There is growing evidence that recent use of marijuana, specifically the psychoactive substance Δ9 – tetrahydrocannabinol (THC) increases the risk for motor vehicle accidents compared to drug-free drivers, particularly at higher concentrations.

(Ramaekers et al., 2004; Ramaekers et al., 2009).

Research has demonstrated recent THC use approximately doubled one’s risk of a traffic crash, this is especially true for fatal crashes

(Asbridge et al., 2005; Asbridge et al., 2012; Hartman & Huestis, 2013; Li et al., 2013; Otto et al., 2016).

Also, habitual THC users have been found to have 10 times the crash risk compared to occasional or non-users

(Blows et al., 2005).

Studies which look at unsafe driver action, a proxy measure of crash responsibility, found drivers who test positive for THC are 16–29% more likely to commit an unsafe action than drivers who test negative for THC

(Hansteen et al., 1976; Bédarad et al., 2007; Dubois et al., 2015).

Drivers under the influence of THC appear to have a similar brake latency to drivers with a BAC of 0.05

(Liguori et al., 1998).

In addition, the reaction times of drivers who are under the influence of THC are slower than for sober drivers

(O’Kane et al., 2002; Ramaekers et al., 2006; Grotenhermen et al., 2007; Lenné et al., 2010; Ronen et al., 2010; Adrian, 2015; Hartman et al., 2016).

Drivers under the influence of THC also demonstrate impairment in their ability to complete divided attention tasks

(Barnett et al., 1985; Battistella et al., 2013; Hanson, 2013; Adrian, 2015).

Individuals also report that THC use made them feel too tired to drive safely

(Neale, 2001; Sexton et al., 2002; Sewell et al., 2009; Ronen et al., 2010).

THC impairment has been found to impact, in a dose-dependent manner, a driver’s ability to gauge time and distance

(Rehbein et al., 1973; O’Kane et al., 2002).

THC impairment has also demonstrated increased errors in recognition of traffic lights and delayed response times to their appearance

(Moskowitz et al., 1976; O’Kane et al., 2002).

Studies have demonstrated THC use impairs fundamental road tracking ability, with the degree of impairment increasing as a function of the consumed THC dose

(Barnett et al., 1985; Robbe, 1994; Sexton et al., 2002; Ménétrey et al., 2005; Bosker et al., 2012; Battistella et al., 2013; Adrian, 2015).