# Prevalence of drugged and/or medicated driving in New Zealand

June 2022

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**Waka Kotahi NZ Transport Agency research report 689**
Contracted research organisation – Ipsos, New Zealand

WAKA KOTAHI NZ TRANSPORT AGENCY
New Zealand Government

ISBN 978-1-99-004468-7 (electronic)
ISSN 2815-8377 (electronic)

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Dudding, A., Beccari, S., & Bartle, J. (2022). *Prevalence of drugged and/or medicated driving in New Zealand* (Waka Kotahi NZ Transport Agency research report 689).

Ipsos was contracted by Waka Kotahi NZ Transport Agency in 2021 to carry out this research.



**Keywords:** attitudes, drugged driving, incidence, medicated driving, prevalence

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# Acknowledgements

The authors would like to thank all those who took part in this study and the members of the steering committee:

- Dr Paul Graham (Waka Kotahi NZ Transport Agency)
- Malcolm Menzies (Waka Kotahi NZ Transport Agency)
- Nils van Lamoen (New Zealand Police)
- Michael Slyuzberg (Ministry of Justice)
- Vidhiya Damodaran (Ministry of Transport)
- Samuel Andrews (Ministry of Health).

We would also to express our thanks to Emily Hughes and Kali Mercier of the NZ Drug Foundation, as well as the peer reviewers of this report:

- Matthew Baldock (Deputy Director, Centre for Automotive Safety Research, University of Adelaide)
- Kristine Mayo (an independent researcher).

# Abbreviations and acronyms

| | |
|---|---|
| CAPI | computer-assisted personal interviewing |
| CBD | cannabidiol |
| CIT | compulsory impairment test |
| DMT | N, N-dimethyltryptamine |
| DUI | driving under the influence |
| ESR | Environmental Science and Research |
| GBL | gamma butyrolactone |
| GDS | Global Drug Survey |
| GHB | gamma hydroxybutyrate |
| LSD | lysergic acid diethylamide |
| MAPPS | Motivation–Ability–Processing–Physical–Social |
| MDMA | 3,4-methylenedioxy-methamphetamine (commonly known as ecstasy or molly) |
| NDSHS | National Drug Strategy Household Survey |
| NZHS | New Zealand Health Survey |
| PMA | paramethoxyamphetamine |
| PMMA | paramethoxymethamphetamine |
| RTD | ready to drink (pre-mixed beverages) |

# Notes to the readers

## Significant differences

Significant differences at the 95% confidence interval are shown throughout the report:

- **Green coloured font** has been used to denote percentages that are significantly higher than those recorded for all those answering said question.
- **Red coloured font** has been used to denote percentages that are significantly lower than those recorded for all those answering said question.

Percentages may not always sum to 100% due to rounding and/or where respondents are able to give more than one answer. Sub-sample sizes also influence the maximum margin of error, so a percentage difference between two numbers may be indicated as significant for one answer but not for another where the base size is smaller, thereby increasing the margin of error.

Significant differences with a base size of $n < 50$ have not been reported on. No corrections for multiple comparisons are applied.

## Terminology

| | |
|---|---|
| **NETT** | NETT refers to when more than one response or sample group has been combined – for example, combining the proportions of those giving answers of *very satisfied* and *satisfied* to produce a *NETT Satisfied* number (to represent who were satisfied to some degree). |
| **Non-probability sampling** | As the sample for this survey is via panels and non-panel sources, it is considered a non-probability sampling approach. For this reason, confidence intervals and margins of error have not been calculated. |
| **Prescription medication vs recreational drugs** | The purpose of the drug and/or medication usage has not been separated between prescription medication and recreational/illicit drugs (see Table 2.1). This has been done intentionally to allow respondents to safely admit to drug and/or medication usage whatever the purpose or reason for doing so. Therefore, we cannot report the difference between prescribed medication and recreational drug usage. |
| **Drug and/or medication timeframe** | In the survey we asked respondents if they had 'ever driven within three hours (3 h) of taking drugs and/or medication'. 'Three hours' was used as a time reference that best reflected the time period where for most drugs and/or medications, one is not in a fit state to drive without being under the influence of the drugs and/or medication taken. We understand that each drug and/or medication has a different timeframe when driving is allowed; however, one timeframe was selected for ease of surveying. |

| | |
|---|---|
| **Impairment** | No assessment of actual levels of impairment due to drugs and/or medication is included in the survey analysis. Nor are conclusions drawn about patterns of behaviour or reasons for them (eg, use of combinations of drugs and/or medications). Such assessments or conclusions, or decisions about policy responses, may be made or reached through further analysis and matching of raw data produced to accompany this report. |
| **Crash data by drug/medication type** | Crash risk estimates of various substances from key publications vary, and this project does not investigate any differences or similarities in the risks associated with various drugs and medications. The purpose of the study is to understand the prevalence of the various drugs and medications that are used by New Zealand drivers. |
| **Medicated vs prescription drugs and/or medication** | The way we asked if someone took drugs and/or medication within 3 hours of driving in the last 12 months could result in some of the drugs and/or medication incidence results being a combination of prescription and recreational drugs (eg, benzodiazepines taken as an anti-anxiety medication or as a recreational drug). Commentary on the level of impact of each drug and medication on driving was not in scope. |

# Contents

# Executive summary

The purpose of this research is to identify the overall prevalence of drugged and/or medicated driving in New Zealand and to understand the profile of those who have driven under the influence of drugs and/or medication.

The three main objectives of the research are:

- identify the overall prevalence of drugged and/or medicated driving in New Zealand before implementing the new testing regime
- identify the prevalence of drugged and/or medicated driving in New Zealand by different population groups (ie, age, gender, ethnicity, region) before implementing the new testing regime
- help develop a framework to assess whether the implementation of the new testing regime reduces the prevalence of drugged and/or medicated driving in New Zealand.

This research was conducted via an online survey amongst 4,688 New Zealand drivers aged 16 and over who had driven in the last 12 months. Those who had driven under the influence of drugs and/or medication in the last 12 months (*n* = 1,094) were asked further questions about the last occasion that they drove under the influence of drugs and/or medication.

Just under a quarter (23%) of all respondents claimed to have driven within 3 hours of taking drugs and/or medication in the past 12 months. These drugged and/or medicated drivers include people who take medications that are prescribed to them and people who take drugs recreationally.

Respondents who have taken drugs and/or medication within 3 hours of driving in the last 12 months present some significant differences compared to the overall New Zealand sample. Drugged and/or medicated drivers are significantly more likely to be female (57% vs 51% of total sample) and younger – aged 16–24 (19% vs 15% of total sample) and aged 25–44 (37% vs 34% of total sample) – and significantly less likely to be aged 65+ (11% vs 19% of total sample). Due to their age, they are also significantly more likely to be students (9% vs 7% of total sample) or not working (18% vs 12% of total sample) and significantly less likely to be retired (10% vs 16% of total sample).

Overall, drugged and/or medicated drivers are significantly more likely to live in the South Island (28% vs 24% total sample) and significantly less likely to be from the Auckland area (28% vs 34% of total sample) or from the Upper North Island (32% vs 37% of total sample).

Non-drugged/non-medicated drivers are significantly more likely to be aged 65+ (22% vs 19% of total sample) and/or retired (18% vs 16% of total sample).

Drugged and/or medicated drivers' reasons for driving the last time they drove under the influence of drugs and/or medication also present significant differences. They are significantly more likely than the total sample to have driven:

- for work as part of their job (13% vs 10% of total sample)
- to take kids to/from school/kindergarten (27% vs 22% of total sample)
- to give someone else a ride (29% vs 21% of total sample)
- for medical/dental purposes (32% vs 25% of total sample)
- to visit family/friends (60% vs 55% of total sample).

The top three types of drugs/medications taken by respondents who had driven within 3 hours of taking drugs and/or medication in the past 12 months are anti-depressants (10%), strong painkillers (9%) and

cannabis (5%). There are several significant demographic differences regarding the most common drugs and/or medication taken. Amongst the 10% who took anti-depressants within 3 hours of driving, students and those not in paid employment were the biggest groups significantly more likely to have done so. Females were also significantly more likely than the total sample to have taken anti-depressants and driven within 3 hours of taking drugs and/or medication in the past 12 months.

Amongst the 9% who took strong painkillers within 3 hours of driving, there are several demographic differences that indicate that they did so to get on with their day – 14% claimed the reason they drove was for work as part of their job, and 12% drove to take kids to/from school/kindergarten.

Those who took cannabis within 3 hours of driving (5%) were significantly more likely to be younger (under the age of 45), not working, on a restricted or learner licence, and/or have held their licence for less than 10 years.

The 4% who took anti-nausea medication within 3 hours of driving were significantly more likely to be female, aged 25–44, and/or not working.

Those who took anti-anxiety drugs within 3 hours of driving (4%) were significantly more likely to be younger (aged 16–24), live in a shared household or with their parents, not working, and/or have held their licence for less than 10 years.

Of those who drove within 3 hours of taking drugs and/or medication on the last occasion, 47% did so once a week or more often. Those who drove within 3 hours of taking drugs and/or medication weekly or more often were significantly more likely to have taken anti-depressants, prescription stimulants and/or anti-anxiety drugs on the last occasion.

Most drives within 3 hours of taking drugs and/or medication on the last occasion were quite recent, with 40% of drugged and/or medicated drivers having done so in the last week and 62% within the last 4 weeks or more often. Those who drove within 3 hours of taking drugs and/or medication within the last month were significantly more likely to have taken anti-psychotics, anti-depressants and/or anti-anxiety drugs on the last occasion.

Those who drove within 3 hours of taking drugs and/or medication were more likely to drive during the day (64%) rather than in the evening (30%). Respondents aged 45+ were significantly more likely to have driven after taking the drugs and/or medication during the day, rather than in the evening. Anti-depressants, anti-anxiety drugs and strong painkillers were significantly more likely to be taken during the day. Those who drove after taking drugs and/or medication during the evening were significantly more likely to be aged 25–44 and to have taken amphetamines, alcohol (as well) and/or anti-psychotics.

The reasons for driving within 3 hours of taking drugs and/or medication on the last occasion varied, with the top three being to get to/from work, for shopping/running chores, and to visit friends/family. Those who drove to get to work, not surprisingly, were significantly more likely to be working (45%). Those who drove to shop or run chores were significantly more likely to be a single parent living with a child/children (39%), single (35%), not working (52%) and/or retired (38%). Those who drove to visit friends/family were significantly more likely to be not working (26%).

There are some interesting significant differences in terms of purpose of the drive and the drugs and/or medication taken on this last occasion. Those who took anti-psychotics, sedatives/sleeping pills and/or strong painkillers on the last occasion were significantly more likely to have driven for medical/dental purposes. Respondents who took anti-anxiety drugs are the only group who were significantly more likely to have driven to get themselves to/from work. Those who took prescription stimulants, anti-anxiety drugs, anti-psychotics and/or sedatives/sleeping pills were significantly more likely to have driven to get themselves to/from education.

More than a third of respondents (37%) took passengers with them the last time they drove within 3 hours of taking drugs and/or medication. Of these, over half (54%) took only one passenger, while 46% took two or more passengers. Three-quarters (76%) of those who drove after taking drugs and/or medication claimed to have planned to drive prior to taking the drugs and/or medication. A similar proportion (72%) also planned to take drugs and/or medication.

Amongst those who planned to take drugs and/or medication, 58% also planned to drive. Those who planned to take drugs and/or medication the last time they drove under the influence of drugs and/or medication were significantly more likely to have taken anti-depressants and significantly less likely to have taken strong painkillers, alcohol (as well as other drugs and/or medication) and/or cannabis. Those who planned to drive after taking drugs and/or medication the last time they drove under the influence of drugs and/or medication were also significantly more likely to have taken anti-depressants and significantly less likely to have taken alcohol (as well as other drugs and/or medication), anti-psychotics, sedatives/sleeping pills and/or amphetamines.

When asked about how their driving ability was affected by the drugs and/or medication taken on the last occasion they drove within 3 hours of taking them, 59% of respondents claimed that their driving was ‘not at all impaired (as safe as taking the same drive without taking any drugs and/or medication)’. Respondents who took anti-depressants on the last occasion they drove were significantly more likely to claim that their driving ability was not at all affected by the drugs and/or medication they took.

# Abstract

The purpose of this research was to identify the overall prevalence of drugged and/or medicated driving in New Zealand and to understand the profile of those who have driven under the influence of drugs and/or medication. The results will be used to develop an evaluation framework to understand if, once introduced, the proposed new drug testing regime will help reduce drugged and/or medicated driving prevalence in New Zealand.

This research was conducted via an online survey amongst 4,688 New Zealand drivers aged 16+ who had driven in the last 12 months. Those who had driven under the influence of drugs and/or medication in the last 12 months (*n* = 1,094) were asked further questions about the last occasion that they drove under the influence of drugs and/or medication.

Just under a quarter (23%) of all respondents claimed to have driven within 3 hours of taking drugs and/or medication in the past 12 months. Anti-depressants (10%), strong painkillers (9%) and cannabis (5%) were the top three types of drugs/medications taken within 3 hours of driving in the last 12 months.

Amongst those who drove within 3 hours of taking drugs and/or medication in the past 12 months, the top five types of drugs/medications taken on the last occasion of driving within 3 hours of taking drugs and/or medication were anti-anxiety drugs (42%), anti-psychotics (39%), benzodiazepines (37%), anti-nausea medication (37%) and cocaine (37%). Almost half (47%) claim to have driven within 3 hours of taking drugs and/or medication at least once a week or more often. Two-thirds (66%) of this drugged and/or medicated driving was done during the day (between 6 am and 6 pm), and the top three reasons for the behaviour were to get themselves to/from work (32%), for shopping/running chores (27%) and to visit family/friends (20%).

# Background

Driving under the influence of drugs and/or medication is one of the most common contributing factors to death and serious injury crashes in New Zealand. Road to Zero – New Zealand's road safety strategy 2020–2030 – acknowledges the importance of addressing this issue; however, the extent to which a contributing drug and/or medication is present in blood is in many cases unknown.

Under the current regime, drivers are subjected to compulsory breath testing without need for suspicion; if no alcohol is detected or the test is below the limit, but impairment is suspected, the driver is required to perform a compulsory impairment test (CIT). The CIT comprises an eye assessment, a walk-and-turn assessment and a one-leg stand assessment.[1] If the CIT is not satisfactorily completed, it will be followed by a blood test. However, due to the significant time required to perform the CIT (average 52 minutes), training requirements, CIT test sensitivity and good cause to suspect requirement make the CIT difficult to scale up for more widespread testing. Therefore, drugged and/or medicated driving is not effectively detected or deterred on a wide scale.

In late 2019, Cabinet agreed to implement a significant change to New Zealand's drugged and/or medicated driving testing regime by introducing oral fluid testing for drugged and/or medicated driving. This new testing regime is likely to be implemented from mid-2022.

There are two notable knowledge gaps relating to drugged and/or medicated driving in New Zealand at present:

- overall drugged and/or medicated driving prevalence and associated behaviours (including type and amount of drugs and/or medication consumed prior to driving, and frequency of drugged and/or medicated driving)
- demographic and geographic distribution of drugged and/or medicated driving prevalence.

In addition, there is a need to understand the effects of the new testing regime – the change in prevalence and pattern of drugged and/or medicated driving before and after implementing the new testing regime.

[1] Land Transport (Compulsory Impairment Test) Notice 2009.
http://www.legislation.govt.nz/regulation/public/2009/0335/10.0/whole.html#DLM2494018

# Research purpose and objectives

The purpose of this research is to identify the overall prevalence of drugged and/or medicated driving in New Zealand and the impact of the new testing regime in reducing the prevalence of drugged and/or medicated driving (a pre/post analysis).

The prevalence data helps define the size of the problem and establishes the baseline prevalence for the evaluation. If distributional differences are found to exist, this could inform policy design and interventions to mitigate exacerbating distributional inequalities.

The evaluation helps identify the impact of the new regime on drugged and/or medicated driving prevalence and provides an opportunity to review and identify needs for further policy/intervention work.

The objectives of the research are:

- identify the overall prevalence of drugged and/or medicated driving in New Zealand before implementing the new testing regime
- identify the prevalence of drugged and/or medicated driving in New Zealand by different population groups (ie, age, gender, ethnicity, region) before implementing the new testing regime
- help develop a framework to assess whether the implementation of the new testing regime is reducing the prevalence of drugged and/or medicated driving in New Zealand.

A literature review was carried out to consider the merits of different methodologies for gaining an accurate understanding of drugged driving prevalence rates.

The results of this survey have been triangulated against other data sources to increase the accuracy of the results – for example, triangulation of conviction trends, with New Zealand Health Survey data alongside survey data.

# 1 Literature review overview

## 1.1 Overview and purpose

For this literature review, the research questions we sought to answer are:

- How are others doing research into the prevalence of drugged driving among the public?
- Are there studies that compare self-reported drugged driving with impairment tests?
- What other data sources are other jurisdictions and researchers looking at to understand drugged driving incidence? Do they improve accuracy of results?
- What is the impact of drug testing regimes in other countries?
- How can we ensure self-reported drugged driving measures are accurate? How do others do this in quantitative research environments?
- What other context for drugged driving is available?

Eighty studies of drug use and drugged driving were reviewed and used to identify common methodologies and sampling approaches in drugged and/or medicated driving research. Of specific interest was literature exploring self-reported data, testing regimes and biological test results. Further details about the sources consulted and findings of studies referenced are available in Appendix B.

- **Dates:** Post-2013 academic sources, with some review of 2010–2015 in the European Union
- **Journals/Sources:** Google Scholar, University of Auckland Library
- **Jurisdictions:** New Zealand, Australia, the United States, the United Kingdom, Canada, Europe (Norway, Netherlands, Sweden, Portugal, Spain)
- **Target number of articles/documents:** 20–30 sources
- **Search terms used:**
  - **Key terms:** drug driving, drug-impaired driving, driving high, cannabis and driving, prescription medicines, medication, substance, impaired, psychedelic, psychotropic, substance impaired
  - **Context:** driving, road safety, self-reported, random roadside testing
  - **Specifics:** survey, quantitative, testing

## 1.2 Methodologies

The review found that the different approaches to measuring the prevalence of drugged and/or medicated driving and drug and/or medication use among drivers can be grouped into three categories:

- **Intercept testing:** This method uses a combination of biological tests (oral fluid tests) and self-reported data to measure agreement on drugged and/or medicated driving. There is a risk of social desirability bias related to the presence of an interviewer. This approach requires a high level of resource (cost and time).
- **Self-report surveys (respondent led):** There is less social desirability bias than interviewer-led surveys; however, this methodology still relies on truthfulness of the respondent. Pomm (2020) found that admission of any substance use (alcohol, illicit drugs and/or medication) was highest through anonymous computer surveys.

- **Self-report surveys (interviewer led):** This method allows for directed follow-up questions; however, there is a potential source of bias due to the presence of an interviewer. It also has a lower degree of accuracy than biological test results.

## 1.3 Sampling method

The different sampling approaches to measuring the prevalence of drugged and/or medicated driving and drug and/or medication use among drivers can be grouped into three categories:

- **Population probability sample:** A randomised approach that ensures all areas of a population have equal chance of being selected to participate in a study.
- **Case-control structure:** Employs the data of identified drugged and/or medicated drivers to create a driver profile that is used to determine whether others of the same demographic are driving under the influence. Freeman et al. (2016) found six predictors of drink driving behaviour: gender (males); age (young); lower perceptions of the severity of sanctions; and fewer concerns about the harms of the offence (social, internal, and physical).
- **Roadside intercepts:** Vehicles are recruited at the roadside and directed into the survey area. Precautions are taken to ensure recruitment is unbiased – for example, every third car is intercepted.

## 1.4 Questionnaire design

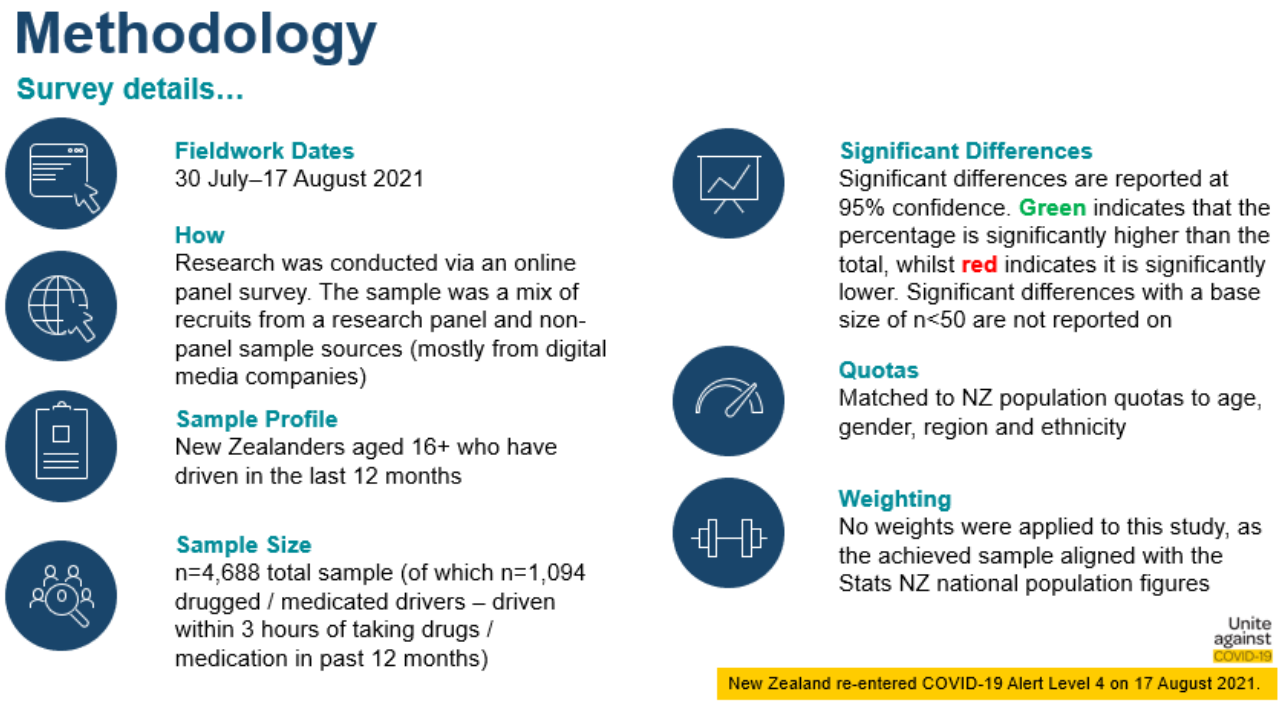
The literature supported the inclusion of the following factors in the survey design.

- **Legal, illegal and prescription drugs:** Use of drugs while driving tends to have a larger effect on the risk of fatal and serious injury accidents than on the risk of less serious accidents (usually property-damage-only accidents). Estimates of risk vary considerably by drug/medication type (Elvik, 2013).
- **Gender:** Drug and/or medication use is gendered – males who are apprehended for drugged and/or medicated driving are more likely to test positive for illicit substances, while females are more likely to test positive for anti-depressants (females are also less likely to re-offend).
- **Dependency and frequency of use:** Dependency issues with drugs, medication and alcohol are linked to driving under the influence (Cook et al., 2017). Frequency and regularity of use can be an important factor – for example, binge drinking is more strongly associated with impaired driving than heavy drinking (Flowers et al., 2008).
- **Association between drink driving and drugged and/or medicated driving:** Those who reported drink driving were 3.26 times more likely to report drugged and/or medicated driving than those who did not report drink driving (Malhotra et al., 2017).
- **Reducing bias:** A number of potential survey biases were identified, including social desirability bias, recall bias and inability to interpret impairment. Risk-mitigation strategies for each of these were also explored, including using time- and behaviour-related questions rather than self-reported impairment, asking drug and/or medication use questions prior to driving behaviours to provide context, focusing on a short period of time (last occasion), and providing detailed information about anonymity of results.

# 2 Methodology

The research was conducted amongst 4,688 New Zealand drivers aged 16+ who had driven in the last 12 months. The research was conducted via an online survey, using a sample of respondents from research panels and from non-panel sample sources (see more in section 2.1). Of the 4,688 respondents, 1,094 had driven within 3 hours of taking drugs and/or medications. The research was conducted from 30 July to 17 August 2021 (Figure 2.1).

**Figure 2.1 Methodology**




The questionnaire was structured in two parts:

- **Part 1 – Incidence:** Part 1 used a sample representative of all New Zealanders and involved understanding the incidence of drugged and/or medicated driving and obtaining sample profile details such as age, gender, region and ethnicity (to allow for an understanding of the drugged and/or medicated driving subgroup). Part 1 took 6–7 minutes to complete and was used to recruit respondents for Part 2.
- **Part 2 – Behaviours:** Those who reported they had driven under the influence of drugs and/or medication in the last 12 months in the initial stage of the questionnaire continued onto Part 2. These respondents were asked questions about their drugged and/or medicated driving behaviours. Part 2 took an additional 6–7 minutes to complete. Those respondents who completed both parts of the questionnaire did so as part of the same survey, in the same session.

The overall recruitment of the sample for Part 1 was matched to the New Zealand population quotas for age, gender, region and ethnicity, provided to us by Stats NZ. After completion, there was no need to weight the data, as the achieved sample aligned with Stats NZ's national population figures. Matching these quotas will allow us to recreate the survey after the implementation of the new testing regime.

Overall, 4,688 respondents undertook the incidence component of the survey (Part 1), and 1,094 continued to complete Part 2 as 'drugged and/or medicated drivers' (driven within 3 hours of taking drugs and/or medication in the past 12 months).

## 2.1 Survey approach

The overall objective of this survey was to provide a quantitative overview of the prevalence of drugged and/or medicated driving in New Zealand. In order to achieve this objective, we conducted an online survey using a sample of respondents from research panels and from non-panel sample sources (river sampling). River sampling recruits respondents in real time from in-app and in-browser based advertisements on gaming and social sites and reward and loyalty programme sites. Respondents are rewarded by the app/site from which they were recruited (eg, they may receive extra lives from a gaming site if recruited from a gaming site).

A blend of panel suppliers and non-panel sources (river sampling) allowed us to reduce online panel biases by reaching people who are not online panel members. The sample comprised a blend of three high-quality online panel samples (80%) and river sampling of non-panel sources (20%).

By using this mix of sample sources, we were able to achieve not only a large sample size for a robust incidence measure and the ability to analyse incidence by subgroups (eg, age, gender, ethnicity, region) but also a large sample size of those who have driven under the influence of drugs and/or medication and the ability to analyse drugged and/or medicated drivers by subgroups.

### 2.1.1 Differences to the 2017 research/survey

The methodology we used differs to the approach used in a previous drugged and/or medicated driving survey conducted by the University of Waikato for Waka Kotahi NZ Transport Agency in 2017 – *The prevalence and impairment effects of drugged driving in New Zealand* (Starkey & Charlton, 2017) – and as such, the results of the two surveys are not directly comparable.

The University of Waikato used a telephone survey for measuring the incidence and a separate online survey that targeted those who had driven under the influence of drugs and/or medication alongside a recontact telephone survey. The list of drugs and medications used in this Ipsos research differs from the list used in the University of Waikato survey (see Appendix E) because we updated it to include the most commonly used drugs and medications in 2021. In addition, the structure of the questionnaires is different, with the University of Waikato survey focusing on behaviour by drug/medication type, while this Ipsos research focuses on behaviour of last drugged and/or medicated driving occasion.

### 2.1.2 Drugs and/or medication taken in the last 12 months

The list of drugs and medications that was used in this research covers drugs and medications that are legal, illegal, prescribed or purchased over the counter. This list includes drugs and medications that are most commonly taken as well as those that are likely to feature in the roadside drug testing that is proposed to be introduced in New Zealand in the near future.

The list of drugs and medications used in this research was developed with the assistance of the NZ Drug Foundation and approved by representatives of Waka Kotahi and the Ministry of Health. The list was shown in the questionnaire as presented in Table 2.1 below and was not rotated.

The drugs and medications in Table 2.1 are the only ones used in this research. We did not analyse any other drugs and/or medications that the respondent may have taken that did not appear on the list.

**Table 2.1 List of drugs and medications (legal, illegal, prescribed or purchased over the counter) measured as shown in the questionnaire**

| Drugs/medications taken |
|---|
| **Alcohol** (beer, wines, spirits, RTDs) |
| **Amphetamines** (including speed, methamphetamine ('P', meth) and PMA/PMMA) |
| **Prescription stimulants** (eg, Ritalin, Concerta, Adderall) |
| **Anti-anxiety drugs** (eg, benzodiazepines, lorazepam, clonazepam) |
| **Anti-psychotics** (eg, haloperidol, quetiapine, risperidone, olanzapine) |
| **Sedatives/sleeping pills** (eg, Valium, diazepam, temazepam, quetiapine, zopiclone) |
| **Benzodiazepines** (eg, Xanax, diazepam), sometimes called benzos, tranks or downers |
| **Anti-depressants** (eg, amitriptyline, fluoxetine, citalopram, venlafaxine) |
| **Anti-nausea medication** (eg, Sea Legs, cyclizine, Phenergan, Prochlorperazine) |
| **Cannabis** (marijuana, weed, pot, hash, hash oil, but not prescription CBD) |
| **Cocaine** |
| **MDMA/ecstasy** (MD, E, molly, pingers) |
| **Synthetic cathinones/bath salts** (eg, mephedrone, eutylone, flakka) |
| **GHB/GBL** (G, fantasy, liquid ecstasy) |
| **Kava** |
| **Hallucinogens** (mainly ketamine (ket, jet, special K); also including NBOMe, LSD, psilocybin, mushrooms, DMT and other synthetic hallucinogens). |
| **Strong painkillers** (including codeine, morphine, methadone, oxycodone, pethidine, fentanyl, tramadol) |
| **Heroin/opiates** (opium, homebake) |
| **Epilepsy medication** (eg, carbamazepine, sodium valproate, lamotrigine) |
| **Synthetic cannabinoids** (eg, synthetic cannabis, synnies, syn cans) |

**Note:** In this report we will refer to each specific drug and/or medication as per the bolded text in the above table. For example, we will state 'amphetamines' instead of the full name presented in the survey – 'Amphetamines (including speed, methamphetamine ('P', meth) and PMA/PMMA)' (eg, Table 4.1).

The drug and medication list used in 2021 is different from that used in the University of Waikato's 2017 survey. Therefore, caution should be taken when comparing the 2017 results with the 2021 results.

Alcohol was added to the overall list of drugs and medications to act as a 'known' reference in the questionnaire. It also provided an option that respondents may have felt more comfortable selecting and encouraged them to continue to be honest in answering the questions for the legal/illegal drugs and medications listed. If a respondent selected **only** alcohol at 'ever driven within 3 hours of taking drugs and/or medication in the past 12 months', then they were excluded from Part 2 (the drugged and/or medicated driving section) of the survey. The report presents results for alcohol (as well), which indicates that a respondent stated that they had driven within 3 hours of both drinking alcohol **and** taking another drug and/or medication, in the last 12 months.

This research does not identify whether the drugs and/or medications were taken on prescription or illicitly. The drugs and medications listed in the survey were selected due to their having an impact on driving ability

regardless of the purpose or reason for taking. The way the question was asked could result in some of the drug and/or medication incidence results being a combination of prescription and recreational drugs and/or medication (eg, benzodiazepines taken as an anti-anxiety medication or as a recreational drug). Commentary on the level of impact of each drug and medication on driving was not in scope.

It should be noted that for illicit drugs, there could be a difference between what respondents believed they were taking and what they were actually sold, which could be contaminated or another drug entirely (eg, not 'pure' cocaine, MDMA or synthetic cannabinoids).

### 2.1.3 Respondent bias

Given the sensitive nature of the survey, the following approaches were included in the design to help mitigate potential respondent biases.

- **Sensitive subject matter** – Special attention was given to ensuring respondents understood their responses were confidential. Please see section 2.1.4 for further details on confidentiality.
- **Social desirability bias** – Social desirability refers to answering questions in a way that reflects current norms of good behaviour rather than being entirely honest, and can lead to under-reporting. The questionnaire design focused on helping respondents feel comfortable admitting to behaviours perceived to be less socially desirable, but first warming up with more common risky behaviours (such as exceeding the speed limit or driving tired). Results have also been compared by drug/medication type with other data and studies.
- **Interviewer bias and safety** – Surveys administered by interviewers are more prone to interviewer bias than self-administered surveys, particularly when they involve sensitive questions. An online survey methodology was chosen for this reason.
- **Self-reporting bias** – Self-reported data are more accurate when individuals understand the questions and when there is a strong sense of anonymity, so these issues needed to be reinforced in questionnaire design.
- **Recency bias –** Focus was placed on ensuring respondents could answer as accurately as possible by limiting the overall incidence to behaviours in the last 12 months and then focusing detailed questions around behaviours while driving under the influence of drugs and/or medication on respondents' most recent occasion.
- **Seasonality –** It is possible that drug and/or medication usage is different throughout the year. For this reason, incidence was calculated based on a 12-month period.
- **Inability to determine impairment** – It is difficult for respondents to accurately and consistently judge impairment as a result of taking drug and/or medication. Therefore, we have used a blanket period of driving within 3 hours of taking the drug and/or medication rather than allowing respondents to identify whether they were impaired.
- **Behaviour bias** – Those who have admitted having taken drugs and/or medication within 3 hours of driving in the last 12 months also admitted to more common risky behaviours. This could be an accurate finding, or could be due to respondent bias – that is, those willing to admit to Behaviour A are more comfortable to also admit to Behaviour B.
- **Methamphetamine/Amphetamine underrepresentation** – The triangulation of the research data we undertook (Appendix A) indicates that our survey is under-representing methamphetamine/amphetamine users, as well as those who have driven 3 hours after taking methamphetamine/amphetamine in the last 12 months. Ipsos concluded that the incidences of other drug types identified in these studies did not differ significantly enough from our results to indicate that the sample was not representative of drugged driving in New Zealand for drugs other than methamphetamine/amphetamine.

