Model organisms and developmental biology

仲寒冰

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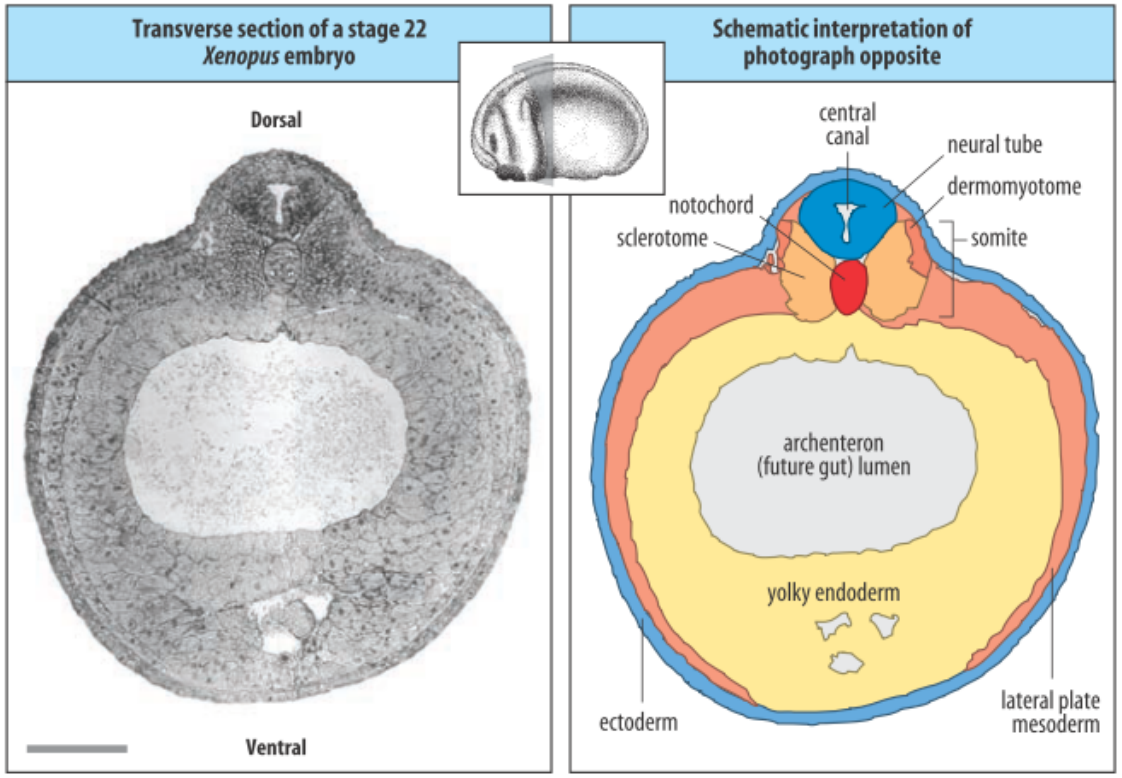
Somites

