

# **Modeling WDP for understanding and implementation**

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# Models for choosing your next dress?



# Models for WDP

- Should help for understanding and implementing WDP
  - Theoretical models or Conceptual frameworks
  - Operational models or process models (engineering, social sciences)
  - Translational models or implementation science



# What is Work Disability?

- Incapacity for work is reduced capacity and restriction of functioning in an occupational context, and is the primary target of sick pay and social security financial benefits.
- Approximately 50% of disabled people who would meet that requirement for IB (LBP??) are working.

Waddel, 2004

# Societal costs of work disability

- World Bank: social exclusion of people with disability from the workplace estimated at US \$1.37 to 1.94 trillion in annual loss in GDP (Metts, 2000)
- WHO: in 2001, cost of work-related health loss and associated productivity loss represented around 4-5% GDP → US \$1,250 billion (Benach et al, 2007)



# Social Determinants of Health

## THE CANADIAN FACTS (2010)

- Over 40% of Canadians with disabilities are not in the labour force, forcing many of them to rely upon social assistance benefits.
- Canada ranks 27th of 29 OECD nations in public spending on disability-related issues.
- Canada falls below the OECD average in efforts to integrate persons with disabilities into the workforce.

Mikkonen, J., & Raphael, D. (2010), OECD data  
Toronto: York University School of Health Policy and Management.

# Social Determinants of Health

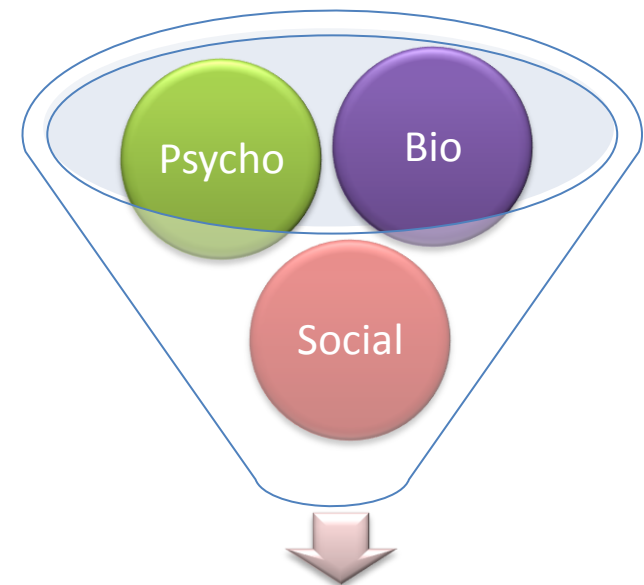
## THE CANADIAN FACTS (2010)

- Many employment issues are related to the workplace being either unable or unwilling to accommodate to the needs of persons with disabilities.
- For many persons with disabilities, an employer's reluctance to provide accommodation on the job can be extremely disheartening and frustrating.

Mikkonen, J., & Raphael, D. (2010), OECD data  
Toronto: York University School of Health Policy and Management.

# Determinants of Work Disability

- Biological factors
  - e.g. medical status, physical capacity
- Psychological factors
  - e.g. fear, anxiety, motivation, depression
- Social factors
  - e.g. work environment, compensation system
- Cultural context
  - E.g. province, country







# From the disorder to work disability

*An unfortunate process...*

*That might most often*

*be avoided*

*But requires to think differently*



# Work is good for your health

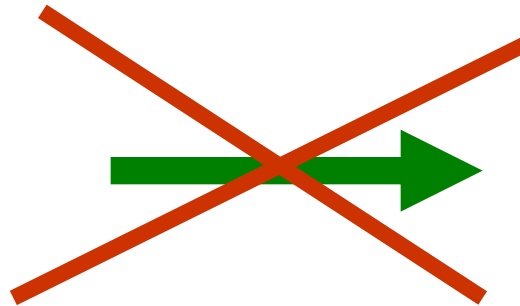
- Occupational health: work may harm you
- WDP: work is good for your health
  - Waddel & Burton, 2006  
Is work good for your health and well being?
  - Dame Carol Black, 2008  
Working for a healthier tomorrow
  - Early retirement may lead to premature death  
Quaade, SJPH, 2002; Tsai, BMJ, 2005; Gjesdal, SJPH, 2009

# Classic disease model

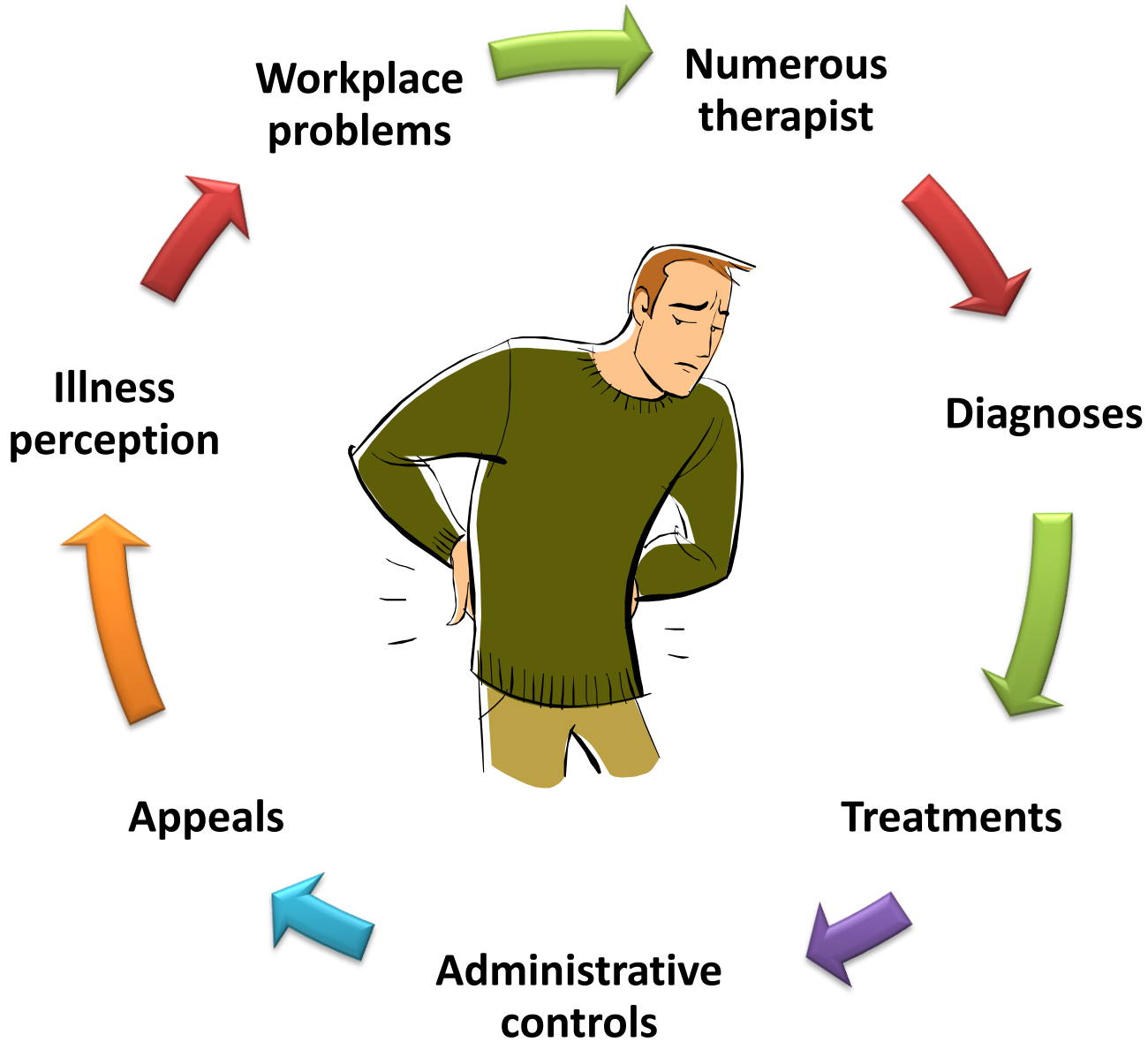
Curing the disease will avoid disability

