

# Nutrition Assessment of Long-Haul Truck Drivers: Implications on Health, Quality of Life and Road Safety

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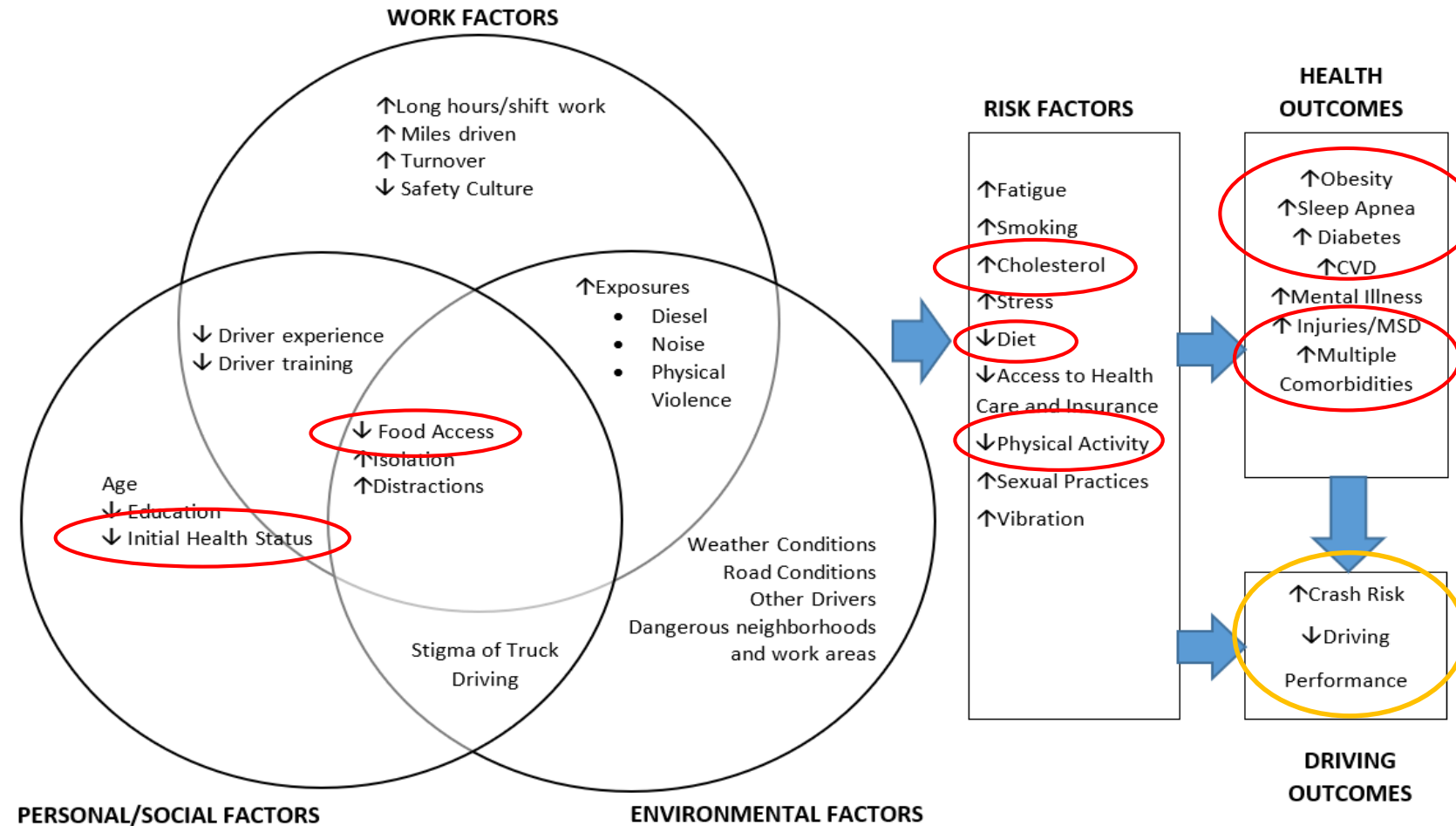


*Located on Treaty 6 Territory and the Homeland of the Métis  
Respectful of Indigenous Peoples and their ancestors*

# Introduction

- ▶ One million Commercial Motor Vehicle drivers in Canada
  - ▶ Statistics Canada 2014
  - ▶ 2 most common occupation in males
- ▶ ~300,000 long-haul truck drivers in Canada
- ▶ Estimate shortage of 25,000-33,000 by 2020
  - ▶ Conference Board of Canada

# Interplay of Work, Personal and Environmental Factors on Health and Driver Outcomes



# Truck driver studies Show:

- ▶ Long-haul truck drivers:
  - ▶ **Living with obesity: >50%**
    - ▶ High rates of hypertension: 22-24%
    - ▶ High rates of cholesterol: 15-62%
    - ▶ Obese: >50%
    - ▶ Diabetes (Type II): 6-14%
    - ▶ Sleep Problems: >50%
      - ▶ Sleep Apnea: 2-18%
  - ▶ Smokers: 32% to 55%

