



# Work-Related Musculoskeletal Disorders (WMSDs) in Washington State Services

A Summary of Research Study Findings

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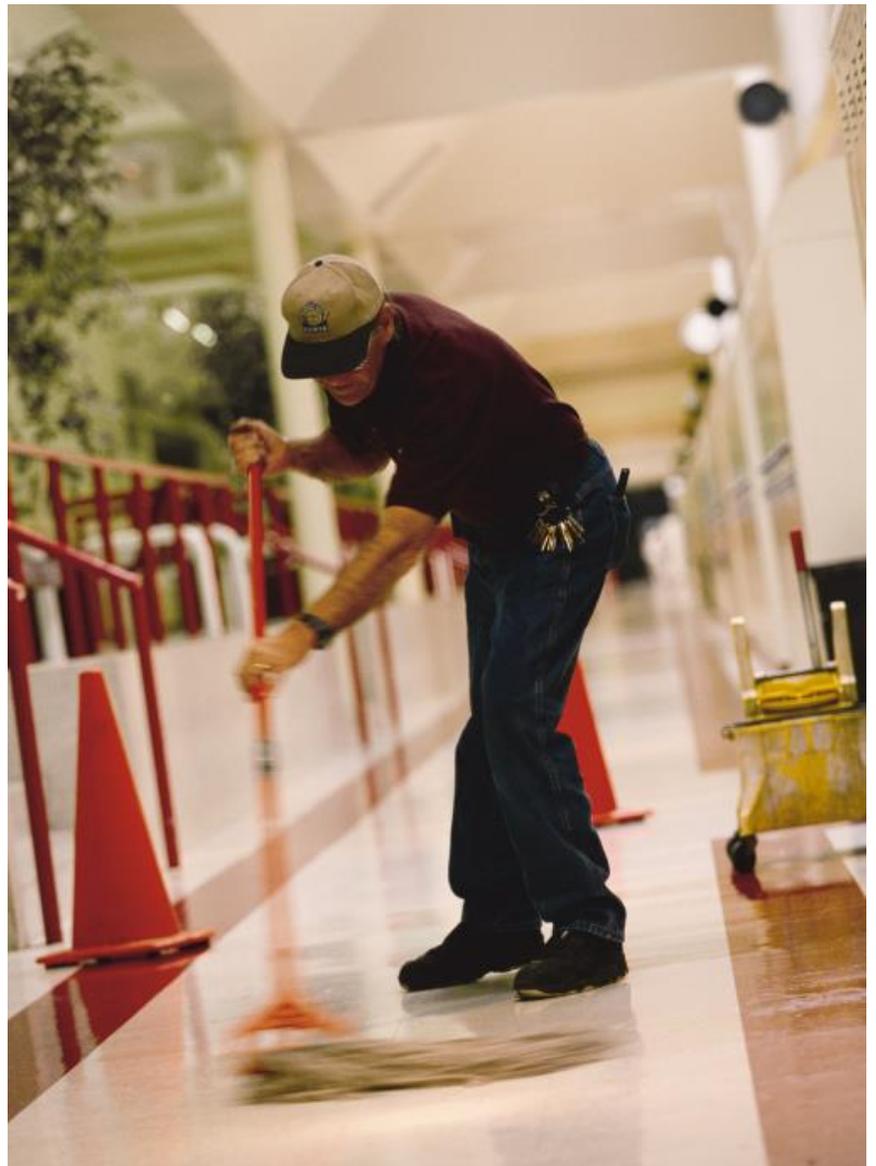
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### Why do we study sprains and strains and overexertions?

The Services sector in Washington State includes a range of industries. Workers in these environments face a multitude of occupational hazards that may lead to serious injuries, from fractures and dislocations to contusions and lacerations.

However, the most common and most costly types of injuries services workers incur are soft-tissue sprains and strains, generally referred to collectively as work-related musculoskeletal disorders (WMSDs). These injuries can result from years of accumulated stress on muscles, tendons, ligaments, and nerves. Common risk factors for WMSDs include repetitive motions, awkward body postures, forceful hand exertions, and heavy or frequent manual material handling.

In 2010 the Safety and Health Assessment and Research for Prevention (SHARP) Program, began a five-year study exploring the physical and organizational factors that may contribute to WMSDs in several major industries of the Services sector. Through interviews with company managers, employee representatives, and injured workers, our researchers gained insight into the organizational climate, the nature of existing safety programs, and the context within which WMSDs occur. During site visits to Services operations, SHARP researchers assessed physical risk factors for hundreds of jobs using a combination of well-researched evaluation instruments. This report draws on the data collected and summarizes the results of the analyses performed.



### What are the injury trends in Services?

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According to Washington State workers' compensation claims data from 2002-2010, Services ranks fifth (out of six) when compared to other industry sectors in its compensable claims rate of WMSD injuries (for claims that involved more than 3 days away from work).

However, two Services industry groups rank in the top 25 when ranking industry groups within all industry sectors by compensable claims incidence rate, and the sector as a whole is responsible for more than one quarter of non-medical costs in all industries in the state.

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Services to Buildings and Dwellings has the highest number of lost work days among all Services groups.



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Within Services, the top five industry groups by claims rate are:

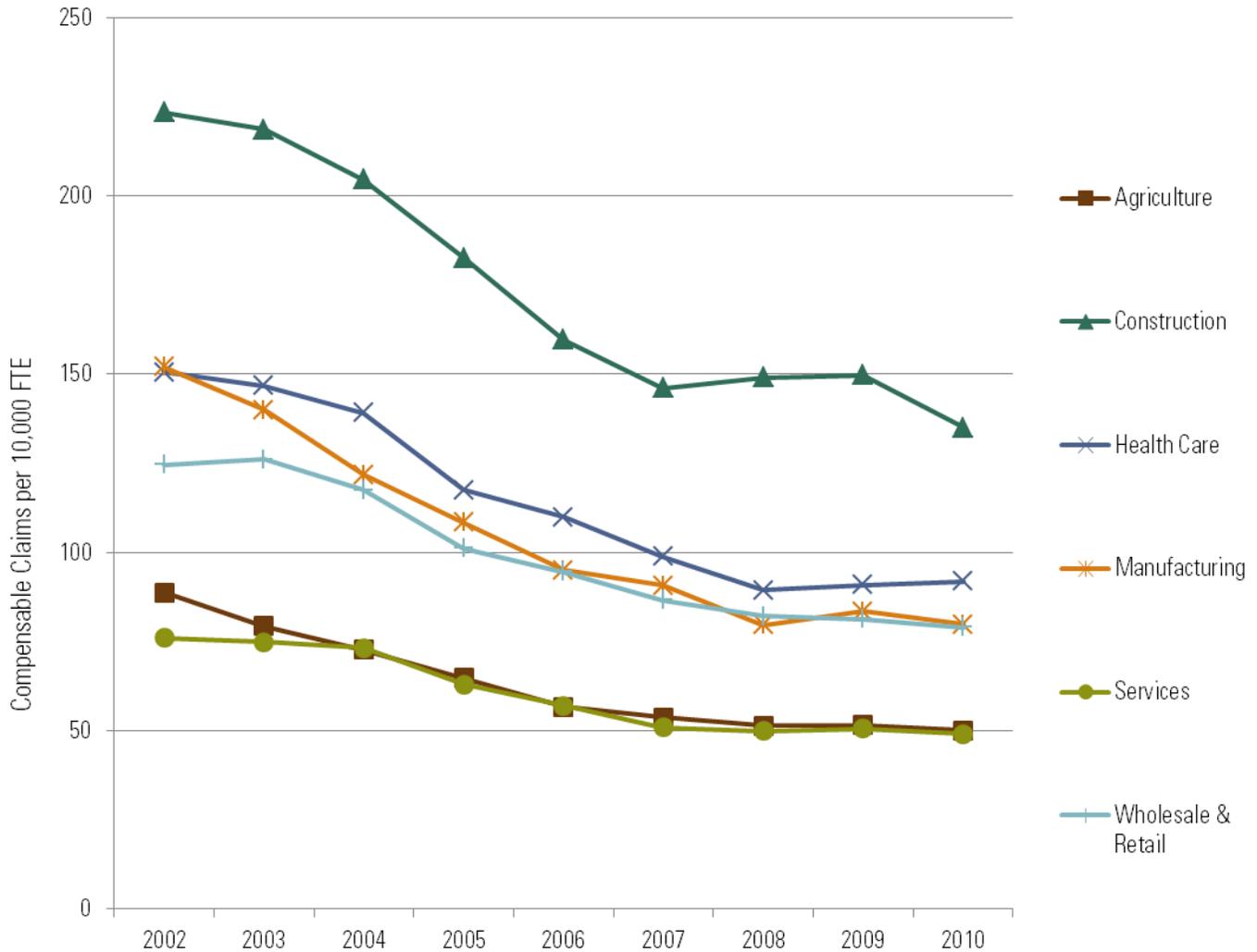
1. Waste Collection
2. Spectator Sports
3. Services to Buildings and Dwellings
4. Executive, Legislative, and Other General Government Support
5. General Rental Centers

Services to Buildings and Dwellings has the highest number of lost work days among all Services groups (826,938 lost days). When ranked by non-medical costs, Executive, Legislative, and Other General Government Support is the highest industry group (\$147,775,267).