**DISEASE**

**DISABILITY**



**Why?**



# The work disability paradigm

Work disability is a complex  
Person – Environment problem



«Work for all, for those with LBP as well»: Alf Nachemson, 1983:

**THE RIGHT OF WORKING**

# Models for WDP

- Should help for understanding and implementing WDP
  - Theoretical models or Conceptual frameworks
  - Operational models or process models (engineering, social sciences)
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# Theoretical models or frameworks

## Models of Return to Work for Musculoskeletal Disorders

Izabela Z. Schultz · Anna W. Stowell ·  
Michael Feuerstein · Robert J. Gatchel ·  
J Occup Rehabil (2007) 17:327–352



# Forensic models

- Aim: right for compensation vs insurance policy
  - Objective proof of impairment and disability
  - Direct link between impairment and disability
  - Insurance model, based on « medical/biological model »





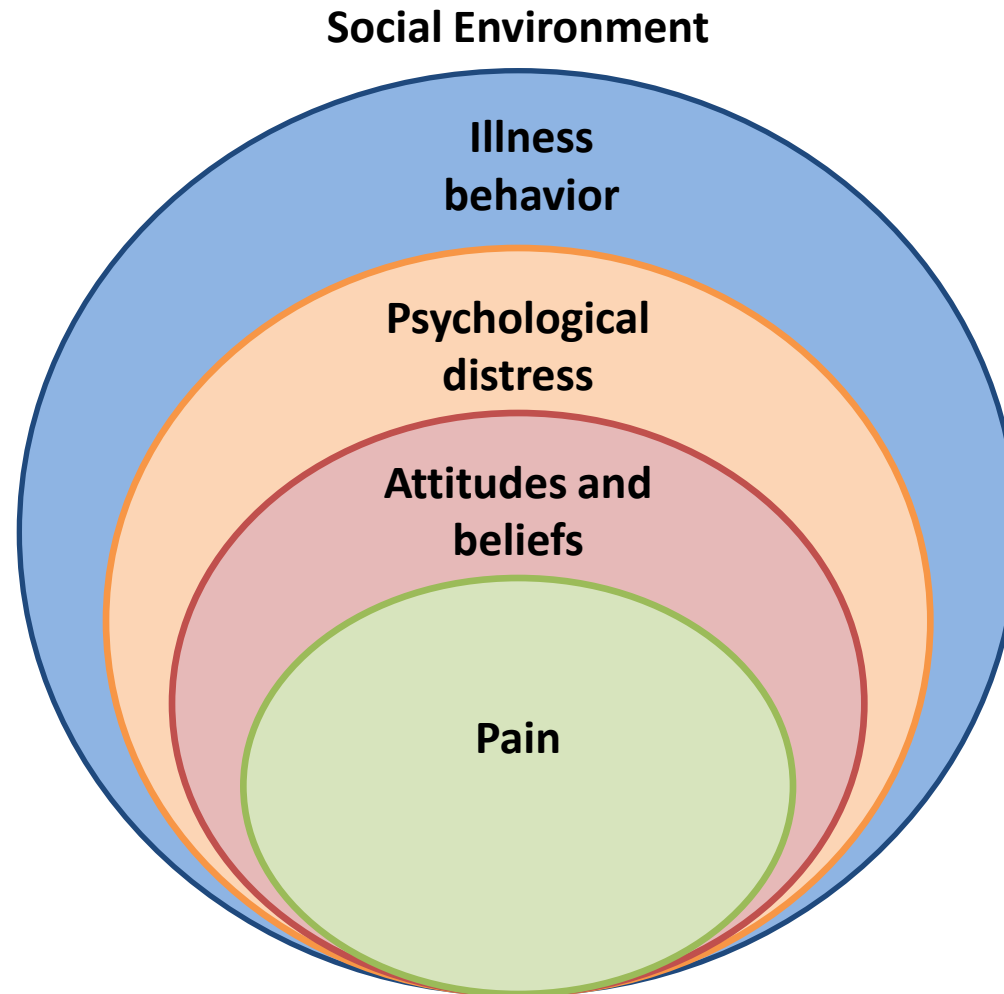
# **Biopsychosocial model**

**Waddell, 1984**

**Aim: various disability determinants?**



# Biospsychosocial model (Waddell, 1984)



# **Model on persistent pain**

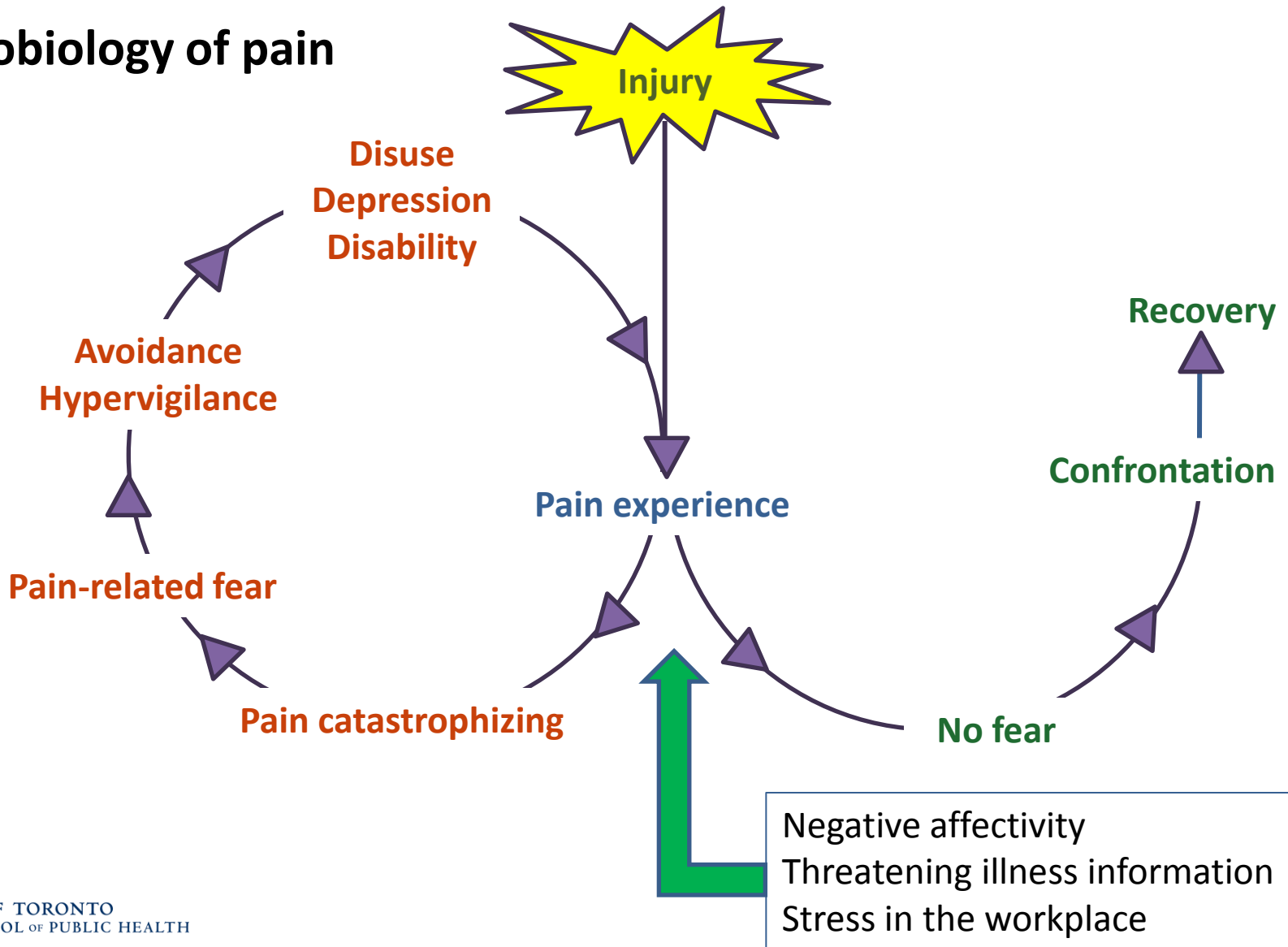
**Vlaeyen, 2000**

**Aim: what to do with persistent pain?**



# Model on persistent pain

## Neurobiology of pain



# Rehabilitation Models

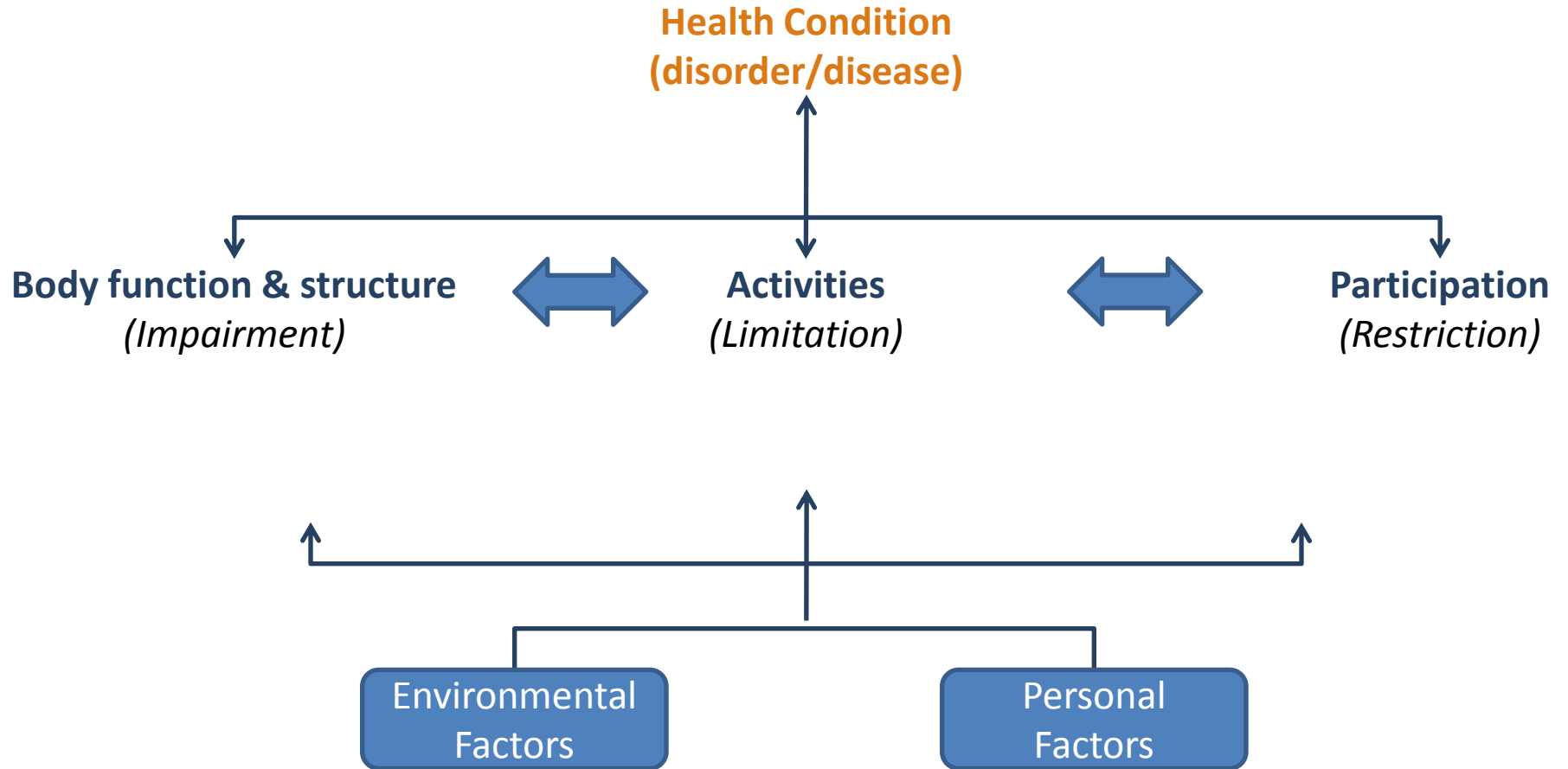
**ICF (WHO)**

**Feuerstein**

**Institute of Medicine**

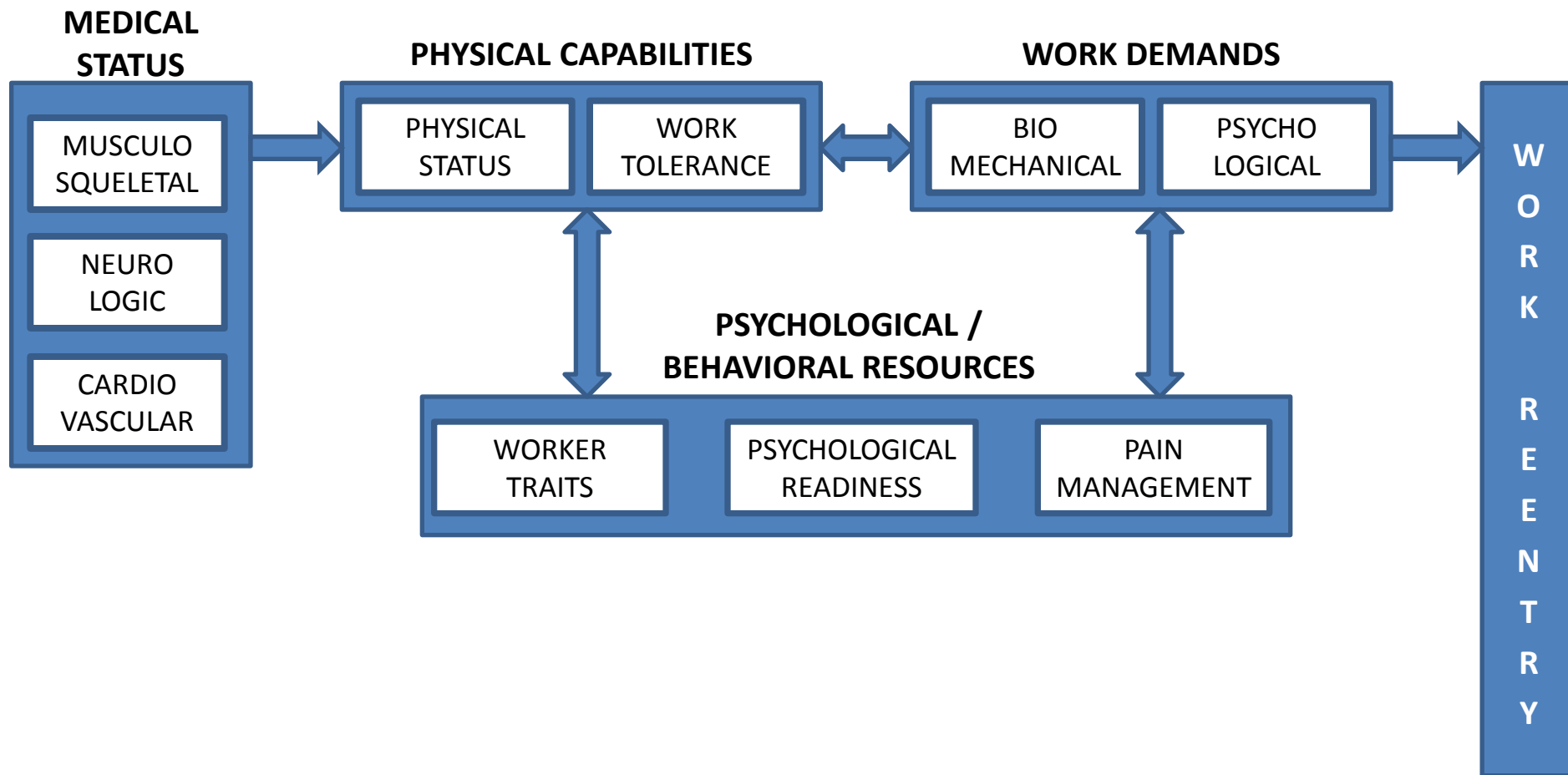


# Interaction of Concepts (ICF, 2001)



# Feuerstein Model of Work Disability

(JOR, 1991: Vol 1, N° 1)



# Institute of medicine model of disability (2001)

## The Workplace

External loads

Organizational factors

Social context

