

# **Sidelines to Front Lines: Applying Athletic Training to Injury Prevention at Worksite**

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# Sidelines to Front Lines: Athletic Training in Occupational Health

- What you'll learn:
  - How athletic trainers (ATs) transfer their expert sideline skills to the worksite
  - How upstream management relates to injury prevention
  - How to reduce downstream costs
  - Education and KSAs of athletic trainers
  - Methods to reduce high injury rate areas, maximize efficiency, improve employee health/wellness

# Athletic Trainers: Education, licensure, scope of practice

- Baccalaureate—professional entry-level, about 70 percent have master's degrees
- Education follows medical model
  - Clinical rotations, continuing education, accredited academic programs, national certification exam
- Licensed/regulated in 48 states; works under the direction of physician, standing orders
- Legal scope of practice varies; some third-party reimbursement

# Survey: ATs provide ROI, decrease injuries at worksite

Respondents say:

- 100 percent had a positive ROI
- 80+ percent had ROI of \$3+ for every \$1
- 85+ percent say number and costs of injuries decreased by 25+ percent
- 90+ percent saw employee days away from work decrease by 25+ percent
- +/- 50 percent say ER costs decrease by 50+ percent

*Note: Craig Halls, Aurora Health Care. 2008 survey confirmed findings of 2003 survey.*

*Limitations: small sample, not peer reviewed.*

# Survey: Workers' comp and healthcare costs

- 63 percent reported positive impact by the AT on workers' comp costs within 6 months
- 96 percent reported positive impact within 1 year
- 45 percent reported positive impact on healthcare costs by AT within 6 months
- 100 percent reported positive impact on healthcare costs by AT within 1 year.

# Survey: Return on investment

- 7.7% reported a ROI of \$1
- 11.5% reported a ROI of \$2
- 11.5% reported a ROI of \$3
- 23.1% reported a ROI of \$3 - \$5
- 23.1% reported a ROI of \$5 - \$7
- 23.1% reported a ROI of more than \$7

# Survey: typical AT job duties

- Injury prevention, stretching, ergonomics
- Wellness programs, fitness, nutrition, work hardening, rehabilitation services
- Triage, first responders for acute injuries/illnesses, first aid
- Other: return-to-work assessments, health risk assessments, pre-employment physicals, case management, functional capacity evaluations, safety reps

# Resources

## Visit NATA.org

- Guide to Athletic Training Services (extended scope of practice)
- State licensure and regulatory information
- Executive Summary: Athletic trainers provide return on investment and decreased injuries in occupational settings
- Article: The Sports Medicine Model of Care for Your Occupational Athlete
- Day in the Life presentation
- Certified Athletic Trainer FAQ's for ATs in commercial setting

# Questions?

## Not All Athletes Wear Jerseys

**Athletic Trainers  
Treat the Athlete in You.**



 National  
Athletic Trainers'  
Association  
*Health Care for Life & Sports*

THE  
FORUM 11

# **Sidelines to Front Lines: Applying Athletic Training to Injury Prevention**

Incorporating Injury Prevention  
Specialists into Industrial Settings  
Program Delivery

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Head Athletic Trainer, Boeing Industrial Athlete Program  
Everett, Washington  
Athletic Training Program Manager, Work-Fit, Inc.

# The Athletic Trainer

- **More than 50 % work outside of school athletic settings**
- **They provide services to people of all ages**
- **Improve functional and physical outcomes.**
- **Specialize in education to prevent injury and re-injury**
- **Reduce rehabilitative and other health care costs**

# The Athletic Trainer

- **Well-known, recognized, qualified health care professionals. AMA recognized**
- **Regulated and licensed health care workers**
- **Provide the same or better outcomes in clinical settings as other providers**
- **An independent national board certifies athletic trainers**
- **National Athletic Trainers Association FACT Sheet, [www.nata.org](http://www.nata.org)**

# The Athletic Trainer



# The Athletic Trainer

- Soft Tissue Injury Prevention



# The Athletic Trainer

## Sprain, Strain Injury Prevention



# Domains of Athletic Training

- Injury Prevention
- Clinical Evaluation and Diagnosis
- Immediate Care
- Treatment, Rehabilitation and Reconditioning
- Organization and Administration
- Professional Responsibility

# Applying the Domains ...

- Domain 1: **Injury Prevention**
  - Conditioning programs
  - Job site evaluations
    - Focus on biomechanics
    - Assess the environment
  - Injury prevention education customized to...
    - Management
    - Workers
    - Individual workers



# Applying the Domains...

- Domain 2: **Recognition and Evaluation**
  - Conduct evaluations and assessments
  - Write SOAP notes
  - Provide referrals
  - Early intervention
  - Often at work site



