

MIGRAINE CONFERS AN EVOLUTIONARY ADVANTAGE TO MIGRAINEURS: YES

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Migraineurs suffer from paroxysmal headache attacks which inhibit daily activities and which lead to withdrawal during the migraine attack. Between the attacks, during the interictal period, no obvious abnormalities can be seen in migraine patients. But there are some very interesting results concerning cognitive stimulus processing in migraine patients:

1. Migraine patients feature a prolonged motion aftereffect (MAE, Shepherd, 2006). From a neurophysiological point of view this may indicate a low cortical preactivation level causing slower overwriting of visual information but high gain of the incoming stimulus (Magis et al, 2013). In special cases where deep visual processing is needed, this feature may help to process incoming visual stimuli for a longer time and therefore with higher intensity. This means also that shorter stimuli can be perceived and processed.

2. Migraine patients produce higher phasic attentional properties. In situations where high attention is needed, migraine patients can maintain attention longer and more intensive than controls. In studies where contingent negative variation, a slow cortical potential is recorded between two defined acoustic stimuli, migraineurs produce a negative potential shift twice as high as in normals. This potential shift is accompanied by missing habituation during the recording session (Kropp et al. 2012), indicating that migraine patients boast a longer attention activation.

3. In a special experimental task provoking a situation of helplessness, migraine patients produce longer activity to solve a change in contingency. For example, when the required task does not longer work, migraine patients exhibit higher DC-potentials and faster reaction times. This indicates a deeper problem solving strategy than normal controls do (Kropp et al. 2012).

4. The recurring headache in migraine patients may protect migraineurs from other diseases like addiction disorders, especially in alcohol consumption, because alcohol may trigger migraine attacks. Migraineurs therefore learn to behave living without any possibly dangerous agents (Loder et al. 2002).

Taken into account these findings we can state that

- a) migraine patients process visual stimuli for a longer time and with a higher intensity,
- b) migraine patients produce higher attentional activation during a required task with missing habituation,
- c) migraine patients show a deeper problem solving strategy than normals do.
- d) migraine prevents from addiction disorders

Therefore migraine patients are more attentive, they perceive stimuli earlier, they keep on task for a longer time compared with healthy controls and they may avoid addictive situations more seriously. Therefore suffering from migraine confers an evolutionary advantage to migraineurs.

References:

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