## The Person

Biomechanical loading

- Internal loads
- Physiological Responses

Internal Tolerances

- Mechanical Strain
- Fatigue

Outcomes

- Pain Discomfort
- Impairment Disability

Individual factors



# **Ecological / Case Management Model**

**Loisel & al., 2001, 2005**



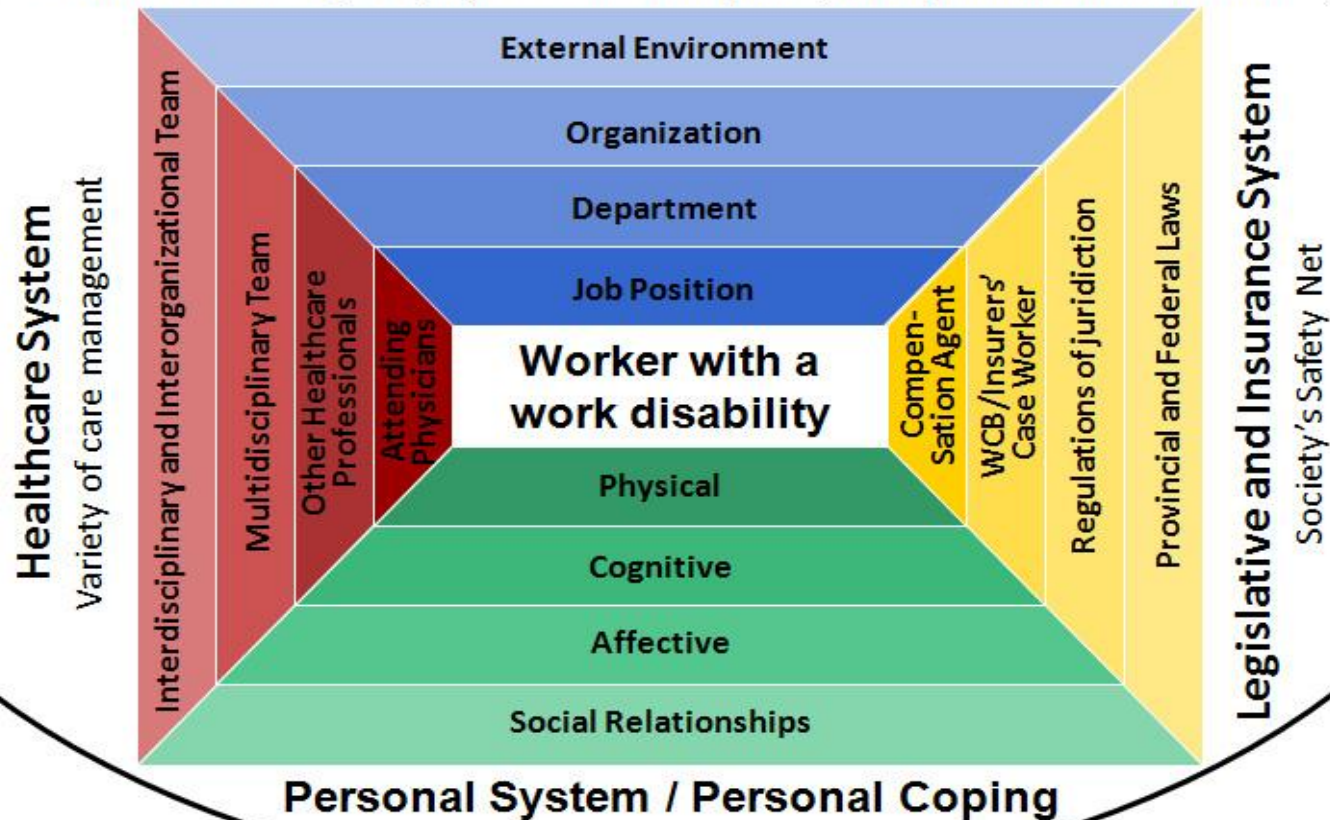
# The Arena of Work Disability

## Overall Societal Context

Culture and politics

## Workplace System

Work relatedness, employees assistance plans, workplace accommodation



# The Arena of Work Disability

Imagine a football game with **each player**  
**having different rules!**



# Models of disability

- It is clear that disability and in particular work disability are SOCIAL issues as well or more than personal issues
- Work disability has PERSONAL and SOCIAL CONSEQUENCES with humane and financial implications