体节

A cross-section through a *Xenopus* embryo



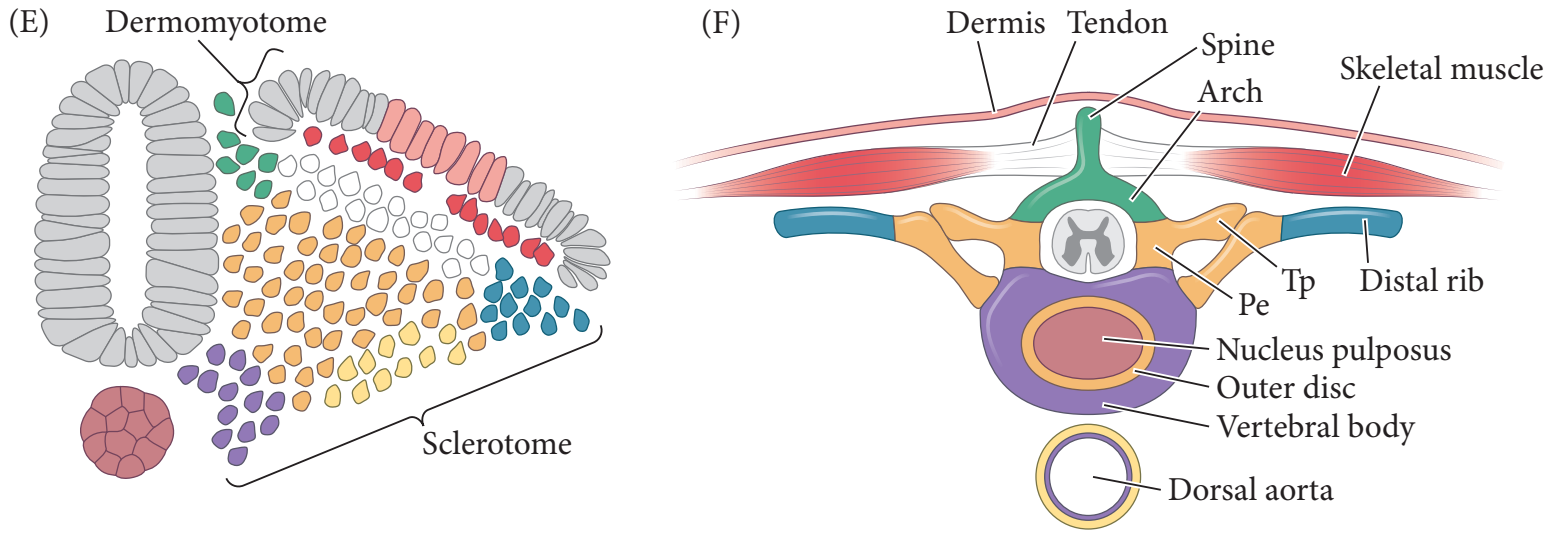
paraxial mesoderm

intermediate mesoderm

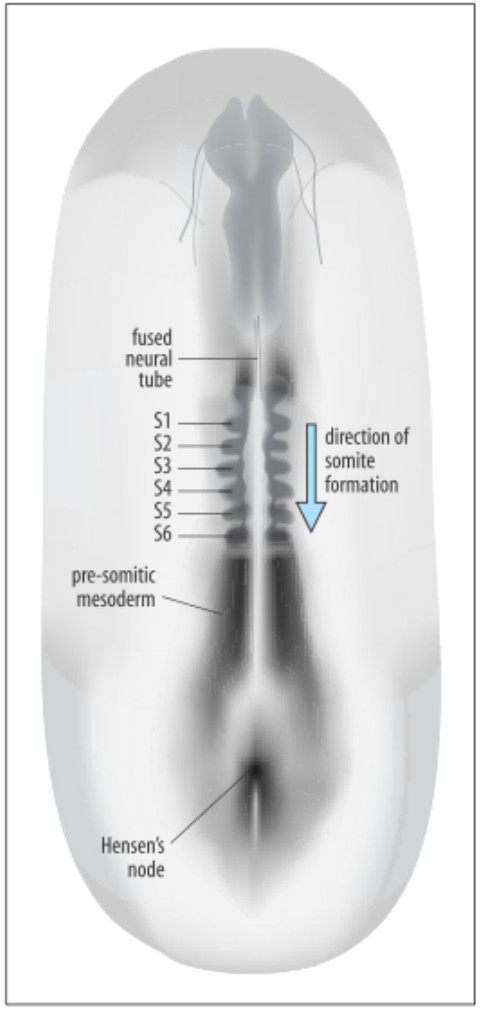
lateral plate mesoderm

Sclerotome -> cartilage and bone.
Dermomyotome = dermo + myo -> dermis + muscle.

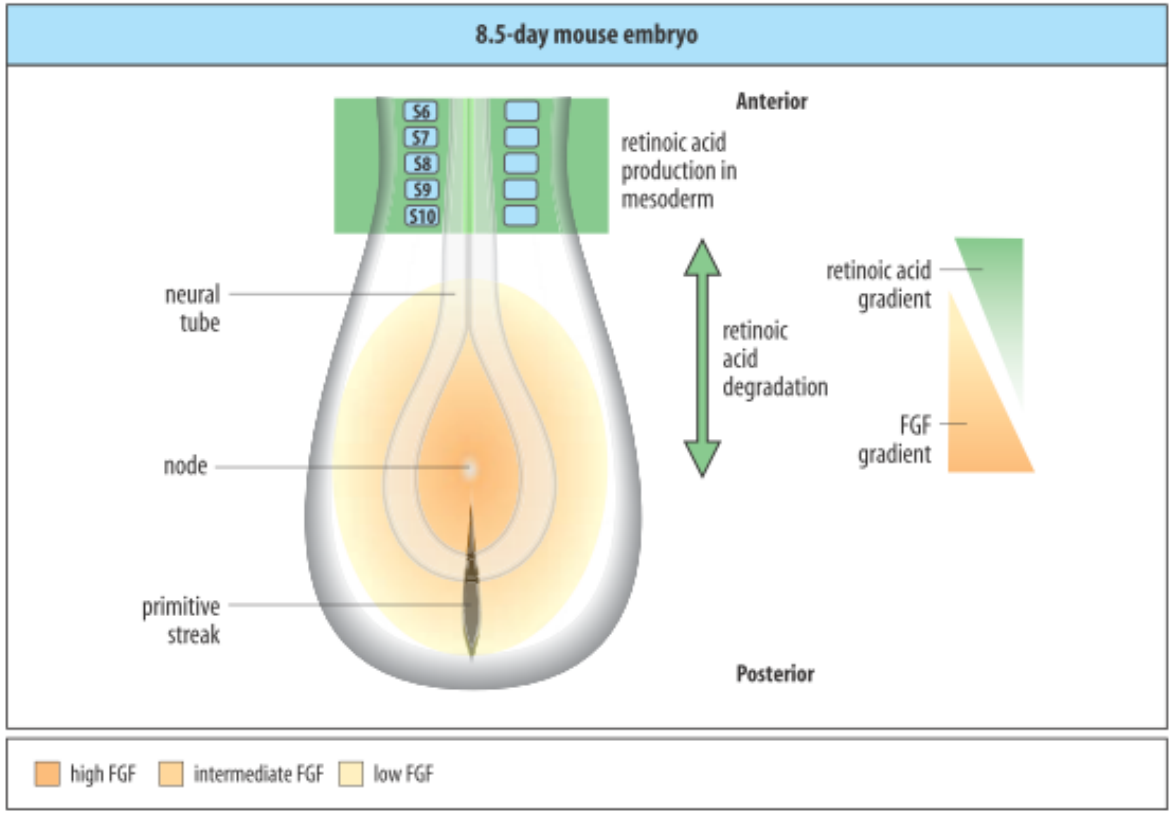
Color-coded schematic of one half of a somite from a 48-hour embryo in cross section