Injuries of the back are the most commonly reported WMSD injury, compared to other body areas.

# How does Services compare to other industry sectors in Washington State?

Washington State, Compensable WMSD Claims Rates, 2002-2010<sup>1 2</sup>



<sup>1</sup> Compensable Claim = a claim that involved more than 3 days away from work

<sup>2</sup> FTE = full time equivalent, an employee working 2000 hours/year

## Which industry groups in Services have high WMSD claims rates?

### Top 25 Study Industry Groups by Claims Rate, 2002-2010\*

Industry Sector	Industry Group Description	Incidence Rate Per 100 FTE**
Services	Waste Collection	2.92
Health Care	Residential Mental Retardation, Mental Health and Substance Abuse Facilities	2.76
Health Care	Psychiatric and Substance Abuse Hospitals	2.64
Wholesale & Retail Trade	Beer, Wine, and Liquor Stores	2.41
Health Care	Other Ambulatory Health Care Services	2.40
Wholesale & Retail Trade	Vending Machine Operators	2.31
Construction	Foundation, Structure, and Building Exterior Contractors	2.15
Manufacturing	Other Furniture Related Product Manufacturing	2.12
Services	Spectator Sports	1.98
Health Care	Nursing Care Facilities	1.98
Manufacturing	Dairy Product Manufacturing	1.96
Wholesale & Retail Trade	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	1.86
Health Care	Community Care Facilities for the Elderly	1.81
Construction	Building Finishing Contractors	1.81
Construction	Residential Building Construction	1.73
Agriculture	Aquaculture	1.71
Wholesale & Retail Trade	Grocery and Related Product Merchant Wholesalers	1.68
Manufacturing	Clay Product and Refractory Manufacturing	1.65
Health Care	General Medical and Surgical Hospitals	1.65
Agriculture	Poultry and Egg Production	1.64
Wholesale & Retail Trade	Grocery Stores	1.64
Wholesale & Retail Trade	Department Stores	1.60
Manufacturing	Sawmills and Wood Preservation	1.59
Manufacturing	Electric Lighting Equipment Manufacturing	1.59
Health Care	Other Residential Care Facilities	1.58

\*Washington State, all compensable WMSD claims. This table lists only those industry groups included in the present study, such that the Transportation & Utilities industry group has been omitted. Very small industry groups (those with 50 companies or fewer) have also been excluded.

\*\*FTE = full time equivalent, an employee working 2000 hours/year

## What is the burden of WMSDs in Services?

### Cost and Lost Days in Services (Industry Groups by Rate Rank), 2002-2010\*

Industry Group	Non-Medical Costs	Lost Work Days**	Incidence Rate Per 100 FTE***	Rate Rank
All Industries	\$3,881,386,921	28,354,928	0.89	--
All Services	\$1,043,528,393	8,455,712	0.60	--
Waste Collection	\$22,023,516	105,330	2.92	1
Spectator Sports	\$2,921,404	12,652	1.98	2
Services to Buildings and Dwellings	\$70,955,880	826,938	1.57	3
Executive, Legislative, and Other General Government Support	\$147,775,267	286,173	1.52	4
General Rental Centers	\$2,258,578	28,710	1.51	5
Justice, Public Order, and Safety Activities	\$47,961,711	295,358	1.35	6
Personal and Household Goods Repair and Maintenance	\$8,285,176	79,495	1.32	7
Rooming and Boarding Houses	\$9,531,036	137,253	1.29	8
Facilities Support Services	\$6,077,534	47,633	1.17	9
Waste Treatment and Disposal	\$4,358,423	27,603	1.17	10
Automotive Repair and Maintenance	\$59,477,826	541,647	1.15	11
Dry Cleaning and Laundry Services	\$8,013,093	84,092	1.13	12
Special Food Services	\$12,299,068	168,341	1.07	13
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	\$15,065,230	92,719	1.07	14
Employment Services	\$50,007,650	628,581	1.01	15
Lessors of Real Estate	\$32,946,975	357,330	1.00	16
Traveler Accommodation	\$24,158,126	340,751	0.96	17
Commercial and Industrial Machinery and Equipment Rental and Leasing	\$5,733,858	47,018	0.92	18
Automotive Equipment Rental and Leasing	\$3,463,299	32,628	0.88	19
Administration of Housing Programs, Urban Planning, and Community Development	\$5,038,136	37,412	0.88	20
Performing Arts Companies	\$2,401,520	16,632	0.84	21
Other Support Services	\$6,005,134	62,532	0.82	22
Personal Care Services	\$11,980,093	174,266	0.82	23
Telecommunications Resellers	\$5,947,824	3,374	0.79	24
Administration of Economic Program	\$18,903,230	112,380	0.79	25
Remediation and Other Waste Management Services	\$26,425,555	77,915	0.77	26
Newspaper, Periodical, Book, and Directory Publishers	\$8,860,560	60,629	0.77	27
Death Care Services	\$1,975,382	19,254	0.75	28
Private Households	\$4,216,257	42,825	0.75	29
Wired Telecommunications Carriers	\$10,549,593	69,031	0.72	30
RV (Recreational Vehicle) Parks and Recreational Camps	\$3,026,717	40,339	0.72	31
Elementary and Secondary Schools	\$60,668,252	112,386	0.71	32
Promoters of Performing Arts, Sports, and Similar Events	\$835,486	11,037	0.69	33
Administration of Environmental Quality Programs	\$10,245,431	82,006	0.68	34
Drinking Places (Alcoholic Beverages)	\$5,419,862	90,652	0.60	35

(Continued on next page)

Industry Group	Non-Medical Costs	Lost Work Days**	Incidence Rate Per 100 FTE***	Rate Rank
Other Amusement and Recreation Industries	\$11,888,992	144,634	0.58	36
Consumer Goods Rental	\$4,480,655	47,592	0.58	37
Activities Related to Real Estate	\$9,587,970	102,949	0.56	38
Civic and Social Organizations	\$6,077,182	79,921	0.56	39
Other Personal Services	\$3,355,864	43,086	0.51	40
Administration of Human Resource Programs	\$22,733,184	162,397	0.50	41
Full-Service Restaurants	\$40,551,492	586,034	0.50	42
Gambling Industries	\$3,312,764	48,390	0.49	43
Other Information Services	\$1,508,742	14,002	0.47	44
Social Advocacy Organizations	\$629,846	8,819	0.46	45
Advertising, Public Relations, and Related Services	\$6,194,371	74,019	0.45	46
Electronic and Precision Equipment Repair and Maintenance	\$2,297,958	18,923	0.43	47
Museums, Historical Sites, and Similar Institutions	\$1,038,206	11,206	0.43	48
Limited-Service Eating Places	\$27,588,256	379,881	0.42	49
Business Support Services	\$12,074,932	126,238	0.40	50
Office Administrative Services	\$8,051,457	58,864	0.38	51
Colleges, Universities, and Professional Schools	\$32,275,375	256,275	0.37	52
Other Professional, Scientific, and Technical Services	\$5,092,144	67,178	0.36	53
Investigation and Security Services	\$5,128,196	52,953	0.35	54
Junior Colleges	\$8,201,419	74,930	0.35	55
Agencies, Brokerages, and Other Insurance Related Activities	\$7,571,302	30,527	0.35	56
Business, Professional, Labor, Political, and Similar Organizations	\$5,255,180	62,592	0.32	57