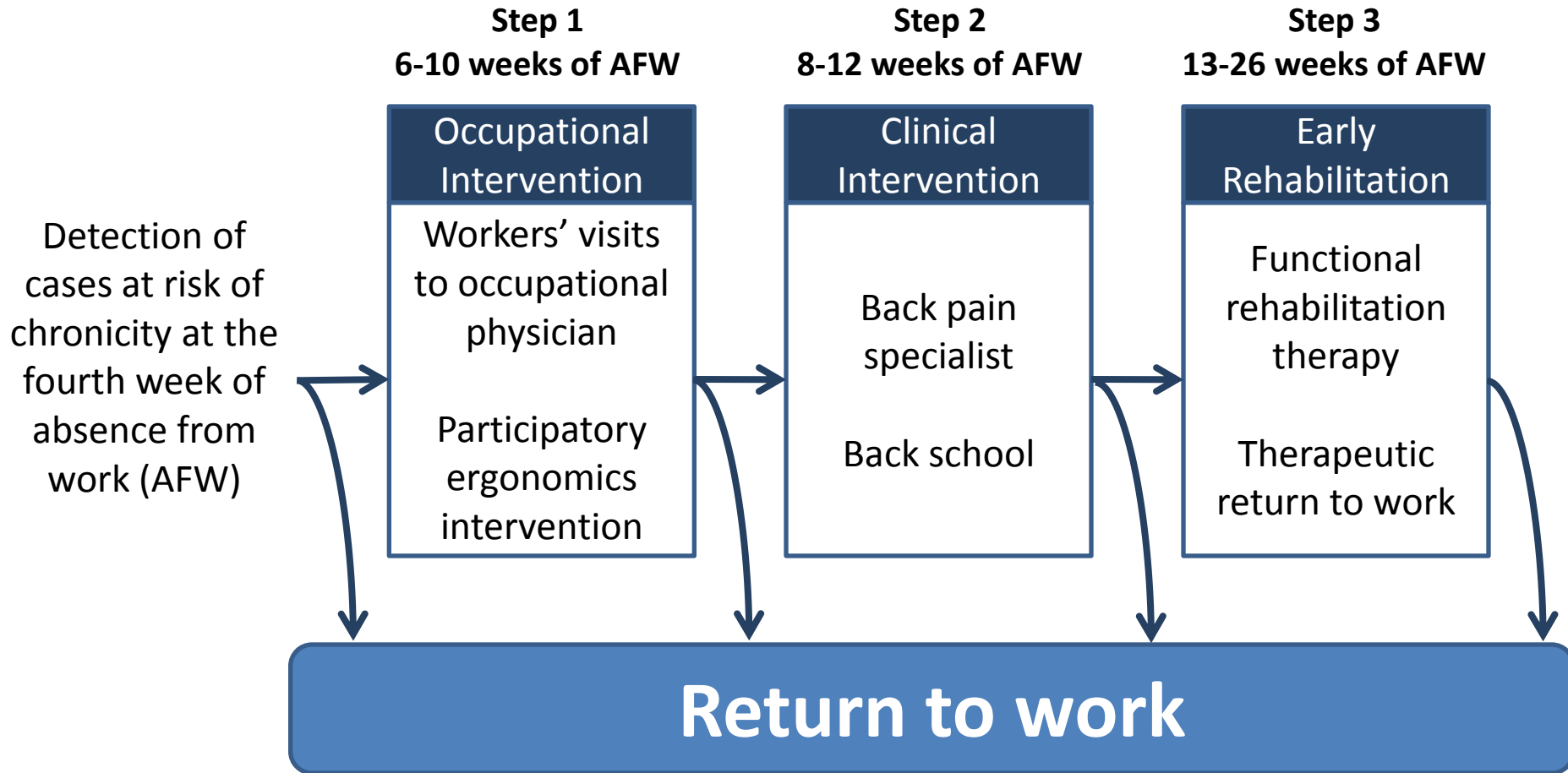


# Operational models

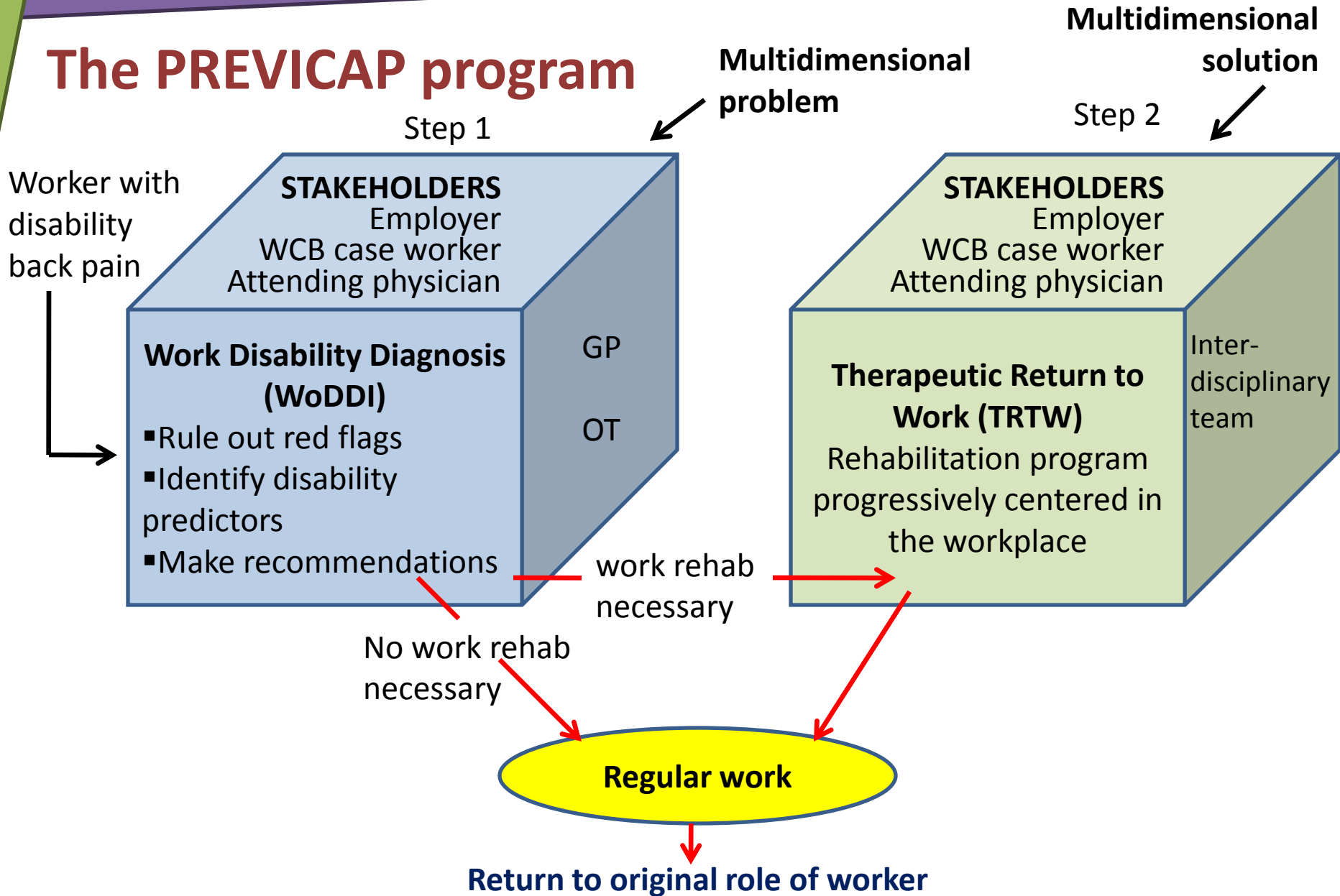
- Sherbrooke model:
  - Loisel & al., Spine 1997
  - Anema & al., Spine 2007
  - Lambeek & al., BMJ 2010
- Previcap program operational model