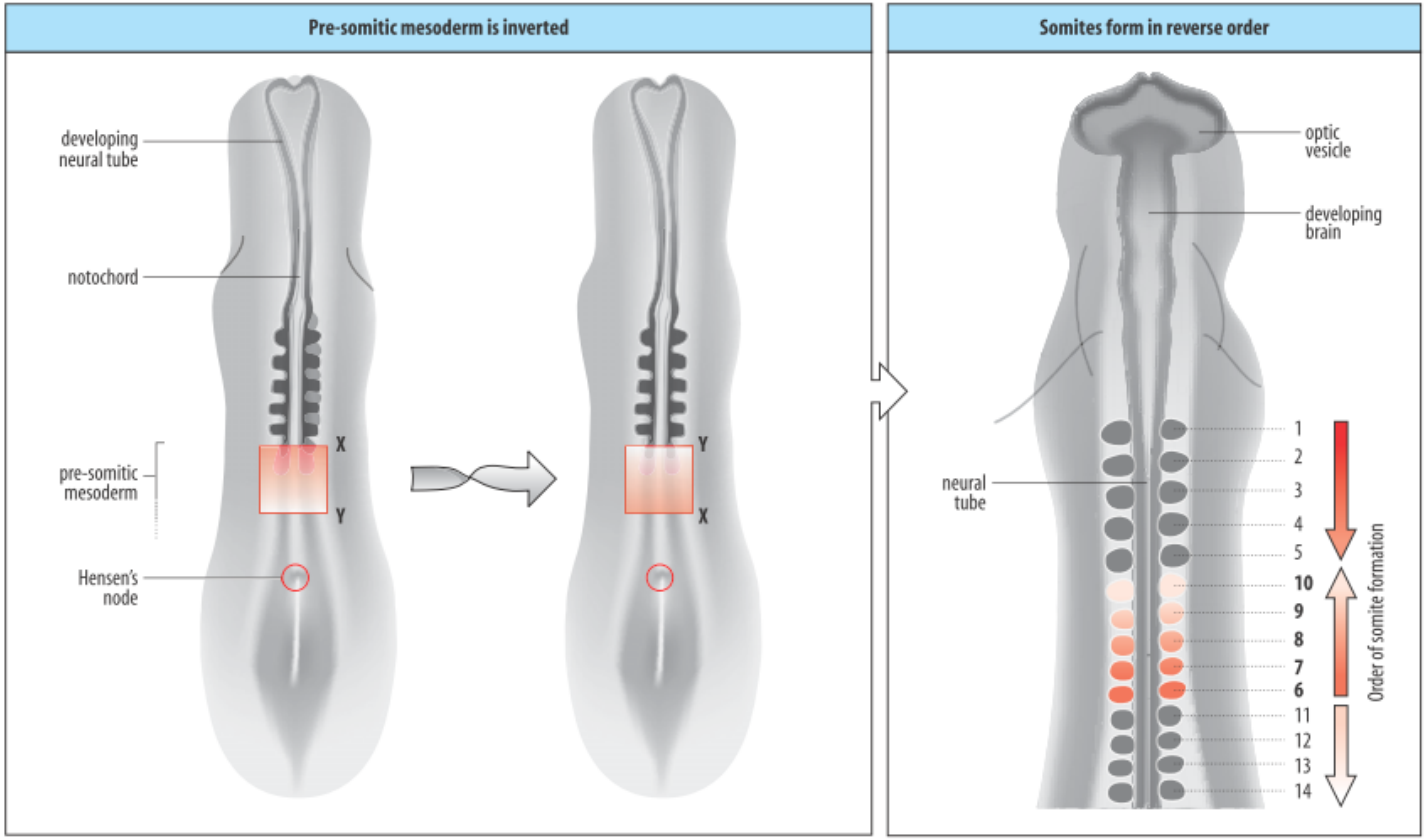
Somites form in pairs from the paraxial mesoderm



