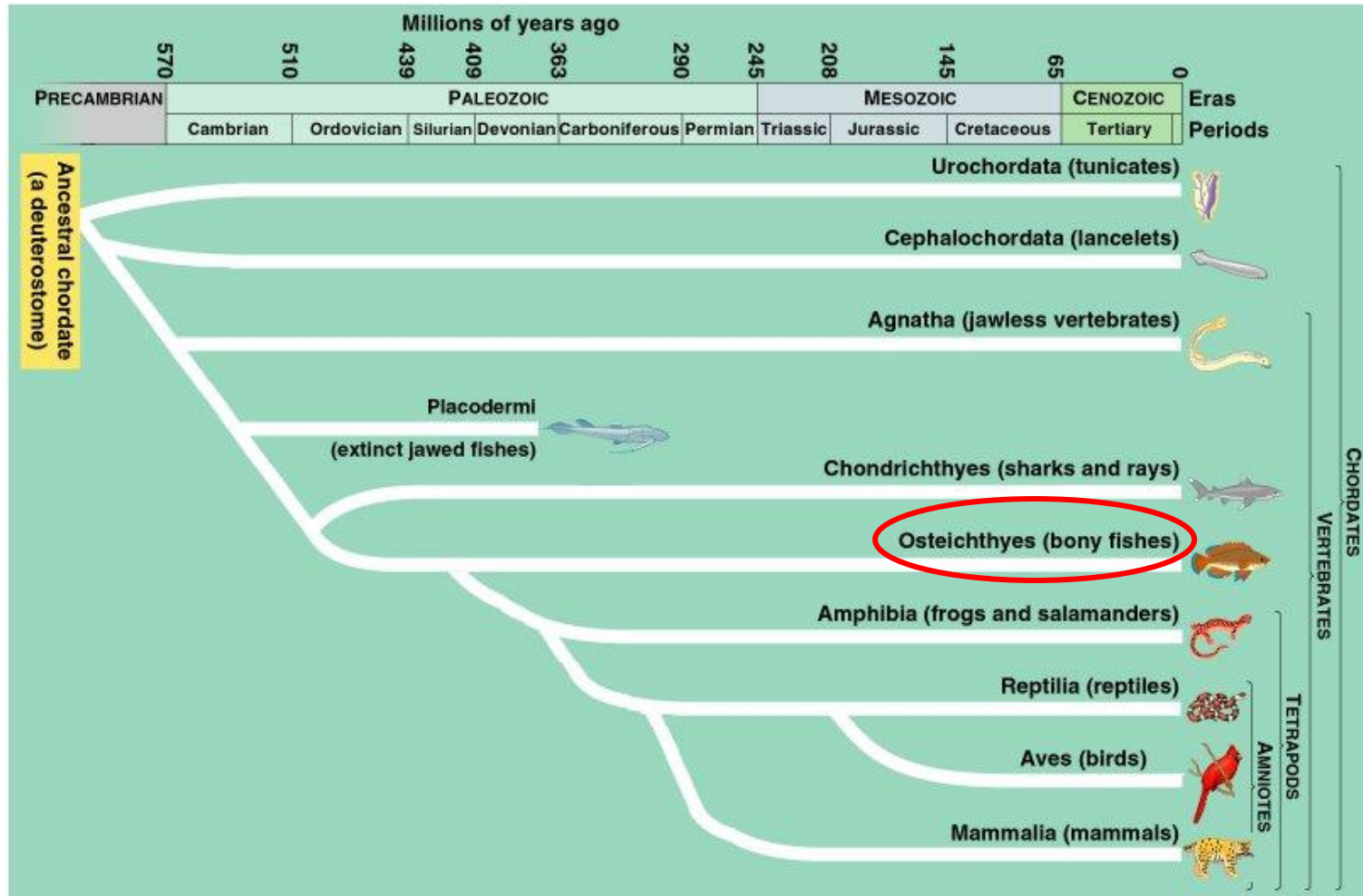
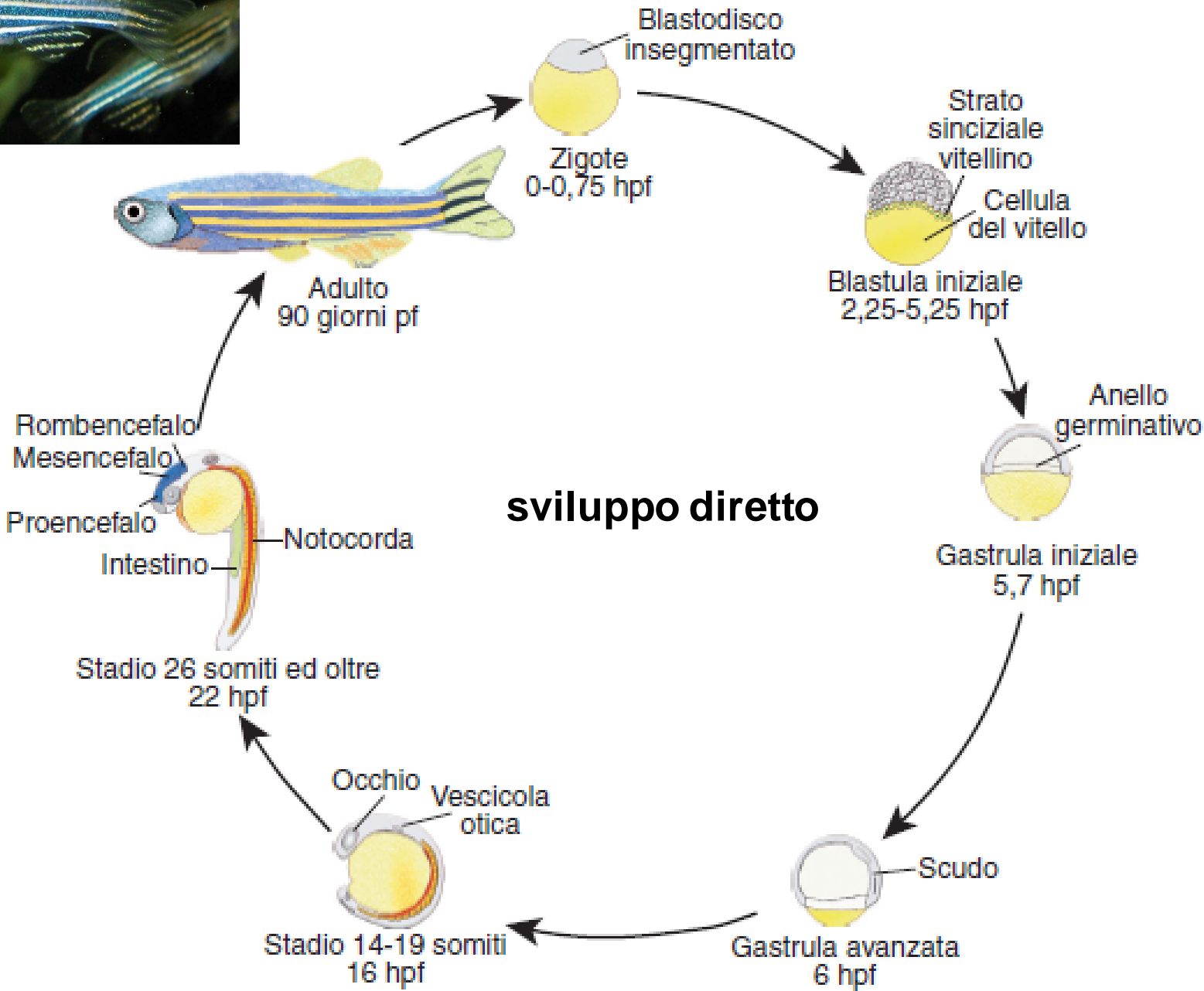
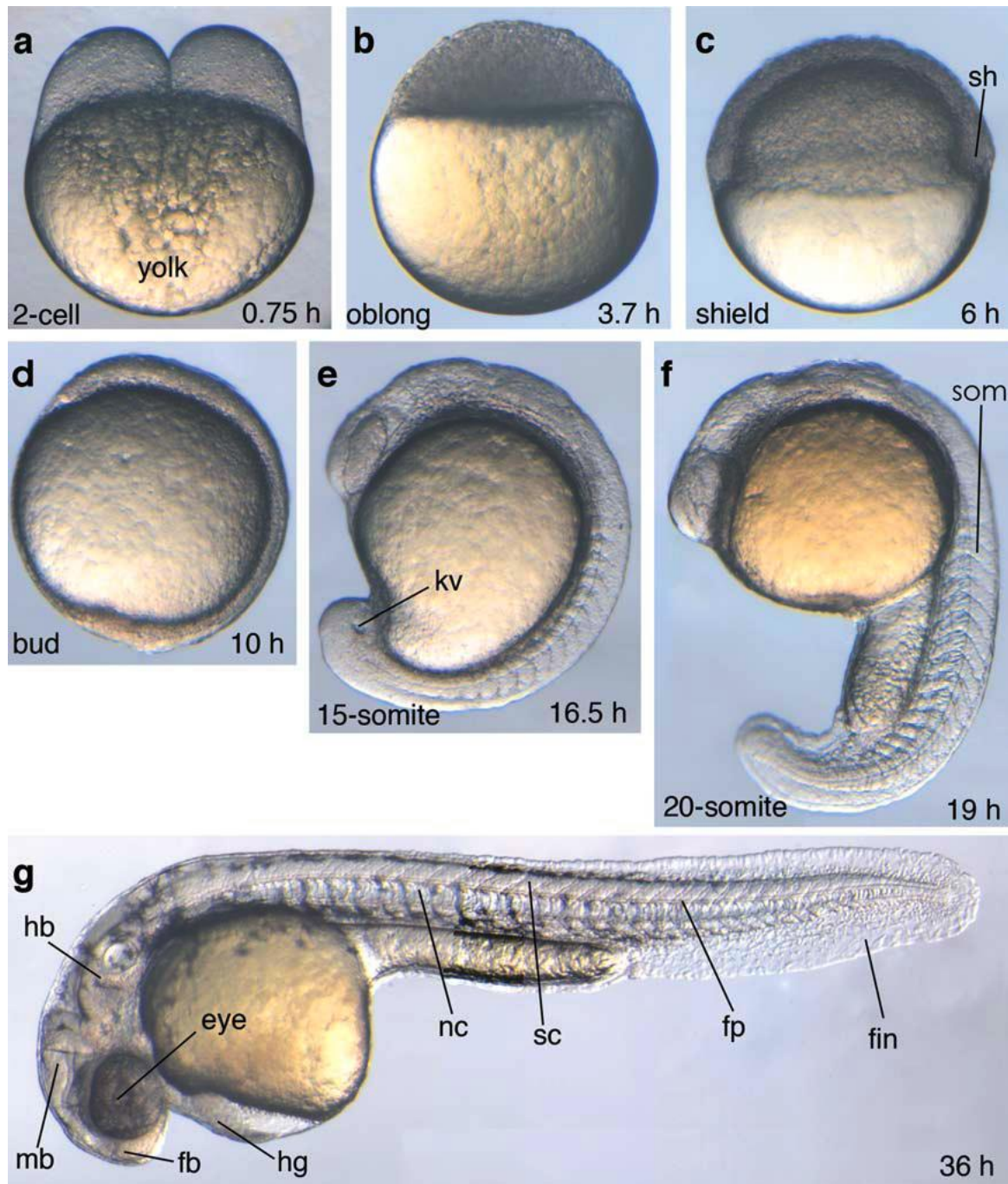


FILOGENESI DEI CORDATI



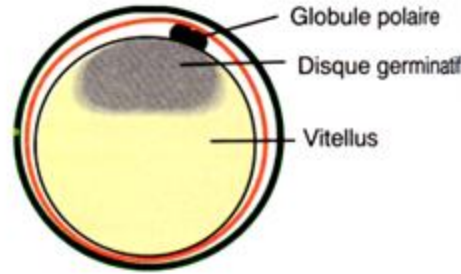
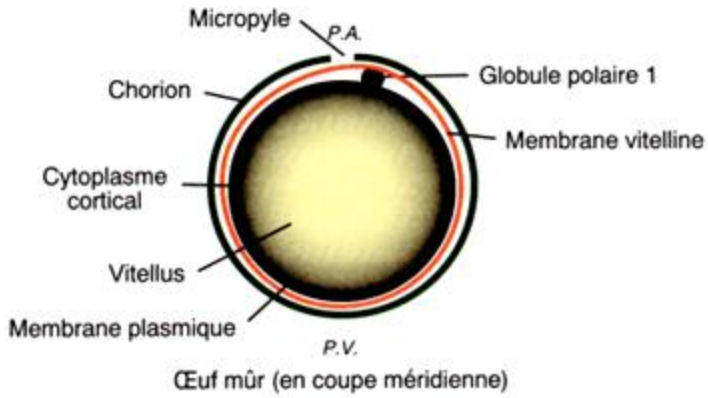
ZEBRAFISH (*Danio rerio*)





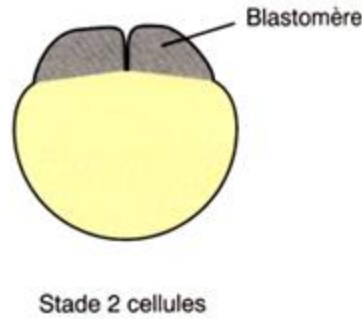
Premières étapes de la segmentation

a) L'œuf insegmenté

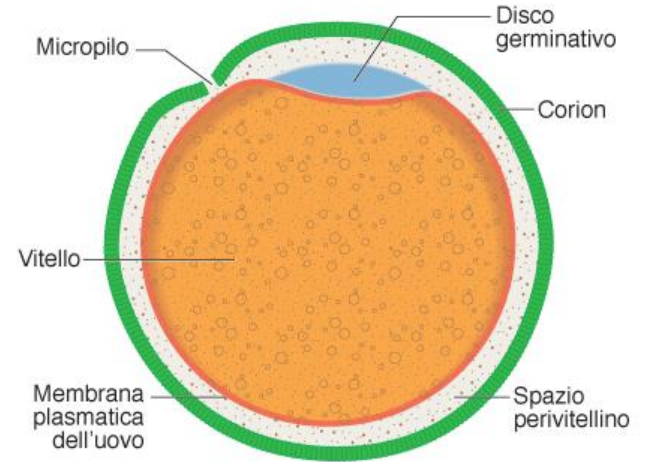


Œuf fécondé (en coupe méridienne)

b) La segmentation : premiers stades (vues latérales externes)

