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Face on! The electrophysiological correlates of facial adaptation

Facial adaptation - induced by prolonged exposure to a face - biases the perception of a subsequent face. Although this phenomenon received large attention in the last years we still do not understand its neural foundations fully. In a series of experiments, we examined facial adaptation and its underlying mechanisms, using recordings of ERPs. We found that facial adaptation increases the latency and decreases the amplitude of the N170 ERP component (a marker of early processing, mainly reflecting structural encoding). However, the adaptation effect was not specific for faces: adaptation to hands biases perception and alters N170 in a similar fashion. The underlying adaptation effect is, however, category-specific: no aftereffect is found if adaptor and test stimuli belong to different categories. Furthermore, the adaptation effect is significantly larger when the adaptor and test stimuli are presented on the same retinal position than when they are displayed in different hemifields. The N170 effects over the hemisphere contralateral to the test face also show this position specificity. Interestingly, position specificity is eliminated by decreasing the duration of the adaptation from 5000 to 500 ms. The implications of these results for mechanisms of face perception are discussed.