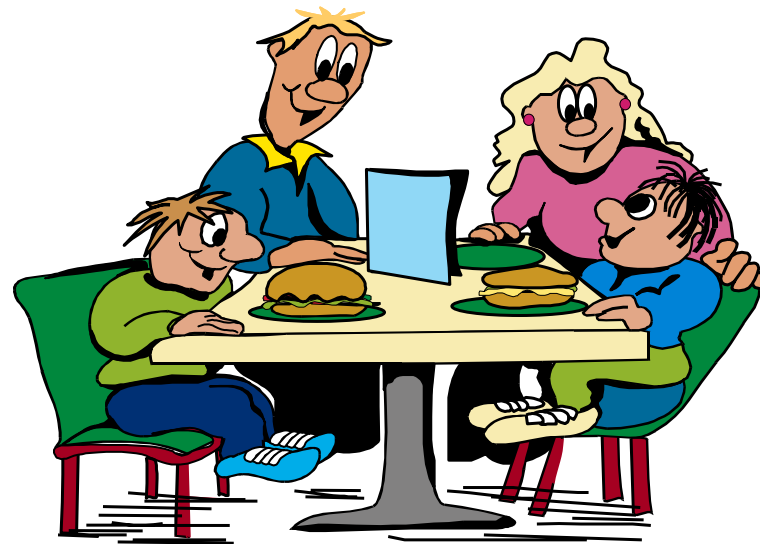


Swallowing Physiology

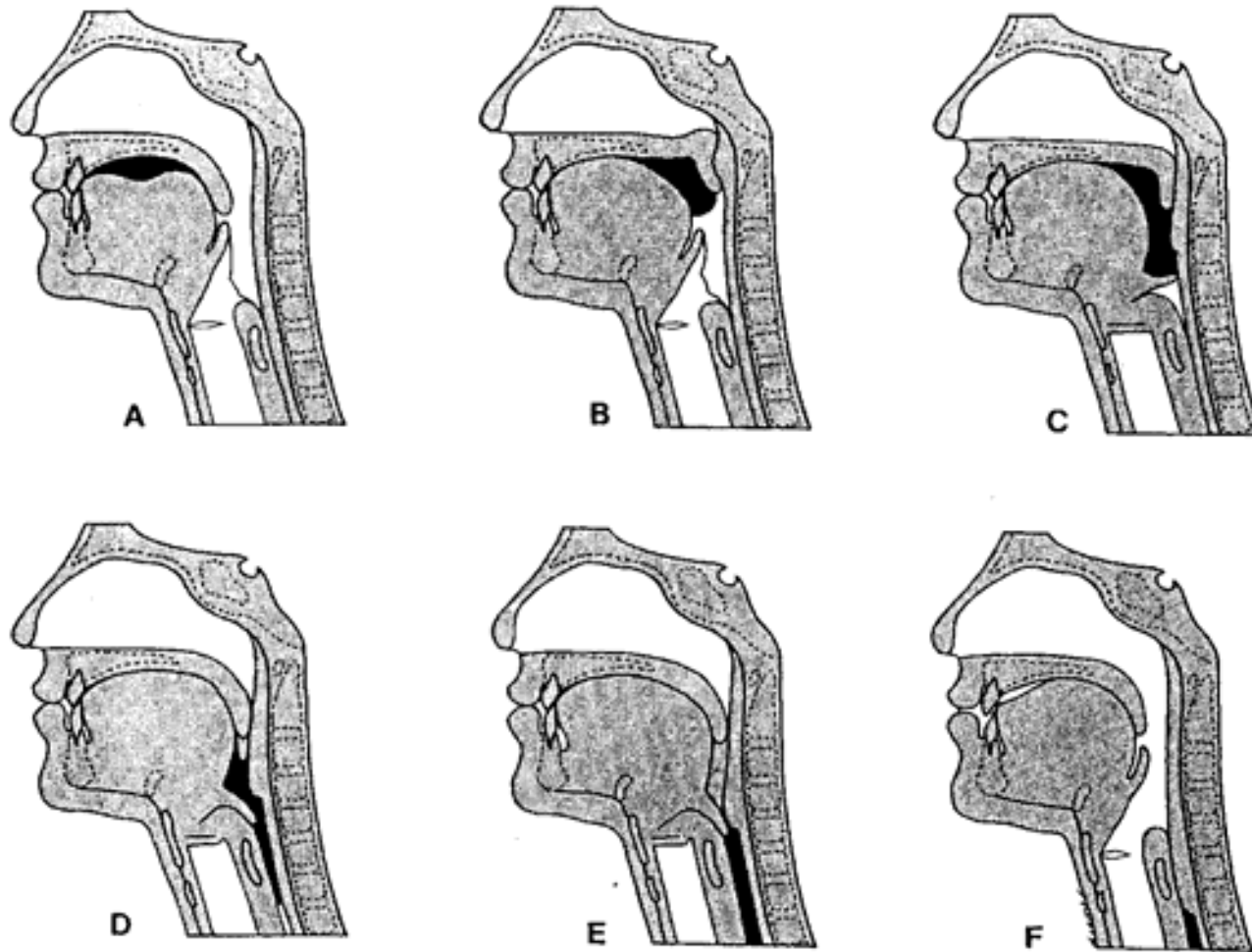
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Swallowing

- Taken for granted
- Complex integration of many muscles and nerves
- Divided into 3 stages
 - oral
 - pharyngeal
 - Oesophageal

Aim = to get nutrients from mouth to GI tract



(Donner, Bosma and Robertson 1985)

Biomechanics.....

