

# **Secondary Intervention**

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# Overview of Interventions

- Primary – population, organization, source
- Secondary – individual/group,
- Tertiary – individual

“Intervention” = “Prevention”

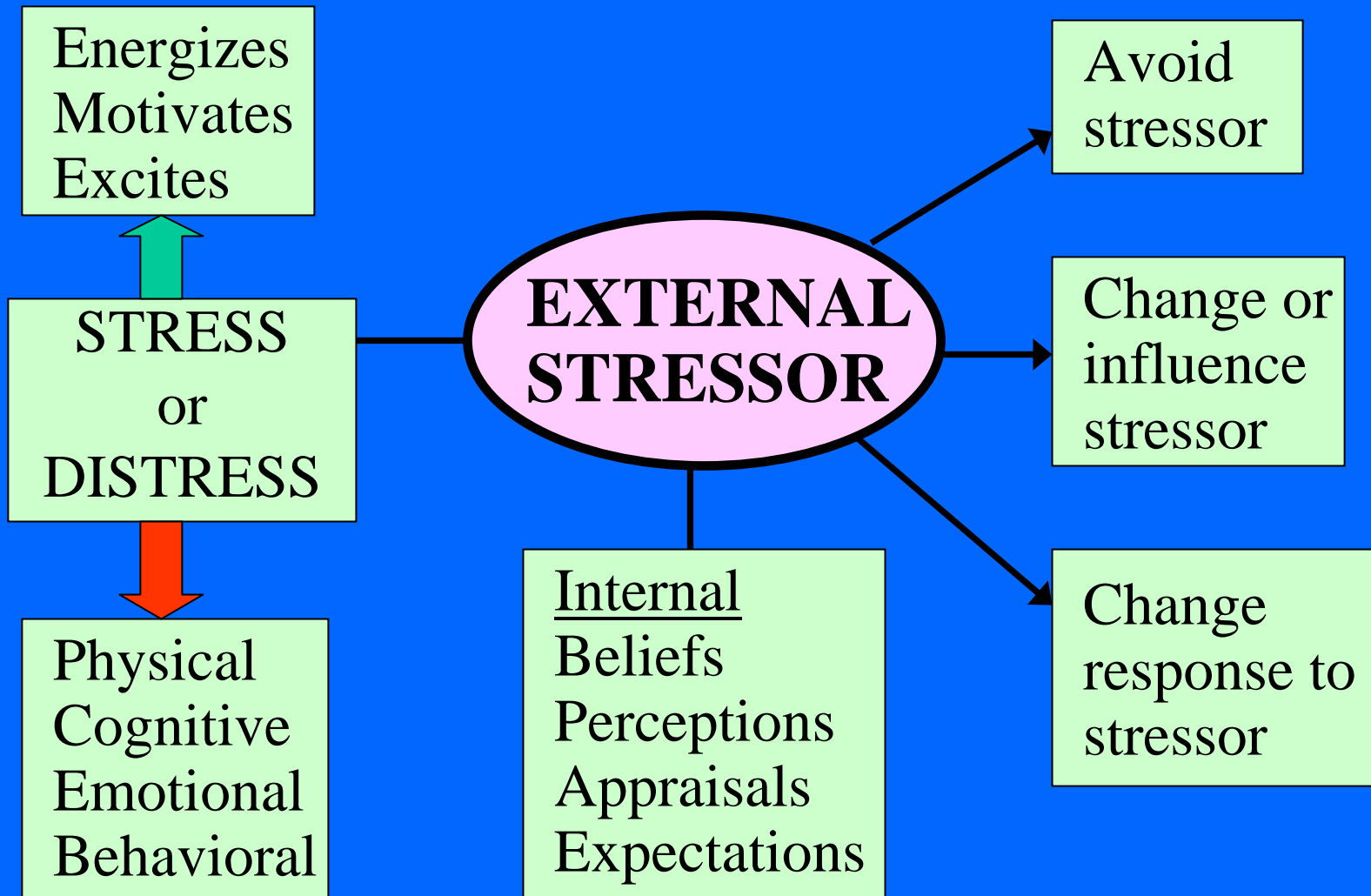
# Stress Management Training (SMT)

- “Techniques and programs that are designed to help employees modify their appraisal of stressful situations or to deal more effectively with the symptoms of stress, or both.” (Murphy 1996)
- Alternative term for secondary or tertiary interventions
- Most research after 1980

