**Vital Functions**

**1. Breathing**

**2. Facial Muscle Function**

**3. Oral-Throat Tract**

**4. Swallowing**

**1. Breathing**

**Definition:**

**Breathing function:**

 - Inspiration: Diaphragm 75% work

 Accessory Muscle: 25% work

 - Expiration: - at rest passive

 - Intercostal and abdominal muscles are active during higher

 activity (exercise, loading etc)

**Coughing function**

**Objectives:**

* Increase mobility: Chest, trunk, shoulder and etc.
* Increase stability & muscle activity
* Supporting recuperation (active break).
* Facilitate general relaxation (musculoskeletal, autonomic etc)
* Relieve pain.
* Supporting of regulation of muscle tone
* Influence on vocal system
* Increase trunk/core activation

**Direction of Facilitation**

* Abdominal and diaphragm
* lower costal
* sternal
* high costal
* latero-costal
* dorso-costal

**2. Facial Muscle Function**

**Functions of Facial Movements**

* Emotional expressions, communicating feelings, individual identity.
* Phonation
* Protection of eyes and mouth
* Hygiene (lips and cheeks motion)
* Feeding: Jaw & mouth movement

**Facial expression and Muscles**

|  |  |  |
| --- | --- | --- |
| Muscle | Mimic movement | Facial expression |
| Frontalis  | Raising eye rows ”look astonished!“ | Expression of surprise |
| Corrugator supercilii | Drawing eyebrows medially & down | Frowning  |
| Procerus  | Forming diagonal wrinkles | Smell bad |
| Levator palpebrae superioris | Opening the upper eye lid “Look up” |  |
| Orbicularis oculi | Closing eye tightly |  |
| Orbicularis oris | Pursing the lips | Kissing  |
| Levator labii superioris, zygomatic minor  | Protruding & elevating upper lip |  |
| Levator anguli oris | Raising one side of upper lip | **Sneering**  |
| Zygomatic minor | Raising lateral angle of mouth upward & laterally | **Smiling**  |
| Risorius  | Drawing corners of mouth laterally | **Grimacing** |
| Buccinator  | Compressing the cheeks | **Blowing**  |
| Depressor labii,inferioris, Mentalis  | Chin out and Protruding the lower lip  | **Pouting**  |
| Depressor anguli oris, Platisma | opening the jaw and moving forward | **Looking disgusted or sad** |

**Therapeutic applications**

The mimic muscles are important in the verbal and non-verbal communication and should be associated in treatment with expressions of the limbic system.

* Patient position: Consider the effects of gravity and functional positions
* Consider hygiene: Consider the sensitivity of the face and the patient's personal space, communicate with the patient prior to palpation.
* Use PNF- Philosophy, Basic Principles and PNF-Techniques
* Use of modalities: thermal stimuli, different equipment etc.
* Visual Cues

**3. Oral-Throat Tract - Tongue**

**Functions of Tongue**

* Manipulates the bolus
* Taste
* Vocal expression
* Mouth hygiene. cleaning teeth and gums
* Influence to position of teeth
* Nonverbal communication

**Therapeutic applications**

* Facilitation tongue movement with appropriate resistance/assistance
* Use of wet tongue blade
* Consider hygiene
* Various 3-D tongue movements
* Consider Patient’s Position

**4. Swallowing**

**Definition -** The semiautomatic process that usually involves action of muscles of the respiratory and gastrointestinal tract to propel food, liquid and saliva from the mouth to the esophagus.

Swallowing does not only play an important role in food digestion, but also a major role in preventing aspiration.

**4 Phases of Swallowing**

 1. Pre-oral phase

 2. Oral phase

 3. Pharyngeal phase

 4.Esophageal phase

**Analysis and Assessment**

**To facilitate facio-oral tract, please check:**

* Inspection of breathing
* Observation in rest
* Position and posture of the patient
* Symmetry of the face, esp. mouth and check
* Gums and the inside of the cheek
* Soft palate for position and symmetry during phonation and at rest.
* Sensation: Oral and intra oral sensation
* Function
* Lip closure, jaw closure, chewing and mastication, tongue mobility and strength
* Swallowing : Salivation, hyoid and larynx mobility and movement
* Coughing, worming reflex, wet or hoarse voice quality

**Therapeutic applications**

* Facilitation take place at the pre-oral or/and oral phase
* Position : chose the proper position where the patient is able to manage swallowing and not struggling to maintain the position
* Facilitating soft palate, larynx lifting
* Light palpation of the hyoid bone to feel the rise up and forward of the
* pharyngeal system.
* Mobilizing the larynx - from one side to the other, upwards and downwards
* Facilitation tongue movement - Diagonally downwards left/right and etc.
* Use techniques that can be use to initiate or facilitate the movement
* Consider functional movements
	+ - * ie) swallowing or singing up to a high note that can facilitate the movement
* Verbal command: ‘swallow’

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