

Mindfulness in the Workplace

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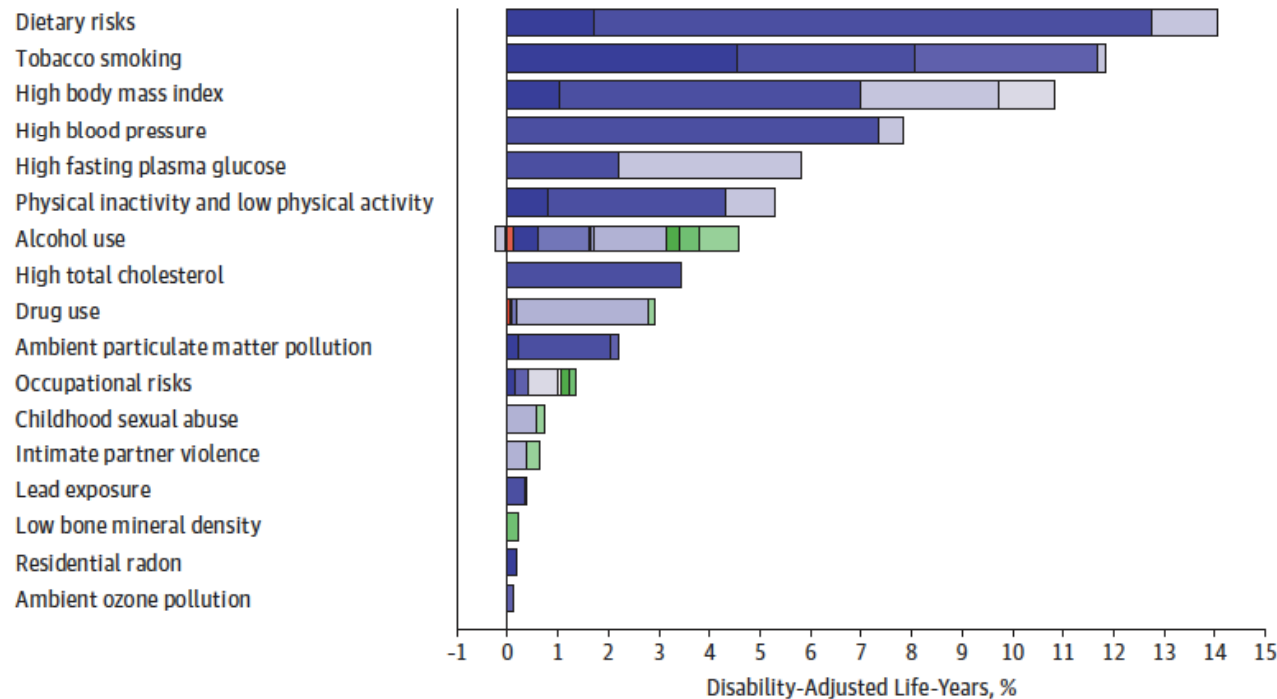
European Union
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*convergence
for economic
transformation*

Behavior Drives Health

B Risk factors as a percentage of disability-adjusted life-years



Diseases and injuries

Intentional injuries

Unintentional injuries

Transport injuries

Other noncommunicable

Musculoskeletal disorders

Diabetes/urogenital/blood/
endocrine

Mental and behavioral disorders

Neurological disorders

Digestive diseases

Cirrhosis

Chronic respiratory diseases

Cardiovascular and circulatory
diseases

Cancer

Other communicable

Nutritional deficiencies

Neonatal disorders

Maternal disorders

Neglected tropical diseases
and malaria

Diarrhea/lower respiratory tract
infections/other infections

HIV/AIDS and tuberculosis

Defining Health



World Health Organization

“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”

-Has not been amended since adoption in 1948

Perhaps we could amend by adding the goal of maintaining well-being **even in the presence** of disease and infirmity

What is Mindfulness?

“Paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally”

– Jon Kabot-Zinn

■ **Mindfulness can be practiced in a variety of settings**

- Sitting
- Standing
- Walking
- Eating
- Working

What is Mindfulness?

Key brain training activities:

- focusing attention on thoughts, emotions, and body sensations
- simply observing them as they arise and pass away without judgment

Examples mindfulness practices:

