

# Medication & driving



- Health professionals and researchers in Australia and internationally agree that the impairing effects of some medications can potentially affect traffic safety adversely<sup>1-5,8,9,12,14-15</sup>.
- In a study of drug use and culpability for road crashes, it was found that the presence of benzodiazepines was associated with a tripling of crash risk<sup>4</sup>.

## State of the Road A Fact Sheet of the Centre for Accident Research & Road Safety - Queensland (CARRS-Q)

### THE FACTS

- Many over-the-counter and prescription medicines can potentially impair driving. These include:
  - benzodiazepines (for treatment of sleeplessness and anxiety);
  - z-drugs - zolpidem and zopiclone (for treatment of sleeplessness);
  - anti-depressants (particularly older drugs including tricyclic antidepressants);
  - strong painkillers such as opiates;
  - muscle relaxants;
  - some anti-epilepsy drugs; and
  - over-the-counter-medicines for cold and flu and some anti-histamines<sup>1,3,7-8,9,12,14-15</sup>.
- According to the International Council on Alcohol, Drugs and Traffic Safety (ICADTS) Working Group on Medicines and their Effects on Driving, many medicines have an impairing effect similar to a blood alcohol concentration (BAC) of 0.05% or even 0.08%. A driver who would strongly object to drink-driving, may unknowingly be driving with similar impairment due to the side effects of his/her medication<sup>8</sup>.
- Australian researchers who studied coroners' reports of fatal crashes in Victoria during 2000-2006 and 2007-2013 reported that medicinal drugs were present in 21% of the victims. Anti-depressants (8%) and benzodiazepines (7%) were most common, followed by opiates/opioids (6.6%) and sedating anti-histamines (1%)<sup>2,5</sup>.
- In a study of drug use and culpability for road crashes, it was found that the presence of benzodiazepines was associated with a tripling of crash risk. The combination of benzodiazepines with alcohol and other impairing drugs increased the risk even more<sup>4</sup>.
- Researchers in Norway calculated that

a sample of drivers who had been apprehended for drug driving and tested positive for more than one impairing medication alone or in combination with alcohol had a 16-20 times higher mortality rate compared to the general population<sup>6</sup>.

- In Western Australia, a study of 616 older drivers who had been hospitalised due to a road crash, found that drivers who had been using benzodiazepines, anti-depressants and opiates had an increased risk for a crash which resulted in hospitalisation<sup>10</sup>.

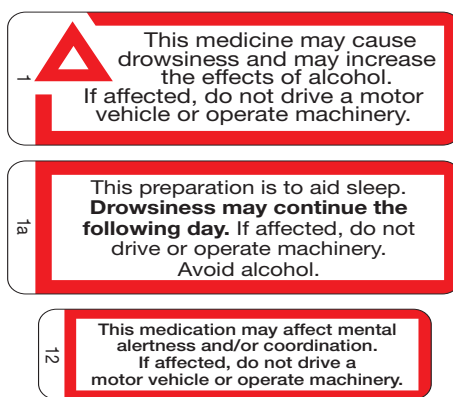
### Effects of medications

- The side-effects of medications may make it unsafe to drive a vehicle, ride a bicycle or operate machinery. Common side-effects include<sup>1,3,8,12,14-15</sup>:
  - Sedation, with sleepiness or a sensation of tiredness.
  - Slow reaction times, preventing fast and effective reactions in emergency situations.
  - Decreased concentration and confusion, making multitasking and decision making more difficult.
  - Decreased coordination, affecting the ability to react to unexpected occurrences.
  - Physical effects including shakiness, dizziness, blurred vision and nausea. Some medications may cause mood changes and anxiety, presenting as aggression and over-reaction to traffic conditions.
  - Medications used for the treatment of diabetes are not sedating but may cause hypoglycaemia which may also make it risky to drive a vehicle or operate machinery.

