

# III- SPECIAL EPITHELIUM



## 2-LATERAL SURFACE: -

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محاضرة هستولوجيا لدبلوم الكيمياء الحيوية 2019-2020

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# **THERE ARE TWO TYPES:-**

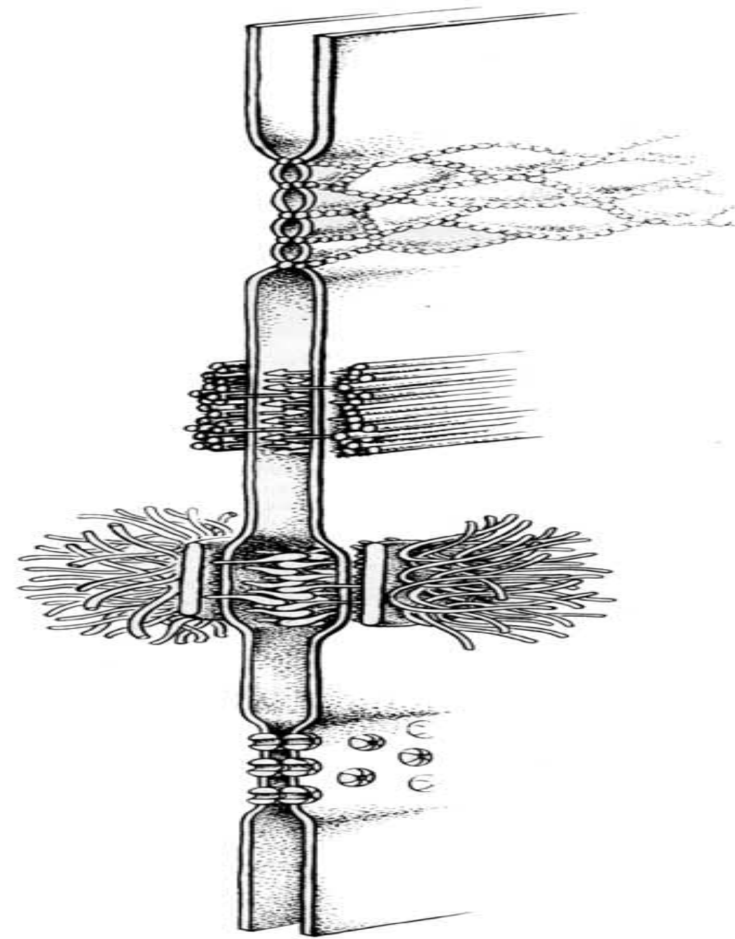
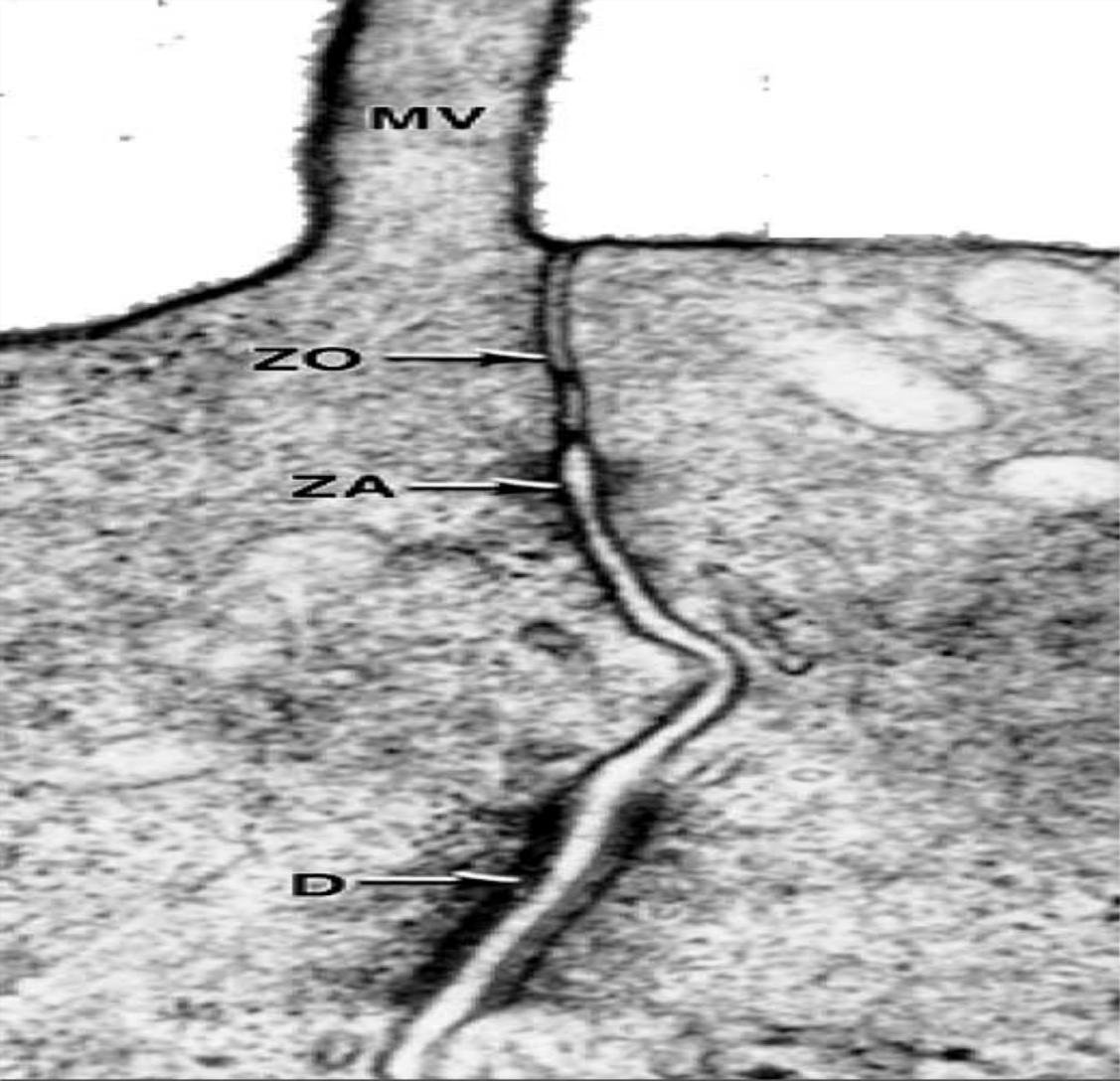
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## **(1) Junctional complex**