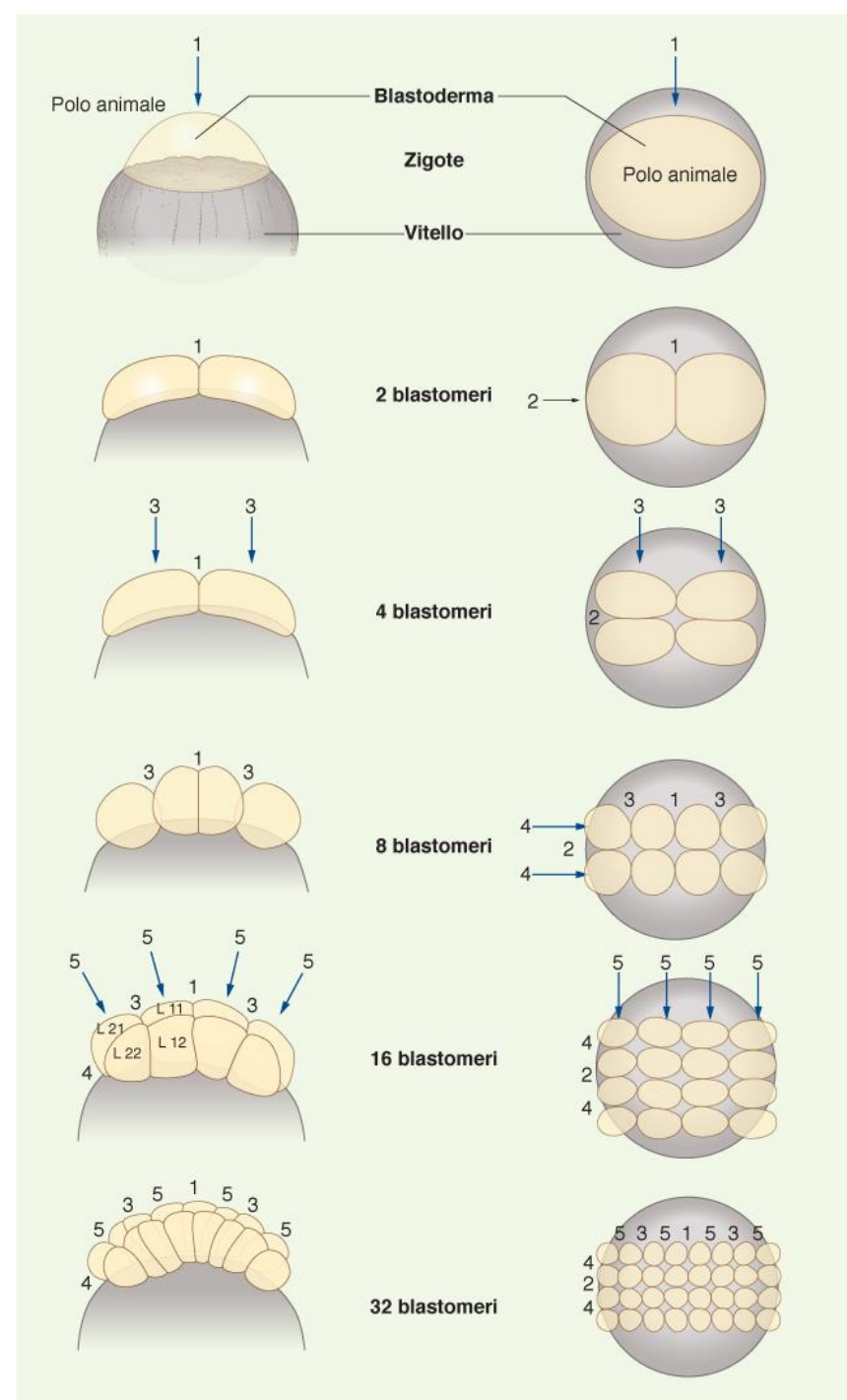
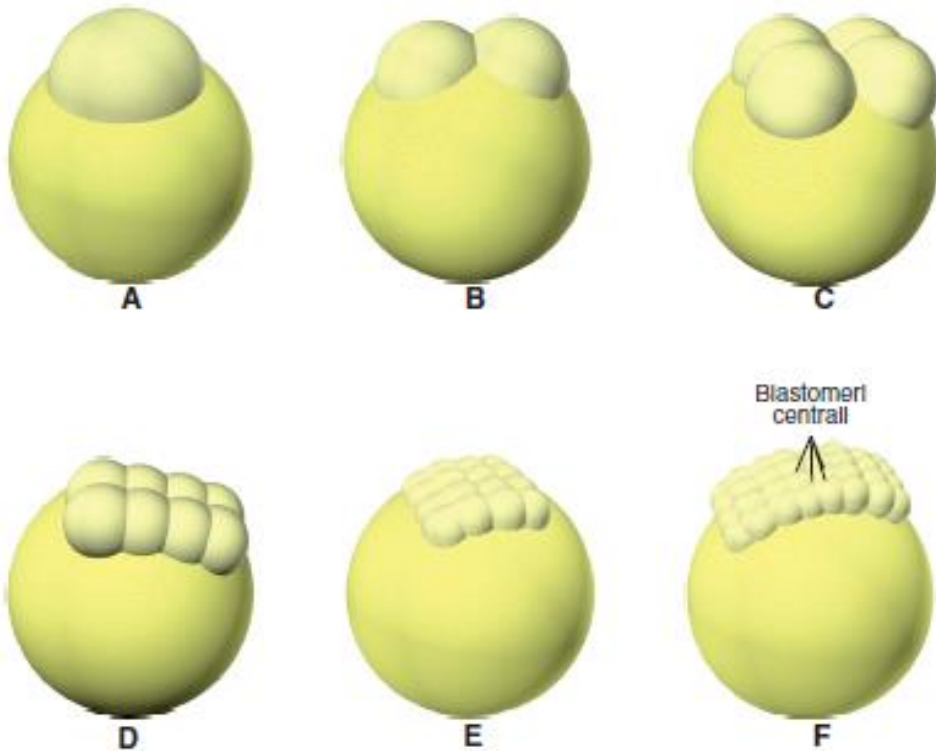


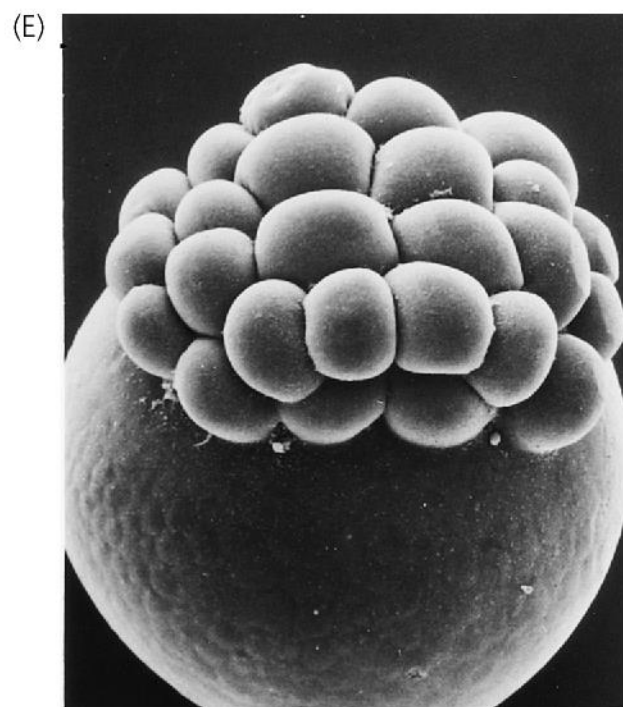
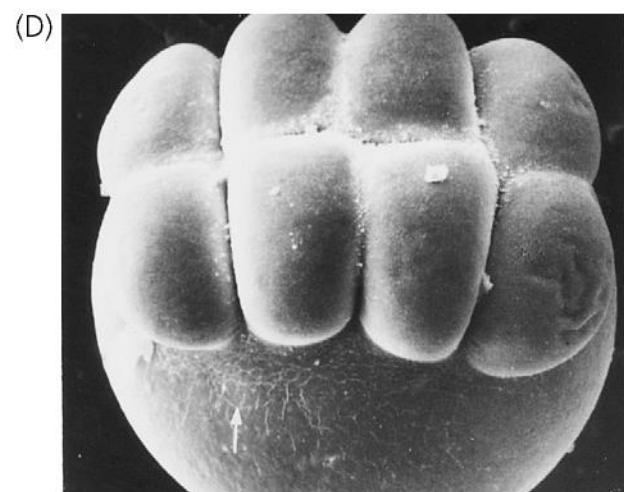
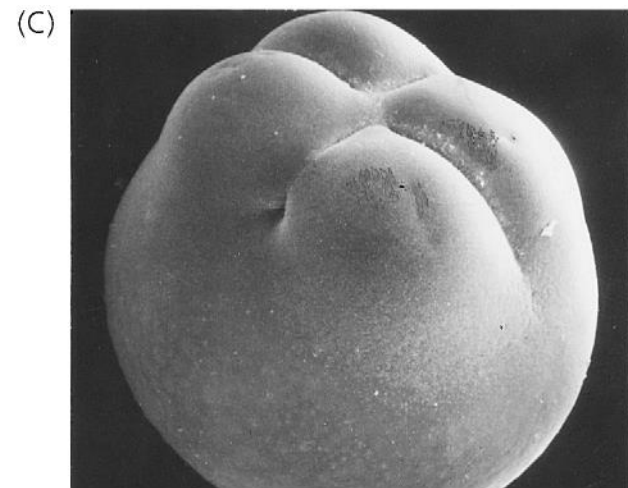
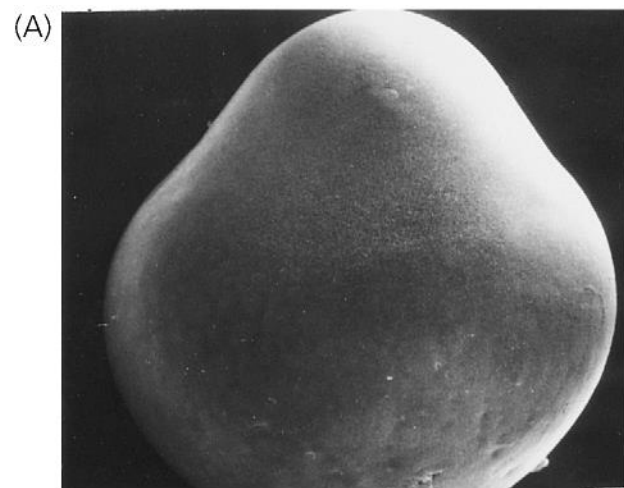
Uovo telolecitico

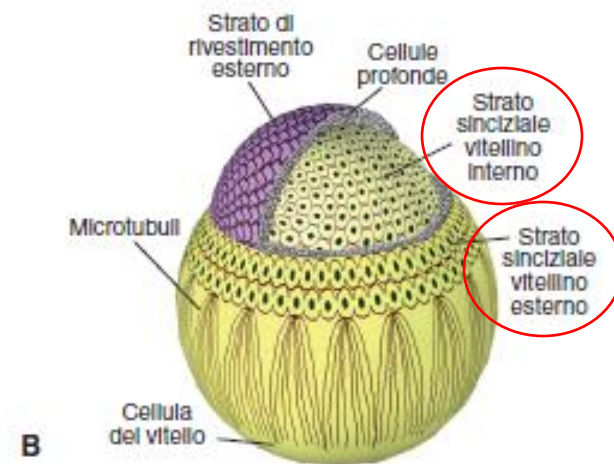
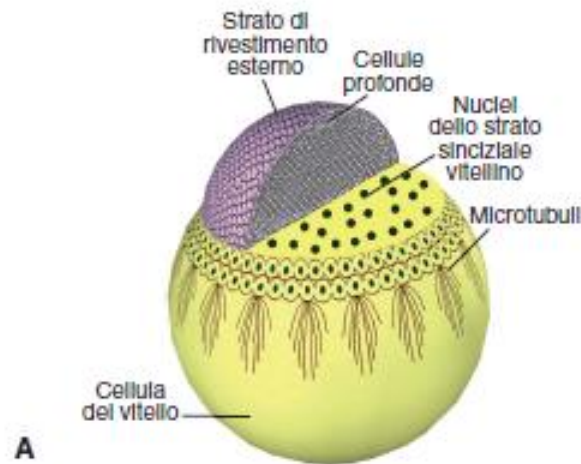
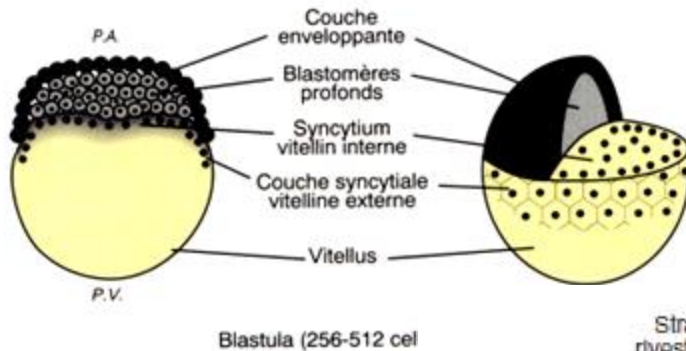
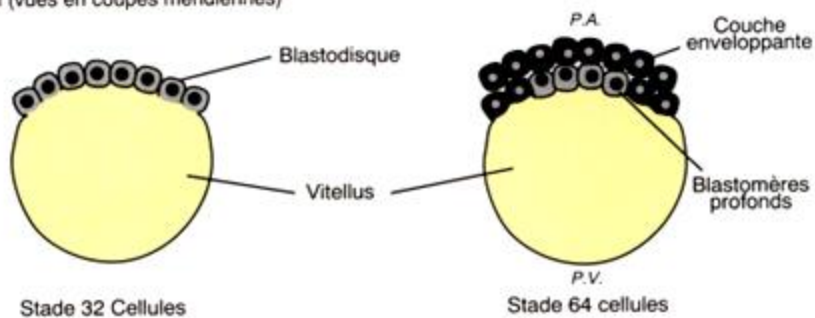