# Secondary Intervention Model

- Based on transactional model
  - Person-organization interaction influenced by cognitive appraisal
- Stressor
  - “Perceived challenge, obstacle, or threat to one’s goals, health, or happiness”
- Stress
  - When person believes her coping resources are not sufficient to meet the perceived challenge
- Response
  - Physical, cognitive, emotional, behavioral

# Secondary Intervention Model



# Physical Response

- Chronic “fight or flight” response without sufficient rest
- Increased heart rate, increased blood pressure, circulation of glucose and free fatty acids to escape danger
- Modern stressors may not be alleviated by these responses
- CVD; diabetes, cancer, some autoimmune illnesses

# Autonomic Nervous System: Summary of Effects

(Quillian-Wolever and Wolever 2003)

<b>Function</b>	<b>Sympathetic Arousal</b>	<b>Parasympathetic Arousal</b>
Skeletal muscles	Tense, in use	Relaxed
Blood	To skeletal muscles, heart, lungs	To central organs
Heart rate	Increases	Decreases
Respiration	Increases	Decreases
Blood pressure	Increases	Decreases
Stress hormones	Increases	Decreases
Blood sugar	Increases	Decreases
Release of fats into circulation	Increases	Decreases
Sexual functioning	Decreases	Increases
Digestion/peristalsis	Decreases	Increases
Immune functioning	Decreases	Increases

# Physical Response

- Chronic indicators: hypertension, fatigue, insomnia, immune suppression
- Acute indicators: temporary fatigue, racing heart rate, shortness of breath, headaches, muscle tension
- Coping tools: exercise, progressive muscle relaxation, deep-breathing, massage therapy

# Cognitive Response

- Arousal beyond optimal level for maximal performance
- Indicators: racing thoughts, obsessive thinking, scattered attention, loss of perspective, focus on the negative aspects while discounting the positive, difficulty with short-term memory, more rigid thinking patterns
- Coping tools: meditation, cognitive-behavioral training

# Emotional Response

- Indicators: increased frequency or intensity of anger, impatience, anxiety, depression
- Emotions are influenced by cortex, therefore thoughts and behaviors can change emotions
- Coping tools: meditation, cognitive-behavioral training

# Behavioral Stress Response

- Indicators: increase in alcohol intake, nicotine use, drug use, eating when not hungry, sleep disturbances, worsening communication behaviors, “nervous habits”
- Coping tools: cognitive-behavioral training

# Behavioral Coping Strategies

- Avoid the stressor
- Change the stressor
  - Solution focused approach (Williams and Williams 1997)
  - Identify problem
  - Generate options
  - Take active steps
- Change response to stressor

# Physical Coping Strategies

- Relaxation techniques
- Somatic
  - Progressive muscle relaxation, most common for stress management
- Cognitive
  - focus on breath, biofeedback, self-hypnosis, imagery, meditation

# Cognitive Relaxation

- Breathing: reduce SNS activity
- Biofeedback: reduce muscle tension, SNS
- Self-hypnosis: elevate mood, reduce pain
  - Autogenic training
- End state imagery
- Meditation: reduce SNS, elevate mood, positive change in hormone levels
  - Respiratory One Method

Quillian-Wolever and Wolever 2003; Murphy 1996

# Meditation

- Effects through relaxation
- Focusing attention away from stressors on neutral or relaxing stimulus
- Reduces BP, anxiety, somatic complaints (6 studies, Murphy 1996)
- Less gastrointestinal distress and emotional and behavioral responses to stress (Winzelberg and Luskin 1999)

# Physical Coping Strategies

- Massage therapy: reduce muscle soreness, enhance immune system, stimulate parasympathetic nervous system leading to relaxation response, reduce anxiety and depression
- Exercise: positive impact on mood states, immune system, CV responses, stress reactivity, job satisfaction

# Exercise

- Physically fit people have lower SNS activity in response to physical load
  - Mixed results for stress
  - De Geus and Van Doornen (1993) found that 8mo intensive fitness program did not change reactivity to stress; did reduce overall HR and BP
  - Effects through neurotransmitter regulation
- Psychological benefits
  - Less depression\*, fatigue, confusion, anger
  - Many studies are flawed
  - Effects through distraction, self-confidence, self-esteem, social support
- Not clear why it works, but it seems to be helpful

# SMT among Managers

- Large manufacturing organization; no apparent stress problems
- 62 managers divided into 4 groups: management skills, meditation, exercise, control
  - Management skills: goal setting and prioritizing, communication, listening, skill development, empathy
  - Meditation: 15-20min, 1-2x/day; meditation sounds to help focus
  - Exercise: 30 min aerobics, 3x/wk
- 10-12 hours training; control-general stress information
- After 13 weeks, intervention groups split and given 2<sup>nd</sup> 10-12 hours training
- BP and HR measured every 2 weeks