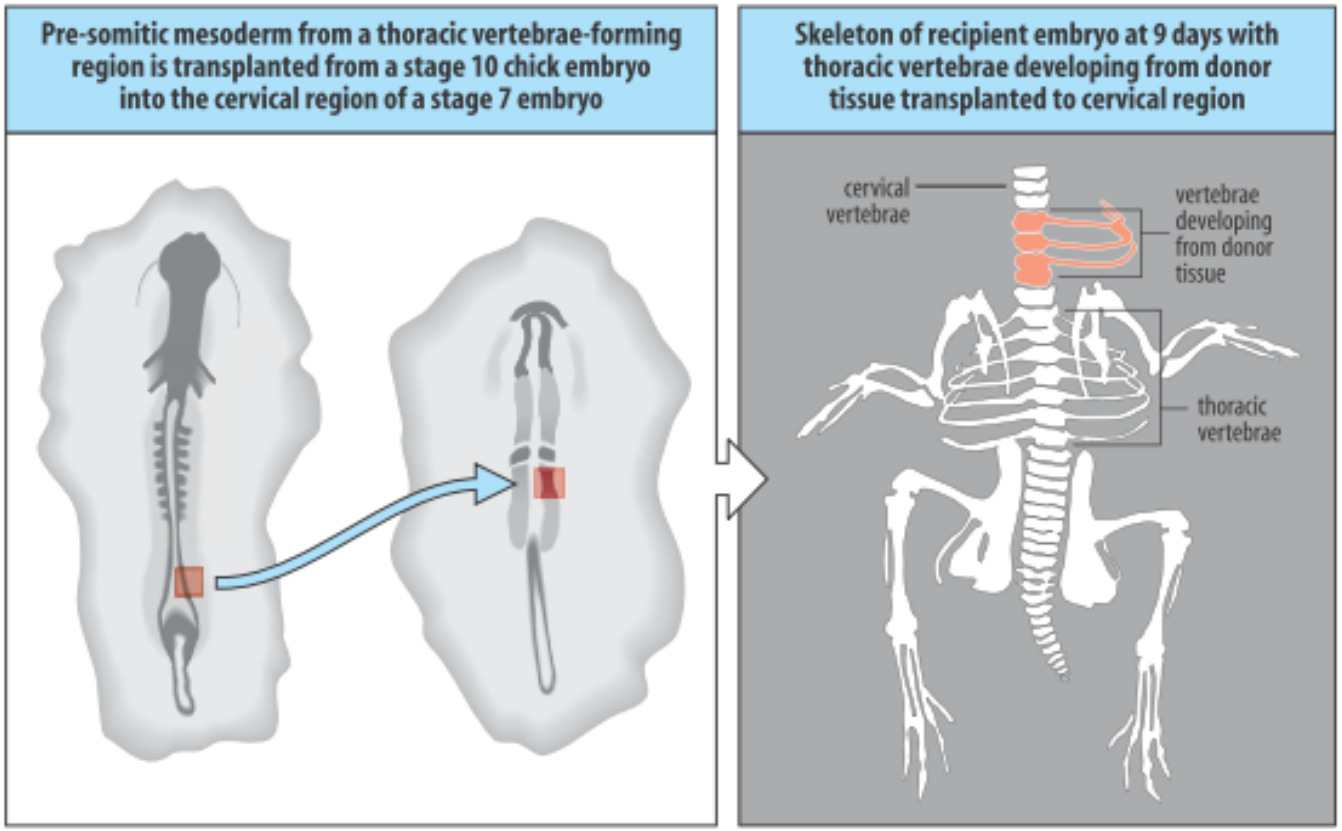
FGF and retinoic acid gradients help to pattern AP axis in the mouse embryo