- 1. Zonula occludens (tight junction)**
- 2. Zonula adherens**
- 3. Macula adherents (desmosomes)**

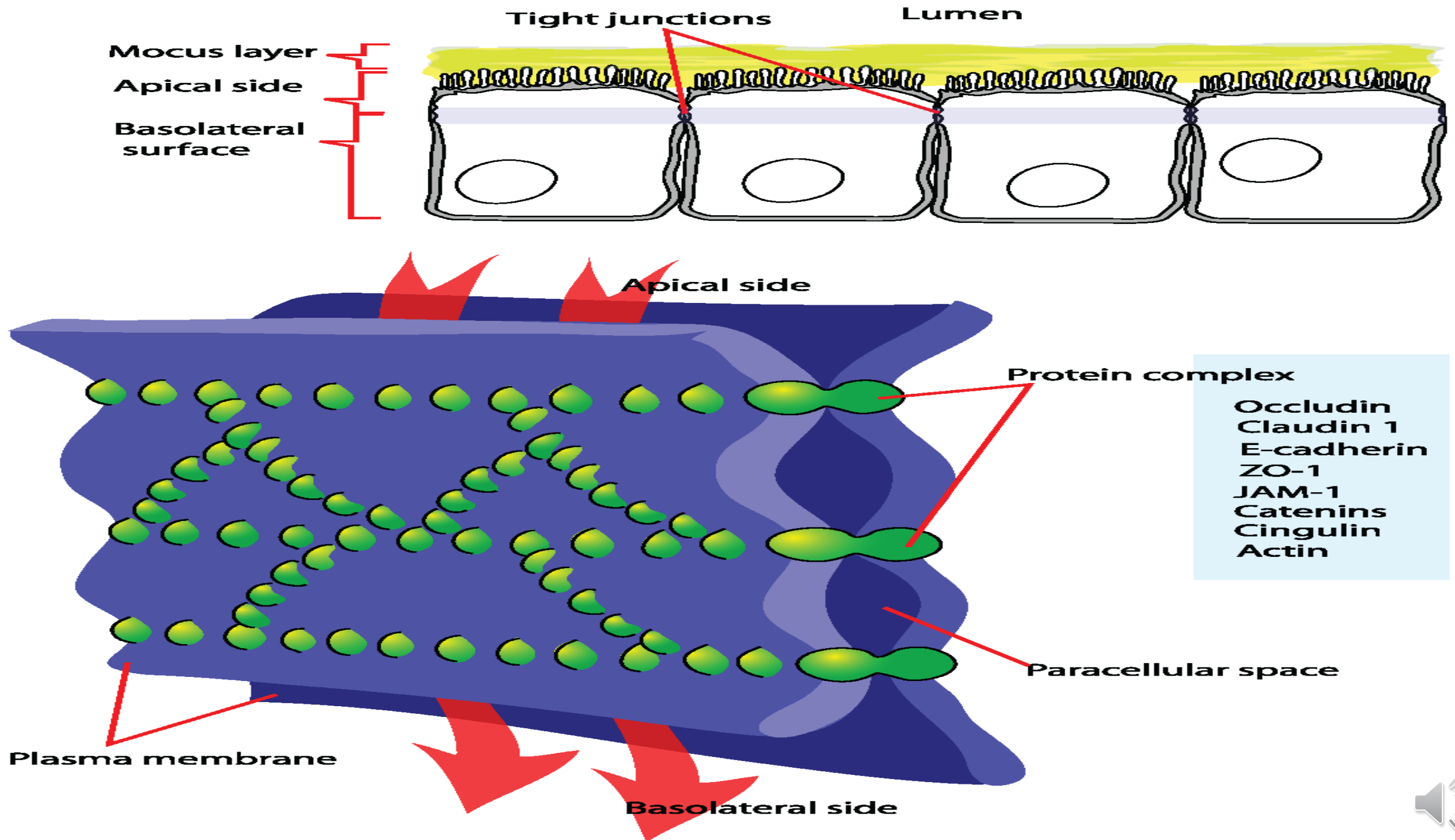
## **(2) Communicating junction (gap junction), (Macula comunicans) nexus**





