

# “Fit for the road”: Log truck driver health and well-being

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## ABSTRACT

Log truck drivers in New Zealand have challenging working conditions with thirteen hour working days usually beginning in the early hours of the morning. This leaves little opportunity for exercise, recreation or family time and so health and relationship problems are common. Battling fatigue is also a constant challenge. The Log Transport Safety Council (LTSC) has been working to improve log truck safety. Driver health and well-being is a current focus following concerns from operators. Poor driver health not only affects individuals but also affects road safety and the productivity of transport operations. An investigation of health and wellness issues among log truck drivers identified issues that could be grouped into the areas of obesity, work/life balance and injuries. A key finding was that twice as many log truck drivers are obese compared with New Zealand males of similar age. Following this study, a trial health and fitness programme for log truck drivers – ‘Fit for the road’, was designed and implemented. Preliminary indications are that ‘Fit for the road’ has had a positive impact on the lives of the participants, although work is also needed to address wider systemic issues within the industry that might affect drivers health and wellbeing. The next challenge will be to implement ‘Fit for the road’ principles within individual transport operations.

## INTRODUCTION

The Log Transport Safety Council (LTSC) has been undertaking a programme of work aimed at improving log truck safety. It is currently investigating concerns about the incidence of poor health and injury and associated effects on time off work and road safety.



Figure 1. Log truck drivers often work 13 hour days, starting in the early hours of the morning, leaving little time for a balanced lifestyle

For drivers, long hours of work can be exhausting, yet their job is relatively sedentary, with only intermittent and brief periods of physical activity during loading and unloading. A driver who gets home at 6pm and goes to bed at 7:30pm for a 2am start also has little opportunity for exercise and quality family time. This life-style may contribute to health, family and relationship problems. These working conditions also sit within an industry where the profit margins of many log transport operations are modest which presents significant challenges to those wishing to improve drivers' working conditions. The mix of long working hours and a relatively sedentary occupation means that log truck drivers may be at risk of obesity and all the accompanying health risks, including type two diabetes, increased LDL (bad) cholesterol, coronary heart disease and depression among others (Ministry of Health 2003).

It is not known whether health and well-being issues among log truck drivers are simply a result of wider social issues, or whether these issues stem from the lifestyle that is imposed upon drivers through their job requirements. It is important to establish the origin of health and well-being issues, so that recommendations and interventions can be tailored accordingly.

In most countries there is little formal recognition by transport organisations of the connection between driver's health risk factors and the effects that these might have on crash risk, disease, extended leave, attrition and perception of the industry. This is surprising given the stereotypical image of a truck driver (overweight, smoker with poor eating habits and long shifts at the wheel) and the established body of literature that exists within this area.

## **PREVIOUS LITERATURE**

### *Health risk factors and fatigue in truck drivers*

A large amount of research has focussed on professional driver health (Korelitz et al. 1993, Moreno et al. 2004, Perez-Chada et al. 2005, Taylor and Dorn, 2006 and Magnusson et al. 1996). Some of this literature spans back almost 50 years (Heady et al. 1956). In Australia a programme of work has started to address workforce planning issues in the freight industry including the implications of an ageing workforce (Kazalac et al. 2008).

In a study titled *Health habits and risk factors among truck drivers visiting a health booth during a trucker trade show* (Korelitz et al. 1993), a cross-sectional survey of 2,945 male and 353 female truck drivers was conducted in order to provide general information on their personal characteristics, health status and health interests. It was found that a large percentage of male truck drivers smoked cigarettes (54% vs. 30% of all U.S. white males), did not exercise regularly (92%), were overweight (50% vs. 25% of all U.S. white males), and/or were not aware they had high blood pressure (66% vs. 46% of the U.S. population). Also, 23% of surveyed truck drivers tested positive on one measure of alcoholism.

Taylor and Dorn (2006) reported that a number of studies have shown that drivers who drive for work have a higher accident risk than the general driving population, even when their greater exposure is considered.

The scientific literature is very clear in that truck drivers have an increased risk of developing cardiovascular disease, and that their working and lifestyle patterns contribute directly to this elevated risk (Krueger et al. 2007). A link between professional driving and stroke has also been indicated (Tuchsen et al. 2006), and there are also a number of factors that are likely to

cause fatigue within the trucking industry (Charlton and Ashton 1997, Charlton and Baas 2000).

### *Overseas truck driver health and well-being interventions*

Increasingly, workplace health and wellness programmes are being recognised as potentially improving employee health, satisfaction and productivity. A number of truck driver health or well-being programmes have been reviewed (Roberts and York 1997). It is generally accepted by industrial health professionals that the return on investment for a good wellness programme is in the order of 3:1 to 4:1. The problem is that it can take time for these savings to be realised and it is difficult to tangibly allocate savings to a particular wellness intervention.

