# 158 - PREVALENCE OF MORBIDITY IN LONG ROUTE TRUCKERS

PEDRO FERREIRA REIS;
LUCAS TERRA NUNES;
BARBARA RIBAS DA SILVA
University Center Dinâmica das Cataratas – Foz do Iguaçu – Paraná – Brazil
fisioterapeutadotrabalho@hotmail.com

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## INTRODUCTION

Brazil has a rail network of 1, 7 million kilometers of roads, with huge representativity between existing modal, wide flexibility and integrating all of the Brazilian states. According to the annual report of the National Agency of ground transportation NAGT (2014), 1 million hauliers were registered on the National Register of Cargo Road Carriers (NRCRC) in the final of 2014, being 848 thousand self-employed professionals ,168 thousand businesses and 405 cooperatives adding a total fleet of 2,2 million vehicles (BRASIL 2015).

Barboza (2014) reports approximately 63% of Brazil's logistics system is carried out via the national roads, making road transportation the main mode of cargo transportation in Brazil. Thus, Erhart and Palmeira (2006) highlight the importance of truck driver in the movement of the Brazilian economy, without which, the industries would not receive the raw material production and would not have to flow conditions, therefore, the products do not arrive at consumers.

According to Law No. 13,103, of March 2, 2015, which regulates the profession of drivers, the truck has become framed in the category of professionals whose conduct vocational training is needed, and whose profession is exercised in activity road transport charges. Concurrent with Law No. 9503 of September 23 de1997 and Decree-Law No. 5,452, of May 1, 1943, the Law on truckers, established the daily working hours of the driver, and went on to secure the right and obligation of professional conduct in rest stops on long-distance trips. However, the failure of the legislation by professionals associated with the intense pace of work imposed by companies to comply with the schedules and deadlines in the delivery of goods has caused changes in the body, damaging the quality of life of these drivers (Ribeiro, 2008).

The use of psychoactive drugs, especially amphetamine is common among truck drivers (MASSON & MONTEIRO, 2010) since access to this type of drug is facilitated by the indiscriminate sale at gas stations (MORENO & ROTENBERG, 2009). The study by Masson and Miller (2010), showed that 70% of truck drivers used some type of psychoactive drug, 63% reported using up to five tablets of amphetamine while traveling and 20% reported side effects such as tachycardia, tremors, hallucinations, nervousness and anorexia. According to the Brazilian Center for Information on Psychotropic Drugs / CEBRID (2015) the use of amphetamine may cause the increase in heart rate (tachycardia) and blood pressure, which could develop into a condition of intoxication if substance use is not interrupted.

Cavagioni et al. (2008) found in their study that 82% truck drivers had BMI greater than 25 kg / m2, 58% were with waist circumference above 94 cm, and 37% had hypertension prevalence. The same study found that 24% of truck drivers had metabolic syndrome and 9% had an absolute risk of coronary events by Framingham score.

It is common to identify among truck drivers a high rate of inactivity, and may be associated with excessive working hours of these professionals (MASSON & MONTEIRO, 2005; Andrusaitis et al, 2006;. LEMOS; Marquèze & MORENO, 2014), since, energy expenditure with metabolic equivalents (H1) these drivers, ranging 1-3, light level being considered (Owen et al., 2000;. PATE et al, 2008).

This research aimed to identify the prevalence of cardiovascular risk in the long routes truck drivers.

## METHODOLOGY

This descriptive and quantitative study were conducted with 96 long distance truckers, whose path was Foz do Iguaçu to Paranaguá through BR 277, both sites belonging to the state of Parana, Brazil.

Verification of cardiovascular risk was performed by the x waist-hip ratio (WHR), which is established by dividing the formula of the hip circumference at waist and classified according to Table 1.

Table 1. Classification of Appeal x waist hip relationship (WHR) for males.
Source: World Health Organization (2011).

| | Male Classification | | | |
|---|---|---|---|---|
| Age | Low | Moderate | High | Very high |
| 20 to 29 | < 0,83 | 0,83 to 0,88 | 0,89 to 0,94 | > 0,94 |
| 30 to 39 | < 0,84 | 0,84 to 0,91 | 0,92 to 0,96 | > 0,96 |
| 40 to 49 | < 0,88 | 0,88 to 0,95 | 0,96 to 1,00 | > 1,00 |
| 50 to 59 | < 0,90 | 0,90 to 0,96 | 0,97 to 1,02 | > 1,02 |
| 60 to 69 | < 0,91 | 0,91 to 0,98 | 0,99 to 1,03 | > 1,03 |

$$WHR = \frac{\text{Perimeter of the hip}}{\text{Perimeter waist}}$$

Anthropometric measurements of waist and hip were performed by means of an inelastic tape measure with the accuracy of 0.1 cm.

All participants signed a free and informed consent form (ICF). Data were tabulated using Microsoft Excel® program and analyzed using the Bioestatic 5.3 program.

## RESULTS AND DISCUSSION

All drivers participating in the study Were male, aged between 22 and 65 years and worked between 1-43 years in the profession of truck driver (Table 2).