The literature review in Appendix B presents more detailed learnings from international approaches to drugged driving research.

### 2.1.4 Confidentiality

We understand that the topic of this survey is highly sensitive in nature, so every precaution was taken to ensure that respondents were aware that their responses are confidential and cannot be linked to any identifiable personal information. Throughout the survey we reminded respondents of this and of the anonymity around the particularly sensitive questions we asked them. An example of such a reminder is:

> *It is important that you know that your participation and responses are treated as completely confidential. The record of your survey responses does not include any identifying information about you and there is no way to identify you from your responses. All results will be grouped together for reporting purposes and shown as a proportion only. Please note, you can stop taking the survey at any time by closing the browser.*

At certain questions we again reminded them of their anonymity.

> *Some of the questions in this survey ask about items that can be perceived as sensitive in nature. We want to reassure you that your responses are confidential and will be used for research purposes only. Individual responses will be combined together with those of other respondents and reported as a group.*

We also used the findings of our literature review to understand what global best practices exist when surveying this topic of drugged and/or medicated driving (see Appendix B).

### 2.1.5 Project steering group feedback

A project steering group was set up with representatives from Waka Kotahi, New Zealand Police, the Ministry of Justice, the Ministry of Transport and the NZ Drug Foundation. The project steering group provided feedback on the research approach, questionnaire, data for triangulation and approach to reporting.

# 3 Respondent profile

## 3.1 Who was surveyed

To determine the incidence of drugged and/or medicated driving, Ipsos surveyed a representative sample of the New Zealand population aged 16+ years (Figure 3.1, Tables 3.1 to 3.5). The sample was based on nationally representative population quotas of age, gender, region and ethnicity. These quotas were matched against Stats NZ's population figures for these groups.

**Figure 3.1 Sample profile**

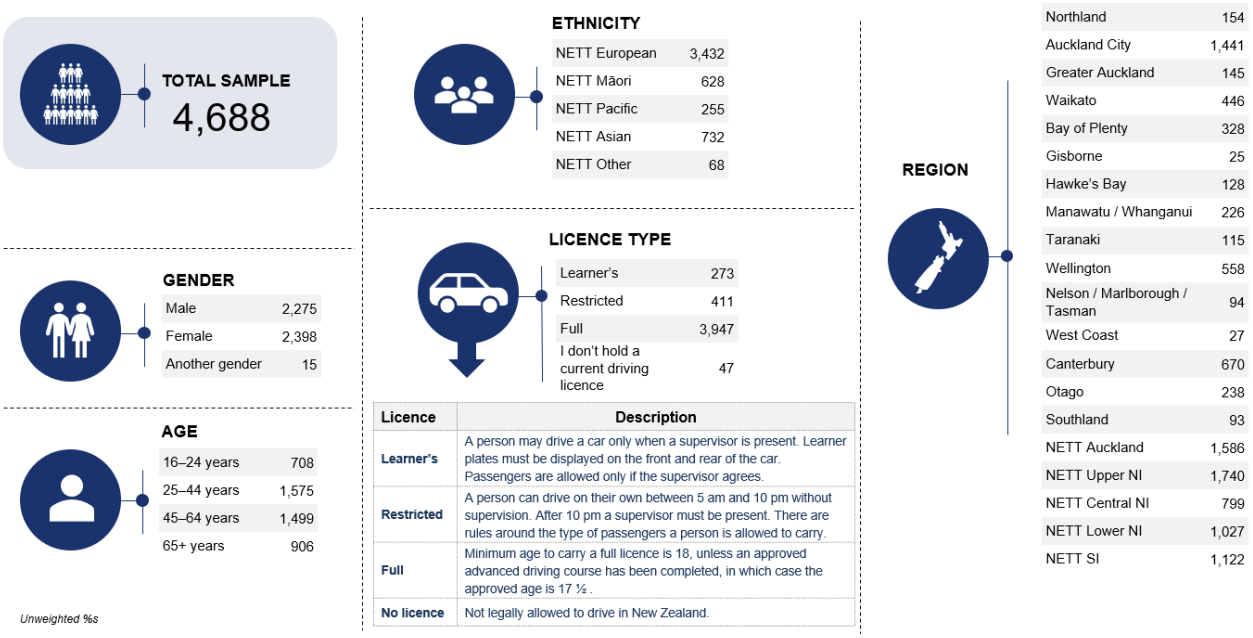



**Table 3.1 Gender**

| Total | *n* = 4,688 |
|---|---|
| Male | 49% |
| *Base, n =* | *2,275* |
| Female | 51% |
| *Base, n =* | *2,398* |
| Another gender | 0% |
| *Base, n =* | *15* |

**Table 3.2 Age**

| Total | *n* = 4,688 |
|---|---|
| 16–24 years | 15% |
| *Base, n =* | *708* |
| 25–44 years | 34% |
| *Base, n =* | *1,575* |
| 45–64 years | 32% |
| *Base, n =* | *1,499* |
| 65+ years | 19% |
| *Base, n =* | *906* |

**Table 3.3 Ethnicity**

| Ethnicity | *n* = 4,688 |
|---|---|
| NETT NZ European | 73% |
| *Base, n =* | *3,432* |
| NETT Māori | 14% |
| *Base, n =* | *628* |
| NETT Pacific | 6% |
| *Base, n =* | *255* |
| NETT Asian | 15% |
| *Base, n =* | *732* |
| NETT Other | 1% |
| *Base, n =* | *68* |

**Table 3.4 Licence type**

| Licence type | *n* = 4,688 |
|---|---|
| Learner licence | 6% |
| *Base, n =* | *273* |
| Restricted licence | 9% |
| *Base, n =* | *411* |
| Full licence | 84% |
| *Base, n =* | *3,947* |
| No current driver licence | 1%* |
| Base, *n =* | 47 |

***** Respondents were recruited only if they had driven in the last 12 months. Not all who drive necessarily have a driver licence.

**Table 3.5 Region**

| Region | *n* = 4,688 |
|---|---|
| Northland | 3% |
| *Base, n =* | *154* |
| Auckland City | 31% |
| *Base, n =* | *1,441* |
| Greater Auckland | 3% |
| *Base, n =* | *145* |
| Waikato | 9% |
| *Base, n =* | *446* |
| Bay of Plenty | 7% |
| *Base, n =* | *328* |
| Gisborne | 1% |
| *Base, n =* | *25* |
| Hawke's Bay | 3% |
| *Base, n =* | *128* |
| Manawatū-Whanganui | 5% |
| *Base, n =* | *226* |
| Taranaki | 2% |
| *Base, n =* | *115* |
| Wellington | 12% |
| *Base, n =* | *558* |

| Region | *n* = 4,688 |
|---|---|
| Nelson/Marlborough/Tasman | 2% |
| *Base, n =* | *94* |
| West Coast | 1% |
| *Base, n =* | *27* |
| Canterbury | 14% |
| *Base, n =* | *670* |
| Otago | 5% |
| *Base, n =* | *238* |
| Southland | 2% |
| *Base, n =* | *93* |
| NETT Auckland City | 34% |
| *Base, n =* | *1,586* |
| NETT Upper North Island | 37% |
| *Base, n =* | *1,740* |
| NETT Central North Island | 17% |
| *Base, n =* | *799* |
| NETT Lower North Island | 22% |
| *Base, n =* | *1,027* |
| NETT South Island | 24% |
| *Base, n =* | *1,122* |

## 3.2 Weighting

Due to the close alignment of the sample with the New Zealand population, no weighting was applied.

# 4 Overall prevalence of drugged and/or medicated driving in New Zealand

## 4.1 Overall incidence of drugs and/or medication taken in the last 12 months

The main objective of this research was to identify the overall prevalence of drugged and/or medicated driving in New Zealand. The survey started with a question on what drugs and/or medication respondents had taken in the last 12 months. The most common drugs and/or medication taken were strong painkillers (24%), anti-depressants (15%), sedatives/sleeping pills (13%), cannabis (12%), anti-nausea medication (11%) and anti-anxiety drugs (9%). The full results are shown in Table 4.1.

**Table 4.1 Incidence of drugs and/or medication taken in the last 12 months**

| Drug/medication taken in the last 12 months (*n* = 4,688) | |
|---|---|
| Strong painkillers | 24% |
| Anti-depressants | 15% |
| Sedatives/sleeping pills | 13% |
| Cannabis | 12% |
| Anti-nausea medication | 11% |
| Anti-anxiety drugs | 9% |
| Anti-psychotics | 4% |
| MDMA/ecstasy | 4% |
| Amphetamines | 3% |
| Prescription stimulants | 3% |
| Benzodiazepines | 3% |
| Hallucinogens | 3% |
| Kava | 2% |
| Epilepsy medication | 2% |
| Cocaine | 1% |
| Synthetic cathinones/bath salts | 1% |
| GHB/GBL | 1% |
| Heroin/opiates | 1% |
| Synthetic cannabinoids | 1% |

**Note:** Alcohol was added to the overall list of drugs and medications to act as a 'known' reference in the questionnaire but was not included in the report as a drug/medication taken in the last 12 months as it was out of scope.

## 4.2 Overall incidence of drugs and/or medication taken within 3 hours of driving in the last 12 months

Following on from the usage question, respondents were asked whether within the last 12 months they had driven within 3 hours of taking drugs and/or medication. Almost a quarter (23%) of the total sample claimed to have done so.

### 4.2.1 Specific drugs and/or medications consumed prior to driving

Table 4.2 outlines the incidence of usage in the last 12 months by type of drug/medication taken in the last 12 months along with the incidence of driving within 3 hours of taking in the last 1 and 12 months. Anti-depressants (10%), strong painkillers (9%), cannabis (5%), anti-anxiety drugs (4%) and anti-nausea medication (4%) were the drugs and/or medications most taken within 3 hours of driving in the last 12 months.

**Table 4.2 Incidence of taking drugs and/or medication in the last 12 months, driving within 3 hours of taking drugs and/or medication in the last 12 months, and driving within 3 hours of taking drugs and/or medication in the last month**

| Drug/medication taken in the last 12 months | Taken in the last 12 months | Driven within 3 hours of taking – last 12 months | Driven within 3 hours of taking – last 1 month |
|---|---|---|---|
| *Base, n =* | *4,688* | *4,688* | *4,688* |
| Strong painkillers | 24% | 9% | 5% |
| Anti-depressants | 15% | 10% | 8% |
| Sedatives/sleeping pills | 13% | 2% | 1% |
| Cannabis | 12% | 5% | 3% |
| Anti-nausea medication | 11% | 4% | 2% |
| Anti-anxiety drugs | 9% | 4% | 3% |
| Anti-psychotics | 4% | 2% | 1% |
| MDMA/ecstasy | 4% | 1% | 0% |
| Amphetamines | 3% | 1% | 1% |
| Prescription stimulants | 3% | 2% | 1% |
| Benzodiazepines | 3% | 1% | 1% |
| Hallucinogens | 3% | 1% | 0% |
| Kava | 2% | 1% | 0% |
| Epilepsy medication | 2% | 1% | 1% |
| Cocaine | 1% | 0% | 0% |
| Synthetic cathinones/bath salts | 1% | 0% | 0% |
| GHB/GBL | 1% | 0% | 0% |
| Heroin/opiates | 1% | 0% | 0% |
| Synthetic cannabinoids | 1% | 0% | 0% |

Amongst those who have taken a drug and/or medication in the last 12 months, there is a higher conversion rate of taking/using and then driving within 3 hours of taking anti-depressants (65.75%), epilepsy medication (64.44%) and amphetamines (55.24%) (see Table 4.3).

**Table 4.3 Conversion rate of taking drugs and/or medication and then driving within 3 hours of taking**

| Drug/medication taken in the last 12 months | Taken in the last 12 months | Driven within 3 hours of taking – last 12 months | Conversion of taken vs driven within 3 hours of taking (last 12 months)* |
|---|---|---|---|
| *Base, n =* | *4,688* | *4,688* | *4,688* |
| Anti-depressants | 15% | 10% | 65.75% |
| Epilepsy medication | 2% | 1% | 64.44% |
| Amphetamines | 3% | 1% | 55.24% |
| Heroin/opiates | 1% | 0% | 48.89% |
| Prescription stimulants | 3% | 2% | 45.91% |
| Anti-anxiety drugs | 9% | 4% | 44.33% |
| Synthetic cathinones/bath salts | 1% | 0% | 42.22% |
| Benzodiazepines | 3% | 1% | 41.62% |
| Cannabis | 12% | 5% | 40.86% |
| Anti-psychotics | 4% | 2% | 40.70% |
| Anti-nausea medication | 11% | 4% | 38.87% |
| Strong painkillers | 24% | 9% | 37.55% |
| GHB/GBL | 1% | 0% | 34.31% |
| Kava | 2% | 1% | 33.35% |
| Synthetic cannabinoids | 1% | 0% | 31.27% |
| Hallucinogens | 3% | 1% | 27.09% |
| Cocaine | 1% | 0% | 26.46% |
| MDMA/ecstasy | 4% | 1% | 16.00% |
| Sedatives or sleeping pills | 13% | 2% | 15.31% |

***** Calculation = % of driven within 3 hours of taking (last 12 months) divided by % of taken in the last 12 months.

# 5 Prevalence of drugged and/or medicated driving amongst different New Zealand population groups

The second key objective of this research was to identify the overall prevalence of drugged and/or medicated driving in New Zealand by different population groups before implementing the new testing regime.

## 5.1 Drugged and/or medicated driver profile

Respondents who have taken drugs and/or medication within 3 hours of driving in the last 12 months (*n* = 1,094; 23%) present some significant differences compared to the overall New Zealand sample. As shown in Table 5.1, drugged and/or medicated drivers were significantly more likely to be females (57% vs 51% of total sample) and younger – aged 16–24 (19% vs 15% of total sample) and aged 25–44 (37% vs 34% of total sample) – and significantly less likely to be aged 65+ (11% vs 19% of total sample). Aligned with the age trend, they were also significantly more likely to be students (9% vs 7% of total sample) or not working (18% vs 12% of total sample) and significantly less likely to be retired (10% vs 16% of total sample).

Drugged and/or medicated drivers were significantly more likely to live in the South Island (28% vs 24% total sample) and significantly less likely to be from the Auckland area (28% vs 34% of total sample) or from the Upper North Island (32% vs 37% of total sample).

Non-drugged/non-medicated drivers were significantly more likely to be aged 65+ (22% vs 19% of total sample) and/or retired (18% vs 16% of total sample).

**Note:** Throughout the tables, **Green** coloured font has been used to denote percentages that are significantly higher than those recorded for all those answering said question. **Red** coloured font has been used to denote percentages that are significantly lower than those recorded for all those answering said question.

**Table 5.1 Drugged and/or medicated driver profile (i)**

| Demographics | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| *Base, n =* | ***4,688*** | *3,594* | *1,094* |
| **Gender** | | | |
| Male | **49%** | 51% | **42%** |
| Female | **51%** | 49% | **57%** |
| Another gender | **0%** | 0% | 1% |
| **Age** | | | |
| NETT 16–24 years | **15%** | 14% | **19%** |
| NETT 25–44 years | **34%** | 32% | **37%** |
| NETT 45–64 years | **32%** | 32% | 33% |
| NETT 65+ years | **19%** | **22%** | **11%** |

| Demographics | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| **Region** | | | |
| NETT Auckland | **34%** | 35% | **28%** |
| NETT Upper North Island | **37%** | 39% | **32%** |
| NETT Central North Island | **17%** | 17% | 17% |
| NETT Lower North Island | **22%** | 22% | 23% |
| NETT South Island | **24%** | 23% | **28%** |
| **Urban/rural** | | | |
| NETT Urban | **86%** | 86% | 86% |
| NETT Rural | **14%** | 13% | 14% |
| **Work status** | | | |
| NETT Working | **66%** | 66% | 63% |
| NETT Student | **7%** | 6% | **9%** |
| NETT Not working | **12%** | **10%** | **18%** |
| Retired | **16%** | **18%** | **10%** |

**Note:** Upper North Island = Auckland City (North Shore, Waitakere, Auckland and Manukau), Greater Auckland (excluding Auckland City) or Northland.

As shown in Table 5.2, drugged and/or medicated drivers were significantly more likely to identify as New Zealand European (81% vs 73% of total sample) or Māori (20% vs 14% of total sample) and significantly less likely to be of Asian ethnicity (7% vs 15% of total sample). They were also significantly more likely to be a single parent living with their children (8% vs 5% of total sample), live in a shared household (12% vs 9% of total sample) and/or identify as single (25% vs 21% of total sample).

**Table 5.2 Drugged and/or medicated driver profile (ii)**

| Demographics | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| *Base, n =* | ***4,688*** | *3,594* | *1,094* |
| **Ethnicity** | | | |
| NETT NZ European | **73%** | **70%** | **81%** |
| NETT Māori | **14%** | **12%** | **20%** |
| NETT Pacific | **6%** | 6% | 7% |
| NETT Asian | **15%** | **18%** | **7%** |
| NETT Other | **1%** | 2% | 1% |
| **Household situation** | | | |
| Single person living alone | **16%** | 16% | 17% |
| Single parent living with child/children | **5%** | 4% | **8%** |
| Couple – no children/children have left home | **30%** | 32% | **25%** |
| Couple – have child/children living at home | **27%** | 28% | 26% |

| Demographics | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| Share household (ie, adults sharing a house/flatting together) | **9%** | 8% | **12%** |
| Live with parents | **7%** | 8% | 6% |
| Extended family household (ie, more than two generations living together) | **3%** | 3% | 4% |
| Boarding | **0%** | 0% | 0% |
| Other household arrangement | **0%** | 0% | 0% |
| Prefer not to say | **1%** | 1% | 1% |
| NETT Single | **21%** | 20% | **25%** |
| NETT Couple | **58%** | 60% | **51%** |

Drugged and/or medicated drivers were significantly more likely to have a restricted driver licence (12% vs 9% of total sample) and significantly less likely to hold a full licence (80% vs 84% of total sample). They were also significantly more likely to have held their licence for less than 5 years (30% vs 24% of total sample) and to have driven more in a typical week (on average about 15 times vs 13 times of the total sample) (see Table 5.3).

**Table 5.3 Drugged and/or medicated driver profile (iii)**

| Licence | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| *Base, n =* | ***4,688*** | *3,594* | *1,094* |
| **Licence type** | | | |
| Learner licence | **6%** | 6% | 7% |
| Restricted licence | **9%** | 8% | **12%** |
| Full licence | **84%** | 85% | **80%** |
| No current driver licence | **1%** | 1% | 1% |
| Don't know | **0%** | 0% | 0% |
| **Length held licence** | | | |
| Less than a year | **5%** | 5% | 5% |
| 1–2 years | **9%** | 8% | 9% |
| 3–5 years | **11%** | **10%** | **16%** |
| 6–9 years | **8%** | 7% | 9% |
| 10 years or more | **67%** | 69% | **61%** |
| Don't know | **1%** | 1% | 0% |
| NETT 5 years or less | **24%** | 23% | **30%** |
| NETT 6 years or more | **75%** | 76% | **70%** |
| **Number of times driven in a typical week – average number a week** | **13** | **12.4** | **14.9** |

Drugged and/or medicated drivers' reasons for driving also present significant differences. They were significantly more likely to have driven:

- for work as part of their job (13% vs 10% of total sample)
- to take kids to/from school/kindergarten (27% vs 22% of total sample)
- to give someone else a ride (29% vs 21% of total sample)
- for medical/dental purposes (32% vs 25% of total sample)
- to visit family/friends (60% vs 55% of total sample).

The types of vehicles driven by drugged and/or medicated drivers were significantly more likely to be a van/ute (14% vs 10% of total sample), light truck (3% vs 2% of total sample), medium/heavy truck (2% vs 1% of total sample) or NETT motorcycle/motor scooter (7% vs 4% of total sample) (see Table 5.4).

**Table 5.4 Drugged and/or medicated driver profile (iv)**

| Driving purpose/ Type of vehicle driven | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| *Base, n =* | ***4,688*** | *3,594* | *1,094* |
| **Usual driving purpose*** | | | |
| To get myself to/from work | **57%** | 57% | 59% |
| To get myself to/from education | **7%** | 6% | 9% |
| For work, as part of my job (eg, doing deliveries, taxi/Uber driver, salesperson) | **10%** | 9% | **13%** |
| To take kids to/from school/kindergarten | **22%** | 21% | **27%** |
| To give someone else a ride | **21%** | **19%** | **29%** |
| For medical/dental purposes | **25%** | **22%** | **32%** |
| For shopping or running chores | **79%** | 78% | 82% |
| To/from leisure activities | **51%** | 51% | 52% |
| To visit family/friends | **55%** | 53% | **60%** |
| To get to some other transport (eg, drive to catch a bus, plane or train) | **5%** | 6% | 5% |
| **Type of vehicle driven*** | | | |
| Car | **95%** | 95% | 94% |
| Van/ute | **10%** | 9% | **14%** |
| Light truck | **2%** | 1% | **3%** |
| Medium/heavy truck | **1%** | 1% | **2%** |
| *NETT Motorcycle/motor scooter* | ***4%*** | *3%* | ***7%*** |
| Motorcycle | **3%** | 2% | **5%** |
| Motor scooter | **1%** | 1% | 2% |

***** Responses less than 5% are not shown.

Respondents were asked about unsafe behaviours they had done while driving in the last 12 months. As shown in Table 5.5, drugged and/or medicated drivers were significantly more likely than the total sample to admit to unsafe behaviours, such as exceeding the speed limit, even if by only a few kilometres per hour (72% vs 61% of total sample); holding or using a mobile phone while driving (35% vs 24% of total sample); driving when tired, even though probably too tired to drive (35% vs 24% of total sample); driving after having an argument/feeling angry (35% vs 21% of total sample); and driving soon after drinking any alcohol (18% vs 11% of total sample).

In contrast, non-drugged/non-medicated drivers were significantly less likely to admit to unsafe behaviours.

**Table 5.5 Drugged and/or medicated driver profile (v)**

| Unsafe behaviours while driving in the last 12 months | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| *Base, n =* | ***4,688*** | *3,594* | *1,094* |
| Exceeded the speed limit, even if by only a few kilometres per hour | **61%** | **58%** | **72%** |
| Held/used a mobile phone | **24%** | **21%** | **35%** |
| Driven when tired, even though probably too tired to drive | **24%** | **20%** | **35%** |
| Driven after having an argument/feeling angry | **21%** | **16%** | **35%** |
| Driven soon after drinking any alcohol | **11%** | **9%** | **18%** |
| None of these | **26%** | **30%** | **14%** |

In terms of perceived likelihood of being caught by the police or a red light/speed camera for certain offences, drugged and/or medicated drivers were significantly less likely to answer 'unlikely' to most of the offences – exceeding the speed limit (22% vs 27% of total sample), for dangerous driving (26% vs 30% of total sample), drinking and driving (25% vs 28% of total sample) and not stopping at traffic lights (34% vs 38% of total sample) (see Table 5.6). There were no differences for driving whilst affected by drugs other than alcohol.

**Table 5.6 Drugged and/or medicated driver profile (vi)**

| Perceived likelihood of being caught by the police or a red light/speed camera for the following offences | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| *Base, n =* | ***4,688*** | *3,594* | *1,094* |
| **Exceeding the speed limit** | | | |
| NETT Likely | **43%** | 42% | 45% |
| NETT Unlikely | **27%** | 28% | **22%** |
| 50/50 | **31%** | 30% | 32% |
| **Dangerous driving** | | | |
| NETT Likely | **45%** | 44% | 47% |
| NETT Unlikely | **30%** | 31% | **26%** |
| 50/50 | **25%** | 24% | 26% |

| Perceived likelihood of being caught by the police or a red light/speed camera for the following offences | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| **Drinking and driving** | | | |
| NETT Likely | **42%** | 41% | 44% |
| NETT Unlikely | **28%** | 29% | **25%** |
| 50/50 | **30%** | 29% | 31% |
| **Not stopping at traffic lights** | | | |
| NETT Likely | **36%** | 35% | 37% |
| NETT Unlikely | **38%** | 39% | **34%** |
| 50/50 | **27%** | 26% | 29% |
| **Driving whilst affected by drugs other than alcohol** | | | |
| NETT Likely | **31%** | 31% | 32% |
| NETT Unlikely | **40%** | 41% | 37% |
| 50/50 | **29%** | 28% | 30% |

## 5.2 Drugged and/or medicated driver profile differences by type of drug/medication taken

As mentioned in section 4 above, overall, the most common drugs and/or medication taken within 3 hours of driving in the last 12 months were anti-depressants (10%), strong painkillers (9%), cannabis (5%), anti-nausea medication (4%) and anti-anxiety drugs (4%) (see Table 5.7).

**Table 5.7 Incidence of drugs and/or medication taken and driving within 3 hours of taking**

| Drug/medication taken | Driven within 3 hours of taking – last 12 months |
|---|---|
| *Base, n =* | *4,688* |
| Anti-depressants | 10% |
| Strong painkillers | 9% |
| Cannabis | 5% |
| Anti-nausea medication | 4% |
| Anti-anxiety drugs | 4% |
| Sedatives/sleeping pills | 2% |
| Anti-psychotics | 2% |
| Prescription stimulants | 2% |
| MDMA/ecstasy | 1% |
| Amphetamines | 1% |
| Benzodiazepines | 1% |
| Hallucinogens | 1% |
| Kava | 1% |
| Epilepsy medication | 1% |
| *Alcohol (as well)* | *32%* |

There are several significant demographic differences regarding the most common drugs and/or medication taken. Following are some of the key differences by individual drugs and/or medication type taken within 3 hours of driving in the last 12 months. Differences are reported for those who took anti-depressants, strong painkillers, cannabis, anti-nausea medication and anti-anxiety medication (as these were larger than 4% of the total sample). The other differences are reported in Appendix A.

Amongst the 10% who drove within 3 hours of taking anti-depressants, students and those not in paid employment were among those significantly more likely to have done so. Females were also significantly more likely than the total sample to have driven after taking anti-depressants (see Table 5.8).

**Table 5.8 Key demographic differences among those who drove within 3 hours of taking anti-depressants**

| Anti-depressants (*n* = 4,688) | 10% |
|---|---|
| Males | 6% |
| Females | 13% |
| NETT 65+ years | 6% |
| NETT Auckland | 7% |
| NETT Upper North Island | 7% |
| NETT South Island | 13% |
| NETT NZ European | 12% |
| NETT Pacific | 5% |
| NETT Asian | 3% |
| Single parent living with child/children | 15% |
| Share household (ie, adults sharing a house/flatting together) | 16% |
| NETT Student | 16% |
| NETT Not working | 17% |
| Held licence 3–5 years | 13% |
| Drove to give someone else a ride | 13% |
| Drove for medical/dental purposes | 13% |

**Note:** Only results that are significantly different from the total sample are shown.

Amongst the 9% who drove within 3 hours of taking strong painkillers, there are several demographic differences related to carrying on with daily life – 14% claimed the reason they drove was for work as part of their job, and 12% drove to take kids to/from school/kindergarten (as seen in Table 5.9).

**Table 5.9 Key demographic differences among those who drove within 3 hours of taking strong painkillers**

| Strong painkillers (*n* = 4,688) | 9% |
|---|---|
| NETT Māori | 14% |
| NETT Asian | 4% |
| Single parent living with child/children | 14% |
| Share household (ie, adults sharing a house/flatting together) | 13% |
| Live with parents | 6% |
| Extended family household | 14% |
| NETT Not working | 14% |
| Held licence for less than 1 year | 3% |
| Drove a motorcycle | 17% |
| Drove a motor scooter | 17% |
| Drove for work as part of their job | 14% |
| Drove to take kids to/from school/kindergarten | 12% |
| Drove to give someone else a ride | 13% |
| Drove for medical/dental purposes | 15% |
| Drove to visit family/friends | 11% |
| Drove a van/ute | 14% |
| Drove a light truck | 19% |

**Note**: Only results that are significantly different from the total sample are shown.

Those who drove within 3 hours of taking cannabis (5%) were significantly more likely to be younger (under the age of 45), not working, on a restricted or learner licence, and/or have held their licence for less than 10 years (Table 5.10).

**Table 5.10 Key demographic differences among those who drove within 3 hours of taking cannabis**

| Cannabis (*n* = 4,688) | 5% |
|---|---|
| NETT 16–24 years | 8% |
| NETT 25–44 years | 6% |
| NETT 65+ years | 1% |
| NETT Māori | 12% |
| NETT Asian | 2% |
| Single parent living with child/children | 9% |
| NETT Couple | 4% |
| Retired | 1% |
| NETT Not working | 9% |
| Learner licence | 9% |
| Restricted licence | 10% |
| Full licence | 4% |

| Cannabis (*n* = 4,688) | 5% |
|---|---|
| Held licence 1–2 years | 8% |
| Held licence 3–5 years | 9% |
| Held licence 10+ years | 3% |
| Drove for work as part of their job | 8% |
| Drove to take kids to/from school/kindergarten | 6% |
| Drove to give someone else a ride | 9% |
| Drove a van/ute | 9% |
| Drove a light truck | 14% |
| Drove a motorcycle | 11% |

**Note:** Only results that are significantly different from the total sample are shown.

The 4% who drove within 3 hours of taking anti-nausea medication were significantly more likely to be female, aged 25–44, and/or not working (Table 5.11).

**Table 5.11 Key demographic differences among those who drove within 3 hours of taking anti-nausea medication**

| Anti-nausea medication (*n* = 4,688) | 4% |
|---|---|
| Female | 6% |
| NETT 25–44 years | 6% |
| NETT 65+ years | 1% |
| NETT Asian | 2% |
| Retired | 1% |
| NETT Not working | 7% |
| Restricted licence | 7% |
| Held licence 3–5 years | 7% |
| Held licence 6–9 years | 7% |
| Held licence 10+ years | 3% |
| Drove for work as part of their job | 8% |
| Drove to take kids to/from school/kindergarten | 6% |
| Drove for medical/dental purposes | 6% |
| Drove a motor scooter | 14% |

**Note:** Only results that are significantly different from the total sample are shown.

Those who drove within 3 hours of taking anti-anxiety drugs (4%) were significantly more likely to be younger (aged 16–24), live in a shared household or with their parents, not working, and/or have held their licence for less than 10 years (Table 5.12).

**Table 5.12 Key demographic differences among those who drove within 3 hours of taking anti-anxiety drugs**

| Anti-anxiety drugs (*n* = 4,688) | 4% |
|---|---|
| Males | 3% |
| NETT 16–24 years | 8% |
| NETT 45–64 years | 3% |
| NETT 65+ years | 1% |
| NETT Māori | 6% |
| NETT Asian | 1% |
| Couple – no children/children have left home | 3% |
| Share household (ie, adults sharing a house/flatting together) | 8% |
| Live with parents | 7% |
| Retired | 1% |
| NETT Not working | 9% |
| Restricted licence | 7% |
| Held licence 3–5 years | 7% |
| Held licence 6–9 years | 7% |
| Held licence 10+ years | 3% |
| Drove to get themselves to/from education | 7% |
| Drove for work as part of their job | 6% |
| Drove to give someone else a ride | 7% |
| Drove for medical/dental purposes | 6% |
| Drove a motorcycle | 10% |

**Note:** Only results that are significantly different from the total sample are shown.

For key demographic differences for the most common drugs and medications taken within 3 hours of driving in the last 12 months that are 3% or less, please refer to Appendix A.

# 6 Drug and/or medication combinations consumed prior to driving

In order to understand the combinations of drugs and/or medications consumed prior to driving, respondents were asked to indicate which drugs and/or medications they had consumed on the **last occasion** they drove within 3 hours of taking drugs and/or medication (respondents could select more than one drug and/or medication). Alcohol was included in the list.

## 6.1 Drugs and/or medication taken on the last occasion

The most common drugs/medications taken on the last occasion drugged and/or medicated drivers drove within 3 hours of taking drugs and/or medication were anti-depressants, epilepsy medication, amphetamines, cannabis and synthetic cannabinoids (see Table 6.1). Please note that these are different from the drugs/medications taken overall in the last 12 months (see Table 4.1).

**Table 6.1 Drugs/medications taken on the last occasion of driving within 3 hours of taking drugs and/or medication**

| Drug/medication taken (base *n* = 1,094) | *n* | % drove within 3 h of taking drugs and/or medication |
|---|---|---|
| Anti-depressants | 527 | 75% |
| Epilepsy medication | 78 | 60% |
| Amphetamines | 97 | 56% |
| Cannabis | 340 | 50% |
| Synthetic cannabinoids | 42* | 50% |
| Strong painkillers | 608 | 49% |
| Prescription stimulants | 117 | 48% |
| Synthetic cathinones/bath salts | 46* | 45% |
| Anti-anxiety drugs | 316 | 42% |
| Anti-psychotics | 152 | 39% |
| Benzodiazepines | 116 | 37% |
| Anti-nausea medication | 291 | 37% |
| Cocaine | 44* | 37% |
| *Alcohol (as well)* | *841* | *36%* |
| Kava | 71 | 36% |
| GHB/GBL | 50 | 27% |
| Heroin/opiates | 34* | 25% |
| Hallucinogens | 85 | 18% |
| MDMA/ecstasy | 107 | 17% |
| Sedatives/sleeping pills | 350 | 16% |

*** Caution:** Low base size (*n* < 50).

Please note that the percentages of drugs and/or medication taken are based on the respondents' last occasion of driving within 3 hours of taking drugs and/or medication (*n* = 1,094).

## 6.2 Most common combinations of drug and/or medication use

Using 'drugs/medications taken on the last occasion of driving within 3 hours of taking drugs and/or medication' as a point of reference allows for analysis of combinations of drugs and/or medications. Those who took anti-psychotics, sedatives/sleeping pills, anti-anxiety drugs, anti-depressants, amphetamines and/or prescription stimulants were significantly more likely to have also taken other drugs and/or medications. However, those taking anti-nausea medication or strong painkillers were less likely to have done so.