A risk for health and wellness programmes for professional drivers is that the responsibility for overall wellness is placed on the driver, without consideration of the wider systemic workplace issues. For example, start times of 2am and 13 hour days may not allow drivers to maintain a balanced lifestyle.

### *Project purpose*

Anecdotal evidence suggests that log truck drivers in New Zealand are particularly susceptible to health and wellness problems. In order to investigate this more fully, and to begin addressing this, the purpose of this project was twofold:

1. To identify health and fitness issues related to log truck drivers of varying ages and provide recommendations for interventions to address these issues.
2. To develop and carry out a pilot health and wellness programme for log truck drivers and determine its feasibility

## **RESEARCH APPROACH**

Four stages of data collection were used:

- 1) Day spent with driver to observe job requirements and initial visits with health and safety personnel at two log truck operations
- 2) Driver questionnaire
- 3) In cab, in-depth driver interviews and supplementary operator discussions
- 4) Driver health and fitness working group to develop a plan for action

### *Day spent with driver and initial health and safety staff visits*

The very first stage of the research was to obtain an understanding of the job requirements of log truck drivers. A full, typical day was spent with a driver from a Rotorua based operation. The day began at 3am, involved three return trips to Kawarau pulp and paper mill and finished at 4:30pm. By travelling with a driver for a whole day, the researcher was able to observe the job requirements, discuss the job with the driver and take still photos of various activities.

Meetings with health and safety personnel from two log transport operations enabled a further discussion of the demands of log truck driving and some of the health and fitness

issues that also commonly arise. At this point two key points became very clear: 1) operators seemed to have a very good understanding of their drivers in terms of the hours they had worked recently, start times and how well they were coping with the demands of the job, and 2) there were already some excellent initiatives that are being trialled and adopted by operators in order to address health and well-being concerns among their drivers.

### *Driver questionnaire*

A driver questionnaire was then developed, based on the issues raised at LTSC meetings, the day spent with a driver and the initial conversations with operators. The questionnaire aimed to obtain a broad range of information about drivers' personal details (height, weight etc), lifestyle habits including physical activity, nutrition, sleep and fatigue, health and well-being (including specific medical problems), difficulties within their job and driver's overall perception of how easy or difficult it is for them to be a log truck driver. A final part of the questionnaire allowed drivers to mention any initiatives that they felt would help to make log truck driving easier, safer or more attractive.

The questionnaire was mailed in batches to log transport operators, who distributed them for completion. Each questionnaire had an accompanying consent form and 'FreePost' envelope. A unique number was stamped onto both the consent form and the questionnaire, and drivers were instructed to tear off and retain their number on the consent form, which was the only place where their name was written. This meant that as soon as the consent form and the questionnaire were separated, there was no way of knowing the identity of the driver unless they contacted the researchers and shared their unique number. As well as protecting driver's confidentiality, this system meant that a driver could pull their questionnaire form from the study if they wished.

Where there were concerns about the possible accuracy of drivers' reported answers, the questionnaire answers were compared with operator held information from health checks. This was only used to check the validity of drivers' self-reporting of their body weight and height.

### *Driver and operator interviews*

Following the return of the driver questionnaires, a range of issues started to emerge, which related to the health, fitness and lifestyle of drivers. In depth interviews with 14 drivers representing the spread of log truck drivers around the country (from Northland to Dunedin) were then carried out to explore these issues with a particular focus on the causes of driver health and fitness problems and possible solutions for the future. The interviews were also used to ascertain possible links between lifestyle, working conditions, health status, fatigue and risk of injury or accident. Photos and some basic measurements (e.g. time spent performing different parts of the job, weight of chain to be thrown for log securing) were also taken in order to help define the job requirements of log truck driving.

All driver interviews took place while the driver undertook his normal duties. Typically 2-3 hours was spent with each driver, with two interviews from one operator being completed each day. Because the driver interviews were shared between two researchers, a standardised template was used to structure the interviews, with the themes following the topics that were covered in the previous driver questionnaire.

Once all of the driver interviews were completed, driver responses were grouped into common themes so that the responses of all 14 drivers could be analysed together. The two

researchers who carried out the interviews then independently summarised the key points from the pooled responses for each theme. These independent summaries were then added together to create an overall summary of key points for each theme.