- Meditation
- Progressive relaxation
- Yoga (some), Tai-Chi

Kabat-Zinn, 2004



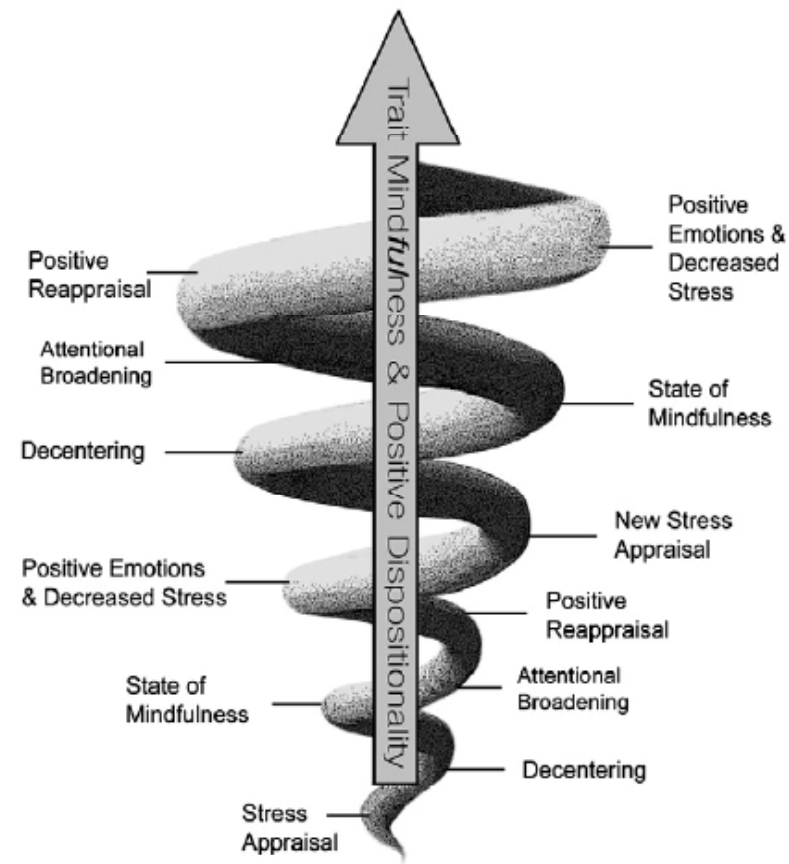
What are the Benefits of mindfulness?

Range of psychological/cognitive benefits:

- Reduced psychological symptoms (depression, anxiety)
- Reduced emotional reactivity/enhanced behavioral regulation
- Enhanced attentional skills
- Increase in compassion and altruistic behavior

What are the Benefits of mindfulness?

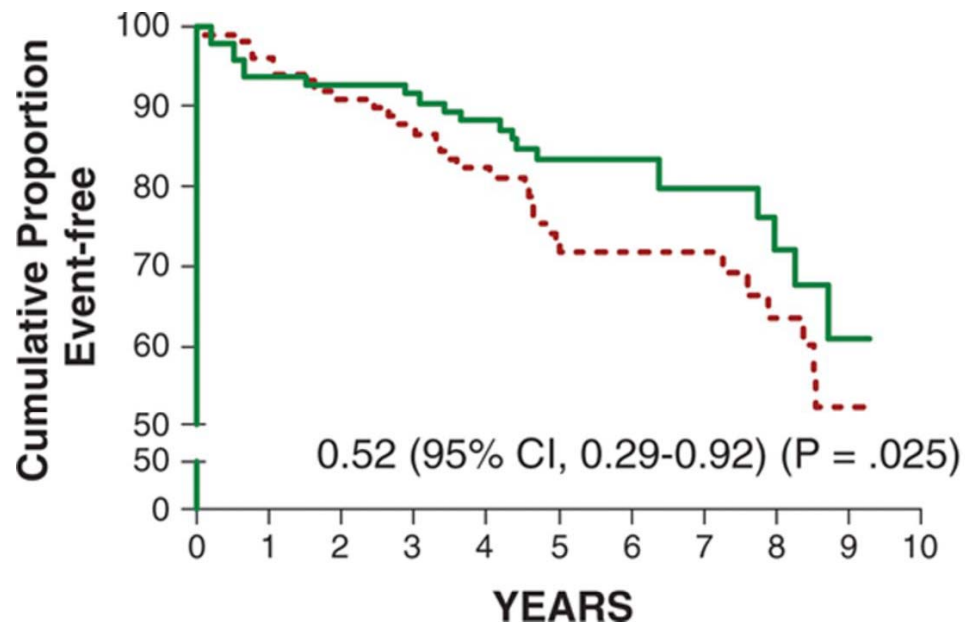
- Some evidence for enhanced coping in response to stressors
- Supportive of “Broaden and Build” theory of positive emotions
- May lead to enhanced **Resiliency**



Garland, 2010

What are the Benefits of mindfulness?

Mindfulness may extend life in groups living with disease



- Practiced 8.5x/ week (recommended session= 20 minutes)

What are the Benefits of mindfulness?

Mindfulness may extend life in the general population

- Those who report practicing yoga in previous 12 months had a **lower risk of mortality**

- Hazard Ratio=0.57
(95% CI= 0.36-0.92)



(Kachen, unpublished data)

How does mindfulness work?