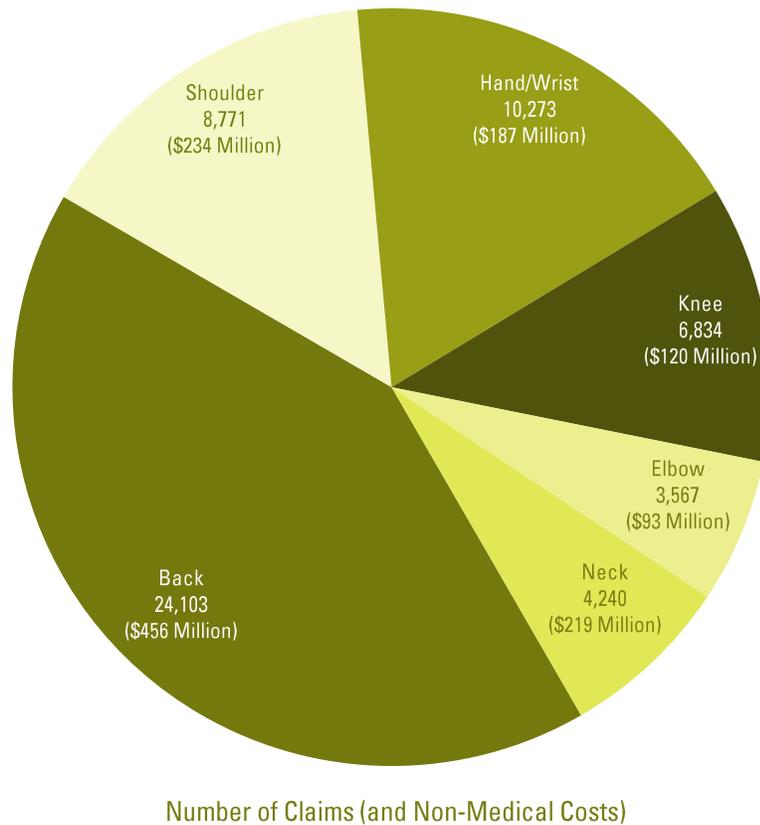
\*Washington State, All Compensable WMSD Claims

\*\*Lost work days included total time loss for state fund claims only; does not include self-insured employers.

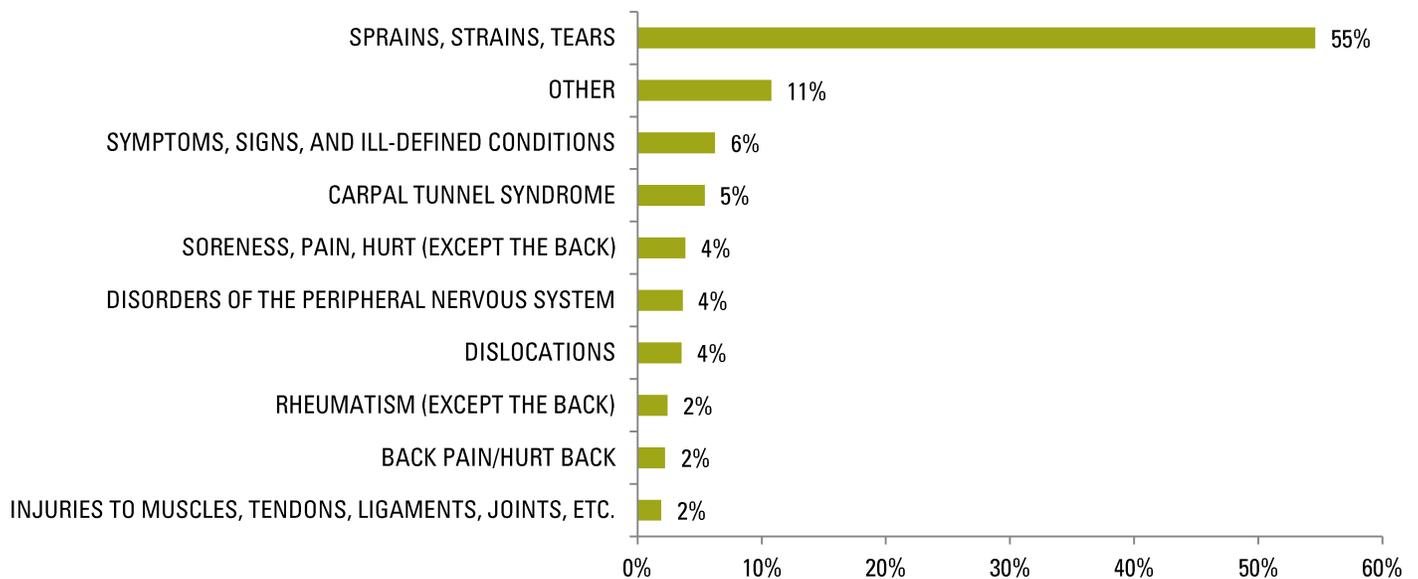
\*\*\*FTE = full time equivalent, an employee working 2000 hours/year

# What kind of WMSD injuries are occurring in Services?

## WMSD Claims & Non-Medical Costs in Services by Body Area, 2002-2010<sup>3</sup>



## WMSD Claims in Services – Top 10 “Nature of Injury” Categories, 2002-2010<sup>4</sup>



<sup>3</sup> Washington State, All Compensable WMSD Claims. A claim may include more than one body area. WMSD claims with uncategorized body area have been excluded.

<sup>4</sup> Washington State, All Compensable WMSD Claims. Excluded categories include remaining 5% of claims.

## What are the physical risks in Services?

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### Focus Industry Groups:

- ▶ **Services to Buildings and Dwellings**
- ▶ **Traveler Accommodations**

### Methods

To assess the physical risk factors in the Services sector, SHARP researchers visited 16 companies; 8 classified as “Services to Buildings and Dwellings” and 8 companies classified as “Traveler Accommodations.” At each site, we assessed risk factors specific to 4 body parts; the back, the shoulder, the hand and wrist, and the knee. We evaluated 436 jobs for WMSD risk factors. Based on the exposure to these risk factors, we then determined the magnitude of risk of injury as either low, moderate, high, or very high.

The physical risk factors that were evaluated are those that have been associated with WMSDs. These risk factors are:

- Awkward postures
- Lifting
- Pushing, pulling, carrying
- High hand forces
- Highly repetitive motions
- Repeated impacts of the hand or knee
- Vibration (whole body, hand)

### Results

The charts in the following pages display some of the notable findings from our analyses.

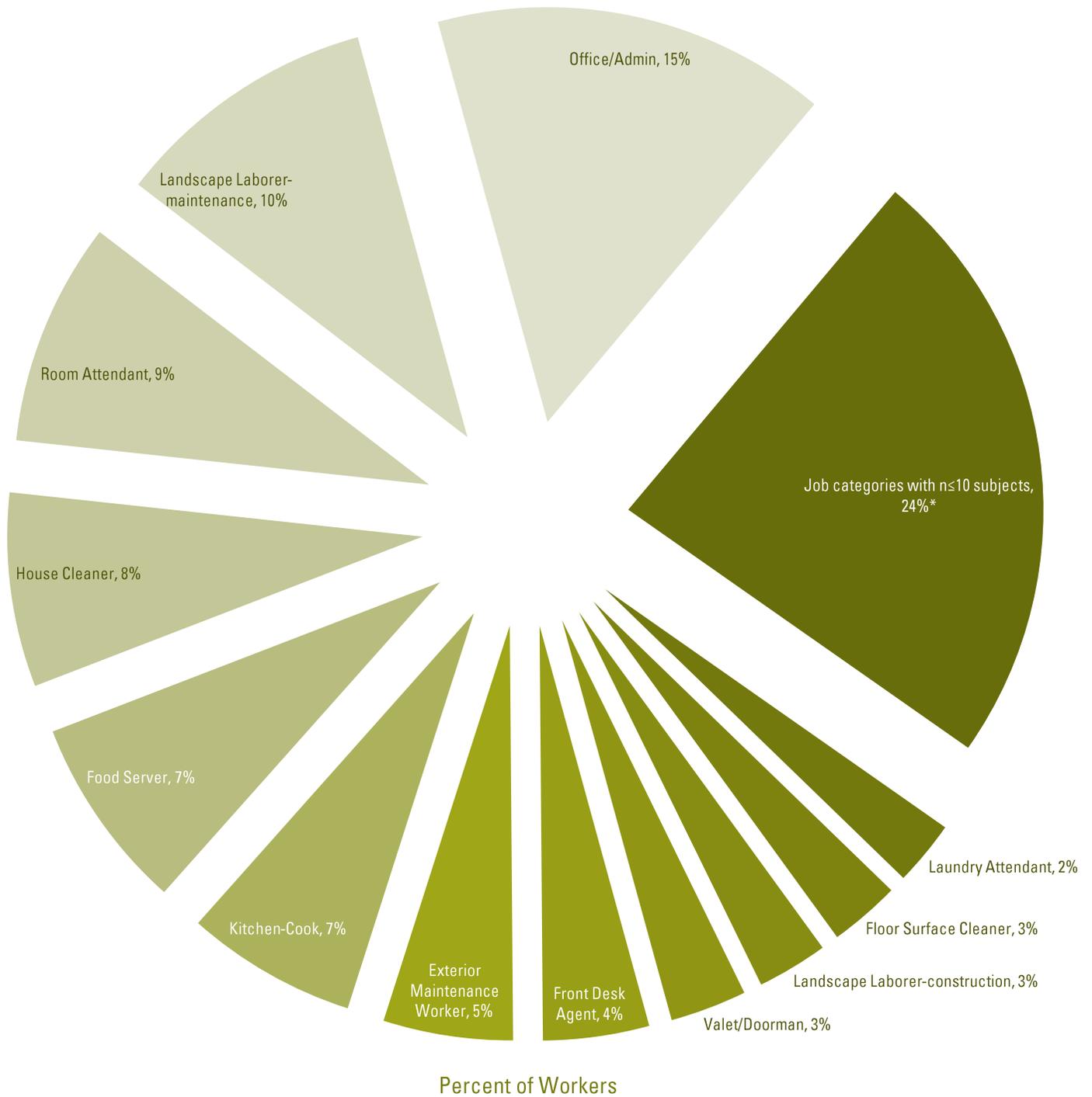
- Job Categories Assessed
- Level of Risk of Injury from Working with Elevated Shoulder Postures
- Level of Risk of Injury from Static Back Postures
- Level of Risk of Injury from Awkward Neck Postures
- Level of Risk of Injury from Prolonged Stress
- Level of Risk of Injury from Manual Material Handling Activities (Lifting, Carrying, Pushing, Pulling)