Segmentazione meroblastica discoidale

SEGMENTAZIONE MEROBLASTICA DISCOIDALE

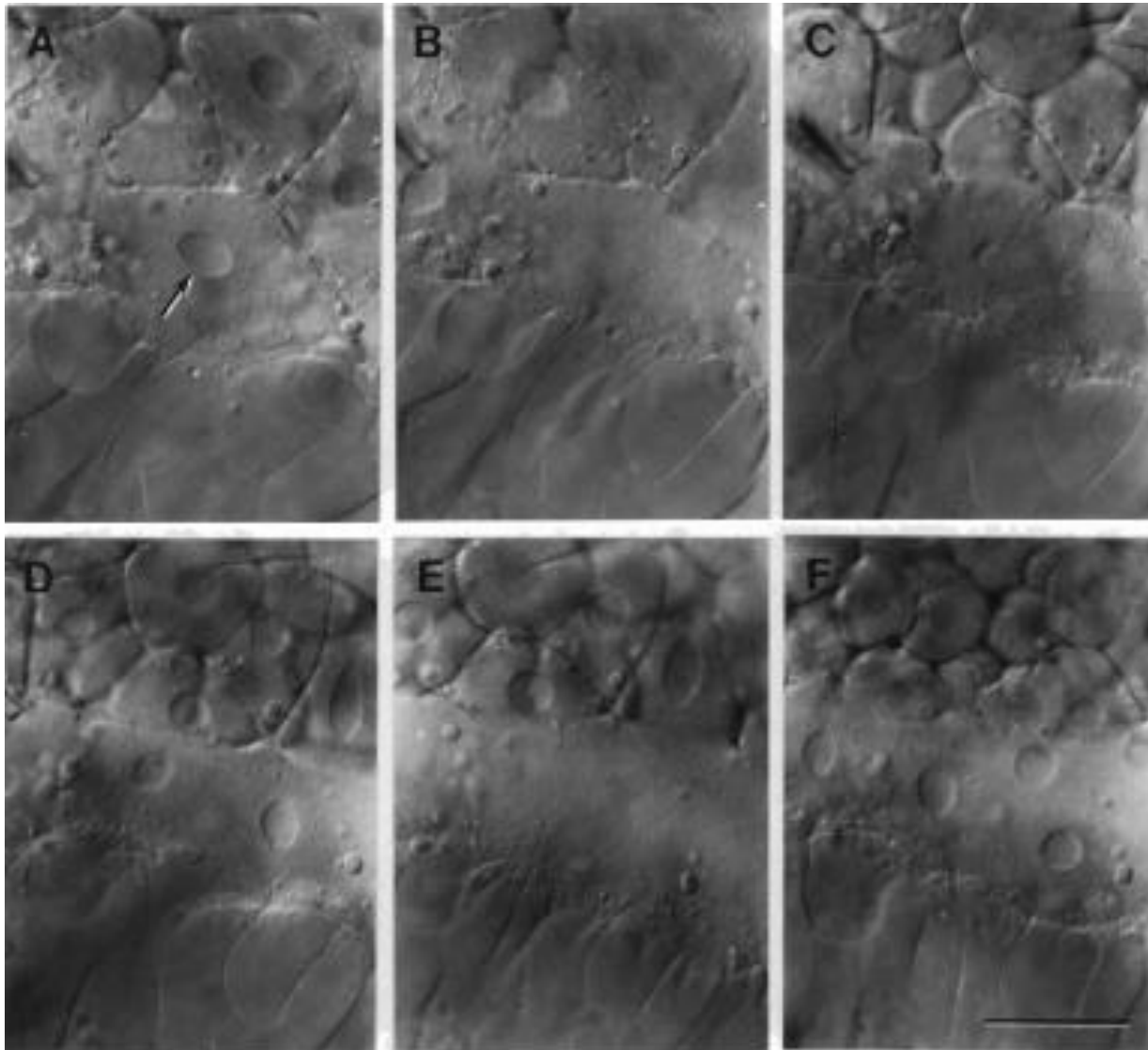




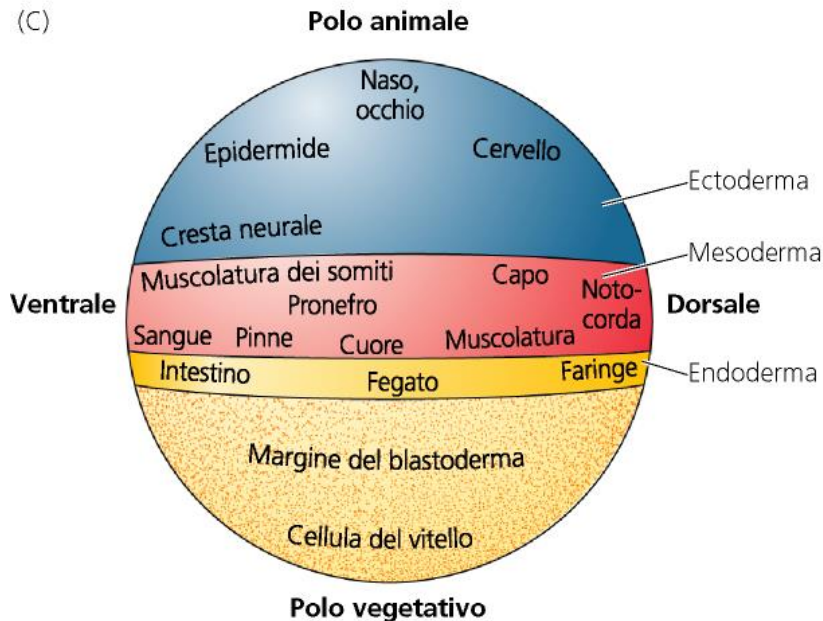
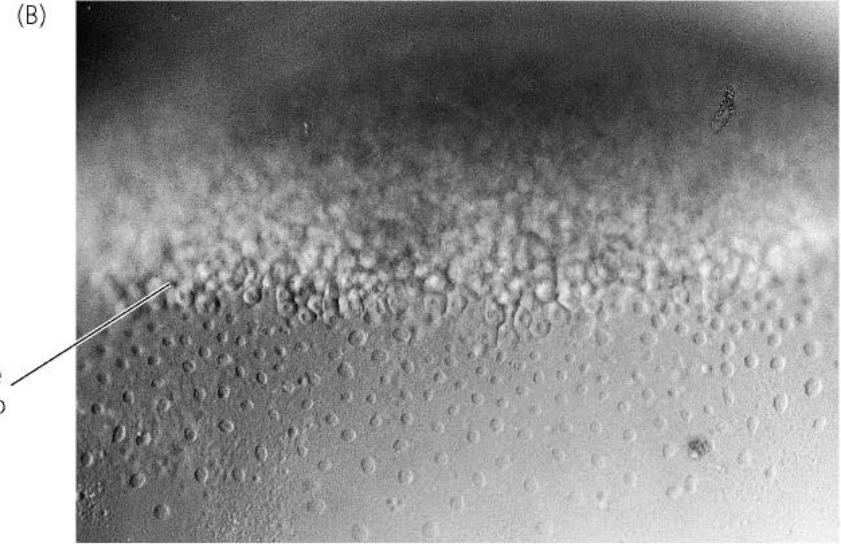
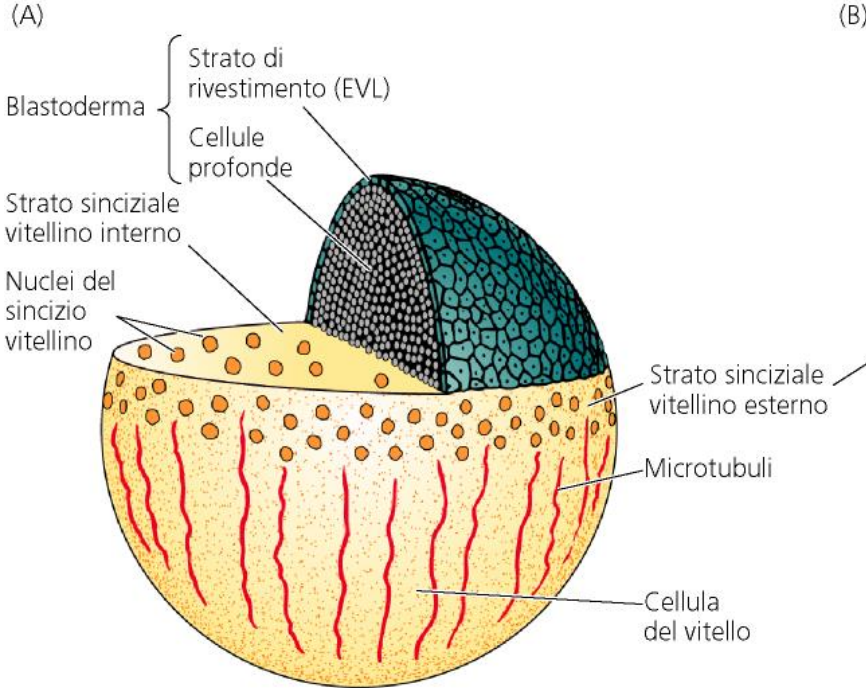


1. Rivestimento esterno: periderma
2. Blastomeri profondi: formano l'embrione
3. Sincizio vitellino

FORMAZIONE DELLO STRATO SINCIZIALE VITELLINO

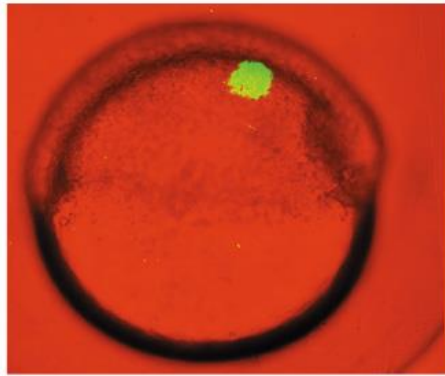


MAPPA DEI TERRITORI PRESUNTIVINI NELLA BLASTULA DI ZEBRAFISH

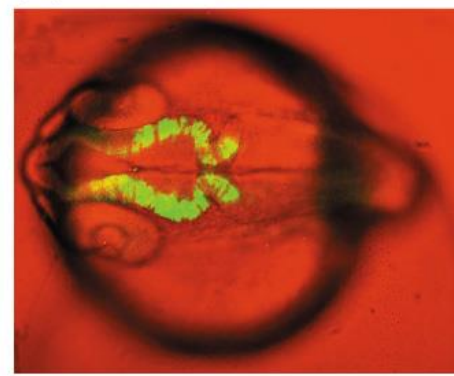


1. Ectoderma, mesoderma ed endoderma presuntivi allineati lungo l'asse animale vegetativo (ma la mappa è «compressa» nell'emisfero animale per via della segmentazione meroblastica).
2. Vicinanza dei territori presuntivi del cordomesoderma e del neuroectoderma sul futuro lato dorsale.

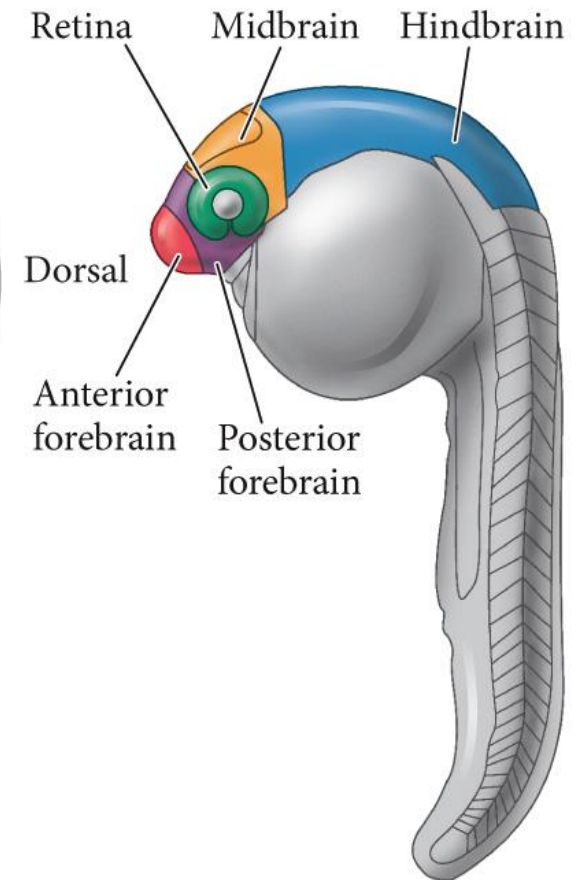
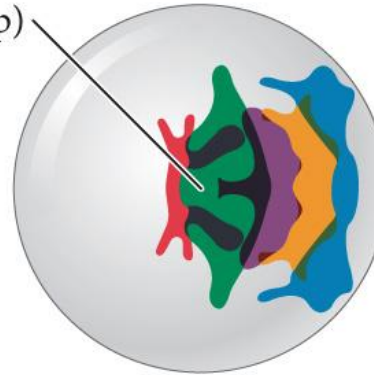
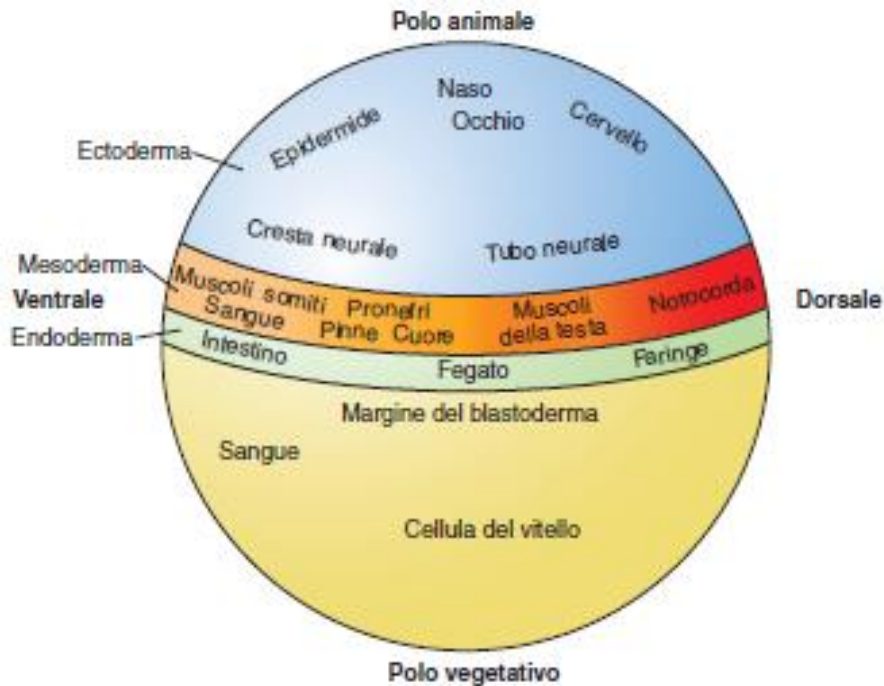
(A)



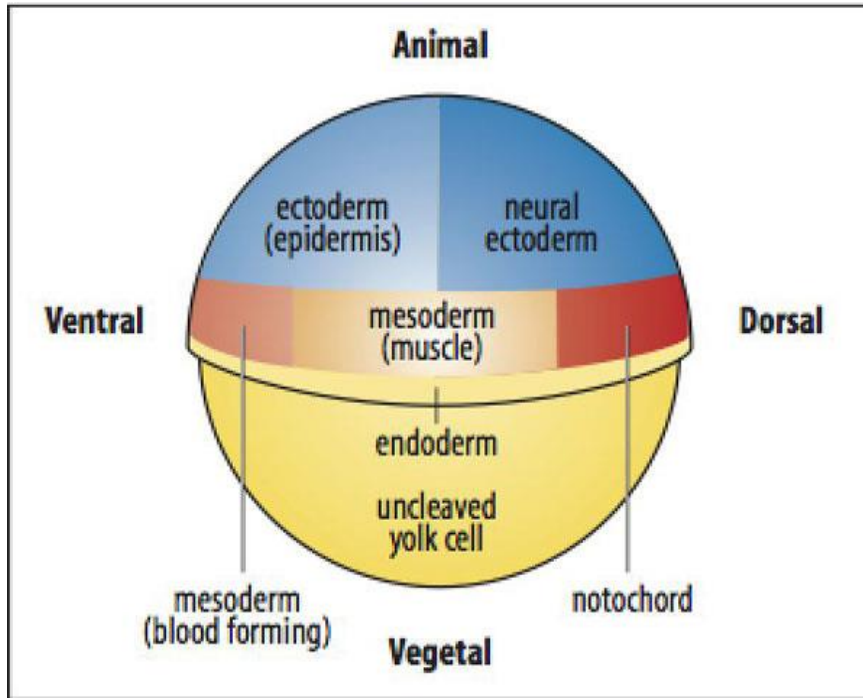
(B)



(C) Animal pole
(egg viewed
from top)



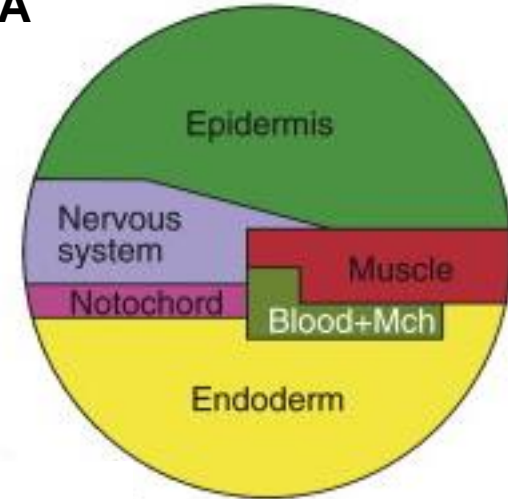
LE MAPPE DEI TERRITORI PRESUNTIVI NELLE BLASTULE DI ZEBRAFISH, XENOPUS E TUNICATI RIVELANO UN PIANO DI ORGANIZZAZIONE CONSERVATO



