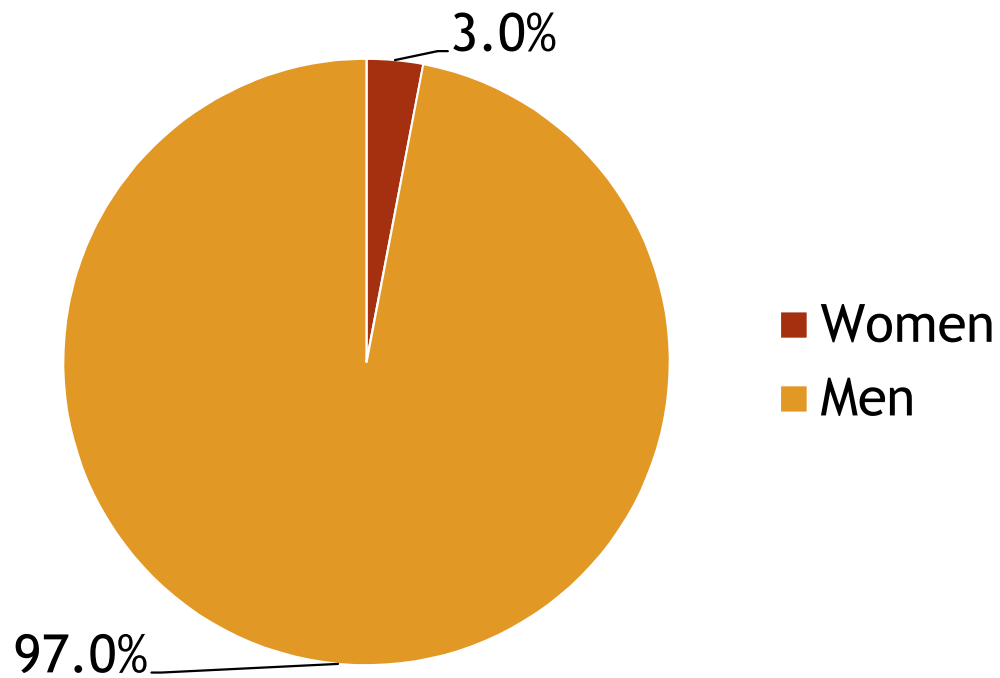




# Women in the Construction Trades: Addressing Health & Safety Challenges

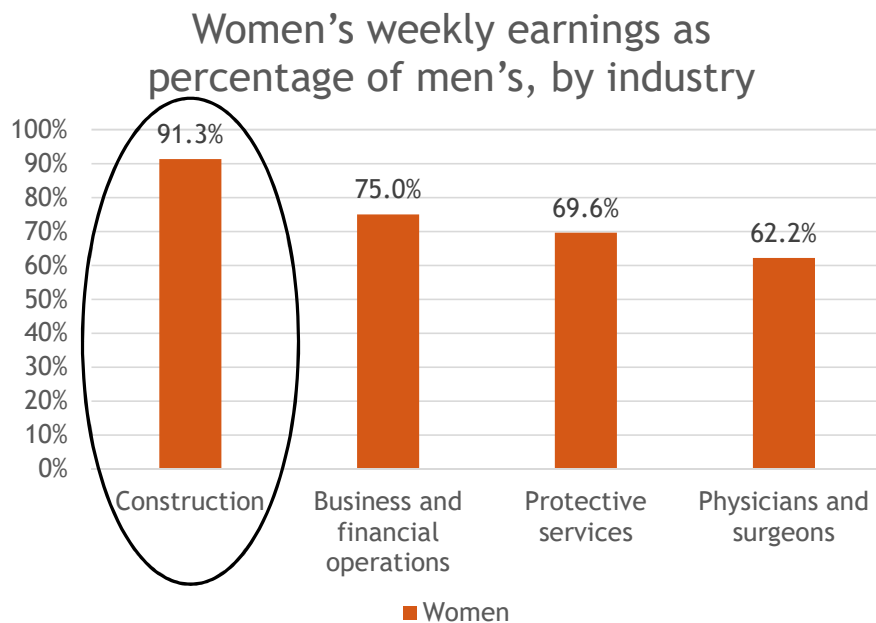
**Noah Seixas, PhD and Hannah M. Curtis, MPH**  
UW Department of Environmental & Occupational Health Sciences

