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## Health Risks of American Long Distance Truckers: Results from a Multi-Site Assessment

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### Abstract

**Objective**—To assess the general and sexual health of long-haul truck drivers in the United States.

**Methods**—Drivers were recruited from company sites and truck stops in North Carolina, Tennessee, and Mississippi. A sample of 266 drivers was assessed for life-style activities; body mass index and blood pressure were measured, and biologic samples were taken for cholesterol, diabetes, and STI/HIV testing.

**Results**—The drivers in this study had higher levels of cholesterol and higher rates of smoking, obesity, and diabetes than the U.S average. STI/HIV infection rates were lower than the U.S. average.

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**Conclusions**—Long-haul truck driving is a stressful occupation with few opportunities for healthy living. Stress reduction, wellness programs, and better food and exercise options at truck stops should be adopted for the benefit of truckers and the safety of the driving public.

## Background

Trucking plays an essential role in the U.S. economy, moving over 70% of the freight across the country.<sup>1</sup> Long-haul trucking is often stressful and un conducive to healthy living. Time off is often limited to truck stops that may not offer quiet or safe sleep environments, healthy dining options, or opportunities for physical and recreational activity.<sup>2–5</sup> The nature of the job requires truckers to stay awake for long periods of time and spend many hours or days away from home. With these working conditions, it is not surprising that truckers are at increased risk of stress-related illness<sup>3, 6–7</sup>, and that they develop obesity, hypertension, high cholesterol, and smoking-related morbidity.<sup>8–9</sup> About one-third of truckers also lack medical insurance, and even more commonly, access to a regular healthcare provider.<sup>10</sup> This study presents the results of a multi-site assessment of truckers' physical and sexual health. Both company and independent (i.e., owner-operator) truckers were evaluated according to their different work conditions, access to health care, and distances to travel. These distinctions may be important when considering the occupational health risks of this sector of the workforce.

Sexual health among long-haul truckers has been the focus of HIV-related research outside the United States, with general agreement that occupational mobility has contributed to HIV transmission in Sub-Saharan Africa, South Asia, and South America.<sup>11–14</sup> However, little is known about truckers' sexual health as a specific area of study in the United States. A few papers have cited occupational stressors, such as loneliness and a transient lifestyle, as potential triggers for sexual risk-taking.<sup>3, 15</sup> Other papers have reported inconsistent condom use, interactions with sex workers and truck chasers, and illicit drug use as activities that may increase truckers' risk of sexually transmitted infections (STI) and HIV.<sup>16–17</sup> Sexual health items are included in our study for a more complete profile of truckers' health in the U.S. context.

## Aims

We hypothesized that occupational demands for on-time deliveries, irregular work schedules, and long distance travel would be stressful (and thus unhealthy), act as a barrier to health care-seeking, and lead to greater sexual risk-taking in this highly mobile population. The study specifically sought to quantify the health risks of a convenience sample of long-haul U.S. truckers by: 1) assessing the prevalence of diabetes, hypertension, obesity, hypercholesterolemia, syphilis, hepatitis C, hepatitis B, HIV, *N. gonorrhoeae*, and *C. trachomatis* through targeted health screenings at trucking companies and highway truck stops, and 2) assessing truckers' general and sexual health risk behaviors in an interviewer-administered survey.

## Methods

### Participant Recruitment and Study Procedures

All study procedures were reviewed and approved by ethics committees at the University of Alabama at Birmingham (Birmingham, AL) and Wake Forest University Health Sciences (Winston-Salem, NC). Discrete “screening blitzes” were conducted between 2007 and 2010 at six sites (4 companies and 2 truck stops) in three southern states: North Carolina (NC), Tennessee (TN), and Mississippi (MS). A screening blitz involved site visits over several days per time for recruitment of eligible volunteers. The eligibility criteria were: long-haul truckers (defined as a driver, full or part-time, who drove a truck across state lines [interstate]), and who were English speakers aged 21 or greater. Suitable volunteers were consented at a private location, where they had their blood pressure measured, were weighed and measured for Body Mass Index (BMI) calculation, submitted 30 cc of first void urine or a self-collected vaginal swab to test for *N. gonorrhoeae* and *C. trachomatis* (GenProbe APTIMA COMBO 2® Assay; GenProbe Inc, San Diego, CA), and had blood collected to measure total cholesterol, high density lipoprotein (HDL), and low density lipoprotein (LDL) (CardioChek™ PA; PTS Diagnostics, Indianapolis, IN). Blood was also collected for hemoglobin A1C (HgbA1C) levels, as well as for syphilis (Rapid Plasma Reagin), hepatitis C antibody and hepatitis B surface antigen. The samples were sent to a commercial laboratory for analysis. An oral swab was collected for rapid HIV antibody testing (OraQuick ADVANCE® Rapid HIV-1/2 Antibody Test; OraSure Technologies, Inc; Bethlehem, PA).