# Operational model of the Sherbrooke model



# The PREVICAP program



# The challenge of implementation



James Lind  
(1716-1794)  
and the case  
of Scurvy





# Scurvy was the most important killer on ocean-going ships

- 1747: James Lind (Naval Surgeon) proves through a controlled trial the effectiveness of citrus fruit on scurvy
- 1753: James Lind publish his findings in the « Treatise of the Scurvy »
- Lind's book:
  - Re-edited in English (1757, 1772)
  - Edited in French (1756, 1783), Italian (1766), German (1775)
- 1795: Admiralty orders embarking citrus juice on vessels, **eradicating scurvy in 2 years**
- **Lag from evidence to implementation: 47 years**
- **Should we wait until YEAR 2050 to implement evidence in WDP ?**



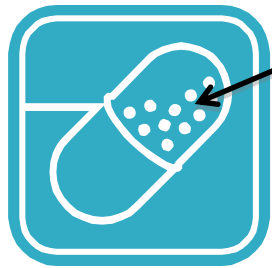
# Implementation models

- Implementation science
- An intervention working well in one place may not work elsewhere, due to the new specific environment
- Adapting the core effective (evidence based) elements with a specific context



# Adaptation with local context

- Medication

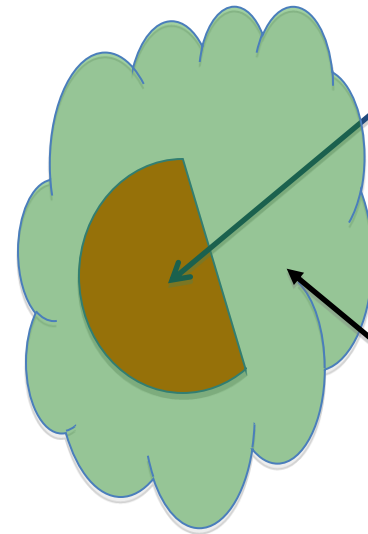


Active ingredients



Contextual adaptation

- Intervention



Evidence based core elements

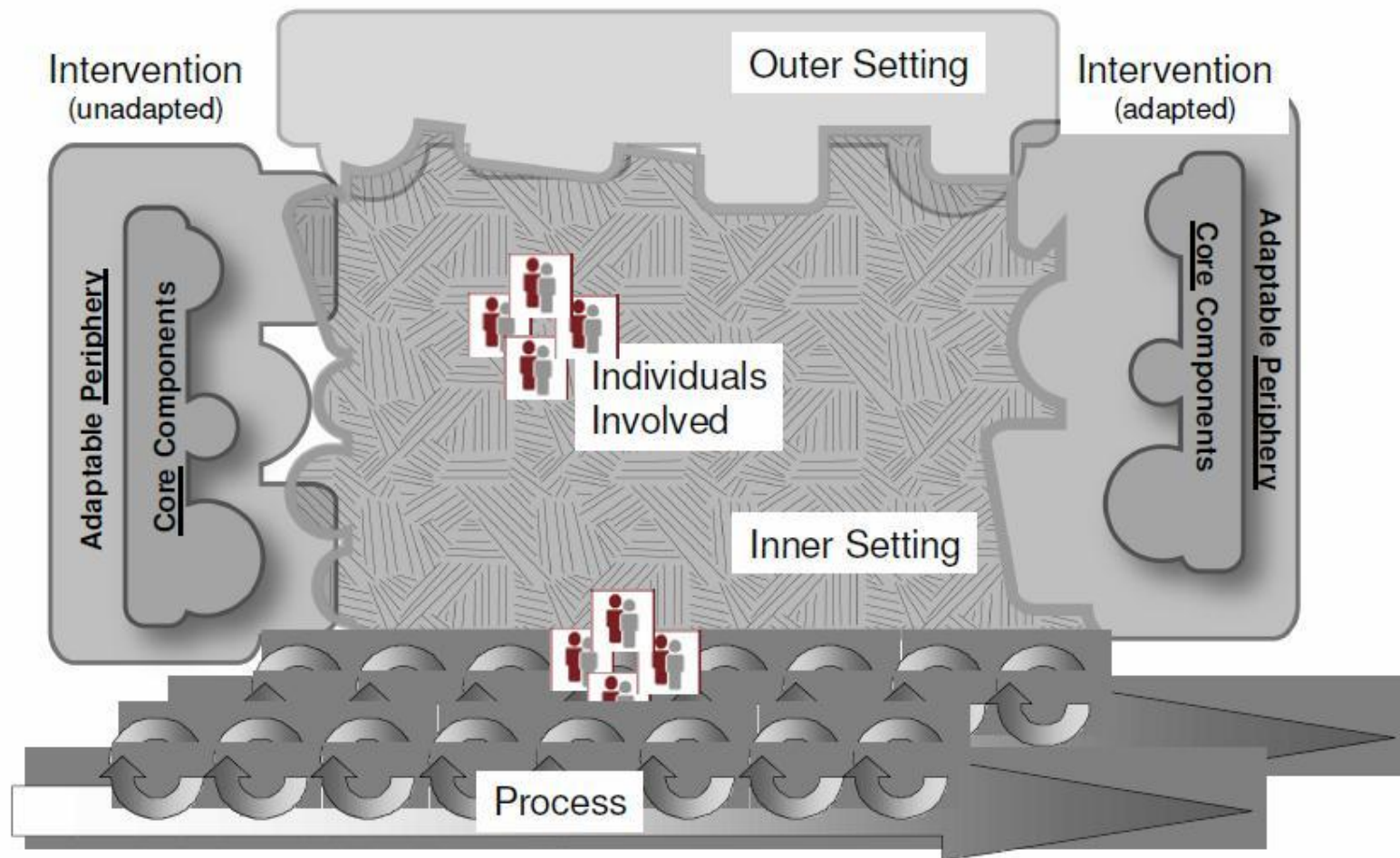
Contextual adaptation

# Recent implementation models

- Greenhalgh, 2004
- Fixen, 2005
- Damschroder, 2009



# Damschroder Model



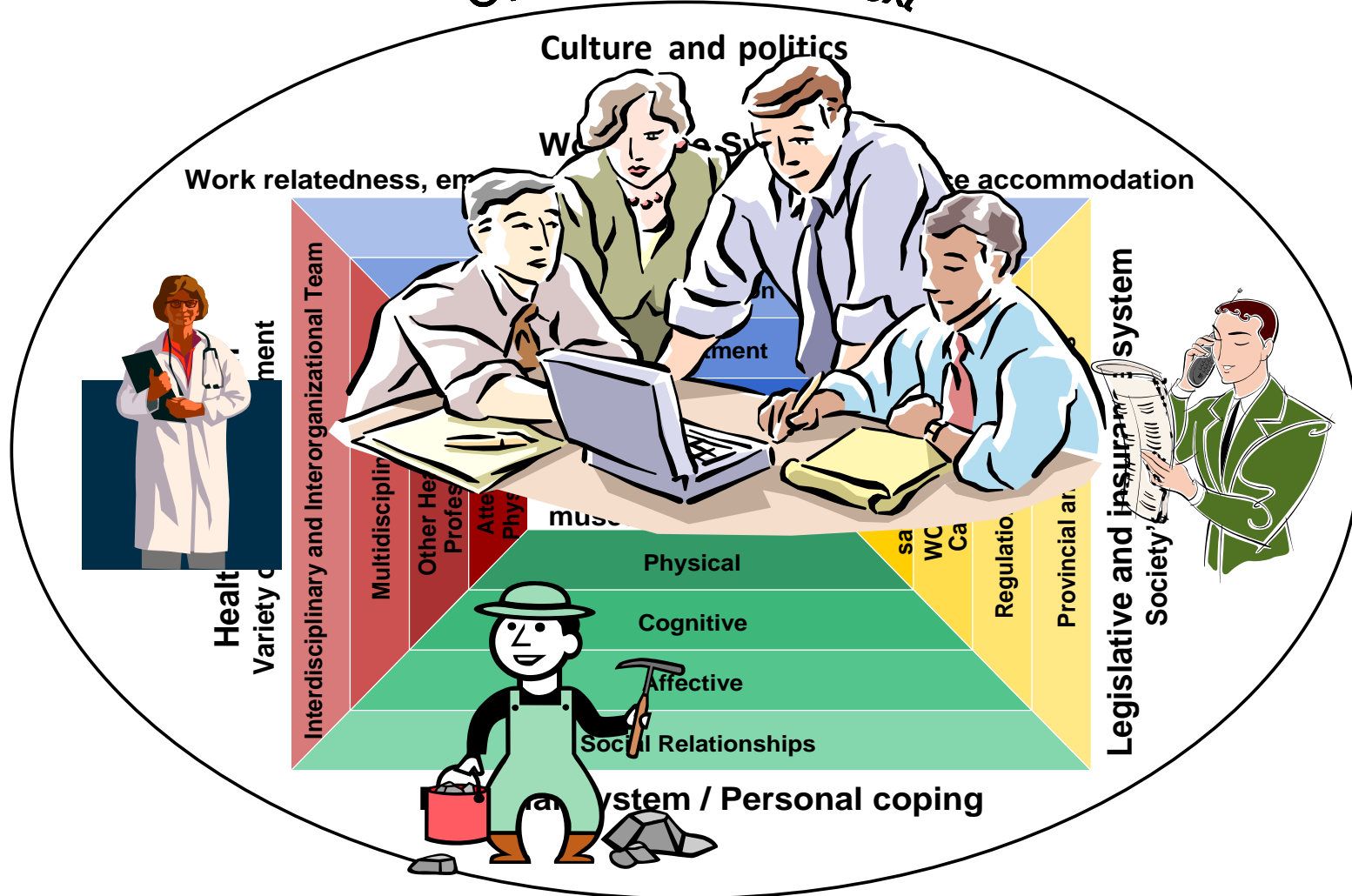
# Main implementation steps

1. Define the effective core elements of the intervention
2. Build a team research users / researchers
3. Look for barriers and facilitators to implementation
4. Develop the local intervention
  - Adapt intervention to the context and
  - adapt the context to the needed core elements
5. Hire and train an intervention team and give it coaching during a limited pilot and assess this limited implementation
6. Revise the intervention and implement at a larger scale with implementation and outcome assessment