ZEBRAFISH

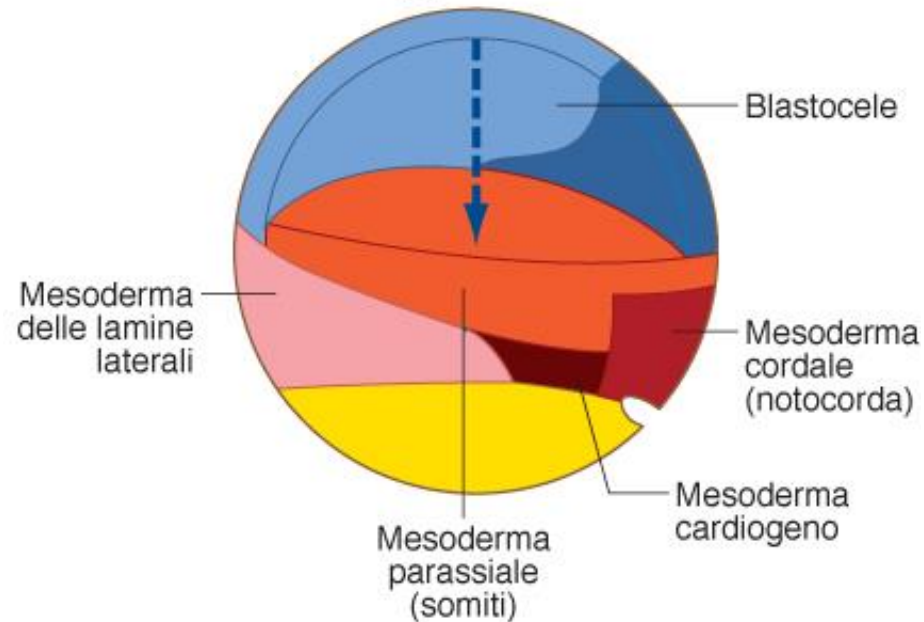
ASCIDIA

Ascidian fate map

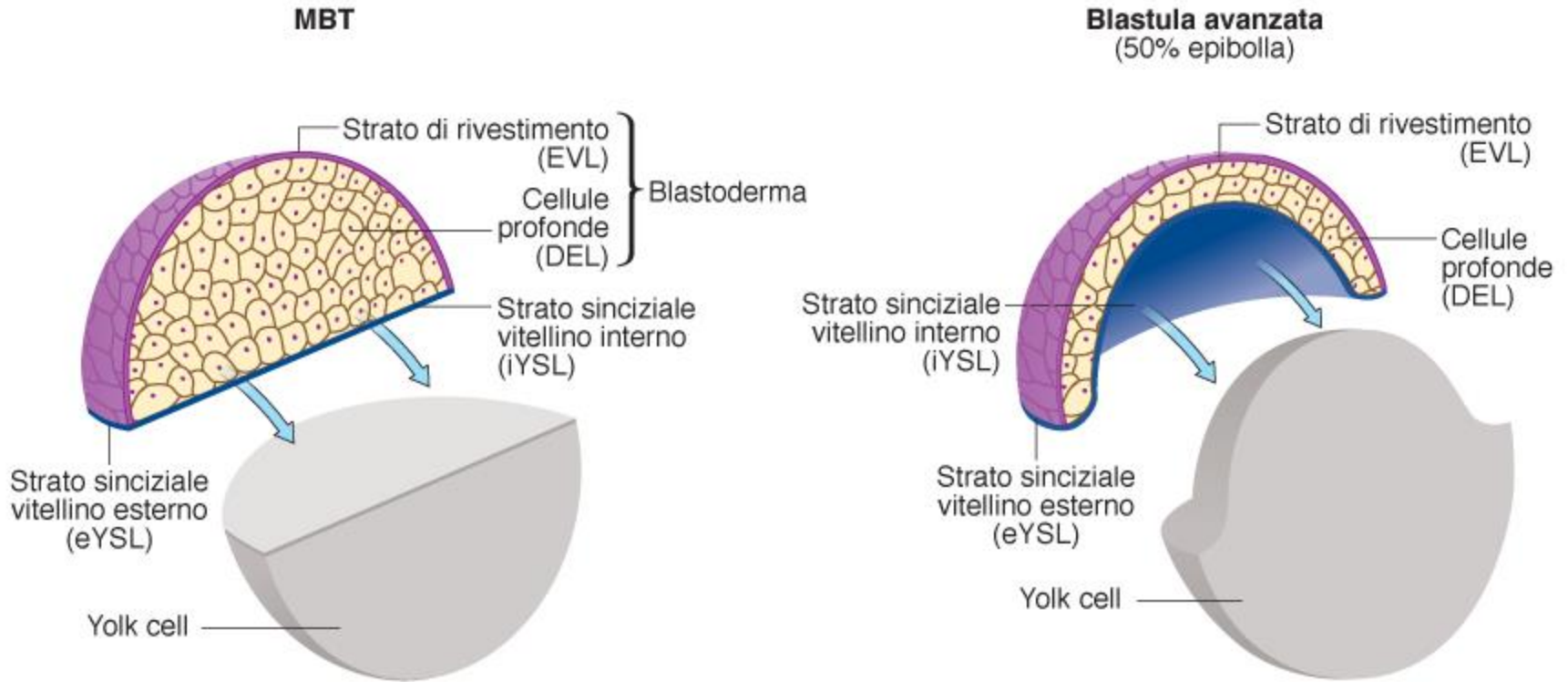


XENOPUS

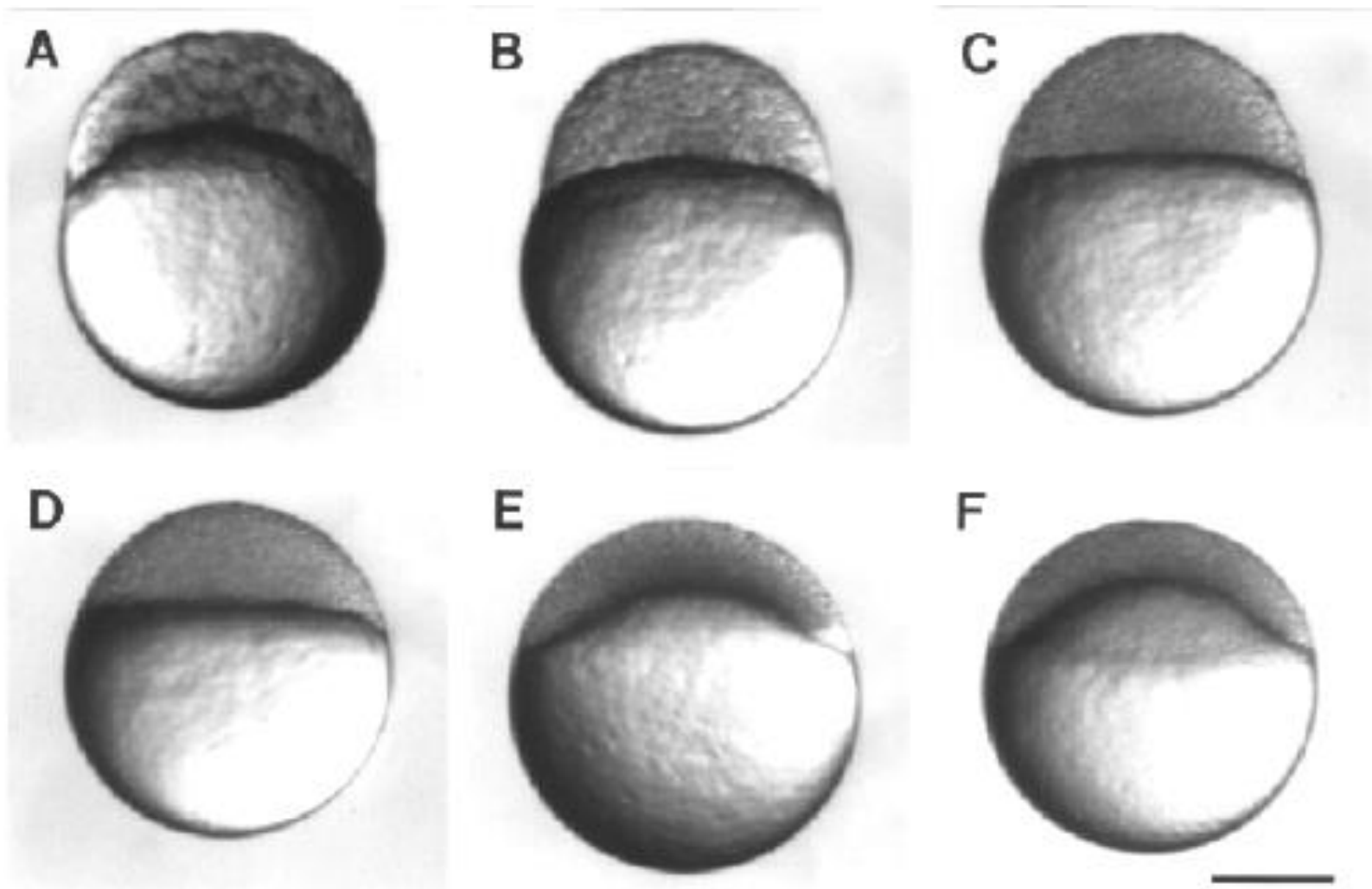
Mappa interna



FASI INIZIALI DELL'EPIBOLIA NELLA BLASTULA DI ZEBRAFISH

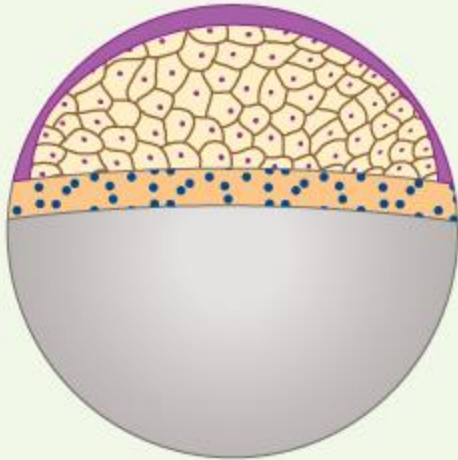


IL BLASTODISCO SI ASSOTTIGLIA PER EFFETTO DI MOVIMENTI DI INTERCALAZIONE RADIALE DELLE CELLULE DEGLI STRATI PIU' INTERNI
Si riduce il numero di strati ed aumenta la superficie

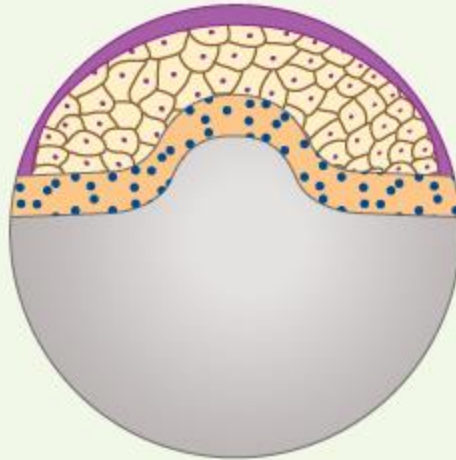


A

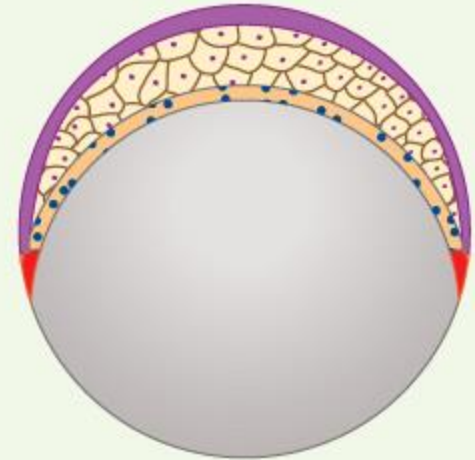
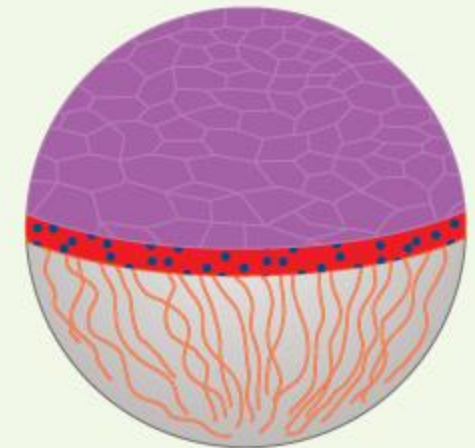
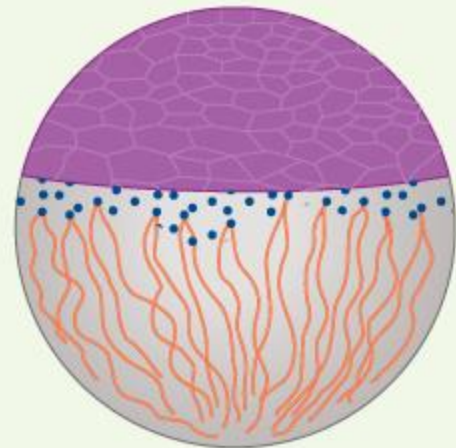
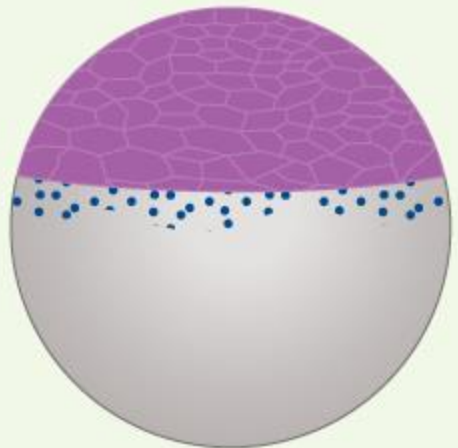
MBT



30%



50%

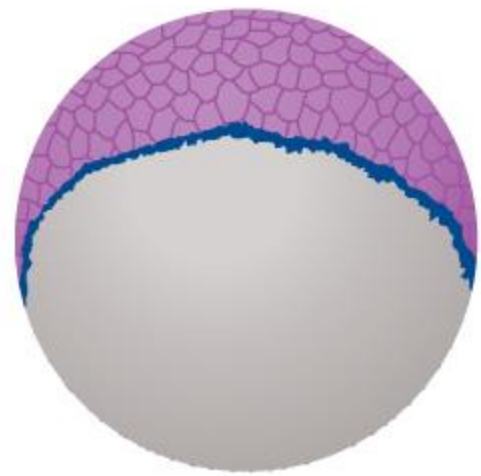
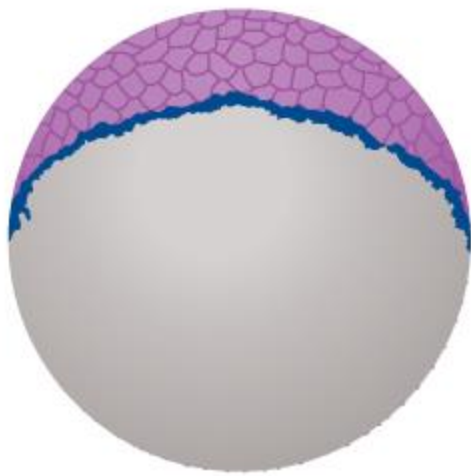
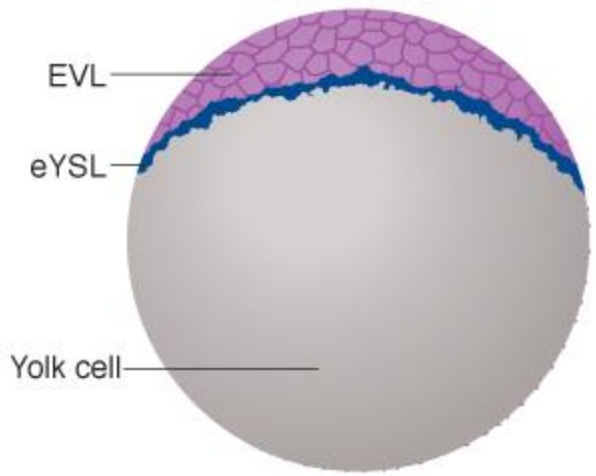
**B**

All'epibolia contribuisce la trazione esercitata dai nuclei del sincizio vitellino

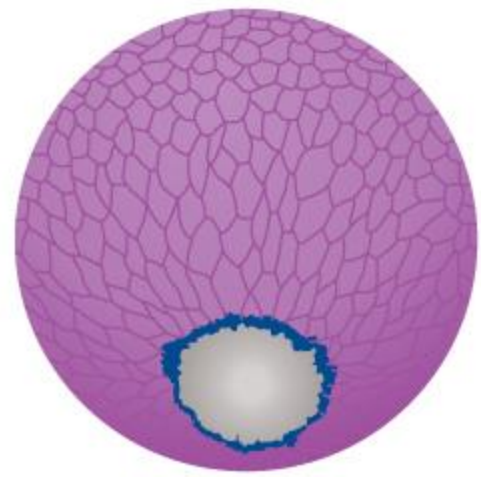
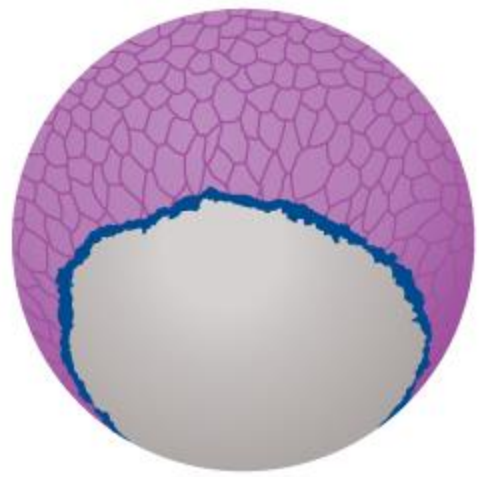


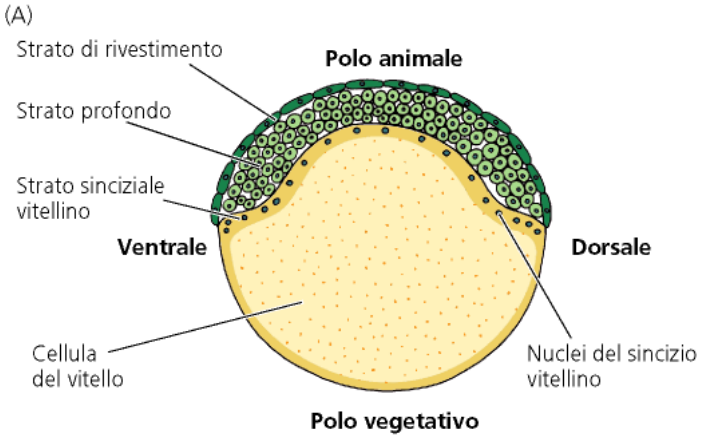


Polo animale



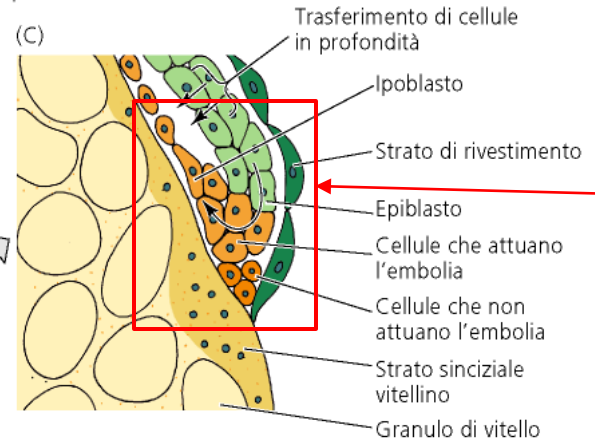
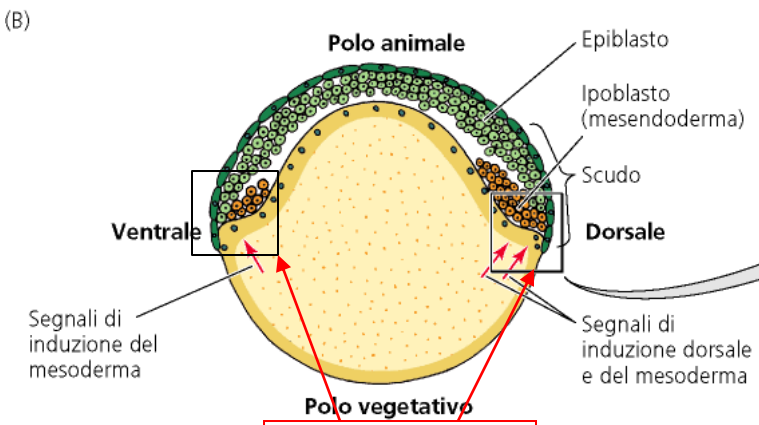
Polo vegetativo