Visiting the log transport operations also provided the opportunity to informally discuss driver health and wellbeing with company owners, general managers, health and safety staff and dispatch staff. Although the content of these discussions has not been analysed formally, these discussions were valuable in that they provided a different perspective on the issues surrounding driver health and wellbeing, and gave greater depth to the issues that need to be understood in order to develop health and wellbeing initiatives for log truck drivers.

Drivers and other transport operator staff provided some excellent suggestions for initiatives to improve the health, fitness and wellbeing of log truck drivers. These suggestions were incorporated into a matrix that was used to create an initial framework for these potential initiatives.

### *Driver health and fitness working group*

A working group was then formed to discuss the major issues and refine a framework for future initiatives. The working group was also used for the initial development of the following health and fitness initiative.

## **RESEARCH FINDINGS**

### *Questionnaire*

A total of 225 questionnaires were returned and used in the final data analysis. This represents approximately 16% of the industry. When asked about their ethnicity, 72% reported being New Zealand European, 27% reported being Maori, 4% reported 'Other' and 1% reported their ethnicity as being Pacific Island. Within the log truck driver sample, New Zealand Europeans were over-represented (67% in New Zealand population), Maori were over-represented (15% in New Zealand population), while other ethnic groups were under-represented.

The mean age of the surveyed drivers was 43.8 years, 25<sup>th</sup> percentile age 35 years and the 75<sup>th</sup> percentile age 52 years. The youngest driver in the group was 19 years and the oldest was 70 years.

It appears that log truck drivers are not unique in terms of their age profile. An analysis of a recent Statistics New Zealand Labour force survey (Statistics NZ 2006) found that the average age of working males is approximately 42 years. Nevertheless, like other industry sectors, the log truck driving industry faces the challenges of an ageing workforce.

Some very clear findings came out of this research, as well as some trends that may require further investigation. Some of the most significant findings from the questionnaire were:

1. Log truck drivers appear to be very overweight compared with their age and gender matched New Zealand counterparts (Figure 2) reported in the 2002/2003 New Zealand Health Survey (Ministry of Health 2004).

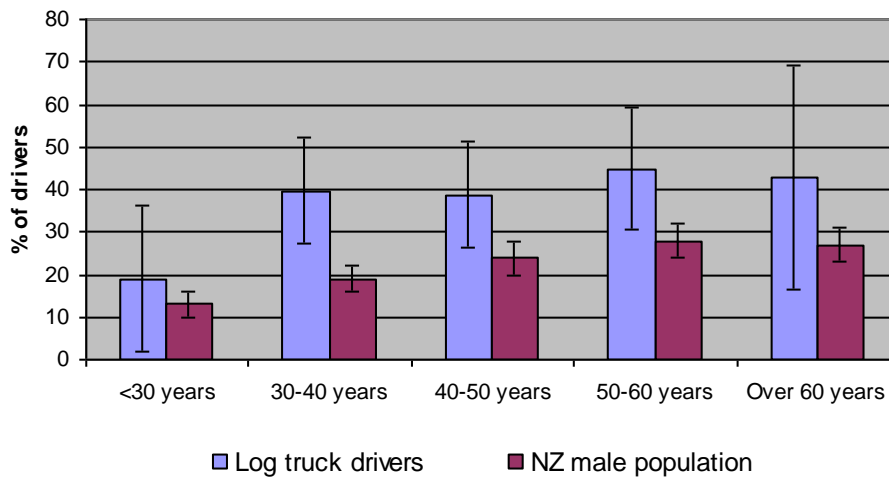


Figure 2. Percentage of drivers who are 'obese' or very obese compared with the New Zealand age and gender matched population. The error bars represent 95% confidence intervals.

2. There is a high reported incidence of mental illness among log truck drivers, but it is similar to that reported within the age and gender matched New Zealand population
3. Hearing problems are widespread among log truck drivers.
4. The most common reported amount of sleep per night is six hours (Figure 3) and approximately one quarter of drivers reported getting less than six hours sleep per night.