- The driver may not be aware of these effects until a quick response is needed to prevent a crash.
- Many factors influence the amount of impairment the individual may suffer. These include<sup>1,3,7-9,12,14-15</sup>:
  - The individual's metabolism, age and weight.
  - The size of the dose and the time since it was taken. This is particularly important with late-night dosing of sleep medications. Some authorities recommend that these medications should be taken not less than 10 hours before driving.
  - Duration of treatment. The effects of new or altered medication regimes will usually be the strongest in the first 2-4 weeks after commencement. Most people develop tolerance to some of the side-effects of medication. This may take weeks or months; some studies have demonstrated that the impairing effects of long-acting benzodiazepines may only abate after more than a year of use.
  - An increase of dose may lead to impairment.
  - Combination of different medications or combination with alcohol and/or illicit drugs may lead to increased impairment.
  - Intermittent or erratic use of medication will slow the development of tolerance.

It is the responsibility of the driver to be aware that medicine use could lead to impairment.

- Most doctors and pharmacists will advise their patients of the potential dangers of their medication. Guidelines have been developed locally and internationally to assist healthcare professionals in informing and educating drivers about the potential of impairment due to medication.
- The ICADTS Working Group on Medicine and Driving compiled a list of commonly used medications, dividing the medicines into three categories based on possible impairment<sup>8</sup>:
  - **Category 1: Presumed to be safe or unlikely to produce an effect.** Repeated experimental investigation demonstrated little or no driving-related impairment. Advice to patient: Read the package insert warnings before driving.
  - **Category 2: Likely to produce minor to moderate adverse effects.** Various experimental circumstances provided evidence of some driving impairment. Advice to patient: Consult a healthcare professional before driving.
  - **Category 3: Likely to produce severe effects or presumed to be potentially dangerous.** In various experimental circumstances gross impairment of driving ability was demonstrated. Advice to patient: Do not drive while using the medication and consult a healthcare professional before recommencing driving activity.



#### What the driver should do

- Be informed about the medication you are using. Read package labels and warning labels. Take the medicine according to the prescription. Do not exceed the prescribed dose. Do not use somebody else's prescription medicine.
- Be aware that medication can impair your driving ability significantly. If you do not feel well, you will not drive well.
- Inform your healthcare professional about all the medicines you are using, including prescription, over-the-counter and alternative (herbal) medicines, as well as illicit drugs.
- Be aware that alcohol and illicit drug use could increase the adverse effects of your medications. Discuss the implications with your health care professional.
- If you are concerned about the effects of your medication on your driving, do not stop the medication. Stop driving and discuss your concerns with your health care professional.
- Use alternative transport while on medication that impairs your driving. Tolerance may develop to the impairment effects, but it may take weeks or months.

Check with your healthcare professional before recommending driving.

- If driving is essential, discuss alternative treatment options with your healthcare professional.
- Driving at night or working in shifts where normal sleep patterns are affected, increase the likelihood of medicine-related adverse outcomes; if you cannot avoid these situations, take precautions to reduce the risk.
- Untreated chronic pain or mental health issues may contribute to adverse driving outcomes. Appropriate treatment, including abstinence from driving until tolerance to impairment effects has developed, may in the longer term result in improved driving skill.

#### FURTHER WORK IN THIS AREA

- Researchers are evaluating the effectiveness of different warning label designs for medication. One study found that it was easier for consumers to correctly interpret warning labels where the level of impairment was indicated on a coloured bar with side information added. Consumers exposed to these labels were also more likely to change their driving behaviour<sup>11</sup>.
- A study comparing the perception of currently used French and Australian medicine warning labels found that a label displaying a warning pictogram combined with the colour red, were the most effective in conveying the warning messages<sup>13</sup>.
- Unpublished research viewed by CARRS-Q, suggests that older drivers viewed prescription medicine as safe to drive as it is "managed treatment", as opposed to over-the-counter or illicit drugs. Further research on this topic is necessary.

#### Warning labels about driving

- Medication packaging display printed warnings about potential driver impairment and additional standardised labels may be added by the dispensing pharmacist. According to national guidelines, ancillary warning labels 1 and 1a are mandatory and label 12 may also be displayed. More detailed information may be found inside the packages and online<sup>13</sup>.

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