# Applying the Domains...

- Domain 3: Immediate Care
  - CPR/AED readiness
  - OSHA level First Aid care



# Applying the Domains...

- Domain 4: **Rehabilitation and Reconditioning**
  - Focus on Reconditioning in targeted classes
  - Develop education materials and HEP's
  - Focus on correcting biomechanical issues
  - Corrective exercise and home care



# Applying the Domains...

- Domain 5: **Health Care Administration**
  - Maintain confidentiality
  - Maintain safe environment
  - SOP development
  - Budgeting
  - Record keeping
  - Program development



# Applying the Domains...

- Domain 6: **Professional Development**
  - Interact with workers, management, union officials, labor relations
  - Participate in continuing education activities
  - Conduct research
  - Promote the role of the athletic trainer



# The “Industrial Athlete”

- Industrial-
  - Minimum of 8 hours/ day
  - Minimum of 5 days/ week
  - Often have overtime
  - There is no periodization
  - Shift work is common
  - No work = no pay



# The “Industrial Athlete”



**The Athlete = The Employee**

# The “Industrial Athlete”



# Where Athletic Trainers Serve

- If there is potential for injury...



# The Solution – Upstream Care

- Analyze areas for injury prevention.
- The “traffic cop” directing care.
- OSHA level 1<sup>st</sup> Aid.
- Proper referral.
- Expedite care.
- Utilize resources.
- Cost containment.



# “Up-Stream” Service Delivery

- Pre-injury.
- Pain and soreness.
- Address the root cause.
- No treatment – not PT.
- SOP, OSHA, State regs.
- Medical Director.
- Management oversight.



# Strategically Placed

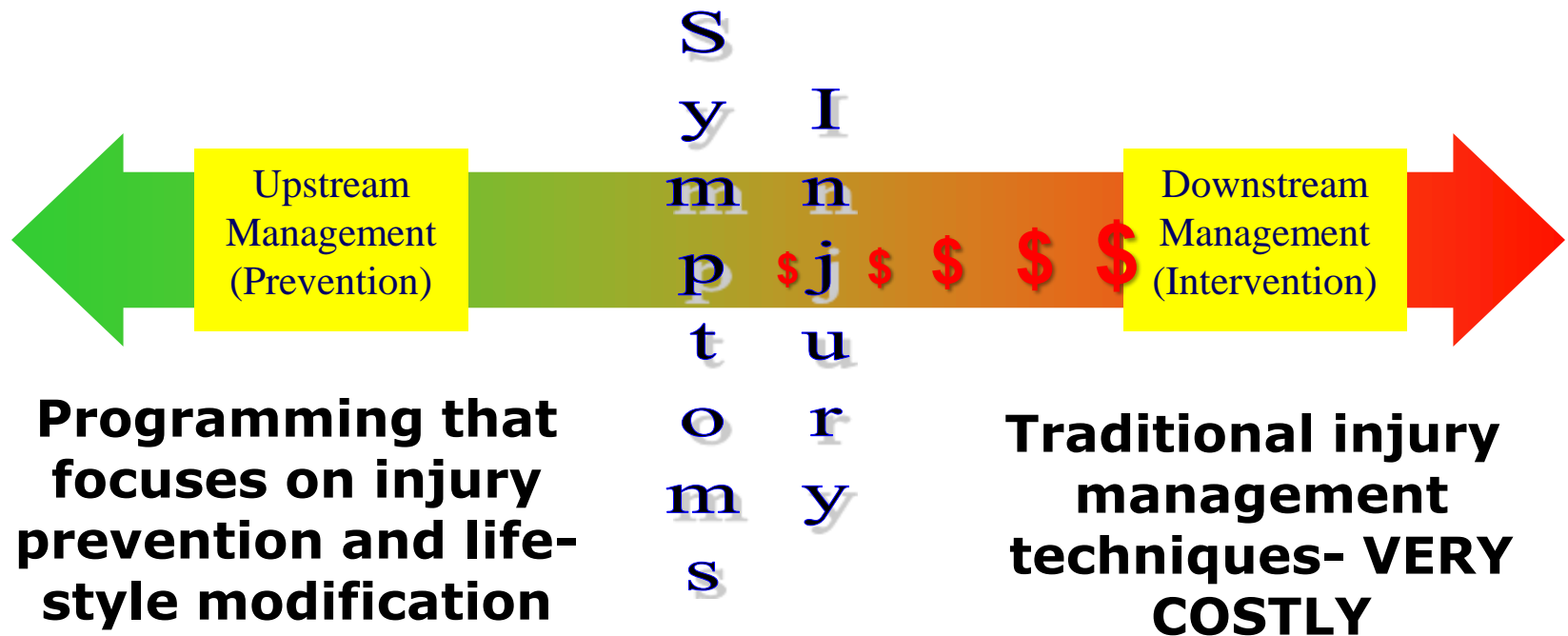
- Athletic Trainers imbedded to concentrate on
  - Injury Prevention
  - Early Intervention
  - Proper Referral
  - With smaller groups
  - Specialists
  - On the “Sideline”
  - Ready to help



# Outcomes

- Where Athletic Trainers are utilized there are improvements in OSHA recordables and Lost Work Day Cases
- Is it Athletic Training alone?
- Not always
- But Athletic Trainers contribute
- Site-wide culture change not only to safety
- But to changing health

# Injury Management Trends



**In order to stay competitive in a global marketplace, American industry must move in this direction**

# Athletic Training

Being an Agent of Change  
by making “Health” personal.