Table 2. Distribution of truckers in average and standard deviation. Foz do Iguaçu, 2015. (n = 96)

| Variable | Avarage | Standard Deviation (SD) |
|---|---|---|
| Age | 43,28 | ±10,10 |
| Time of professional | 18,40 | ±10,93 |

Gus et al. (1998) in their study, say, to identify individuals with cardiovascular disease risk (CVD), the first studies used WHR to determine body composition and body fat distribution.

According to Jensen (2008), WHR is often used in literature as indicator of obesity, since the accumulation of subcutaneous and visceral abdominal fat predisposes individuals to more severe CVD risk.

The WHR this study had an average of 0.91 (SD = 0.06), indicating a "high" cardiovascular risk, as classified according to Table 1, the average age; corroborating the study conducted with officials from the State University of Londrina, where, in men, the mean was 0.93 for average age of 32.5 years (Guedes & Guedes, 2001). In the study by Oliveira et al. (2011), the average value of the WHR was 0.89 for an average age of 46.9 years, with "moderate" cardiovascular risk.

In Figure 1, you can see the cardiovascular risk of the drivers evaluated in this study.

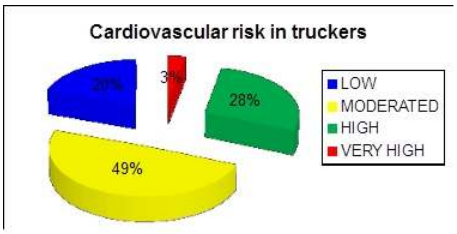



Figure 1. Profile of Cardiovascular Risk
Source: Authors.

Importantly, the correlation between working time as a driver and cardiovascular risk, calculated using the test, Pearson correlation coefficient was r = +0.3782 (p <0.0001), and ranked second weak Dancey and Reidy (2006). This result showed that, regardless of working hours in relation to age, cardiovascular risk was not affected, indicating that even with little professional time the driver already is in the risk category.

The prevalence, the study found that only 20% of drivers were in the "low" cardiovascular risk while 80% had a risk of vascular problems. Through the Hearts of Brazil campaign, developed by the Brazilian Society of Cardiology (2005) it was identified in 9.6% of men, a risk "very high" of CVD. In contrast, Oliveira et al. (2011) found by WHR, the absence of risk "very high" of cardiovascular disease in a study of 103 male teachers.

Fruity (2008) reported in their study that, due to increased inactivity and industrialization, the obese population has grown continually, and excess fat has been a major cause of CVD. According to Ribeiro research (2008), 51.6% of drivers studied were overweight, and 12% were classified as obese.

However, the urbanization rate in developed countries is constantly growing, bringing with it the impact on society of obesity and the risk factors for cardiovascular risks (Codarin et al, 2010; COSTA et al, 2011). According to estimates of the World Health Organization (2000), by the year 2030, about 23.6 million people will die from CVD. Therefore, it is necessary to guide and make changes to the routine work of this category of professional, since a significant number of workers are at risk of developing metabolic disorders; corroborating the findings of Cavagioni et al. (2008), in which 82% of drivers were above the ideal weight.

Government actions have been implemented in Brazil, ensuring full compliance within the National Health System, professional drivers, dependent on psychoactive substances; however, it is necessary to develop awareness campaigns, prevention, and control of obesity in this category of professionals, given the alarming number of individuals classified in numerous studies with cardiovascular risk.

## CONCLUSION

We concluded that drivers evaluated in this study, presented sedentary lifestyle, contributing to the increase in overweight and obesity in this population, which explains the alarming rates of cardiovascular risks found.

In this sense, it is suggested that the change in dietary habits associated with daily physical exercise as well as the decrease in routine stressful jobs, thereby contributing to an improvement of the style and quality of life.

We also studied the importance in controlling the major individual health indicators, highlighting the blood pressure, cholesterol, triglycerides and blood glucose, strengthening the practice and maintenance of a healthy life.

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Pedro Ferreira Reis
Rua dos Expedicionários, 425 - Apartamento 41
Santa Terezinha de Itaipu - Paraná - Brasil

**PREVALENCE OF MORBIDITY IN LONG ROUTE TRUCKERS**
**ABSTRACT**

Brazil has a fleet of trucks superior to 2, 2 millions of vehicles. However, the organization of work in this category doesn't comply with the laws governing the profession. Intense rhythms, no breaks, and pressure in productivity imposes considerable professional wear on your health. The objective of this study was checking the prevalence of cardiovascular risks in long route truckers. This quantitative descriptive study was performed with 96 drivers aged man 22 to 65 years (±10, 10). The cardiovascular risk was evaluated subjectively through the waist and hip relationship (WHR) with reference of classification according to World Health Organization, and analyzed by the Bioestatic 5.3.The results showed 20% low risk,49% moderated risk,28% high risk and 3% with very high risk. We conclude with this study that the evaluated truckers presented one sedentary lifestyle imposed by the inadequate work organization, resulting in a significant percentage of truckers with cardiovascular risks. Thus suggests to this population an improvement in the organization of work as well as periodic monitoring of blood pressure, cholesterol, triglycerides and blood sugar, which should be associated with a better lifestyle and healthy eating.

