine or incisal region to measure freeway space.

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- **Direct extra-oral procedure:** Two marks are placed one in the tip of the tip of the nose & other on the chin in the mid-sagittal plane. The distance between these two points is measured after instructing at rest position & centric occlusion. This difference reading is the freeway space.
- **Indirect extra-oral procedure :** Two lateral cephalograms, at rest position and centric occlusion can help establish the freeway space

❑ **Evaluation of Path of closure :**

The path of closure is the movement of the mandible from rest position to habitual occlusion.

How to examine the path of closure:

Four points are placed in the midline of the face, on each on the bridge of the nose; tip of the nose, philtrum & on the chin. Ask the patient to open the mouth widely & close it slowly. Observe carefully for any abnormalities or deviation of the point on the chin either while opening & closing of the mouth.

Abnormalities of the path of closure seen in some malocclusion –

- **Forward path of closure:** When mandible is more forwardly position to allow the mandibular incisors to go labial to the upper incisors.
- **Backward path of closure:** When mandible is backward position that guided posteriorly to establish occlusion.

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- **Lateral path of closure:** Lateral deviation of the mandible to the right or left side is due to occlusal prematurities or a narrow maxilla.

❑ **Conditions which lead to altered path of closure :**

- Lingually or palatally erupting incisor.
- Occlusal pre maturities
- Habitual forward position of mandible in class II division 1 cases.
- Forward position in case of class III malocclusion.
- Backward position in case of class II division 2 malocclusion
- Sometimes the loss of posterior tooth can cause posterior displacement of mandible.
- Lateral path of closure in case of unilateral cross bite or narrow maxilla.
- Early loss of upper deciduous posteriors leads to forward displacement of mandible.

❑ **Evaluation of Breathing pattern** :

Breathing can be three types –

a. Nasal breathing: When a person breaths normally through the nose.

b. Mouth breathing: When a person normally breaths through the mouth.

c. Oro-nasal breathing: When a person breaths partly through the nose & partly through the mouth.

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➢ **Methods of breathing pattern :**

1. Observation:

- Nasal breathers usually hold the lip contact lightly where as in mouth breathers lips are apart.
- Ask the patient to take a deep breath, nasal breathers inspire through the nose & mouth breathers inspire through the mouth.
- Ask the patient to take a deep breath, in case of nasal breathers external nares of the nose is dialates. In case of mouth breathers no change in external nares.

2. Mirror test:

A double sided mirror is held between the nose & the mouth. Fogging on the nasal side of the mirror indicates nasal breathing while fogging towards the oral side indicates oral breathing.

3. Cotton test: A butterfly shaped piece of cotton is placed over the upper lip below the nostrils.

No movement of cotton – it indicates mouth breather

Cotton moves only one side – breathing through only that nostril

Cotton moves on both sides – breathing through both of the nostrils.

4. Water test:

Ask the patient to fill his mouth with water and retain in for a period of time.

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Nasal breather – can hold the water comfortable.

Mouth breather – con not hold the water continuously

❑ **Examination of T.M.J :**

The functional examination should be including auscultation and palpation of the TMJ. Problems of TMJ, like clicking, crepitus, pain of the masticatory muscle, limitation of jaw movement, hyper-mobility & morphological abnormalities.

❑ **Maximum mouth opening / maximum inter-incisal distance :**

The distance between the incisal edge of maxillary & mandibular incisors when the mouth is wide is called inter-incisal distance. Normally inter-incisal distance is about 40- 45 mm.

 # Evaluation of swallowing / Deglutition:

Different swallowing pattern:

Normal Infantile swallowing pattern:

In a new born, the tongue is relatively large & protrudes between the gum pads & takes part in establishing the lip seal. This kind of swallow is called infantile swallow. It is seen till 1½ to 2 years of age.

Infantile swallow indicates the presence of the following features -

- Protrusion of the tip of the tongue.
- Contraction of perioral muscles during swallowing.

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- No contact at the molar region during swallowing.

Normal mature swallowing pattern:

Infantile swallow is replaced by the mature swallow as the buccal teeth start erupting (usually by 18 months of age).