Next, all participants completed an interviewer-administered survey for information on social demographics, driving category (independent/company), work-related characteristics, health history, and diet. Sexual history was assessed according to past and current activity, with specific items on sex with multiple partners, as well as on unprotected oral, vaginal, or anal sex. Gift cards were provided after the interview. Post-interview, participants received their blood pressure, BMI, cholesterol, and HIV test results. Counseling and referrals were provided in a follow-up interview with truckers who had positive test results. All notifiable STI tests were reported to the health department of the participant’s home state in compliance with public health law.

### Statistical Analyses

Summary statistics were calculated for the study, including means, standard deviations, and medians for continuous measures, and frequencies and proportions for categorical data. To assess relationships between driver type and categorical measures, Fisher’s Exact Tests were used for analysis. Differences between subgroups in continuous data were assessed using independent t-tests. SAS (version 9.4, Cary, NC, USA) was used for all statistical analyses.

## Results

### Study Population

A total of 65.5% of the truckers who were approached at the six sites agreed to participate in the study. These volunteers were recruited from trucking companies (62.2%) or truck stops

(37.8%) in each of the study areas. Refusals involved time constraints, lack of interest, and desire to avoid a blood draw. Of the 294 truckers who volunteered to participate, 284 were men (96.6%) with a mean age of 45.4 years (range 21–74 years). The final sample of 266 truckers excluded 10 women whose numbers were too low to yield valid conclusions, and 18 men who did not meet the definition of long-haul trucker (N=11), or whose status as independent or company employee was missing from the survey data (N=7). Most truckers in the final sample were White (70.7%), Black (24.3%), and Other (4.9%). (Table 1). The truckers lived in 28 different states, most commonly North Carolina (N=99; 37.2%), Tennessee (N=32; 12.0%), and Virginia (N=21; 7.9%). The majority (89.9%) lived in a house, apartment, or condominium, while only 3.4% lived in their truck (data not shown).

The company and independent truckers were similar in terms of age (45.7 years versus 45.3 years) and education (49.5% versus 52.1% had finished high school). They varied in terms of race (74.1% versus 55.3% were White), married/committed relationship (70.5% versus 56.2%), and solo driver status (86.2% versus 91.7%), although these differences were not statistically meaningful. Significant differences between the groups occurred in relation to income and health insurance. Few company truckers earned more than \$80,000 annually (4.2% versus 50% for independent truckers), although they did not have to pay for upkeep or insurance on their rigs. This difference is meaningful because by some estimates, the average independent trucker works at a 5% profit margin, with 95% of their revenue going towards truck maintenance and job-associated expenses.<sup>18</sup> Company truckers were significantly more likely to have health coverage (89.9% versus 58.3%), which also contributed to cost savings for this group (Table 1).

The truckers had worked for a mean of 4.5 companies (1–38) during their careers, which, on average, spanned more than a decade (mean 15.4 +/- 11.4 years; range 0–50/years). They had been employed as company or independent truckers for an average of 5.6 years. The average driving distance was 4,917 miles (median 5,000) over 2 weeks prior to the survey, and the mean time away from home was 16.5 nights over the previous 30 days. Independent truckers had driven more miles than company truckers (5,006 versus 4,897 miles in previous two weeks), although this difference did not reach statistical significance ( $p = 0.73$ ; data not shown). Independent truckers were away for significantly more nights than company truckers (20.5 versus 15.7 nights;  $p < 0.0003$ ; data not shown). Most truckers (80%) reported taking their breaks at a truck stop, with 10.8% breaking at a rest area, 2.1% at a highway on/off ramp, and 7.2% at a different location.