# SMT among Managers

- Results:
  - Over 6 months, all three interventions led to reduced BP and HR, including combos
  - No significant differences between interventions
  - No significant differences between combinations
- Conclusion: range of interventions may have benefit

# Cognitive Coping Strategies

- Cognitive reframing techniques
  - Premise: thoughts, beliefs, values impact one's assessment of stressors and intensity
  - Learn to reinterpret situations
  - Elevate mood, improve outlook
  - Stress inoculation is most common (Murphy 1996)

# Stress Inoculation Training

- One can learn techniques to withstand more severe stressors in future (Meichenbaum 1985)
- Combines physical and cognitive approaches
- Three phases:
  - Rationale: how cognitive appraisal processes impact behavior
  - Coping: variety of approaches
  - Rehearse: practice, role-playing, visualization

# Cognitive Coping Strategies

- Assertiveness training
  - Techniques to help people express their needs in healthy interpersonal exchanges
  - Better manage demands (e.g., saying “no”)
  - Increases control
- Problem-solving approaches

# Emotional Coping Strategies

- Social support: reduce CVD, enhance immune function
  - Most important psychosocial stress buffer
- Disclosure of emotions: decrease BP and muscle tension, enhance immune function

# Religious Involvement

- Inversely associated with psychological distress and positively correlated with well-being
- Many models; a few are:
  - Behavior: discouraging drinking, smoking
  - Physical: meditative prayer for relaxation
  - Cognitive buffering: reframe situations (less serious, opportunity for growth, part of broader plan); greater confidence to cope
  - Psychological resources: self-esteem, control
  - Social support: shared values, tangible assistance, counseling services

Ellison et al. 2001

# Religious Involvement

- 1995 Detroit Area Study (DAS-95)
- 1139 adults in 3 counties
- Church attendance, prayer
- Psychological distress and well-being
- Church attendance confirmed hypothesis
- Prayer weakly failed to confirm
  - People with severe stressors resort to prayer

# SMT for Hypertension

- 22 patients with hypertension; 21 control patients on waiting list
- Training: education, relaxation, problem-solving
- Results:
  - More patients reduced BP of 5mm Hg or more
  - More patients reached normal BP
  - Significant differences remained for 4 months

# SMT for Hypertension

- Review by Murphy (1996)—blood pressure most common physiologic outcome measure
- 20 assessments in 13 studies
- -7.8mm Hg (4-21) systolic BP in trained group
- -5mm Hg (1-12) diastolic BP in trained group
- But -4.9mm Hg/-2.7mm Hg in control group
- As whole SMT has small effect, but muscle relaxation training and meditation significant

# U.S. Public Service Employees

- 79 employees randomly assigned to treatment and control groups
- 16 hours group training over 8 weeks:
  - Recognizing emotional and physical responses to stressors at work
  - Objective evaluation of situation
  - Replacing self-defeating thought processes with positive ones

# U.S. Public Service Employees

- Results:
  - After 16 hours training, small reductions in depression, anxiety and adrenaline secretion
  - Maintained after 4 months
- Limitations:
  - Can't differentiate between component effects
  - How much training is enough?

# Swedish government office workers

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## Intervention (8 months)

