

NEWS RELEASE

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20-Year Study Shows Lack of Fear in Children Precedes Adult Crime

ARLINGTON, Va. (Nov. 16, 2009) – Persons convicted of serious crimes by age 23 did not have the normal heightened response to cues associated with loud, unpleasant noise when they were tested at 3 years of age, according to a new study published in *The American Journal of Psychiatry*.

The finding strengthens evidence that early brain dysfunction increases the risk for criminal offending, since learning to associate a cue with a frightening outcome, known as fear conditioning, relies on the amygdala and prefrontal cortex.

Nearly 1,800 children were studied over 20 years by Yu Gao, Ph.D., and colleagues in the United States and the United Kingdom. When subjects were 3 years of age, fear conditioning was assessed by measuring electrical activity of the skin after presentation of two types of long auditory tones. One tone was usually followed by a short, loud, unpleasant sound, conditioning the child's reaction to this tone due to anticipation of the unpleasant noise. The other tone served as a control tone, which was deeper in pitch and had no unpleasant association. Skin conductance measures the nervous system's control over sweat secretion that is part of the body's fear response.

Normal fear conditioning would result in greater skin responses to the conditioned tone than to the control tone. According to the authors, poor fear conditioning is hypothesized to predispose to crime because "individuals who lack fear are less likely to avoid situations, contexts, and events that are associated with future punishment—resulting in a lack of conscience."

By age 23, 137 subjects had convictions for serious crimes. These individuals showed a lack of fear conditioning at age 3 whereas noncriminal subjects with similar characteristics, including social adversity, exhibited normal fear conditioning.

The report will appear online on November 16 at [AJP in Advance](#), the online advance edition of *The American Journal of Psychiatry (AJP)*, the official journal of the American Psychiatric Association. Data collection was supported by the Medical Research Council (U.K.), Wellcome Trust (U.K.), and National Institute of Mental Health.

The American Journal of Psychiatry is the oldest continuously published medical specialty journal in the United States and was recently named one of the "Most Influential Journals in Biology & Medicine of the Last 100 Years." Statements in this press release or the articles in the *Journal* are not official policy statements of the American Psychiatric Association.

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