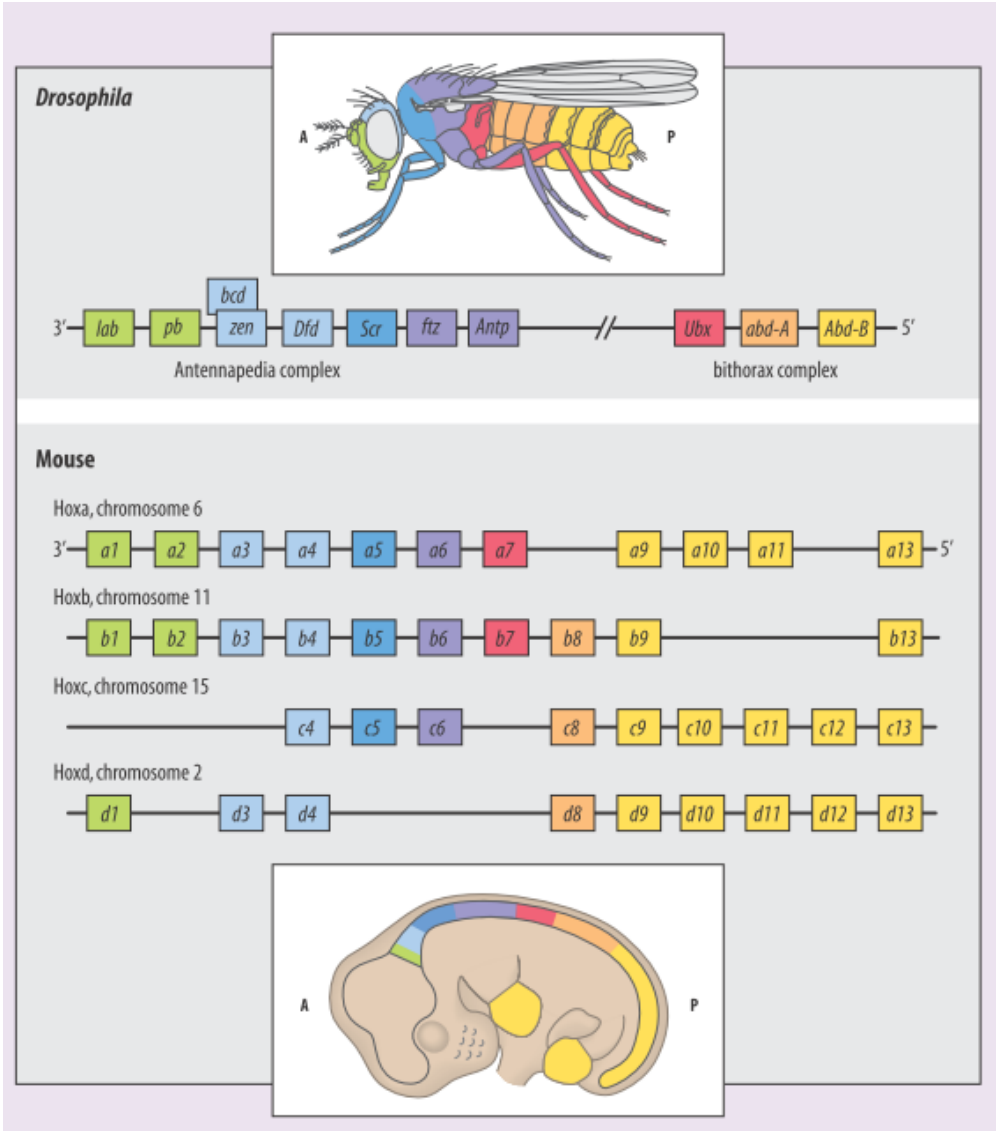
The temporal order of somite formation is specified early in embryonic development



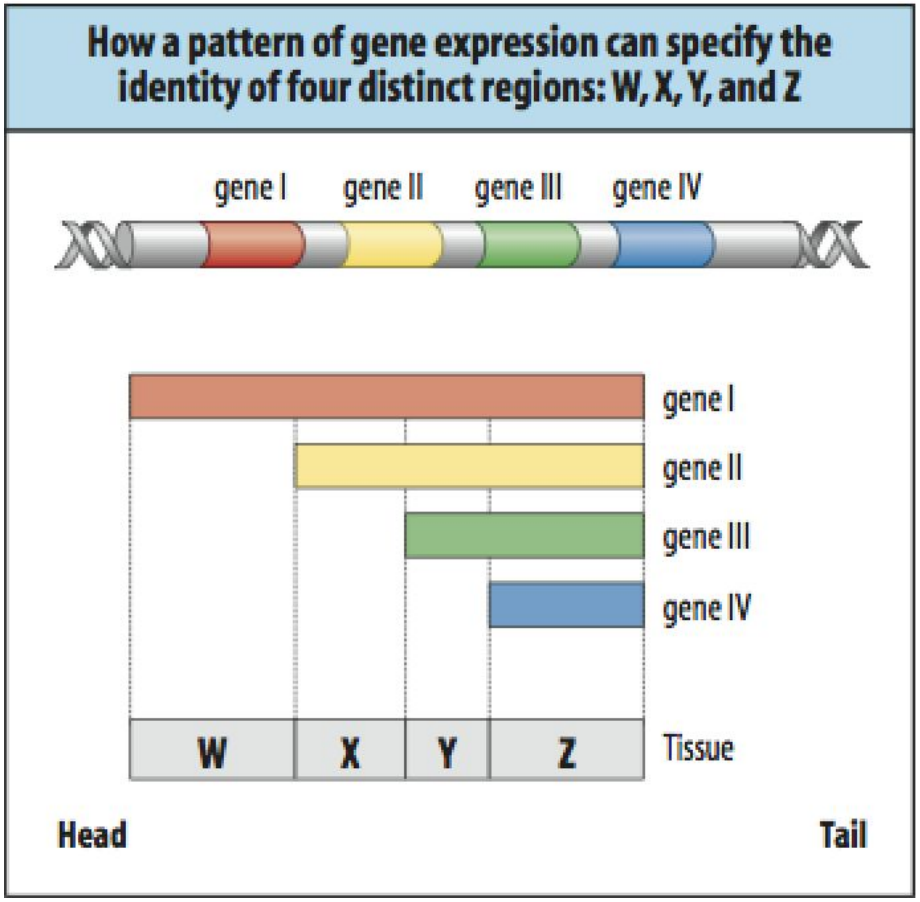
The pre-somatic mesoderm has acquired a positional identity before somite formation