The charts that follow illustrate the level of risk (very high, high, moderate, low) posed by exposure to each risk factor. The level of risk is determined by these factors:

- The duration of exposure to the risk factor (How long?)
- The frequency of exposure to the risk factor (How often?)
- The intensity of the exposure to the risk factor (How much?)

## Job Categories Assessed

We observed jobs in a large number of categories (39 in total) in the Services Industry Sector.

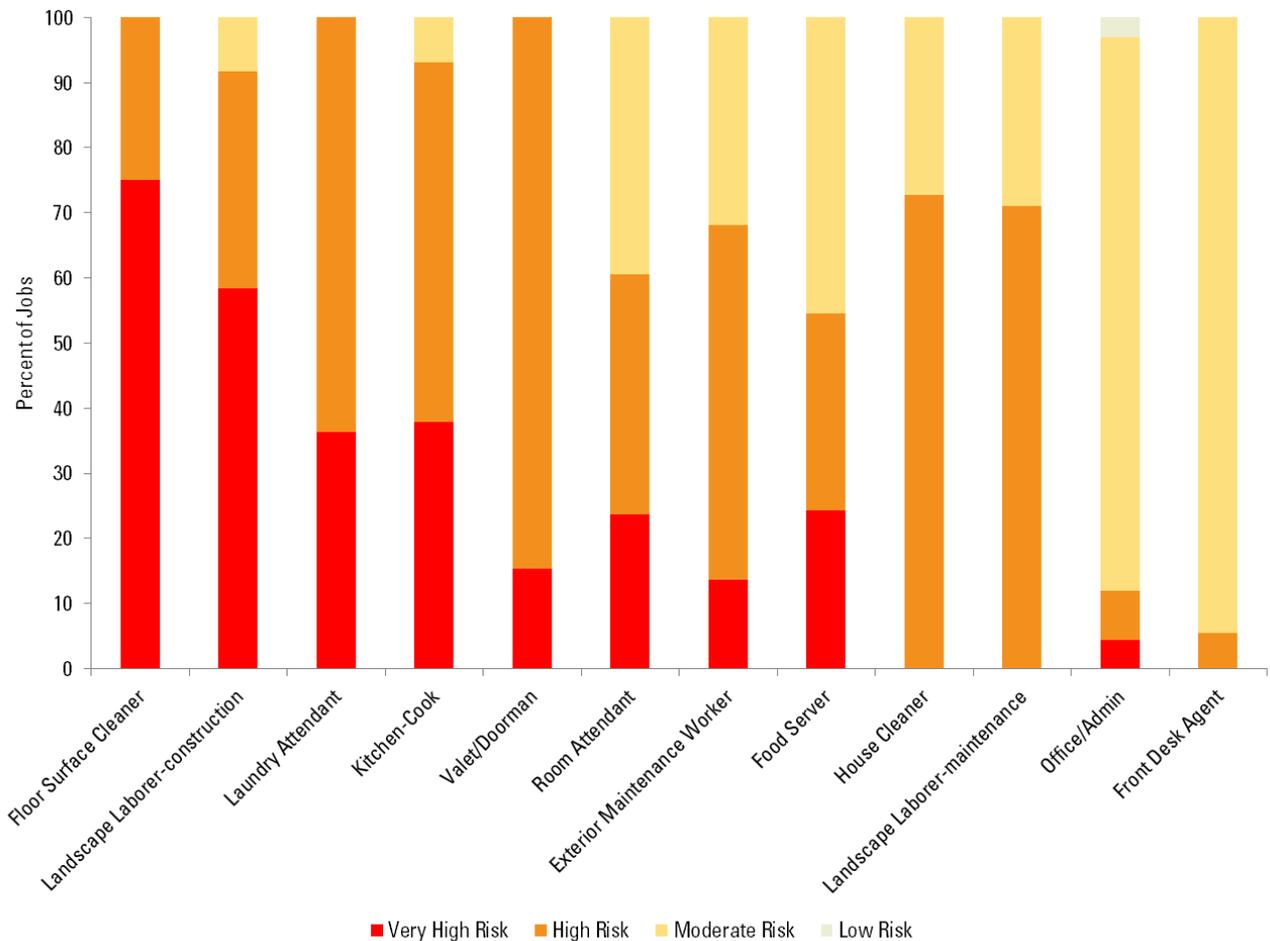


\*Job categories with n≤10 subjects: Deliveryman; Janitor; Landscape Foreman-construction; Pool Attendant; Spa Attendant; Banquet Captain; Mechanic; Warehouseman; Window Washer; Landscape Manager; Plant Nursery Laborer; Security; Spa Front Desk; Concierge; Room/House Inspector; Banquet Houseman; Barista; Bartender; Massage Therapist; Retail Clerk; Busser; Engineering; Houseman; Restaurant Host; Spa Therapist; Landscape Foreman-maintenance; Dishwasher

## Level of Risk of Injury from Working with Elevated Shoulder Postures\*

Working with the hands above shoulder level posed a moderate to high risk of injury for most job categories.