# The Boeing Industrial Athlete

Incorporating Athletic Trainers into the  
Workplace

William Smith MD, MBA

September 9, 2011

# Overview

- Current Industry Trends
- Musculoskeletal Focus
- Program Development
- Metrics and Outcomes

## Shared Services Group

### Not just a stretch

Industrial Athlete Program helps workers better tackle physically demanding tasks

BY BETSY CASE

Bending, twisting and lifting might describe a day in the life of a professional athlete. But the people who build Boeing products crawl out on wings, twist through small fuselage sections and lift heavy equipment. It's time, Boeing Health Services Manager Dr. William E. Smith said, "that they receive the same level of advanced care as professional athletes in order to prevent pain and injury."

It's for these "industrial athletes" that Smith is creating a new program at Boeing. The Boeing Industrial Athlete Program combines services such as industrial massage, conditioning exercises, stretching, and physical and occupational therapy. This voluntary program, available at the workplace, is designed to improve the physical and mental resilience of employees. Services are available at no cost to the employee and the benefits can be life-changing. "Our goal is for employees to be able to fully engage in life without pain and injury and stay in the game for themselves, their families and their career," Smith said.



# The Boeing Company

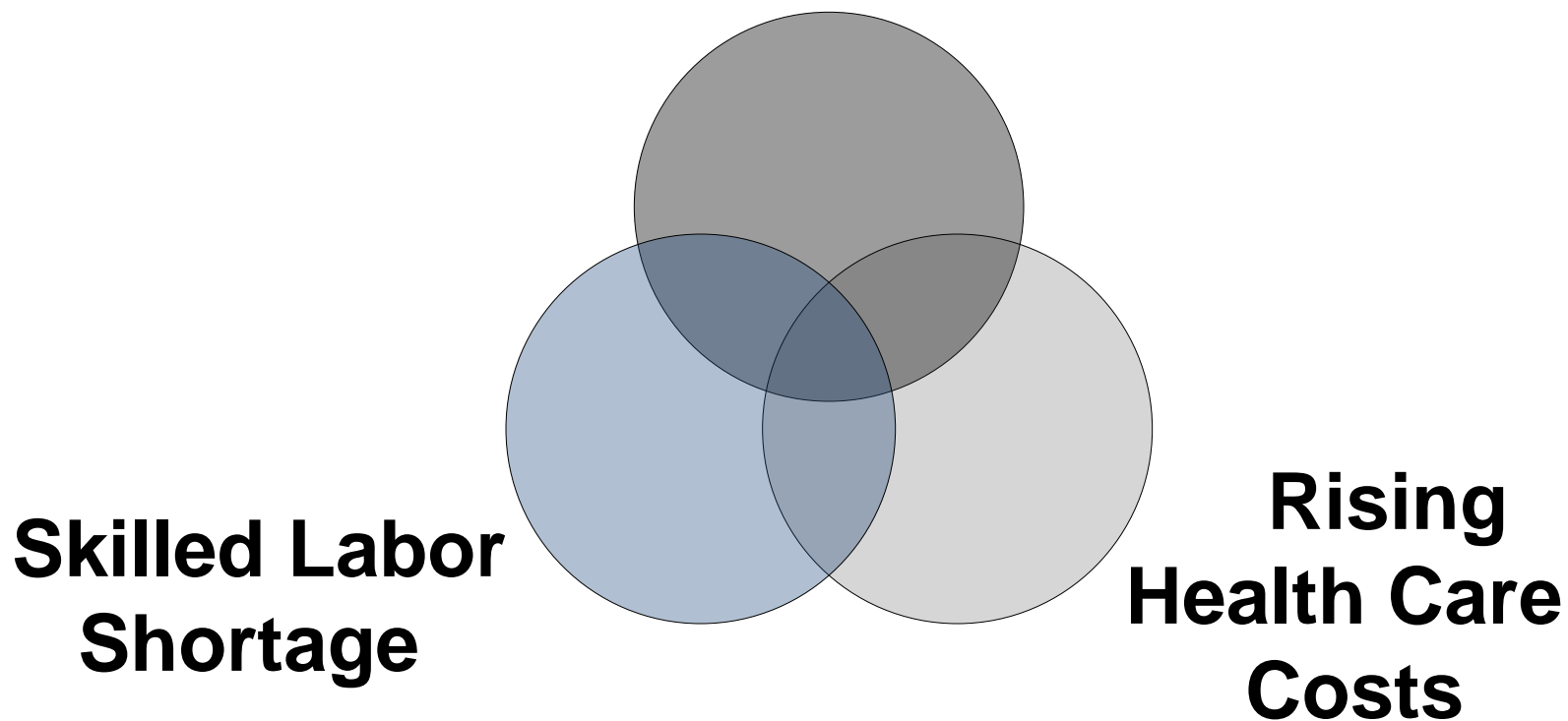
- World's leader in aerospace
- 166,000 employees in more than 70 countries
- Market leader in commercial jetliners, military aircraft, satellites, missile defense, human space flight, launch systems and services
- Revenues of greater than \$66 billion