# Why the labor shortage?



\*Source: Bureau of Labor Statistics, 2016

# Financial benefits of the trades



**\$22.88**  
Median hourly  
wage

Women earn **91.3%** of men's weekly earnings

\*Sources: BLS, Women in the Labor Force: A Datebook. 2015; BLS, Occupational Employment Statistics, 2015

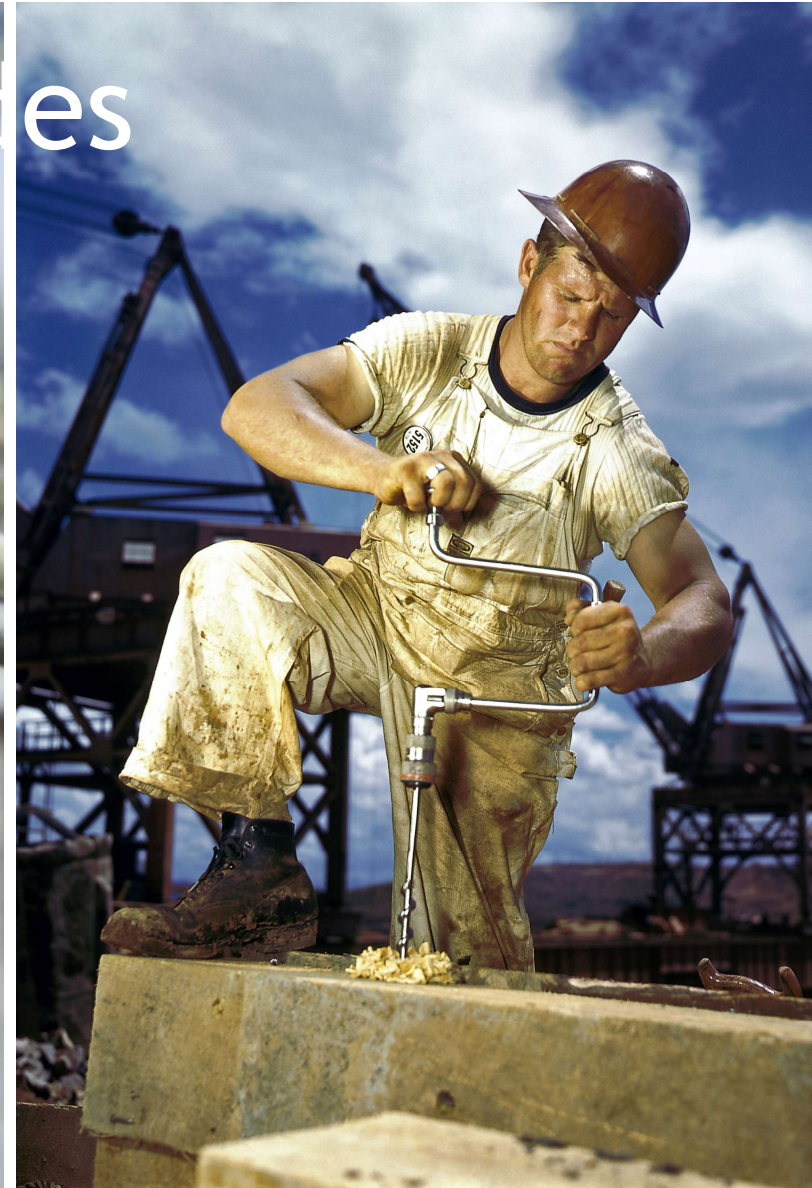
“There’s that feeling of pride when you drive by a building that you know you were a part of, and you kind of feel like you left a part of yourself all over the county.”