### Self-Reported Health Status

Self-reported health was good, with 35.5% of truckers indicating very good or excellent health, and 42% indicating good health (Table 2). On the question of whether or not poor health currently interfered with daily activities, only 15% of truckers answered that it did. Although most truckers (64.5%) felt out of shape, 60.5% also reported that they had exercised within the past 30 days. On average, this group worked out on 3.8 days per week during this time period. Almost half of the overall sample (47.7%) reported having a past diagnosis of hypertension or pre-hypertension and, among those with a prior diagnosis, 62.1% were taking blood pressure medications. The majority of truckers (77.3%) reported

having a cholesterol check in the past, and 45.8% of this group was aware that their cholesterol was high. Nineteen truckers (7%) reported having coronary artery disease, and 15 (5.6%) had a history of myocardial infarction. Forty-six truckers (17.3%) had been diagnosed as pre-diabetic or diabetic. No statistical differences existed between types of truckers on these measures (all  $p > .05$ ).

### Access to Health Care

The two trucker types reported different sources of health care. Employer-based health coverage had enabled 75.2% of company truckers to receive healthcare from a personal provider compared to 54.2% of independent truckers (Table 2). On a related point, 25% of independent truckers had received care from an acute care facility or emergency room compared to only 15% of company truckers ( $p < 0.05$ ). Most truckers had U.S. Department of Transportation (DOT) check-ups, either annually (32%) or every two years (62.8%), although only 20.1% had additional checkups. Barriers to health care were reported by both groups, with 32% of truckers citing conflicts between work schedules and doctors' hours, and 19.6% citing financial problems that prevented them from obtaining health care.

### Substance Use

One third of the total sample (32.3%) smoked cigarettes on the job, although almost half of this group (48.8%) had tried to quit over the past year (Table 2). Half of all truckers (50.8%) reported alcohol intake over the past 30 days. Only 2.6% of truckers reported any drug use in the last 3 months, with marijuana as their drug of choice. Independent truckers reported using illicit drugs more often than company truckers (6.4% versus 1.8%), although the difference was not statistically significant.

### Sexual Health

Most truckers (82%) had been sexually active over the past six months. Independent truckers, who spent longer periods of time away from home than company truckers ( $p = .0003$ ), were more likely to report having more than one sex partner over the past three months (16.2% versus 6.6%) (Table 3). Almost all truckers self-identified as heterosexual (98.1%), with only 2.6% reporting a history of same-sex contact. Many truckers did not feel at risk of STIs, as indicated by low rates of condom use (a mean of 1 condom for every 10 episodes of vaginal sex), and prior testing for HIV (43.6%). Seventeen truckers reported having casual sex without condoms at least half the time, and 9.4% had exchanged sex for money or drugs in the past. Only one trucker reported having been diagnosed with STI in the past year, although 17.3% reported having had at least one STI, usually gonorrhea (63.6%).

### Test Results

The biomedical screenings and test results identified additional chronic health conditions in both groups. More than two-third of truckers (68.3%) were obese (mean BMI 32.8, range 19–55), and 20.5% (54/264) were diabetic as defined by an HgbA1C of 6.5% or higher (mean HgbA1C 6.1%, range 4.4–9.7%) (Table 4). Their mean blood pressure was 135/86 mmHg (median 132/85 mmHg, 98–190/58–120 mmHg), and their mean total cholesterol was 169 mg/dL (range 100–272 mg/dL). Almost half (47.8%) of the truckers were

hypertensive or pre-hypertensive, and 62.1% of this group had been prescribed blood pressure medications for this problem in the past. Independent truckers were more likely than company truckers to have high blood pressure and high cholesterol, although the differences were not statistically significant.

Fifty-one truckers who denied (or did not remember) ever being told that they had a particular health condition were found to have met the criteria for diabetes (HgbA1C  $\geq$  6.5%), high cholesterol (total cholesterol  $\geq$  200 mg/dL), or hypertension (SBP  $\geq$  140 mmHg and DBP  $\geq$  90 mmHg). Of this group, 24 were diagnosed with diabetes, 14 with high cholesterol, and 19 with hypertension. All of these men were referred for evaluation of the new medical condition, and some were referred for more than one condition. In sum, 41 company truckers (19%) and 10 independent truckers (21%) were referred for further evaluation for at least one condition that was reported as being undiagnosed at the time of their screening ( $p=0.84$ ; data not shown).

