

# Stretching Program to Decrease Work-Related Injuries in Meat Packing Plant Employees

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## Introduction

- Musculoskeletal disorders are a common occupational injury (Sundstrup et al., 2013).
- A stretching program prior to physical labor is effective in decreasing work-related musculoskeletal injuries in meat packing plants.
- Pre-shift stretching programs may decrease compensation claims, avoidable company costs, and employee time away from work all while increasing productivity.
- Prevention of injuries related to working conditions is an objective of Healthy People 2020.

(KC, LL, JM, JS, AW)

## Purpose

- To implement a pre-shift stretching program among male immigrant workers with specific aims to:
  - Decrease work-related injuries and employee time away from work
  - Decrease company costs and compensation claims
  - Increase company productivity

(KC, LL, JM, JS, AW)

## Supporting Research

- The most common type of non-fatal occupational injuries that result in days away from work are musculoskeletal injuries (Choi & Woletz, 2010).
- According to the Bureau of Labor Statistics musculoskeletal injuries can affect muscles, nerves, tendons, joints, cartilage, or spinal discs (Choi & Woletz, 2010).
- Risk factors that cause or aggravate musculoskeletal injuries are repetitive motion, awkward posture, forceful exertions, pressure points, and static postures (Choi & Woletz, 2010).
- The prevalence of musculoskeletal injuries in the shoulder, arm and hand is high among slaughterhouse workers, allegedly due to high loading intensities and cyclic repetitive actions of these body regions during work (Sundstrup et al., 2013).
- It is commonly believed that stretching can reduce chance of strain or sprain injury because of the following benefits:
  - Increased flexibility
  - Improved range of motion
  - Improved circulation
  - Improved posture
  - Stress relief

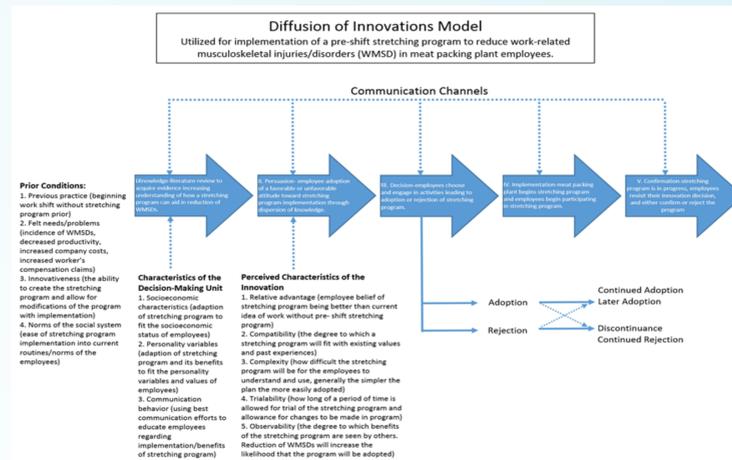
(Choi & Woletz, 2010)  
(KC, LL, JM, JS, AW)

## Supporting Research Cont.

- According to a systematic review of six randomized controlled trials, moderate-quality evidence exists to support the use of workplace interventions aimed at preventing disability and facilitating return to work among workers with musculoskeletal disorders (van Oostrom et al., 2009).
- Strength resistance training and an all-around physical exercise program reduced duration of back and right shoulder pain and increased right shoulder elevation strength after implementing a worksite physical activity intervention (Pedersen, Blangsted, Andersen, Jørgensen, Hansen, & Sjøgaard, 2009).
- Several studies reviewed by Choi & Woletz (2010) found that performing stretching exercises can increase range of motion, increase flexibility, and reduce discomfort/pain potentially playing a role in work-related musculoskeletal injury prevention.
- According to the study by Gartley & Prosser (2011) the odds of experiencing a work-related musculoskeletal injury were 7.69 times higher for non-stretchers than for those who participated in the stretching program. They reported savings during a 3-month intervention, considering the cost of 24 workers participating, equaled \$3,688.00; the savings for one injury-free employee for a year was \$2,925.00.

