FDA Hearing on Stimulants – March 23, 2006
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Stimulants Suppress Growth of Bones & Brain

Stimulant treatments for ADHD have been shown to suppress the growth rates of children in numerous studies. In the largest government investigation to date, 579 children were evaluated prospectively over the course of 2 years. Medicated children suffered a persistent suppression of growth equal to 1 cm (0.39 inches) per year. Unmedicated children grew normally.

Although stimulant package inserts continue to deny a causal effect between prescription drugs and growth suppression, a causal mechanism was clearly demonstrated by *in vitro* experiments reported in 1979. Researchers at the University of Arkansas described *how* stimulants suppress the formation of cartilage in bone tissue. That study has been overlooked by scientists for more than 20 years.

The potential effects of stimulants upon craniofacial development should be seriously considered. The human skull undergoes significant growth through age seven, along with important remodeling well into adolescence. Impairments in this process could have dire consequences for the normal development of the brain.

The neuroimaging studies of subjects addicted to street drugs, such as cocaine and amphetamine, share a common finding: reduced gray matter and smaller brains. Such findings are consistent with the studies of children who have been medicated with stimulants. The implication is that prescription drugs, just like street drugs, shrink the human brain.

Stimulants Cause Neuronal Imprinting - Example: Addiction

The phenomenon of neuronal imprinting refers to the process by which medications alter the development of entire pathways or systems within the brain. While this process is especially important in children, it is no less critical in adults. Stimulants, such as methylphenidate and amphetamine, re-wire the brain in harmful ways which increase the likelihood of future chemical dependencies (such as nicotine and cocaine).

Stimulants Are Futile Treatments for ADHD

The U.S. government's largest (MTA) study demonstrated diminishing effects for medication over time. By the 14 month endpoint, previously unmedicated children enjoyed a numerically superior outcome if they remained drug free. At a 24 month follow-up, previously medicated children who remained on drugs began to experience a reversal of fortune. The benefits of behavioral therapy were enduring. The benefits of stimulants did not persist.

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