The STI test results indicated that seven truckers (3.2%) had positive hepatitis C antibody and one had evidence of chronic active hepatitis B infection (0.5% positive for HbsAg) (Table 4). One trucker was diagnosed with genital chlamydial infection, and another had a positive RPR that failed to confirm with the treponemal assay and was therefore a false positive test. All tests for gonorrhea and HIV were negative. The truckers' STI morbidity was low and, in the case of hepatitis, was likely to reflect more remote exposure.

## Discussion

This study assessed the physical and sexual health of 266 long-haul truckers at 6 sites in the Southeast region of the United States. The results build on a small body of earlier research on long-haul U.S. truckers' health in which they were found to have higher rates of smoking, hypertension, and elevated cholesterol,<sup>6</sup> as well as higher rates of obesity,<sup>4,8</sup> metabolic syndrome,<sup>19</sup> and ischemic heart disease than other U.S. employees and the general population as a whole.<sup>20</sup> With the exception of Valway et al.,<sup>15</sup> the small number of U.S. studies that have specifically addressed STI/HIV risk in this population used qualitative methods.<sup>7,21</sup> The current study may be the most comprehensive to date in matching biomarker and prevalence data with U.S. truckers' self-reports of health behavior and morbidity, and with occupational factors such as DOT checkups and access to health care.

The truckers in this study met the U.S. average for cholesterol checks (77% versus 76%), and a diagnosis of pre-hypertension or hypertension (47% versus 46%).<sup>22</sup> They exceeded the U.S. average for obesity (68.3% versus 36.5%), high cholesterol (46% versus 39%), diabetes (15% versus 10%), and cigarette smoking (32% versus 21%).<sup>22</sup> Some truckers who reported being in good to excellent health had therefore overestimated their health status. Apart from the alarming levels of obesity, these results reflect national trends for chronic health conditions, as well as occupational-specific factors such as being sedentary for extended periods of time and limited food options at truck-stop restaurants.<sup>23</sup> The high rate of cigarette smoking can be attributed, in part, to truckers' blue-collar culture and low educational attainment.<sup>24</sup> The older age of the truckers compared to the U.S. labor force as a whole (45 years versus 41 years) may also have contributed to their higher morbidity.<sup>25</sup>



The truckers had similar education levels and social backgrounds. Research has tied social status to health outcomes,<sup>27–28</sup> which may account for non-statistical differences in health outcomes between company and independent truckers. The two groups also had similar work conditions, including mandatory annual or biennial DOT health screenings and, if diagnosed with serious conditions such as diabetes or heart disease, having to seek treatment in order to retain a commercial driver's license. Other factors include driving schedules that are a barrier to seeing a doctor during standard office hours, which means that both groups are driving when they feel ill. Many truckers self-treat by taking over-the-counter drugs or wait until they return home to seek medical care, and keep making deliveries unless they are extremely ill.<sup>29</sup>

The independent truckers nevertheless had higher rates of hypertension and cholesterol than the company truckers, who had higher rates of health insurance coverage and greater opportunities for preventive care. The proportion of truckers in each group who were referred for evaluation of a new medical condition was not significantly different. It is worth noting that access to health coverage under the Affordable Care Act would be available to independent truckers if the study were conducted today. Driving schedules and other factors, such as social isolation, the pressure of meeting deadlines for delivery, and limited food options at truck-stop restaurants, remain the same for both groups and call for better food choices and more flexible access to health care near truck stops and other convenient locations.

The results for sexual health counter popular myths about “highway cowboys” and the freewheeling style of U.S. long-haul truckers.<sup>7</sup> STI/HIV prevalence was low, and 92% of truckers reported having had no sex or only one partner over the past three months. The independent truckers had higher rates of casual sex, longer driving routes, and were less likely to be in committed relationships than the company truckers, but these factors did not result in higher rates of STI/HIV. The small number of positive test results can be compared to some areas of Sub-Saharan Africa, South Asia, and South America, in which long-haul truckers had similar risk factors but high HIV/STI rates.<sup>11–14</sup> Valway et al.'s<sup>15</sup> study of long-haul truckers in New Mexico also found low rates of STIs, which the authors attributed to low contact with sex workers and lower rates of STI/HIV compared to some countries outside the United States. Trucking industry changes such as GPS tracking and faster delivery times have contributed to more surveillance and less risk-taking among U.S. long-haul truckers in recent decades.<sup>7</sup> These multiplicative factors not only suggest that trucking is no longer the “Wild West” for sexual risk-taking, but that occupational stress and chronic health problems are the true frontier for interventions that are designed to protect truck truckers' health.