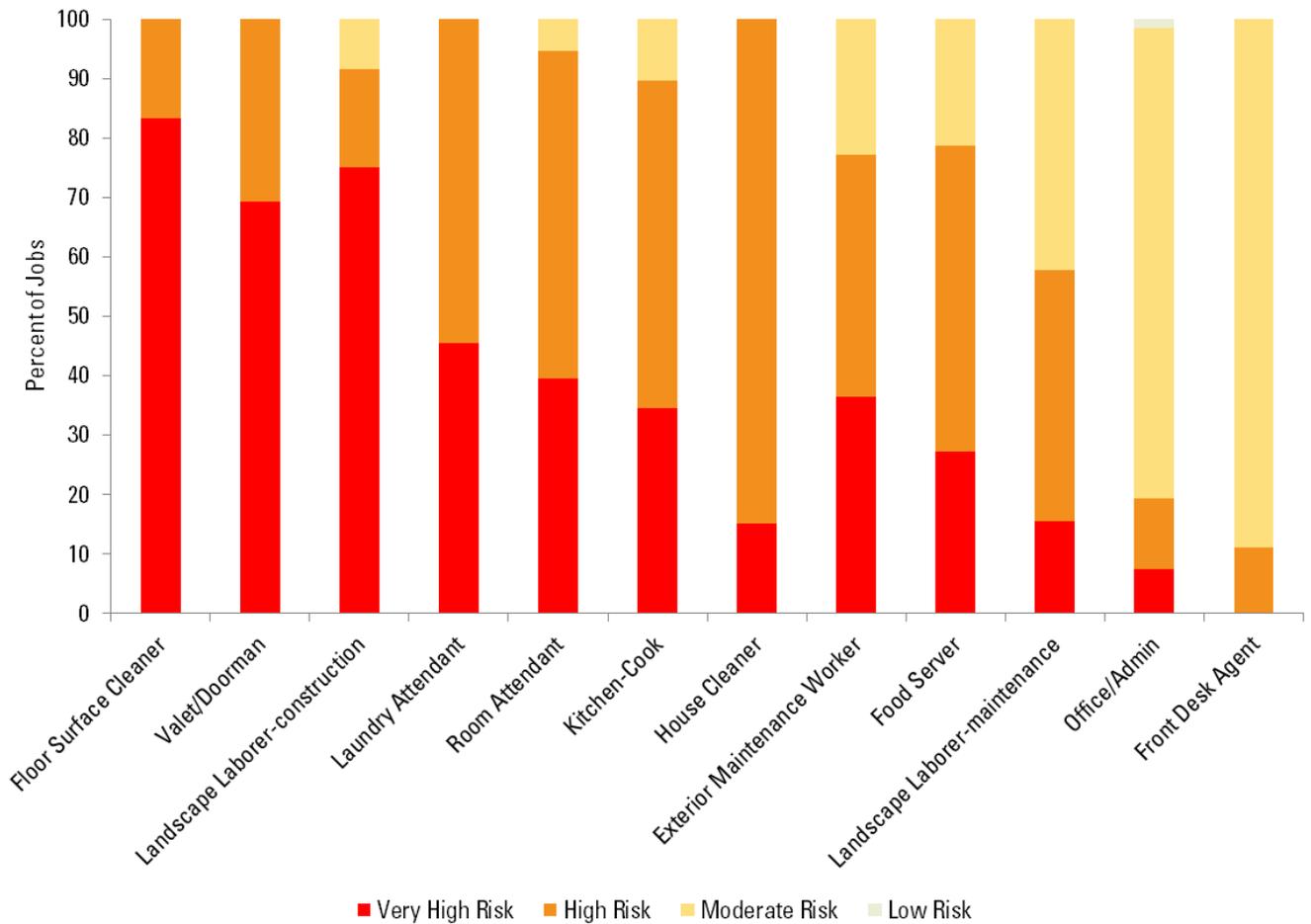
The work activities of most of the floor surface cleaners (carpet and hardwood surfaces) posed a very high risk of injury.



\*Selected job categories, (more than 10 workers observed)

## Level of Risk of Injury from Static Back Postures\*

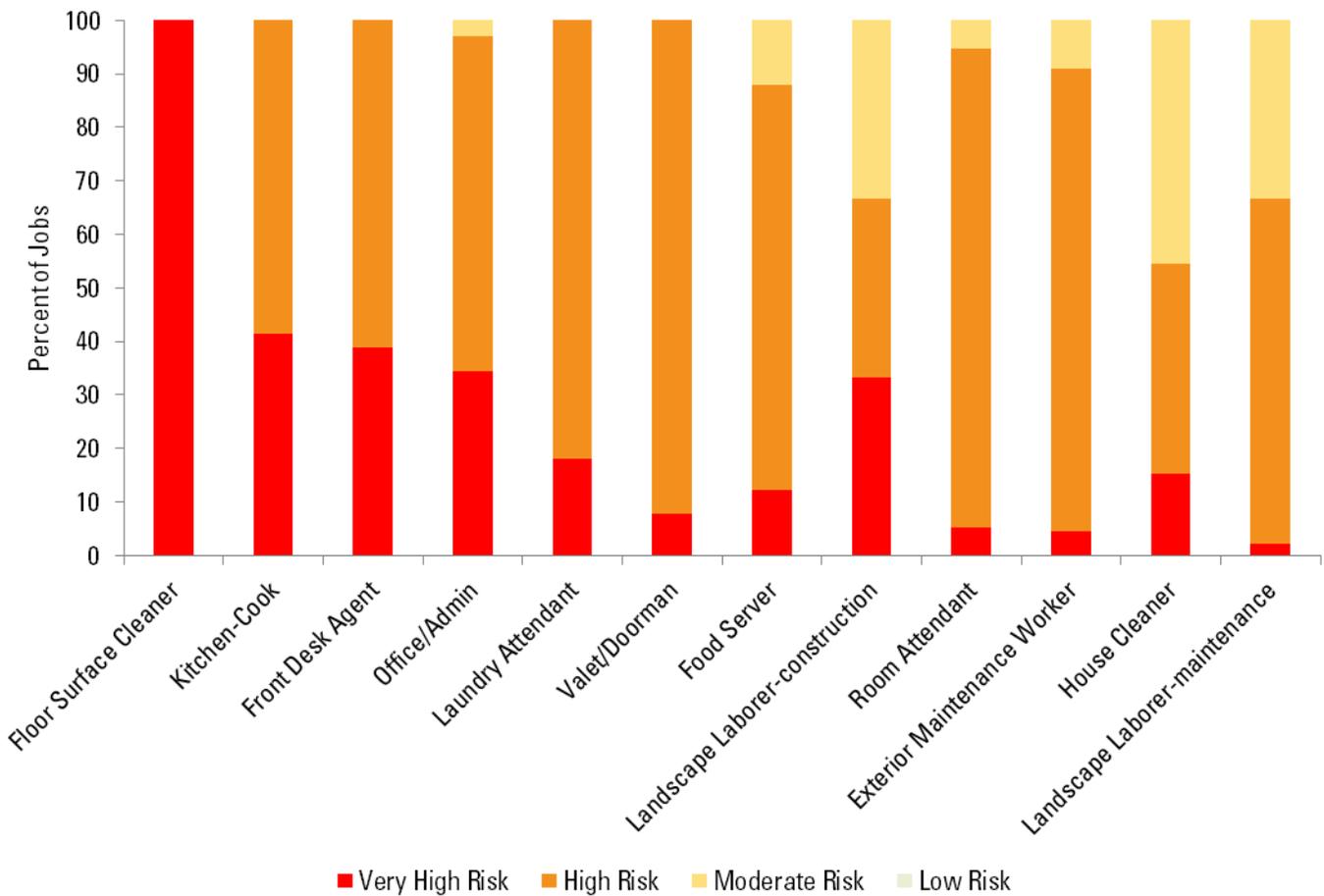
Most of the Valet/Doormen, Construction Landscape Laborers, and Floor Surface Cleaners (carpet and hardwood surfaces) whose work was assessed in this study had a very high risk of injury from static back postures.



\*Selected job categories, (more than 10 workers observed)

## Level of Risk of Injury from Awkward Neck Postures\*

The awkward neck postures (mostly neck flexion) and the durations of these postures posed a very high risk of injury for the floor surface cleaners (carpet and hardwood surfaces) observed in this study.

