

Effects of Marijuana on the Body



The ingestion of marijuana, specifically the psychoactive substance $\Delta 9$ — 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).

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).



THC affects the body by interacting with specific endogenous cannabinoid receptors localized in the **cerebellum, hippocampus, basal ganglia, and cortex**

(Lalberge & Ward, 2004).



Following the ingestion of THC, subjects have demonstrated significant increases in **heart rate, elevated systolic blood pressure, and dilated pupil size**

(Rafaelson 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).



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).



Higher levels of THC also induce **greater impairment** than lower levels

(Lenné et al., 2010).



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).



TTLCTS1708.4348.0717