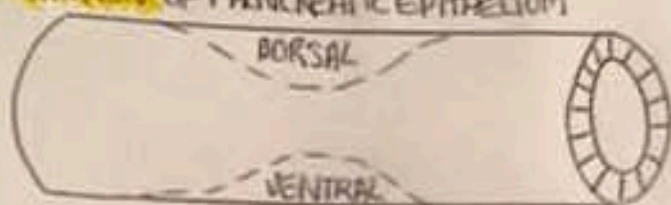
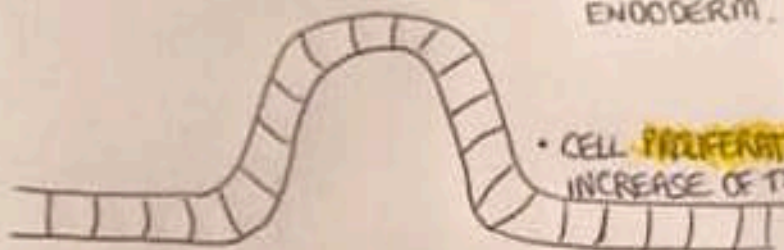


## PRIMARY TRANSITION

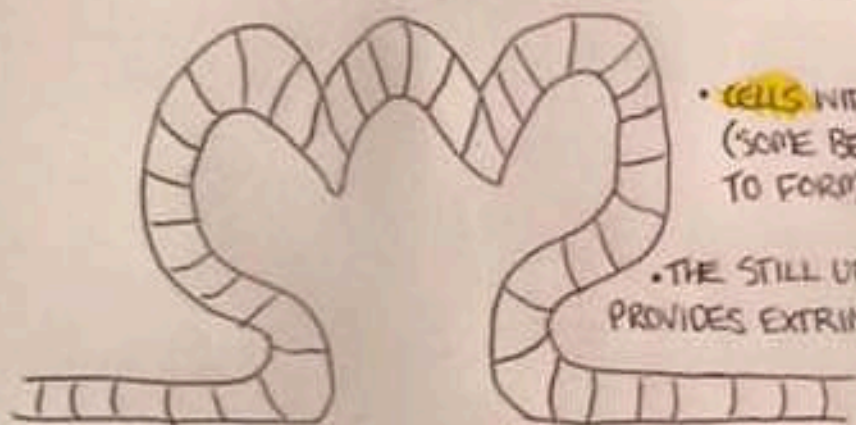
### INVAGINATION OF PANCREATIC EPITHELIUM



- TWO PANCREATIC EPITHELIAL BUDS ARE INDUCED BY THE ENDOTHELIAL CELLS AND EMERGE FROM THE OPPOSING SIDES OF THE FOREGUT ENDODERM.



- BUDS ELONGATE
- CELL PROLIFERATION CAUSES RAPID SIZE INCREASE OF THE PANCREATIC BUDS.



- CELLS WITHIN THE BUD CHANGE THEIR SHAPE (SOME BECOME WEDGE-SHAPED) AND BEGIN TO FORM BRANCHED TUBULAR STRUCTURES.

- THE STILL UN-DIFFERENTIATED EPITHELIUM PROVIDES EXTRINSIC SIGNALS TO CONTROL GROWTH.

## SECONDARY TRANSITION

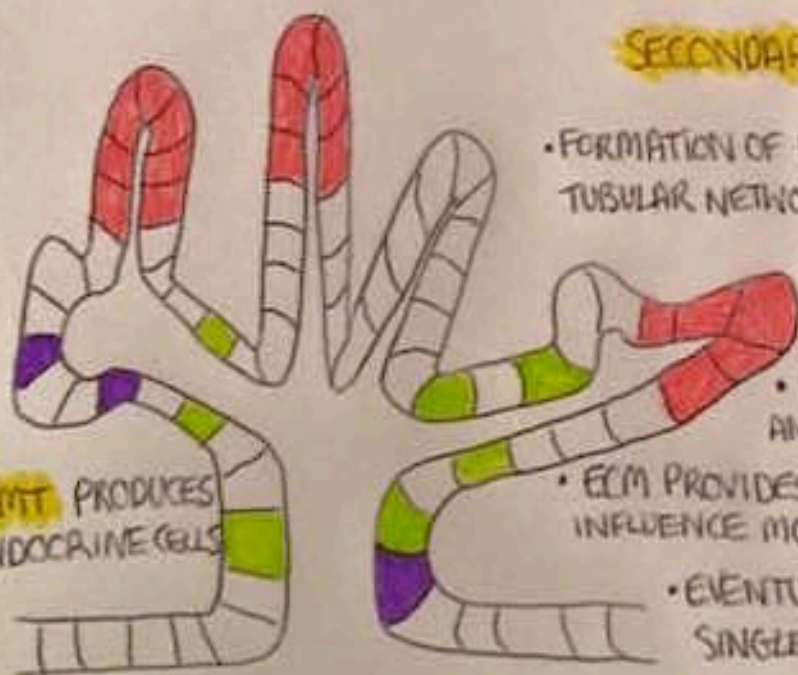
- FORMATION OF HIGHLY COMPLEX/HIGHLY ORDERED TUBULAR NETWORK.

- BLOOD VESSELS AND NERVES BEGIN TO PENETRATE THE EPITHELIUM.

- DIFFERENTIATION INTO ENDOCRINE, ACINAR AND DUCTAL CELLS.

- ECM PROVIDES LOCALLY RESTRICTED SIGNALS WHICH INFLUENCE MORPHOGENESIS AND CELL FATE.

- EVENTUALLY PANCREATIC BUDS FUSE INTO A SINGLE ORGAN (~E12-5).



EMT PRODUCES ENDOCRINE CELLS