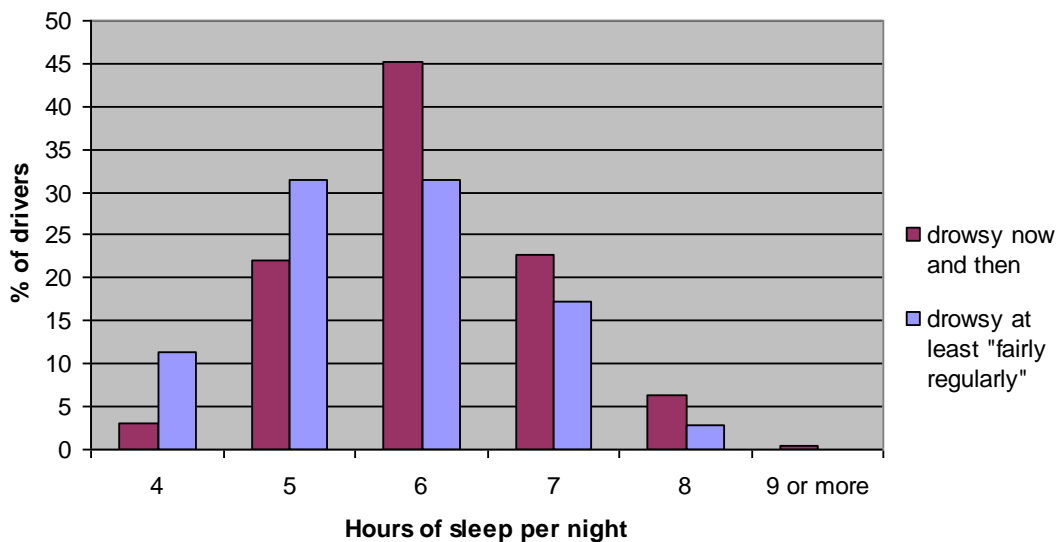


Figure 3. Reported hours of sleep per night reported by drivers who feel sleepy or drowsy while driving "now and then" compared with those who feel sleepy or drowsy "fairly regularly, "quite often", "most of the time" or "almost always".

5. Approximately 10-20% of drivers reported problems with sleep, sleepiness or fatigue.
6. Approximately one third of all drivers have reported needing to visit an emergency department or hospital as a result of a workplace accident, with the most common cause of injury being 'slips, trips and falls from or around truck' (17% of all drivers) and the most common injury being 'pain in the neck, back, shoulder, elbow, wrist, hip, knee or ankle' (26% of all drivers).
7. Approximately 37% of drivers report having problems fitting work and home life into the day. This appears to be more of a problem with younger drivers than for older drivers, but in general this is a major issue with failed relationships and isolation from family being common.
8. When asked "What could employers and the industry do to make the job of log truck driving easier, safer or more attractive?", 33% replied that issues related to time should be addressed (including working hours, work / life balance, scheduling / early starts and productivity pressure). Money or pay related issues were mentioned by 32%. Road conditions were mentioned by 11%, truck related equipment by 10% and training by 5% of drivers.

### *Driver interviews*

In order to further explore the issues faced by drivers, in-cab driver interviews were carried out with 14 drivers from seven different companies from Northland to Dunedin.

From the interviews, several themes stood out as being particularly important:

- **Road conditions and other drivers.** Many drivers felt that these environmental factors have the ability to add a significant amount of stress to the job.
- **Working outside of the cab.** This is considered to be a potentially risky environment for drivers, especially on skid sites where the ground can be very uneven.
- **Performance pressure.** A lot of pressure to be productive appears to come from a perceived mismatch between what the dispatcher is requesting and what the driver is experiencing on the job.

The commitment of most drivers to their job was impressive and most required high standards of themselves. In these situations, those who had clear messages from their company that the driver cannot be responsible for delays at ports, mills, skid sites etc and that all the driver can do is operate the truck efficiently and safely, appeared to have less self-imposed pressure.

- **Generally positive perception of employer.** Most drivers that we interviewed had a generally positive view of their employer and understood that many issues related to their work were a result of the wider industry (i.e. conditions imposed by forest owners, ports or mills).
- **Fatigue.** The questionnaire findings were supported by most drivers in that fatigue appeared to affect most drivers "now and then" or in certain circumstances. Almost all drivers admitted that by the end of a 70 hour week they were getting quite tired and that early afternoon on Thursdays and Fridays can be problem times. Monday mornings were also times where tiredness can be a problem. Those who rarely exceeded 12 hours of duty appeared to be able to cope with a typical week much more easily.

- **Personal opinion of health and fitness.** Again, the questionnaire was supported in that most drivers appeared to have a relatively high appraisal of their personal health and fitness. There appears to be a mismatch between driver’s perception of their health and fitness and their actual health and fitness. Lack of available hours in the day was commonly cited as a reason for not participating in exercise.
- **Work/life balance, family and relationship stress.** This was the single biggest issue for the 14 drivers that we interviewed. Drivers were very forthcoming in describing the conflict that exists between their job and their families. Many drivers clearly find it difficult to be a log truck driver and also lead a fulfilling and active home life.
- **Pay vs. Hours.** Most drivers were happy with the income they received each week, but were less appreciative of the working hours required to earn it. It appears that some drivers get used to the maximum possible hours (70 per week) and then budget their lives accordingly. This causes problems in two ways: Driver’s get fatigued as they continue to work 70 hour weeks and also they struggle financially when there are less working hours on offer.
- **Knowledge and experience of older drivers.** The older drivers that we interviewed appeared much more capable and confident in most parts of their job and their knowledge and experience is clearly very valuable in log truck driving.