Of those taking amphetamines, nearly half (46%) also took cannabis. More than half (58%) of those using anti-anxiety drugs also took anti-depressants. Amongst those taking anti-psychotics, 51% also took anti-depressants and 42% took anti-anxiety drugs. Those who took anti-nausea medication, strong painkillers and/or cannabis were less likely than other drug and/or medication users to take other drugs and/or medication (Table 6.2).

**Table 6.2 Drugs/medications taken on last occasion of driving within 3 hours of taking drugs and/or medication – Combinations consumed prior to driving (read down columns)**

| Drug/medication taken on last occasion | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,041**** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| Anti-depressants | **36%** | **15%** | 25% | **58%** | **51%** | 41% | – | **26%** | **16%** | **19%** | ***18%*** |
| Strong painkillers | **27%** | 29% | 27% | 21% | 31% | **45%** | **15%** | 33% | 20% | – | *25%* |
| Cannabis | **16%** | **46%** | 26% | 14% | 21% | 24% | **7%** | **6%** | – | 12% | ***21%*** |
| Anti-anxiety drugs | **12%** | 13% | **22%** | – | **42%** | **34%** | **20%** | 18% | 11% | 9% | *9%* |
| Anti-nausea medication | **10%** | 8% | 8% | 15% | 17% | 18% | 7% | – | **4%** | 12% | *8%* |
| Amphetamines | **5%** | – | **20%** | 6% | **16%** | **16%** | **2%** | 4% | **15%** | 5% | *8%* |
| Prescription stimulants | **5%** | **20%** | **–** | **10%** | 12% | **16%** | 4% | 4% | 8% | 5% | *7%* |
| Anti-psychotics | **5%** | **17%** | 12% | **19%** | – | **29%** | 8% | 9% | 7% | 6% | *4%* |
| Sedatives/sleeping pills | **5%** | **16%** | **16%** | **15%** | **28%** | – | 6% | 9% | 8% | **9%** | *7%* |
| Benzodiazepines | **4%** | **17%** | **19%** | **15%** | **23%** | **33%** | 4% | 4% | **9%** | **7%** | *4%* |
| Epilepsy medication | **4%** | 6% | **15%** | **9%** | **15%** | 11% | 5% | 7% | 4% | 4% | *3%* |
| Cocaine | **2%** | **15%** | **14%** | **6%** | **7%** | **18%** | 1% | 4% | 3% | 3% | ***4%*** |
| MDMA/ecstasy | **2%** | **11%** | **15%** | **5%** | **11%** | **7%** | 1% | **5%** | **4%** | 3% | ***4%*** |
| Synthetic cathinones/bath salts | **2%** | **17%** | **17%** | **6%** | **13%** | **15%** | 1% | **6%** | **6%** | 3% | ***5%*** |
| Kava | **2%** | **11%** | **17%** | 3% | **9%** | **9%** | 1% | 4% | **5%** | 2% | *5%* |
| Synthetic cannabinoids | **2%** | **12%** | **12%** | 2% | **9%** | **21%** | 1% | 5% | **6%** | 3% | ***4%*** |
| GHB/GBL | **1%** | 5% | 10% | **4%** | 9% | 11% | 1% | **5%** | 3% | 1% | *2%* |
| Hallucinogens | **1%** | 9% | **13%** | 3% | 5% | **9%** | 1% | 3% | 4% | 2% | *2%* |
| Heroin/opiates | **1%** | 8% | 8% | **3%** | 6% | 6% | 1% | 3% | 3% | 1% | *2%* |
| *Alcohol (as well)* | ***28%*** | ***42%*** | *36%* | *22%* | *19%* | *35%* | ***14%*** | *22%* | ***37%*** | *25%* | – |
| ***Average % of drugs/ medications taken** – not including alcohol (as well)* | ***7%*** | ***17%*** | ***17%*** | ***12%*** | ***18%*** | ***21%*** | ***24%*** | *5%* | *9%* | *9%* | – |

* Not including 53 respondents who answered '0 drugs/medications taken last occasion', 'no' or 'prefer not to answer'.

Those who used sedatives/sleeping pills, prescription stimulants, anti-psychotics and/or amphetamines on average took more than 4 drugs and/or medications, compared to the average of 1.8 for the overall sample of drugged and/or medicated drivers (Table 6.3).

**Table 6.3 Average number of different drugs and/or medications taken on last occasion of drugged and/or medicated driving**

| | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,041**** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| Average – based on 1 or more drug/medication† | **1.8** | 4.2 | 4.2 | 3.3 | 4.4 | 4.9 | 2.0 | 2.7 | 2.7 | 2.3 | *2.4* |

* Not including 53 respondents who answered '0 drugs taken last occasion', 'no' or 'prefer not to answer'.

† Average calculated to include all 20 drugs and/or medications taken on last occasion of driving within 3 hours of taking (but not shown in table as sample size was < 50).

When alcohol is not included in the average calculation, the patterns are similar, with users of sedatives/sleeping pills, anti-psychotics and amphetamines having taken at least 3.2 drugs and/or medications on average, compared to 1.5 for the overall sample of drugged and/or medicated drivers (Table 6.4).

**Table 6.4 Average number of different drugs and/or medications taken on last occasion of drugged and/or medicated driving, not including alcohol**

| | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers |
|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***739**** | *31†* | *36†* | *103* | *47* | *36†* | *340* | *86* | *107* | *225* |
| Average – based on 1 or more drug/medication‡ | **1.5** | 3.2 | 2.9 | 2.6 | 3.7 | 3.8 | 1.7 | 2.0 | 2.2 | 1.7 |

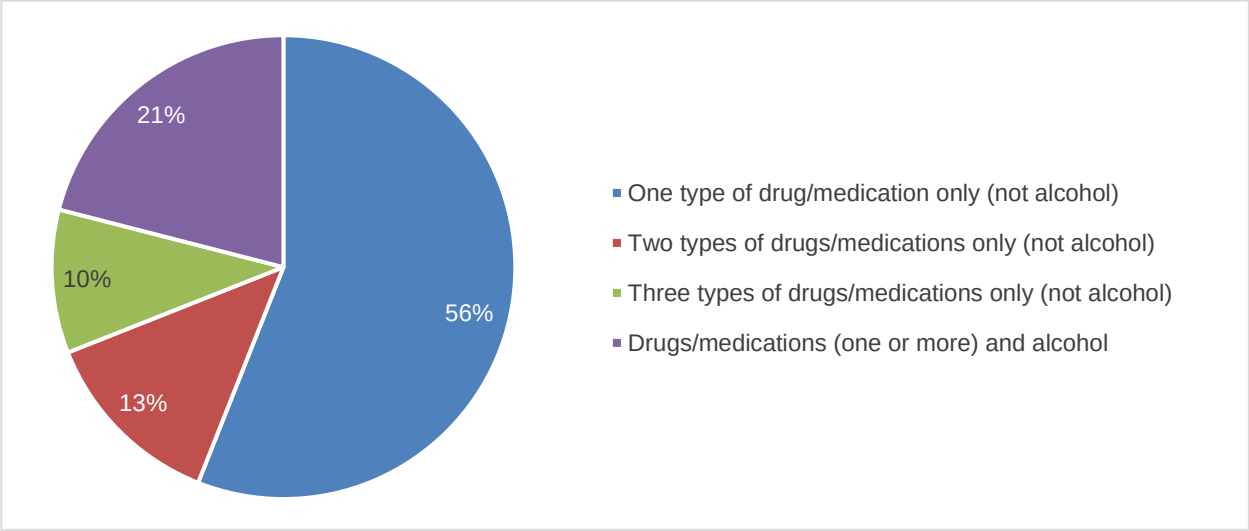
* Not including 53 respondents who answered '0 drugs taken last occasion', 'no' or 'prefer not to answer'.

† Caution: Low base size (*n* < 50).

‡ Average calculated to include all 20 drugs and/or medications (not including alcohol as well) taken on last occasion of driving within 3 hours of taking (but not shown in table as sample size was < 50).

In terms of the number of drugs and/or medications taken on the last occasion of driving within 3 hours of taking drugs and/or medication, 56% took one type of drug/medication only (without alcohol) (Figure 6.1).

**Figure 6.1 Mix of drugs and/or medications taken**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 938).
**Note:** Not including 53 respondents who answered '0 drugs taken last occasion', 'no' or 'prefer not to answer'.

Apart from strong painkillers, those who took drugs and/or medication on the last occasion of driving within 3 hours of taking drugs and/or medication were significantly more likely to have taken 3 types of drugs and/or medication only (not alcohol) (Table 6.5).

**Table 6.5 Mix of drugs and/or medications taken on last occasion of drugged and/or medicated driving**

| Mix of drugs and/or medications taken on last occasion | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***938**** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *199* |
| One type of drug/medication only (not alcohol) | **56%** | **17%** | **28%** | **20%** | **3%** | **12%** | 51% | **36%** | **34%** | **46%** | – |
| Two types of drugs/medications only (not alcohol) | **13%** | 15% | 9% | **23%** | 15% | 7% | **20%** | **22%** | 13% | 16% | – |
| Three types of drugs/medications only (not alcohol) | **10%** | **26%** | **27%** | **36%** | **63%** | **45%** | **14%** | **20%** | **15%** | 13% | – |
| Drugs/medications (one or more) and alcohol | **21%** | **42%** | **36%** | 22% | 19% | **35%** | **14%** | 22% | **37%** | 25% | *100%* |

***** Not including 53 respondents who answered ‘0 drugs taken last occasion’, ‘no’ or ‘prefer not to answer’.

# 7 Details of last occasion of drugged and/or medicated driving

Drugged and/or medicated drivers were asked questions around what they did when they drove within 3 hours of taking drugs and/or medication, as well as their last occasion of drugged and/or medicated driving, to understand their behaviours and the situation in which they drove. The answers to these questions will allow Waka Kotahi to better understand drugged and/or medicated driving behaviours, create an evaluation framework to use as part of the future testing regime and consequently help reduce the prevalence of drugged and/or medicated driving in New Zealand.

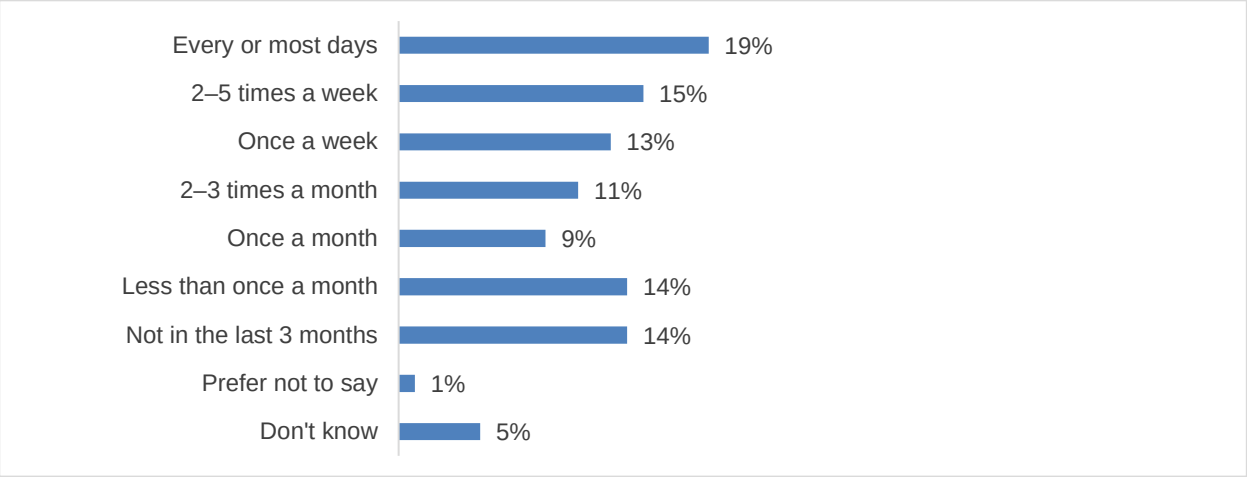
All questions in this section refer to the drugs and/or medication respondents took the **last time** they drove within 3 hours of taking drugs and/or medication (they could select more than one drug and/or medication).

## 7.1 Drugged and/or medicated driving behaviours

### 7.1.1 Frequency and recency of drugged and/or medicated driving

Of those who drove within 3 hours of taking drugs and/or medication in the last 12 months (*n* = 1,094), 47% stated they did so once a week or more often (Figure 7.1).

**Figure 7.1 Frequency of driving within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Those who drove within 3 hours of taking drugs and/or medication weekly or more often were significantly more likely to have taken anti-depressants, prescription stimulants and/or anti-anxiety drugs on the last occasion (Table 7.1).

**Table 7.1 Key demographic differences among those who drove within 3 hours of taking drugs and/or medication weekly or more often**

| NETT Weekly or more often (*n* = 1,094) | 47% |
|---|---|
| Live in Waikato region | **37%** |
| Anti-depressants (drug/medication taken last occasion) | **67%** |
| Prescription stimulants (drug/medication taken last occasion) | **65%** |
| Anti-anxiety drugs (drug/medication taken last occasion) | **63%** |
| *Alcohol (as well) (drug/medication taken last occasion)* | ***34%*** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who drove within 3 hours of taking drugs and/or medication monthly were significantly more likely to be older (65+ years) and/or retired (Table 7.2).

**Table 7.2 Key demographic differences among those who drove within 3 hours of taking drugs and/or medication once a month or more often**

| NETT Monthly – once a month or more often (*n* = 1,094) | 19% |
|---|---|
| NETT 65+ years | **28%** |
| Retired | **28%** |
| NETT Not working | **12%** |
| *Alcohol (as well) (drug/medication taken last occasion)* | ***27%*** |
| Anti-depressants (drug/medication taken last occasion) | **14%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who drove within 3 hours of taking drugs and/or medication less than once a month were significantly less likely to have taken anti-anxiety drugs and/or anti-depressants on the last occasion (Table 7.3).

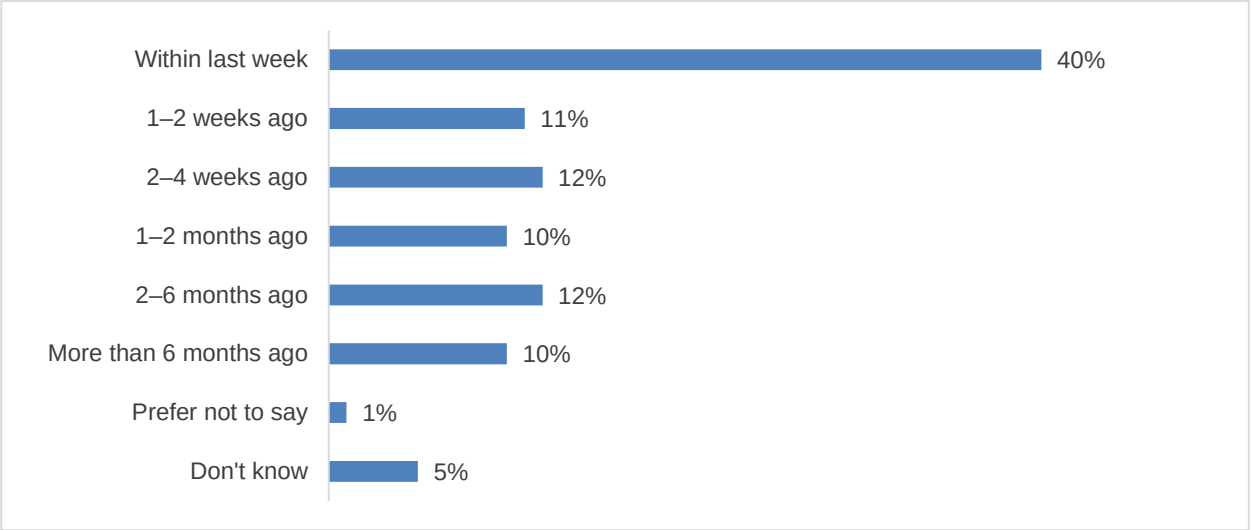
**Table 7.3 Key demographic differences among those who drove within 3 hours of taking drugs and/or medication less than once a month**

| NETT Less than once a month (*n* = 1,094) | 27% |
|---|---|
| *Alcohol (as well) (drug/medication taken last occasion)* | ***35%*** |
| Anti-anxiety drugs (drug/medication taken last occasion) | **15%** |
| Anti-depressants (drug/medication taken last occasion) | **13%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

The last driving occasion within 3 hours of taking drugs and/or medication was generally quite recent, with 40% of drugged and/or medicated drivers having done so in the last week and 62% within the last 4 weeks or more often (Figure 7.2).

**Figure 7.2 Recency of driving within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Those who drove within 3 hours of taking drugs and/or medication within the last month were significantly more likely to have taken anti-psychotics, anti-depressants and/or anti-anxiety drugs on the last occasion (Table 7.4).

**Table 7.4 Key demographic differences among those who drove within 3 hours of taking drugs and/or medication within the last month**

| NETT Within last month (*n* = 1,094) | 62% |
|---|---|
| NETT 65+ years | 72% |
| NETT 16–24 years | 52% |
| Live in Manawatū-Whanganui region | 76% |
| Live in Greater Auckland (excluding Auckland City) | 43% |
| Live in a suburban area | 68% |
| Live in a city centre | 53% |
| NETT Māori | 55% |
| NETT Student | 48% |
| Restricted licence | 53% |
| Learner licence | 44% |
| Held licence for 3–5 years | 54% |
| Anti-psychotics (drug/medication taken last occasion) | 82% |
| Anti-depressants (drug/medication taken last occasion) | 80% |
| Anti-anxiety drugs (drug/medication taken last occasion) | 77% |
| Strong painkillers (drug/medication taken last occasion) | 58% |
| *Alcohol (as well) (drug/medication taken last occasion)* | *54%* |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Respondents who drove within 3 hours of taking drugs and/or medication within the last 1–6 months were significantly more likely to be younger (aged 16–24), to live in the Waikato region, and/or to live in a city centre (Table 7.5).

**Table 7.5 Key demographic differences among those who drove within 3 hours of taking drugs and/or medication within the last 1–6 months**

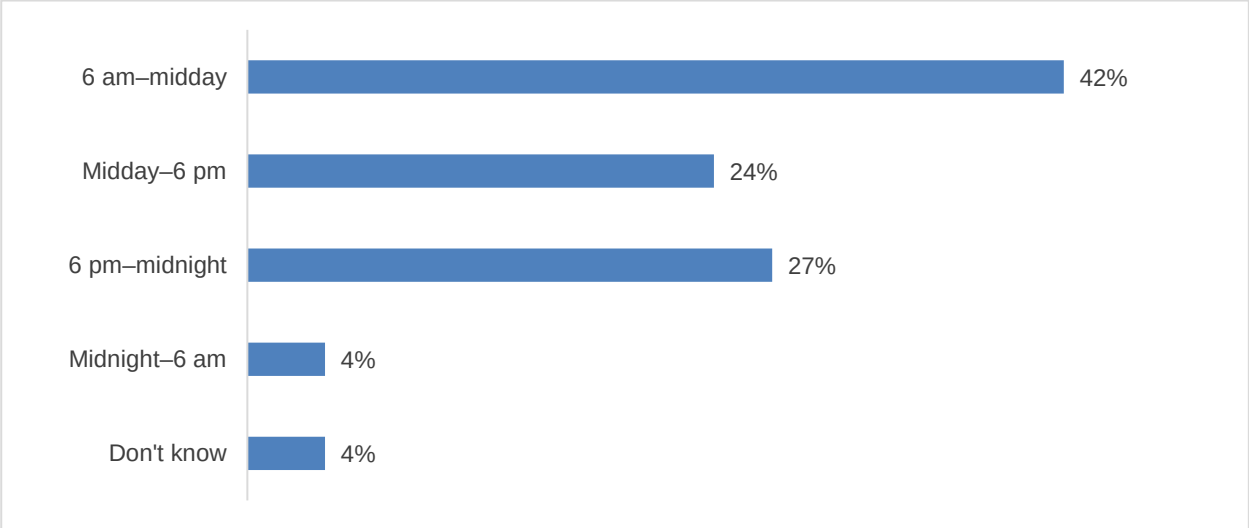
| NETT Within last 1–6 months (*n* = 1,094) | 23% |
|---|---|
| NETT 16–24 years | 29% |
| Live in Waikato region | 34% |
| Live in a city centre | 31% |
| *Alcohol (as well) (drug/medication taken last occasion)* | *33%* |
| Anti-anxiety drugs (drug/medication taken last occasion) | 12% |
| Anti-depressants (drug/medication taken last occasion) | 10% |
| Anti-psychotics (drug/medication taken last occasion) | 6% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

### 7.1.2 Time of day taken vs time of day driven

Regarding the time of day when the drugs and/or medications were taken, during the day was most common, with 66% claiming to have done so between 6 am and 6 pm (Figure 7.3).

**Figure 7.3 Time of day drugs and/or medications were taken**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Amongst the 66% who took drugs and/or medication during the day, the groups significantly more likely to have done so were those aged 65+, those who were retired, and those who took anti-anxiety drugs, anti-depressants and/or strong painkillers (Table 7.6).

**Table 7.6 Key demographic differences among those who drove after taking drugs and/or medication during the day**

| NETT Day (*n* = 1,094) | 66% |
|---|---|
| NETT 65+ years | 80% |
| NETT 25–44 years | 60% |
| NETT Pacific | 52% |
| NETT Single | 73% |
| Retired | 77% |
| Held licence for 3–5 years | 54% |
| Drove to give someone else a ride | 62% |
| Drove a van/ute | 58% |
| Anti-anxiety drugs (drug/medication taken last occasion) | 79% |
| Anti-depressants (drug/medication taken last occasion) | 79% |
| Strong painkillers (drug/medication taken last occasion) | 76% |
| Cannabis (drug/medication taken last occasion) | 52% |
| *Alcohol (as well) (drug/medication taken last occasion)* | *47%* |
| Amphetamines (drug/medication taken last occasion) | 47% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who reported they had taken drugs and/or medication during the evening were significantly more likely to have taken alcohol (as well as another drug and/or medication), amphetamines and/or cannabis (Table 7.7).

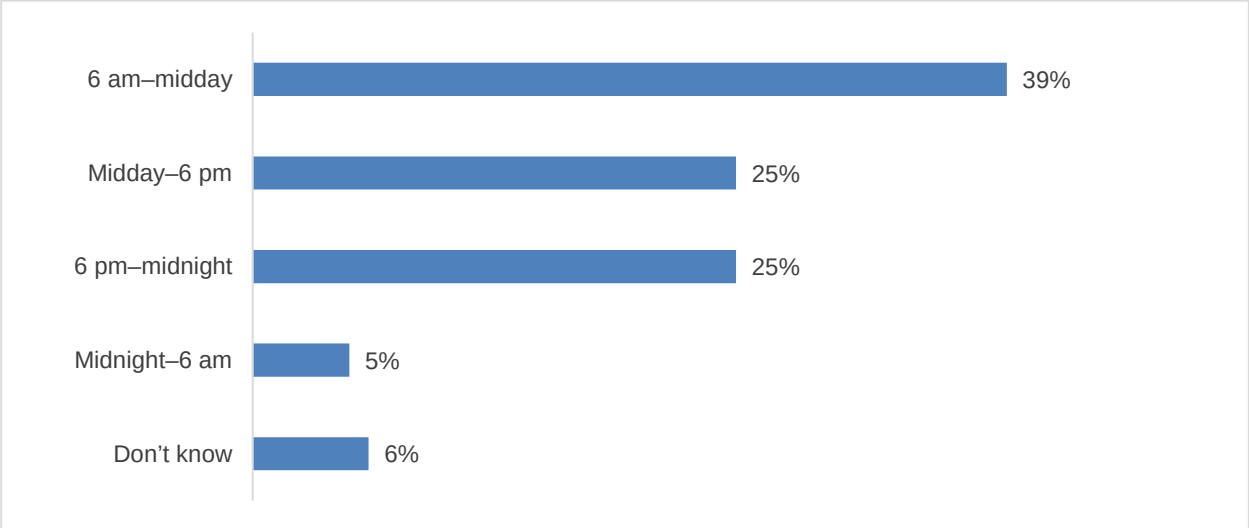
**Table 7.7 Key demographic differences among those who drove after taking drugs and/or medication during the evening**

| NETT Evening (*n* = 1,094) | 31% |
|---|---|
| NETT 25–44 years | 36% |
| NETT 65+ years | 17% |
| NETT Pacific | 45% |
| Retired | 20% |
| Held licence for 3–5 years | 41% |
| Drove a van/ute | 40% |
| *Alcohol (as well) (drug/medication taken last occasion)* | *50%* |
| Amphetamines (drug/medication taken last occasion) | 47% |
| Cannabis (drug/medication taken last occasion) | 43% |
| Anti-anxiety drugs (drug/medication taken last occasion) | 19% |
| Anti-depressants (drug/medication taken last occasion) | 19% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Again, those who drove within 3 hours of taking drugs and/or medication were more likely to do so during the day (64%) rather than the evening (30%) (Figure 7.4).

**Figure 7.4 Time of day driven within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Those aged 45+ were significantly more likely to have driven after taking drugs and/or medication during the day rather than in the evening. Anti-depressants, anti-anxiety drugs and strong painkillers were significantly more likely to be taken during the day (Table 7.8).

**Table 7.8 Key demographic differences among those who drove within 3 hours of taking drugs and/or medication during the day**

| NETT Day (*n* = 1,094) | 64% |
|---|---|
| NETT 65+ years | **77%** |
| NETT 45–64 years | **71%** |
| NETT 16–24 years | **54%** |
| NETT Pacific | **41%** |
| Held licence for 3–5 years | **47%** |
| Drove to give someone else a ride | **60%** |
| Drove a van/ute | **58%** |
| Anti-depressants (drug/medication taken last occasion) | **77%** |
| Anti-anxiety drugs (drug/medication taken last occasion) | **76%** |
| Strong painkillers (drug/medication taken last occasion) | **74%** |
| Anti-psychotics (drug/medication taken last occasion) | **51%** |
| Amphetamines (drug/medication taken last occasion) | **50%** |
| Cannabis (drug/medication taken last occasion) | **46%** |
| *Alcohol (as well) (drug/medication taken last occasion)* | ***44%*** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who drove after taking drugs and/or medication during the evening were significantly more likely to be aged 25–44 and to have taken amphetamines, alcohol (as well) and/or anti-psychotics (Table 7.9).

**Table 7.9 Key demographic differences among those who drove within 3 hours of taking drugs and/or medication during the evening**

| NETT Evening (*n* = 1,094) | 30% |
|---|---|
| NETT 25–44 years | 36% |
| NETT 65+ years | 18% |
| NETT Pacific | 53% |
| Retired | 21% |
| Held licence for 3–5 years | 43% |
| Amphetamines (drug/medication taken last occasion) | 55% |
| *Alcohol (as well) (drug/medication taken last occasion)* | *52%* |
| Anti-psychotics (drug/medication taken last occasion) | 46% |
| Strong painkillers (drug/medication taken last occasion) | 22% |
| Anti-depressants (drug/medication taken last occasion) | 18% |

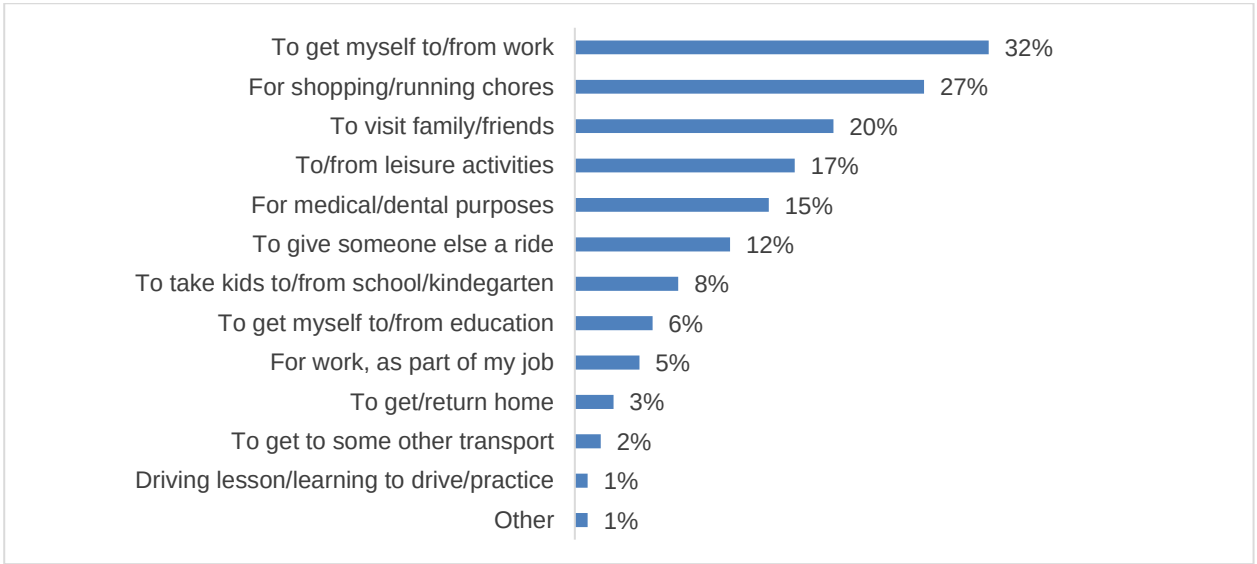
**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

## 7.1.3 Trip details

The reasons for driving within 3 hours of taking drugs and/or medication on the last occasion are diverse, with the top three being to get to/from work, for shopping/running chores, and to visit friends/family (Figure 7.5).

### 7.1.3.1 Purpose of the drive

**Figure 7.5 Reasons for driving within 3 hours of taking drugs and/or medication on last occasion**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Those who drove to get to work, not surprisingly, were significantly more likely to work either full-time or part-time (45%). Those who drove to shop or run chores were significantly more likely to be a single parent living with a child/children (39%), single (35%), not working (52%) and/or retired (38%). Those who drove to visit friends/family were significantly more likely to be not working (26%) (Table 7.10).

**Table 7.10 Key demographic differences – Reasons for driving within 3 hours of taking drugs and/or medication on last occasion**

| Reasons for driving within 3 hours of taking drugs and/or medication on last occasion (*n* = 1,094) | | | | | |
|---|---|---|---|---|---|
| **To get myself to/from work** | **32%** | **For medical/dental purposes** | **15%** | **To get myself to/from education** | **6%** |
| NETT 65+ years | 9% | NETT Māori | 21% | NETT 16–24 years | 15% |
| NETT Central North Island | 22% | NETT Not working | 25% | NETT 45–64 years | 2% |
| Single parent with child/children | 22% | Held licence 6–9 years | 25% | NETT 65+ years | 1% |
| Live with parents | 18% | **To give someone else a ride** | **12%** | NETT Pacific | 16% |
| NETT Working | 45% | NETT 16–24 years | 20% | NETT Asian | 15% |
| NETT Student | 18% | NETT 45–64 years | 8% | Live with parents | 26% |
| NETT Not working | 7% | NETT 65+ years | 2% | NETT Couple | 3% |
| Retired | 6% | NETT Pacific | 41% | NETT Student | 28% |
| **For shopping/running chores** | **27%** | NETT Māori | 20% | Retired | 1% |
| NETT Asian | 15% | NETT Not working | 20% | Learner licence | 14% |
| Single parent with child/children | 39% | Retired | 4% | Restricted licence | 11% |
| NETT Single | 35% | Learner licence | 29% | Held licence less than 1 year | 18% |
| NETT Couple | 23% | Restricted licence | 22% | Held licence 1–2 years | 17% |
| NETT Not working | 52% | Full licence | 9% | Held licence 3–5 years | 12% |
| Retired | 38% | Held licence 1–2 years | 23% | Held licence 10+ years | 2% |
| Held licence 3–5 years | 18% | Held licence 10+ years | 8% | **For work, as part of my job** | **5%** |
| Held licence 1–2 years | 17% | **To take kids to/from school/kindergarten** | **8%** | NETT Pacific | 15% |
| **To visit friends and family** | **20%** | Male | 5% | Held licence 6–9 years | 12% |
| NETT Not working | 26% | NETT 25–44 years | 14% | Held licence 3–5 years | 10% |
| **To/from leisure activities** | **17%** | NETT 45–64 years | 5% | Drove a van/ute | 9% |
| NETT 65+ years | 30% | NETT 65+ years | 2% | | |
| NETT Upper North Island | 12% | NETT Lower North Island | 4% | | |
| NETT Auckland | 11% | Single parent with child/children | 19% | | |
| Retired | 29% | Couple – child/children at home | 19% | | |
| Held licence less than 1 year | 6% | Single person living alone | 3% | | |
| | | Couple – no children/children have left home | 1% | | |
| | | Retired | 2% | | |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

The reasons for driving within 3 hours of taking drugs and/or medication on the last occasion are similar to the reasons for driving in a typical week (Table 7.11).

**Table 7.11 Reasons for driving – Total sample vs drugged and/or medicated driver sample in a typical week vs last occasion of drugged/medicated driving**

| Reasons for driving | Total sample – reasons for driving in a typical week | Drugged and/or medicated drivers – reasons for driving in a typical week | Drugged and/or medicated drivers – reasons for drugged/medicated driving on last occasion |
|---|---|---|---|
| *Base, n =* | *4,688* | *1,094* | *1,094* |
| For shopping or running chores | 67% | 70% | 27% |
| To get myself to/from work | 49% | 51% | 32% |
| To visit family/friends | 47% | 52% | 20% |
| To/from leisure activities | 44% | 45% | 17% |
| For medical/dental purposes | 21% | 27% | 15% |
| To take kids to/from school/kindergarten | 19% | 23% | 8% |
| To give someone else a ride | 18% | 25% | 12% |
| For work, as part of my job (eg, doing deliveries, taxi/Uber driver, salesperson) | 8% | 11% | 5% |
| To get myself to/from education | 6% | 7% | 6% |
| To get to some other transport (eg, drive to catch a bus, plane or train) | 5% | 4% | 2% |

There are some interesting significant differences in terms of purpose of the drive and the drugs and/or medication taken on this last occasion. The most common reasons given for driving after taking drugs and/or medication were to get to/from work, for shopping/running chores, and to visit family/friends. Those who took anti-psychotics, sedatives/sleeping pills and/or strong painkillers on the last occasion were significantly more likely to have driven for medical/dental purposes. Respondents who took anti-anxiety drugs are the only group who were significantly more likely to have driven to get themselves to/from work. Those who took prescription stimulants, anti-anxiety drugs, anti-psychotics and/or sedatives/sleeping pills were significantly more likely to have driven to get themselves to/from education. Those who took cannabis were the only group who were significantly more likely to be driving to visit friends or family (Table 7.12).