## Strengths and Limitations

This study used a multi-site convenience sample that was recruited from truck stops and trucking companies and provided data on the general and health risks of long-haul truckers. This purposive method enabled data collection for numerous health conditions, while conducting a health and behavioral assessment of 266 truckers in three Southern states. The authors worked with several company administrations to help recruit truckers for the

research, a method that might have been biased in favor of company drivers, although the percentage of U.S. independent drivers is quite small.<sup>30</sup> The research also excluded non-English speakers and truckers who were unwilling to participate, as well as women whose numbers were too small for valid conclusions. The exclusions and regional focus suggest that the results may not be representative of all 1.6 million long-haul truck drivers in the United States. Given that study recruitment took place across several states over an extended period of time, duplicate enrollment of drivers were possible. However, at entry into the study, a unique identifier was created for each participant consisting of letters and numbers specific to the individual. Therefore, if an individual erroneously enrolled more than once, even if previously enrolled in another state, he would have shown up in the system with the same unique identifier, but with a different date of enrollment and/or site. No duplicate unique identifiers occurred during the study period. A particular strength of the study is the mixed methodology that enhanced the validity of the results, offset problems with recall bias and socially desirable answers, and provided a comprehensive profile of truckers' risk behavior and health outcomes. The biological markers not only provided a check on the truckers' self-reports, but revealed under-reported chronic health conditions such as heart disease and diabetes.

## Recommendations

The results of this study highlight the need for interventions that are designed to improve truckers' health status and create a healthier working environment for them. Specifically, the findings support prior calls for more truck stops and rest areas in order to alleviate occupational stress,<sup>2-3</sup> improved access to health care for this highly mobile workforce,<sup>29</sup> and interventions to extend healthcare coverage to all employees in the trucking population.<sup>10</sup> The results strengthen the case for healthier dining options,<sup>5</sup> and access to gyms in order to reduce morbidly high obesity rates among truckers.<sup>4,8</sup> Actions to change known risk factors such as smoking are also needed in view of self-reported rates of smoking that are well above the national average.<sup>8</sup> However, with increased industry competition, a growing trend toward deregulation, and political uncertainty over the fate of the Affordable Care Act (ACA), lifestyle interventions could become less available to truckers in the future. This change would mostly affect independent truckers who have access to nutrition counseling and preventative care for smoking, obesity, and diabetes through the ACA. Such deregulatory pressures may also affect drug and alcohol testing, as well as the number of hours that truckers can drive safely. Notwithstanding these political trends, the need for stress reduction, wellness programs, and better food and exercise options at truck stops have all been strongly supported by the trucking industry through initiatives such as "wingmen programs" in which buddies exercise, diet, and check on each other.<sup>31</sup> These recent advances in private-public support for wellness programs prompt us to recommend their universal adoption for the benefit of truckers and the safety of the driving public.