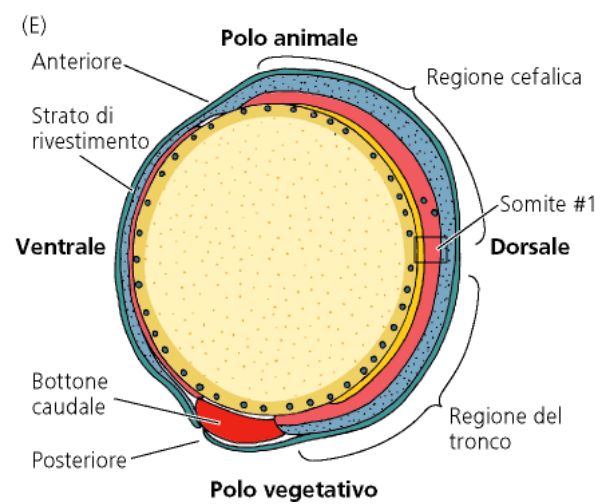
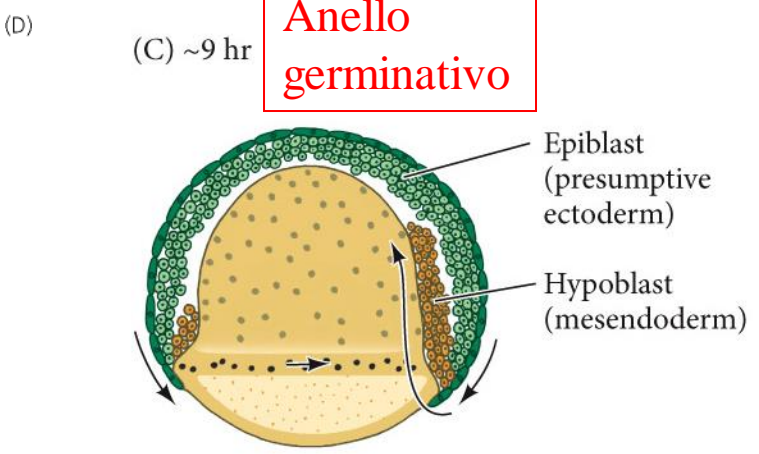


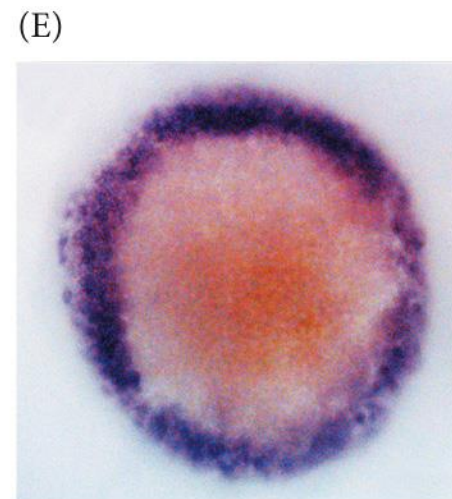
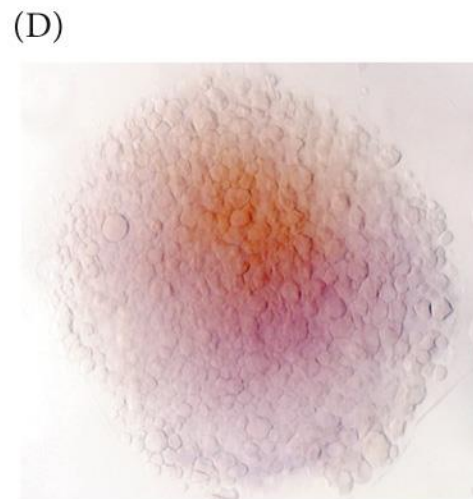
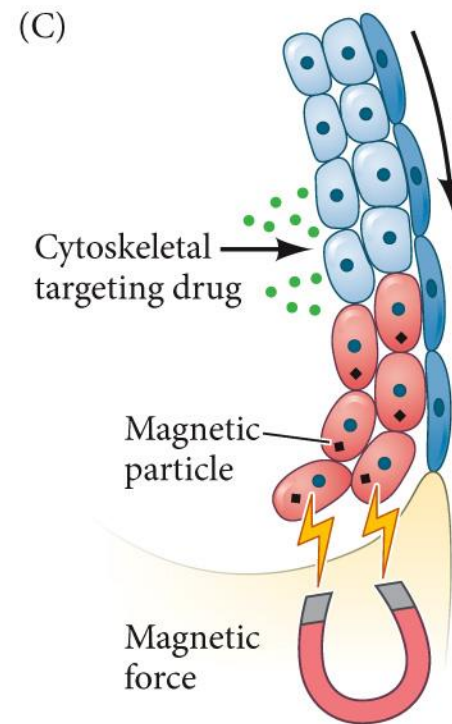
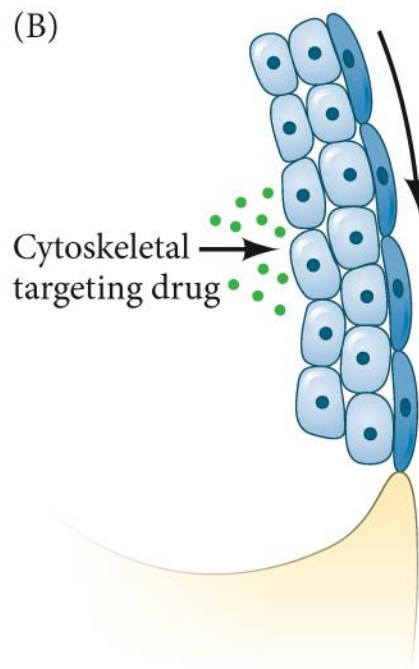
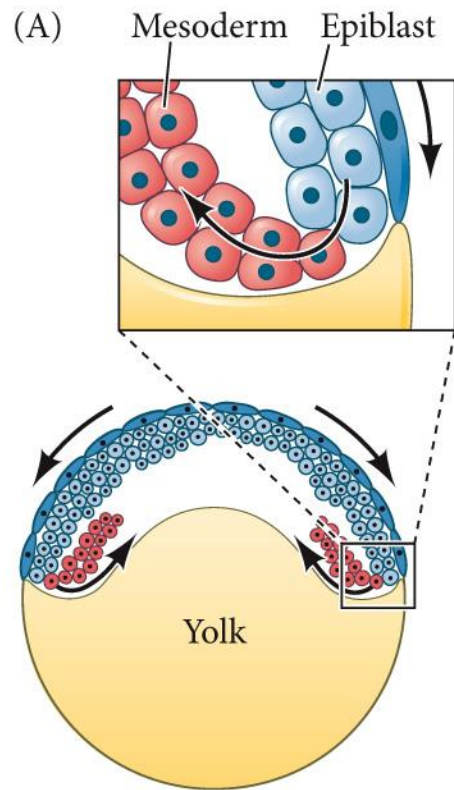
Strato esterno= periderma (verde scuro)
 Epiblasto= ectoderma (verde)
 Ipoblasto= mesoderma (arancio, poi rosso)
 endoderma (arancio, poi giallo)

- Mesoderma
- Ectoderma, neuroectoderma
- Epiblasto pluripotente
- Mesendoderma: precursori sia del mesoderma sia dell'endoderma
- Endoderma
- Strato di rivestimento (EVL)

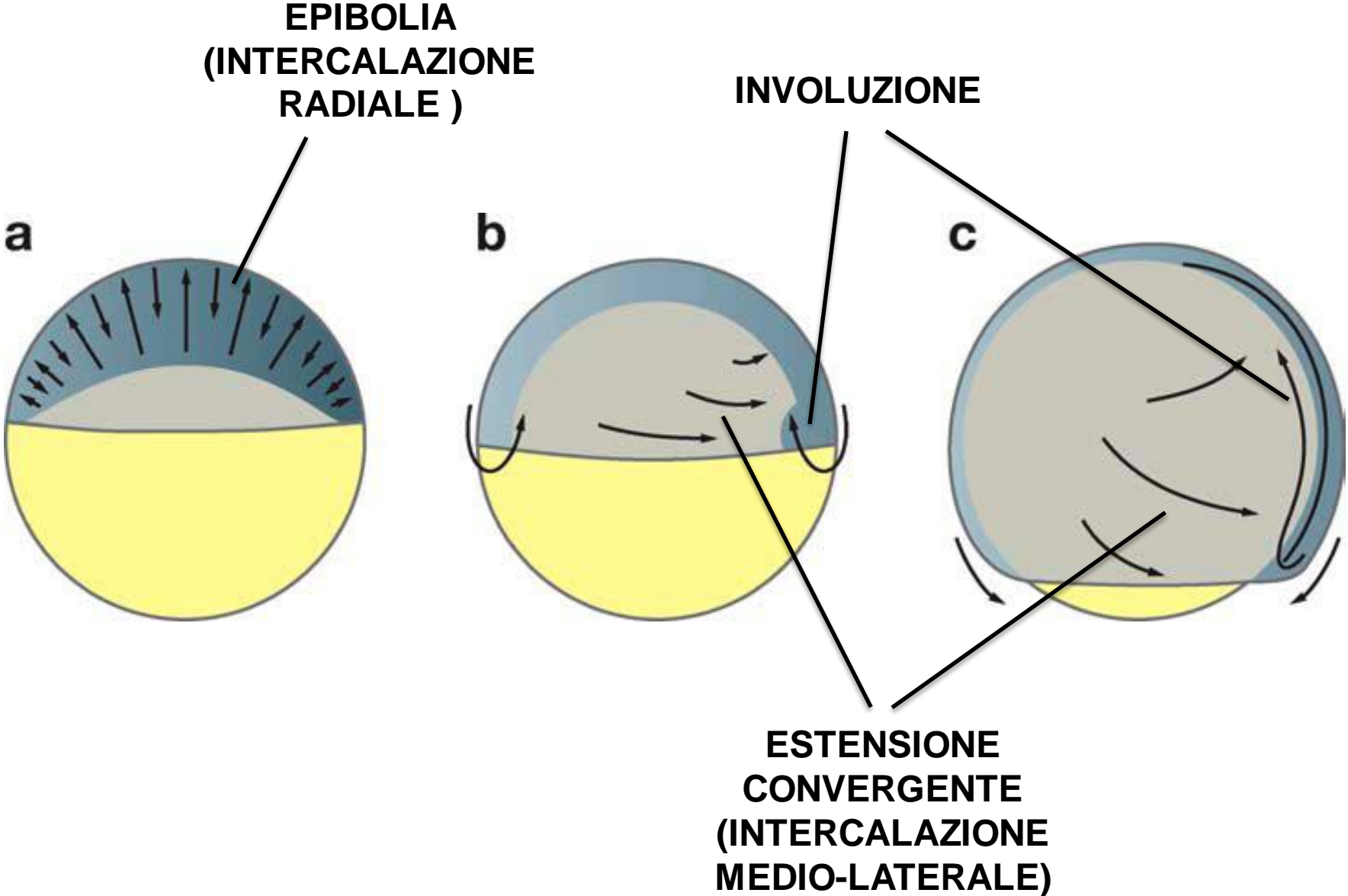


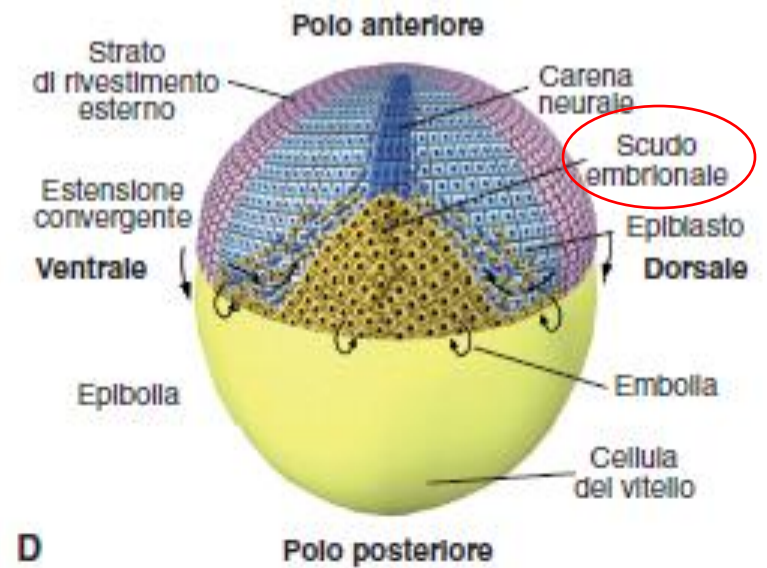
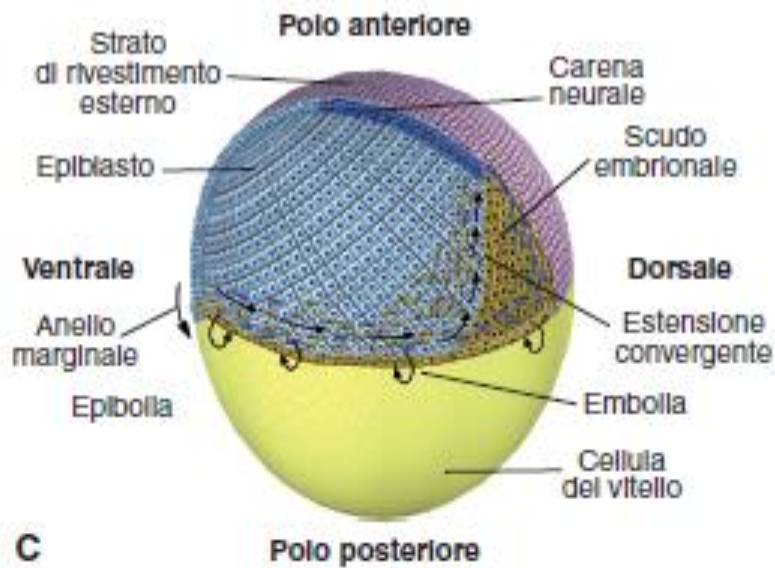
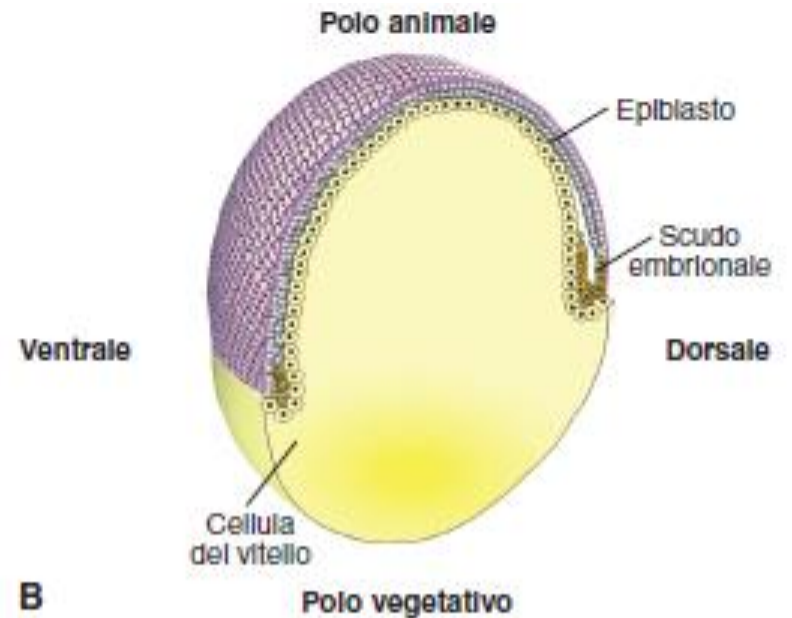
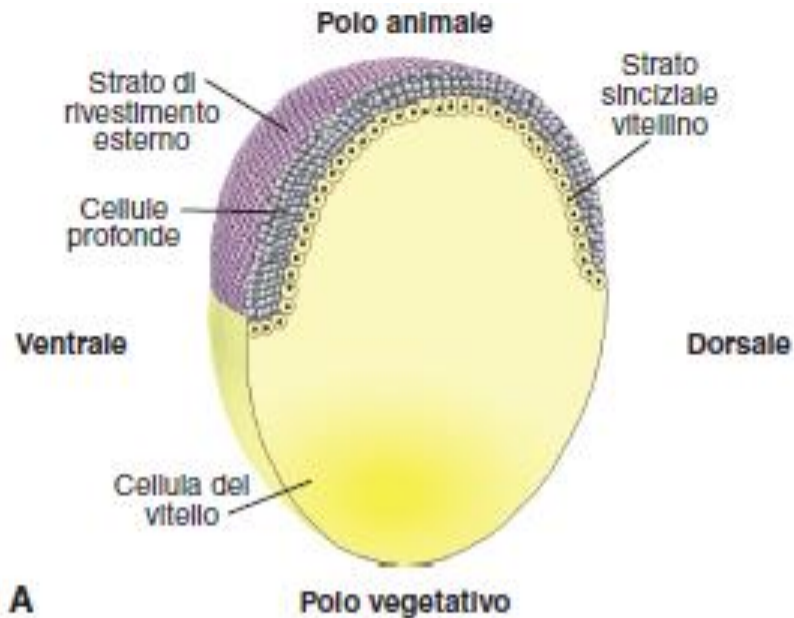
Anello germinativo