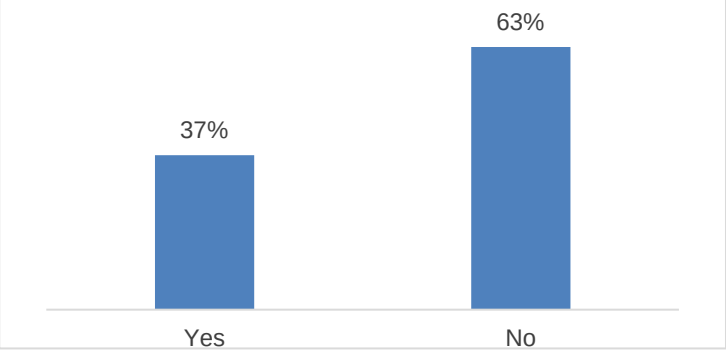
**Table 7.12 Reason for drugged and/or medicated driving on the last occasion, by type of drug/medication taken**

| Reason for drugged and/or medicated driving (last occasion) | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,041*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| To get myself to/from work | **32%** | 22% | 31% | **38%** | 19% | 36% | 38% | 29% | **17%** | 35% | *27%* |
| For shopping or running chores | **27%** | 31% | 22% | 28% | 31% | 34% | **33%** | 28% | **37%** | 29% | *25%* |
| To visit family/friends | **20%** | 31% | 18% | 20% | 22% | 25% | 20% | 17% | **34%** | 20% | *25%* |
| To/from leisure activities | **17%** | **32%** | 13% | 14% | 16% | 11% | 15% | 14% | **27%** | 13% | ***26%*** |
| For medical/dental purposes | **15%** | 11% | 14% | 20% | **27%** | **30%** | 14% | 22% | 13% | **26%** | *11%* |
| To give someone else a ride | **13%** | **40%** | **22%** | 17% | **30%** | **22%** | 11% | **23%** | **24%** | 13% | *14%* |
| To take kids to/from school/kindergarten | **8%** | 11% | 14% | 5% | 11% | 8% | 9% | **15%** | 8% | 8% | *6%* |
| To get myself to/from education | **6%** | 10% | **20%** | **13%** | **15%** | **20%** | 6% | 9% | 8% | 5% | *5%* |
| For work, as part of my job, (eg, doing deliveries, taxi/Uber driver, salesperson) | **5%** | **15%** | **15%** | 7% | **12%** | **20%** | **2%** | 4% | 5% | 5% | *5%* |

#### 7.1.3.2 Driving with passengers

More than a third (37%) of respondents took a passenger with them on the last occasion they drove within 3 hours of taking drugs and/or medication (Figure 7.6).

**Figure 7.6 Taking passengers on last occasion of driving within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Those who drove with passengers were significantly more likely to have taken amphetamines, prescription stimulants, sedatives/sleeping pills and/or anti-nausea medication on the last occasion they drove within 3 hours of taking drugs and/or medication (Table 7.13).

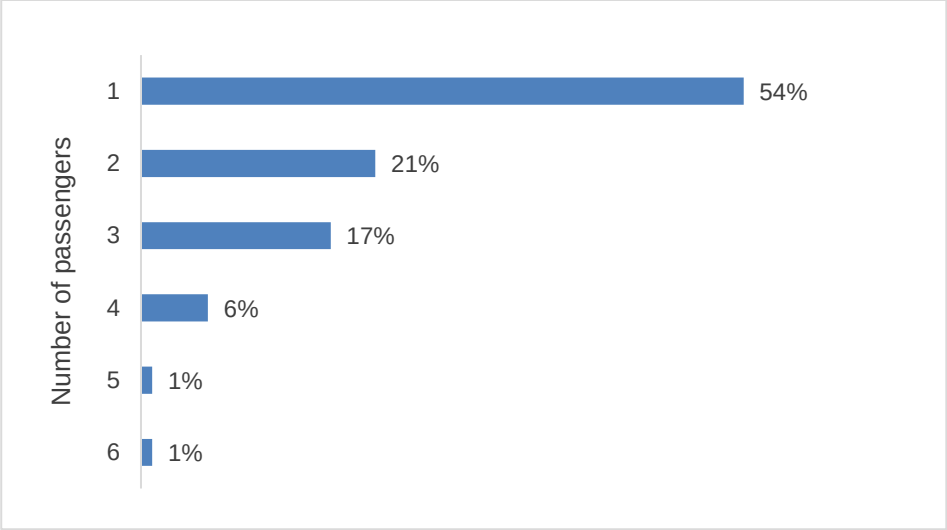
**Table 7.13 Key demographic differences among those who took passengers with them the last time they drove within 3 hours of taking drugs and/or medication**

| Yes, passengers taken (*n* = 1,094) | 37% |
|---|---|
| NETT 25–44 years | 48% |
| NETT 45–64 years | 24% |
| Live in a city centre | 47% |
| NETT Māori | 48% |
| NETT Couple | 44% |
| NETT Single | 30% |
| Learner licence | 56% |
| Held licence 6–9 years | 51% |
| Held licence 3–5 years | 48% |
| Held licence 1–2 years | 47% |
| Held licence 10+ years | 31% |
| Drove to take kids to/from school/kindergarten | 55% |
| Drove to give someone else a ride | 43% |
| Amphetamines (drug/medication taken last occasion) | 63% |
| Prescription stimulants (drug/medication taken last occasion) | 54% |
| Sedatives/sleeping pills (drug/medication taken last occasion) | 52% |
| Anti-nausea medication (drug/medication taken last occasion) | 52% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Of the 37% of respondents who took passengers with them on the last trip they drove within 3 hours of taking drugs and/or medication, over half (54%) took only one passenger, while 46% took 2 or more passengers (Figure 7.7).

**Figure 7.7 Number of passengers taken on last occasion of driving within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who took passengers with them the last time they drove within 3 hours of taking drugs and/or medication (*n* = 407).

Those who took only one passenger were significantly more likely to be part of a couple with no children or their children have left home, while those who took 3 passengers were significantly more likely to live in a city centre (Table 7.14).

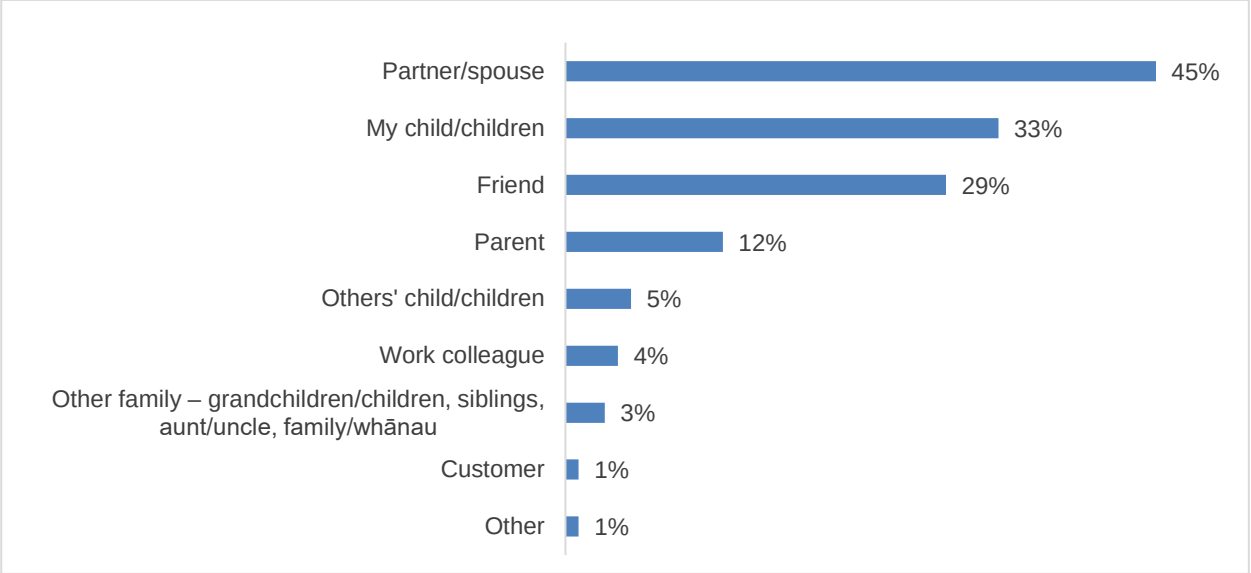
**Table 7.14 Key demographic differences – Number of passengers taken**

| Number of passengers taken (*n* = 407) | |
|---|---|
| **1 passenger** | **54%** |
| Live in a city centre | **35%** |
| Couple – no children/children have left home | **74%** |
| Couple – have child/children living at home | **40%** |
| Full-time employee | **45%** |
| **3 passengers** | **17%** |
| Live in a city centre | **27%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

The types of passengers taken on this trip were more likely to be a partner/spouse (45%), the driver's children (33%) or a friend (29%) (Figure 7.8).

**Figure 7.8 Type of passenger taken on last occasion of driving within 3 hours of taking drugs and/or medication**

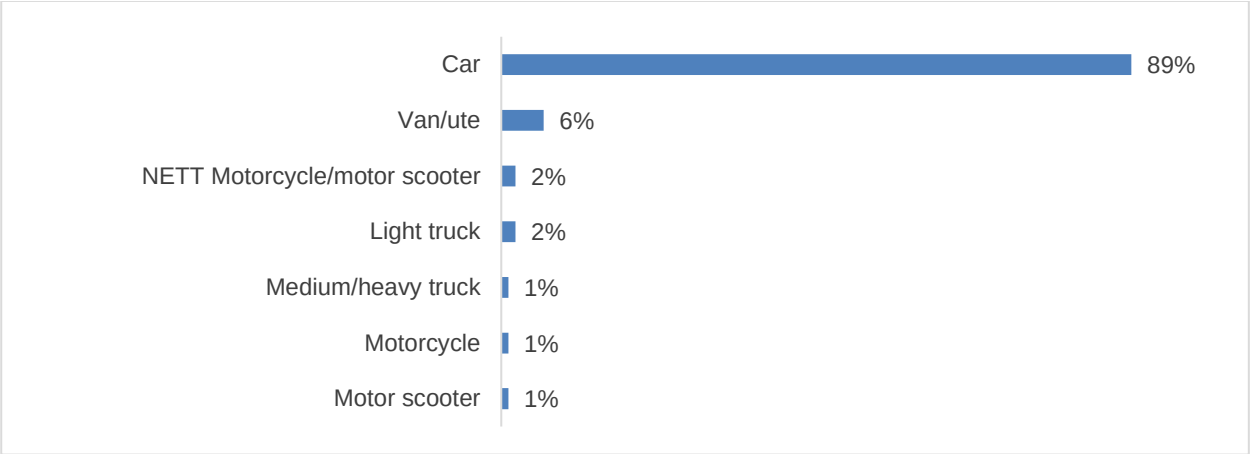



**Base:** Drugged and/or medicated drivers who took passengers with them the last time they drove within 3 hours of taking drugs and/or medication (*n* = 407).

#### 7.1.3.3 Type of vehicle driven

Cars (89%) were the most common type of vehicle driven within 3 hours of taking drugs and/or medication on the last occasion (Figure 7.9).

**Figure 7.9 Type of vehicle driven on last occasion of driving within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Compared to the total sample, in a typical week, drugged and/or medicated drivers were more likely to have driven a car within 3 hours of taking drugs and/or medication on the last occasion (Table 7.15).

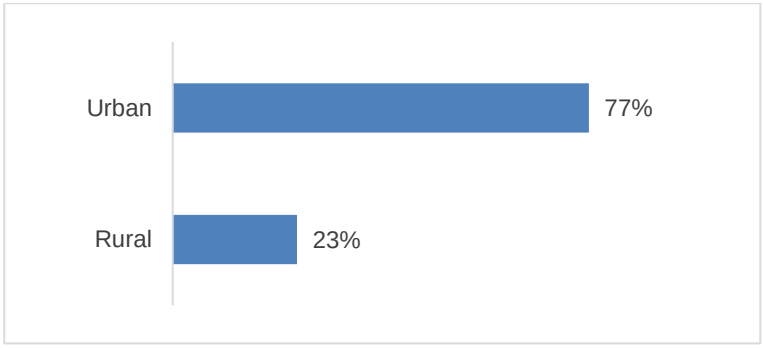
**Table 7.15 Type of vehicle driven – Total sample vs drugged and/or medicated driver sample in a typical week vs last occasion of drugged/medicated driving**

| Vehicle type driven | Total sample – vehicle driven in a typical week | Drugged and/or medicated drivers – vehicle driven in a typical week | Drugged and/or medicated drivers – vehicle driven on last occasion of drugged/medicated driving |
|---|---|---|---|
| *Base, n =* | *4,688* | *1,094* | *1,094* |
| Car | 81% | 80% | 89% |
| Van/ute | 9% | 12% | 6% |
| Light truck | 2% | 3% | 2% |
| Medium/heavy truck | 1% | 2% | 1% |
| Motorcycle | 2% | 4% | 1% |
| Motor scooter | 1% | 2% | 1% |
| Bus | 1% | 2% | 0% |

### 7.1.3.4 Driving on urban/rural roads

The most recent occasion of driving after taking drugs and/or medication was most commonly on urban roads (77%) rather than rural ones (23%) (Figure 7.10).

**Figure 7.10 Type of road most driven on last occasion of driving within 3 hours of taking drugs and/or medication – urban vs rural roads**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Compared to the total sample, drugged and/or medicated drivers were significantly less likely to have driven on urban roads within 3 hours of taking drugs and/or medication (Table 7.16).

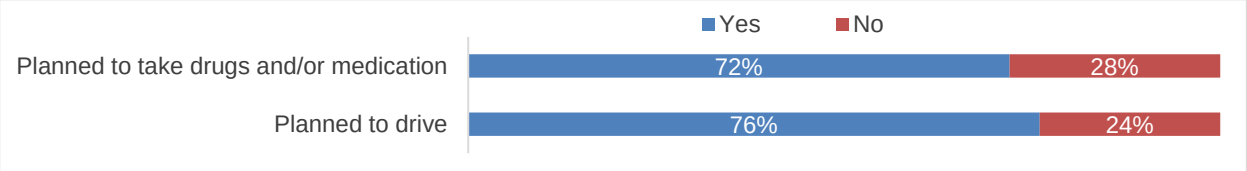
**Table 7.16 Type of road most driven (urban vs rural) – Total sample vs drugged and/or medicated drivers on last occasion of drugged/medicated driving**

| Type of road most driven | Total sample – type of road most driven | Drugged and/or medicated drivers – type of road most driven on last occasion of drugged/medicated driving |
|---|---|---|
| *Base, n =* | ***4,688*** | *1,094* |
| NETT Urban | **86%** | **77%** |
| NETT Rural | **14%** | **23%** |

### 7.1.4 Planned or spontaneous drug and/or medication use vs driving

Still related to the last occasion, three-quarters (76%) of those who drove after taking drugs and/or medication claimed to have planned to drive prior to taking the drugs and/or medication. A similar proportion (72%) also planned to take drugs and/or medication (Figure 7.11).

**Figure 7.11 Planned vs spontaneous decision on last occasion of driving within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

As shown in Table 7.17, 58% of drugged and/or medicated drivers had planned both to take the drugs and/or medication and to drive. Just 14% of those who had planned to take the drugs and/or medication drove afterwards despite not planning to, and only 10% had planned neither to take the drugs and/or medication nor to drive.

**Table 7.17 Planned/not planned to drive vs planned/not planned to take drugs and/or medication**

| | | Planned to take drugs and/or medication | |
|---|---|---|---|
| | | Planned | Not planned |
| Planned to drive | Planned | 58% | 18% |
| | Not planned | 14% | 10% |

**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Those who planned to take drugs and/or medication were significantly more likely to be taking anti-depressants and significantly less likely to be taking strong painkillers, alcohol (as well as other drugs and/or medication) and/or cannabis (drug/medication taken last occasion) (Table 7.18).

**Table 7.18 Key demographic differences among those who planned to take drugs and/or medication**

| Yes, I planned to take drugs and/or medication (*n* = 1,094) | 72% |
|---|---|
| NETT 65+ years | **84%** |
| Live in Manawatū-Whanganui region | **86%** |
| NETT Māori | **62%** |
| NETT Asian | **53%** |
| Retired | **84%** |
| Restricted licence | **62%** |
| Drove to get themselves to/from education | **62%** |
| Anti-depressants (drug/medication taken last occasion) | **90%** |
| Strong painkillers (drug/medication taken last occasion) | **66%** |
| *Alcohol (as well) (drug/medication taken last occasion)* | ***65%*** |
| Cannabis (drug/medication taken last occasion) | **60%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who planned to drive after taking drugs and/or medication were also significantly more likely to have taken anti-depressants and significantly less likely to have taken alcohol (as well as other drugs and/or medication), anti-psychotics, sedatives/sleeping pills or amphetamines (drug/medication taken last occasion) (Table 7.19).

**Table 7.19 Key demographic differences among those who planned to drive after taking drugs and/or medication**

| **Yes, I planned to drive (*n* = 1,094)** | **76%** |
|---|---|
| NETT 65+ years | **93%** |
| NETT 45–64 years | **84%** |
| NETT 16–24 years | **61%** |
| Live in a suburban area | **81%** |
| Live in a city centre | **66%** |
| NETT Māori | **60%** |
| NETT Pacific | **59%** |
| Retired | **91%** |
| NETT Student | **67%** |
| Full licence | **81%** |
| Restricted licence | **62%** |
| Learner licence | **54%** |
| Held licence 10+ years | **83%** |
| Held licence 1–2 years | **67%** |
| Held licence 3–5 years | **66%** |
| Drove to give someone else a ride | **72%** |
| Drove to get themselves to/from education | **65%** |
| Anti-depressants (drug/medication taken last occasion) | **85%** |
| *Alcohol (as well) (drug/medication taken last occasion)* | ***71%*** |
| Anti-psychotics (drug/medication taken last occasion) | **65%** |
| Sedatives/sleeping pills (drug/medication taken last occasion) | **62%** |
| Cannabis (drug/medication taken last occasion) | **57%** |
| Amphetamines (drug/medication taken last occasion) | **49%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

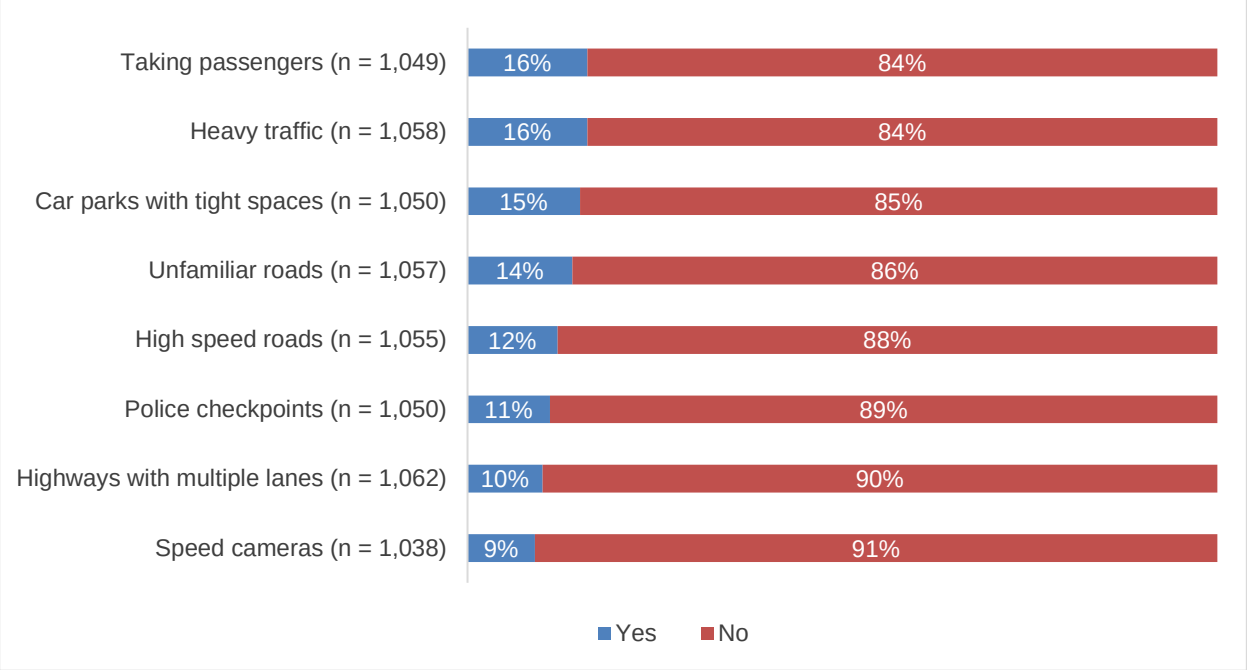
# 8 Modifications to driving behaviour

## 8.1 Situations avoided by drivers

Drugged and/or medicated drivers were asked if they had made any changes to their driving behaviour as a result of taking drugs and/or medication and driving on the last occasion.

Overall, more than 80% of the drugged and/or medicated drivers did not make any changes to their driving behaviour due to the drugs and/or medication taken. Avoiding taking passengers and avoiding heavy traffic were the changes with the highest responses at 16% (Figure 8.1).

**Figure 8.1 Situations avoided by drugged and/or medicated drivers the last time they drove within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

**Note:** Base is reduced for each situation avoided, as it excludes 'Don't know' and 'Refused to answer'.

However, those who took amphetamines, prescription stimulants, sedatives/sleeping pills, cannabis and/or, to a lesser extent, anti-psychotics were significantly more likely to have made a change to their driving behaviour after taking drugs and/or medication, in contrast to those who took anti-depressants, who were significantly less likely to have done so (Table 8.1).

**Table 8.1 Situations avoided by drugged and/or medicated drivers the last time they drove within 3 hours of taking drugs and/or medication, by type of drug/medication taken on last occasion**

| Situation avoided by drugged and/or medicated drivers | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong painkillers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,094*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| Taking passengers | **16%** | **37%** | **29%** | 18% | **32%** | **36%** | **9%** | 23% | **28%** | 17% | ***21%*** |
| Heavy traffic | **16%** | **31%** | **30%** | 18% | **28%** | **34%** | **10%** | 19% | **30%** | 18% | ***22%*** |
| Car parks with tight spaces | **15%** | **27%** | **27%** | **21%** | 23% | **32%** | 10% | 21% | **23%** | 15% | *17%* |
| Unfamiliar roads | **14%** | **27%** | **32%** | 19% | 23% | **32%** | **8%** | **21%** | **26%** | 14% | *18%* |
| High-speed roads | **12%** | **28%** | **22%** | 14% | **24%** | **34%** | **8%** | **19%** | **21%** | 14% | ***18%*** |
| Highways with multiple lanes | **11%** | **24%** | **24%** | 13% | **24%** | **32%** | **6%** | **19%** | **18%** | 11% | ***14%*** |
| Police checkpoints | **10%** | **31%** | **29%** | 10% | 15% | **22%** | **4%** | 9% | **25%** | 10% | ***20%*** |
| Speed cameras | **9%** | 16% | **20%** | 8% | **20%** | **29%** | **4%** | 11% | **14%** | 8% | ***13%*** |

Respondents were asked to explain in their own words the reasons they changed how they drove or why they changed their route. Of the 371 respondents who did make a change to their driving behaviour, 40% stated that the reason was to think about safety/how they drove, and 28% said it was to think about the route they took (Table 8.2).

**Table 8.2 Reasons for changing driving behaviour**

| Reasons for changing driving behaviour – Open | Total |
|---|---|
| *Base, n =* | *371* |
| **NETT Think about safety/how I drive** | **40%** |
| Check how I am feeling/am I ok to drive | 9% |
| Feeling less confidence in myself | 7% |
| Speed/drive more slowly | 6% |
| My passengers | 2% |
| Safety/drive safely | 12% |
| Being careful/be focused | 8% |
| Other thoughts about safety/how I drive | 2% |
| **NETT Think about the police** | **10%** |
| Avoid police | 6% |
| Getting caught/pulled over | 5% |
| **NETT Think about the route** | **28%** |
| Change to a familiar route | 5% |
| Change to a faster/shorter route | 4% |
| Change to a less congested route/places/times | 19% |
| Change to side roads | 2% |
| Change to an easier to manage route | 3% |
| Other thoughts about route | 4% |
| **NETT Think about other things** | **31%** |
| Other thoughts about making changes | 3% |
| **Made no changes** | **3%** |
| Nothing | 7% |
| Don't know/no response | 18% |

### 8.1.1 Verbatims – Considerations made by those who change their driving behaviour as a result of taking drugs and/or medication

#### 8.1.1.1 Think about safety/how i drive

*'Making sure that I drive with more focus on road conditions and speed. I also tried to get someone else to drive if possible.'*

*'…anxiety meds made me really tired and I avoid populated places, so I tend to go out early and get my chores/shopping done and avoid people and traffic.'*

*'Sometimes I don't notice things on the road as quickly as I ideally should. However, it would be worse to drive while in withdrawal!'*

*'I had drunk 2 RTDs and was sure I was not over my limit and drove home. I did, however, decline to drop a friend home, so I didn't have a passenger. I think I chose to do this so as to make my trip as short as possible.'*

*'You're not really thinking, I guess, sometimes you can be distracted by talking with your passenger, if you have one. Sometimes you think a cop might catch you.'*

*'I tried to take roads that I knew had a parking lane along the side so that I could switch with my passenger if I felt I could not drive.'*

*'My reactions were slightly slower than normal, and I take the back roads, so I have a high chance of getting home without being pulled over.'*

*'Ensuring that there is not a lot of traffic and when parking finding more space to park rather than a tight squeeze.'*

*'Was feeling tired so went to quieter streets.'*

#### 8.1.1.2 Think about the police

*'Avoiding traffic and lights. Avoiding regular police checkpoint spots.'*

*'I tried to avoid cops mainly. No need to catch a court case.'*

*'I think about losing my driver's licence if caught and police charges. I think about my partner's safety if I was to crash, it would be my fault.'*

*'Just try to be as legal as possible as to not get pulled over by police.'*

*'Because there was a higher chance of police stops and I didn't want that trouble.'*

#### 8.1.1.3 Think about the route

*'I want to make this trip as easy and painless as possible so I will only take very familiar roads, easy parking spots, uncongested areas, easy in and out places.'*

*'Wanting to reduce the risk of being pulled over or driving a route that is more complex – crossing a main highway, etc.'*

*'I use side roads and avoid main roads and more cars.'*

*'In general, I don't like driving in heavy traffic regardless of drugs/alcohol/medicine.'*

*'I know my driving judgement is not as sharp if I've recently taken my prescription medication. I only park in angled car parks with a lot of room, so I can eliminate the need to do any backing or manoeuvring.'*

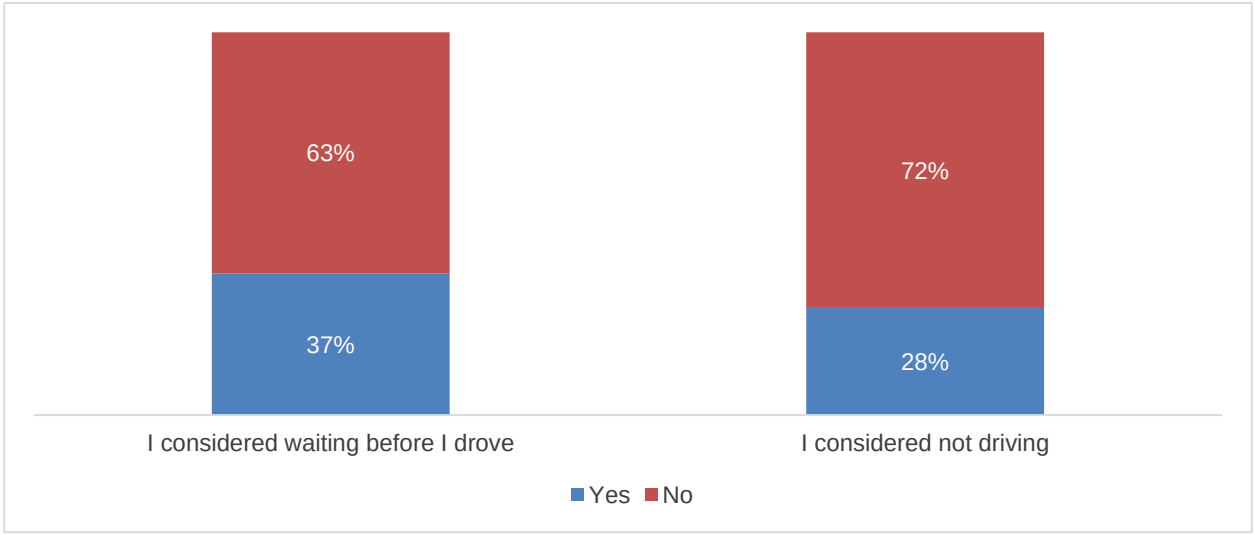
*'My reactions were slightly slower than normal. And I take the back roads to have a high chance of getting home with being pulled over.'*

*'The things I thought about when making the changes … Being honest, I didn't think to change because I was taking the medication. I only change route depending on traffic flow, and with the passengers, most times I'm just driving myself to and from work so I'm always in my own vehicle alone.'*

## 8.2 Considered waiting before driving vs considered not driving

Of the drugged and/or medicated drivers who drove within 3 hours of taking drugs and/or medication, a third (37%) claimed to have considered waiting before they drove, while 28% considered not driving after taking drugs and/or medication (Figure 8.2).

**Figure 8.2 Considerations made after taking drugs and/or medication on last occasion of driving within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Those who took amphetamines, prescription stimulants, sedatives/sleeping pills and/or cannabis were significantly more likely to consider waiting or not driving, in contrast to those who took anti-depressants, who were significantly less likely to do so (Table 8.3).

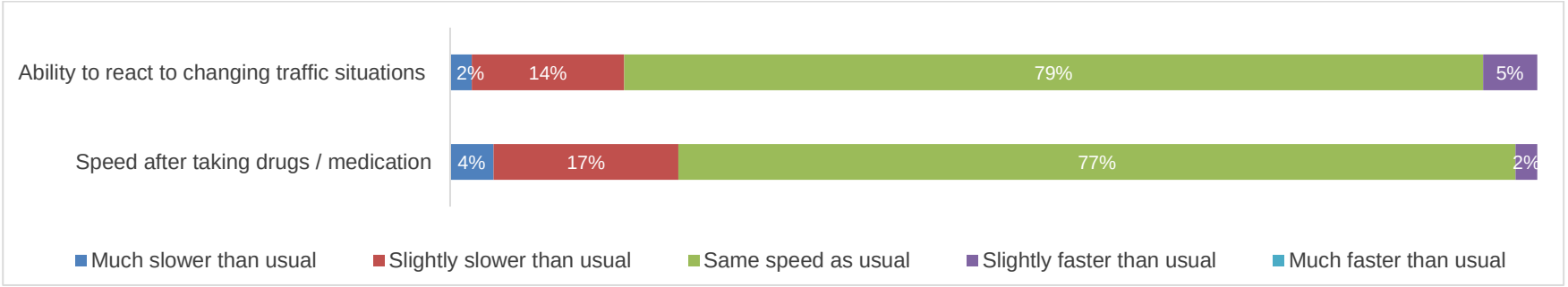
**Table 8.3 Considerations made by those who had driven within 3 hours of taking drugs and/or medication, by type of drug/medication taken on last occasion**

| Consideration | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,094*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| I considered waiting before I drove | **37%** | **55%** | **56%** | 35% | 50% | **62%** | **21%** | 45% | **60%** | 42% | ***51%*** |
| I considered not driving | **28%** | **46%** | **41%** | 28% | **48%** | **57%** | **17%** | **39%** | **43%** | 33% | ***35%*** |

## 8.3 Perceived speed and reaction time

In comparison to situations when respondents drove without having taken any drugs and/or medication, 79% claimed to be able to react at the same speed to changing traffic situations, and 77% claimed to have driven at the same speed after taking drugs and/or medication (Figure 8.3).

**Figure 8.3 Perceived impact of drugs and/or medication on speed/ability to react to changing traffic on last occasion of driving within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Those who took amphetamines and/or sedatives/sleeping pills on the last occasion they drove within 3 hours of taking drugs and/or medication were significantly more likely than the overall sample of drugged and/or medicated drivers to claim that they drove faster after taking drugs and/or medication. Those who took amphetamines, prescription stimulants and/or cannabis were significantly more likely to claim to have driven more slowly after taking drugs and/or medication (Table 8.4).

**Table 8.4 Perceived impact of drugs and/or medication on speed on last occasion of driving within 3 hours of taking drugs and/or medication, by type of drug/medication taken**

| Perceived impact on speed after taking drugs and/or medication | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,094*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| Same speed as usual | **77%** | **50%** | **55%** | 78% | 67% | **61%** | **90%** | 73% | **62%** | 73% | ***69%*** |
| NETT Slower | **20%** | **35%** | **38%** | 20% | 27% | 30% | **9%** | 22% | **35%** | 22% | ***27%*** |
| NETT Faster | **3%** | **15%** | 7% | 2% | 5% | **9%** | **1%** | 5% | 3% | 4% | *4%* |

When asked about their ability to react to changing traffic situations during the last occasion they drove after taking drugs and/or medication, those who took amphetamines, prescription stimulants, anti-psychotics and/or cannabis were significantly more likely to claim that they reacted faster. Those who took prescription stimulants, sedatives/sleeping pills and/or cannabis were significantly more likely to claim to have reacted more slowly after taking these (Table 8.5).

