Pupil Dilation Responding to Emotional Stimuli

Pehmoeller, Saskia (School: Bartlesville High School)

The purpose of this experiment is to see how a pupil reacts to emotional stimulation. I hypothesized that a pupil reacts by dilation to nonverbal emotional stimuli. The participants sat in front of a phone camera on a stand, which always had the same distance to the eyes. Then their pupil resting size got captured before a negative emotional stimulation (a woman screaming) got played. The volume was always 60 decibels and the duration of the sound was always 4 seconds. Each video got analyzed by using an image measuring software called ImageJ. The data was measured from the point where the stimulation started until the peak. The average dilation at the peak is at 17.2%. The average duration of the peak until the resting position was calculated, which is 2.04 seconds. The study shows that there is a significant dilation of the pupil when humans receive negative emotional stimulation. Research shows that the dilation of a pupil comes almost always from a noradrenaline release from the Locus Coeruleus. But the pathways between the Locus Coeruleus and the dilator of the pupil are still not clear.

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