

Einladung zum Vortrag
im Rahmen des Kolloquiums Biologie und Umweltwissenschaften
gemeinsam mit dem Department für Neurowissenschaften

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Developmental and lineage differences in middle ear structure and function in toad

Frogs and toads are unique in that their middle ear structures vary dramatically in completeness, both throughout development and among species, despite a terrestrial lifestyle and reliance on acoustic communication. We have examined cranial morphology and sensitivity to sound and vibration in diverse toads. Like other anurans, toads develop middle ears as they approach metamorphosis. Development of these ear structures is quite protracted in toads, however, such that juveniles live for months or years on land with incomplete middle ears and reduced sensitivity to sounds. Moreover, numerous toad species never develop complete middle ear structures. These species initiate middle ear development on schedule, yet the development stalls. Species that lack fully formed middle ears are typically less sensitive to airborne sound, although some species have inexplicable auditory sensitivity that rivals relatives with completely formed middle ears. These studies highlight holes in our knowledge about the diverse ways air vibrations can reach the inner ear and the conditions under which greater sensitivity to sound would benefit survival or reproduction.

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