**Table 8.5 Perceived impact of drugs and/or medication on ability to react to changing traffic conditions on last occasion of driving within 3 hours of taking drugs and/or medication, by type of drug/medication taken on last occasion**

| Perceived impact on ability to react to changing traffic conditions after taking drugs and/or medication | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,094*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| Same speed as usual | **79%** | **54%** | **52%** | 74% | **67%** | **56%** | **89%** | 77% | **63%** | 77% | ***69%*** |
| NETT Slower | **16%** | 20% | **29%** | 20% | 21% | **33%** | **9%** | 20% | **26%** | 19% | ***25%*** |
| NETT Faster | **5%** | **26%** | **19%** | 6% | **12%** | 11% | **2%** | 3% | **11%** | 4% | *6%* |

# 9 Perceived impairment

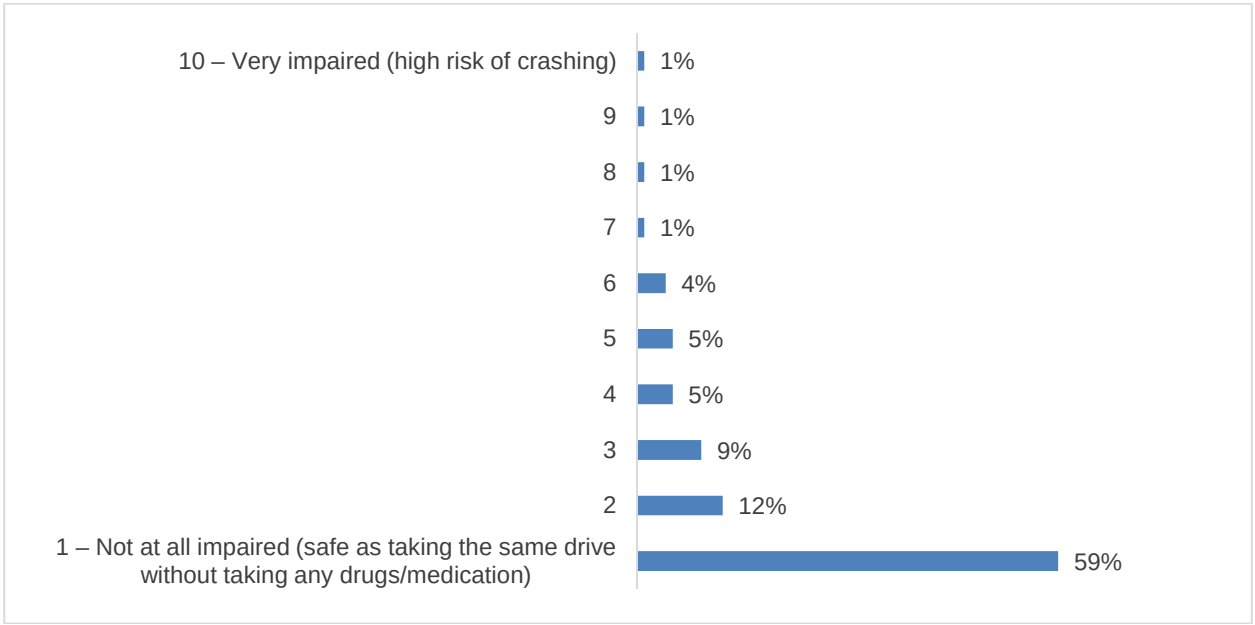
The questions asked about perceived impairment were related to the last occasion when respondents had driven within 3 hours of taking drugs and/or medication. These drugs and/or medications include those that have been prescribed to them, as well as recreational drugs. Perceived impairment may differ by respondent.

Drugged and/or medicated driver perceptions of impairment are based on their perception of how their driving ability was affected by the drugs and/or medication they took, rather than their actual impairment after taking the drug and/or medication.

## 9.1 Impact on overall driving ability

When asked about how their driving ability was affected by the drugs and/or medication taken on the last occasion they drove within 3 hours of taking drugs and/or medication, 59% of respondents claimed that their driving was 'not at all impaired (safe as taking the same drive without taking any drugs and/or medication)' (Figure 9.1).

**Figure 9.1 Drugged and/or medicated drivers' perceived impairment the last time they drove within 3 hours of taking drugs and/or medication**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Respondents who took anti-depressants on the last occasion they drove were significantly more likely to claim that their driving ability was not at all affected by the drugs and/or medication they took (Table 9.1).

**Table 9.1 Drugged and/or medicated drivers' perceived impairment the last time they drove within 3 hours of taking drugs and/or medication, by type of drug/medication taken**

| Perceived impairment | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,094*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| 1 – Not at all impaired (safe as taking the same drive without taking any drugs and/or medicine) | **59%** | **9%** | **42%** | 51% | **40%** | **35%** | **77%** | 53% | **39%** | 55% | ***41%*** |
| 2–10 (10 = very impaired, high risk of crashing) | **41%** | **91%** | **58%** | 49% | **60%** | **65%** | **23%** | 47% | **61%** | 45% | ***59%*** |

# 10 Attitudes to drugged driving and police enforcement

The third objective of this research was to work with Waka Kotahi to develop a framework to assess whether the implementation of the new drug testing regime will reduce the prevalence of drugged and/or medicated driving in New Zealand. The following questions were asked to gauge a pre-measure of the attitudes of drugged and/or medicated drivers compared to the overall New Zealand population.

## 10.1 Perceptions of likelihood of being caught or stopped

In terms of likelihood of being caught by the police or a red light/speed camera for certain offences, drugged and/or medicated drivers were significantly less likely to answer NETT 'Unlikely' to most of the offences – exceeding the speed limit (22% vs 27% of total sample), dangerous driving (26% vs 30% of total sample), drinking and driving (25% vs 28% of total sample) and not stopping at traffic lights (34% vs 38% of total sample) (see Table 10.1). There were no differences for driving whilst affected by drugs other than alcohol.

**Table 10.1 Perceived likelihood of being caught by the police or a red light/speed camera**

| Perceived likelihood of being caught by the police or a red light/speed camera for the following offences | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| *Base, n =* | ***4,688*** | *3,594* | *1,094* |
| **Exceeding the speed limit** | | | |
| NETT Likely | **43%** | 42% | 45% |
| NETT Unlikely | **27%** | 28% | **22%** |
| 50/50 | **31%** | 30% | 32% |
| **Dangerous driving** | | | |
| NETT Likely | **45%** | 44% | 47% |
| NETT Unlikely | **30%** | 31% | **26%** |
| 50/50 | **25%** | 24% | 26% |
| **Drinking and driving** | | | |
| NETT Likely | **42%** | 41% | 44% |
| NETT Unlikely | **28%** | 29% | **25%** |
| 50/50 | **30%** | 29% | 31% |
| **Not stopping at traffic lights** | | | |
| NETT Likely | **36%** | 35% | 37% |
| NETT Unlikely | **38%** | 39% | **34%** |
| 50/50 | **27%** | 26% | 29% |
| **Driving whilst affected by drugs other than alcohol** | | | |
| NETT Likely | **31%** | 31% | 32% |
| NETT Unlikely | **40%** | 41% | 37% |
| 50/50 | **29%** | 28% | 30% |

Drugged and/or medicated drivers were significantly more likely than the total sample to believe that a person in New Zealand will be stopped at a police checkpoint to test for alcohol. However, currently there is no difference amongst drugged and/or medicated drivers and non-drugged/non-medicated drivers in terms of being stopped at a police checkpoint to test for drug usage (Table 10.2).

**Table 10.2 Perceived likelihood of being stopped at a police checkpoint**

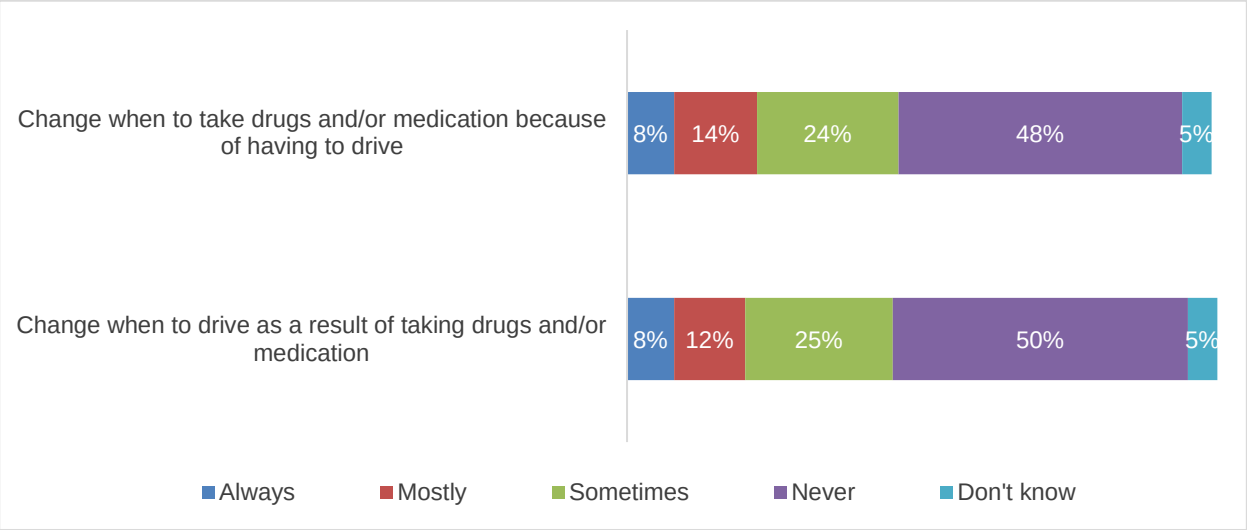
| Perceived likelihood of being stopped at a police checkpoint | Total sample | Non-drugged/ non-medicated drivers | Drugged and/or medicated drivers |
|---|---|---|---|
| *Base, n =* | ***4,688*** | *3,594* | *1,094* |
| **To test for alcohol** | | | |
| NETT Likely | **53%** | 51% | **59%** |
| NETT Unlikely | **23%** | 25% | **17%** |
| 50/50 | **25%** | 25% | 24% |
| **To test for drug usage** | | | |
| NETT Likely | **29%** | 30% | 26% |
| NETT Unlikely | **45%** | 45% | 45% |
| 50/50 | **26%** | 25% | 28% |

# 11 Drugged and/or medicated driving behaviours

## 11.1 Adapting behaviours to avoid driving drugged and/or medicated

When asked whether they had changed when to drive (post-use) or when to take drugs and/or medication, around half of drugged and/or medicated drivers claimed that they never changed their behaviours after taking drugs and/or medication (Figure 11.1).

**Figure 11.1 Drugged and/or medicated drivers' reported changes in driving behaviour**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

Compared to all respondents who have taken drugs and/or medication in last 12 months, drugged and/or medicated drivers were less likely to never change when they drive or when they take drugs and/or medication (Table 11.1, Table 11.2).

**Table 11.1 Reported change in driver behaviour – Change when to drive as a result of taking drugs and/or medication**

| Change when to drive as a result of taking drugs and/or medication | Those who took drugs and/or medication in last 12 months | Those who took drugs and/or medication in last 12 months but did not drive after taking drugs and/or medication | Drugged and/or medicated drivers – last occasion driven after taking drugs and/or medication |
|---|---|---|---|
| *Base, n =* | ***3,800*** | *2,706* | *1,094* |
| Always | 11% | 12% | **8%** |
| Mostly | 8% | 7% | **12%** |
| Sometimes | 16% | 13% | **25%** |
| Never | 54% | 55% | **50%** |
| Don't know | 11% | 13% | **5%** |

**Note:** Significant testing against drugged and/or medicated drivers (last occasion driven after taking drugs and/or medication) vs all respondents who have taken drugs and/or medication in last 12 months.

**Table 11.2 Reported change in driver behaviour – Change when to take drugs and/or medication because of having to drive**

| Change when to take drugs and/or medication because of having to drive | Those who took drugs and/or medication in last 12 months | Those who took drugs and/or medication in last 12 months but did not drive after taking drugs and/or medication | Drugged and/or medicated drivers – last occasion driven after taking drugs and/or medication |
|---|---|---|---|
| *Base, n =* | ***3,800*** | *2,706* | *1,094* |
| Always | 11% | 13% | **8%** |
| Mostly | 9% | 7% | **14%** |
| Sometimes | 15% | 11% | **24%** |
| Never | 53% | 56% | **48%** |
| Don't know | 11% | 13% | **5%** |

**Note:** Significant testing against drugged and/or medicated drivers (last occasion driven after taking drugs and/or medication) vs all respondents who have taken drugs and/or medication in last 12 months.

Those who claimed to always change when they drive as a result of taking drugs and/or medication are significantly more likely to be young (aged 25–44), part of a couple with a child or children living at home and/or to have held their licence for 6–9 years (Table 11.3).

**Table 11.3 Key demographic differences among those who always change when to drive as a result of taking drugs and/or medication**

| Always change when to drive (*n* = 1,094) | 8% |
|---|---|
| NETT 25–44 years | **12%** |
| NETT 65+ years | **3%** |
| Couple – have child/children living at home | **13%** |
| Licence held 6–9 years | **16%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Respondents who claimed to never change when they drive as a result of taking drugs and/or medication were significantly more likely to be older (45+ years), part of a couple with no children or their children have left home, retired, not working and/or to have held their licence 10 years or more (Table 11.4).

**Table 11.4 Key demographic differences among those who never change when to drive as a result of taking drugs and/or medication**

| Never change when to drive (*n* = 1,094) | 50% |
|---|---|
| NETT 65+ years | **69%** |
| NETT 45–64 years | **57%** |
| NETT 25–44 years | **44%** |
| NETT 16–24 years | **42%** |
| NETT Auckland | **42%** |
| NETT Pacific | **23%** |

| Never change when to drive (*n* = 1,094) | 50% |
|---|---|
| Couple – no children/children have left home | 59% |
| Retired | 66% |
| NETT Not working | 60% |
| Restricted licence | 40% |
| Licence held 10+ years | 57% |
| Licence held 1–2 years | 37% |
| Licence held 6–9 years | 32% |
| Drove to give someone else a ride | 39% |
| Drove to get themselves to/from education | 37% |
| NETT Motorcycle/motor scooter | 34% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those claiming to always change when to take drugs and/or medication because of having to drive were significantly more likely to identify as Pacific or Asian and/or to have held their licence for 6–9 years (Table 11.5).

**Table 11.5 Key demographic differences among those who always change when to take drugs and/or medication because of having to drive**

| Always change when to take drugs and/or medication (*n* = 1,094) | 8% |
|---|---|
| NETT Pacific | 17% |
| NETT Asian | 16% |
| Licence held 6–9 years | 14% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those claiming to never change when to take drugs and/or medication because of having to drive were significantly more likely to be older (65+ years), retired, not working and/or have held their licence for 10+ years (Table 11.6).

**Table 11.6 Key demographic differences among those who never change when to take drugs and/or medication because of having to drive**

| Never change when to take drugs and/or medication (*n* = 1,094) | 48% |
|---|---|
| NETT 65+ years | 69% |
| NETT 45–64 years | 55% |
| NETT 16–24 years | 35% |
| NETT Upper North Island | 41% |
| NETT Auckland | 40% |
| NETT Māori | 37% |
| NETT Asian | 35% |
| NETT Pacific | 19% |

| Never change when to take drugs and/or medication (*n* = 1,094) | 48% |
|---|---|
| Couple – no children/children have left home | 56% |
| Retired | 66% |
| NETT Not working | 57% |
| Learner licence | 35% |
| Licence held 10+ years | 56% |
| Licence held 3–8 years | 37% |
| Licence held 1–2 years | 28% |
| To give someone else a ride | 38% |
| Drove for work as part of their job | 36% |
| Drove to get themselves to/from education | 35% |
| NETT Motorcycle/motor scooter | 34% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Respondents who claimed to always change when to drive or when to take drugs and/or medication were significantly more likely to have taken amphetamines, prescription stimulants and/or sedatives/sleeping pills. Those who took anti-depressants were significantly more likely to claim to never change behaviours as a result of taking this medication (Table 11.7).

**Table 11.7 Changing when to drive and when to take drugs and/or medication, by type of drug/medication taken on last occasion of drugged and/or medicated driving**

| Change when to drive as a result of taking drugs and/or medication | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,094*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| Always | **8%** | **26%** | **21%** | 8% | **19%** | **21%** | **4%** | **16%** | 12% | 10% | ***14%*** |
| Mostly | **12%** | 14% | 11% | 16% | 18% | **33%** | **8%** | 14% | 13% | 12% | ***17%*** |
| Sometimes | **25%** | 33% | 33% | 24% | 23% | 13% | **18%** | 21% | **36%** | 27% | ***31%*** |
| Never | **50%** | **22%** | **35%** | 46% | 39% | **30%** | **65%** | 43% | **36%** | 48% | ***35%*** |
| **Change when to take drugs and/or medication because of having to drive** | **Total** | **Ampheta-mines** | **Prescription stimulants** | **Anti-anxiety drugs** | **Anti-psychotics** | **Sedatives/ sleeping pills** | **Anti-depressants** | **Anti-nausea medication** | **Cannabis** | **Strong pain-killers** | ***Alcohol (as well)*** |
| *Base, n =* | ***1,094*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| Always | **8%** | **24%** | **20%** | 6% | 16% | **21%** | **5%** | 12% | 13% | 6% | ***13%*** |
| Mostly | **14%** | 25% | 24% | 15% | 23% | **33%** | **7%** | 21% | 18% | 16% | ***22%*** |
| Sometimes | **24%** | 30% | 25% | 23% | 19% | 14% | **18%** | 21% | 31% | 28% | *28%* |
| Never | **48%** | **16%** | **30%** | 49% | 41% | **28%** | **65%** | **37%** | **33%** | 47% | ***32%*** |

When comparing drugged and/or medicated drivers (last occasion) to all respondents who have taken drugs and/or medication in the last 12 months but did not drive after taking drugs and/or medication, the proportions of those who always change when to drive and those who always change when to take drugs and/or medication are similar (Table 11.8).

**Table 11.8 Changing when to drive and when take drugs and/or medication, by type of drug/medication taken on last occasion – Drugged and/or medicated drivers vs drugged and/or medicated non-drivers**

| Change when to drive as a result of taking drugs and/or medication | Total | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers | *Alcohol (as well)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Drugged and/or medicated drivers (n = )* | ***1,094*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| % Always | **8%** | **26%** | **21%** | 8% | **19%** | **21%** | **4%** | **16%** | 12% | 10% | ***14%*** |
| *Drugged and/or medicated non-drivers (n = )* | ***2,706*** | *21** | *38** | *113* | *42** | *246* | *181* | *214* | *203* | *516* | *2,488* |
| % Always | **12%** | **-** | **-** | 16% | **26%** | **19%** | 16% | **20%** | **18%** | **19%** | *12%* |
| **Change when to take drugs and/or medication because of having to drive** | **Total** | **Ampheta-mines** | **Prescription stimulants** | **Anti-anxiety drugs** | **Anti-psychotics** | **Sedatives/sleeping pills** | **Anti-depressants** | **Anti-nausea medication** | **Cannabis** | **Strong pain-killers** | ***Alcohol (as well)*** |
| *Drugged and/or medicated drivers (n = )* | ***1,094*** | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* | *302* |
| % Always | **8%** | **24%** | **20%** | 6% | 16% | **21%** | **5%** | 12% | 13% | 6% | ***13%*** |
| *Drugged and/or medicated non-drivers (n = )* | ***2,706*** | *21** | *38** | *113* | *42** | *246* | *181* | *214* | *203* | *516* | *2,488* |
| % Always | **13%** | **-** | **-** | **19%** | 21% | **19%** | 16% | **19%** | 17% | **17%** | *12%* |

* Caution: Low base size ($n < 50$).

Respondents were asked to give more details about the changes they make to when they drive and when they take drugs and/or medication. Those who make changes mainly alter the timing of taking drugs and/or medications or adjust/postpone when they drive after taking drugs and/or medication (Table 11.9).

**Table 11.9 Changes in driving behaviour made by those who change when they drive and those who change when they take drugs and/or medication**

| Changes made to driving behaviour (always/mostly/sometimes) | Total drugged and/or medicated drivers who always/mostly/ sometimes change when to drive and/or when to take drugs | Those who change when to drive as a result of taking drugs and/or medication | Those who change when to take drugs and/or medication because of having to drive |
|---|---|---|---|
| *Base, n =* | *125* | *91* | *86* |
| **NETT Changes – Drugs and/or medication** | **36%** | **34%** | **39%** |
| Change timing of drug and/or medication intake | 12% | 11% | 11% |
| Adjust/postpone/change plans, etc, if taking drugs and/or medication | 5% | 5% | 5% |
| Other changes regarding drugs and/or medication | 5% | 3% | 7% |
| Do not/never drive if taking drugs and/or medication at all | 4% | 6% | 5% |
| Use alternative transport if taking drugs and/or medication | 3% | 2% | 5% |
| Be a clean driver/do not take drugs and/or medication at all if need to drive | 4% | 5% | 6% |
| **NETT Changes – Alcohol** | **20%** | **21%** | **22%** |
| Drink less alcohol in general if I have to drive | 6% | 6% | 7% |
| Do not/never drive when over or close to limit | 6% | 6% | 6% |
| **NETT Other changes** | **23%** | **25%** | **20%** |
| Use alternative transport (no further information given) | 6% | 4% | 7% |
| Be aware of changes in me in general (no further information given) | 6% | 7% | 7% |
| Change my driving behaviour/habits/plans | 5% | 6% | 2% |
| **NETT Other** | **28%** | **27%** | **26%** |
| **None/no changes** | **6%** | **3%** | **8%** |
| Don’t know/no response | 20% | 22% | 17% |

### 11.1.1 Verbatims – Change when to drive as a result of taking drugs and/or medication

#### 11.1.1.1 Changes – Alcohol

*'1. Alcohol: If I want to drink alcohol, I make sure that someone else (my partner) is the designated driver. If it is my turn to be the designated driver, then I don't drink any alcohol at all. Or if I know that I still need to drive then I don't drink alcohol, for example at a work lunch if I had to pick my kids up from school after work, then I wouldn't drink alcohol, only soft drinks or juice or alcohol-free beer. 2. Strong prescription painkillers, ie, codeine: I only take this at night-time for pain relief because it makes me drowsy, and so there is no need for me to drive. If I have a very strong pain during the day, eg, sinus pain or period pain, I will take sick leave from work and arrange for someone else to fetch my kids from school so that I can take the codeine and won't need to drive.'*

*'Limit the amount of alcohol I drink when I know I need to drive. If taking medication, I try and take it at night, so I usually don't drive immediately afterwards.'*

*'Be more aware of surroundings especially at night when there are other drivers under the influence of drugs or alcohol. Nowadays I do not like driving at night, as it seems much more dangerous.'*

*'I will not drink at all if I need to drive within 5 hrs.'*

*'If I have consumed more than 2 glasses of beer, I arrange for my wife to drive.'*

*'Prescription medicines only – possible problem meds usually taken at night, seldom drive evenings and usually before taking this type of prescription. Alcohol – occasionally have one drink with evening meal, so should be well under the limit when driving home. Very occasionally use alternative "sober driver".'*

#### 11.1.1.2 Changes – Drugs and/or medication

*'I will avoid taking when I know I need to drive.'*

*'Taking them at times that won't impair my driving, eg, once I get home or before bed.'*

*'Medication is taken at night. I don't drive for at least two days after general anaesthetic and being given strong painkillers in hospital.'*

*'If I want to get high to a point it's not safe to drive, I will do my driving before I take the drug, I'll get all my stuff sorted and get myself somewhere chill to take it, then hide my keys and get mega high. If I'm already high and something happens and I need to drive, I will either not go till the drugs have worn off or will get someone else to drive me there.'*

*'I hold a "P" licence and drive a school bus. I need to be safe at all times so work with my Doctor and Employer as needed should I have to take prescribed medicines or pills.'*

*'Don't drive if feel altered, as in someone drives me or delay trip.'*

*'I drink alcohol only if I have a meal, only one standard drink and only if it is early enough and if I have enough time to pass before needing to drive. This is about once a year. Otherwise I make sure I'm not driving or I'm at home. Anti-nausea meds – I take a non-drowsy one during the day if needed.'*

*'I try not to take anything before driving, but my pre-existing health conditions stop me from doing all this and it is very hard to do. It is hard to keep up and I'm a person that easily gets very sick even though I'm only 33 (4 days away from 34).'*

*'Made sure there was lots of time between taking pain killers and driving or got someone else to drive for me.'*

*'My antidepressant has no side effects so I can drive without loss of ability. I don't take anti-anxiety meds if I'm going to drive.'*

*'I drive slower and pay more attention to the road. I have chronic pain, which is why I take pain medication, so usually by the time I'm driving the pain has lessened and I am able to be more present in my driving.'*

#### 11.1.1.3 Other changes

*'I try to make sure I have eaten something, and I try and get some sleep before I have to drive.'*

*'I chose not to drive and got an Uber instead.'*

*'Usually if I have something that's already pre-planned, I'll avoid any recreation until I've finished.'*

*'The change I make, is that I self-check/assure myself of my actions MORE often (before, during and after driving). I ensure I am still in a straight-thinking mindset. I make certain that I am always thinking about pros and cons and know what I am doing while understanding my limitations and limits.'*

*'Arrange a ride.'*

*'Get someone else to drive.'*

*'Decide not to drive if I'm not capable.'*

*'I would wait until the effects had worn off. Or get someone else to drive me if I had to go somewhere.'*

### 11.1.2 Verbatims – Change when to take drugs and/or medication because of having to drive

#### 11.1.2.1 Changes – Alcohol

*'I try to avoid or limit driving after taking alcohol.'*

*'I will only drive if I've had 1 or 2 alcoholic beverages but prefer not to at all and never drive if I have smoked marijuana.'*

*'When I go to wine tasting I tip out wines I don't like. Even though we are advised we are likely to be under the limit, I still feel it would impair me more than I'm comfortable with. I also make sure I eat the offered bread and cheese to slow alcohol absorption.'*

*'I either don't drink or move when I leave. I do not rate myself sober as a driver and would not risk even one drink (I am obese, so it likely has little effect on my blood alcohol).'*

*'If I know I have to drive in the next few hours I wait until after I have driven, when I decide to drive I always consider how much I have had, for example, if I have just finished a beer or a joint I would wait at least an hour or so or get my wife to drive. Quantity Matters.'*

*'I am simply very aware of what I need to do when I need to drive and adjust accordingly. If I know I am going to drive, I make sure I'm not going to drink or limit myself to non-alcoholic or low alcoholic drinks. If I'm under the weather and require strong pain killers, I change my plans to ensure I am not required to drive.'*

#### 11.1.2.2 Changes – Drugs and/or medication

*'I will not drive until I feel sober (3+ hrs) when smoking weed, and until very recently would not drive if I had smoked that day at all but have come to understand my own tolerance and metabolism of cannabis enough that I feel safe. I never found antidepressants or codeine to impact my presence of mind and reactions so don't make changes around those.'*

*'I have always pain 24/7/365. If my pain is more than 7/10, I take extra medication and hold off driving. We are retired so I can choose when to drive.'*

*'I try to not be the driver if I've taken my meds not long before driving, or stay longer where I am, or make alternative arrangements if I had appointments to drive to, ie, rebook.'*

*'Not drive immediately (usually wait around 1–2 hours) after using medicine that will have an effect on me driving.'*

*'I suffer from migraines and I know that a lot of the medication I take for these can cause drowsiness and suggest you don't drive. After taking any medication that says I shouldn't drive I ask my partner to drive me if I need to go out or I will stay at home. I take anti-anxiety and anti-depression medication every day so unfortunately, I do have to drive after taking that as I take it in the mornings.'*

*'Will not drive after half hour of taking sleeping medication. Antidepressants do not affect driving or ability to drive. Cannabis as a rule is at home thing ... it is not a regular thing to drive within a few hours. I prefer to get home safely.'*

*'For a while I was taking heavy doses of a pain relief medication (Gabapentin), when first dispensed the pharmacist advised not driving until I had gauged their effect. I avoided driving while taking them. I no longer take them often but still avoid driving!'*

*'Don't drive if feel altered, as in someone drives me or delay trip.'*

*'I rearrange my schedule or plans to compensate for the tablet I need to take (codeine).'*

*'Taking any painkillers hours in the night before driving.'*

#### 11.1.2.3 Other changes

*'Rest prior to driving.'*

*'Allow someone to drive, take a good rest.'*

*'Be more observant to anticipate a need to react.'*

*'No changes to the way I drive, as I have always been a safe and responsible driver.'*

*'Become more relaxed.'*

*'Postponed a trip.'*

*'I get someone else to drive or drop me off.'*

## 11.2 Applying a behaviour change lens

A number of questions were included in the survey to understand triggers, barriers and associated behaviours. These questions were loosely developed according to Ipsos' applied behaviour change framework MAPPS.[2]

Ipsos has undertaken an extensive review of the academic and practitioner literature relating to behaviour change systems. From this research and alongside our experience and more recent developments from within the Ipsos Global Science Organisation, we developed the MAPPS Framework, based on research by Professor Susan Michie (University College London), who developed 'The Behaviour Change Wheel' (Michie et al., 2011).

MAPPS provides a systematic approach to understanding complex theories. Table 11.10 shows the behavioural attributes included in the survey and how they fit in the model.

**Table 11.10 Ipsos applied behaviour change framework MAPPS**

| MAPPS dimension | MAPPS category | What it means | Attribute wording |
|---|---|---|---|
| **Motivation** | Outcome expectations | I don't think it will work | Drugs or medicines don't tend to affect my driving. |
| | Internalisation | I don't want to do it | I don't like to drive after taking drugs or medication for my safety and the safety of others. |
| | Self-efficacy | I don't feel able to do it | Sometimes I don't have any options, I have to drive after taking drugs or medications. |
| | Identity | I'm not that kind of person | Although I use drugs/mix alcohol with drugs, I care about others. |
| | Emotion | I do not feel like doing it | I would really regret getting caught or losing my licence.<br>I would really regret hurting myself or others. |
| **Ability** | Capability | I am not able to do it | I cannot avoid taking drugs and/or medication (eg, due to medical reasons, addiction, etc) even though I have to drive. |
| **Processing** | Decision forces | How I process information | I plan ahead and don't drive after taking drugs or medicines, or wait before I drive. |
| **Physical** | Environmental factors | How things are set up around me | Where I live means that I sometimes have to drive after taking drugs or medicine. |
| **Social** | Social norms | What's expected of me | Other people expect me to drive, even after I've taken drugs or medicines. |

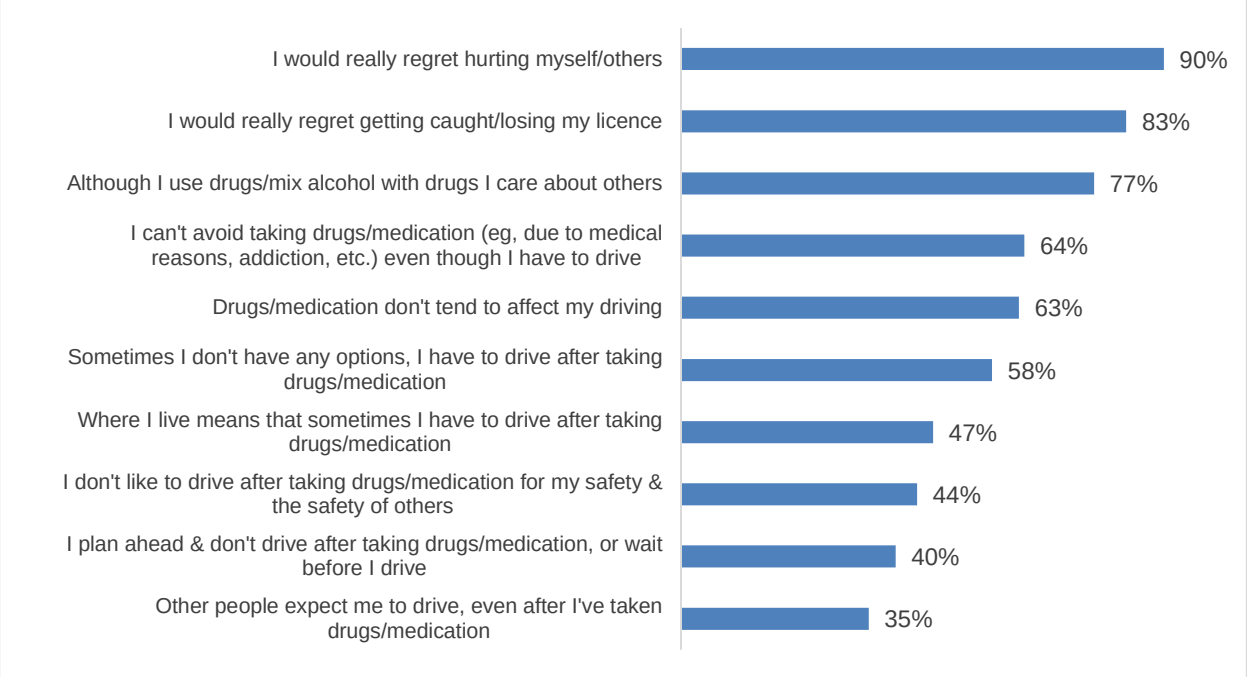
## 11.3 Drugged and/or medicated drivers' attitudes to drugged and/or medicated driving

Drugged and/or medicated drivers agreed that they would really regret hurting themselves or others, would really regret getting caught/losing their licence, and although they use drugs or mix alcohol with drugs, they care about others. However, 64% claimed that they could not avoid taking drugs and/or medication even

[2] MAPPS stands for Motivation–Ability–Processing–Physical–Social

though they had to drive. Overall, 63% claimed that drugs and/or medication do not affect their driving (Figure 11.2, Table 11.11).