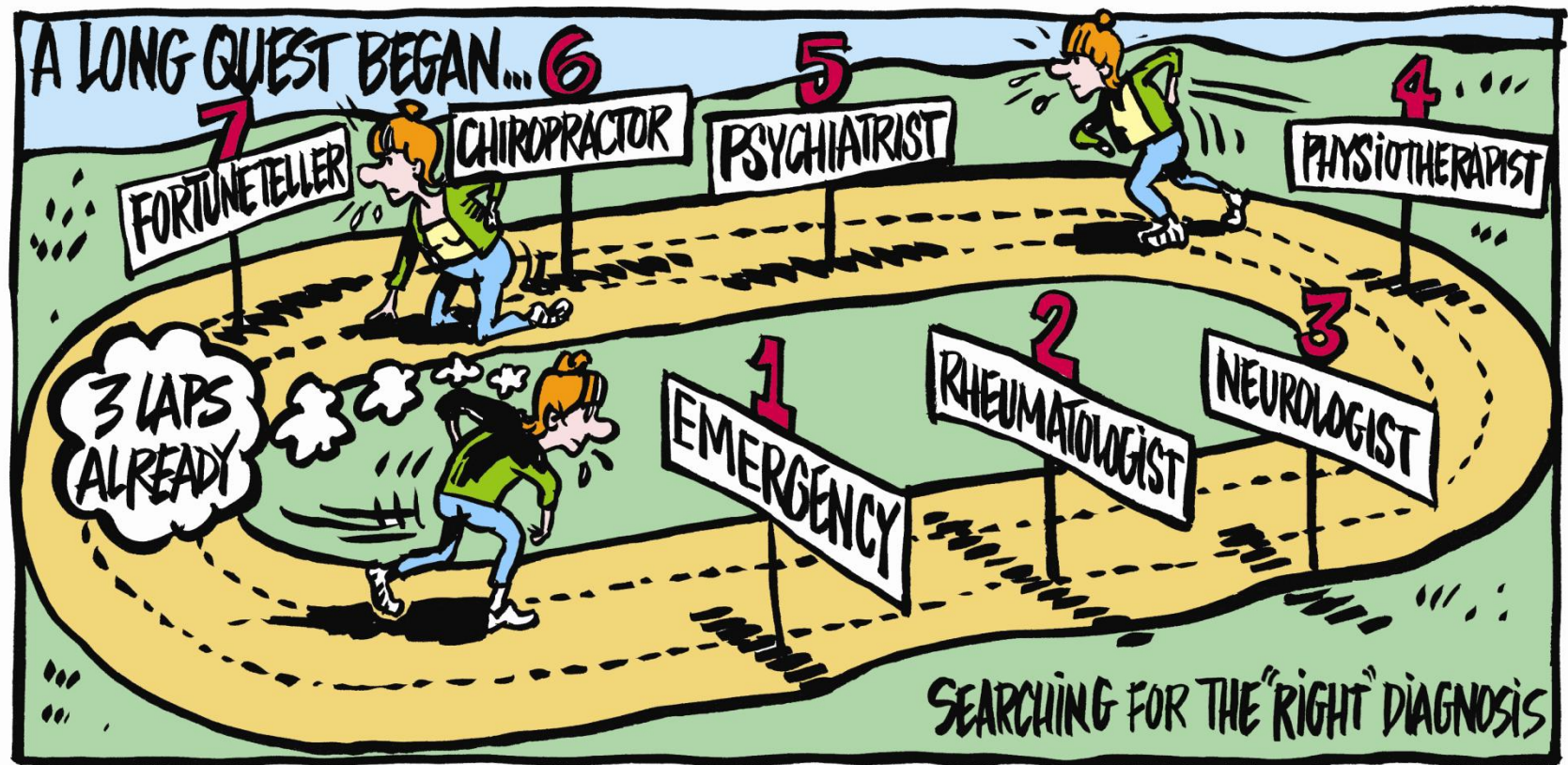


# PLAYING WITH OTHERS IN THE ARENA

Overall societal context



# Where to go? What to do? Who to believed?

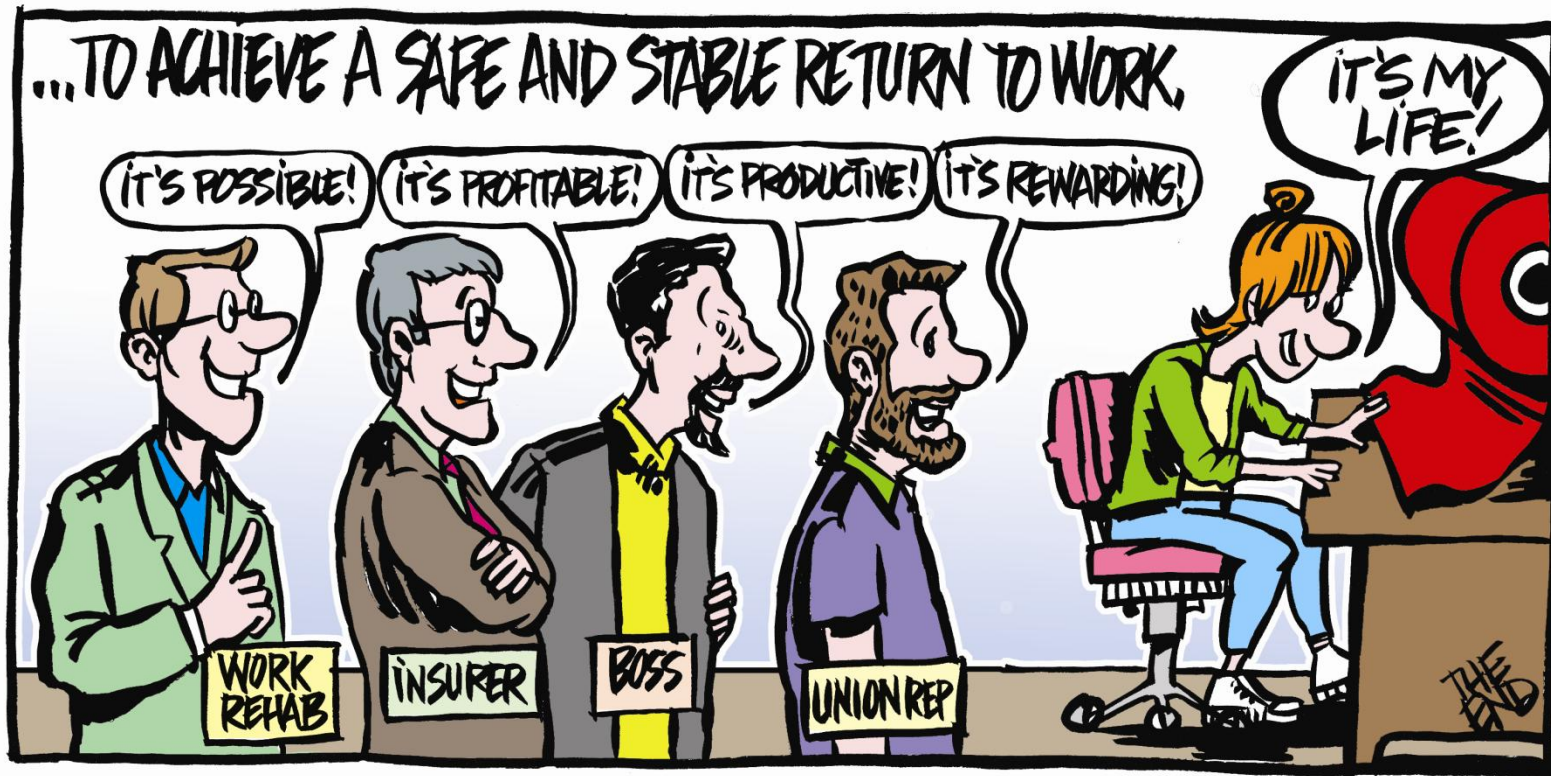


© CAPRIT, Université de Sherbrooke, 2005



# Work disability prevention

- Should focus on the psychosocial and environmental factors that impede return to work
- Bring together stakeholders in a win-win strategy



# Work Disability Prevention CIHR Strategic Training Program

- **Guided principles:** Competency-based; collaborative and cooperative learning; transdisciplinarity
- **Learning experience:** Small groups of trainees; various educational methods promoting discussion between peers and with mentors; international participation; stakeholders' perspective and mixed disciplines and methodologies
- **Disciplines Involved:** Anthropology, biomechanics, education and rehabilitation, epidemiology, ergonomics, ethics, kinesiology/exercise science/human movement sciences, medicine, nursing, occupational therapy, physiotherapy, psychology, public health, sociology, etc.

# Work Disability Prevention CIHR Strategic Training Program

- **Three year part-time studies:**  
Two weeks intensive summer session; e-learning; optional courses; special projects; training practicums
- **Language of instruction:** English
- **Location:** University of Toronto, Ontario, Canada
- **Calendar:** E-courses begin in April; summer sessions are held in June



**Next session: June 2011**

**Application Deadline:  
January 15, 2011**

**For more information:  
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