Life expectancy: decreased by 12 to 15 y

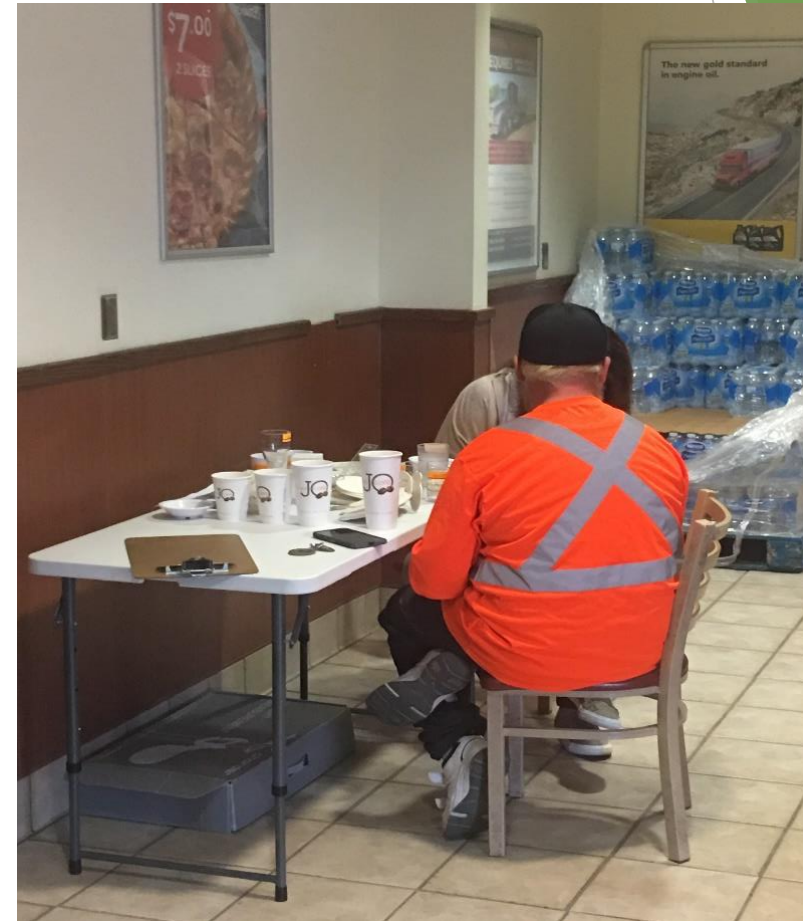
**Lifestyle - poor diet and a lack of exercise**

# Rationale

- ▶ Diseases present concerns in the trucking industry as the associated morbidities are a risk to road safety, ability to work and perform tasks
  - ▶ Obesity and associated sleep apnea (OSA)
    - ▶ Positively correlated to motor vehicle crashes
  - ▶ Obesity associated with diabetes and heart diseases
    - ▶ Decreased productivity due to increases in sick days and the inability to carry out responsibilities of the work
- ▶ Dearth of nutrition research exists involving truck drivers (LHTD)
  - ▶ Especially studies comprising of a full nutrition assessment.

# Purpose of Present Study (Larger Study)

- ▶ To collect health and wellness information on long-haul truck drivers
  - ▶ Study performed in AB and SK
  - ▶ Consisted of multiple parts
    - ▶ Survey
    - ▶ Objective health measurements
      - ▶ Blood pressure, anthropometry (BMI, WC), grip strength, body composition (bioelectric impedance)
    - ▶ Dietary intake and practices
    - ▶ One on one semi-structured Interview



# Sample Data and Characteristics

- ▶ Data completeness

- ▶ Survey: 232 respondents
- ▶ **Objective Health Measurements: 216**
- ▶ Interviews: 92

- ▶ Characteristics

- ▶ Age:  $50.4 \pm 12.3$  y  
range 23-89 y
- ▶ Gender: 96.5% men
- ▶ Ethnicity: 70% Caucasian



# Health Measures

- ▶ **BMI: 32.2±6.7 (range 19.9 - 54.8)**

- ▶ Least risk: 11.7%
- ▶ Increased risk: 30.6%
- ▶ High risk: 26.0%
- ▶ Very high risk: 31.6%

**Bariatric Surgery: BMI ≥ 40, >100 pounds, or BMI ≥ 35 and one or more **obesity**-related co-morbidities**

- ▶ **Blood Pressure**

- ▶ Systolic: 146 ± 18 (range 100-221)
- ▶ Diastolic: 91 ±10 (range 64-140)