**Figure 11.2 Attitudes to drugged and/or medicated driving – Agree (Net Agree 5–7; 7 = strongly agree)**




**Base:** Drugged and/or medicated drivers who have driven within 3 hours of taking drugs and/or medication (*n* = 1,094).

**Table 11.11 Attitudes to drugged and/or medicated driving, by type of drug/medication taken on last occasion of drugged and/or medicated driving**

| Attitudes to drugged driving (NETT Agree 5–7) | Total | *Alcohol (as well)* | Ampheta-mines | Prescription stimulants | Anti-anxiety drugs | Anti-psychotics | Sedatives/ sleeping pills | Anti-depressants | Anti-nausea medication | Cannabis | Strong pain-killers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Base, n =* | ***1,094*** | *302* | *54* | *56* | *131* | *58* | *56* | *396* | *109* | *171* | *299* |
| I would really regret hurting myself or others | **90%** | *90%* | **81%** | **72%** | 88% | 88% | **78%** | 93% | 88% | 88% | 90% |
| I would really regret getting caught or losing my licence | **83%** | *84%* | **69%** | **66%** | 80% | 79% | 76% | 87% | 85% | **73%** | 85% |
| Although I use drugs/mix alcohol with drugs I care about others | **77%** | *83%* | 82% | 71% | 79% | 75% | 76% | 75% | 74% | **85%** | 79% |
| I cannot avoid taking drugs and/or medication (eg, due to medical reasons, addiction, etc) even though I have to drive | **64%** | ***49%*** | 52% | 62% | **75%** | 74% | 69% | **85%** | 64% | **44%** | **73%** |
| Drugs and/or medication don't tend to affect my driving | **63%** | ***56%*** | 57% | 61% | 73% | 65% | 71% | **75%** | 64% | 60% | 67% |
| Sometimes I don't have options, I have to drive after taking drugs and/or medication | **58%** | ***48%*** | 52% | 50% | 69% | **74%** | 69% | **66%** | 66% | **46%** | **71%** |
| Where I live means sometimes I have to drive after taking drugs or medicine | **47%** | ***41%*** | 42% | 44% | 53% | 54% | **63%** | 53% | 47% | **35%** | **55%** |
| I don't like to drive after taking drugs and/or medication for my safety and the safety of others | **44%** | ***53%*** | 50% | 40% | 41% | 52% | **68%** | **34%** | 50% | 46% | 48% |
| I plan ahead and don't drive after taking drugs and/or medication, or wait before I drive | **40%** | ***49%*** | 44% | 47% | 35% | 43% | 53% | **31%** | 49% | 40% | 39% |
| Other people expect me to drive, even after I've taken drugs and/or medication | **35%** | *32%* | **53%** | **52%** | **45%** | **49%** | **49%** | 36% | 30% | 34% | **42%** |

Those who have taken drugs and/or medication in the last 12 months within 3 hours of driving and claimed they plan ahead and don't drive after taking drugs and/or medication or wait before they drive were significantly more likely to be younger (aged 16–24), to be students, and to have driven to get themselves to/from education or give someone else a ride (Table 11.12).

**Table 11.12 Key demographic differences – Attitudes to drugged and/or medicated driving (i)**

| 'I plan ahead and don't drive after taking drugs and/or medication or wait before I drive' (*n* = 1,094) | 40% |
|---|---|
| NETT 16–24 years | 49% |
| NETT Auckland | 47% |
| NETT Asian | 58% |
| Single person living alone | 32% |
| NETT Single | 32% |
| NETT Student | 52% |
| Held licence for 1–2 years | 51% |
| Held licence for 10+ years | 35% |
| NETT Held licence for 5 years or less | 48% |
| Drove to get themselves to/from education | 54% |
| Drove to give someone else a ride | 47% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who are younger (aged 16–24) and those who identify as Māori or Asian were significantly more likely to state they don't like to drive after taking drugs and/or medication for their own safety and the safety of others (Table 11.13).

**Table 11.13 Key demographic differences – Attitudes to drugged and/or medicated driving (ii)**

| 'I don't like to drive after taking drugs and/or medication for my safety and the safety of others' (*n* = 1,094) | 44% |
|---|---|
| NETT 16–24 years | 54% |
| NETT Māori | 52% |
| NETT Asian | 56% |
| Held licence for 1–2 years | 57% |
| NETT Held licence for 2 years or less | 56% |
| NETT Held licence for 5 years or less | 52% |
| Drove to get themselves to/from education | 61% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who believed that drugs and/or medication don't tend to affect their driving were significantly more likely to be older (65+ years) and/or retired and significantly less likely to be male and/or identify as Māori or Pacific (Table 11.14).

**Table 11.14 Key demographic differences – Attitudes to drugged and/or medicated driving (iii)**

| 'Drugs and/or medication don't tend to affect my driving' (*n* = 1,094) | 63% |
|---|---|
| Male | 57% |
| NETT 65+ years | 73% |
| NETT Māori | 55% |
| NETT Pacific | 47% |
| Retired | 73% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those on a learner or restricted licence were significantly less likely to claim they would regret getting caught or losing their licence (Table 11.15).

**Table 11.15 Key demographic differences – Attitudes to drugged and/or medicated driving (iv)**

| 'I would really regret getting caught or losing my licence' (*n* = 1,094) | 83% |
|---|---|
| NETT 45–64 years | 89% |
| NETT Pacific | 64% |
| Learner licence | 71% |
| Restricted licence | 72% |
| NETT Held licence for 5 years or less | 77% |
| Drove to get themselves to/from education | 76% |
| Drove a light truck | 59% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Females were significantly more likely to claim that they would really regret hurting themselves or others (Table 11.16).

**Table 11.16 Key demographic differences – Attitudes to drugged and/or medicated driving (v)**

| 'I would really regret hurting myself or others' (*n* = 1,094) | 90% |
|---|---|
| Male | 85% |
| Female | 94% |
| NETT 16–24 years | 84% |
| NETT Pacific | 74% |
| Learner licence | 81% |
| Held licence for 3–5 years | 84% |
| NETT Held licence for 5 years or less | 86% |
| Drove to get themselves to/from education | 84% |
| Drove a light truck | 78% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those of Pacific or Asian ethnicity and those who have held their licence for 3–5 years were significantly less likely to claim that they cared about others even if they used drugs and/or medication or alcohol (Table 11.17).

**Table 11.17 Key demographic differences – Attitudes to drugged and/or medicated driving (vi)**

| **'Although I use drugs/mix alcohol with drugs I care about others' (*n* = 1,094)** | **77%** |
|---|---|
| NETT Pacific | **66%** |
| NETT Asian | **65%** |
| Held licence for 3–5 years | **69%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who live in a rural area, those who are older (65+ years) and those who are retired were significantly more likely to claim that where they live means that sometimes they have to drive after taking drugs and/or medicine (Table 11.18).

**Table 11.18 Key demographic differences – Attitudes to drugged and/or medicated driving (vii)**

| **'Where I live means that sometimes I have to drive after taking drugs and/or medication' (*n* = 1,094)** | **47%** |
|---|---|
| NETT 65+ years | **63%** |
| NETT Rural | **61%** |
| NETT Pacific | **28%** |
| Retired | **63%** |
| Restricted licence | **32%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who claimed that 'people expect me to drive, even after I've taken drugs and/or medication' were significantly more likely to have driven for medical/dental purposes (Table 11.19).

**Table 11.19 Key demographic differences – Attitudes to drugged and/or medicated driving (viii)**

| **'Other people expect me to drive, even after I've taken drugs and/or medication' (*n* = 1,094)** | **35%** |
|---|---|
| Single person living alone | **25%** |
| Drove for medical/dental purposes | **42%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Those who are older (aged 45+) were significantly more likely to claim not being able to avoid taking drugs and/or medication even though they had to drive (Table 11.20).

**Table 11.20 Key demographic differences – Attitudes to drugged and/or medicated driving (ix)**

| 'I cannot avoid taking drugs and/or medication (eg, due to medical reasons, addiction, etc) even though I have to drive' (*n* = 1,094) | 64% |
|---|---|
| NETT 16–24 years | 52% |
| NETT 45–64 years | 71% |
| NETT 65+ years | 80% |
| NETT Māori | 50% |
| NETT Pacific | 45% |
| NETT Asian | 53% |
| Single parent living with child/children | 53% |
| Full-time employee | 58% |
| Not in paid work and not seeking work | 81% |
| Retired | 83% |
| NETT Working | 59% |
| Restricted licence | 48% |
| Held licence for less than a year | 48% |
| Held licence for 1–2 years | 47% |
| Held licence for 10+ years | 69% |
| NETT Held licence for 2 years or less | 47% |
| NETT Held licence for 5 years or less | 53% |
| NETT Held licence for 6 years or more | 69% |
| Drove for medical/dental purposes | 75% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

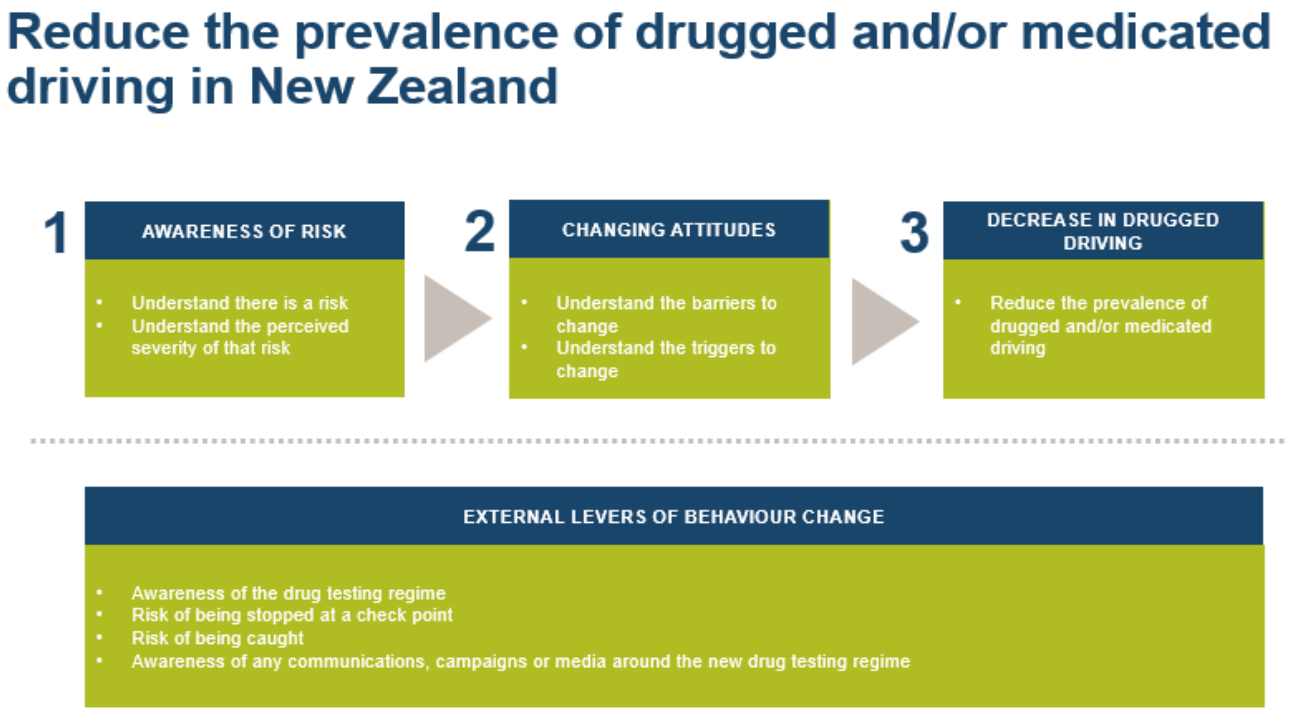
# 12 Potential evaluation approach

The final objective of this research was to develop a potential approach to evaluate the impact of the introduction of the roadside drug testing regime. This framework will also allow Waka Kotahi to understand the short- and long-term effects of the new testing regime and identify the types of interventions required to target these issues. This section outlines a potential evaluation framework option.

The proposed framework is adapted from the extended Health Belief Model (LaMorte, 2019), which was originally developed to understand the failure of people to adopt disease prevention strategies. It was later expanded for use in responses to symptoms and compliance. The key components of this behavioural change model involve initially identifying a perceived risk, followed by an understanding of the severity of that risk. This then flows into an understanding of the triggers and barriers to changing the behaviour. The model has been extended to include a cue to action (triggers to change behaviour) and self-efficacy, or confidence in their ability to adapt the new behaviour.

Figure 12.1 illustrates an adaption of this model as a proposed evaluation framework.

**Figure 12.1 Proposed evaluation framework**




It includes three key measures to evaluate:

- **Drivers' awareness of the risk** attributed to driving under the influence of drugs and/or medication and drivers' awareness of the severity of this risk.
- **Drivers' attitudes towards reducing drugged and/or medicated driving**. This includes understanding the barriers to not driving after taking drugs and/or medication, as well the triggers to stopping this behaviour.
- **The prevalence of driving under the influence of drugs and/or medication**. Once drivers have an awareness of the risk of drugged and/or medicated driving and how severe the risk is, and the triggers

and barriers to changing behaviours are understood and interventions (such as the roadside drug testing regime) are in place, the ultimate outcome will be a reduction in drugged and/or medicated driving.

There are also some key levers that can help effect this change, which will be monitored once the new testing regime is in place:

- The awareness of the roadside testing regime.
- The perceptions of the risk of being stopped at a check point or being caught for driving under the influence of drugs and/or medication.
- The awareness and outtake of any communications or media around the testing regime.

The availability of alternate transport modes is also of critical importance.

## 12.1 Potential evaluation measures

The current questionnaire covers the key aspects of this model. Once the roadside testing regime has been launched, further questions can be added (such as awareness of the regime). This section outlines the measures behind the potential evaluation model.

Amongst those who had taken drugs and/or medication in the last 12 months, 19% claimed that drugs and/or medication don't tend to affect their driving, and just under half (41%) believed that their driving was impaired by the drugs and/or medication they had taken (Table 12.1).

**Table 12.1 Awareness of risk**

| Awareness of risk – Drugged and/or medicated drivers (*n* = 1,094) | |
|---|---|
| **Perceived risk** | |
| Drugs and/or medication don't tend to affect my driving – Disagree | 19% |
| **Perceived severity** | |
| Driving is impaired (high risk of crashing) – Agree | 41% |

Those who drove under the influence of drugs and/or medication were concerned with the consequences of doing so – 83% would regret getting caught or losing their licence and 90% would really regret hurting themselves or others. Just over three-quarters (77%) believed that although they use drugs or mix alcohol with drugs, they care about others. Of note, 35% also claimed that other people expect them to drive, even after they've taken drugs and/or medication (Table 12.2).

**Table 12.2 Changing attitudes – Perceived triggers and barriers to changing behaviour**

| Attitudes – Drugged and/or medicated drivers (*n* = 1,094) | |
|---|---|
| **Perceived triggers** | |
| I don't like to drive after taking drugs and/or medication for my safety and the safety of others – Agree | 44% |
| I would really regret getting caught or losing my licence – Agree | 83% |
| I would really regret hurting myself or others – Agree | 90% |
| Although I use drugs/mix alcohol with drugs I care about others – Agree | 77% |

| Attitudes – Drugged and/or medicated drivers (*n* = 1,094) | |
|---|---|
| **Perceived barriers** | |
| Sometimes I don't have any options, I have to drive after taking drugs and/or medication – Agree | 58% |
| Other people expect me to drive, even after I've taken drugs and/or medication – Agree | 35% |

Currently 23% of New Zealand drivers have taken drugs and/or medication within 3 hours of driving in the last 12 months. Of those who have taken drugs and/or medication and driven, 8% claimed that they would always change when to drive or when they take drugs and/or medication if they have to drive (Table 12.3).

**Table 12.3 Decrease in drugged and/or medicated driving**

| Decrease in drugged and/or medicated driving | |
|---|---|
| **Total sample** | |
| *Base, n =* | *n = 4,688* |
| Drugged and/or medicated drivers' incidence | 23% |
| **Drugged and/or medicated drivers** | |
| *Base, n =* | *n = 1,094* |
| **Cue to act** | |
| Change when to drive as a result of taking drugs and/or medication – Always | 8% |
| Change when to take drugs and/or medication because of having to drive – Always | 8% |

There are also external levers that could be used as part of the new evaluation framework, which could help understand the overall incidence of drugged and/or medicated driving. They can be tracked once the new regime is in place. Currently 29% of the overall sample and 26% of drugged and/or medicated drivers think they would be likely to be stopped at a police checkpoint to test for drug usage, while 31% of the overall sample and 32% of drugged and/or medicated drivers think they would be likely to be caught by the police driving whilst affected by drugs other than alcohol (Table 12.4).

**Table 12.4 External levers to pull**

| Perceived likelihood of being caught for drugged and/or medicated driving | Total sample | Drugged and/or medicated drivers |
|---|---|---|
| *Base, n =* | *n = 4,688* | *n = 1,094* |
| Likelihood of being stopped at a police checkpoint to test for drug usage – Total 'Likely' | 29% | 26% |
| Likelihood of being caught by the police driving whilst affected by drugs other than alcohol – Total 'Likely' | 31% | 32% |

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# Appendix A: Survey results

Throughout the report, we have included significant differences by demographics and by type of drug/medication taken. Where these subgroup results showed useful and relevant differences, we have included them in the body of the report. However, due to the large number of possible breakdowns, the remaining tables have been included in this appendix, to ensure the report is complete but without adding significant length.

## A.1 Respondent profile – additional breakdowns

**Note:** **Green** coloured font has been used to denote percentages that are significantly higher than those recorded for all those answering said question. **Red** coloured font has been used to denote percentages that are significantly lower than those recorded for all those answering said question.

**Table A.1 Key demographic differences among those who drove within 3 hours of taking sedatives/sleeping pills**

| Sedatives/sleeping pills (*n* = 4,688) | 2% |
|---|---|
| NETT 25–44 years | 3% |
| NETT Pacific | 4% |
| Couple – no children/children have left home | 1% |
| Share household (ie, adults sharing a house/flatting together) | 4% |
| NETT Not working | 4% |
| Drove to take kids to/from school/kindergarten | 3% |
| Drove to give someone else a ride | 4% |
| Drove for medical/dental purposes | 3% |
| Drove a van/ute | 4% |
| Drove a light truck | 6% |
| Drove a motor scooter | 12% |
| Drove a bus | 8% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.2 Key demographic differences among those who drove within 3 hours of taking anti-psychotics**

| Anti-psychotics (*n* = 4,688) | 2% |
|---|---|
| NETT 25–44 years | 3% |
| NETT Pacific | 5% |
| NETT Māori | 3% |
| Share household (ie, adults sharing a house/flatting together) | 4% |
| NETT Not working | 4% |
| Restricted licence | 3% |
| Held licence 1–2 years | 3% |
| Held licence 3–5 years | 4% |
| Held licence 10+ years | 1% |
| Drove a light truck | 5% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.3 Key demographic differences among those who drove within 3 hours of taking prescription stimulants**

| Prescription stimulants (*n* = 4,688) | 2% |
|---|---|
| NETT 16–24 years | 4% |
| NETT 45–64 years | 1% |
| NETT Pacific | 4% |
| NETT Māori | 3% |
| Share household (ie, adults sharing a house/flatting together) | 4% |
| NETT Not working | 3% |
| NETT Student | 3% |
| Restricted licence | 3% |
| Held licence 1–2 years | 3% |
| Held licence 3–5 years | 4% |
| Held licence 10+ years | 1% |
| Drove to get themselves to/from education | 3% |
| Drove for work as part of their job | 4% |
| Drove to give someone else a ride | 3% |
| Drove a motorcycle | 5% |
| Drove a light truck | 5% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.4 Key demographic differences among those who drove within 3 hours of taking MDMA/ecstasy**

| MDMA/ecstasy (*n* = 4,688) | 1% |
|---|---|
| NETT 16–24 years | 1% |
| NETT Māori | 2% |
| Learner licence | 2% |
| Held licence 3–5 years | 2% |
| Drove for work as part of their job | 2% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.5 Key demographic differences among those who drove within 3 hours of taking amphetamines**

| Amphetamines (*n* = 4,688) | 1% |
|---|---|
| NETT 25–44 years | 3% |
| NETT 45–64 years | 1% |
| NETT Māori | 5% |
| Single parent living with child/children | 3% |
| Share household (ie, adults sharing a house/flatting together) | 3% |
| NETT Not working | 5% |
| Held licence 3–5 years | 4% |

| Amphetamines (*n* = 4,688) | 1% |
|---|---|
| Held licence 6–9 years | 3% |
| Held licence for 10+ years | 1% |
| Drove for work as part of their job | 3% |
| Drove to take kids to/from school/kindergarten | 2% |
| Drove to give someone else a ride | 3% |
| Drove a van/ute | 3% |
| Drove a light truck | 5% |
| Drove a motorcycle | 5% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.6 Key demographic differences among those who drove within 3 hours of taking benzodiazepines**

| Benzodiazepines (*n* = 4,688) | 1% |
|---|---|
| NETT Pacific | 5% |
| Extended family household (ie, more than two generations living together) | 4% |
| NETT Not working | 3% |
| Drove for work as part of their job | 3% |
| Drove a light truck | 8% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

## A.2 Drugged driving behaviours – additional breakdowns

**Table A.7 Key demographic differences – Type of passenger**

| Type of passenger taken (*n* = 407) | |
|---|---|
| **Partner/spouse** | **45%** |
| Male | 61% |
| Female | 34% |
| NETT Couple | 63% |
| NETT Single | 14% |
| NETT Held licence 2 years or less | 24% |
| NETT Held licence 5 years or less | 21% |
| NETT Held licence 6 years or less | 7% |
| Drove to take kids to/from school/kindergarten | 35% |
| Anti-anxiety drugs (drug/medication taken last occasion) | 27% |
| **My child/children** | **33%** |
| NETT 25–44 years | 44% |
| NETT 16–24 years | 13% |
| Couple – have child/children living at home | 58% |

| Type of passenger taken (*n* = 407) | |
|---|---|
| Couple – no children/children have left home | 5% |
| NETT Held licence 2 years or less | 16% |
| Drove to take kids to/from school/kindergarten | 61% |
| **Friend** | **29%** |
| NETT 16–24 years | 41% |
| NETT Central North Island | 15% |
| NETT Single | 42% |
| NETT Couple | 17% |
| NETT Held licence 2 years or less | 47% |
| Drove to give someone else a ride | 39% |
| Cannabis (drug/medication taken last occasion) | 47% |
| **Parent** | **12%** |
| NETT 16–24 years | 28% |
| NETT Pacific | 30% |
| NETT Held licence 2 years or less | 26% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.8 Key demographic differences – Type of vehicle driven**

| Type of vehicle driven (*n* = 1,094) | |
|---|---|
| **Car** | **89%** |
| Female | 93% |
| Male | 82% |
| NETT Pacific | 70% |
| Drove for work as part of their job | 75% |
| Anti-depressants (drug/medication taken last occasion) | 95% |
| *Alcohol (as well) (drug/medication taken last occasion)* | *84%* |
| **Van/ute** | **6%** |
| Male | 9% |
| Female | 3% |
| Rural | 12% |
| NETT Held licence 5 years or less | 2% |
| Drove for work as part of their job | 15% |
| Anti-depressants (drug/medication taken last occasion) | 2% |
| **Light truck** | **2%** |
| NETT Central North Island | 4% |
| Sedatives/sleeping pills (drug/medication taken last occasion) | 8% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.9 Key demographic differences – Urban vs rural roads driven**

| Urban vs rural roads driven (*n* = 1,094) | |
|---|---|
| **Urban** | **77%** |
| NETT 16–24 years | **72%** |
| NETT Auckland | **82%** |
| NETT Live in urban area | **83%** |
| NETT Live in rural area | **41%** |
| Single parent living with child/children | **87%** |
| NETT Single | **81%** |
| Drove for work as part of their job | **71%** |
| Anti-anxiety drugs (drug/medication taken last occasion) | **71%** |
| **Rural** | **23%** |
| NETT 16–24 years | **28%** |
| NETT Auckland | **18%** |
| NETT Live in rural area | **59%** |
| NETT Live in urban area | **17%** |
| NETT Single | **19%** |
| Single parents living with child/children | **13%** |
| Drove for work as part of their job | **29%** |
| Anti-anxiety drugs (drug/medication taken last occasion) | **29%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

## A.3 Modifications to driving behaviours – additional breakdowns

**Table A.10 Key demographic differences among drugged and/or medicated drivers who avoided heavy traffic during the drive**

| Avoided heavy traffic (*n* = 1,094) | 16% |
|---|---|
| NETT 16–24 years | **25%** |
| NETT 45–64 years | **10%** |
| NETT Asian | **29%** |
| NETT Māori | **23%** |
| NETT European | **12%** |
| Live with parents | **25%** |
| Retired | **8%** |
| Learner licence | **30%** |
| Restricted licence | **25%** |
| Licence held less than 1 year | **30%** |
| Licence held 1–2 years | **27%** |
| Licence held 10+ years | **10%** |
| Drove to get themselves to/from education | **27%** |
| NETT Motorcycle/motor scooter | **29%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.11 Key demographic differences among drugged and/or medicated drivers who avoided taking passengers during the drive**

| Avoided taking passengers (*n* = 1,094) | 16% |
|---|---|
| NETT 16–24 years | 22% |
| NETT 45–64 years | 11% |
| NETT 65+ years | 6% |
| NETT Upper North Island | 21% |
| NETT Pacific | 28% |
| NETT Asian | 25% |
| NETT Māori | 23% |
| NETT Student | 25% |
| Retired | 5% |
| Restricted licence | 25% |
| Licence held 1–2 years | 25% |
| Licence held 10+ years | 11% |
| NETT Motorcycle/motor scooter | 28% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.12 Key demographic differences among drugged and/or medicated drivers who avoided car parks with tight spaces during the drive**

| Avoided car parks with tight spaces (*n* = 1,094) | 15% |
|---|---|
| NETT 16–24 years | 25% |
| NETT 45–64 years | 7% |
| NETT Upper North Island | 18% |
| NETT Pacific | 23% |
| NETT Māori | 20% |
| Live with parents | 26% |
| Couple – no children/children have left home | 5% |
| NETT Student | 22% |
| Restricted licence | 28% |
| Licence held less than 1 year | 34% |
| Licence held 1–2 years | 23% |
| Licence held 3–5 years | 21% |
| Licence held 10+ years | 8% |
| Drove to get themselves to/from education | 30% |
| NETT Motorcycle/motor scooter | 26% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.13 Key demographic differences among drugged and/or medicated drivers who avoided unfamiliar roads during the drive**

| Avoided unfamiliar roads (*n* = 1,094) | 14% |
|---|---|
| NETT 16–24 years | 28% |
| NETT Upper North Island | 19% |
| NETT Asian | 24% |
| Live with parents | 34% |
| Couple – no children/children have left home | 8% |
| NETT Student | 25% |
| Retired | 4% |
| Restricted licence | 28% |
| Learner licence | 27% |
| Licence held less than 1 year | 38% |
| Licence held 1–2 years | 28% |
| Licence held 3–5 years | 21% |
| Licence held 10+ years | 6% |
| Drove to get themselves to/from education | 27% |
| NETT Motorcycle/motor scooter | 23% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.14 Key demographic differences among drugged and/or medicated drivers who avoided high-speed roads during the drive**

| Avoided high-speed roads (*n* = 1,094) | 12% |
|---|---|
| NETT 16–24 years | 18% |
| NETT 45–64 years | 7% |
| NETT 65+ years | 6% |
| NETT Auckland | 16% |
| NETT Upper North Island | 16% |
| NETT South Island | 7% |
| NETT Asian | 25% |
| NETT Māori | 18% |
| NETT European | 9% |
| Retired | 4% |
| Restricted licence | 19% |
| Licence held 1–2 years | 22% |
| Licence held 3–5 years | 19% |
| Licence held 10+ years | 8% |
| Drove to get themselves to/from education | 22% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.15 Key demographic differences among drugged and/or medicated drivers who avoided police checkpoints during the drive**

| Avoided police checkpoints (*n* = 1,094) | 11% |
|---|---|
| NETT 16–24 years | 18% |
| NETT 45–64 years | 4% |
| NETT 65+ years | 4% |
| NETT Asian | 24% |
| NETT Pacific | 23% |
| Couple – have child/children living at home | 14% |
| Retired | 4% |
| Learner licence | 22% |
| Licence held less than 1 year | 25% |
| Licence held 1–2 years | 20% |
| Licence held 3–5 years | 18% |
| Licence held 10+ years | 5% |
| Drove to get themselves to/from education | 18% |
| Drove for work as part of their job | 16% |
| NETT Motorcycle/motor scooter | 20% |
| NETT 65+ years | 4% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

Please note that demographic differences of results of 10% or less are not shown for 'avoid any of the following during the drive'.

**Table A.16 Key demographic differences among those who considered waiting before driving after taking drugs and/or medication**

| I considered waiting before I drove (*n* = 1,094) | 37% |
|---|---|
| NETT 16–24 years | 55% |
| NETT 45–64 years | 30% |
| NETT 65+ years | 16% |
| NETT Auckland | 43% |
| NETT Upper North Island | 43% |
| NETT Pacific | 53% |
| NETT Māori | 52% |
| Live with parents | 55% |
| Couple – no children/children have left home | 29% |
| Retired | 20% |
| Learner licence | 52% |
| Restricted licence | 51% |

| I considered waiting before I drove (*n* = 1,094) | 37% |
|---|---|
| Licence held less than 1 year | 52% |
| Licence held 1–2 years | 63% |
| Licence held 3–5 years | 48% |
| Licence held 10+ years | 28% |
| Drove to get themselves to/from education | 60% |
| Drove to give someone else a ride | 46% |
| NETT Motorcycle/motor scooter | 56% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.17 Key demographic differences among those who considered not driving after taking drugs and/or medication**

| I considered not driving (*n* = 1,094) | 28% |
|---|---|
| NETT 16–24 years | 44% |
| NETT 45–64 years | 21% |
| NETT 65+ years | 10% |
| NETT Pacific | 47% |
| NETT Māori | 42% |
| NETT Asian | 41% |
| Live with parents | 40% |
| NETT Single | 21% |
| Couple – no children/children have left home | 21% |
| NETT Student | 40% |
| Retired | 14% |
| Learner licence | 47% |
| Restricted licence | 41% |
| Full licence | 24% |
| Licence held less than 1 year | 50% |
| Licence held 1–2 years | 45% |
| Licence held 3–5 years | 40% |
| Licence held 10+ years | 20% |
| Drove to get themselves to/from education | 52% |
| Drove to give someone else a ride | 36% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.18 Key demographic differences among those who drove slower after taking drugs and/or medication**

| NETT Slower (*n* = 1,094) | 20% |
|---|---|
| NETT 16–24 years | 30% |
| NETT 45–64 years | 15% |
| NETT 65+ years | 9% |
| NETT Pacific | 39% |
| NETT Māori | 27% |
| Retired | 7% |
| Learner licence | 35% |
| Restricted licence | 29% |
| Licence held 1–2 years | 37% |
| Licence held 10+ years | 15% |
| Drove for work as part of their job | 28% |
| Drove to give someone else a ride | 27% |
| NETT Motorcycle/motor scooter | 39% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.19 Key demographic differences among those who drove the same speed as usual after taking drugs and/or medication**

| Same speed as usual (*n* = 1,094) | 77% |
|---|---|
| NETT 65+ years | 89% |
| NETT 45–64 years | 84% |
| NETT 16–24 years | 68% |
| NETT European | 81% |
| NETT Māori | 67% |
| NETT Asian | 66% |
| NETT Pacific | 55% |
| Couple – no children/children have left home | 84% |
| Retired | 91% |
| Licence held 10+ years | 83% |
| Licence held 6–9 years | 68% |
| Licence held 1–2 years | 58% |
| To give someone else a ride | 70% |
| Drove for work as part of their job | 67% |
| NETT Motorcycle/motor scooter | 58% |
| NETT Faster | 3% |
| NETT Māori | 6% |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

**Table A.20 Key demographic differences – Perceived ability to react to changing traffic situations after taking drugs and/or medication**

| Ability to react to changing traffic situations (*n* = 1,094) | |
|---|---|
| **NETT Slower** | **16%** |
| NETT South Island | **12%** |
| NETT Asian | **29%** |
| NETT Not working | **10%** |
| Drove to get themselves to/from education | **28%** |
| **Same speed as usual** | **79%** |
| NETT 65+ years | **87%** |
| NETT 45–64 years | **86%** |
| NETT 16–24 years | **68%** |
| NETT Māori | **72%** |
| NETT Pacific | **61%** |
| Couple – no children/children have left home | **86%** |
| Learner licence | **65%** |
| Licence held 10+ years | **85%** |
| Licence held 3–5 years | **70%** |
| Licence held 1–2 years | **62%** |
| Drove for work as part of their job | **71%** |
| Drove to get themselves to/from education | **67%** |
| NETT Motorcycle/motor scooter | **66%** |
| **NETT Faster** | **5%** |
| NETT 16–24 years | **10%** |
| NETT 45–64 years | **1%** |
| NETT Pacific | **14%** |
| Learner licence | **12%** |
| Restricted licence | **9%** |
| Licence held 1–2 years | **14%** |
| Licence held 3–5 years | **10%** |
| NETT Motorcycle/motor scooter | **14%** |

**Note:** Only results that are significantly different from the total sample of drugged and/or medicated drivers are shown.

# Appendix B: Literature review

## B.1 Overview and purpose

In order to better understand the current level of risk and the success of a road-testing regime, the prevalence of drugged and/or medicated driving in New Zealand needs to be measured in a systematic and consistent way to be able to report on changes. Ipsos reviewed 80 studies of drug use and drugged driving to identify common methodologies and sampling approaches in order to validate the proposed approach for this study.

