Effects of Marijuana on the Body

The ingestion of marijuana, specifically the psychoactive substance Δ9 — tetrahydrocannabinol (THC) found in the marijuana plant, has demonstrated physical and cognitive effects on the human body.

(Weinstein et al., 2008; Hartman et al., 2016; Otto et al., 2016).

THC affects the body by interacting with specific endogenous cannabinoid receptors localized in the cerebellum, hippocampus, basal ganglia, and cortex (Laberge & Ward, 2004).

Higher levels of THC also induce greater impairment than lower levels (Lenné et al., 2010).

Research has demonstrated THC has short-term effects on cognitive function—specifically decision making and motor coordination—which can ultimately impact the driving task and increase crash risk (Liguori et al., 1998; Otto et al., 2016).

In addition, individuals report feelings of sleepiness, reduced physical effort, decreased clear-headedness and lack of energy following smoking THC (Liguori et al., 1998; Liguori et al., 2002; Ronen et al., 2008; Weinstein et al., 2008; Ronen et al., 2010; Burston et al., 2015).

Studies indicate THC reduces critical tracking performance (eyes), the ability to make correct decisions during a task (brain), and increased stop-reaction time (Kurzthaler et al., 1999; Ramaekers et al., 2006; Weinstein et al., 2008).

Following the ingestion of THC, subjects have demonstrated significant increases in heart rate, elevated systolic blood pressure, and dilated pupil size (Rafaelsen et al., 1973; Perez-Reyes, 1988; Berghaus et al., 1995; Liguori et al., 1998; Weinstein et al., 2008; Khiabani et al., 2008; Bramness et al., 2010; Ronen et al., 2010; Hartman et al., 2016).