**VISION 2016: *Promote the health and well-being of Boeing people and their families***



# Employer Challenges

## Deteriorating Health Status



# Leading US Health Reasons for Absenteeism & Presenteeism

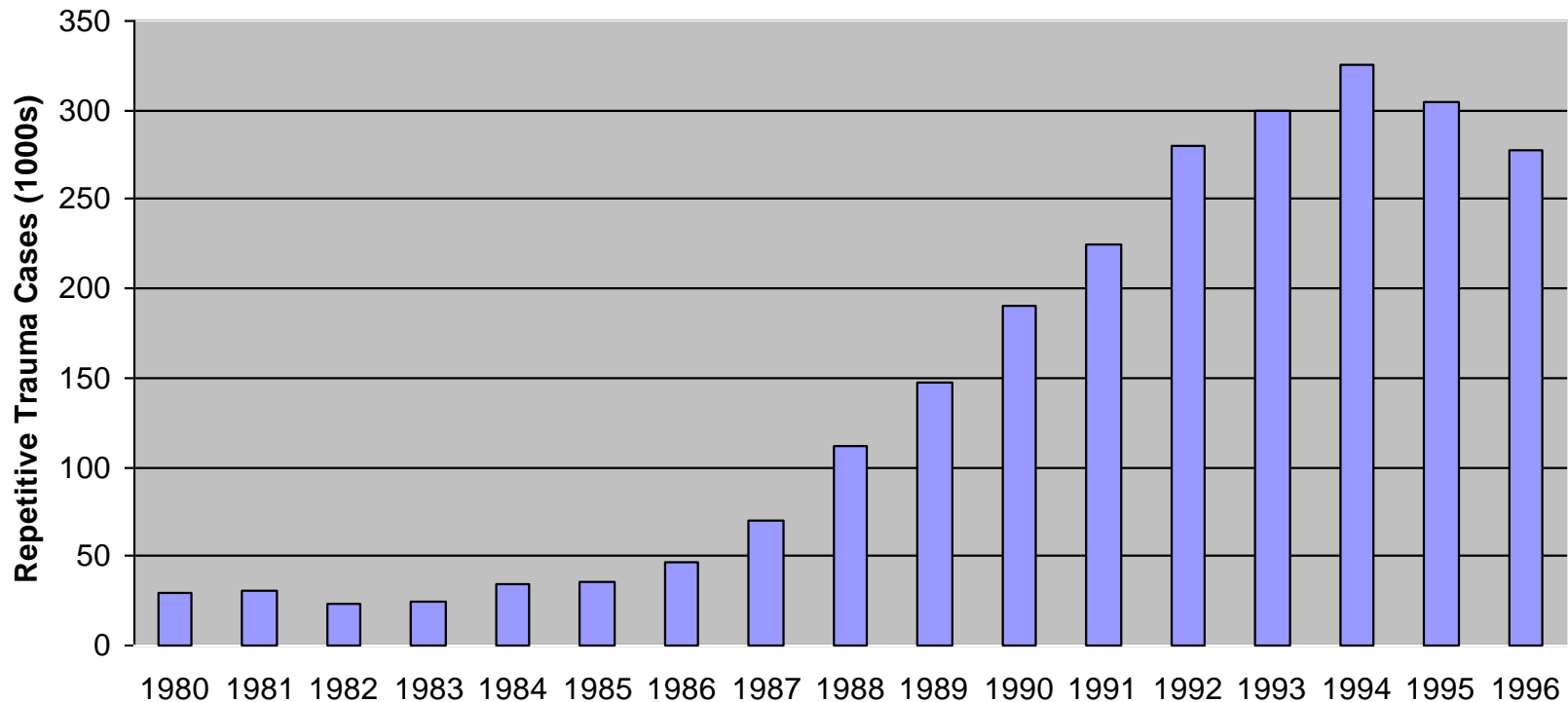
Absenteeism	Presenteeism
Musculoskeletal	Mental Health
Mental Health	Musculoskeletal
Pregnancy	Respiratory
Others Respiratory, GI, Cardiovascular	GI
	Migraine

