

# Physical Demands Description Handbook

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# What is a Physical Demands Description (PDD)?

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[www.ohcow.on.ca/workbooks](http://www.ohcow.on.ca/workbooks)

## Physical Demands Description (PDD):

A systematic procedure to quantify and evaluate all of the physical, environmental and cognitive demands of all **essential** and **non-essential** tasks of a job.

# Who completes the PDD?

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- Internal Staff (Supervisors, JHSCs, etc.)
  - preferably someone with expertise in health and safety
- Trained experts (Hired Consultants)
  - Always check credentials!
- Certified Ergonomist
  - Canadian Certified Professional Ergonomist (CCPE)

# What is the PDD used for?



Communicate job requirements to healthcare professionals



Provide data for use in adjudication of injury claims



Identify areas for further analysis (i.e. MSD hazards)



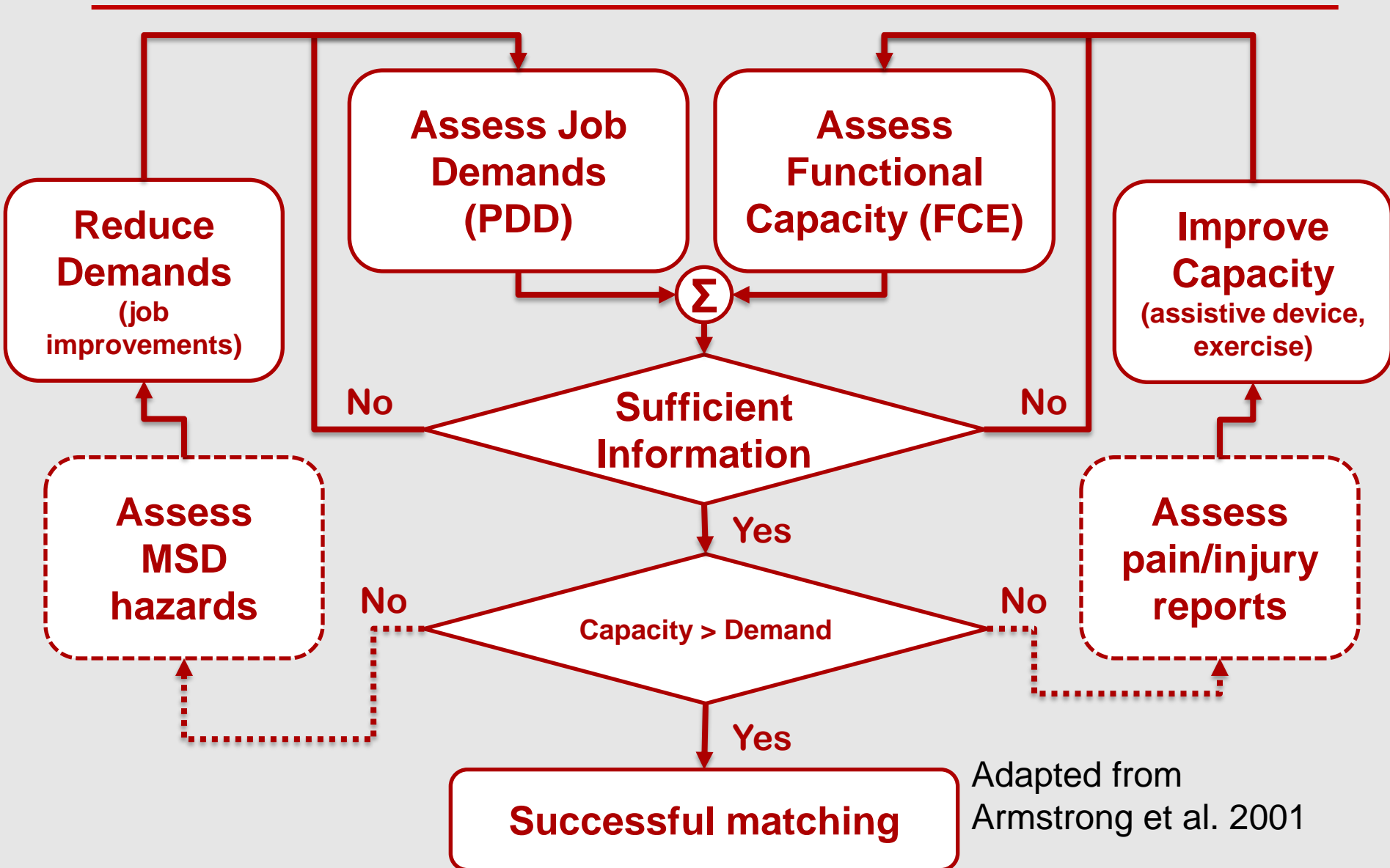
To provide information for hiring and training

