

Limb development in vertebrates Desarrollo de los miembros en los vertebrados

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Members of vertebrates are complex structures with three lines to consider, proximal-distal, anterior-posterior and dorsal-ventral. The battery of genes involved in the formation of these structures is well conserved in evolution. The outline of the member is composed of undifferentiated mesenchymal cells derived from somatic lateral mesoderm covered by ectoderm. The apical ectodermal ridge is a signal producing center for development and is located in the distal margin of the outline of a member. The area of progress is below and allows the growth of the member. The type of structures formed along the proximal distal axis is specified by Hox genes. Sonic Hedgehog protein is involved in regulating the activity of a second signaling center known as the zone of polarizing activity. Members also have a dorsal ventral polarity. The Wnt protein secreted from the dorsal ectoderm, instructs the surrounding mesenchymal cells to differentiate into dorsal structures whereas Engrailed 1 expressed