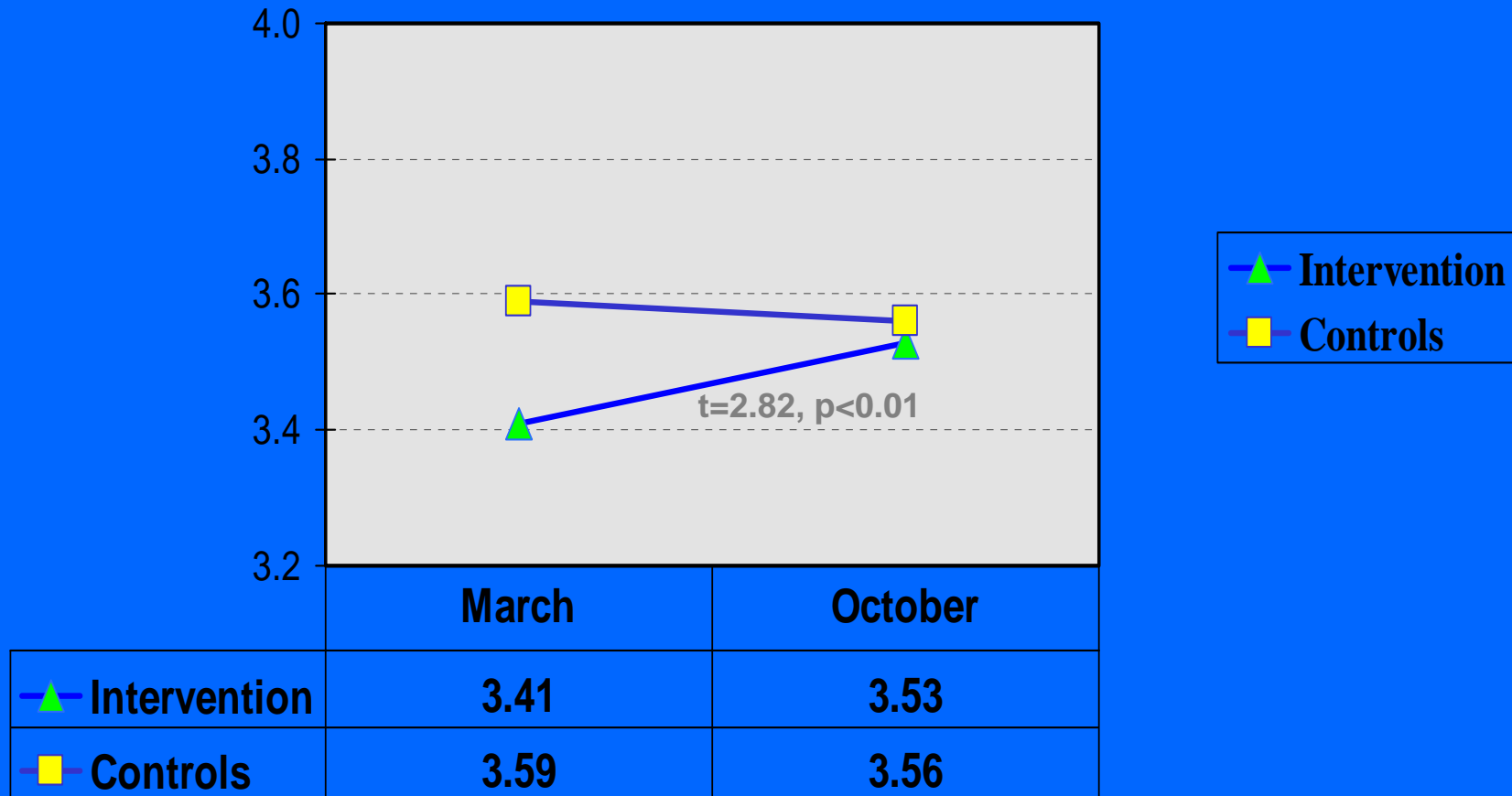
- Education program
- Relaxation training
- Worker committees developed “action plans”  
(job conditions to be improved, proposed actions, responsible individuals, time table, priority), held weekly meetings

## Groups

- 4 intervention groups (n=94); 1 control group (n=35)