Journeywoman electrician

# Masculinity of the trades



\*Image: Freelance Commission



# Social capital

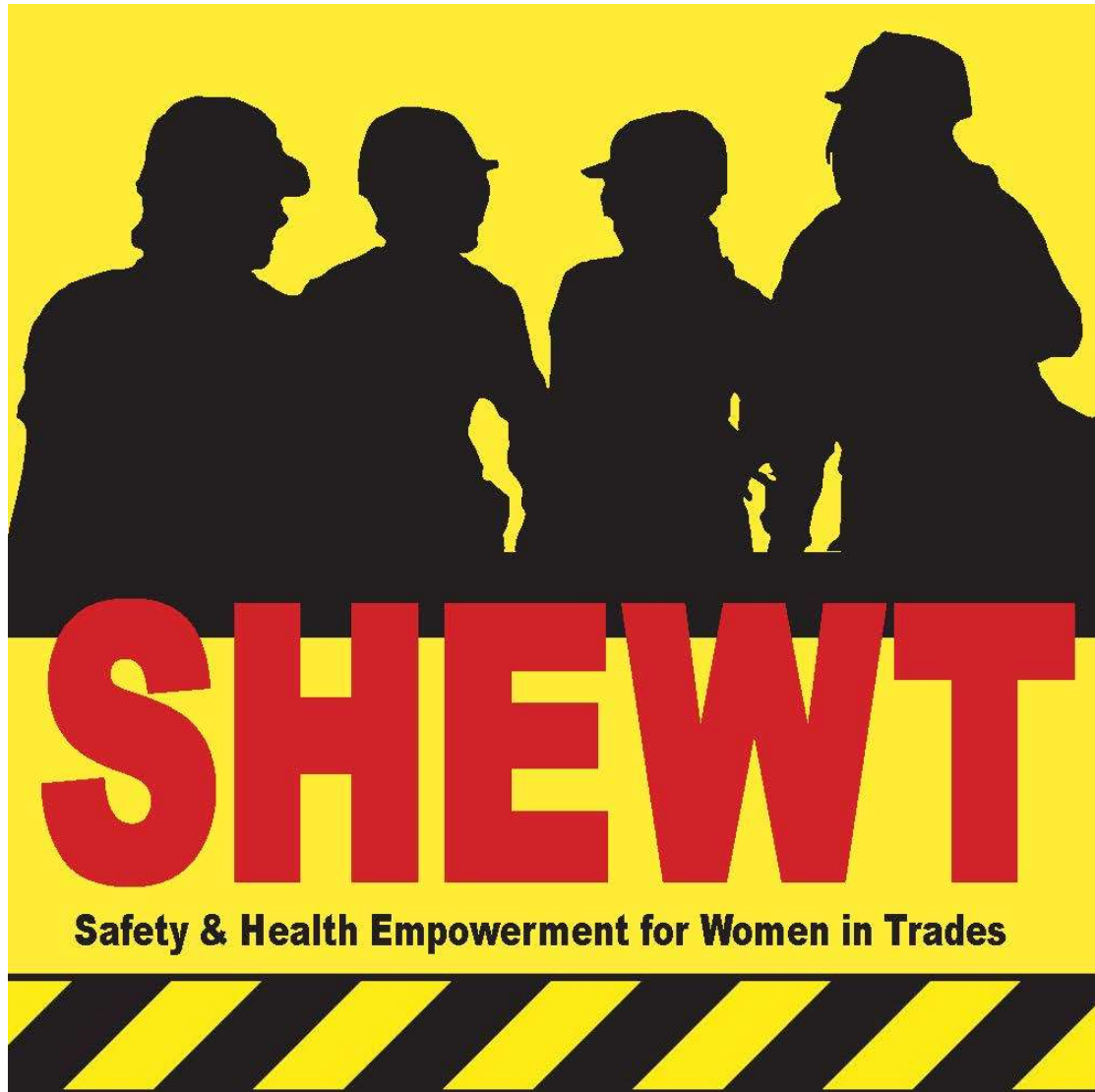
- ▶ Shared values and understandings of a culture that enable individuals and groups to trust each other and work together effectively
- ▶ Social capital is also related to influence and the authority individuals gain or lose through their relationships, how they respond to social expectations, and how they communicate within their culture



# Masculinity of the trades

“It is so hard to find gear that fits!  
Why is that so darn hard? When I talk  
to vendors they just say there is no  
money in it.”