Mechanism	Exemplary instructions	Associated brain areas
1. Attention regulation	Sustaining attention on the chosen object; whenever distracted, returning attention to the object	Anterior cingulate cortex
2. Body awareness	Focus is usually an object of internal experience: sensory experiences of breathing, emotions, or other body sensations	Insula, temporo-parietal junction
3.1 Emotion regulation: reappraisal	Approaching ongoing emotional reactions in a different way (nonjudgmentally, with acceptance)	(Dorsal) prefrontal cortex (PFC)
3.2 Emotion regulation: exposure, extinction, and reconsolidation	Exposing oneself to whatever is present in the field of awareness; letting oneself be affected by it; refraining from internal reactivity	Ventro-medial PFC, hippocampus, amygdala
4. Change in perspective on the self	Detachment from identification with a static sense of self	Medial PFC, posterior cingulate cortex, insula, temporo-parietal junction

How does mindfulness work?

- Mindfulness changes brain structure (and function)

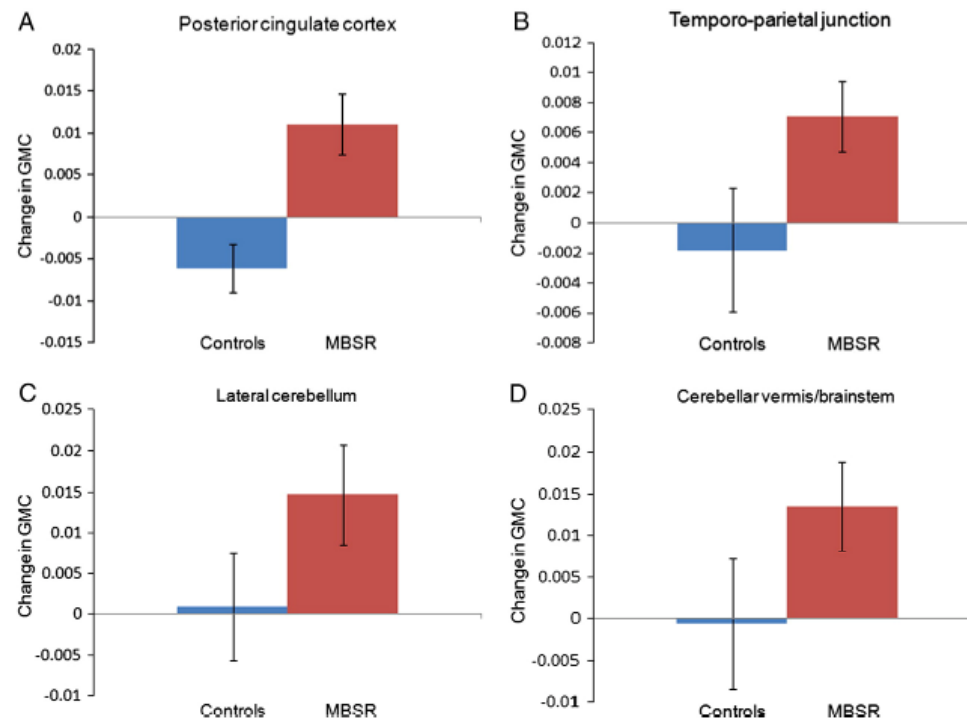


Fig. 3. Change in gray matter concentration (GMC) within the clusters in the posterior cingulate cortex (A), the temporo-parietal junction (B), the lateral cerebellum (C) and the cerebellar vermis/brainstem (D) in the MBSR and control group. Error bars show 95% confidence interval.

8 weeks of sustained practice (27 min/day) **increases grey matter density** in several regions of the brain

How does mindfulness work?

OPEN ACCESS Freely available online

PLOS ONE

Relaxation Response Induces Temporal Transcriptome Changes in Energy Metabolism, Insulin Secretion and Inflammatory Pathways

Manoj K. Bhasin^{1,4,5*}, Jeffery A. Dusek^{6*}, Bei-Hung Chang^{7,8*}, Marie G. Joseph⁵, John W. Denninger^{1,2}, Gregory L. Fricchione^{1,2}, Herbert Benson^{1,3†}, Towia A. Libermann^{1,4,5*†}

Assessed rapid time-dependent genomic changes during one 15 minute meditation session of among experienced practitioners (n=26) and also in novices before and after 8 weeks of relaxation response training (n=26).

How does mindfulness work?