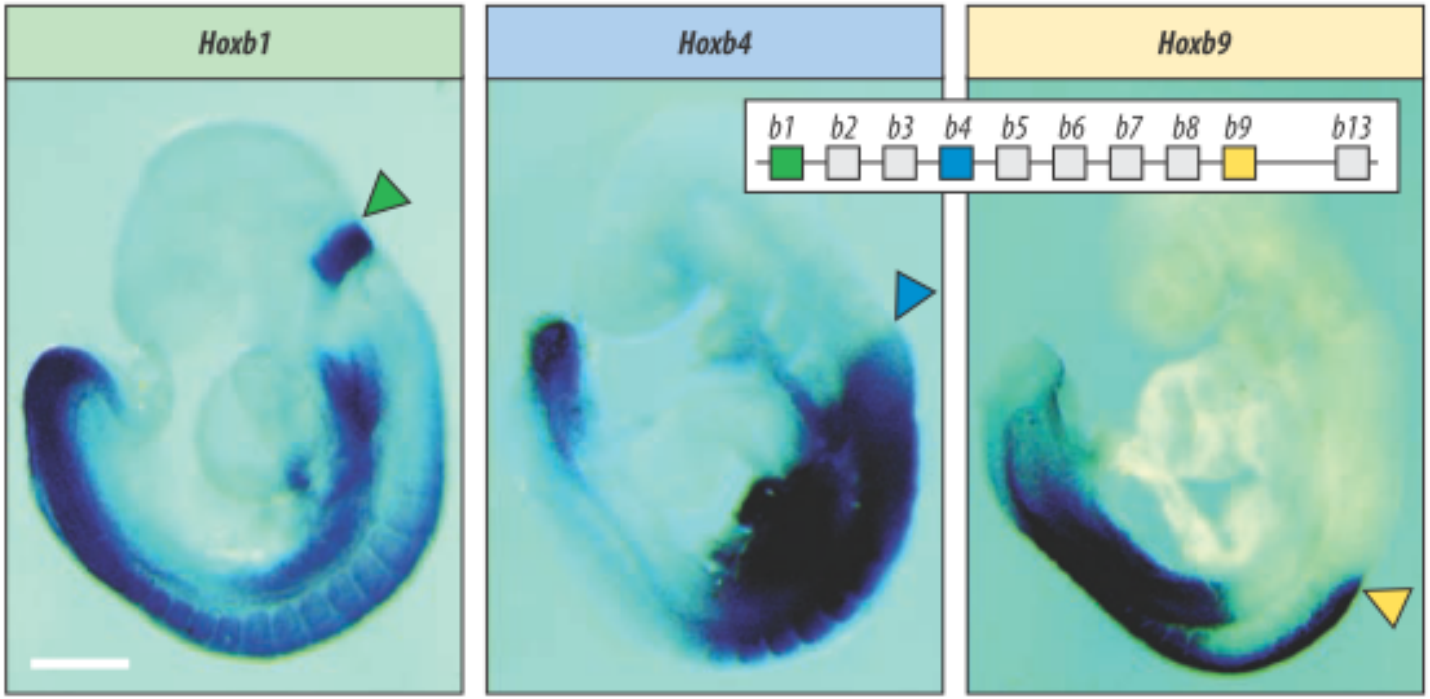
The *Hox* genes



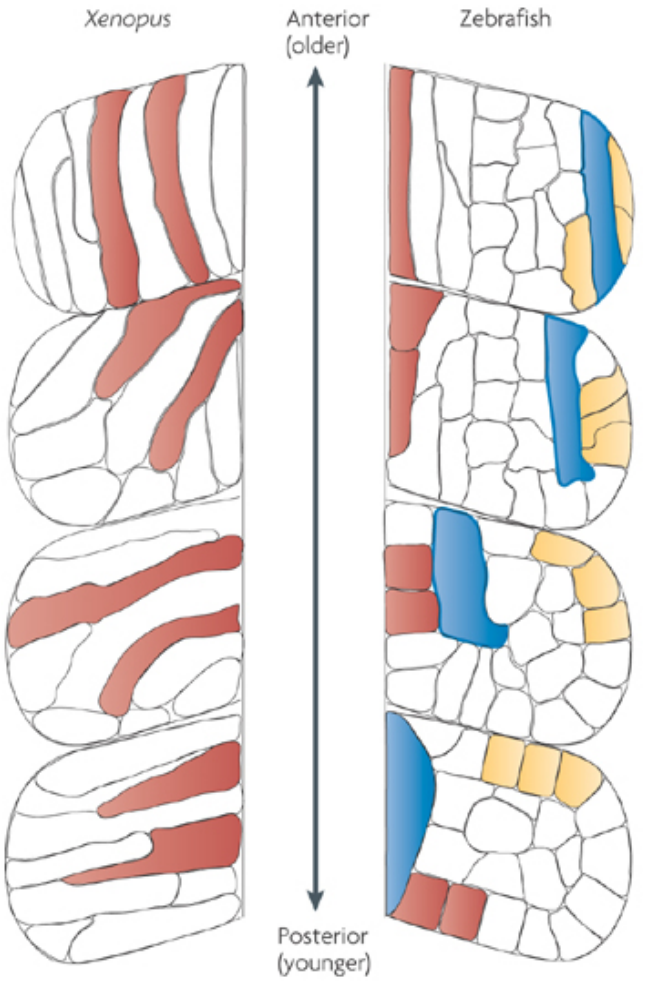
Gene activity can provide positional values