Tradeswoman/safety professional



# SHEWWT

Safety & Health Empowerment for Women in Trades



# Study methods

## ▶ Focus Groups

- ▶ 4 groups held in 2015
- ▶ 19 tradeswomen and 6 tradesmen
- ▶ Recruited through advisory committee

## ▶ Questionnaires

- ▶ Administered via online, phone, & paper surveys in 2015-2016
- ▶ 198 women and 93 men
- ▶ Recruited through community partners

# Focus group themes: Physical risks

- ▶ Dangerous work environment
  - ▶ Slips/trips/falls
  - ▶ Electricity
  - ▶ Loud noise
  - ▶ Chemical exposure
- ▶ Chronic injuries
- ▶ Complacency
- ▶ Management prioritizing production over safety

“You could die any day if you stick your finger in the wrong place at the wrong time”

Journeywoman electrician

“The normal wear and tear... I mean I’ve only done it for two years, and I can already feel it in my back and my knees.”

Apprentice electrician

## Focus group themes: Non-physical risks

- ▶ Job insecurity
- ▶ No paid sick leave
- ▶ Inadequate bathrooms
- ▶ Macho culture
- ▶ Hazing

“I just don’t use the bathroom. I mean, I only work like five minutes from my house so it’s like I will hold it all day long. I hate it—I cannot stand Honey Buckets.”

Journeywoman electrician

“It’s always hard to break into a group. And there’s a certain amount of...hazing, just pulling tricks on the new person that happens.”