**Top 5 for frequency and top 3 for economic impact**

# Work-Related Musculoskeletal Disorders

- More than 60% of all occupational illnesses
- 1.8 million injuries each year and 600,000 people miss some work
- Longest time off the job of any work-related condition. The median number of workdays missed is 17
- Average cost per worker compensation claim related to repetitive stress is \$43,500\*
- Total cost to U.S. in excess of \$20B annually

# Frequency Repetitive Trauma Cases United States 1980-1996



Cumulative trauma as a percent of total work-related injuries has tripled from 20% to 60% of all workplace injuries

# Physical Risk Factors

- Age
- Physical Shape
  - ❖ Strength, flexibility, conditioning
- Stature
- Weight/obesity/Diabetes
  - ❖ GM Study: Diabetics 2X greater risk for Carpal Tunnel Syndrome
- Smoking
  - ❖ Smokers 40% greater work related injuries
- Poor work postures/habits

# Job Risk Factors

- Repetition
- Force
- Awkward postures
- Vibration/impact
- Static loading
- Temperature extremes

# Psychosocial Risk Factors

- Rapid work pace
- Monotonous work
- Low job satisfaction
- Low decision latitude
- Job stress

Source: IOM; Musculoskeletal Disorders and the Workplace

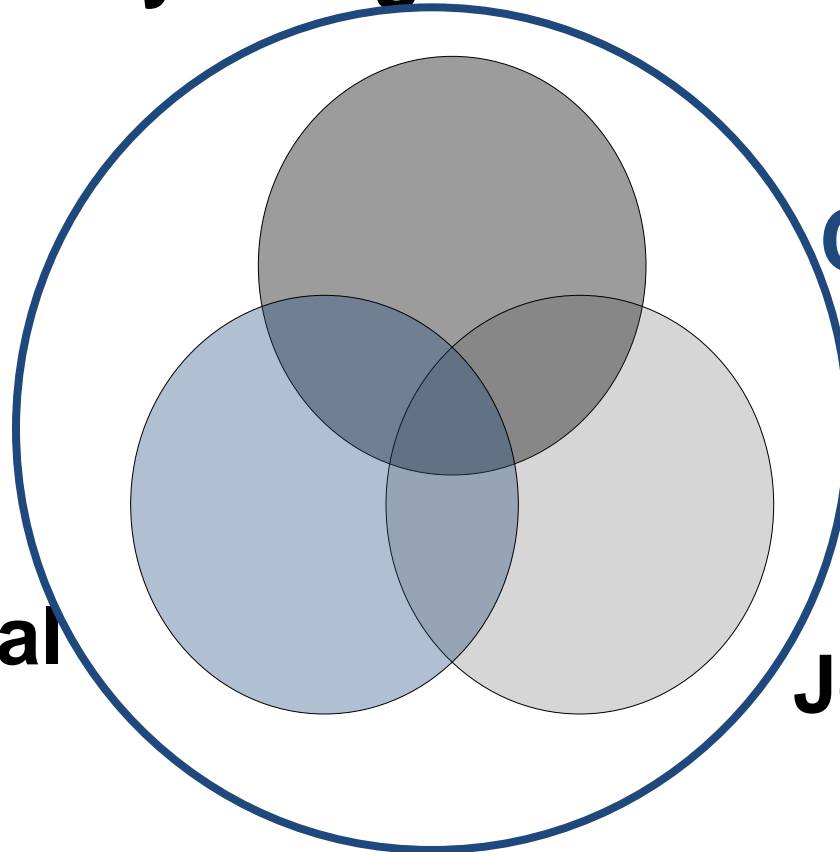
# Cumulative Trauma Risk

**Physiological Factors**

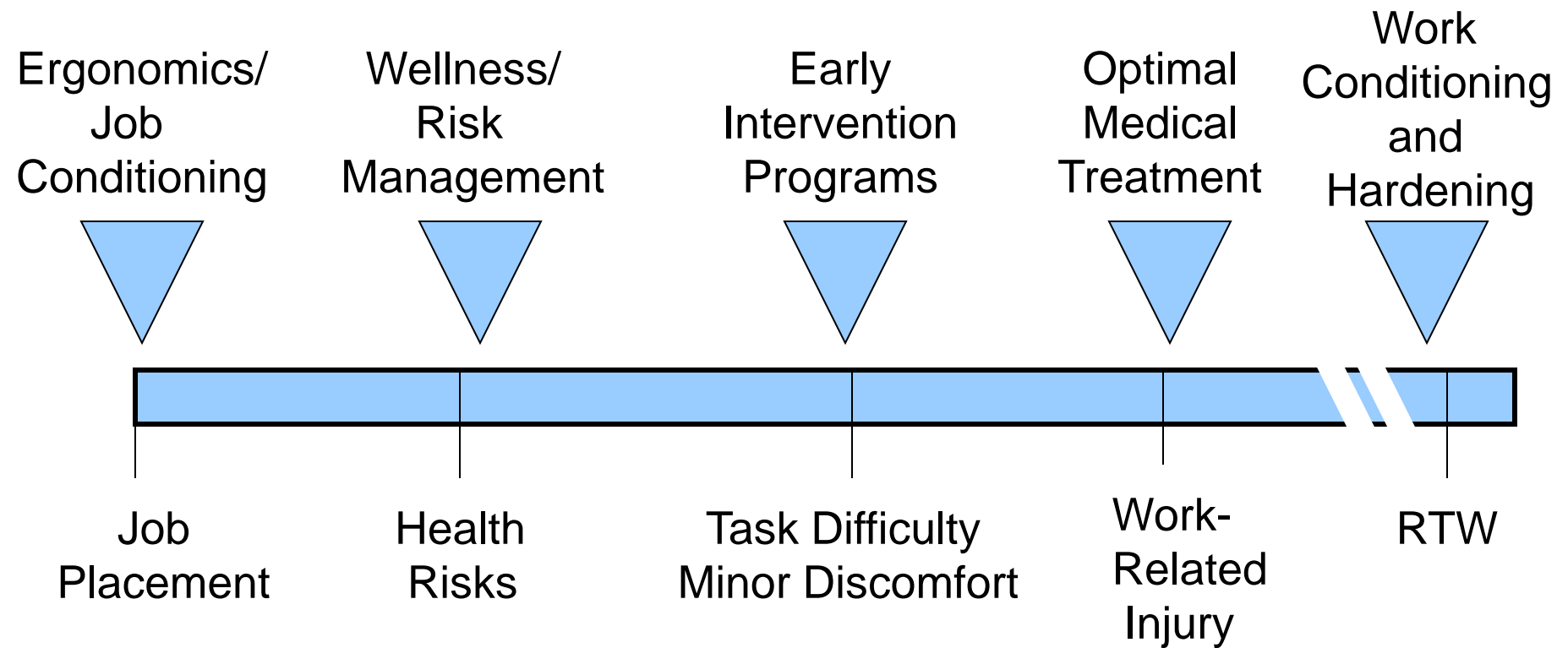
**Culture**

**Psychosocial  
Factors**

**Job Factors**

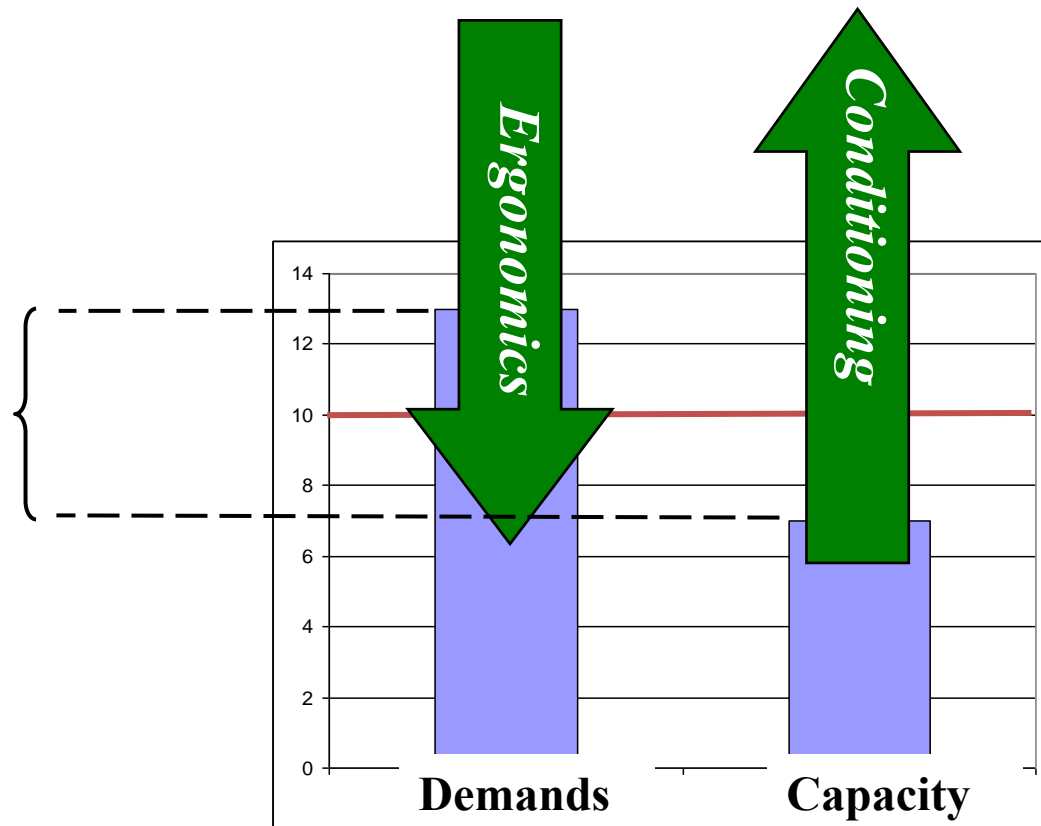


# Employment Continuum



# Gap Between Worker Capability and Work Demands

*The physiologic gap between worker capability and the demands of the job is a significant driver of soft tissue injuries.*