- ▶ **Physical Activity (Self reported)**

- ▶ Sedentary: 21.6%
- ▶ Light activity: 32.7%

# Comparison to Canadian Norms

Conditions	OHS LH-TD (n=232)	CCHS Healthy (n=26,229)	CCHS All TD (n=990)
BMI (very high risk)	<b>31.6%</b>	1.3%	1.3%
Diabetes	<b>15.3%</b>	4.2%	5.1%
Hypertension	<b>28.0%</b>	4.0%	4.1%
Physical Inactivity	54.3%	44.7%	65.3%
Cancer	<b>13.2%</b>	0.9%	0.9%
Heart Disease	4.1%	2.4%	3.6%

CCHS - Canadian Community Health Survey

TD CCHS: 18-65 years; income > 20K; work between 10-130 h/wk

# Health Measures by BMI Classification

Variables	Least Risk	Increased Risk	High Risk	Very High Risk
Age*	49.3 ± 13.4	48.5 ± 13.0	48.5 ± 10.2	<b>54.6±12.6</b>
Systolic**	142 ± 15	142 ± 18	148 ± 19	151 ± 19
Diastolic	88 ± 10	91 ± 11	92 ± 8	94 ± 13
Exercise (% sedentary)	45.8%	52.8%	42.3%	<b>66.7%</b>
SSB intake	68.2%	73.6%	78.7%	76.1%
Fruit Intake	72.7%	56.6%	61.7%	58.7%
Fast Food Intake	33.3%	50.0%	40.4%	51.1%

SSB – Sugar Sweetened Beverages \* p<.05; \*\*p=.055 – approaching significance  
 Fruit Intake, SSB, Fast food – Self reported, per day, not servings or amount

## Consumption of Goods

## Frequencies

Consume Fruits (daily)	60%
SSB [Pop/Soda] (daily)	<b>76%</b>
Coffee Consumption (daily)	<b>93.7%</b> <b>(range 1-15)</b>
<b>Fast Food at Truck Stops</b>	
2x or more per day	<b>10%</b>
Once per day	<b>26%</b>
2-3 per week	<b>32%</b>
Once a week	12%
Rarely/Never	21%
<b>Fast Food (not at truck stops)</b>	
2x or more per day	5%
Once per day	15%
2-3 per week	<b>27%</b>
Once a week	<b>26%</b>
Rarely/Never	<b>26%</b>
Fridge in truck	76%
# Meals per day (not including snacks)	<b>1.2 ± 0.4 (range 1-2)</b>



# Grip Strength (Proxy Muscle Strength Quality of Life)

Age Norms (years)	Sample Size	Right OHS (kg)	CND Norms	Left OHS (kg)	CND Norms
25-29	6	41.7±10.5	~30%	41.3±10.4	~30%
30-34	15	47.8±6.3	~52%	45.6±6.0	~40%
35-39	16	50.9±13.8	~60%	51.1±10.9	~62%
40-44	15	49.4±8.0	~60%	46.2±6.1	~43%
45-49	31	46.9±8.9	~46%	46.2±8.9	~44%
50-54	28	47.4±9.5	~50%	46.4±8.6	~47%
55-59	32	45.2±9.8	~48%	43.5±9.4	~40%
60-64	22	41.3±8.0	~40%	37.5±7.9	~20%
65-69	13	38.7±12.0	~33%	34.0±12.5	~20%
70-74	6	37.6±4.7	~49%	34.8±5.5	~30%

CND (Canadian) - Canadian Health Measures Survey

CND norms: <https://www150.statcan.gc.ca/n1/pub/82-003-x/2016010/article/14665/tbl/tbl03-eng.htm>

# Conclusions

- ▶ **4.7% of our LHTD had a crash in past 12 months**
  - ▶ TD make up 20% of all crashes
    - ▶ Statistics Canada
- ▶ LHTD have poor dietary intake/patterns and sedentary levels PA
  - ▶ Unhealthy lifestyle practices resulting in high rates of overweight/obesity, NCDs and high BP
- ▶ Food and working environments are contributing factors to drivers' health
- ▶ LHTD are more susceptible to the already problematic food and working environments in Canada
  - ▶ Greater risk for developing NCDs
  - ▶ Inflating health care costs
  - ▶ Increased risk for crashes