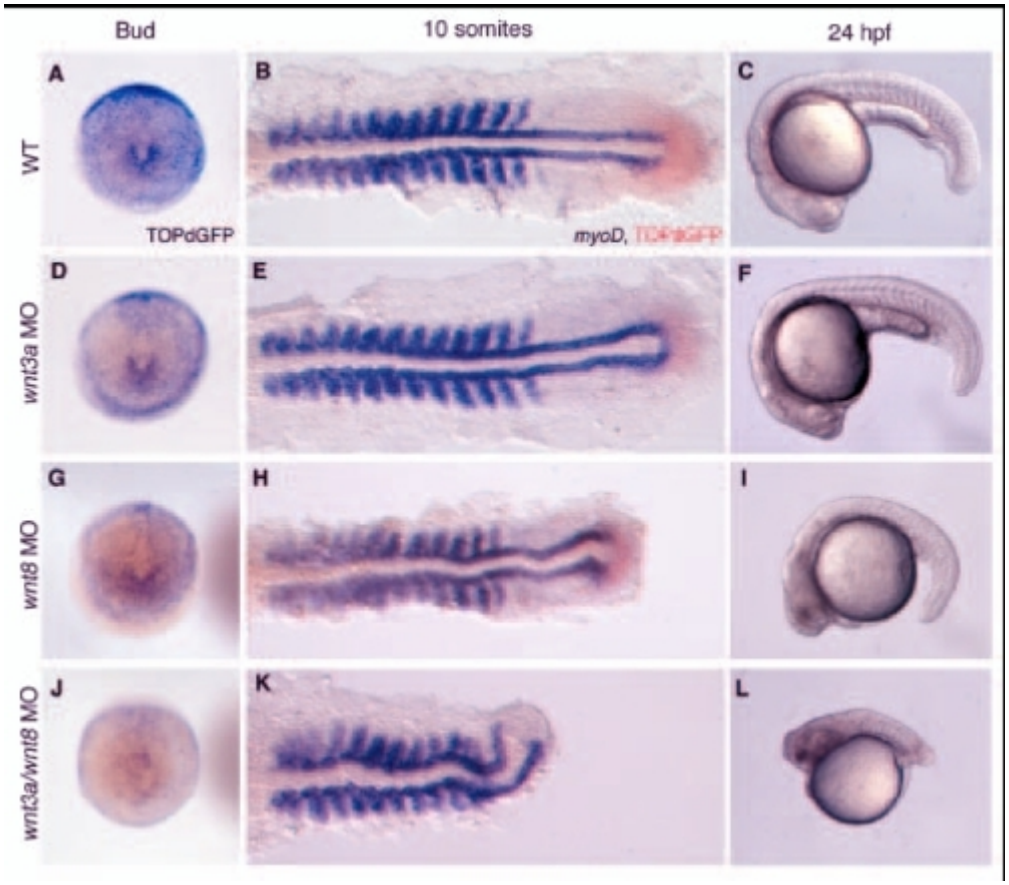
Hox gene expression in the mouse embryo



Thanks!

