**PROJECT RESUME**

**TITLE:** Coordinated development of the middle and external ear: lessons from a mouse mutant

During development organs are formed from the integration of different tissues into a final structure. Often a single organ has a number of distinct embryonic origins, with components that initiate in different areas of the embryo at different time points. This is particularly true of the ear, which is divided into external, middle and inner ear compartments. For a functioning ear, the three parts, derived from different cell types, evolving and developing at different time scales, must integrate and connect together to allow continuous sound transfer. This proposal focuses on the interaction between the middle and external ear during development using the mouse as a model. We aim to understand how defects in one part of the ear impact development in adjacent regions to test the hypothesis that the forming neural crest derived membranous bones of the middle ear guide the extension of the ectodermal external ear canal.

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