# Industrial Athlete Mission

**To give employees the resilience to engage in a lifetime of physically demanding work and play**

# Facilities

- Bring the services to the worksite
- Factory training centers
- Everything is on-site
- Serve all shifts

# Guiding Principles Industrial Athlete Program

- Utilize best-in-class and evidence-based sports medicine concepts
- Customize programs for specific site and employee needs
- Focus on high-risk physically demanding jobs
- Integrate Industrial Athlete into existing site programs
- Provide programs at no cost to participants or home budgets
- Service delivery on-the-clock and at the worksite

# Why An Industrial Athlete?

- Employees with physically demanding industrial jobs are like professional athletes.
  - Both need physical strength and flexibility
  - Both require physical conditioning and training
- Professional athletes have special training camps, trainers and personal work-outs and care to ensure that they are able to meet the demands of their sport.
  - Employees can benefit from similar programs that match conditioning and support programs to their job demands.



# Why Athletic Trainers?

- **Certified Athletic Trainers specialize in preventing, recognizing, managing and rehabilitating injuries that result from physical activity.**
- Understand the pathology of injury and illness
  - Conduct evaluations of recent or preexisting injury
- Educational competencies:
  - Human physiology, human anatomy, exercise physiology, kinesiology/biomechanics, nutrition, acute care of injury and illness, statistics and research design.
- First Response / First Aid
- Referral to medical care
- Referral to support services



# Job Conditioning

- Customized voluntary conditioning circuits