Drug testing regimes have been successful in a number of jurisdictions abroad in curbing drugged driving related collisions and injuries. Of the sources reviewed, 33 included self-reported data, 12 included evaluations of drug testing regimes, and 18 compared drug testing results. Jurisdictions referenced most frequently included the United States (18), New Zealand (17), Australia (12) and Canada (10).

## B.2 Themes and demographic subgroups to explore within questionnaire to assist with analysis

In addition, during the methodological review, Ipsos identified some common themes to take into consideration when evaluating the results of the prevalence survey.

### B.2.1 Demographic and driving event differences in likelihood of driving drugged

Older adults may be more susceptible to the effects of alcohol and drugs (Choi et al., 2016) and to have higher fatal injury risks from motor vehicle crashes. This could have an impact on both self-reported effects and experiences of impairment. Age also appears to have an impact on chosen substances – younger drivers have been found to self-report higher cannabis use than alcohol, unless on a licence that requires supervision (Cook et al., 2017). If possible, age should be considered in reviewing triangulation data and results by drug used in order to stratify by age where comparisons are possible.

Occupation or reason for driving will also have an impact on prevalence of drugged driving. Research into the use of drugs as a means to stay awake when driving has found that in industries with extended driving periods, such as trucking, stimulants are frequently detected in deceased drivers (Poulsen et al., 2014). There is also an increased risk to drivers who use stimulants in combination with other drugs, compared with those who use opioids or sedatives. This, combined with lower self-reporting or awareness of amphetamine use (National Highway Traffic Safety Administration [NHTSA], 2007), might make it more difficult to identify occupational-associated risk.

The passengers in the vehicle will also have an impact on impaired driving choices. A review of several studies by Ditter et al. (2005) found a self-reported increase in passenger alcohol consumption when a designated driver is available. Exploration into how applicable this is to drugged driving may help to shed a light on potential issues with a harm reduction strategy.

### B.2.2 Frequency of use, combining substances and collision frequency

Self-reported dependency issues, with both alcohol and drugs, have been linked to driving under the influence (Cook et al., 2017). Some research into alcohol-impaired driving shows binge use is more strongly associated with impaired driving than heavy drinking (Flowers et al., 2008). Regular cannabis smokers were not deterred by harm reduction campaigns and believed they could compensate for cannabis performance impairments (Hartman & Huestis, 2013). Further research into whether these findings are applicable to a

drugged driving context, and if regularity of drug taking influences decision-making when impaired, is needed.

Malhotra et al. (2017) found associations between self-reported drink driving and self-reported drugged driving, noting that respondents who reported drink driving were 3.26 times more likely to report drugged driving than those reporting no drink driving. Similarly, Elvik (2013) found that use of drugs while driving tends to have a larger effect on the risk of fatal and serious injury accidents than on the risk of less serious accidents (usually property-damage-only accidents). However, the estimates of risk vary considerably by drug taken. However, examination of substances found in deceased drivers has proven difficult to relate to impairment (Poulsen et al., 2012; Robertson et al., 2017). Many drivers killed in road traffic accidents had several substances in their systems at the time of death, creating difficulty in determining whether or not certain drugs contributed to impairment. When using triangulation data for verification, a comparison may consider the available evidence and tested substances within this multi-use context.

### B.2.3 Legal vs illegal drugs

Malhotra et al. (2017) found that respondents showed greater acceptance towards driving under the influence of legal drugs (43.5%) such as anti-depressants, compared to illegal drugs (10.3%). However, the crash risk may be nearly the same (Woratanarat et al., 2009). Hels et al. (2013) found that for all psychoactive substances analysed, the estimated risk of serious injury was higher for young drivers, lower for adult drivers and even lower for older drivers.

### B.2.4 Drugs and ethnicity

Peters et al. (2015) found that different ethnicities within the United States had varying levels of accuracy with self-reported drug use with different substances. It is important to consider several factors that lead to lower rates of accuracy in self-reported drug use by ethnicity, such as profiling; likelihood of being stopped, detained and arrested; and incarceration rates.

### B.2.5 Drugs and gender

Drug use varies by gender, with males more likely to test positive for illegal substances, including cocaine, marijuana and amphetamines (Domingo-Salvany, 2017; NHSTA, 2007; Robertson et al., 2017; Traffic Injury Research Foundation, n.d.). Comparatively, females are more likely to test positive for anti-depressants. Webster et al. (2020) found that female impaired drivers are more likely to report suffering from psychiatric disorders, such as anxiety and bipolar disorder; however, they are less likely to re-offend than males.

### B.2.6 Attitudes towards drugged driving

Malhotra et al. (2017) explored the reasons indicated by respondents for choosing not to drive after substance use. This included ability to drive negatively affected, being worried about the safety of others and being worried about getting caught by police. Respondents felt they were more likely to be caught speeding, drink driving or failing to stop at a red light than to be caught drugged driving.

### B.2.7 Discussion of the deterrence of punishment vs bodily injury

There was some disagreement about the effectiveness of different deterrence strategies for drugged driving. Some found punishment-based deterrents effective, such as exposure to roadside testing that can result in criminal charges (Davey et al., 2014; Freeman & Watson, 2009). Others found that injury-based consequences and the risk of a serious crash were a higher concern than losing one's licence or being arrested (Beck et al., 2009). Freeman and Watson (2009) noted a shift in the influence of non-legal sanctions on the likelihood of committing a crime, in that factors such as peer and social sanctions and moral attachment to the norm may affect criminal behaviour. Watling et al. (2010) noted that low levels of

awareness around drugged driving legislation and testing methods may contribute to negating the efficacy of deterrence and perception of the severity of punishments. Freeman and Watson (2009) found that respondents' self-reported 'driving under the influence' (DUI) contrasted with their self-reported perceptions of the strength of various deterrents. While legal deterrents were reported as strong, a considerable proportion of the sample still admitted to DUI at least once within the 6-month period of the study.

This suggests that increasing enforcement activity and punishment as a deterrent may not lower the prevalence of drugged driving incidents on its own unless awareness is raised. For instance, Beck et al. (2009) found that an increase in fatalities impacted perception of the leniency of police measures among the public. Understanding the exposure and awareness of legislation around impaired driving, the consequences and exposure to roadside testing will help to evaluate these strategies.

## B.3 Methodologies for identifying the prevalence of drugged driving among the public

The most common approaches to measuring prevalence of drugged driving and drug use among drivers can be grouped into three categories:

- Intercept testing (roadside)
- Self-report surveys (respondent led)
- Self-report surveys (interviewer led)

The advantages and disadvantages of each approach are described below.

### B.3.1 Intercept testing

**Advantages**

- Ability to conduct biological tests to complement survey questions
- Observation of impairment
- Randomised sample with actual behaviour measure

**Disadvantages**

- Self-selection and social desirability bias due to voluntary nature of testing
- Social desirability related to interviewer presence
- Testing only able to cover a subset of possible impairing substances at certain concentration thresholds
- Cost, timing and resource
- Higher respondent burden

**Examples**

Woratanarat et al. (2009) explored the relationship between self-reported drug use and substances detected through oral fluid samples. Participants were drivers involved in road traffic incidents resulting in hospitalisation. Willing cases were interviewed by nurses using a standard questionnaire, and variables included psychoactive drug use during the previous month. Illicit drugs detected in urine samples of cases included amphetamine and cannabis. However, there are limitations with the Woratanarat et al. (2009) study. The number of participants who had a psychoactive drug present in their urine sample was small ($n$ = 158), and the study was conducted among drivers in Thailand, which was not one of the most common jurisdictions referenced most frequently in the literature reviews.

### B.3.2 Self-report surveys (respondent led)

**Advantages**

- Less social desirability bias than interviewer-led questionnaires
- Lower respondent burden – can answer at their convenience

**Disadvantages**

- Loss of triangulation against other factors
- Relies on presumption of truthfulness of respondents
- Ability for follow-up questions is minimal

**Examples**

Pomm (2020) examined the effectiveness of different survey methods in helping to provide accurate self-report levels of drug and alcohol use and found that admission of any substance use (alcohol and drugs) was highest through anonymous computer surveys. However, rates of recent illicit drug use were highest on confidential computerised surveys.

Welp et al. (2003) conducted similar research comparing self-reported drug use against detected drug behaviour. Participants were aged between 18 and 30 and were selected from intercepts and respondent-driven sampling. Eligibility criteria required participants to be regular drug users (using at least 3 days a week for at least 2 months prior to the survey). Important to note is that this may have increased the accuracy of self-reported results. Participants were asked to report their average drug intake over a 2-month period. Following this, they were surveyed with a standard questionnaire and had a hair sample analysed for illicit drugs such as cocaine, heroin and methadone. The study found good agreement between the reported amount of drug intake and the concentration of drugs found in hair.

### B.3.3 Self-report surveys (interviewer led)

**Advantages**

- Representation of population
- Ability to ask directed follow-up questions

**Disadvantages**

- Harder to reach a subset of drivers
- Declining home phone usage among younger cohorts (if done by phone)
- Cost

**Examples**

Surveys could be conducted by telephone or in person. The telephone interviews were used to allow for random digit dialling to reach a probability sample.

Some researchers suggested that face-to-face interviews may allow for relationship building with the researcher, making participants feel more comfortable as they mirror in-home survey methods (Choi et al., 2016), while others identified a potential source of bias with an interviewer-led questionnaire and a lower degree of accuracy compared to biological test results (Johnson et al., 2012).

## B.4 Discussion of self-reported drug use and drugged driving

A number of limitations and risk mitigation strategies were highlighted for studies using self-reported drug use and drugged driving in their prevalence estimates.

### B.4.1 Accuracy of self-reporting

A number of studies we reviewed compared self-reported drug use against biological test results to gain an understanding of accuracy. Agreement between self-report and biological tests varied across studies. Recruitment criteria, legislation and socio-demographic factors all played a role in influencing results.

- **Peters et al. (2015)** compared self-report and urinalysis among 15,528 inmates in the United States. They found moderate agreement between self-reported drug use and drug test results. This varied by drug type.
  - **More accurate:** Age, cannabis, methamphetamine, ethnic majority, those with no prior arrests
  - **Less accurate:** African Americans
- **Lacey et al. (2007)** reported the results of the 2007 National Roadside Survey of Alcohol and Drug Use by Drivers in the United States, which showed some variation by type of drug, suggested to be a combined reluctance to disclose on site and perhaps a lack of awareness about products containing these substances (ie, diet pills containing amphetamines). Amphetamine had the lowest correspondence, with approximately 72% of night-time drivers indicating they had 'never' used the substance, despite positive results following drug analysis.
  - **More accurate:** Anti-depressants, cough suppressants, painkillers
  - **Less accurate:** Barbiturates, amphetamines

Other studies that included a comparison between self-reported and biological tests found similar results in accuracy of reported behaviour.

- **Welp et al. (2003)** assessed the dose–effect relationship between self-reported drug use and the concentration of drugs in hair follicles. There was high agreement between self-report and biological tests – all hair samples contained one or more drugs. The high agreement may be due to eligibility criteria requiring participants to be active, regular drug users.
- **Sousa et al. (2013)** compared the prevalence of drink driving in police statistics to the prevalence of drink driving in self-reported questionnaires. Self-reported data revealed a higher prevalence of drink driving than police statistics alone. However, combining self-report data with police statistics allowed for a more accurate representation of drink driving. A high percentage of drivers who reported recent alcohol consumption refused breathalyser testing by police.
  - **More accurate:** Combined police statistics and self-report
  - **Less accurate:** Police statistics alone (due to loophole in the law that allows drivers to refuse a breath test if they believe it will be self-incriminating)

### B.4.2 Strategies for mitigating self-reported limitations

Across the studies reviewed, a number of common limitations were highlighted by researchers using self-report questionnaires to measure drug use and/or drugged driving.

#### B.4.2.1 Social desirability bias and under-reporting

**Limitation:** Social desirability bias

**Risk mitigation strategies**

- Anonymity of results through self-completed online surveys
- Clarity that there are no repercussions associated with survey results
- Comparison with previous studies of accuracy by drug type in other jurisdictions/studies and triangulation with crash data

**How this has been addressed**

Self-reported data works on the assumption that respondents are truthful, making it susceptible to bias (Beck et al., 2009; Choi et al., 2016; Cook et al., 2017; Gjerde et al., 2019). Social desirability bias may influence how respondents report their behaviour, particularly around illegal substance use, in order to be viewed more favourably by others.

Gjerde et al. (2019) discovered that identified infrequent drug users and users of certain drugs such as MDMA and cocaine are less likely to report use than habitual or experienced users. They found that half of those who tested positive for cannabis reported their use during the past 48 hours. Self-report accuracy lowered with other drugs, with one in six who tested positive for cocaine reporting use, and one-third of those who tested positive for MDMA reporting use.

Addressing the issue of social desirability bias, the National Roadside Survey of Alcohol and Drug Use by Drivers (NHTSA, 2007) combined the use of self-report data with blood and oral fluid tests. Drivers were asked to complete a questionnaire detailing past drug use and perceived effects of drugs on driving ability and give an oral fluid sample.

#### B.4.2.2 Recall bias

**Limitation:** Poses limitations to self-reported data when errors occur due to respondents' inaccurately remembering previous experiences.

**Risk mitigation strategies**

- Ask drug use questions prior to questions about driving under the influence to provide context for participants' responses
- Use a smaller window or focus on most recent drug use incident
- Ask about drug and medication use generally, then a typical day/drive to aid in accurate recall

**How this has been addressed**

Seeking to mitigate the limitations of recall bias around past drug use, Malhotra et al. (2017) re-phrased the questions asked of respondents to encourage them to think about drug and medication use generally, and then focus on a typical day to aid in accurate recall. Other studies into the incidences of self-reported drugged driving have also acknowledged that under-reporting due to recall bias was of concern (Choi et al. 2016; Cook et al., 2017).

#### B.4.2.3 Ability to interpret impairment

**Limitation:** Ability to interpret impairment

**Risk mitigation strategies**

- Time- and behaviour-related questions, ensuring the result is measurable to the respondent

**How this has been addressed**

In their research, Freeman et al. (2016) noted that the ability to assess impairment based on blood alcohol limit and the 'legal' time is hard to determine for the average person. Cook et al. (2017) also noted that it is

currently difficult for police to determine whether drivers are operating a vehicle under the influence of cannabis, due to the lack of regulations around drugged driving testing.

#### B.4.2.4 Identifying correlation vs causation of drugged driving decreases linked to policy changes

**Limitation:** Correlation vs causation

**Risk mitigation strategies**

- Understand limitations of the study and continue to review for context changes in environment
- Include as many questions around other factors contributing to collisions as possible

**How this has been addressed**

In their research, Beck et al. (2009) acknowledged a number of factors that limited their investigation. Identifying and understanding limitations aids in mitigating the risks associated with correlation vs causation. The authors note that cause–effect inferences cannot be made in this instance, as the data are cross-sectional. Research conducted by Cook et al. (2017) reached the same conclusion. Beck et al. (2009) noted that several factors contribute to alcohol-impaired crashes, such as personal history of the driver and environmental factors such as type of roads and number of alcohol outlets.

#### B.4.2.5 Uncertainty around consistency of exposure to deterrence communications

**Limitation:** Inconsistent exposure to communications/messaging

**Risk mitigation strategies**

- Identify existing campaigns in New Zealand regions around road safety
- Ask questions about exposure to existing safer driver campaigns

**How this has been addressed**

Research conducted by Beck et al. (2009) found that uncertainty around respondent exposure to advertising aimed at deterring drugged driving may lead to inaccurate self-report and skew results.

## B.5 Sampling strategies used for identifying the prevalence of drugged driving among the public

The different approaches to measuring prevalence of drugged driving and drug use among drivers can be grouped into three categories:

- **Population probability sample**
  Beck et al. (2009) applied a randomised sampling method to ensure all members of the population had an equal chance of being selected for participation in the study.
- **Case-control structure**
  The case-control structure approach employs the data of identified drug drivers to create a driver profile that is used to determine whether others of the same demographic are driving under the influence. In their research, Freeman et al. (2016) found six predictors of drink driving behaviour: males; younger drivers; lower perceptions of the severity of sanctions; and less concern about the harms of the offence (social, internal, and physical). Specifically, age and gender were significant predictors of drink driving.
- **Roadside intercepts**
  Vehicles are recruited at the roadside and directed into dedicated survey areas. To ensure recruitment is unbiased, every third car is directed to participate in the study (Kelley-Baker et al., 2017). The authors

note this method is typical of roadside intercepts, as it 'results in a random selection of eligible vehicles that is not biased toward any particular class of driver' (Kelley-Baker et al., 2017, p. 32).

## B.6 Recommendations for measuring prevalence of drugged and/or medicated driving in New Zealand

To measure prevalence, we recommend maintaining the current population sample approach to maximise reach to New Zealanders.

For future development/measurement, we recommend:

- using the case-control method within the proposed sampling structure – quotas set for population characteristics for core sample with a boost of drug users from other sources
- adapting the core questions from self-reported data surveys following traffic incidents (if possible) to assist with alignment.

Potential further research could include:

- measuring actual levels of impairment to compare with survey data (eg, intercept alongside self-report)
- efficacy of testing
- underlying causes of patterns of behaviour (including understanding other transport mode options available)
- perceived impact of illegal drugs vs prescribed medication in New Zealand
- further analysis of the subgroup who drive after taking anti-depressants, including how they differ from other drugged and/or medicated drivers.

# Appendix C: Triangulation of research data

The purpose of this triangulation of data is to provide comparisons and therefore confidence in the results for the prevalence of drugged and/or medicated driving in New Zealand. Ipsos has reviewed what is publicly available in New Zealand regarding the incidence of drug and/or medication use and the prevalence of drugged and/or medicated driving in New Zealand. These studies are not directly comparable to the 2021 survey due to survey design, questionnaire differences and interpretation differences resulting in distinctly different sets of data being collected. However, based on the findings from the studies below, the most prevalent drugs were overall representative of drug use in New Zealand, and the incidences of other drug types did not differ significantly enough from our results to indicate that the sample was not representative of drugged driving in New Zealand (apart from methamphetamine). Methamphetamine use was lower than expected and may indicate that the 2021 results were not representative of those who had driven within 3 hours of taking methamphetamine in the last 12 months.

## C.1 *The prevalence and impairment effects of drugged driving in New Zealand* (Starkey & Charlton, 2017)

### C.1.1 Overview and purpose

The purpose of this University of Waikato study was to establish a quantitative picture of the type and extent of drugged and/or medicated driving in New Zealand and investigate the level of driving impairment produced by the more commonly used drugs and/or medication, both legal and illegal.

### C.1.2 Methodology

This research was a statistically representative stratified telephone survey of New Zealand drivers to provide accurate and up-to-date information about the incidence of legal and illegal drugs consumed in New Zealand prior to driving. Based on information collected in the survey, the University of Waikato conducted a follow-up survey of drivers who had indicated they drove after drug use to determine the timing, type and extent of driving, presence of other vehicle occupants, and whether any self-selected countermeasures were used. A separate online survey was conducted to understand drivers' attitudes and perceptions of drugged driving, including the use of prescription drugs. Phase 1 of the telephone survey focused on the incidence of drugged driving in New Zealand. A stratified telephone survey ($n$ = 2,000) and internet survey ($n$ = 434) were conducted to explore the extent of drugged driving. A representative mix of the age and gender of licenced drivers from across New Zealand completed the telephone survey.

The internet survey was conducted primarily to provide insights into New Zealand drivers' attitudes and perceptions towards drugged driving online. Questions regarding the incidence of drugged driving were also included to supplement the data for the telephone survey and to provide context for the information gathered on the participants' attitudes and perceptions towards drugged driving.

For the phase 2 survey, 622 participants who had agreed to be contacted had driven within 3 hours of taking a drug (or alcohol). Of these 622 participants, 434 completed the survey.

### C.1.3 The results and how they compare to this Ipsos research

Although the methodologies between the two surveys are different, the top five most commonly taken drugs within three hours prior to driving are consistent between both studies. Amongst those surveyed, the top five most commonly taken drugs/medications (other than alcohol, within 3 hours prior to driving) were strong painkillers, anti-depressants, anti-nausea medication, cannabis and anti-anxiety drugs (Table C.1).

**Table C.1 Drugs/medications most commonly taken within 3 hours prior to driving – University of Waikato 2017 vs Ipsos 2021**

| | University of Waikato 2017 (telephone) | Ipsos 2021 (internet) |
|---|---|---|
| | *Representative sample – NZ population* | *Representative sample – NZ population* |
| *Base, n =* | *2,000* | *4,688* |
| Anti-depressants | 6.05% | 9.89% |
| Strong painkillers | 9.81% | 9.01% |
| Cannabis | 2.55% | 4.77% |
| Anti-nausea medication | 3.50% | 4.19% |
| Anti-anxiety drugs | 2.86% | 4.06% |

While the results are not directly comparable (due to the differences in methodology, sample framework, questionnaire design), the results of the stratified telephone survey regarding the drugs/medications most commonly taken within 3 hours prior to driving are not dissimilar to the 2021 findings.

## C.2 *Public attitudes to road safety* (Waka Kotahi, 2020)

### C.2.1 Overview and purpose

Waka Kotahi has a key role in delivering Road to Zero, New Zealand's road safety strategy. The strategy has a Vision Zero approach with the goal that no one in New Zealand is killed or seriously injured in road crashes. The *Public Attitudes to Road Safety* report is part of the commitment to delivering Road to Zero. The report shows public attitudes to road safety issues and behaviours.

### C.2.2 Methodology

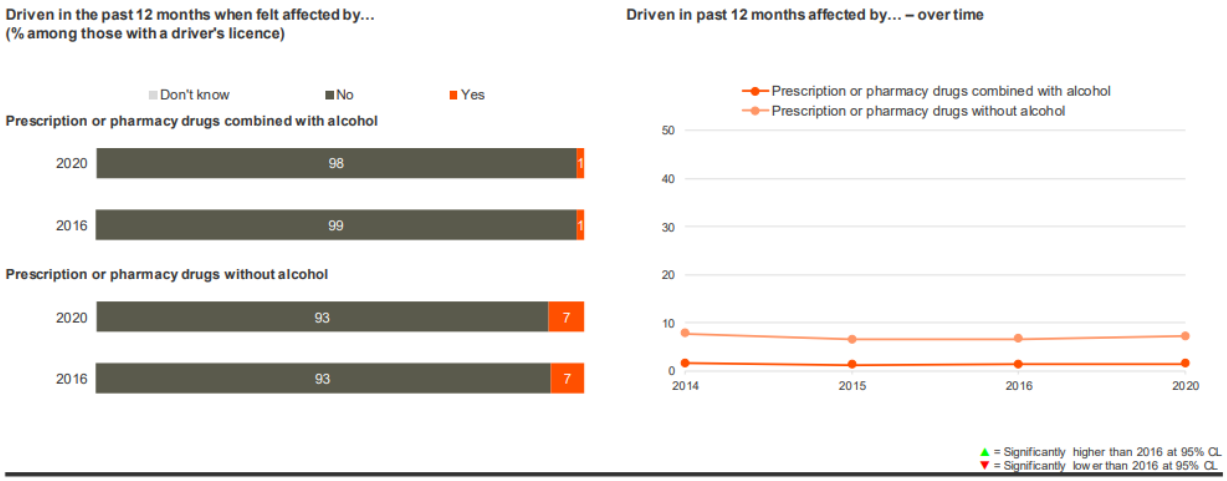
This research was conducted amongst New Zealanders aged 16 and over via computer-assisted telephone interviewing. The survey was divided into two streams, with 1,665 interviews being conducted for each stream (3,330 in total).

The questions focused on specific road safety topics, including speed; car safety; driver fatigue; impairment and distraction; attitudes to enforcement; and Road to Zero/Vision Zero. The survey also included some questions related to drug-impaired driving and enforcement.

### C.2.3 The results and how they compare to this Ipsos research

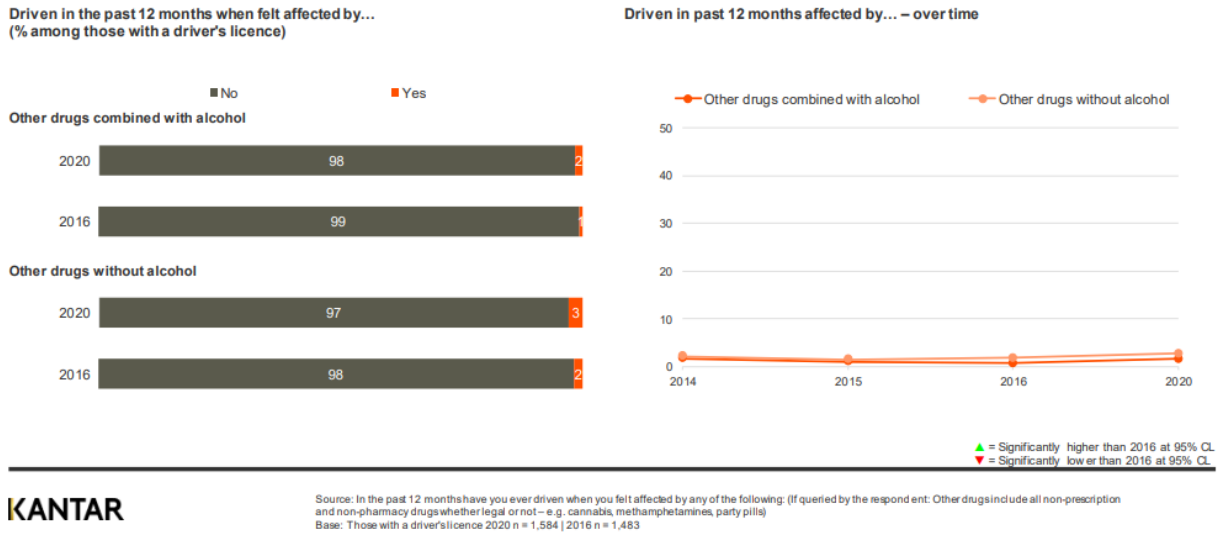
Only a minority (7%) claimed to have driven while affected by prescription/pharmacy drugs without alcohol, whereas 1% stated they had driven while affected by prescription/pharmacy drugs with alcohol (Figure C.1).

**Figure C.1 Proportion of respondents who had driven in past 12 months while feeling affected by prescription/pharmacy drugs (reprinted from Waka Kotahi, 2020, p. 73)**




Very few (3%) claimed to have driven while affected by other drugs without alcohol in the past 12 months, whereas 2% stated they had driven while affected by other drugs with alcohol (Figure C.2).[3]

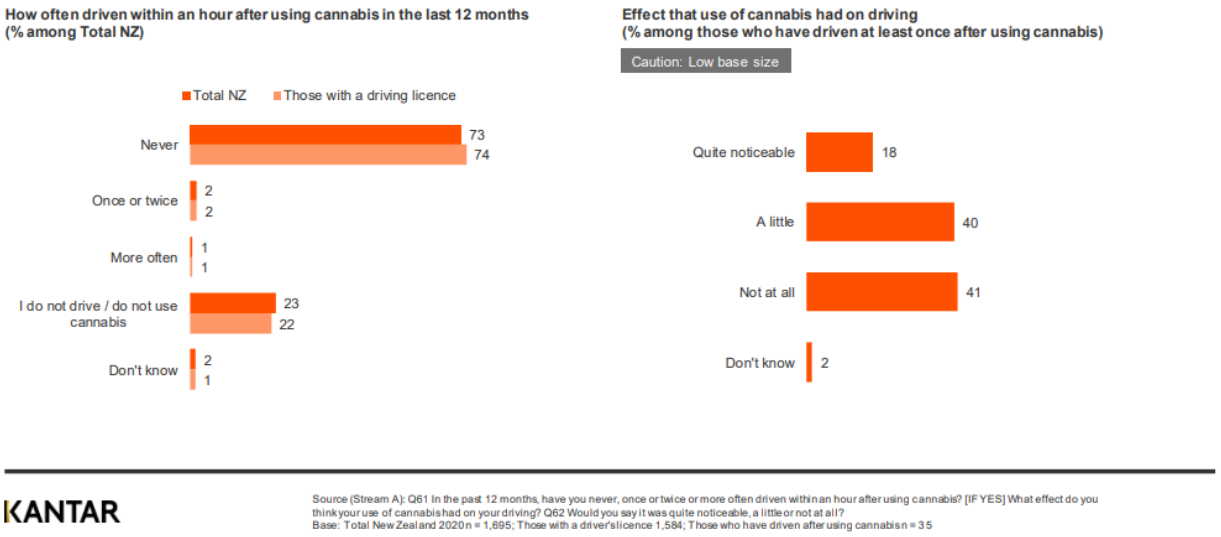
**Figure C.2 Proportion of respondents who had driven in past 12 months while feeling affected by other drugs (reprinted from Waka Kotahi, 2020, p. 74)**




A quarter (26%) of those with a driver licence claimed to have driven within an hour of using cannabis in the last 12 months (Figure C.3).

[3] Other drugs include all non-prescription and non-pharmacy drugs whether legal or not (eg, cannabis, methamphetamines, party pills).

**Figure C.3 Proportion of respondents who had driven within an hour after using cannabis in the last 12 months (reprinted from Waka Kotahi, 2020, p. 75)**




Our findings cannot be directly compared to the *Public Attitudes to Road Safety* research due to the use of different interpretations of 'affect' of each drug/medication and different timeframes of when the drug/medication was taken (1 hr vs 3 hr). However, we can make a reasonable assumption that all indicated results in our survey would be higher than the 7% of respondents who claim have driven while affected by prescription or pharmacy drugs without alcohol.

## C.3 The New Zealand Health Survey (Ministry of Health, n.d.)

### C.3.1 Overview and purpose

The New Zealand Health Survey (NZHS) provides information about the health and well-being of New Zealanders and is used to monitor population health and provide supporting evidence for health policy and strategy development in New Zealand.

### C.3.2 Methodology

The survey is conducted amongst residents of New Zealand aged 15 and over. Interviews are conducted in respondents' homes, and the interviewer enters responses directly into a laptop using computer-assisted personal interviewing (CAPI) software.

### C.3.3 The results and how they compare to this Ipsos research

The NZHS contains a question that is asked to understand what drugs have been taken in the last 12 months for recreational or non-medical purposes. A small proportion (15%) claimed to have taken cannabis, and 1% claimed to have taken amphetamines in the past 12 months in 2019–2020 (Table C.2).

**Table C.2 Prevalence of illicit drug use reported in the NZHS, 2011–2020**

| Type of drug | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|---|---|---|---|
| Cannabis | 8% | 9.4% | 10.5% | 9.9% | 11.3% | 11.6% | 11.9% | 15% | 14.9% |
| Amphetamine | 0.7% | 0.7% | 0.9% | 0.7% | 0.9% | 0.8% | 0.7% | 1% | 1.1% |

Although we cannot directly compare the results of the two surveys due to differences in methodology, questionnaire purpose and contents, research objectives and definition of the drugs taken (recreational or non-medical purposes), the findings for cannabis and amphetamines use in the last 12 months are not too dissimilar when compared with the University of Waikato survey (Table C.3).

**Table C.3 Drugs taken in the last 12 months – NZHS 2016/17 vs University of Waikato 2017 vs Ipsos 2021**

| Type of drug | NZHS 2016/17 (CAPI) | University of Waikato 2017 (telephone) | NZHS 2019/20 (CAPI) | Ipsos 2021 (internet) |
|---|---|---|---|---|
| | Representative sample – NZ population | Representative sample – NZ population | Representative sample – NZ population | Representative sample – NZ population |
| *Base, n =* | *unknown* | *1,885* | *unknown* | *4,688* |
| Cannabis | 12% | 7% | 15% | 12% |
| Amphetamine | 0.08% | 0.4% | 1% | 3% |

## C.4 Comparison of most commonly used drugs between New Zealand and Australia

According to the Australian 2019 National Drug Strategy Household Survey (NDSHS), an estimated 9 million (43%) people aged 14 and over in Australia had illicitly used a drug at some point in their lifetime (including the non-medical use of pharmaceuticals), and an estimated 3.4 million (16.4%) had used an illicit drug in the previous 12 months. This was similar to proportions in 2016 (43% and 15.6%, respectively) but has increased since 2007 (38% and 13.4%, respectively).

In 2019, the most common illicit drug used in the previous 12 months was cannabis (11.6%), followed by cocaine (4.2%) and ecstasy (3.0%).

A number of changes were reported in the recent use of illicit drugs between 2016 and 2019, including increases in the use of:

- cannabis (from 10.4% to 11.6%)
- cocaine (from 2.5% to 4.2%)
- ecstasy (from 2.2% to 3.0%)
- hallucinogens (from 1.0 % to 1.6%)
- inhalants (from 1.0% to 1.4%)
- ketamine (from 0.4% to 0.9%) (Australian Institute of Health and Welfare, 2021).[4]

Although Ipsos cannot directly compare our results to the NDSHS findings, as they are very different surveys, there are similar trends over time in both surveys, such as an increase in cannabis, cocaine and ecstasy use in the last 12 months (Table C.4).

[4] https://www.aihw.gov.au/reports/australias-health/illicit-drug-use

**Table C.4 Drugs and/or medication most commonly taken in last 12 months – New Zealand vs Australia**

| | New Zealand | | Australia | |
|---|---|---|---|---|
| | UOW 2017 (telephone) | Ipsos 2021 (internet) | NDSHS 2016 | NDSHS 2019 |
| | *Representative sample – NZ population* | *Representative sample – NZ population* | *TBC* | *TBC* |
| *Base, n =* | *2,000* | *4,688* | *TBC* | *TBC* |
| Cannabis | 6.6% | 11.7% | 10.4% | 11.6% |
| Cocaine | 0.4% | 1.1% | 2.5% | 4.2% |
| Ecstasy | 1.1% | 3.7% | 2.2% | 3.0% |
| Ketamine | n/a | 2.5%* | 0.4% | 0.9% |

***** The Ipsos 2021 (internet) study asked this as 'Hallucinogens' (including ketamine).
**Note:** Inhalants were not asked in the Ipsos 2021 survey, so cannot be compared with the NDSHS.