# Who relies on PDD information?

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- Internal
  - Human Resources
  - Health & Safety
  - Occupational Health
  - Supervisors
  - Engineers
- External
  - Physicians
  - Physiotherapists
  - Occupational Therapists
  - WSIB Adjudicators
  - Insurance Providers

# One example of its application



Adapted from  
Armstrong et al. 2001

# The legal reason for the PDD

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## Workplace Safety and Insurance Act, 1997 Section 37(3)

*“When requested to do so by an injured worker or the employer, a health professional treating the worker shall give the Board, the worker and the employer such information as may be prescribed concerning the worker’s **functional abilities**. The required information must be provided on the prescribed form.”*

# Problems and Discrepancies

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- Exactly what information on physical demands is required from the employer
- Do they have PDDs
- Outdated PDDs
- Inaccurate PDDs



**PHYSICAL DEMANDS**

Date December 18, 2006  
 Department Communications

**PHYSICAL DEMANDS**

**STRENGTH**

- Lifting
- Carrying
- Pushing
- Pulling
- Handling
- Throwing
- Gripping
  - Power Grasp
  - Pinch Grasp
- Reaching
  - Above Shoulder
  - Below Shoulder
  - To the Side

**POSTURES**

- Shoulder
  - Abduction
  - Flexion
- Hip
  - Abduction
  - Flexion/Extension
- Wrist
  - Radial/Ulnar Deviation
  - Pronation/Supination
- Trunk
  - Extension
  - Side Bending
  - Twisting
- Neck
  - Flexion/Extension
  - Side Bending
  - Twisting

**MOBILITY**

- Sitting
- Standing
- Walking
- Climbing
- Crawling
- Crouching
- Kneeling
- Balancing
- Foot Pedal/Action
- Fine Motor

(PDD)

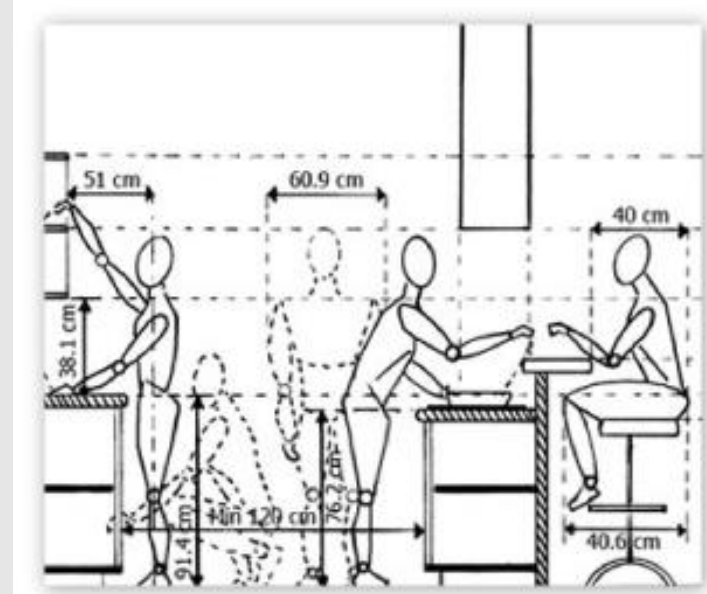
Physical Demands Analysis

PHYSICAL DEMAND	TASK #	FREQUENCY					DESCRIBE ACTIVITY Note distances, durations and surfaces
		N	R	O	F	C	
<b>MOBILITY</b>							
Walking		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Standing		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sitting		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Crawl		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Driving (Forklift/Vehicle/Other)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>POSTURE - Back</b>							
Bending Forward		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bending Backwards		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Twisting		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>POSTURE - Reaching</b>							
Above Shoulder Level		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Note forward and/or side reach distances Select...
Chest to Shoulder Level		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Below Chest Level		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Behind Body		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>POSTURE - Elbow/Forearm/Wrist</b>							
Elbow Flexion/Extension		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Select...
Wrist Flexion/Extension		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wrist Rotation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>POSTURE - Neck</b>							
Forward Bending/Flexion		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Select...
Backward Bending/Ext.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Twisting/Turning/Tilting		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>POSTURE - Hip/Knee/Ankle/Foot</b>							
Crouching/Squatting		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Kneeling		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Climbing (Stairs/Other)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Jumping		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Foot Pedal/Action		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

N = Not required, R = Rarely

# Objective vs. Subjective PDD Information

- A PDD should reflect the job not the worker
- Relying on subjective information can be problematic
- Absolute measurements are key
- Reduce generalizations and guesswork





# Preparing to conduct a PDD

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- Determine where PDD(s) are required
- Determine who needs to be involved
  - Worker, Manager, HR, JHSC, Union Representative
- Have trained observer(s)
- Have all necessary equipment
- Schedule observation & data collection

# Observation & Data Collection

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- Determine job purpose & tasks
  - Roundtable discussion
- Verify purpose & tasks
  - Through job observation
- Quantify physical demands
- Classify essential & non-essential tasks

