and it is therefore unclear whether migraineurs evidence deviant information processing features. In the present study, migraine children (n = 30) were presented with an auditory oddball paradigm. Results were compared to a group of healthy age-matched controls (n = 15) and a group of healthy adults (n = 20). The children had a mean age of 11.7 years (sd = 2.0) and the adults a mean age of 26 years (sd = 4.3).

534 tones (standard: 1200 Hz, Go: 400 Hz, NoGo: varying frequencies) were presented with a distribution of 70%, 15%, and 15%. ERPs were registered from 10 electrode sites (10–20 system) referenced to linked ears. EEG was recorded with a time constant of 10 s and a low bandpass filter of 35 Hz and sampled at 200 Hz from 100 ms before to 1000 ms after the tone onset. Data were corrected for EOG blink artifacts, averaged, and baseline corrected with regard to the initial 100 ms.

Main migraine results revealed increased N1-latencies in migraine children at frontal and central electrodes with regard to Go, NoGo, and standard conditions. Additionally, N1 amplitudes were increased in the standard condition in children with migraine with aura and in control children. With regard to developmental effects, N2 latencies were increased in children in the NoGo condition at frontal and central sites. N2 amplitudes were larger in children at frontal sites in the Go and the NoGo condition. Considering P3a, only amplitudes at lateral central electrodes were increased in adults during the NoGo condition. P3b amplitudes were increased in children in the Go condition at Pz and P3. Nc amplitudes at frontal sites were larger in children in the Go and more so in the NoGo condition.

Migraine affects oddball ERPs during the early stages of information processing and irrespective of experimental condition. Developmental effects were most prominent at frontal electrode sites with an elevated N2 and Nc in the NoGo condition and an increased P3b in the Go condition.

The dependence of body odor expression and perception on the HLA-system, reflected in the CSERP

Müller[1], C., Pause[1], B. M., Krauel[1], K., Sojka[1], B., Gottsmann[1], B., Rogalski[1], K., Krischer[1], A., Müller-Ruchholtz[2], W., & Ferstl[1], R.
Dept. of Psychology[1]; Dept. of Immunology[2], University of Kiel, Germany

The MHC-molecule is a cellular surface protein, responsible for the discrimination of self/nonself by cells of the immune system. Recent studies revealed that its influence is not restricted to the intraindividual communication of cells: It has been shown that it plays an important role in interindividual chemosensory communication for mice, rats and it has been suggested also for humans. Mice and rats are able to olfactorily discriminate individuals from congenic strains, which are genetically different only at the MHC loci. It seems that the mate selection of these animals depends on these MHC-specific odors. The human MHC molecule, referred to as HLA (human leucocyte antigene) has been found in different body fluids like blood, urine and sweat.

To date two different hypotheses about the relation between HLA-dependent body odor expression and perception have been proposed: One hypothesis is that humans may discriminate body odors according to the HLA-type of the odor-donor, independent of the HLA-type of the perceiving subject. In another more specific assumption it is supposed that the perception of body odors might additionally be affected by the HLA-type of the perceiver.

An important question in human odor expression and perception is whether the axillary sweat contains odorous information about the individual HLA-type and whether it can be detected by other individuals. The present study was conducted to find initial evidence for an HLA-associated body odor expression in humans by using an objective method. The reaction to different body odors was measured through CSERPs (chemosensory event-related potentials), which allow conclusions to be drawn about differences in the cortical processing of odors.

Twenty women aged between 22 and 37 smelt either only body odors from women or men. Three odors (axillary hair) from donors with different HLA-types were individually adapted to the HLA-type of the perceiving subject. One odor-donor (referred to as deviant 2) had an HLA-type similar to the subject and two had HLA-types, which differed from the subjects type but were similar to each other (standard and deviant 1). The EEG-recordings were taken in a so-called "oddball-paradigm:" The subject was instructed to react to a deviant "target" stimulus which appeared with a probability of 20% among a sequence of "standard" stimuli. The subject was not informed about a third "distractor" stimulus, which appeared with the same probability as the "target".

The standard stimulus always came from a donor with an HLA-type different from the perceiver. "Target" and "distractor" were alternated: In one condition deviant 1 (dissimilar from subject, similar to standard) was given as the "target" and deviant 2 (similar to subject but dissimilar to standard) was used as "distractor." This order was reversed in the second condition. All subjects received each condition in half of the trials.

Preliminary results seem to indicate that the reactions to body odors from donors with a similar HLA-type are stronger than reactions to odors from donors with a dissimilar HLA-type. Maybe this could be interpreted as a negative emotional response to body odors of subjects with an HLA-type similar to the type of the perceiver.

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