(KC, LL, JM, JS, AW)

## Theoretical Model



(Carlson, 2009)(Pender, Murdaugh, & Parsons, 2011)  
(AW)

## Program Plan

After reviewing the literature, it was found a pre-shift stretching program would be beneficial in reducing work related injuries. In order to implement the program a Nurse Practitioner hired by the company will implement the following plan:

- Compiled data on cost savings and effectiveness along with a demonstration of the stretching program to be presented to the company managers.
- Pre-program assessments and screening questionnaire will be completed to assess each employee on their eligibility to complete the program.
- Each eligible employee will attend a session on the importance of pre-shift stretching.
- Handouts with a picture and a description of each stretch will be given to employees prior to starting the program.
- Large posters of each stretch will also be displayed in the conference room where the daily stretching routine will take place.
- For the first two weeks of implementation, an occupational health nurse practitioner (NP) along with a physical therapist will perform the stretching program with the employees at the start of their shift to ensure each stretch is being completed properly.
- The employees will then be allowed to complete each stretching program when they arrive for their scheduled shift.
- The program will last approximately six minutes and consist of nine stretches, targeting the neck, shoulders, upper and lower back, quadriceps, hamstrings, arms and ankles (Gartley & Prosser, 2011).
- Each stretch will be held for 10 to 15 seconds and completed in the standing position (Gartley & Prosser, 2011).
- Each employee will receive \$40.00 per month off their health insurance costs for participating.
- As an extra incentive, a grab-and-go style breakfast will be made available every Friday to employees who participate in the program.
- Employees will be asked to complete periodic surveys to evaluate satisfaction and any barriers to change of the stretching program.

(JM)

## Personnel Collaboration

The company and its members must work together as one to successfully implement a stretching program among employees.

- Occupational health NP to organize and oversee program while responding to individual health needs
- Consult physical therapist specialized in stretching protocols to develop program with occupational health NP, demonstrate to company management, and perform stretches with employees for first two weeks
- Company managers to lead daily stretching program after first two weeks of initiation and ensure compliance is maintained
- Incorporate use of interpreter during first two weeks of implementation to make certain ethnicities understand and are capable of effectively participating in program
- Human Resources to provide recognition and incentives for participation while making stretching program a part of the company's wellness plan

(LL)



## Model Rationale

- Roger's Diffusion of Innovations Model was chosen for program implementation.
- This model helps disseminate health behavior interventions which have been successfully tested into mainstream for practical use (Pender et al., 2011).
- Communication is a necessary and important part of implementation and spread of innovations (Pender et al., 2011).
- The Diffusion of Innovations Model provides the user with the necessary communication channels to convey need/importance and successfully implement an innovation.
- The Diffusion of Innovations Model is a theory based on many years of research which is successful in promoting changes in behaviors, programs, and policies to promote health (Pender et al., 2011).

(AW)

## Health & Cultural Considerations

Many immigrants are non-native English speaking and encounter serious language barriers, intercultural communication barriers, and health literacy challenges.

- Identify cultural language and communication styles
- Identify cultural values, beliefs, attitudes, views, expectations, needs, preferences, and practices
- Reflect on personal self-awareness of own cultural worldview and attitudes about cultural differences
- Develop cultural awareness, cultural responsiveness, cultural competence, linguistic competence, and respect
- Design a culturally appropriate stretching program
  - Incorporate diverse cultural and spiritual values, beliefs, preferences, and attitudes
  - Include culturally competent and appropriate education and interventions
- Use cross cultural communication with adaptive communication strategies
- Use familiar and accepted languages, images, and demonstrations

(KC)

## Evaluation of Program

Evaluation of stretching program will be completed to ensure it benefits meat packing employees and company. Changes will be made to program plan as needed to achieve stretching program specific aims.

- Track rates of employee attendance and participation in stretching program with an attendance/participation log
- Measure outcome variables by completing audits of data at 3 and 6 month intervals including:
  - Work-related injuries and employee time away from work
  - Company costs and compensation claims
  - Company productivity
- Compare retrospective data to prospective data gathered from 3 and 6 month intervention trials
- Use surveys completed by employees to evaluate satisfaction and barriers to change of the stretching program
- Adapt stretching program plan based on results of audits and employee surveys, making and implementing changes to program plan as needed

(JS)