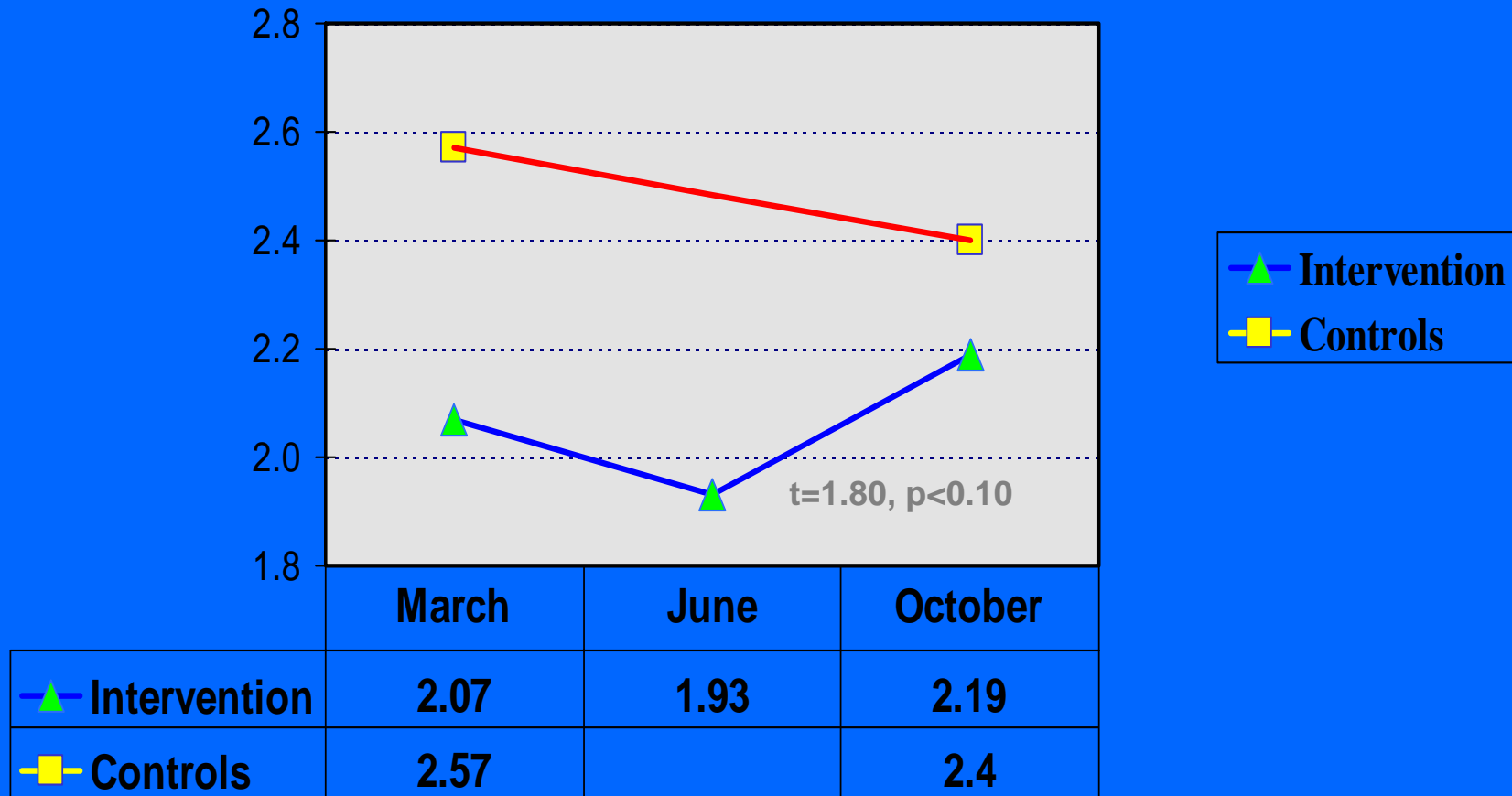
# Swedish government office workers

## Work stimulation and autonomy



# Swedish government office workers

## Supervisor support



# Swedish government office workers

## ApoB/ApoA1 Ratio



# Swedish government office workers

- Combined approach provided short term results
- Limitation: which component contributed to outcomes and to what extent?

# Comparison of SMTs

SMT Method	Optimal results	Strength
Muscle relaxation	Physiologic	Strong
Meditation	Physiologic, psychologic/cognitive, somatic, job/organizational	strong (conditional)
Biofeedback	Physiologic	weak
Cognitive-behavioral	Psychologic/cognitive, somatic	strong
	Job/organizational	moderate
Combination	Physiologic, psychologic/cognitive, somatic, job/organizational	strong

# Intervention Characteristics

- Very few studies
- Leadership: trainer vs. peer-led
  - Fontana et al. (1999): 18 teenagers; 18 controls
    - Stress inoculation training; 6 sessions; lower heart rate and anxiety afterwards and 6 mo later
- Size: large one-day vs. small weekly
  - Brown et al. (1998): 36 large, 36 small, 52 controls; no difference
- Content: effect of individual components?
  - Most SMTs use range of techniques
  - Researchers find similar outcomes

# Tertiary Intervention

- Rehabilitation of individuals experiencing physical or mental ill health from stress (Cooper and Cartwright, 1986)
- Workplace counseling
- Employee Assistance Programs (Cooper et al., 2003)

# EAPs

- Definitions vary depending on objectives
- Key components:
  - Systematic, organized, continuous
  - Employer initiated
  - Employees and their families (in most cases)
  - Work and non-work problems

# Goals of EAPs

- Enhancing employee morale and motivation
- Improving productivity
- Reducing disciplinary problems
- Decreasing financial costs of medical and disability claims
- Promoting image of employer

# Possible Components

- Substance abuse programs
- Stress management training
- Wellness programs

# Conclusions

- Many different targets & strategies
- Importance of integrating:
  - Primary intervention: occupational health
  - Secondary intervention: workplace health promotion
  - Tertiary intervention: workplace health recovery
- Interventions require negotiation, teamwork
- Need for intervention research

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