Journeyman carpenter

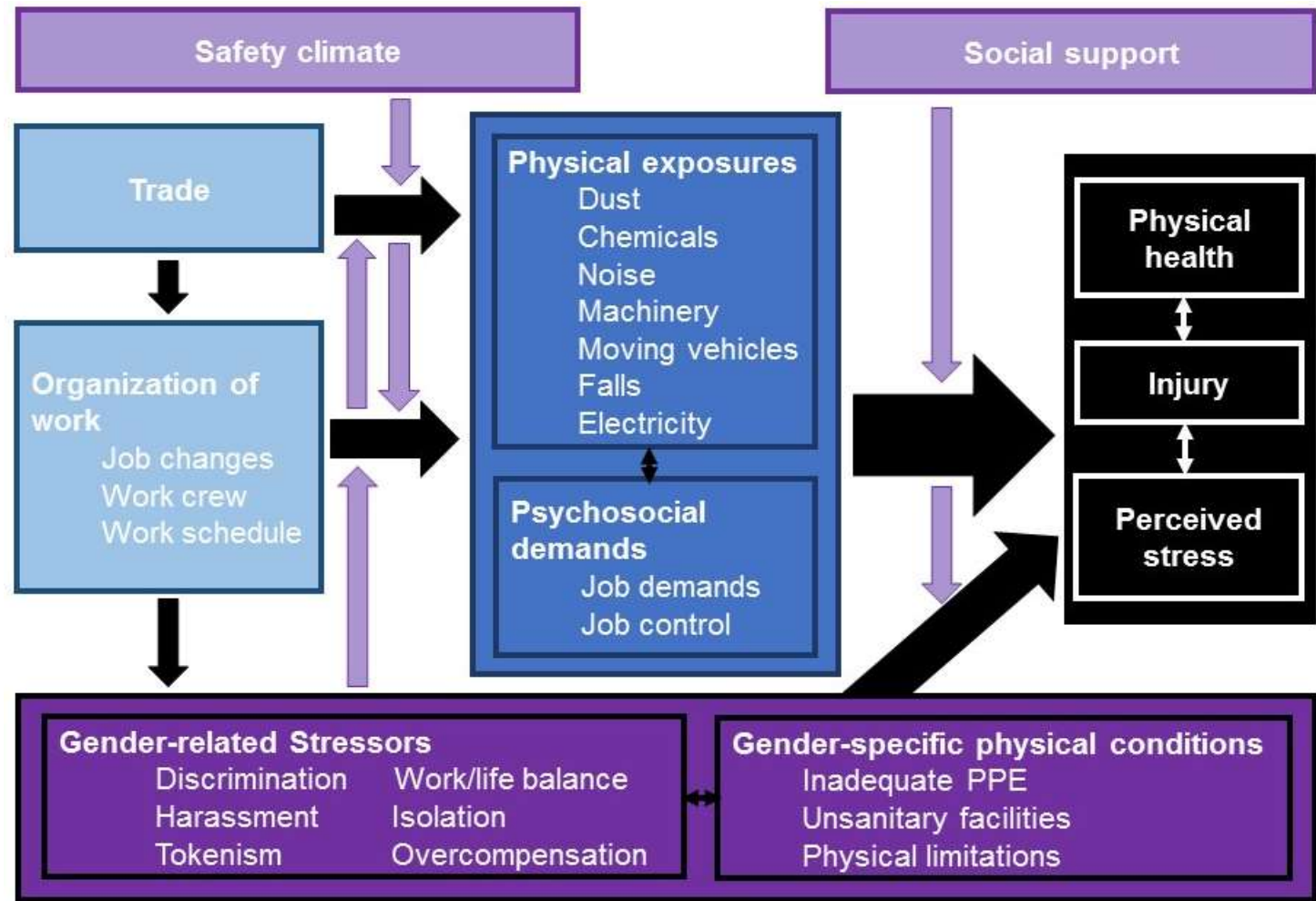
## Focus group themes: risks to women

- ▶ Inadequate PPE
- ▶ Physical limitations
- ▶ Sexual harassment
- ▶ Gender discrimination
- ▶ Tokenism
- ▶ Overcompensation
- ▶ Poor work-life balance
- ▶ Fear of reporting

“It’s like being under a magnifying glass every day you go to work.”

Journeywoman electrician

# Conceptual Model of Workplace Stressors Affecting Health and Safety of Women in Trades



## Conceptual model key:

- = exposure
- = exposure and modifier
- = structural factor
- = outcome
- = direct association
- = modifying assoc.

# Main Findings

“I have been doing this a long time. It has gotten better but so much of the stress is covert, hard to pin down. The harassment never really stops; you learn to ignore it... Men don't want us there so it is a constant, unstated hostile environment.”

Journeywoman electrician

	Women (n=198)	Men (n=93)
	%	%
<b>Self-Rated Health</b>		
<b>Poor</b>	6	7
<b>At Least 1 Injury in Past Year*</b>		
<b>Yes</b>	31	12
<b>Perceived Stress*</b>		
<b>High</b>	31	18

\*Women and men are significantly different at  $p < 0.05$

# Regression OR's for psychosocial risks (Women)

OR = 1 for no association;

OR <1 is protective, OR > 1 is higher risk

Variable (reference category)	Injury in last year OR	Stress OR
Overcompensation (low) High	4.23 ***	1.94
Sexual harassment (low) High	2.13	2.40
Work/Life Balance (good) Bad	1.45	7.78 ***
Age Discrimination (no) Yes	2.17	9.77 ***
Gender Discrimination (no) Yes	2.71 **	2.46
Bullying (no) Yes	2.28	2.43
Isolation (low) High	1.53	2.08
Safety Climate (low) High	0.61	0.40
Social Support (low) High	1.24	0.25 **
Debt/Job Loss/ Homelessness (no) Yes	2.83	4.65 ***

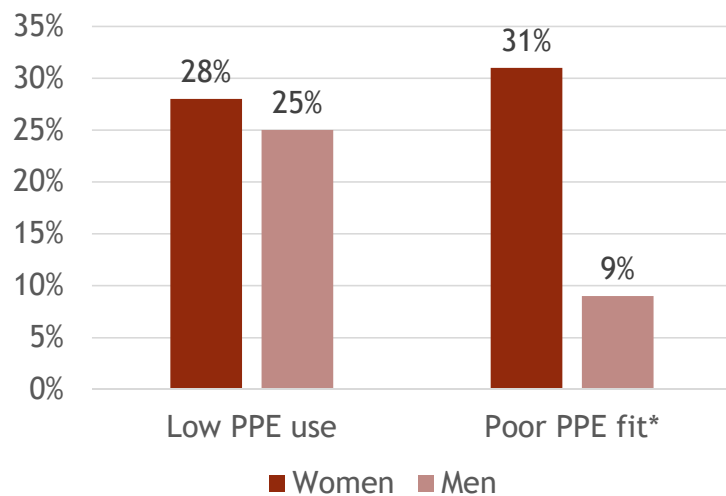
\*p<0.05

\*\*p<0.01

\*\*\*p<0.001

All models controlled for:  
Age, Trade, Level

# Main Findings: PPE



\*Women and men are significantly different at  $p < 0.05$   
Women (n=198), men (n=93)