**KEYWORDS:** cardiovascular risk, truckers, sedentary lifestyle

**MORBIDITÉ PRÉVALENCE DANS CONDUCTEURS CAMIONS DE LONGUE ROUTE**
**RÉSUMÉ**

Brésil dispose d'une flotte de camions de 2, 2 millions de véhicules. Cependant, l'organisation du travail dans cette catégorie ne sont pas conformes avec les lois régissant la profession. Rythmes intenses, sans pauses, et la pression de la productivité nécessite un épuisement considérable dans votre santé. Le but de cette étude était de déterminer la prévalence du risque cardiovasculaire chez les liaisons long camions. Cette étude quantitative descriptive a été réalisée avec 96 pilotes femme âgés extrêmes: 22-65 ans (± 10, 10). Le risque cardiovasculaire a été évaluée à l'aide subjectivement taille et de hanches (WHR) en référence à la classification en vertu Organisation mondiale de la Santé et analysé par les résultats Bioestatic 5.3.Les montré 20% à faible risque, 49% risque modéré, 28% de risque élevé et 3% avec un risque très élevé. Nous concluons de cette étude que les camionneurs devaient évaluer un mode de vie sédentaire imposée par la mauvaise organisation du travail, résultant dans une proportion importante de conducteurs de camions présentant des risques cardiovasculaires. Par conséquent, cette population suggère que l'amélioration de l'organisation du travail et la surveillance régulière de la tension artérielle, le cholestérol, les triglycérides et la glycémie, ce qui devrait être associée à une meilleure qualité de vie et alimentation saine.

**MOTS-CLÉS:** le risque cardiovasculaire, les camionneurs, style de vie sédentaire.

**PREVALENCIA MORBILIDAD EN CONDUCTORES DE LARGO RECORRIDO DE CAMIONES**
**ABSTRACT**

Brasil cuenta con una flota de camiones superiores a 2, 2 millones de vehículos. Sin embargo, la organización del trabajo en esta categoría no cumple con las leyes que rigen la profesión. Ritmos intensos, sin pausas, y la presión de la productividad impone un considerable desgaste profesional en su salud. El objetivo de este estudio fue comprobar la prevalencia de riesgos cardiovasculares en camiones de rutas largas. Este estudio descriptivo cuantitativo se realizó con 96 conductores chica de edad 22 a 65 años (± 10, 10). El riesgo cardiovascular se evaluó subjetivamente a través de la cintura y la cadera relación (RHO) con referencia de la clasificación según la Organización Mundial de la Salud, y analizada por los resultados Bioestatic 5.3.Las mostraron 20% de bajo riesgo, 49% de riesgo moderado, el 28% de alto riesgo y 3%, con un riesgo muy alto. Concluimos con este estudio que los camioneros evaluados presentaron un solo estilo de vida sedentario impuesta por la organización del trabajo inadecuadas, lo que resulta en un porcentaje significativo de los camioneros con riesgos cardiovasculares. Por lo tanto, sugiere que esta población de una mejora en la organización del trabajo, así como el seguimiento periódico de la presión arterial, el colesterol, los triglicéridos y azúcar en la sangre, lo que debería ser asociado con un mejor estilo de vida y la alimentación saludable.

**PALABRAS CLAVE:** riesgo cardiovascular, camioneros, de estilo de vida sedentario.

**PREVALÊNCIA DE MORBIDADE EM MOTORISTAS DE CAMINHÃO DE LONGAS ROTAS**
**RESUMO**

O Brasil possui uma frota de caminhões superior a 2,2 milhões de veículos. No entanto, a organização do trabalho desta categoria não cumpre as leis que regem o exercício da profissão. Ritmos intensos, ausência de pausas e pressão por produtividade impõe neste profissional um desgaste considerável na sua saúde. O objetivo deste estudo, foi verificar a prevalência de riscos cardiovasculares nos motoristas de longas rotas. Este estudo descritivo quantitativo, foi realizado com 96 motoristas homens com faixa etária de 22 a 65 anos (±10,10). O risco cardiovascular foi avaliado subjetivamente através da relação cintura x quadril (RCQ), com referência de classificação de acordo com a World Health Organization, e analisados pelo programa Bioestatic 5.3. Os resultados apresentaram 20% com baixo risco, 49% risco moderado, 28% risco alto e 3% com risco muito alto. Conclui-se com este estudo que os motoristas avaliados apresentaram um estilo de vida sedentário imposto pela organização de trabalho inadequada, implicando em um percentual significativo de motoristas com riscos cardiovasculares. Assim, sugere à esta população uma melhora na organização do trabalho, bem como um monitoramento periódico da pressão arterial, colesterol, triglicerídeos e glicemia, os quais deverão ser associados a um melhor estilo de vida e alimentação saudável.

**PALAVRAS-CHAVE:** risco cardiovascular; motoristas; sedentarismo.