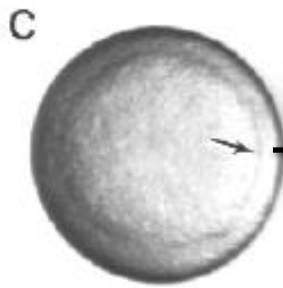
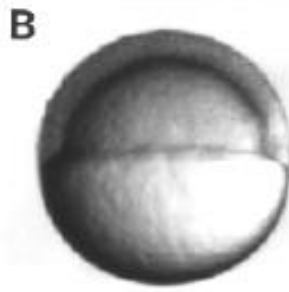
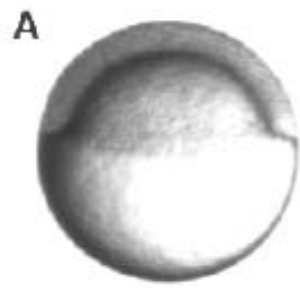




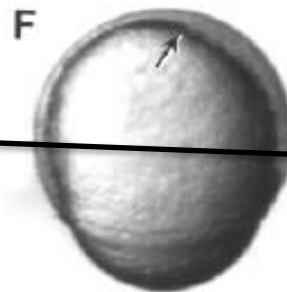
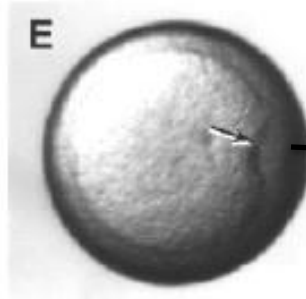
MOVIMENTI CELLULARI DURANTE LA GASTRULAZIONE IN ZEBRAFISH



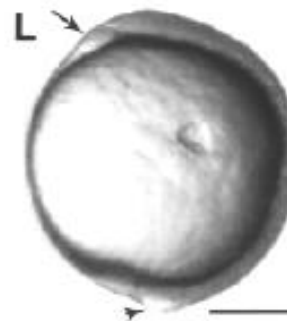
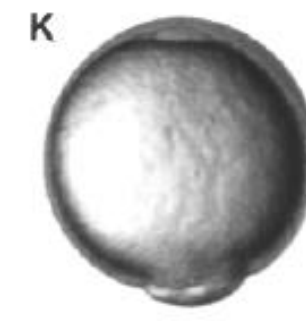
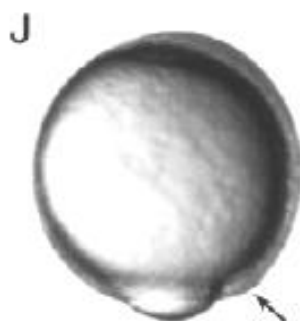
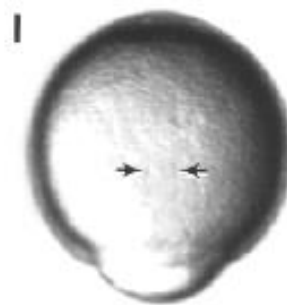
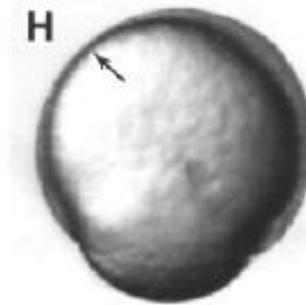
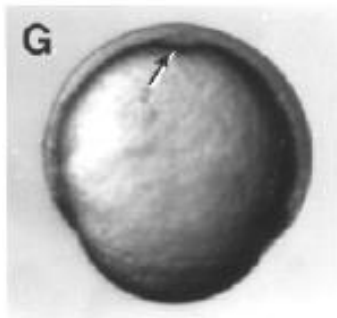


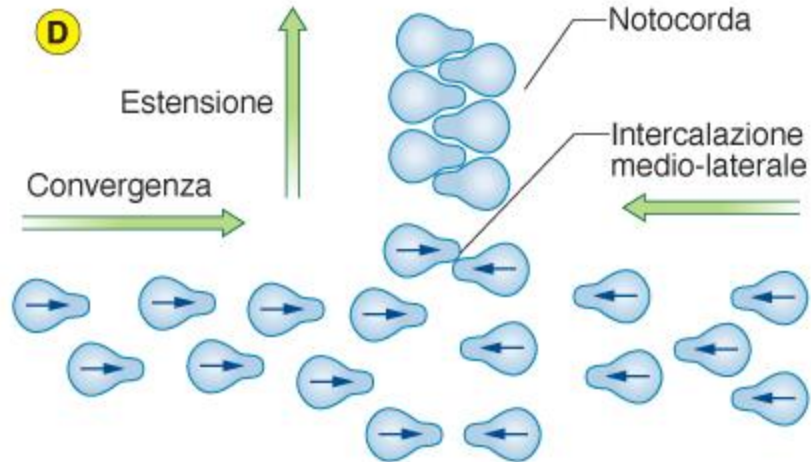
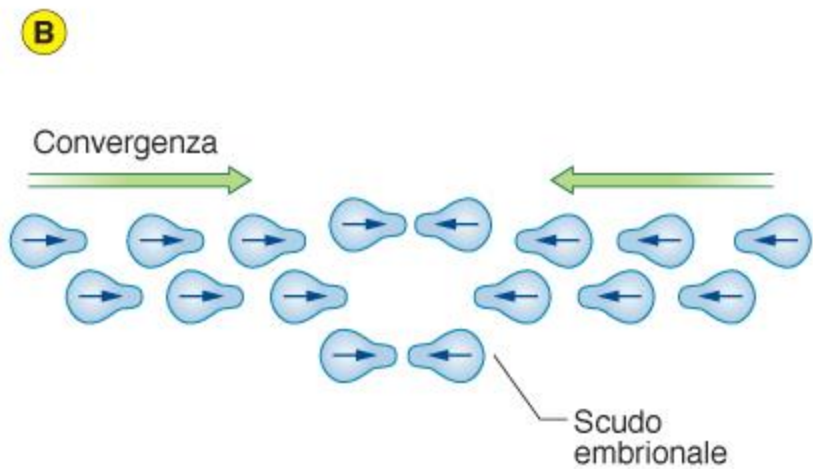
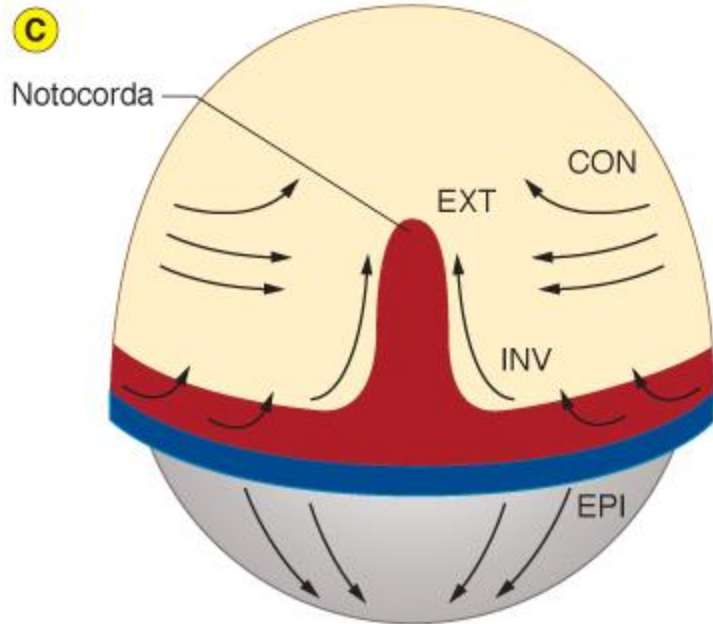
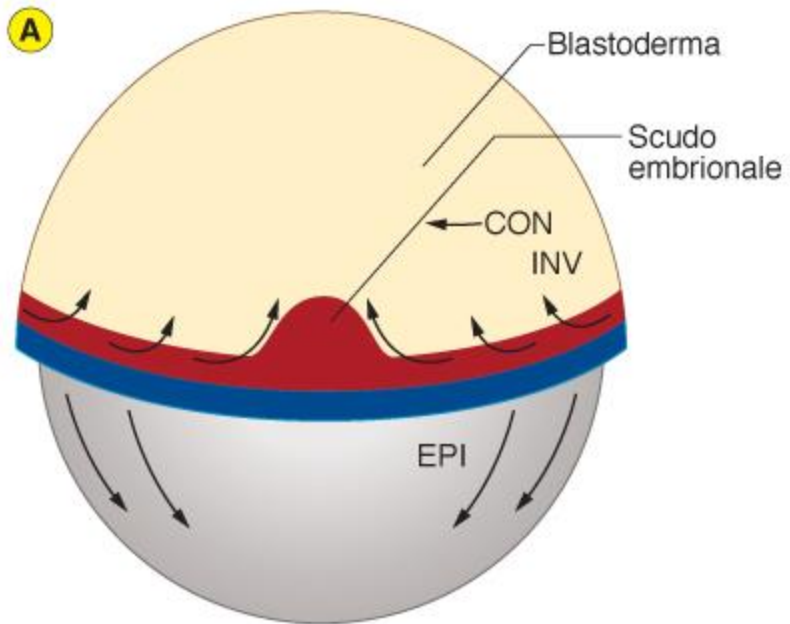


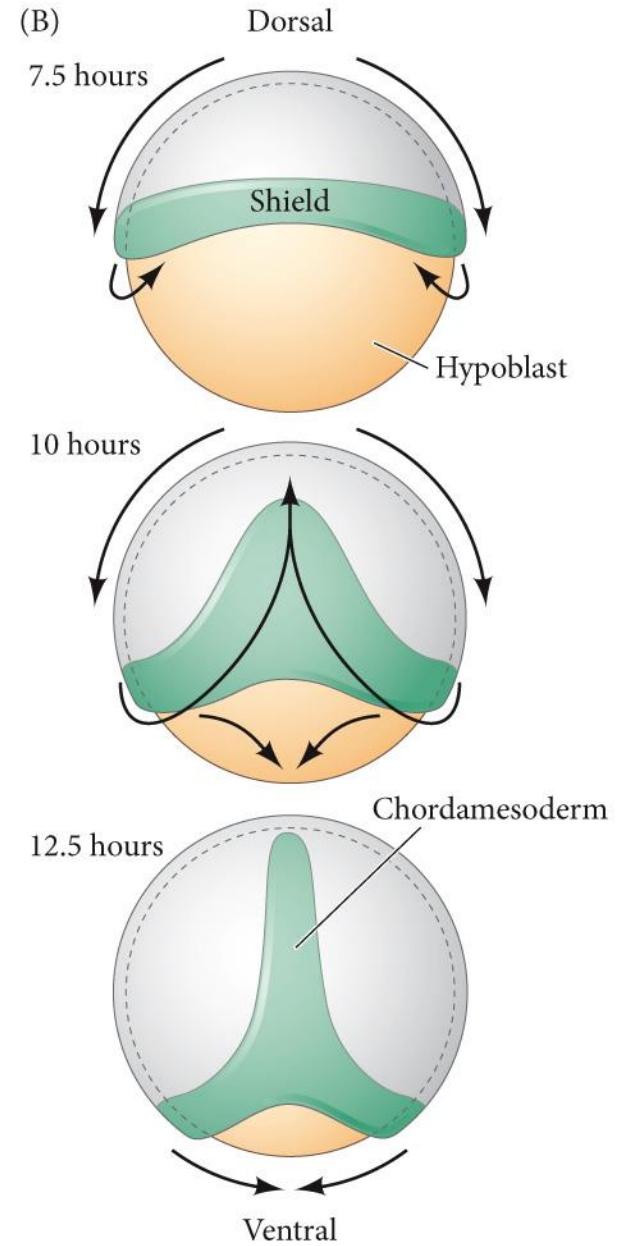
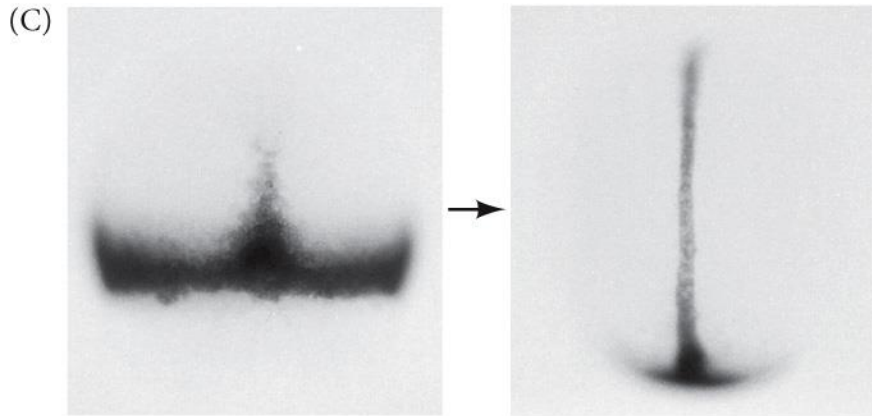
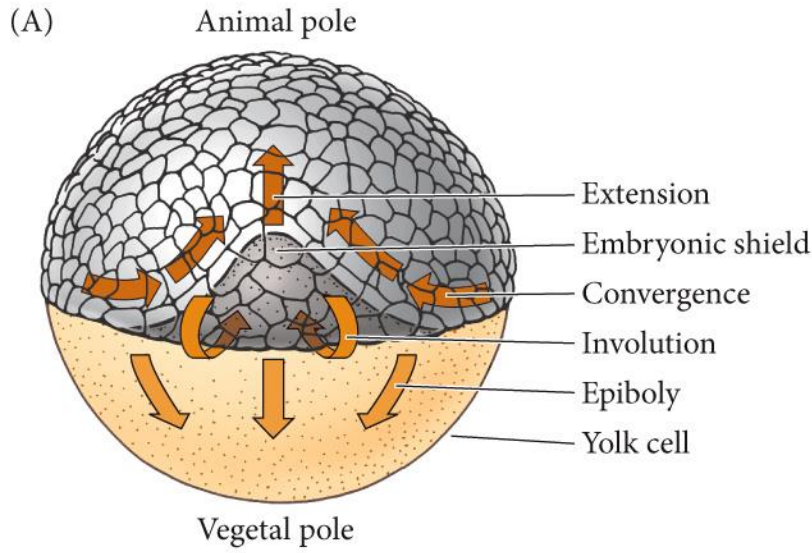
**ANELLO
GERMINATIVO**