# Observation & Data Collection

- Measurement Tools

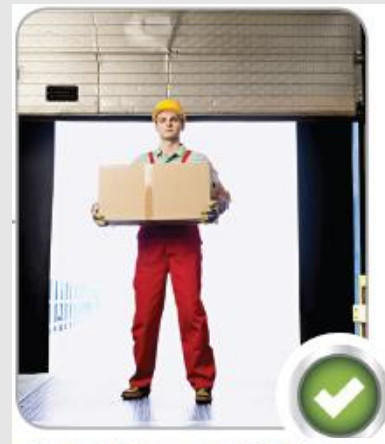


- Measurement Techniques
  - Average multiple measures
  - Record absolute values
  - Include maximum ranges

# Observation & Data Collection

- Environmental Factors
  - Noise, lighting, vibration, temperature

- Photographs



# Observation & Data Collection

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- Physical Demand Elements





# Physical Demand Measurement Details

**LIFT/LOWER** ▶ Moving an object from one level to another  
(includes pulling or exerting upward force to hold a static object).




## Important Measurements

- Frequency
- Weight
- Start Lift Height
- End Lift Height
- Hand(s) Used
- Horizontal Distance
- Grip Type

# Physical Demand Matrix

Physical Demand Element	Measures to Document in the PDD						
Lift/Lower	Frequency	Weight	Start Height	End Height	Hand(s) Used	Reach	Grip Type
Carry	Frequency	Weight	Height	Distance	Hand(s) Used	Reach	Grip Type
Push	Frequency	Average Force	Max Force	Height	Distance	Hand(s) Used	Grip Type
Pull	Frequency	Average Force	Max Force	Height	Distance	Hand(s) Used	Grip Type
Reach	Frequency	Height	Distance	Hand(s) Used			
Grip	Frequency	Force	Height	Direction	Hand(s) Used	Reach	Grip Type
Pinch	Frequency	Force	Height	Pinch Type	Hand(s) Used	Reach	
Write	Frequency	Duration	Height	Surface	Tool Type		
Fine Finger Movement	Frequency	Duration	Height	Finger(s) Used	Hand(s) Used	Precision Level	
Sit	Duration	Seat Height	Dimensions	Surface			
Stand	Duration	Surface	Footwear				
Walk	Duration	Distance	Surface	Footwear			
Kneel	Frequency	Duration	Knee(s) Used	Surface			
Crouch/Squat	Frequency	Duration					
Balance	Duration	Leg(s) Used	Surface				
Crawl	Frequency	Duration	Distance	Surface			
Climb	Frequency	Duration	Distance	Surface			
Taste	Frequency	Food(s)	Precision Level				
Smell	Frequency	Odour Type(s)	Precision Level				
Speech	Frequency	Information	Level of Detail				
Hear	Frequency	Duration	Sound(s)	Sound Level			
Feel/Tactile	Frequency	Duration	Material(s)	Precision Level			
Vision/Read	Frequency	Information	Level of Detail				
Data Entry	Frequency	Information	Technology	Hand(s)			
Driving	Duration	Hand Height	Vehicle	Surface	Surroundings		
Foot Action	Frequency	Force	Height	Object	Foot/Feet		
Handling of Odd Objects	Frequency	Duration	Weight	Height	Object		

# PDD Template

<b>1. Driving Loader</b> 	<b>Task Duration</b>	<i>The worker will move sand and stone from storage lots on the plant yard to an underground hopper that funnels materials onto a conveyor belt.</i>					
	5-15 minutes per material						
	<b>Task Frequency</b>						
	12 – 15 times per shift						
<b>Task Elements</b>	<b>Duration</b>	<b>Seat Height</b>	<b>Dimensions</b>	<b>Surface</b>			
<i>Sit</i>	5-15 minutes	55-65 cm	45 x 45 x 12 cm	Cushioned			
	<b>Duration</b>	<b>Hand Height</b>	<b>Vehicle</b>	<b>Surface</b>	<b>Surroundings</b>		
<i>Driving</i>	5-15 minutes	80 – 85 cm	Front-End Loader	Gravel	Other Vehicles		
	<b>Frequency</b>	<b>Force</b>	<b>Height</b>	<b>Object</b>	<b>Foot/Feet</b>		
<i>Foot Action</i>	10 times per minute	25-28 kg	15 cm	Accelerator	Both		

# Reporting

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- Finalize PDD document
- Distribute for approval & sign-off
- File & Backup

# Future Considerations and Next Steps

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- Timeline for review & updates
- Use of data for MSD prevention
- Working with the WSIB to standardize what physical demands data is required

# Take Home Message

- Emphasis on process, considerations, and measurement techniques
- Template is applicable in wide range of settings
- Can be used as either stand-alone or additional resource for your current PDD program