It is characterized by –

- Maxillary & mandibular teeth in contact.
- Mandible stabilizes by V cranial nerve muscle (muscle of mastication).
- Tip of the tongue is held against the palate above& behind the incisors.
- Minimal contraction of lips during the mature type of swallowing.
- **Methods of swallowing pattern :**

1. Observe the position of tongue while the mandible is in postural rest position –

In normal swallowing pattern the lips touches lightly without any contraction of facial muscle.

2. Place fingers over the temporalis and masseter muscle give a little water to the patient. Ask him to swallow –

- Normal swallowing pattern – contraction of the muscle can be felt.

- Tongue thrust swallowing – no / mild contraction can be felt.

3. Retract the lower lip using a tongue depssor or a mirror & ask the patient to swallow –

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- Normal swallowing pattern – cannot swallow without lip support.
- Tongue thrust swallowing – cannot swallowing cause of mandibular

Stabilization by the contraction of mentalis muscle is inhabited by the depression of lower lip.

4. Other indications of presence of tongue thrusting type of swallowing – Incomplete lips, incomplete overbite, lisping, circum oral muscle contraction.

❑ **Examination of speech :**

Severe malocclusion may cause speech disturbance due to interference in normal movement of tongue & lip.

Example –

- Ask the patient to count from 1-20.
- The patient is asked to repeat after the clinician.
- Ask the patient to say ‘Sing a Song of Six Pence’ or ‘S’, ‘T’.

❑ **Study model :**

Uses of study model includes –

1. It helps in measurement of arch length, arch width, & tooth size.
2. They help in assessment of treatment progress by the dentist.
3. They help in assessing the nature & severity of mal occlusion.
4. They are helpful in motivation of the patient.

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5. It makes it possible to stimulate treatment procedures on the cast.

❑ **Certain radiographs :**

■ **<u>Periapical radiograph :</u>**

Importance of periapical radiograph –

1. Present or absent of permanent teeth.
2. Shape & position of teeth present.
3. In relative state of development of teeth,
4. Extent of calcification of teeth,
5. The path of eruption of permanent teeth,
6. The morphology & inclination of root of permanent teeth,
7. The periodontal ligament space & lamina dura,
8. The height & contour of the alveolar bone,
9. Dental caries,
10. Apical infection,
11. Root fractures,
12. Retained deciduous tooth,
13. Pattern & amount of root resorption,
14. The presence of supernumerary teeth.

■ **<u>Bite wing radiograph :</u>**

Importance of bite wing radiograph –

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1. To detect proximal caries.
2. To study height & contour of interdental alveolar bone.
3. To detect secondary caries below the restoration.
4. Over hanging proximal restoration,
5. Periodontal changes,
6. Inter proximal calculus.

- **Panoramic radiograph / Orthopantomograph :**

Importance of Panoramic radiograph:

1. All present or absent of permanent teeth.
2. Shape & position of teeth present.
3. Extent of calcification of teeth,
4. The path of eruption of all permanent teeth,
5. The morphology & inclination of root of permanent teeth,
6. The periodontal ligament space & lamina dura,
7. The height & contour of the alveolar bone,
8. Dental caries,
9. Apical infection,
10. Root fractures, jaw fracture
11. Retained deciduous tooth,
12. Pattern & amount of root resorption,

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13. The presence & absent of multiple supernumerary teeth

14. They are useful aids in serial extraction procedures to study the status of erupting teeth.

15. Mixed dentition period to study the status of unerupted teeth

❑ **Facial Photograph :**

A facial photograph indicates the soft tissue morphology & facial expression. Both extra-oral & intra-oral photograph are useful to diagnostic records.

Three extra-oral views are taken –

- Frontal view
- Profile view
- Oblique view

The intra-oral views are taken -

- Left & right lateral view
- Frontal view
- Maxillary & mandibular occlusal view

➢ **Uses of photograph :**

- They are useful in assessment of facial symmetry, facial type & profile.
- They serve as diagnostic records.
- They help in assessing the progress of the treatment.

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Dedicated To

My Mom, Zubaida Shaheen

My Dad, Md. Islam

&

My Only Son

Mohammad Sharjil

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