Abnormal embryonic development of the head & neck are relatively common events. As a group oro-facial clefting and disorders of branchial arch development alone may be seen in 1 in 500 live births. Classification of craniofacial malformations can be tricky. Not all dysmorphologists agree on one specific classification scheme. One particularly attractive way of classifying these anomalies is by pathogenetic mechanisms. Pathogenesis may be stratified by tissue type, developmental field, or aberrant processes.

In this discussion we will review the major strata of pathogenetic mechanisms. We will highlight these mechanisms with targeted examples. An overview of what will be covered will include:

- Oro-facial clefting syndromes
- Craniosynostosis (isolated and syndromic)
- Developmental field defects (midline defects and disorders of branchial arches)
- Disruptions and deformations
- Selected syndromes with critical features

Each condition will be discussed in light of its key features, etiologic basis, associated recurrence risk, related conditions, and key management issues.