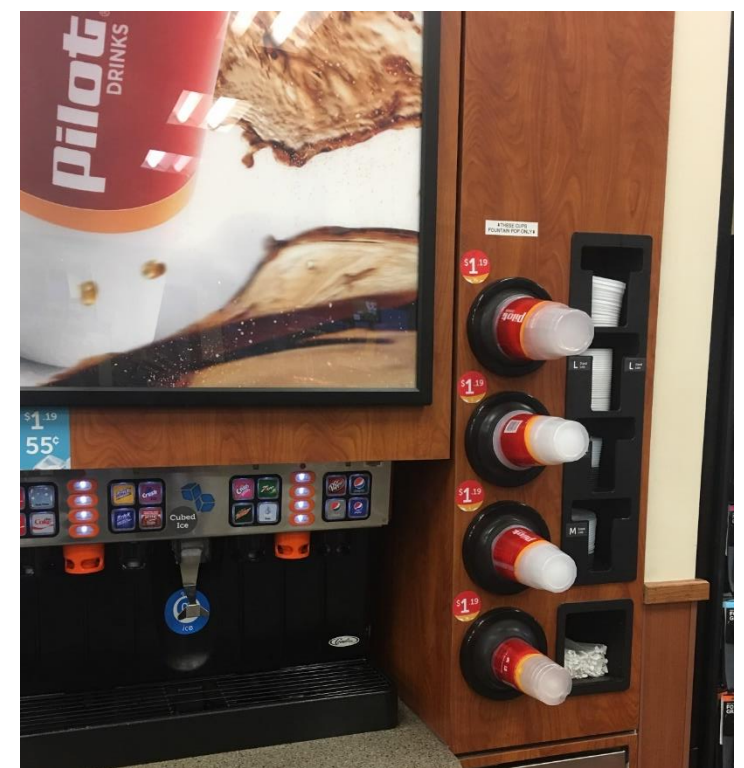
# Challenges for LHTD (examples)



Canada's Food Guide (January 2019)



**Barriers - Poor Quality**  
**Convenience, Taste LHTD? Interviews**



**Barriers**  
**Marketing**  
**Cost**  
**Choices**

# Recommendations

## Recognize obesity as a chronic disease

- WHO, CMA, AMA, yet no government

## Cause or highly correlated to other NCDs

- ▶ Fair access to health care
  - ▶ Naltrexone (alcohol and drug dependence)
  - ▶ Buprobion (depression and smoking)
  - ▶ Combined - Contrave (Weight loss) - \$3500 / month
- ▶ Increase support for prevention and treatment
- ▶ Eliminate stigma and weight bias
- ▶ Human rights



# Opportunities for a better lifestyle

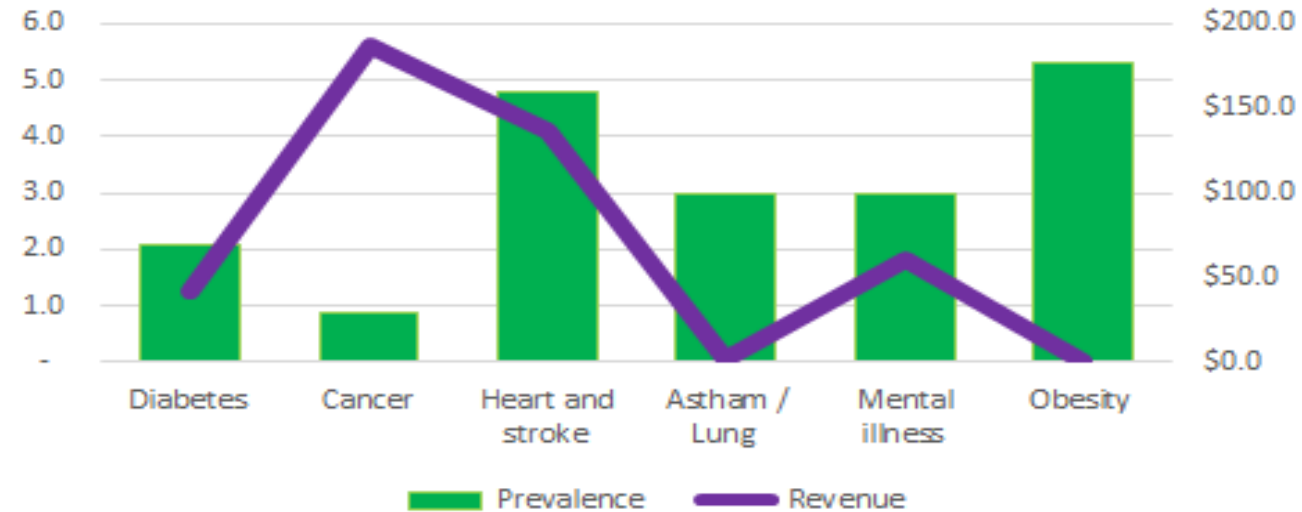
## Accessibility

- ▶ Healthy foods
  - ▶ Grocery, truck stops, etc.
- ▶ Physical activity
- ▶ Rest stops

## Programming

- ▶ Government Policy and Programs
  - ▶ Health Canada, marketing, etc
- ▶ Industry (Trucking)
  - ▶ Regulations, training
- ▶ Community
  - ▶ Education, understanding?

Funding Revenue vs. Disease Prevalence  
(\$'s and numbers in millions)



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# Questions, Thoughts, Comments?



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