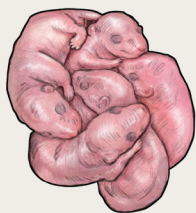


A LIFETIME OF CONSEQUENCES?

Large-scale, longitudinal studies of humans whose mothers smoked marijuana once or more per week and experimental work on rodents exposed to cannabinoids in utero have yielded remarkably consistent intellectual and behavioral correlates of fetal exposure to this drug. Some exposed individuals exhibit deficits in memory, cognition, and measures of sociability. These aberrations appear during infancy and persist through adulthood and are tied to changes in the expression of multiple gene families, as well as more global measures of brain responsiveness and plasticity. Researchers currently consider these perturbations to be mediated by changes to the endocannabinoid system caused by the active compounds in cannabis.

- ↑ Increased
- ↓ Decreased
- ▲ Altered

↓ Birth weight



NEONATE



↓ Birth weight

↓ Dopamine D2 receptor levels in brain

- ↑ Hyperactivity
- ↑ Anxiety
- ↓ Synapse formation
- ↓ Glutamate signaling in prefrontal cortex
- ↓ Dopamine D2 receptor levels in brain



EARLY DEVELOPMENT



- ↓ Verbal reasoning scores
- ↓ Short-term memory
- ↑ Aggression (females)
- ↑ Anxiety and depression
- ↑ Impulsivity and inattention
- ↑ Hyperactivity

- ↑ Anxiety
- ↓ Memory consolidation
- ↓ Socialization



ADOLESCENCE



- ↑ Depressive symptoms
- ↓ Abstract reasoning
- ↑ Delinquency, antisocial behavior

- ↓ Socialization
- ↑ Anxiety
- ↑ Opioid-seeking
- ↓ Short-term memory
- ↓ Synaptic plasticity
- ▲ Gene expression
- ▲ Opioid receptor abundance in prefrontal cortex
- ▲ Neuroendocrine signals in the hypothalamus



ADULTHOOD



- ↓ Visuo-spatial memory
- ↑ Drug-seeking