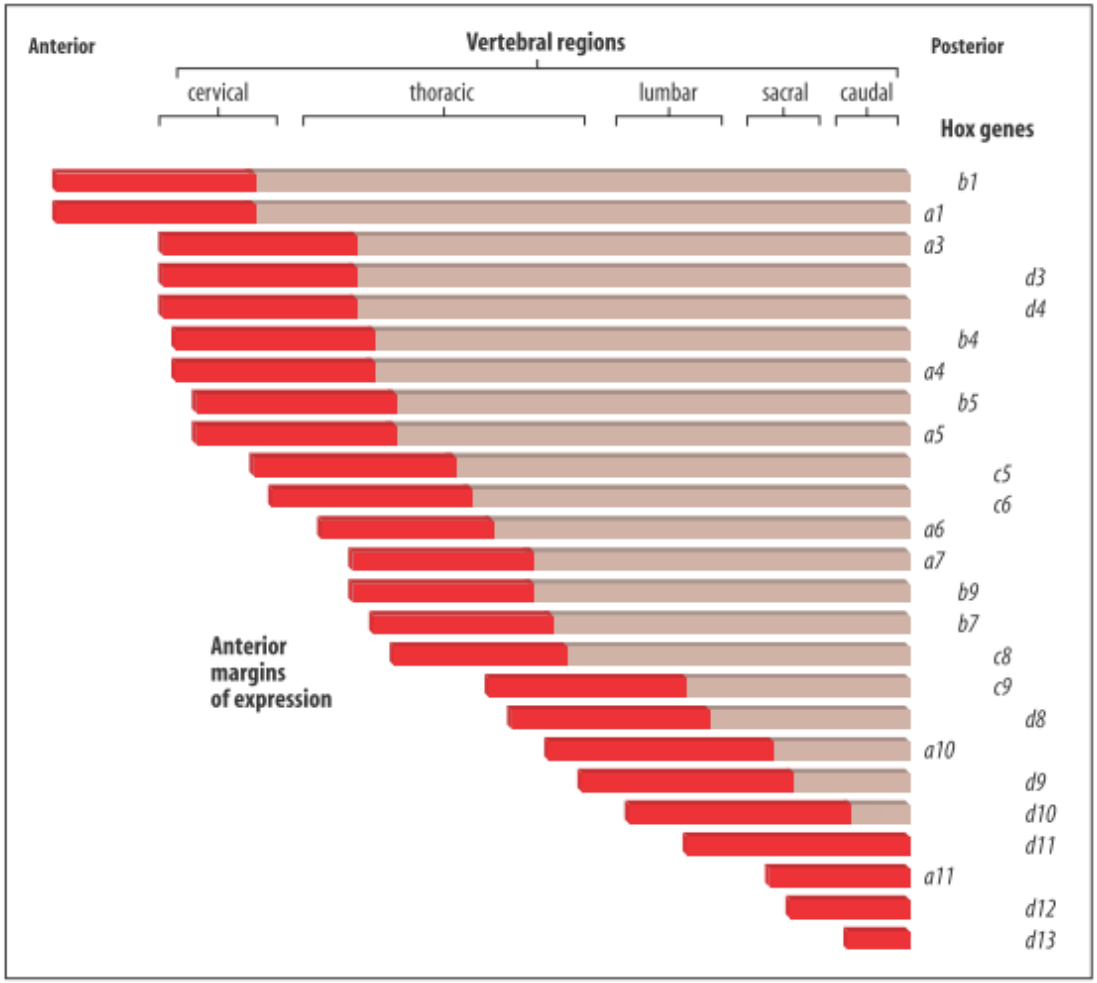

Xenopus
Anterior
(older)
Zebrafish
Posterior
(younger)

Expression pattern of *myoD*

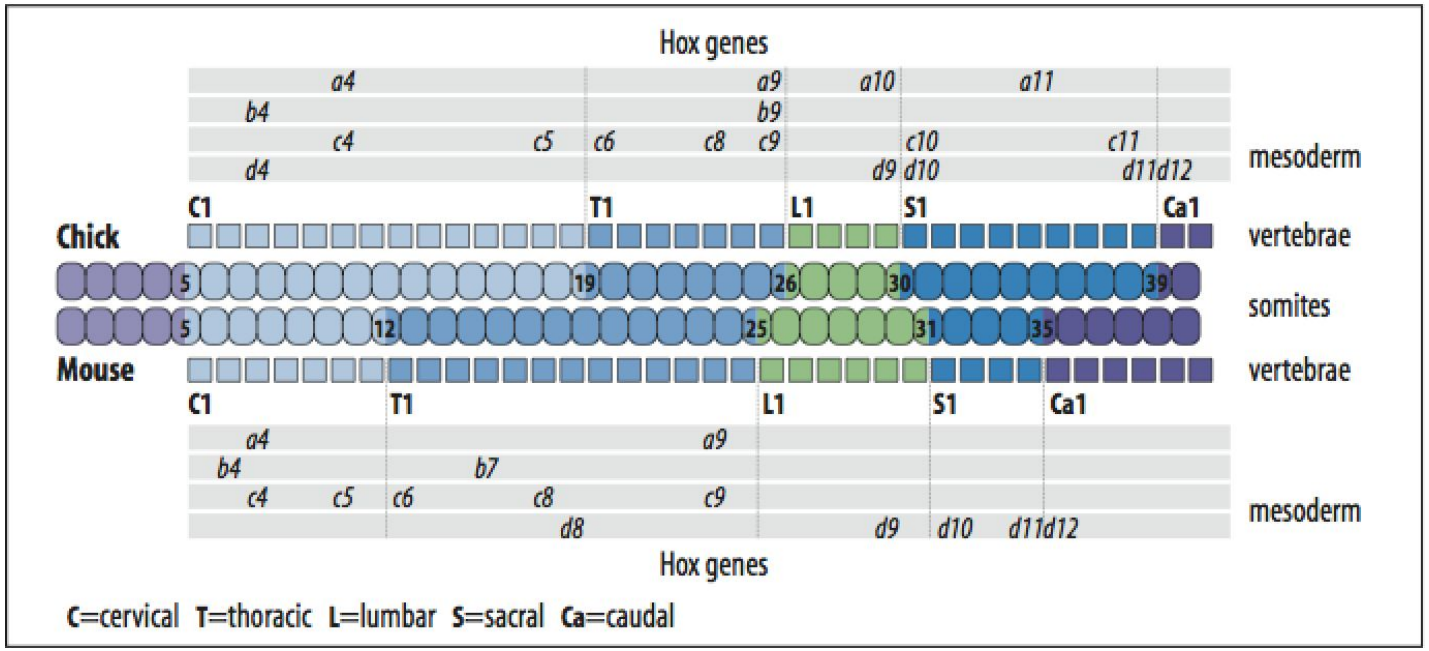


Thorpe *et al.*, 2005

A summary of *Hox* gene expression in the mouse mesoderm



Patterns of *Hox* gene expression in the chick and mouse embryos



Homeotic transformation of vertebrae due to deletion of *Hoxc8* in the mouse