- Exercise circuit based job requirements and injury patterns
- 30 minute to 1-hour sessions two to four times a week for 6-8 weeks
- Focus on hourly workforce in physically-demanding jobs
- Led by Athletic Trainers and Exercise Physiologists



# Joint-Specific Conditioning

- Intensive conditioning program related to selected body areas
- For those returning to work with significant or recurrent injury
- On-the-clock conditioning customized for each employee and approved by manager
- May range from one or two sessions total to 2 or 3 sessions per week for up to 6 weeks



# Symptom Intervention

- Early intervention for employees with mild discomfort or some difficulty performing daily work
- Athletic Trainer (AT) is often “embedded” in work area (“shipside” model)
- Assessment , first aid treatment, and/or referral to an on-site clinic or other resources as indicated
- Comprehensive plan to proactively manage symptoms & prevent further injury, including:
  - ✓ Customized conditioning and strengthening
  - ✓ Work methods and body mechanics review
  - ✓ Pre-shift warm-up exercise programs
  - ✓ Deep tissue interventions
  - ✓ Ergonomics, Wellbeing



# Work Area Evaluation

- Assessment of work area and methods to address what can be done to prevent injury/reduce pain
- Discussion of body mechanics and postural education
- Change of position and micro break stretching
- Work Risk Analysis (WRA)
  - Qualitative Job or Job-site analyses to determine risk factors and corrective actions.



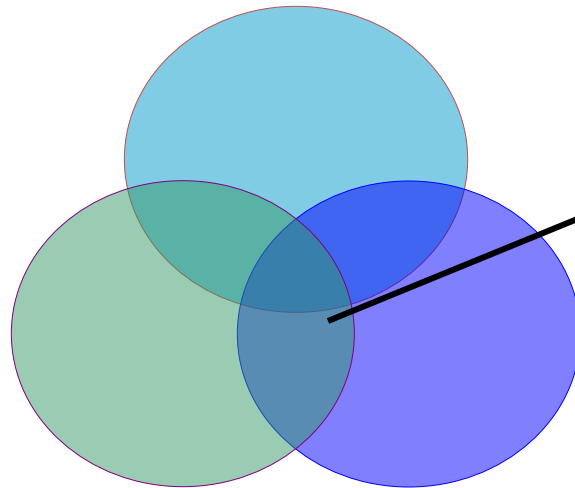
# Feedback

- Participant feedback positive
- Management feedback positive
- Physical improvement
- Morale improvement
- Greater demand than resources

