1 ☐ Velopharyngeal Closure
   ☐ Functional consequence of multiple movements
   ☐ Muscles of SP
   ☐ Muscles of Pharynx

2 ☐ SP Muscles: Levator, Tensor and Uvula
   ☐ Muscular sling arrangement of muscles
   ☐ Primary muscle = levator - 40% SP
   ☐ Arises from temporal bone; inserts behind palatine aponeurosis
   ☐ Moves SP upward and backward
   ☐ Pulls lateral walls medially

3 ☐ Tensor
   ☐ Arises from sphenoid and eustachian tube
   ☐ Wraps around pterygoid hamulus
   ☐ Blends in palatine aponeurosis
   ☐ Elevates SP to level of hamulus
   ☐ Ventilates middle ear

4 ☐ Muscularis Uvula
   ☐ Intrinsic to SP
   ☐ Arises in palatine aponeurosis
   ☐ Passes over levator to tip of uvula
   ☐ Little contribution to movement
   ☐ Adds bulk/volume to SP

5 ☐ Antagonistic Muscles
   ☐ Palatoglossus
   ☐ Palatopharyngeus
   ☐ Salpingopharyngeous

6 ☐ Muscles of Pharynx
   ☐ Pharynx divided into three parts: nasopharynx, oropharynx and laryngopharynx
   ☐ Nasopharynx - posterior portion of nasal cavity
   ☐ Opening in lateral wall - eustachian tube
   ☐ Communicates with oropharynx

7 ☐ Pharyngeal Muscles
   ☐ 1. Superior constrictor
   ☐ Arises velum, alveolar process of mandible & sides of tongue
   ☐ Inserts median pharyngeal raphe
   ☐ Function: as constrictor: medial movement of lateral pharyngeal walls

8 ☐ Uniqueness: Passavant's Paad
localized anterior projection of tissue in ppw
variable shape, size, placement, incidence
potential contribution to closure
basis for formation unknown

9 Other Pharyngeal Muscles
- middle constrictor
- median raphe>hyoid
- no contribution to closure
- important for swallowing, hyoid bone movement
- inferior constrictor raphe to thyroid
- important for swallowing, laryngeal movement

10 Velopharyngeal Closure
- closure of nasopharyngeal passage/v-p port/opening
- v-p port opn at rest
- air routed through oral or nasal cavity

11 Characteristics
- unconscious
- automatic, rapid
- involuntary - little voluntary control
- important for biological function of swallowing

12 Velopharyngeal Closure
- Port sealed off during production of all consonants except nasals
- appears as simple gating closure mechanism
- more complex

13 Myodynamics of Closure
1 - 3 features - lateral will, soft palate and pharyngeal wall movement
- lateral wall movement - levator contraction
- velar movement - contacts ppw 3-4 mm below palatal plane
- velar bulk on dorsal surface
2 - Synchronization of movement
- 4 distinct patterns of closure
- coronal, sagittal, circular and circular with passavants pad

14 Coronal Closure Pattern
- primarily up and back movement of sp
- lateral walls touch elevated velum
- most common: 60% of people

15 Sagittal Closure Pattern
- Primarily lateral wall movement
- lateral walls touch in mid-line
16  Circular Pattern of Closure
17  Circular with Passavants Pad
    *emphasis on ppw movement
    *ppw moves forward either as a unit or as pad formation
18  Significance to Clefting
    *Despite repair, the v-p mechanism may be compromised
    *some usually or sometimes achieve closure
    *some never achieve closure
19  Case of lack of closure
    *movement coordinated with speech context
    *“complete” closure not required for adequate perception
    *closure begins/is completed before onset of phonation
    *closure influenced by phonemic context
    *length of velum greater during function than rest
20  Beyond Myodynamics
    *coordinated with speech context
    *complete closure not required
    *closure begins/is completed before onset of phonation
    *influenced by phonemic context
    *length of velum greater during function than rest