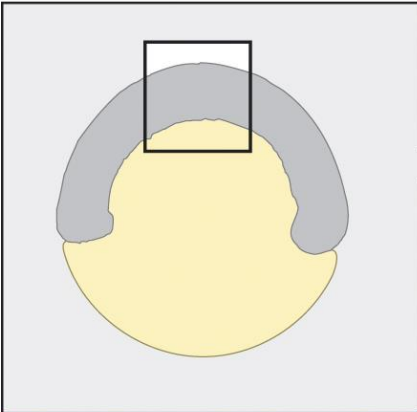
SCUDO



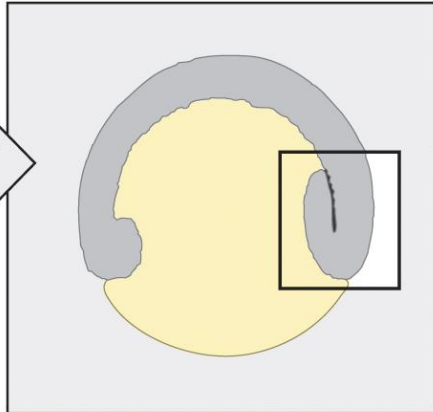
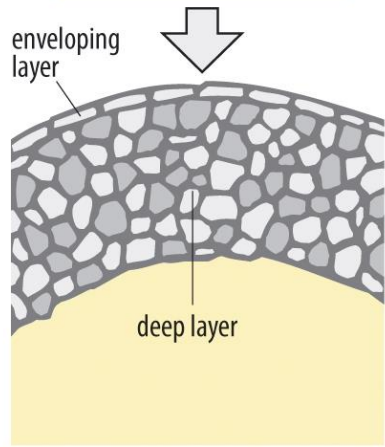
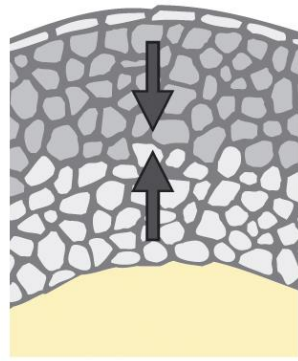




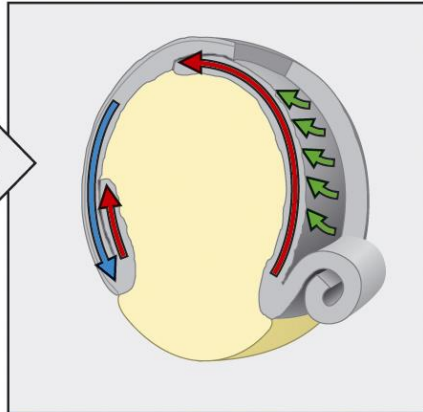
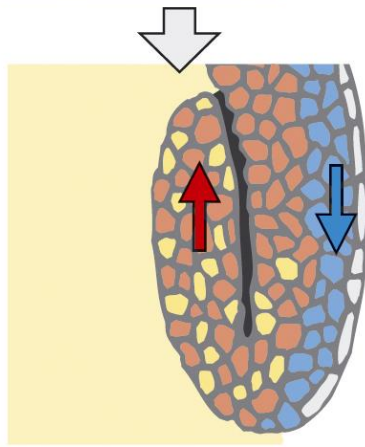
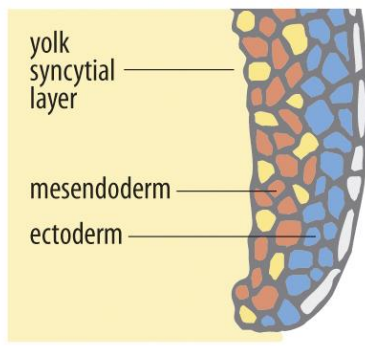
 Convergence and extension
 Epiboly  Involution



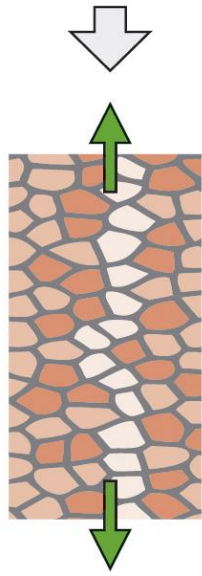
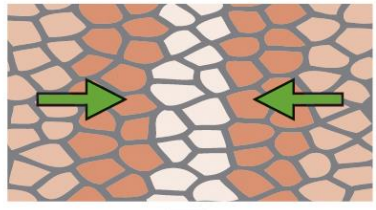
Radial intercalation

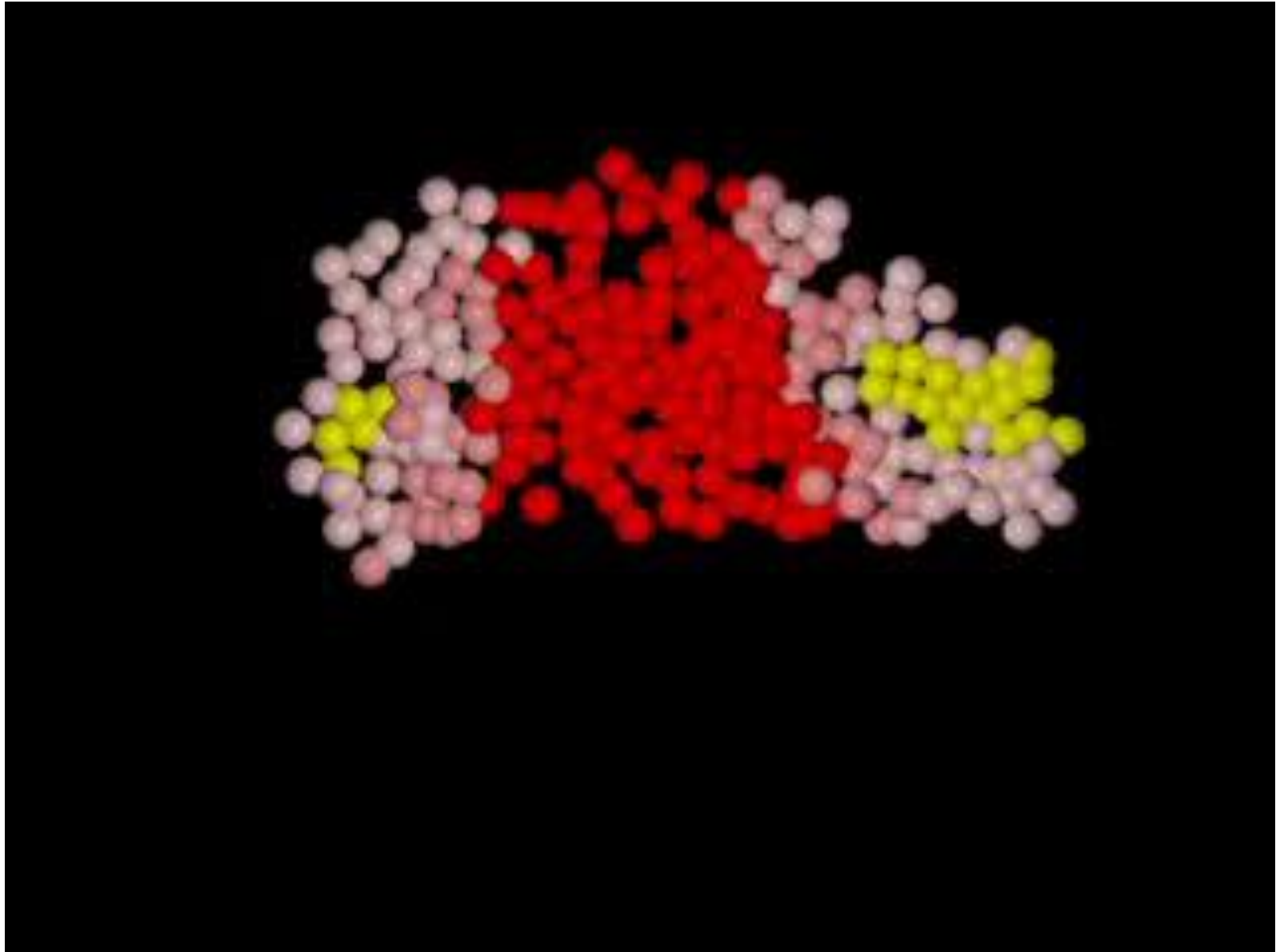


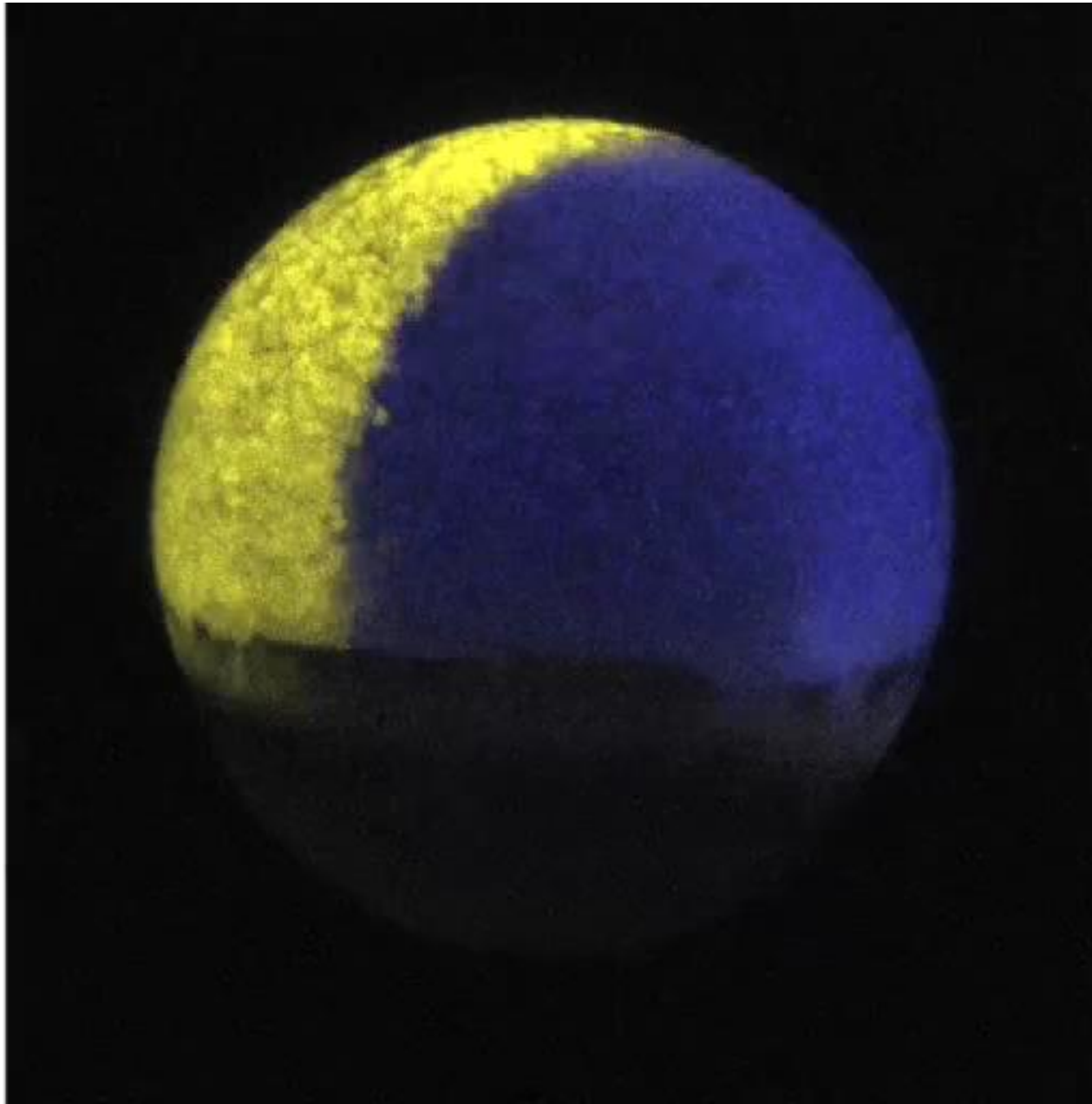
Epiboly

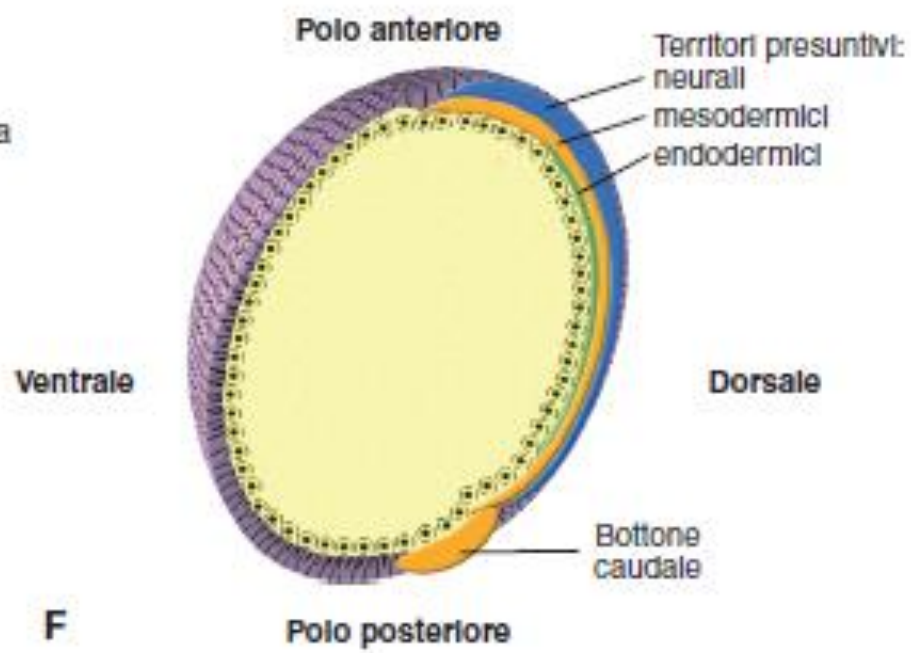
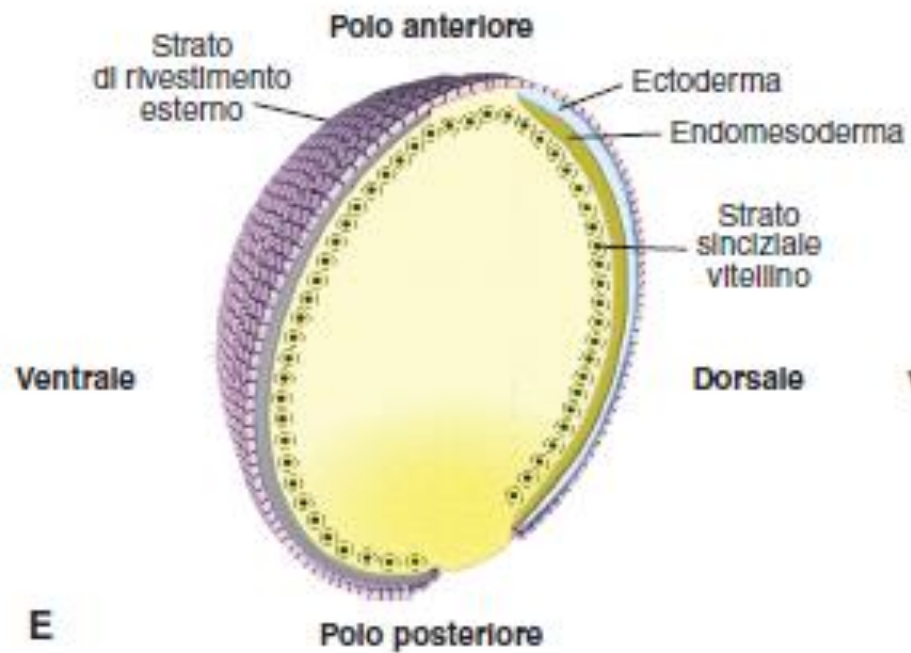