# Program Evaluation

Participation Statistics

Program Decisions



Survey Responses

Data Analysis

# Job Conditioning

## Success measures

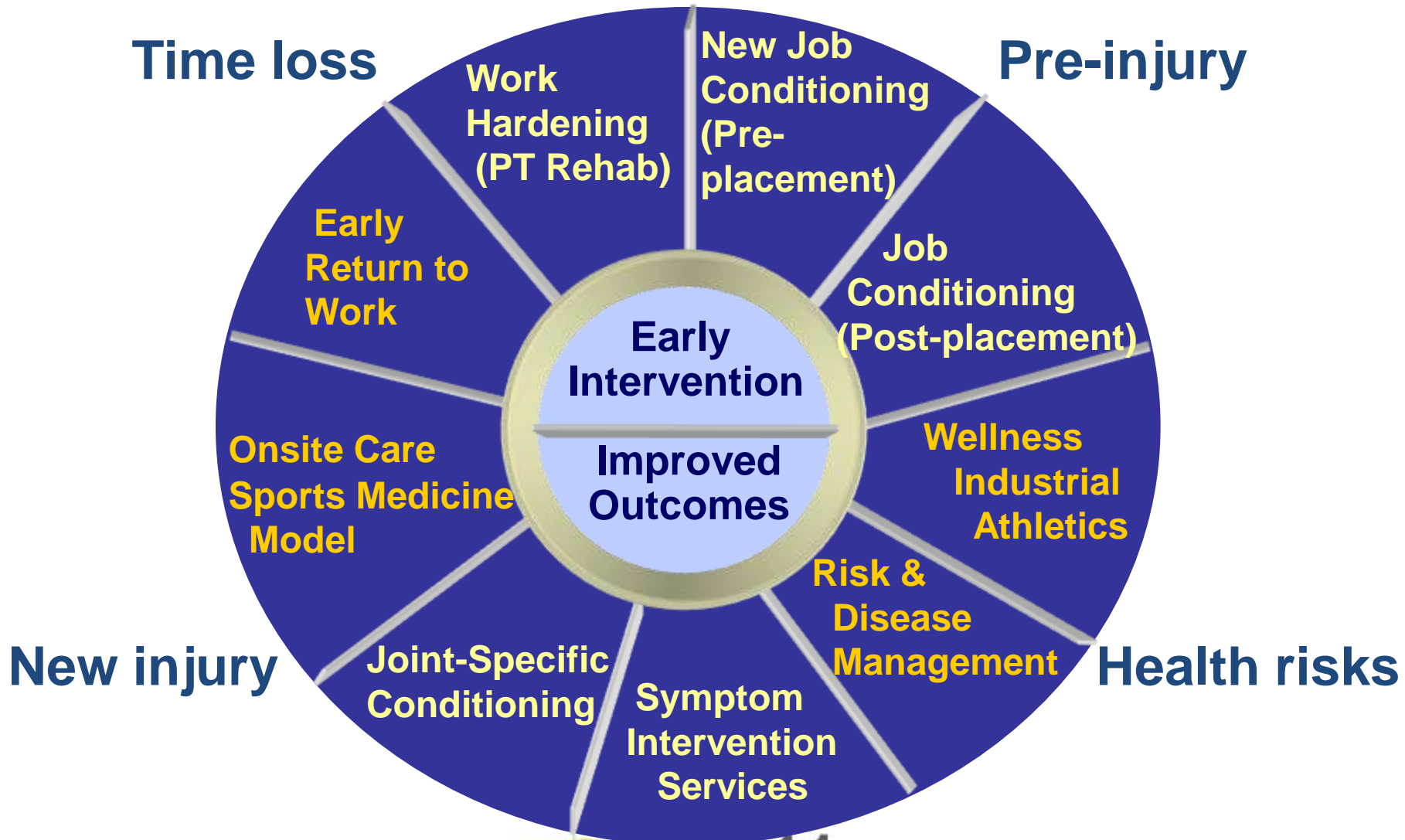
- Participants show increase in strength and flexibility, decrease in pain
- 90% of participants make healthy changes to work and exercise habits following program participation
- 60 minute program proven to reduce likelihood of injury
- Impact of injury reduction gradually diminishes between 1-2 years
- Greater reduction of injury rates observed with more time spent in program

# Symptom Intervention

## Success measures

- 60% of participants report significant decrease in pain
- 98% remain injury-free (for body part seen) three months after Symptom Intervention visits
- 98% overall satisfaction with program (2% neutral)
- 100% would recommend services to others (4% with reservations)
- 80% of participants have made changes to work habits

# Boeing Industrial Athlete



# Questions?