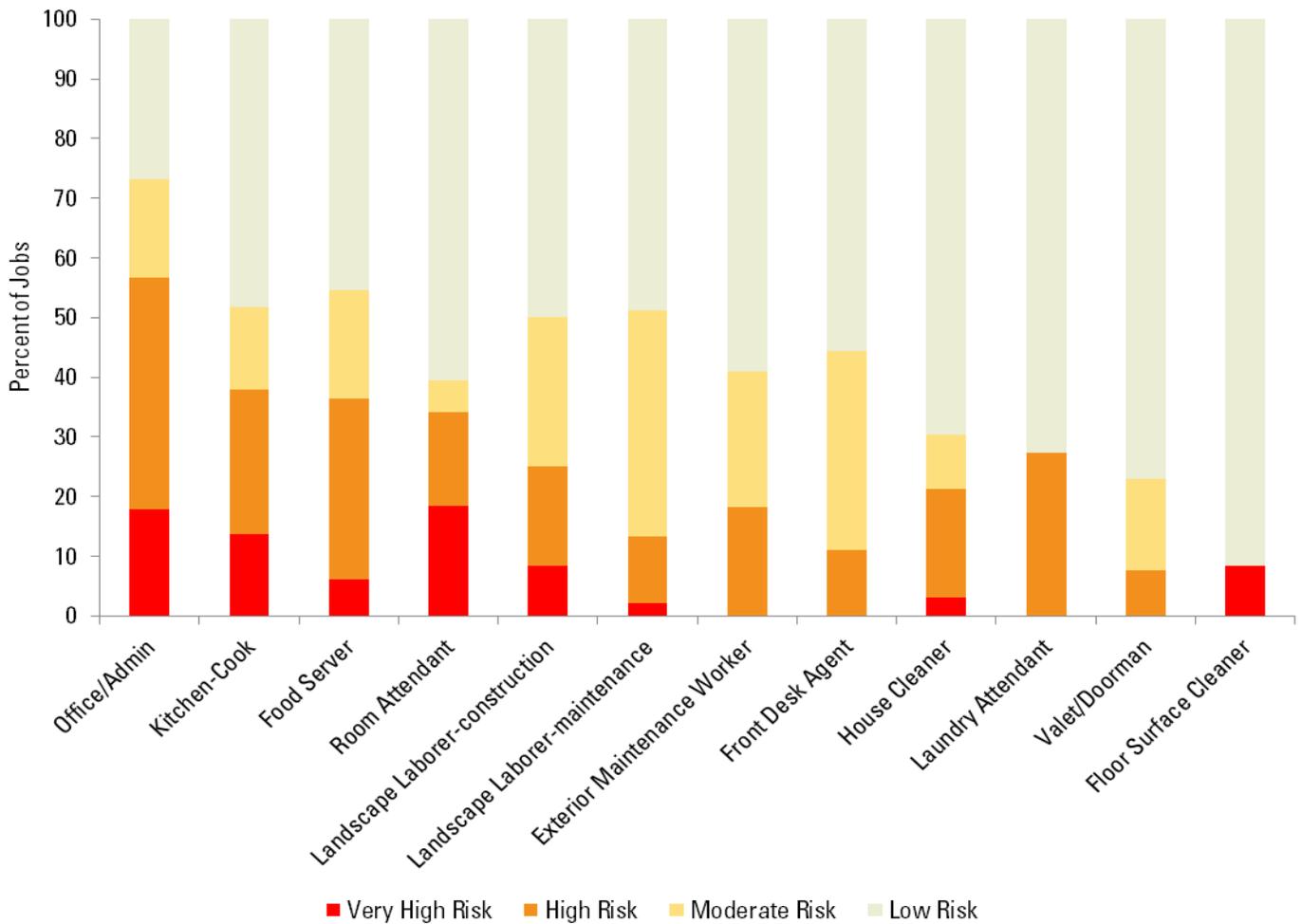


\*Selected job categories, (more than 10 workers observed)

## Level of Risk of Injury from Prolonged Stress\*

Office/administrators and room attendants in hotels faced a very high risk of injury from prolonged stress.

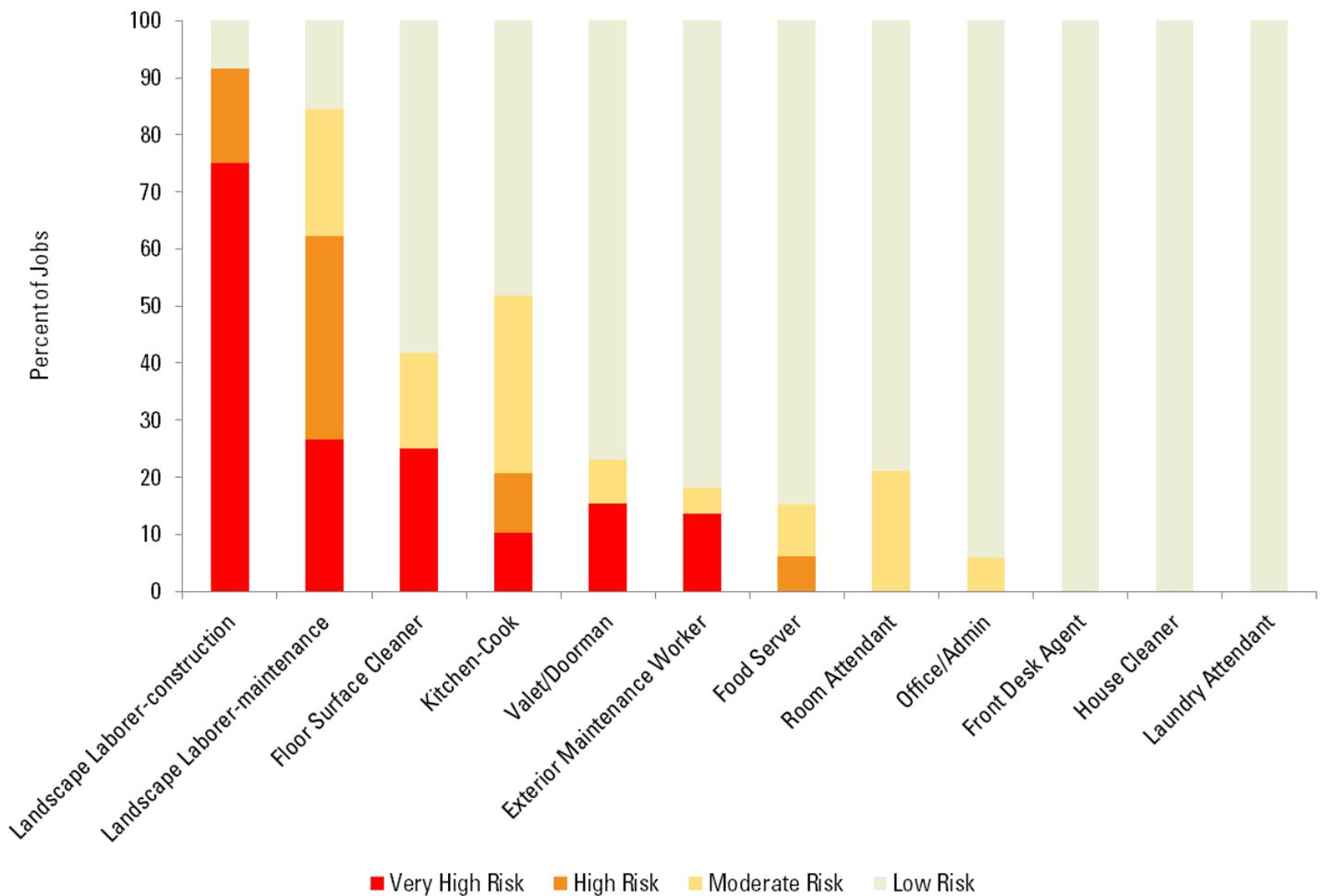
Room attendants found tight cleaning schedules a major source of stress.



\*Selected job categories, (more than 10 workers observed)

## Level of Risk of Injury from Manual Material Handling Activities (Lifting, Carrying, Pushing, Pulling)\*

Very few job categories were assessed to have more than a minimal risk of injury from manual material handling (lifting, pushing, pulling & carrying) activities except for Landscape Construction Laborers. Most workers in this job category were determined to have a very high risk of injury.



\*Selected job categories, (more than 10 workers observed)

## Discussion

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Among the companies in the Services sector involved in our study, there were a large number of job categories assessed (39), indicating a wide variety of work performed in this industry group. Risk factors typically associated with other industries like construction and manufacturing (e.g. lifting, high hand forces) did not pose as great a risk of injury in the Services industry. Repeated impacts of the hand or knee and repetitive foot movements (risk factors for WMSDs) were not observed among the work activities observed in this study. However, several assessed risk factors produced interesting results:

- Prolonged standing was common among the jobs in the Services sector – over 50% of the jobs required standing for more than 6 hours per day.
- In 69% of the jobs, static back postures posed a high or very high risk of injury.
- In more than 50% of the jobs assessed, awkward shoulder postures posed a high or very high risk of injury.

Exposure to a single risk factor can pose a high risk but exposure to a combination of risk factors increases the risk of injury. Risk factor combinations that have been associated with increased WMSD risk include awkward back postures with frequent/heavy lifting, working overhead while handling heavy objects, and awkward wrist postures with forceful hand exertions.

Although the design of our study did not allow us to determine if risk factors occurred simultaneously, it was possible to identify where these risk factors occurred in the same job. Additionally, if the duration of exposure to each of these risk factors was for longer periods, then the likelihood that these risk factors occurred at the same time was high. The following risk combinations were found among the jobs in the Services sector:

- The combination of the forward bending of the back more than 45° for more than 4 hours per day and manually handling weight more than 10 lbs. was seen in Landscape Maintenance Laborers and Hotel Room Attendants.
- The combination of working with the elbows above shoulder level for more than 4 hours per day and manually handling weights more than 25 lbs. was seen in Exterior Maintenance Workers, Window Washers, and Food Servers.

This study identified physical risk factors specific to the Services sector using commonly used evaluation tools. However, potential risk factors were observed that are not often identified as such. Forceful hand exertions other than pinch and power gripping were observed in activities performed by Hotel Room Attendants, Massage Therapists, Floor Surface Cleaners (carpet and hardwood surfaces) and Exterior Maintenance workers. These hand exertions included pressing down with the palm or fingers, operating trigger controls and pushing objects across a surface. These types of exertions and the wrist postures adopted while performing these exertions can contribute to WMSD risk but is not commonly quantified.