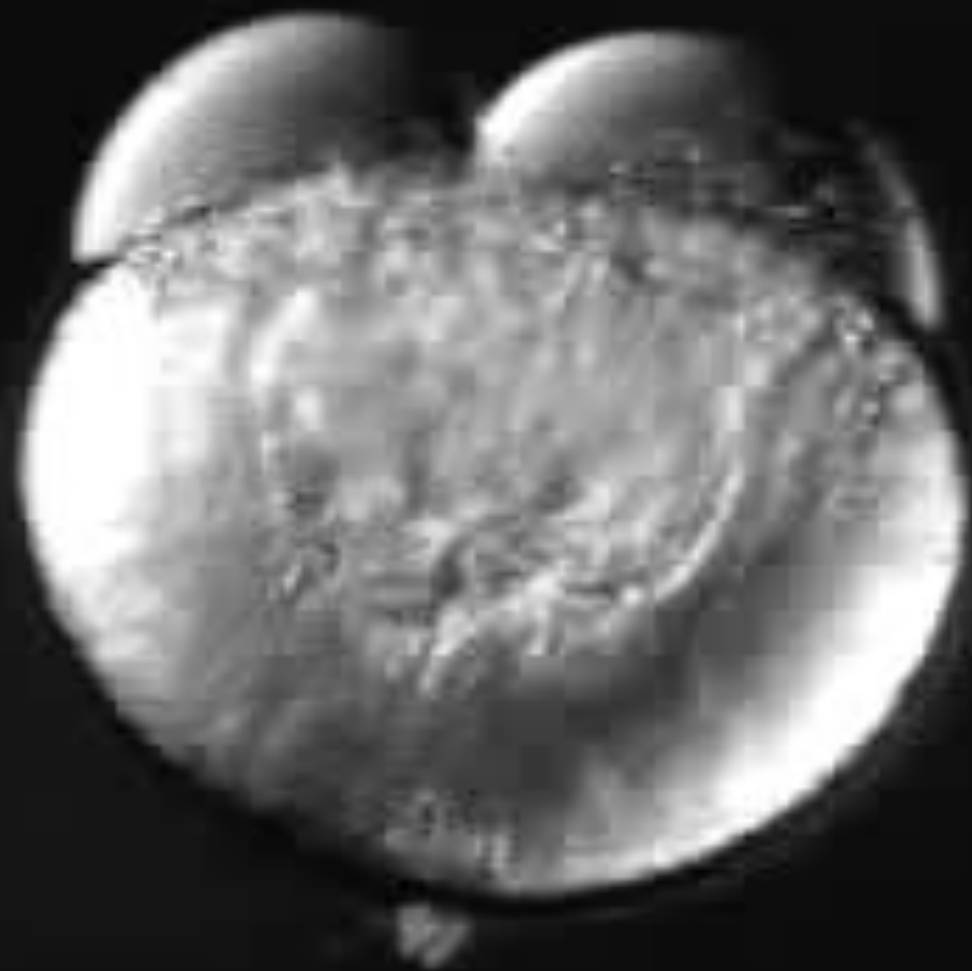
Convergent extension











FASI DELLA NEURULAZIONE IN ZEBRAFISH

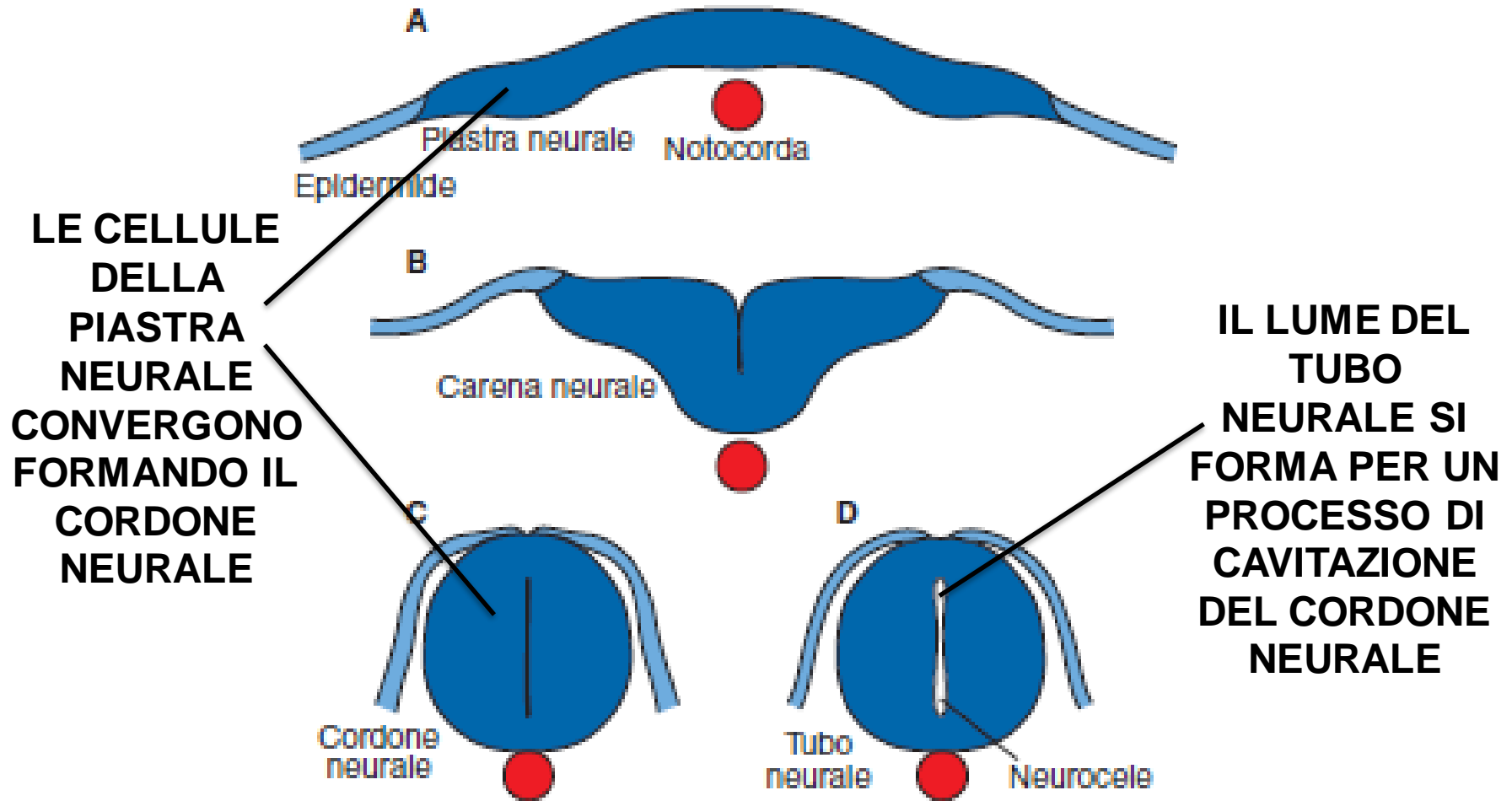


Figura 8

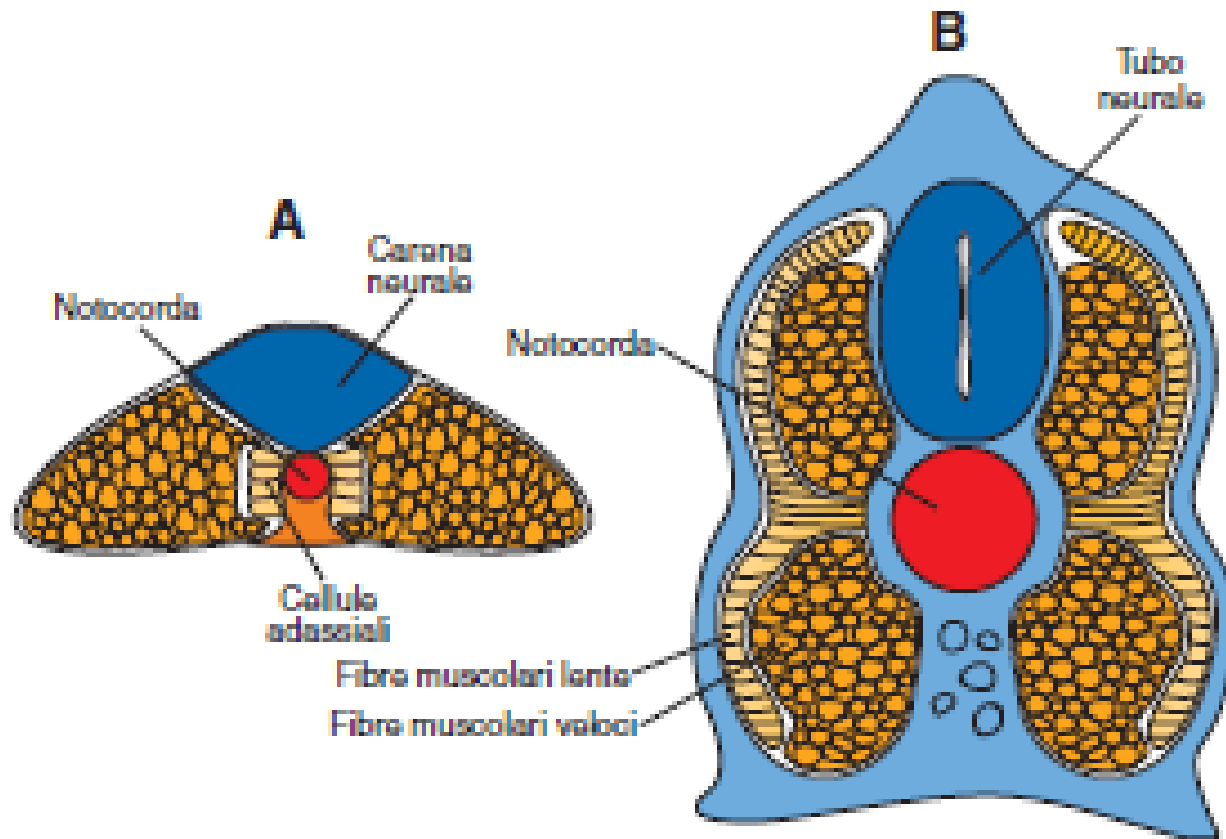
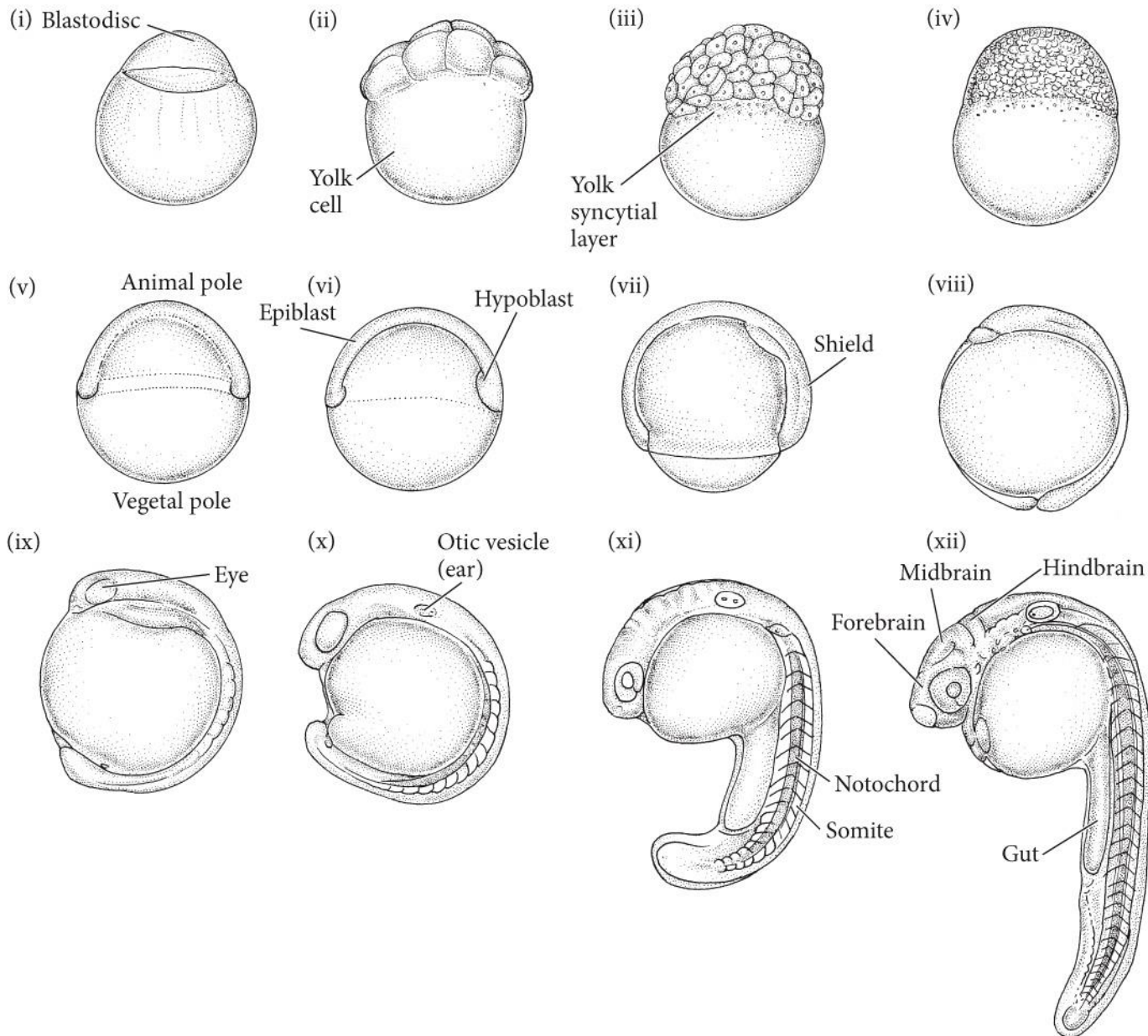
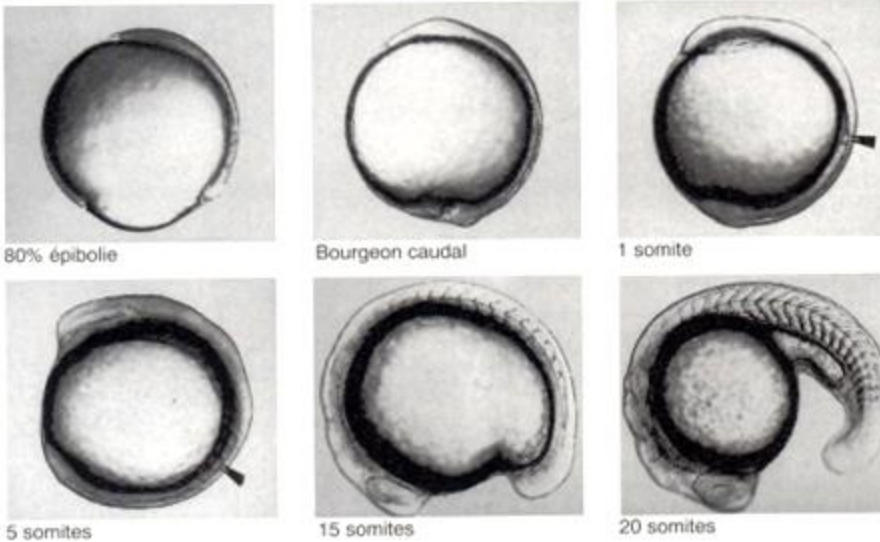


Figura 7



DEVELOPMENTAL BIOLOGY 11e, Figure 11.32
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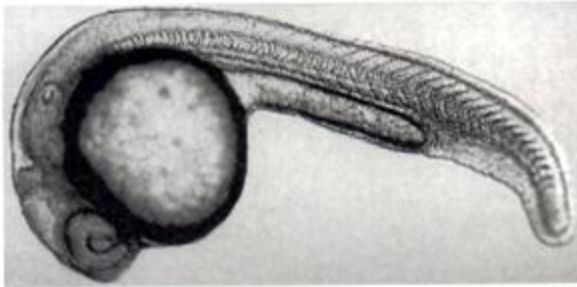
a) Formation du jeune bourgeon caudal et somitogénèse



BOTTONE CAUDALE



b) Redressement du bourgeon caudal

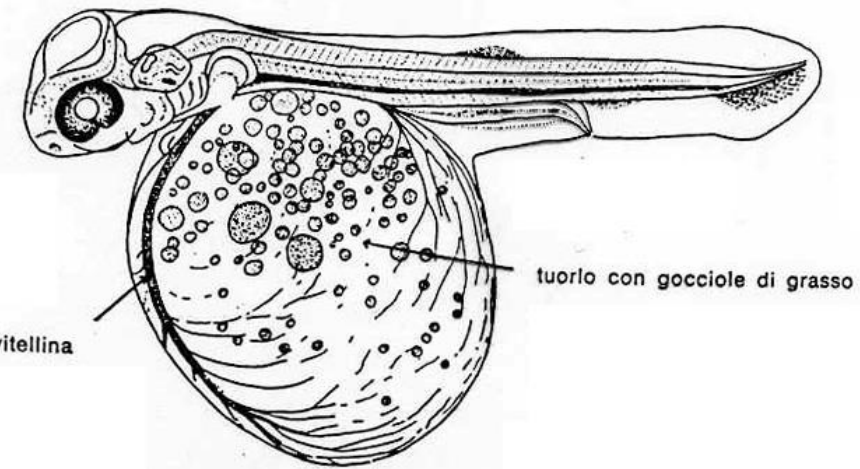


Bourgeon caudal âgé

c) Formation de la larve nageuse



(d'après Boulekbache, 1998)



Sacco del tuorlo