**Junctional complex with its components**  
**Zonula occludens**  
**Zonula adherens**  
**Macula adherens**





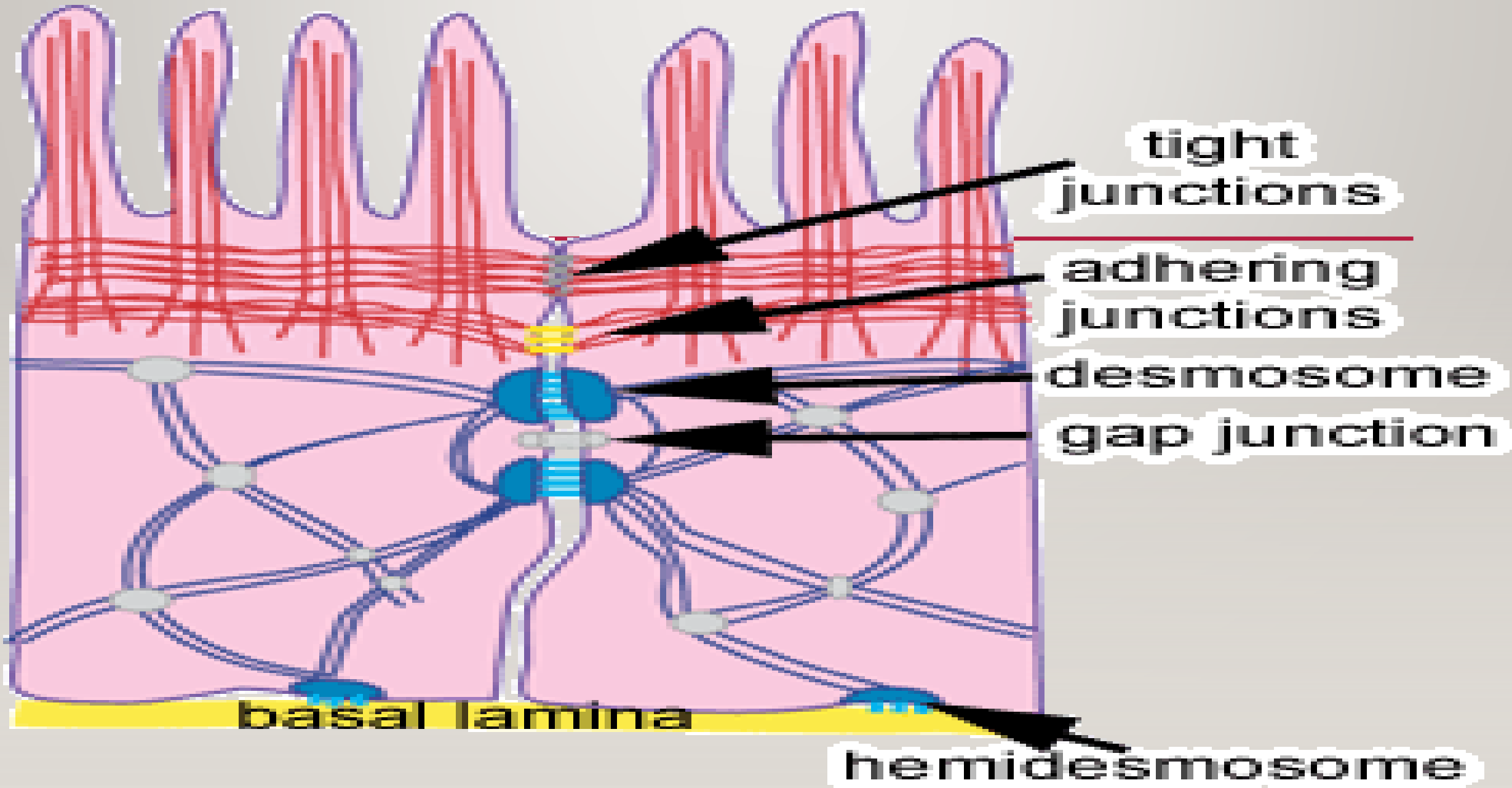
# **A) ZONULA OCCULUDENS: (TIGHT JUNCTION)**

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- **These junctions are girdle that enclose the entire upper side of the lateral surface of the cell at various places.**
- **About 10-15nm extracellular spaces was present between adjacent cells**
- **It occurs in the cells that need seal between them to prevent passage of solutes between them.**







## B) ZONULA ADHERENS (JUNCTIONAL COMPLEX)

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- **This junction is located just beneath the tight junction.**
- **It form continuous girdle around the cell.**
- **No membrane fusion. The intercellular space is (15-20nm).**
- **The space filled with low electron dense materials.**
- **At this junction numerous filamentous (tonofilaments) seen embedded in the inner surface of each cell membrane. It present between cells of the intestine**



## C) MACULA ADHERENS [DESMESOMES]

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- **Spot like junction = macula junction**
- **The intercellular space (15-20nm) of adjacent cell membrane.**
- **The two cell membrane are thickened by the condensation of the Tonofilament intermediate line of dense material seen in the inter cellular region, “This dark line may represent condensation of fusion of the cell coats (glycocalyx) in this region, it is present in the cardiac muscle cells, in the stratified squamous cells.**





## 2-COMMUNICATING JUNCTION (GAP JUNCTION), (MACULA COMUNICATIONS) NEXUS

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- **Similar to tight junction**
- **Minute bridge in the distance between the two membranes and consists of lipoprotein.**
- **It known as [macular – type junction]**
- **The adjacent cell membrane comes into close contact but with a distance of 2nm in between. This gap permits passage of ions and small molecules.**
- **It was seen in the cells of smooth and cardiac muscle.**