## Physical Job Evaluation Checklist for Services

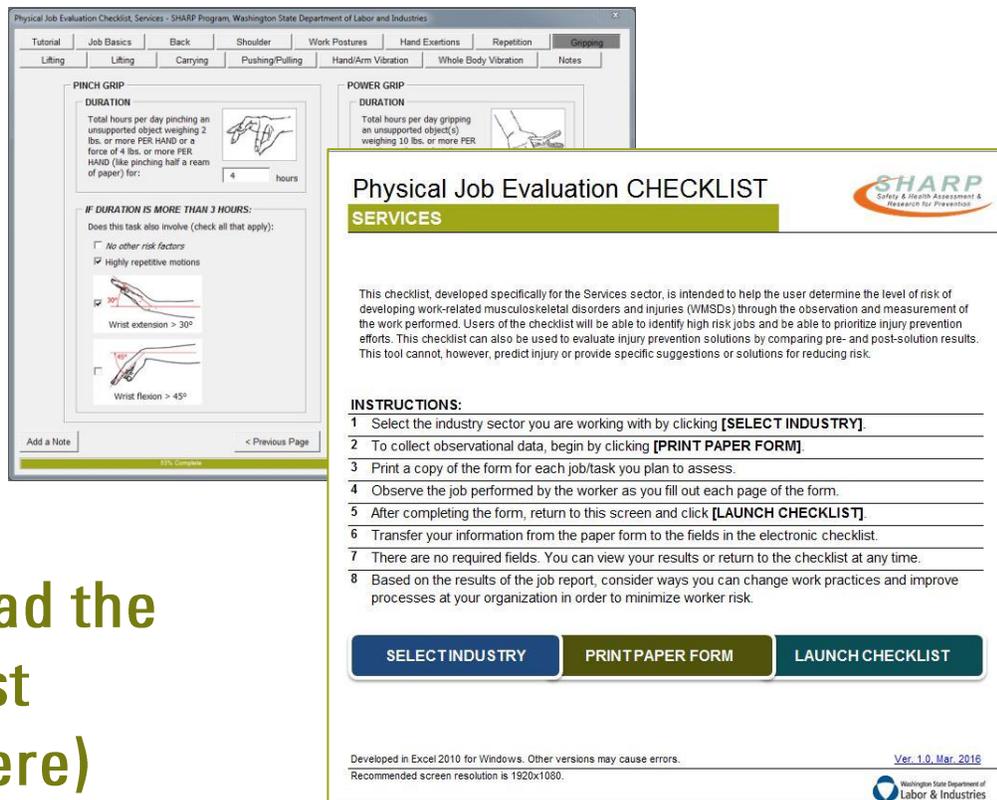
In an effort to help increase general awareness of physical factors that contribute to work-related musculoskeletal disorders and injuries (WMSDs), such as sprains and strains, SHARP researchers developed a Physical Job Evaluation Checklist tailored specifically for work performed in the Services sector. This checklist can quickly assess levels of risk of injury for the back, shoulder, hand/wrist, and knee in a given job.

The Physical Job Evaluation Checklist was developed from observations of the more common jobs performed in hotels and services to buildings and the evaluation of WMSD risk based on those observations. The checklist is comprised of items for WMSD risk factors that were observed and assessed to pose more than a minimal risk.

While the checklist was developed using observations from hotels and services to buildings, other industries in the Services sector may have similar job activities and may benefit from the use of the Physical Job Evaluation Checklist.

This checklist is **not** intended to predict injury. Instead, the purpose of the Physical Job Evaluation Checklist is:

- 1) To help identify aspects of the job that pose a risk for the back, shoulder, hand/wrist and knee injury
- 2) To help prioritize injury prevention efforts by identifying the jobs or the aspects of the job that pose the greatest risk of injury



The image shows a screenshot of the Physical Job Evaluation Checklist software. The top window displays a navigation menu with tabs for Tutorial, Job Basics, Back, Shoulder, Work Postures, Hand Exertions, Repetition, and Gripping. The 'Gripping' tab is active, showing sections for 'PINCH GRIP' and 'POWER GRIP'. The 'PINCH GRIP' section asks for the total hours per day pinching an unsupported object weighing 2 lbs. or more PER HAND or a force of 4 lbs. or more PER HAND (like pinching half a ream of paper) for: 4 hours. It also includes a section for 'IF DURATION IS MORE THAN 3 HOURS' with checkboxes for 'No other risk factors' and 'Highly repetitive motions'. Below this are diagrams of a hand with 'Wrist extension > 30°' and 'Wrist flexion > 45°' marked. The bottom window shows the 'Physical Job Evaluation CHECKLIST SERVICES' with a 'SHARP' logo. It includes instructions for using the checklist, such as selecting the industry sector, collecting observational data, and launching the checklist. At the bottom of this window are three buttons: 'SELECT INDUSTRY', 'PRINT PAPER FORM', and 'LAUNCH CHECKLIST'. The footer of the checklist window includes the text 'Developed in Excel 2010 for Windows. Other versions may cause errors.' and 'Recommended screen resolution is 1920x1080.' along with the 'Ver. 1.0, Mar. 2016' and the Washington State Department of Labor & Industries logo.

Download the  
checklist  
(click here)

<http://www.lni.wa.gov/Safety/Research/Wmsd/WMSD2010.asp>

# Start With the Basics: General Principles for Preventing Musculoskeletal Injuries and Disorders

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The physical risk factors in a workplace that can contribute to the development of musculoskeletal injuries and disorders can be both numerous and complicated. However, there are several basic principles and “best practices” that should be considered when attempting to eliminate or reduce these physical risk factors. If you have jobs that have more than one of these risk factors occurring at the same time (combination exposures), these should be your first priority for improvement. Finally, workers should be involved in brainstorming solutions if physical risk factors are found.

## Awkward Postures:

Avoid holding the body in the same position for long periods of time (static postures).

- Try to move from that posture, even if for a short period of time.
- Use a machine to do the task.
- Keep the body moving (dynamic movements)--vary the levels or distance in which the work is performed, as long as extreme postures are not adopted.

Avoid working with the limbs far from the torso.

- Adjust (lower) the height of the work to below shoulder level.
- Frequently performed activities should be performed directly in front of the body.

Avoid hand tools or the orientation of objects that cause the wrist to bend upwards (extension) or downwards (flexion) or to the side (wrist deviation).

- Use jigs or work surfaces that can orient the object into a position that keeps the wrist straight.

Avoid working with the back bent forward (back flexion) for long periods of time.

- Raise the work to at least waist level.
- Alternate with work that is performed standing up straight.

## High Hand Forces:

When grasping an object with any kind of force, avoid using a pinch grip (grasping with the tips of the fingers). A power grip (holding the object with the fingers wrapped around it) can generate more force.

- Use a tool such as a vise or a jig to hold the object that requires a power grip.

## Repetitive Motions:

Avoid having to perform quick motions repeatedly over an extended period of time.

- See if it is possible to use a machine instead.
- Alternate the performance of repetitive tasks with less repetitive ones.

## Heavy, Awkward and Frequent Lifting:

- Avoid lifting objects that:
  - can't be lifted close to the body,
  - require twisting during the lift,
  - are too big or of a shape that doesn't allow a good hold by the hands,
  - require the start and end of the lift to be below knee level or above shoulder level, if the object is heavy.
- Use a machine to do the lifting.
- Arrange space so that heavier objects are kept between knee and shoulder height.
- Store less used, lighter, smaller objects below knee level or above shoulder level if there are no other alternatives.

## What other factors could be involved in sprains, strains, and overexertions?

### Important WMSD risks described by injured Services workers

Over the course of our research we conducted many physical exposures assessments of jobs at companies throughout Washington State. Risk factors were evaluated using a set of established tools designed to assess aspects of the work such as posture, force, and repetition. However, we also conducted interviews with workers from the Services sector that had filed workers' compensation claims for sprains, strains, and other WMSDs. These interviews helped shed light on factors, other than the physical, our tools could not measure but may contribute to, or exacerbate, WMSD injuries. The following are excerpts taken from these interviews that illustrate several commonly mentioned problems.



### Disorganized Work Environments & Poor Surfaces

Injured workers in Services industries commonly related the disorganization of workspaces to their injuries, including poorly stored items, clutter, and cramped spaces. They also commonly described problematic floor surfaces that made rolling or moving equipment challenging as contributors to their injuries.

