

Review of: "Is gastrulation the most important time in your life?"

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This is an interesting discussion regarding the importance of gastrulation, taking into consideration the action of neuroectodermal progenitors. I believe all stages of development are important, but gastrulation is one of the most critical since it creates germ layers, allows for interactions between cells placing them in new morphogenetic positions, priming organogenesis. Even if gastrulation varies among vertebrates, cell regulatory networks could be quite conserved to drive morphogenesis. It might be truth that neuroectodermal progenitors (as the author discusses) may challenge our view of chordate body plan evolution and axial development, but the fact is that gastrulation is indeed a critical time in our lives, and when gastrulation goes wrong, further developmental processes go wrong, ending in congenital malformations and disease. I like the figures, and enjoyed reading this document.

The author may add two more figures (if possible), 1) to highlight the fact that the definition of gastrulation leaves out some animal taxa (sponges), and 2) to highlight the fact that tissues may derive from neuromesodermal progenitors independently of gastrulation:

1. It is mentioned that "gastrulation is a common characteristic of all metazoans, except sponges..." "[sponges] develop two tissue layers by the morphogenetic mechanisms characteristic of gastrulation, but they lack the fate determination and stability that define them..." it would be very informative including a schematic representation of the gastrulation-like process in sponges, comparative to (a more generic?) gastrulation process in other metazoans.
2. A schematic representation of the gastrulation-independent role of neuromesodermal progenitors, to follow this statement: "...tissues that generally derive from different germ layers can also be derived from pluripotent cells, called neuromesodermal progenitors, without passing through a germ layer intermediate, i.e., independently from gastrulation..."