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**Table 1**

Study Population Stratified by Driver Type\*

Characteristic	Company Drivers N=218	Independent Drivers N=48	Total N=266	p-value
<b>Age</b>	45.7 (SD=10.8)	45.3 (SD=11.6)	45.6 (11.0)	0.82
<b>Race</b>				0.027
White	160 (74.1%)	26 (55.3)	186 (70.7)	
Black	46 (21.3)	18 (38.3)	64 (24.3)	
Other	10 (4.6)	3 (6.4)	13 (4.9)	
<b>Ethnicity</b>				0.24
Hispanic	15 (7.6)	6 (13.3)	21 (8.7)	
Non-Hispanic	182 (92.4)	39 (86.7)	221 (91.3)	
<b>Marital Status</b>				0.11
Married/committed	153 (70.5)	27 (56.2)	180 (67.9)	
Single	16 (7.4)	7 (14.6)	23 (8.7)	
Separated/divorced/widowed	48 (22.1)	14 (29.2)	62 (23.4)	
<b>Education</b>				0.55
<12years	39 (18.1)	7 (14.6)	46 (17.4)	
High School graduate/GED	107 (49.5)	25 (52.1)	132 (50.0)	
Some college	55 (25.5)	10 (20.8)	65 (24.6)	
Technical school	15 (6.9)	6 (12.5)	21 (8.0)	
<b>Driver Class</b>				0.063
Solo	188 (86.2)	44 (91.7)	232 (87.2)	
Team	24 (11.0)	1 (2.1)	25 (9.4)	
Both	6 (2.8)	3 (6.2)	9 (3.4)	
<b>Income</b>				<0.0001
<40,000/year	65 (30.1)	9 (18.8)	74 (28.0)	
40,000–80,000/year	142 (65.7)	15 (31.2)	157 (59.5)	
>80,000/year	9 (4.2)	24 (50.0)	33 (12.5)	
<b>Pay Basis**</b>				<0.0001
Per mile	195 (89.4)	24 (51.1)	219 (82.6)	
Hourly	2 (0.9)	0	2 (0.8)	
Per trip	8 (3.7)	13 (27.7)	21 (7.9)	
Salaried	2 (0.9)	0	2 (0.8)	
Other	11 (5.1)	10 (21.3)	21 (7.9)	
<b>Health Insurance***</b>				<0.0001
Private, company-based	178 (81.7)	12 (25.0)	190 (71.4)	
Private, not company-based (self-insured/spouse)	9 (4.1)	13 (27.1)	22 (8.3)	
Veteran's Administration	5 (2.3)	2 (4.2)	7 (2.6)	
Medicaid/Medicare	1 (0.5)	1 (2.1)	2 (0.8)	

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Characteristic	Company Drivers N=218	Independent Drivers N=48	Total N=266	p-value
Other	3 (1.4)	0	3 (1.1)	
None	22 (10.1)	20 (41.7)	42 (15.8)	

\* Totals may not equal 100% due to missing data

\*\* Some drivers reported more than one method of payment

\*\*\* Some drivers reported more than one type of insurance coverage

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**Table 2**

Health Status Stratified by Driver Type<sup>#</sup>

Characteristic	Company Drivers N=218	Independent Drivers N=48	Total N=266	p-value
<b>General health perceived as...</b>				0.82
Very good/Excellent	76 (35.0)	17 (37.8)	93 (35.5)	
Good	93 (42.9)	17 (37.8)	110 (42.0)	
Fair/Poor	48 (22.1)	11 (24.4)	59 (22.5)	
<b>DOT check-up frequency</b>				0.74
Every 2 years	135 (61.9)	32 (66.7)	167 (62.8)	
Annually	72 (33.0)	13 (27.1)	85 (31.9)	
Every 6 mo	7 (3.2)	2 (4.2)	9 (3.4)	
Other	4 (1.8)	1 (2.1)	5 (1.9)	
<b>Months since last non-DOT check-up</b>				0.72
0 – 12 mo	156 (73.6)	32 (69.6)	188 (72.9)	
>12mo	14 (6.6)	4 (8.7)	18 (7.0)	
>24mo	42 (19.8)	10 (21.7)	52 (20.1)	
<b>Where receive healthcare</b>				0.017
Personal provider	164 (75.2)	26 (54.2)	190 (71.4)	
Emergency room/acute care facility	33 (15.1)	12 (25.0)	45 (16.9)	
Non-acute care clinic	15 (6.9)	6 (12.5)	21 (7.9)	
Other	6 (2.8)	4 (8.3)	10 (3.8)	
<b>Exercise/30d</b>				0.10
Yes	137 (62.8)	24 (50.0)	161 (60.5)	
No	81 (37.2)	24 (50.0)	105 (39.5)	
<b>Diagnosed with hypertension/borderline hypertension?</b>				0.20
Yes	88 (40.4)	18 (37.5)	106 (39.8)	
Borderline	20 (9.2)	1 (2.1)	21 (7.9)	
No	110 (50.5)	29 (60.4)	139 (52.3)	
<b>Cholesterol checked ever?</b>				0.25
Yes	170 (78.7)	34 (70.8)	204 (77.3)	
No	46 (21.3)	14 (29.2)	60 (22.7)	
<b>Informed cholesterol high?</b>				0.54
Yes	75 (44.9)	17 (50.0)	92 (45.8)	
No	84 (50.3)	17 (50.0)	101 (50.2)	
Don't know	8 (4.8)	0	8 (4.0)	
<b>History of myocardial infarction?</b>				0.16
Yes	10 (4.6)	5 (10.4)	15 (5.6)	
No	208 (95.4)	43 (89.6)	251 (94.4)	
<b>Diagnosed with diabetes?</b>				0.76