# C.5 Global drug survey 2019

## C.5.1 Overview and purpose

The Global Drug Survey (GDS) is a worldwide questionnaire that asks people about their alcohol and drug use habits. The survey covers both the positive and negative aspects of drug use and detects any new global drug trends.

## C.5.2 Methodology

The GDS is an opt-in survey conducted online, and anyone can participate at any time. New Zealand is one of the countries surveyed in this global research. However, as it is an opt-in survey, it is not representative of the New Zealand population and cannot be directly compared to the Ipsos research on the prevalence of drugged and/or medicated driving in New Zealand. The questions asked in the GDS are also very different to those in the Ipsos survey, so caution should be used when comparing any results.

## C.5.3 The results and how they compare to this Ipsos research

Of those GDS respondents who indicate they live in New Zealand, 24.7% claim to have used cannabis mixed with tobacco, whereas the 2021 Ipsos survey indicates that 11.7% have used cannabis in the last 12 months. In terms of opioid use by country, 26.9% of New Zealand respondents claim to have used opioids. Although Ipsos did not ask specifically about opioids in the 2021 survey, 0.8% of New Zealand drivers claim to have used heroin/opiates (opium, homebake) in the last 12 months.

# C.6 Wastewater drug testing in New Zealand (New Zealand Police and the Institute of Environmental Science and Research (ESR))

## C.6.1 Overview and purpose

Wastewater testing is used by the New Zealand Police and other agencies, such as the Ministry of Health and New Zealand Customs, to understand drug consumption in communities. The programme tests public

sewage schemes for traces of restricted drugs to provide insight into patterns of use. ESR's wastewater testing covers 39 sites around New Zealand, capturing 80% of the population.

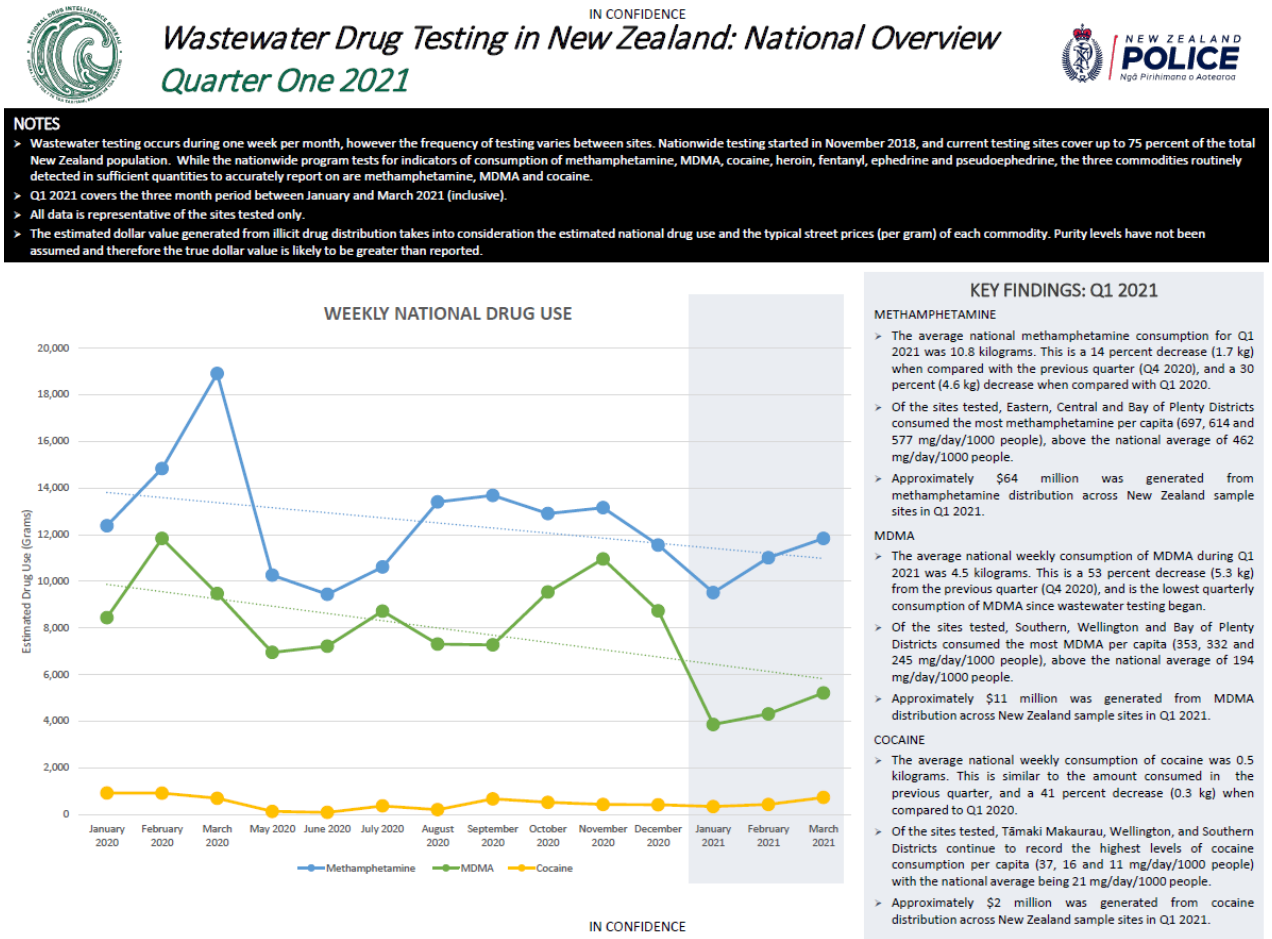
## C.6.2 Methodology

Wastewater testing occurs during one week per month; however, the frequency of testing varies between sites. Nationwide testing started in November 2018, and current testing sites cover up to 75% of the total New Zealand population. Using a robust sampling protocol and a modified and validated extraction method, ESR tests for indicators of consumption of methamphetamine, MDMA, cocaine, heroin, fentanyl, ephedrine and pseudoephedrine.[5]

## C.6.3 The results and how they compare to this Ipsos research

According to the Q1 2021 results, the drugs routinely detected in public sewage (in sufficient quantities to accurately report on) are methamphetamine, MDMA and cocaine (Figure C.4).

**Figure C.4 Wastewater drug testing results, Q1 2021 (reprinted from New Zealand Police, 2021, p. 1)**




[5] Wastewater testing cannot pick up traces of synthetic drugs and prescription medication, nor can it detect cannabis use. Q1 2021 covers the 3-month period between January and March 2021 (inclusive). All data are representative of the sites tested only.

Ipsos cannot directly compare the results of the Ipsos research with results of the wastewater drug testing programme, as they measure two very different things. However, wastewater drug testing indicates that the average national weekly consumption of cocaine is the lowest of the three drugs tested, which matches the lower levels reported for taking cocaine in the last 12 months (1%) (Table C.5). On the other hand, according to the wastewater drug testing results, the average national weekly consumption of methamphetamine is higher during Q1 2021 than the average national weekly consumption of MDMA (Figure C.4). We do not see this same gap in the Ipsos survey, which could indicate that our survey is under-representing methamphetamine/amphetamine users.

**Table C.5 Incidence of drugs and/or medication taken in the last 12 months (Ipsos 2021 survey)**

| Drug/medication taken in the last 12 months | (*n* = 4,688) |
|---|---|
| MDMA/ecstasy | 4% |
| Amphetamines | 3% |
| Cocaine | 1% |

# C.7 Justice statistics data tables (Ministry of Justice, 2021)

## C.7.1 Overview and purpose

The Ministry of Justice statistics data tables contain details on people (including children, young people and adults) going through the courts or accessing justice services from 2011/2012 to 2020/2021. Some of these results include those who went through the courts or accessed justice services due to drug offences.

## C.7.2 Methodology

The results include information on:

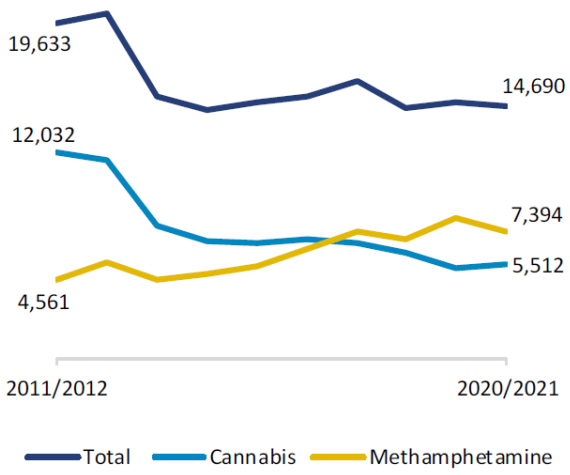
- finalised charges and people charged
- children and young people
- specific offence types (such as drug and family violence offences)
- specific justice processes (such as bail and offending on bail, and discharge without conviction)
- aspects of the Family Court (such as protection order applications)
- specific justice services (such as legal aid).

COVID-19 affected several areas of the justice system, impacting trends in the data for 2019/2020 and 2020/2021. Therefore, the reader should be cautious when drawing conclusions using the 2020/2021 statistics.

## C.7.3 The results and how they compare to this Ipsos research

In 2020/2021, there was a 2% decrease in the number of charges for drug offences (from 14,952 charges in 2019/2020 to 14,690 in 2020/2021). Since 2011/2012, the number of charges has fallen by 25% (Figure C.5). This long-term trend is mostly due to a decrease in cannabis charges, which have more than halved since 2011/2012. However, over the same period, the number of methamphetamine charges has nearly doubled, overtaking the number of cannabis offences for the first time in 2017/2018.

**Figure C.5 Ministry of Justice charges for drug offences, 2011–2021 (reprinted from Ministry of Justice, 2021, p. 5)**




These results cannot be directly compared to the Ipsos research because the Ministry of Justice reports the number of charges for drug offences while the Ipsos research reports the incidence of drugs and/or medications taken. However, what is of note is that the number of methamphetamine charges has nearly doubled since 2011/2012, indicating that survey could be under-representing methamphetamine/ amphetamine users (as also seen in the wastewater drug testing results).

# Appendix D: Quantitative questionnaire

**Part 1**

**INTRODUCTION**

Thank you for agreeing to participate in this survey, being carried out on behalf of Waka Kotahi (New Zealand Transport Agency).

During this survey, we will ask you a range of different questions about you and your transport behaviours. We are interested in how and why people behave in certain ways while driving. The results will be used to help make our Transport System safer.

Depending on your answers, this survey should take between 7 and 12 minutes. It is important that you know that your participation and responses are treated as completely confidential. The record of your survey responses does not include any identifying information about you and there is no way to identify you from your responses. All results will be grouped together for reporting purposes and shown as a proportion only.

Please note, you can stop taking the survey at any time by closing the browser.

SCREENER SECTION

**[ASK ALL]**

**First, a few questions about you to make sure we include the views of a good range of people.**

S1 **Are you…** SR

1. Male
2. Female
3. Another gender

**[ASK ALL]**

S2 **Which of these age groups do you fit into?** SR

5-year age groups, 16–70+ years

| | | Grouped age (for quotas) |
|---|---|---|
| Under 16 years | CLOSE | |
| 16 to 19 years | 1 | 16-24 years |
| 20 to 24 years | 2 | 16-24 years |
| 25 to 29 years | 3 | 25-44 years |
| 30 to 34 years | 4 | 25-44 years |
| 35 to 39 years | 5 | 25-44 years |
| 40 to 44 years | 6 | 25-44 years |
| 45 to 49 years | 7 | 45-64 years |
| 50 to 54 years | 8 | 45-64 years |
| 55 to 59 years | 9 | 45-64 years |
| 60 to 64 years | 10 | 45-64 years |
| 65 to 69 years | 11 | 65+ years |
| 70 years and over | 12 | 65+ years |

**[ASK ALL]**

S3 **Which of the following regions do you currently live in or closest to?** SR

| | | Grouped regions (for quotas) |
|---|---|---|
| 1 | Northland | Upper NI |
| 2 | Auckland City (North Shore, Waitakere, Auckland and Manukau) | Upper NI |
| 3 | Greater Auckland (excluding Auckland City) | Upper NI |
| 4 | Waikato | Central NI |
| 5 | Bay of Plenty | Central NI |
| 6 | Gisborne | Central NI |
| 7 | Hawkes Bay | Lower NI |
| 8 | Manawatu / Whanganui | Lower NI |
| 9 | Taranaki | Lower NI |
| 10 | Wellington | Lower NI |
| 11 | Nelson / Marlborough / Tasman | SI |
| 12 | West Coast | SI |
| 13 | Canterbury | SI |
| 14 | Otago | SI |
| 15 | Southland | SI |

**[ASK ALL]**

S4 **Which of the following best describes where you live?** SR

| | | |
|---|---|---|
| A city centre | 1 | Urban |
| A suburban area | 2 | Urban |
| A town | 3 | Urban |
| A rural area (within 5km of a town) | 4 | Rural |
| A rural area (more than 5km from a town) | 5 | Rural |
| Unsure | 98 | |

**[ASK ALL]**

S5 **Which ethnic group or groups do you belong to?** MR

| | | |
|---|---|---|
| NZ European | 1 | E |
| Māori | 2 | M |
| Samoan | 3 | P |
| Cook Island Māori | 4 | P |
| Tongan | 5 | P |
| Niuean | 6 | P |
| Other Pacific (specify) | 7 | P |
| Chinese | 8 | A |
| Indian | 9 | A |
| Other Asian (specify) | 10 | A |
| Other (specify) | 97 | O |
| Prefer not to say | 98 | O |

**[CHECK QUOTAS AND CLOSE IF QUOTA FILLED]**

**[ASK ALL]**

S6 **Which of the following describes your household situation?** SR

| | |
|---|---|
| Single person living alone | 1 |
| Single parent living with child / children | 2 |
| Couple – don't have any children / children have left home | 3 |
| Couple – have child / children living at home | 4 |
| Share household (i.e. adults sharing a house / flatting together) | 5 |
| Live with parents | 6 |
| Extended family household (i.e. more than two generations living together) | 7 |
| Other household arrangement (please specify) | 97 |
| Prefer not to say | 98 |

**[ASK ALL]**

S7 **Which of the following best describes your employment status?**

| | |
|---|---|
| Full-time employee | 1 |
| Part-time employee | 2 |
| Self employed | 3 |
| A student, also in paid employment | 4 |
| A student, not in paid employment | 5 |
| Not in paid work and not seeking work | 6 |
| Not in paid work but seeking work | 7 |
| Retired | 8 |

**The next questions are about driving and your views on driving**

**[ASK ALL]**

Q1 **Have you driven in the last 12 months?** SR

| | |
|---|---|
| Yes | 1 |
| No | **CLOSE SURVEY** |

**[ASK ALL]**

Q2 **What type of driving licence do you hold?** SR

| | |
|---|---|
| Learner's licence | 1 |
| Restricted licence | 2 |
| Full driving licence | 3 |
| I don't hold a current driving licence | 4 |
| Don't know | 9 |

**[ASK IF HAVE LICENCE Q2 =1-3]**

Q3 **How long have you held this licence for?** SR

| | |
|---|---|
| Less than a year | 1 |
| 1-2 years | 2 |
| 3-5 years | 3 |
| 6-9 years | 4 |
| 10 years or more | 5 |
| Don't know | 9 |

**[ASK ALL]**

Q4 **Thinking about your driving during a typical week, how many times would you say you drive (and/or ride a motorbike / motor scooter) in a typical week?** SR

***Note:*** *Count going to and from a location as two trips, e.g. to and from work counts as two trips*

| | |
|---|---|
| INSERT Number of trips each week | |
| Don't Know | 99 |

**[ASK IF TYPICALLY DRIVE AT LEAST ONCE A WEEK Q4>0]**

Q5 **And for what purposes would you usually drive in a typical week?** MR

*Please select all that apply*

| | |
|---|---|
| To get myself to / from work | 1 |
| To get myself to / from education | 2 |
| For work, as part of my job e.g. doing deliveries, taxi / Uber driver, salesperson | 3 |
| To take kids to / from school / kindergarten | 4 |
| To give someone else a ride | 5 |
| For medical / dental purposes | 6 |
| For shopping or running chores | 7 |
| To / from leisure activities | 8 |
| To visit family / friends | 9 |
| To get to some other transport (e.g. drive to catch a bus, plane or train) | 10 |
| Other, please specify | 97 |

**[ASK IF TYPICALLY DRIVE AT LEAST ONCE A WEEK Q4>0]**

Q6 **Which types of vehicle/s would you usually drive in a typical week?** MR

*Please select all that apply*

| | |
|---|---|
| Car | 1 |
| Van or ute | 2 |
| Light truck | 3 |
| Medium or heavy truck | 4 |
| Motorcycle | 5 |
| Motor scooter | 6 |
| Bus | 7 |
| Other (please specify) | 97 |

**[ASK ALL]**

Q7 **Which of the following have you done while driving in the last 12 months?** MR

*Please select all that apply* **RANDOMISE STATEMENTS**

| | |
|---|---|
| Exceeded the speed limit, even if by only a few kilometres per hour. | 1 |
| Held and use a mobile phone. | 2 |
| Driven when tired, even though you were probably too tired to drive. | 3 |
| Driven after having an argument or feeling angry. | 4 |
| Driven soon after drinking any alcohol. | 5 |
| None of these | 6 |

**[ASK ALL]**

Q8 **How likely do you think it is that a person in New Zealand will be caught by the police or a red light / speed camera for the following offences?**

| | **Codes>** | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|
| | **RANDOMISE STATEMENTS** | Very likely | Fairly likely | 50/50 | Fairly unlikely | Very unlikely |
| 1 | Exceeding the speed limit | | | | | |
| 2 | Dangerous driving | | | | | |
| 4 | Drinking and driving | | | | | |
| 5 | Not stopping at traffic lights | | | | | |
| 6 | Driving whilst affected by drugs otherthan alcohol | | | | | |

**[ASK ALL]**

Q9 **How likely do you think it is that a person in New Zealand will be stopped at a police check point for the following reasons?**

| | **Codes>** | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|
| | **RANDOMISE STATEMENTS** | Very likely | Fairly likely | 50/50 | Fairly unlikely | Very unlikely |
| 1 | To test for alcohol usage | | | | | |
| 2 | To test for drug usage | | | | | |

**[ASK ALL]**

Q10 **Some of the questions in this survey ask about items that can be perceived as sensitive in nature. We want to reassure you that your responses are confidential and will be used for research purposes only. Individual responses will be combined together with those of other respondents and reported as a group.**

**The next questions ask about any drugs or medicines (legal, illegal, prescribed or purchased over the counter) that you have taken over last 12 months.**

**In the last 12 months have you…**

| | | Yes | No | Don't know | Prefer not to answer |
|---|---|---|---|---|---|
| 1 | Taken any medication prescribed to you | 1 | 2 | 3 | 8 |
| 2 | Taken any over-the-counter medications (e.g. for coughs, colds, allergies or painkillers) | 1 | 2 | 3 | 8 |
| 3 | Taken any drugs for recreational purposes (e.g. alcohol, cannabis, party pills, prescription medicines, etc.) | 1 | 2 | 3 | 8 |

**[ASK ALL]**

Q11 **This list in this question contains different types of drugs and medicines. It includes both legal and illegal drugs as well as prescription and over the counter medications. Which of these have you taken or used in the last 12 months?**

*Remember, your answers will be strictly confidential, and your responses will not be linked back to you.*

| | **DO NOT ROTATE LIST – SHOW IN THIS ORDER** | Yes | No | Prefer not to answer |
|---|---|---|---|---|
| 1 | Alcohol (beer, wines, spirits, RTDs) | 1 | 2 | 3 |
| 2 | Amphetamines including speed, methamphetamine ('P', meth) and PMA/PMMA | 1 | 2 | 3 |
| 3 | Prescription stimulants (e.g. Ritalin, Concerta, Adderall) | 1 | 2 | 3 |
| 4 | Anti-anxiety drugs (e.g. benzodiazepines, Lorazepam, Clonazepam) | 1 | 2 | 3 |
| 5 | Anti-psychotics (e.g. Haloperidol, Quetiapine, Risperidone, Olanzapine) | 1 | 2 | 3 |
| 6 | Sedatives or sleeping pills (e.g. Valium, Diazepam, Temazepam, Quetiapine, Zopiclone) | 1 | 2 | 3 |
| 7 | Benzodiazepines (e.g. Xanax, Diazepam) sometimes called benzos, tranks or downers | 1 | 2 | 3 |
| 8 | Anti-depressants (e.g. Amitriptyline, Fluoxetine, Citalopram, Venlafaxine) | 1 | 2 | 3 |
| 9 | Anti-nausea medication (e.g. Sea legs, Cyclizine, Phenergan, Prochlorperazine) | 1 | 2 | 3 |
| 10 | Cannabis (marijuana, weed, pot, hash, hash oil, but not prescription CBD) | 1 | 2 | 3 |
| 11 | Cocaine | 1 | 2 | 3 |
| 12 | MDMA or Ecstasy (MD, E, molly, pingers) | 1 | 2 | 3 |
| 13 | Synthetic cathinones / bath salts (e.g. mephedrone, eutylone, flakka) | 1 | 2 | 3 |
| 14 | GHB / GBL (G, fantasy, liquid ecstasy) | 1 | 2 | 3 |
| 15 | Kava | 1 | 2 | 3 |
| 16 | Ketamine (Ket, Jet, Special K), NBOMe, LSD, psilocybin, mushrooms, DMT or other synthetic hallucinogens | 1 | 2 | 3 |
| 17 | Strong pain killers (including Codeine, Morphine, Methadone, Oxycodone, Pethidine, Fentanyl, Tramadol) | 1 | 2 | 3 |
| 18 | Heroin or opiates (opium, homebake) | 1 | 2 | 3 |
| 19 | Epilepsy medication (e.g. Carbamazepine, Sodium Valproate, Lamotrigine) | 1 | 2 | 3 |
| 20 | Synthetic cannabinoids (e.g. synthetic cannabis, synnies, Syn cans) | 1 | 2 | 3 |

**[ASK IF TAKEN/USED ANY DRUG/MEDICINE Q11=1 FOR ANY OPTION. SHOW ONLY RESPONSE CODES WHERE Q11=1]**

Q12 **And in the past 12 months, have you ever driven <u>within three hours of taking</u>**:

| | | Yes | No | Prefer not to answer |
|---|---|---|---|---|
| 1 | INSERT LIST FROM Q11 | 1 | 2 | 8 |

**[ASK IF DRIVEN AFTER TAKING DRUG/MEDICINE IN LAST 12 MONTHS Q12 =1 FOR ANY OPTION. SHOW ONLY RESPONSE CODES WHERE Q12=1]**

Q13 **And in the past <u>1 month</u>, have you ever driven within three hours of taking**:

| | | Yes | No | Prefer not to answer |
|---|---|---|---|---|
| 1 | INSERT LIST FROM Q12 | 1 | 2 | 8 |

**[ASK IF TAKEN/USED ANY DRUG/MEDICINE Q11 =1 FOR ANY OPTION]**

Q14 **Thinking about the drugs and medicine you have taken over the past year, in general, how often would you say you:**

| | **ROTATE** | Always | Mostly | Sometimes | Never | Don't know |
|---|---|---|---|---|---|---|
| 1 | Change when you drive as a result of taking these drugs or medicines? | 1 | 2 | 3 | 4 | 9 |
| 2 | Change when you take these drugs or medicines because you have to drive? | 1 | 2 | 3 | 4 | 9 |

**[ASK IF Q14 =1-3 FOR ANY OPTION]**

Q15 **Please describe, in as much detail as possible, what changes you make**

OPEN-ENDED QUESTION

**END OF PART ONE.**

**DO NOT CONTINUE IF:**

**- IF NO RESPONSES AT Q12=1 (HAS NOT DRUG DRIVEN IN LAST 12 MONTHS)**

**- ONLY Q12 1 ALCOHOL =1 ONLY**

**THANK AND CLOSE SURVEY**

**PART TWO**

**[ASK ALL]**

D1 **Now thinking about the last 3 months, on average, how often would you say you have driven within three hours of taking these sorts of drugs or medicines?** SR

| | |
|---|---|
| Every or most days | 1 |
| 2-5 times a week | 2 |
| Once a week | 3 |
| 2-3 times a month | 4 |
| Once a month | 5 |
| Less than once a month | 6 |
| Not in the last 3 months | 97 |
| Don’t know | 99 |
| Prefer not to say | 98 |

**For the next few questions, please think about <u>the last time</u> that you drove within three hours of taking one of the drugs or medicines listed.**

**Again, please remember that the answers you provide for this survey are confidential and we encourage you to answer honestly.**

**[ASK ALL]**

D2 **How long ago was the last time you drove within three hours of taking drugs or medicines?** SR

| | |
|---|---|
| Within the last week | 1 |
| 1–2 weeks ago | 2 |
| 2–4 weeks ago | 3 |
| 1–2 months ago | 4 |
| 2–6 months ago | 5 |
| Longer than 6 months ago | 6 |
| Don’t know | 99 |
| Prefer not to say | 98 |

**[ASK ALL]**

D3 **And on this last occasion of driving within three hours of taking drugs or medicines, which drug/s or medication/s had you taken?** SR

*Please select all that apply*

| | | Yes | No | Prefer not to answer |
|---|---|---|---|---|
| 1 | INSERT LIST FROM D11 (IF SELECTED 1 in D11) | 1 | 2 | 8 |

**[ASK ALL]**

D4 **And on this last occasion, what time of day did you take the drugs or medicines?** SR

| | |
|---|---|
| Between 6am and midday | 1 |
| Between midday and 6pm | 2 |
| Between 6pm and midnight | 3 |
| Between midnight and 6am | 4 |
| Don't know | 9 |

**[ASK ALL]**

D5 **And on this last occasion, what time of day did you drive within three hours of taking drugs or medicine?** SR

| | |
|---|---|
| Between 6am and midday | 1 |
| Between midday and 6pm | 2 |
| Between 6pm and midnight | 3 |
| Between midnight and 6am | 4 |
| Don't know | 9 |

**[ASK ALL]**

D6 **On this last occasion, why did you drive?** MR

*Please select all that apply*

| | |
|---|---|
| To get myself to / from work | 1 |
| To get myself to / from education | 2 |
| For work, as part of my job e.g. doing deliveries, taxi / Uber driver/sales | 3 |
| To take kids to / from school / kindergarten | 4 |
| To give someone else a ride | 5 |
| For medical / dental purposes | 6 |
| For shopping or running chores | 7 |
| To / from leisure activities | 8 |
| To visit family / friends | 9 |
| To get to some other transport (e.g. drive to catch a bus, plane or train) | 10 |
| Other, please specify | 97 |

**[ASK ALL]**

D7 **And what type of vehicle did you drive?** SR

| | |
|---|---|
| Car | 1 |
| Van or ute | 2 |
| Light truck | 3 |
| Medium or heavy truck | 4 |
| Motorcycle | 5 |
| Motor scooter | 6 |
| Bus | 7 |
| Other (please specify) | 97 |

**[ASK ALL]**

D8 **Thinking about the same drive, did you take any passengers in the car with you?** SR

| | |
|---|---|
| Yes | 1 |
| No | 2 |

**[ASK IF D8=1 HAD PASSENGERS]**

D9 **How many passengers did you take?** SR

*If it differed during your drive, please select the maximum number of passengers you had at any point on the trip.*

| | |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| More than 6 | 7 |

**[ASK IF D8=1 HAD PASSENGERS]**

D10 **Which of the following categories best describes your passengers?**

*If you had more than one passenger, please select all that apply* MR

| | |
|---|---|
| Partner / spouse | 1 |
| Parent | 2 |
| My child / children | 3 |
| Others' child / children | 4 |
| Friend | 5 |
| Work colleague | 6 |
| Customer | 7 |
| Other, please specify | 97 |

**[ASK ALL – TOTAL MUST ADD TO 100%]**

D11 **And still thinking about that last drive after taking drugs or medicines, what proportion of your drive was on urban (town) versus rural roads?**

- ***If all of your driving was in town, you would say 100% urban.***
- ***If you drove half of your time out of town (that is rural), the percentage for urban and rural would be 50% each.***
- ***The total should add up to 100.***

| | | Percentage of drive |
|---|---|---|
| 1 | Urban (town) | |
| 2 | Rural | |
| | | **100%** |

**[ASK ALL]**

D12 **Thinking about how you drove on this occasion, compared to when you drive without having taken drugs or medication, would you describe your speed as being....**SR

| | |
|---|---|
| Much slower than usual | 1 |
| Slightly slower than usual | 2 |
| Same speed as usual | 3 |
| Slightly faster than usual | 4 |
| Much faster than usual | 5 |

**[ASK ALL]**

D13 **Thinking about how your ability to react to changing traffic situations on this occasion, compared to when you usually drive, would you describe your ability to respond as being....**SR

| | |
|---|---|
| Much slower than usual | 1 |
| Slightly slower than usual | 2 |
| Same speed as usual | 3 |
| Slightly faster than usual | 4 |
| Much faster than usual | 5 |

**[ASK ALL]**

D14 **Overall, how much do you think your driving ability was affected by the drugs/medicines you had taken?** SR

| | |
|---|---|
| 1 – Not at all impaired (safe as taking the same drive without taking any drugs and / or medicine) | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |
| 10 – Very impaired (high risk of crashing) | 10 |

**[ASK ALL]**

D15 **Still thinking about the same occasion...Did you make any changes to the route you drove because of the drugs/ medicine you had been taking?**

**We would like to know if you tried to avoid any of the following during the drive....**

| | RANDOMISE STATEMENTS | Yes | No | Don't Know | Refuse |
|---|---|---|---|---|---|
| 1 | Heavy traffic | 1 | 2 | 99 | 98 |
| 2 | Highways with multiple lanes | 1 | 2 | 99 | 98 |
| 3 | High speed roads | 1 | 2 | 99 | 98 |
| 4 | Speed cameras | 1 | 2 | 99 | 98 |
| 5 | Police checkpoints | 1 | 2 | 99 | 98 |
| 6 | Car parks with tight spaces | 1 | 2 | 99 | 98 |
| 7 | Unfamiliar roads | 1 | 2 | 99 | 98 |
| 8 | Taking passengers | 1 | 2 | 99 | 98 |

**[ASK IF CHANGED ROUTE: ANY OF D15_1-8 =1]**

D16 **You mentioned that you changed how you drive or the route you took because of the drugs/ medicine you had been taking. What are the things you think about when making these changes?**

OPEN-ENDED RESPONSE

**[ASK ALL]**

D17 **Still thinking about the same occasion. Which of the following was planned in advance?**

| | | Yes | No |
|---|---|---|---|
| 1 | I had planned to take the drugs and / or medicine | 1 | 2 |
| 2 | I had planned to drive | 1 | 2 |

**[ASK ALL]**

D18 **Still thinking about the same occasion, which, if any, of the following did you consider?**

| | | Yes | No |
|---|---|---|---|
| 1 | I considered waiting before I drove | 1 | 2 |
| 2 | I considered not driving | 1 | 2 |

**[ASK ALL]**

D19 **And finally, this question is about your thoughts on driving in general. How much do you agree with each of the following:**

| | RANDOMISE | Strongly agree | | | | | | Strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | Sometimes I don't have any options, I have to drive after taking drugs or medicines | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 2 | I plan ahead and don't drive after taking drugs or medicines, or wait before I drive | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 3 | I don't like to drive after taking drugs or medicine for my safety and the safety of others | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 4 | Drugs or medicines don't tend to affect my driving | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 5 | I would really regret getting caught or losing my licence | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 6 | I would really regret hurting myself or others | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 7 | Although I use drugs / mix alcohol with drugs I care about others. | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 8 | Where I live means that sometimes I have to drive after taking drugs or medicine | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 9 | Other people expect me to drive, even after I've taken drugs or medicines | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 10 | I cannot avoid taking drugs (e.g. due to medical reasons, addiction, etc.) even though I have to drive | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

**[ASK ALL]**

D20 **To finish with, a couple of questions about you… How many years have you lived in New Zealand?** SR

| | |
|---|---|
| Less than 1 year | 1 |
| 1 year to just under 2 years | 2 |
| 2 years to just under 5 years | 3 |
| 5 years to just under 10 years | 4 |
| 10 years or more | 5 |
| I do not live in New Zealand | 9 |

**[ASK ALL]**

D21 **Which of the following best describes your household's annual income from all sources, before tax?** SR

| | |
|---|---|
| $20,000 or less | 1 |
| $20,001-$50,000 | 2 |
| $50,001-$70,000 | 3 |
| $70,001-$100,000 | 4 |
| $100,001-$150,000 | 5 |
| $150,001+ | 6 |
| Prefer not to say | 98 |
| Don't know | 99 |

Thank and close

**[NOTE TO PROGRAMMER – CAN WE PLEASE PUT THIS MESSAGE AFTER SURVEY IS SUBMITTED:]**

The results of this research will be reported on Waka Kotahi's website by early 2022.

# Appendix E: Drug and medication list used in the University of Waikato's 2017 survey

The drug and medication list used in the Ipsos 2021 survey is different from that used in the University of Waikato's 2017 survey (Starkey & Charlton, 2017).

**Table E.1 List of drugs and medications used in the University of Waikato's 2017 survey (adapted from Starkey & Charlton, 2017, pp. 95–96)**

| Drug/medication taken |
|---|
| **Alcohol** (above the legal limit) |
| **Amphetamine/methamphetamine** (P) |
| **Anti-anxiety drugs** |
| **Antidepressants** |
| **Anti-nausea medication** (eg, for travel sickness) |
| **Anti-psychotics** |
| **Cannabis** |
| **Cocaine/crack** |
| **Ecstasy** |
| **Hallucinogens** (eg, LSD, acid, mushies) |
| **Kava** |
| **Strong painkillers** (eg, codeine, tramadol, morphine) |
| **Opiates** (eg, heroin) |
| **Party pills** |
| **Prescription stimulants** (eg, methyphenidate) |
| **Sedatives/sleeping pills** |
| **Synthetic cannabis** (eg, K2, Kronic, Spice) |