### *Summary of findings*

Based on the data collected within this project, the main themes and key issues that log truck drivers face are summarised (Table 1). This summary provided a basis for the development of a matrix of possible interventions aimed at different levels – the driver, transport operation, industry sector and government.

Table 1. Summary of the main themes and key issues faced by log truck drivers

<b>Theme</b>	<b>Key issues</b>
Obesity	Nutrition, Exercise
Work / Life Balance	Driving hours, start times, relationships, stress, fatigue
Workplace injuries	Hearing, Skid site, Sitting in Cab, Getting in and out of cab

## **DEVELOPMENT OF ‘FIT FOR THE ROAD’ DRIVER HEALTH AND WELLNESS PROGRAMME**

The study indicated a number of health and wellness issues affecting log truck drivers. These findings prompted the LTSC to fund (in partnership with ACC) a pilot driver health and fitness programme.

An advisory committee was formed to establish the health and wellness programme. Personnel with expertise in health and wellness programme delivery were commissioned to help design and to carry out the programme. LTSC members chose “Fit for the Road” as the preferred name for the programme.





The aim of the Fit for the Road programme is to encourage and assist log truck drivers to improve their health and empower them to make healthy choices. Forty five drivers were recruited from around New Zealand to participate in the programme. At the beginning of the programme each driver participated in a health assessment that included weight and height measurement (to calculate body mass index), hip and waist circumference measurement, full blood analysis, family history of heart disease and questions about their nutrition and psychological status. Health assessments were also carried out for a control group of drivers who did not participate in the programme, allowing the programme outcomes to be more accurately assessed. For participants, the initial meeting was also used to counsel drivers about the aims and format for programme and drivers were asked to consider goals which were to be submitted later. Participants were also given a start-up pack including water bottle and t-shirt. Participants were grouped into teams based on their geographical location, providing participants with a support network.

The programme was designed as a year-long programme with monthly themes. Examples of the themes include nutrition, Push Play, quit smoking and wellness at work. The main way in which drivers receive support are through monthly mail-outs of information, much of which are derived from existing initiatives. The monthly themes were supplemented with activities such as food diary analyses and a programme called “Challenge Me”, where participants were required to set and attempt to complete food, exercise and lifestyle challenges. A free phone number was also used to provide professional support for drivers within the programme. Many individuals and groups set their own challenges within the programme.

Fit for the Road is due to conclude in September 2009 and participants’ final challenge will be to compete in a fun-run/walk event called the “Red Stag Relay”. Post-programme health checks will then be carried out, allowing comparisons with drivers’ pre-programme health. An evaluation of the effectiveness of the programme along with recommendations for the industry in the future will also be carried out.

## **DISCUSSION**

The findings have shown that there are clearly challenges related to log-truck driver health and wellbeing, which can be broadly categorised as obesity, work/life balance and workplace injury issues. One of the key findings was that log truck drivers were almost twice as likely to be obese compared with their New Zealand non-log truck counterparts. This finding is consistent with previous research (Korelitz et al. 1993), which found that US truck drivers were twice as likely to be overweight compared with all white US males.

The Fit for the Road programme is likely to mainly improve general health but may have less of an effect on work/life balance and injuries (although improved health may also reduce the risk of injury). In order to comprehensively address log truck driver health and wellbeing

issues, systemic interventions are also needed. Log transport operators have anecdotally reported that their hours of operation are often restricted by forest, port and mill operations. Furthermore, because drivers get paid hourly rates, they often want to work 13 hour days, despite possible detrimental effects. It appears that many drivers quickly become accustomed to the income that can be achieved through working such long hours. Log transport operators, forest owners and the government will need to work together to fully examine the log supply chain before conditions for log truck drivers might substantially improve.

The findings from this study and associated health and fitness trial have implications for the wider transport industry where similar health issues are likely to be present. It is suggested that following the evaluation of Fit for the Road, a programme of work is carried out to develop health and fitness initiatives for the wider transport sector, at a national level.

## **CONCLUSION**

Aspects of log-truck driving appear to have negative effects on driver's health and wellbeing. A pilot health and wellness programme may help to improve the health and wellbeing of drivers. However, changes to the wider forestry supply chain are needed so that log truck drivers may be allowed more favourable working conditions and therefore better health and wellbeing.

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