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Acquiring pitch associations across modalities: the role of experience

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Abstract: When interpreting our perceptual world, information from multiple perceptual modalities is often associated. Such crossmodal associations can arise from innate structural connections in the brain, statistical correlations in the environment, or through language. In a large group of participants across a wide age range and language background, we tested crossmodal associations between pitch and 7 dimensions in comparison modalities. We found evidence supporting the existence of all 7 types of associations, but the strength of association varied by dimension. Pitch-angularity and pitch-weight judgments were the most robust associations. In general, strength of associations increased with age, with significant associations occurring in the oldest age group (age 19+), consistent with experiential accounts of crossmodal associations.