Of women who did not feel comfortable asking for better PPE, more than half listed **“fear of being labeled complainer by coworkers”** or **“fear of layoff”** as the primary reason



## Take-home messages

- ▶ Large untapped labor force interested in construction
  - ▶ Benefits of construction employment are substantial
  - ▶ But barriers to participation are many, especially for women
- ▶ The effects of a gendered workforce
  - ▶ Labor shortage
  - ▶ Unfair access to protected groups
- ▶ But also, increases health and injury risks
  - ▶ For women, but likely for men, too

# What can we do?

- ▶ Hire more women!
- ▶ Education/Inclusion training
- ▶ More better bathrooms
- ▶ Enforce anti-discrimination and harassment policies
  - ▶ Zero tolerance for safety violations.
  - ▶ Why not for harassment?
- ▶ Build such policies into bid specs

“I don’t think women apprentices get adequate **mentoring**”

“When it is possible,  
**mentors** should be  
provided for  
apprentices...”

“...get connected to another woman in  
the trades who can be a **mentor**”

## “Offer a **mentoring** program”

“I really think that we should have **mentors** who  
are trained in being **mentors** rather than solely  
as journeymen.”

“It would be ideal to have a **mentoring** program for  
women as an apprentice in the particular trade she  
is in to help understand the construction industry.”

# SHEWT Mentorship

- ▶ Pilot program to empower women apprentices to address health and safety
- ▶ Train 15 journeywomen and journeymen to serve as mentors for ~25 women apprentices
  - ▶ Carpenters, Electricians, Ironworkers, Laborers, Pipe Trades
  - ▶ Mentors learn how to support mentees as they navigate construction culture and help them advocate for their health and safety needs
- ▶ Safety and Health is seen as a key focus for effective mentorship

# We're not alone on Mentorship (Women, Minorities, All workers)

- ▶ Trades and Apprenticeships
  - ▶ Carpenters
  - ▶ Pipe Trades
  - ▶ Sheetmetal workers
  - ▶ Ironworkers
  - ▶ Electricians
- ▶ Pre-apprenticeships Regional Collaborative
  - ▶ Government/Owners (King County, City of Seattle, Sound Transit, Port of Seattle)
  - ▶ Contractors (Sellen, Mortenson, and others)
  - ▶ Pre-Apprenticeships (e.g., ANEW, PACE, PACT, YouthBuild)
- ▶ Mentorship programs need sustainable development and coordination

To learn more, visit:  
<http://deohs.washington.edu/shewt>

<b>SHIP</b> Grant Program	Safety and Health Investment Projects SafetyGrants.Lni.wa.gov
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“The heartbreak about onsite job accidents is someone who’s new to the trade that was withheld the training and information from the journey-level workers around them. And while this happens to a lot of new people it specifically and oftentimes uniquely happens to women and minorities in the trades. They are left out to fend for themselves because there is a group of people who don’t think they should be there.”

Retired electrician



# Questionnaire

## CONSTRUCTS MEASURED

Occupational exposures	Job demands/control	Work organization	General health
PPE	Overcompensation	Work/life balance	Injury
Discrimination	Harassment	Safety climate	Perceived stress
Tokenism	Isolation	Social support	

- ▶ Recruited using contacts from community partners in unions, apprenticeship programs, contractors, and trade associations
- ▶ Data collection
  - ▶ 291 surveys completed by workers throughout WA State
  - ▶ Mix of online, paper, and phone interviews
- ▶ Analysis
  - ▶ Descriptive statistics, logistic regression to test associations

## Regressions for “Stress” and “Injury” (Women)

OR = 1 for no association;

OR <1 is protective, OR > 1 is higher risk

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<b>Variable (reference category)</b>	<b>Injury in last year OR</b>	<b>Stress OR</b>
Trade (Laborer)		
Carpenter	0.63	0.68
Electrician	2.05	1.52
Pipe Trades	1.25	1.27
Sheet Metal	3.24	0.34
Other	1.32	0.99
Level (Journey)		
Apprentice	1.92	0.67
Age ( $\leq 30$ )		
31-40	2.11	0.52
41-50	1.89	0.37
>50	1.47	0.26

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\*p<0.05 \*\*p<0.01 \*\*\*p<0.001