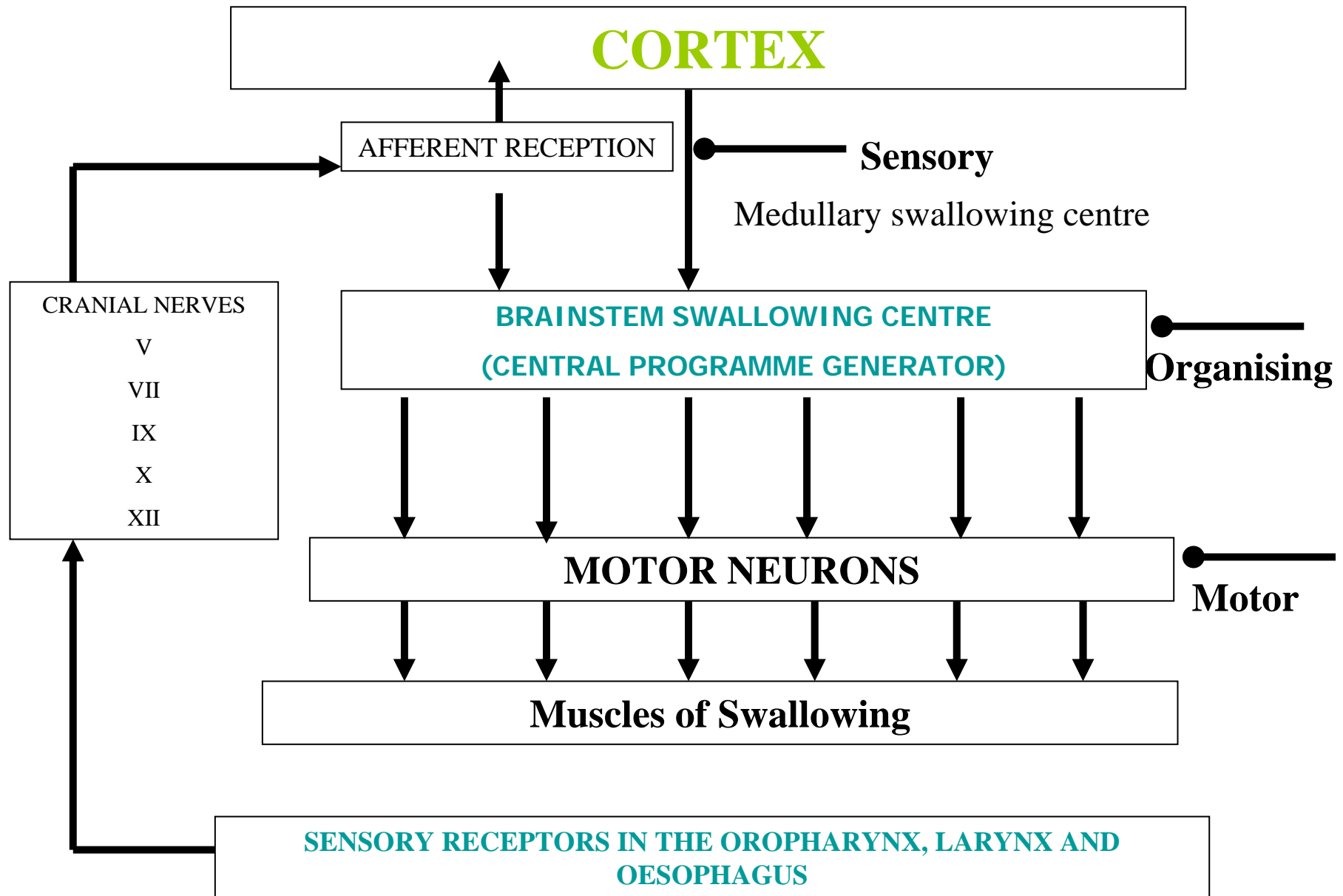
- Described as a single pressure driven event – tongue as a pressure driver
- Important valves = lips, soft palate, larynx, CP sphincter
- Breakdown in pressure differentials will have an effect on the next phase of the swallow

Neural control of swallowing

Controlled by sensory-motor cortex

Brainstem pattern generator

Peripheral sensory receptors



Sensory modulation

- **Oropharynx dense with sensory receptors**
- **Adapts to bolus characteristics – taste, temperature and consistency**
- **Timing of laryngeal ascent bolus dependent –liquids v solids**
- **Duration of laryngeal closure increases with bolus volume and viscosity**
- **Breakdown resulting in aspiration is rare**

Penetration and aspiration

- Measured by:

Depth of material entering the larynx

Residual after the swallow

Ability to clear

Studies to date suggest laryngeal penetration may be normal in health (more data needed)

Ref: Rosenbek et al 'A penetration- aspiration scale'