*I was getting French fries off a shelf. It's a very high shelf to have over 55 pounds to be stored. So when I picked the item up, I lifted the item over my head and I kind of fell back. Initially I just thought I was out of shape, but throughout the night I was picking up heavy items between 25 to 50 pounds and getting items out and storing them. At the end of the evening, the strain on my back took a toll of it. I didn't pay no mind to it until my back went out the next day. —Cook, back injury*

*I got up in the back of the truck and we had some left over mulch and I was trying to set up...and I stepped on the mulch and I wasn't balanced when I put my weight on my foot, and my knee went to the left. ...I stepped kind of wrong. It was the mulch that got me off balance. ...I was trying to get over it and the mulch wasn't really that, you know, hard. It was really soft, so it caught me off balance. ...I think the only thing that we could do something different is clean out all the trucks the day that we get back, or the night, whatever, once we get back to the nursery and park. ...That could have solved that problem, and I'd still be working. –Landscaping Construction Worker, knee injury*

*First off, the injury that I have, it's not what I would call an impact injury. ...because of the severity of servicing steel in different locations and different situations, I have just literally worn down and tore up my knee. In my particular injury, I was pulling a container and I felt this tug at my knee. The problem was the container was sitting in dirt. The container clearly states it must be on a hard compacted surface. ...because over the course of [workers'] lifetime at this job, you got containers sitting in places that they shouldn't be. But you are expected to get that container and service it. –Garbage Truck Driver, knee injury*

## **Problematic Equipment**

Workers discussed many different problems with equipment in relation to their injuries, including poor design, chronic break-down, and a lack of the right tool.

*I would say repetitive motion was the main factor. A specific motion of unloading the rack would aggravate my wrist and I could pin point it to a specific activity. ...It puts weight on the wrist and then kind of puts it in a position that's not natural for it and you do it over and over and over. The racks aren't huge but their five to six pounds. It's a substantial weight to do for ten hours over and over and they come out pretty fast. – Dishwasher, wrist injury*

## **Working Through Injury**

Many workers explained that continuing to work past injury symptoms led to intensified pain and worse injury. In some cases, workers continued working for multiple days after symptoms began, often at the request of their supervisors. Many workers explained that because they didn't feel pain after the initial "pop" during the first day they didn't feel it was necessary to stop working. It was only the next day that the intense pain set in. This may be one of the riskier characteristics of WMSDs—that symptoms may be mild enough to continue working, at least in the beginning. However, what these workers have learned is that it's better to take precaution immediately to avoid further injury.

*My foot was planted however it was...and I turned and I physically felt—it was something I've never felt before. It felt like it sort of popped and that was that. Honestly I didn't think anything of it and I didn't even go to the doctor for three to four days. The next day it was pretty sore and then it was real sore the next day and the day after that I think is when I finally told my boss and that I needed to go to the doctor. –Maintenance Engineer, knee injury*

## Work Pace & Workload

Work pace has been identified as a risk factor for WMSDs and was evaluated during the physical job assessments. The interviews of the injured workers also highlighted the impact of work pace and workload on injury risk.

*We had this one night, it was a Tuesday night, and it just got like freakishly busy. I was pretty overwhelmed and I had 3 servers. ...I was dealing with a lot of tables and there was a lot of people coming in. The second the table was up, I'd have to re-set it as quickly as I could. ...I was just really overwhelmed and to the point of being annoyed where I was just so done. I was really struggling. ...I went to go clean off a table and I'm grabbing stuff and I dropped one of the linens across the table and I leaned over the table to pick it up because it just fell on the seat and I grabbed it with my right arm and as I came back up it was like this jolt of pain right through my back. ... It kind of goes back to the whole—if they had brought more staff on. –Busser, back injury*

*Trying to be quick instead of taking the time to stop, go get the tractor and pull this weeping alaskan cedar five feet over so the line looks full, you know. Stuff like that. Too many cutting corners to be quick. And of course you know my boss would tell me not to cut corners, but there's like that underlying message where you've got to do it quick and you've got to do it fast and you've got like forty different projects going on at once so, where do you shave corners, you know. –Nursery Manager, back injury*

*I pretty much took care of everything. In a lot of kitchens, there are four, five, six different people on the line cooking at one time. ...Well, in this kitchen, you're the only person back there. You do all the prep. You do all the cooking. You run the food out to the table. So you're going and you got a lot to do and it's just freaking hectic, constantly. It's a good environment for injury because everything's moving so fast and everybody wants their food right now. –Cook, back injury*

*We get suspended, we get chewed out, we get fired if we're not done on time regularly. Even though they constantly add work. On closing—take the time needed; that will end most nighttime shift injuries. Honestly, there's not time, but if you tell that to the boss she fires you. She suspended me for two weeks because I told her that I had to rush because there's no time at the end of the night. She hates that phrase—“No time.” –Custodian, knee injury*

*Honestly I don't know. I was just doing another daily routine of lifting the dishes and stuff and it just tore. ...you have to go as fast as you can and get those plates off the cart, on to the table, and you have to do it as fast as you can because, like I said, every five to ten minutes they're calling for another pickup on another cart because it is a buffet. It's constant. You gotta go fast. Basically if you don't go fast, you don't work. That's basically what they tell you. ...Maybe if I was able to go a little slower I would have had better posture than just going as fast as you can, not even thinking. You just gotta lift and you gotta go, go, go. –Dishwasher, shoulder injury*

# Industry Prevention Strategies

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## Lessons learned from Services insiders

We also conducted 66 interviews with management and non-management representatives from companies in the Services sector throughout the State to help us gain additional insights into strategies for preventing WMSDs. Preventing injuries to muscles and tendons often involves performing tasks in new ways or by using new or alternative tools and materials. While the cost of purchasing new technology can seem daunting, it doesn't have to be. Even small changes can make a huge difference.

### Landscaping

*When we're smoothing out the topsoil at the end of a job we used to get all the guys out with rakes and shovels. Then we figured out we could make a dragger out of a post or a section of chain link fence that we could attach to the back of the skid steer and drag across that way. It's quicker, looks better, and is a lot safer.—Foreman*

### Hotels

#### The banquet room

*Anything that's over a certain amount of weight that's too heavy for one person, we put stickers on them that say "2-person lift only."—Banquet Captain*

*Servers use chair and table carriers when setting up for events.—HR Director*

### Laundry

*Laundry staff have carts with spring boards in them; the lighter the load gets, it rises to the top, so there's not so much back bending.—HR Coordinator*

*We use laundry shoots so people aren't carrying laundry up and down stairs.—General Manager*

### Reception

*We've been using new floor mats that have an air cushion for people that are standing on their feet all day. We also do the Shoes For Crews program so everybody has the proper footwear for the work they're doing.—  
Chief Engineer*

## Housekeeping

*We used to have to carry our cleaning supplies from room to room, and now we have them all on wheeled carts. –Housekeeping/Laundry*

*Housekeeping supplies are transported on carts, so there's not as much bending over. Some people have modified their own cart, and added shelves, et cetera. –General Manager*

*Housekeeping closets are organized to make it easy to grab things from a standing position; for shorter housekeepers, we have a step stool. –General Manager*

*We changed to new shower curtains that snap off. We used to have to have a taller person come take them down. –Housekeeper/Laundry*

*We have a large dumpster that housekeeping or dishwashers put garbage bags in, and we created a wooden step stool to help access it that can be moved when the garbage truck comes. –HR Director*

## Additional Resources

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### WMSDs

- Work-Related Musculoskeletal Disorders of the Back, Upper Extremity, and Knee in Washington State, 2002-2010
  - Report Summary: [http://www.lni.wa.gov/Safety/Research/Files/WMSD\\_TR\\_EXP\\_Summary2.pdf](http://www.lni.wa.gov/Safety/Research/Files/WMSD_TR_EXP_Summary2.pdf)
  - Full Report: [http://www.lni.wa.gov/Safety/Research/Files/WMSD\\_TechReport2015.pdf](http://www.lni.wa.gov/Safety/Research/Files/WMSD_TechReport2015.pdf)
- Perceptions of risk from workers in high risk industries with work related musculoskeletal disorders
  - Summary: [http://www.lni.wa.gov/safety/research/files/75\\_14\\_15\\_hunter\\_2014\\_wmsd\\_risk\\_perception.pdf](http://www.lni.wa.gov/safety/research/files/75_14_15_hunter_2014_wmsd_risk_perception.pdf)
  - Journal Article: <http://content.iospress.com/download/work/wor01697?id=work%2Fwor01697>
- Job Organization and Worker Health  
<http://www.tandfonline.com/doi/full/10.1080/00140139.2015.1065347>

### L&I Programs

- SHARP Program  
<http://www.lni.wa.gov/Safety/Research/default.asp>
- Sprains & Strains Prevention Resources  
<http://www.lni.wa.gov/safety/SprainsStrains/>
- DOSH Consultations  
<http://www.lni.wa.gov/Safety/Consultation/default.asp>