

The Effects of Psychoactive Prescription Drugs on Driving

Canadian studies have found that the problem of driving while impaired by drugs is as serious as alcohol-impaired driving (Beirness, Beasley, & McClafferty, 2015; Boak et al., 2015; Woodall, Chow, Lauwers, & Cass, 2015). More recently, concerns have risen about the role psychoactive prescription drugs, such as opioids, sedatives and stimulants, play in one's ability to operate a vehicle safely. Research shows that these substances can negatively affect the cognitive and motor functions of a driver, which increases the risk of crash involvement (Dassanayake, Michie, Carter, & Jones, 2011; DRUID, 2012; Gjerde, Normann, Christophersen, Samuelsen, & Mørland, 2011).

Psychoactive Prescription Drugs

Psychoactive prescription drugs are those that change brain function and result in changes in how people who take them think and feel.

Purpose

In an effort to better understand the relationship between psychoactive prescription drugs and the risk of crash involvement, the Canadian Centre on Substance Abuse (CCSA):

- Reviewed and summarized the evidence on the effects these drugs have on the ability to drive safely;
- Examined how often Canadians drive after the use of these drugs and the risks of being in a crash as a result of this use; and
- Identified ways to help keep drivers in Canada who use these prescription drugs and other road users safe.

The evidence reviewed in this report will help to inform policies and practices aimed at reducing injuries associated with impaired driving as a result of psychoactive prescription drugs.

Key Findings

Psychoactive prescription drugs cause changes in how the brain works. Such changes can disrupt the ways the brain receives, processes and responds to environmental information (See Table 1). Although the ways in which drugs affect the body and brain vary, the effects will have the same overall result: a decrease in the brain's ability to process information and respond by movement, skills relevant for driving. This decrease has negative effects on driving ability and increases the risk of a car crash.



Table 1: Effects of Psychoactive Prescription Drugs

	Sedatives (e.g., benzodiazepines, depressants, sleep medications)	Stimulants (e.g., amphetamines)	Opioids (e.g., oxycodone, fentanyl)
Effects on the brain and body	<ul style="list-style-type: none"> Slows the speed at which the brain receives, processes & responds to environmental information Confuses & disorients Causes jerky eye movements & slurred speech Impairs judgement & lowers inhibitions 	<ul style="list-style-type: none"> Speeds up brain activity Normal sleep and rest periods are disrupted. Dilates pupils Causes body shakes & increases talkativeness Causes restlessness, agitation & nervousness As the stimulant effects fade, fatigue and sleepiness can cause inattention & carelessness 	<ul style="list-style-type: none"> Constricts pupils & causes droopy eyelids Lowers heart rate & breathing Causes drowsiness
Effects on driving	<ul style="list-style-type: none"> Impairs motor coordination & slows reaction time Decreases attentiveness & ability to divide attention 	<ul style="list-style-type: none"> Reduces driver balance & coordination Reduces impulse control Increases risk taking 	<ul style="list-style-type: none"> Slows reaction time Reduces ability to divide attention & follow instructions Slows driving

Summary

Route and time of administration can result in a difference in the intensity of effect, and tolerance to a drug can make it difficult to predict the extent of effects in an individual driver who has ingested it. Prescription drugs, when used for the first time, after an increase in dose or when used in a problematic way (e.g., not consistent with medical guidelines or the law), have the potential to adversely affect one’s ability to operate a motor vehicle safely. Even responsible use of a medication by an individual who is non-tolerant or who has taken other drugs or alcohol can create a dangerous decline in driving performance.

The Way Forward

More research is needed to better understand the negative effects of psychoactive prescription drugs on driving, when impairment is likely to occur and who is at greatest risk. While this research has yet to be done, we do have enough data to know that prevention efforts are needed. To that end, all those with a stake in reducing the risks of using these prescription drugs while driving (e.g., regulators, physicians and nurses, pharmacists, police and policy makers) have an important role to play and should work together to share available research, resources, knowledge and experience to develop and implement an integrated set of policies and practices.

To Learn More

- Find the full report, as well as other CCSA reports on our [Drug-Impaired Driving](#) page.
- Use the [Information Request](#) page to ask to be added to our distribution list.
- Join the conversation online to help create a healthier society, free of the harms of substance use, by following @CCSACanada.



Additional Resources

- [Drug-Impaired Driving Toolkit](#)
- [Oral Fluid Drug Screening Policy Brief](#)
- [Drug Evaluation and Classification Program Policy Brief](#)
- [First Do No Harm: Responding to Canada's Prescription Drug Crisis](#)

References

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