Characteristic	Company Drivers N=218	Independent Drivers N=48	Total N=266	p-value
Yes	32 (14.7)	7 (14.6)	39 (14.7)	
Borderline	5 (2.3)	2 (4.2)	7 (2.6)	
No	181 (83.0)	39 (81.3)	220 (82.7)	
<b>Current cigarette smoking</b>				0.61
Yes	69 (31.7)	17 (35.4)	86 (32.3)	
No	149 (68.3)	31 (64.6)	180 (67.7)	
<b>Tried to quit at least 1 day in last 12 months</b>				0.58
Yes	32 (47.1)	9 (56.3)	41 (48.8)	
No	36 (52.9)	7 (43.7)	43 (51.2)	
<b>Drugs/3mo</b>				0.11
Yes	4 (1.8)	3 (6.4)	7 (2.6)	
No	214 (98.2)	44 (93.6)	258 (97.4)	

# all numbers do not add up to 100% due to missing data and/or answer of "unsure/don't know"



**Table 3**

Sexual Behavior and STD History By Driver Type

Characteristic	Company Drivers N=218	Independent Drivers N=48	Total N=266	p-value
<b>STD/12mo?</b>				>0.99
Yes	1 (3.3)	0	1 (2)	
No	29 (96.7)	11 (100)	40 (98)	
<b>Ever tested for HIV?</b>				0.68
Yes	95 (43.6)	21 (43.8)	116 (43.6)	
No	112 (51.4)	23 (47.9)	135 (50.8)	
Not sure	11 (5.0)	4 (8.3)	15 (5.6)	
<b>Sex partner gender</b>				>0.99
Female	212 (97.3)	47 (97.9)	259 (97.4)	
Male	2 (0.9)	0	2 (0.7)	
Both	4 (1.8)	1 (2.1)	5 (1.9)	
<b>Sexual identity</b>				0.63
Heterosexual	214 (98.2)	47 (97.9)	261 (98.1)	
Homosexual	2 (0.9)	0	2 (0.8)	
Bisexual	2 (0.9)	1 (2.1)	3 (1.1)	
<b>Sexually active/6mo</b>				0.34
Yes	181 (83.0)	37 (77.1)	218 (81.9)	
No	37 (17.0)	11 (22.9)	48 (18.1)	
<b>&gt;1 partner/3mo</b>	12/181 (6.6)	6/37 (16.2)	18/218 (8.3)	0.092
<b>Ever exchange sex for drugs/money</b>				0.79
Yes	20 (9.2)	5 (10.4)	25 (9.4)	
No	198 (90.8)	43 (89.6)	241 (90.6)	

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**Table 4**

Biologic Outcomes

Test	Company Driver N=218	Independent Driver N=48	p-value
Systolic blood pressure (mmHg; mean, (std dev); median, range)	134.3 (14.4); 132 (110, 190)	138.3 (18.0); 139 (98, 190)	0.16
Diastolic blood pressure (mmHg; mean, (std dev); median, range)	85.8 (9.7); 86 (62, 120)	84.1 (12.7); 84 (58, 110)	0.40
BMI (mean, (std dev); median, range)	32.7 (5.9); 32 (19, 50)	33.0 (6.0); 33 (23, 55)	0.77
Total cholesterol (mg/dL; mean, (std dev); median, range)	167 (37); 161 (100, 272)	174.0 (38); 172 (100, 259)	0.25
HgbA1C (%; mean, (std dev); median, range)	6.1 (0.8); 6.0 (4.4, 9.3)	6.1 (1.1); 5.8 (5.0, 9.7)	0.91
	Number (%)	Number (%)	P-value
<b>Hepatitis C antibody</b>			
Positive	7 (3.2)	0	0.36
Negative	211 (96.8)	48 (100)	
<b>Hepatitis B surface antigen</b>			
Positive	1 (0.5)	0	>0.99
Negative	217 (99.5)	48	

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