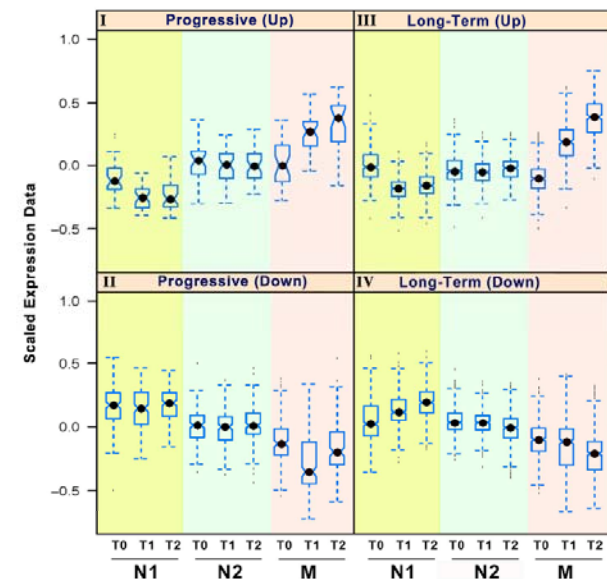
Mindfulness changes short-term gene functioning



Energy metabolism,
mitochondrial function,
insulin secretion,
telomere maintenance



Inflammatory
response, stress-
related pathways



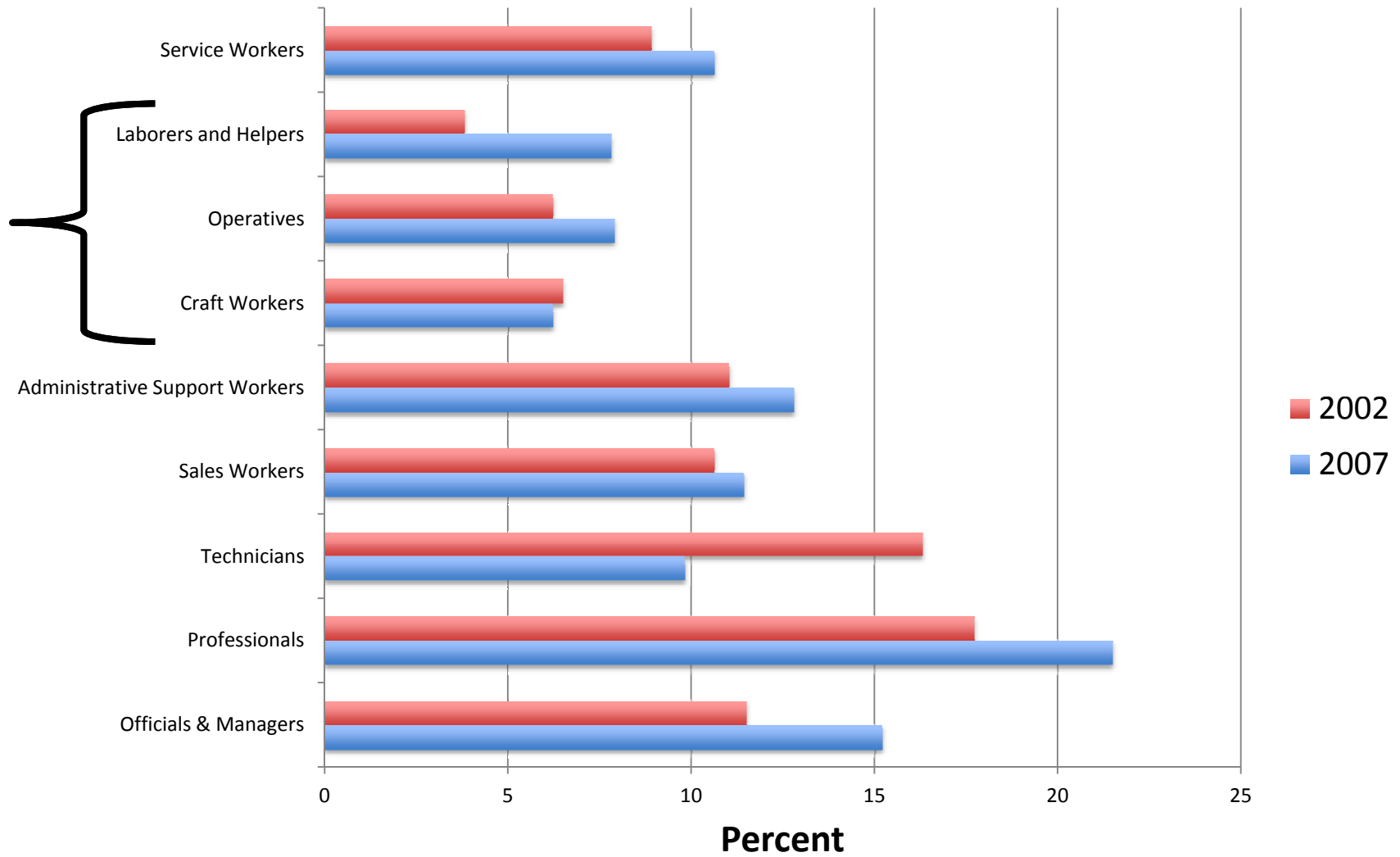
Prevalence of worker mindfulness practices in the US

Mindfulness practices growing rapidly among workers in the US

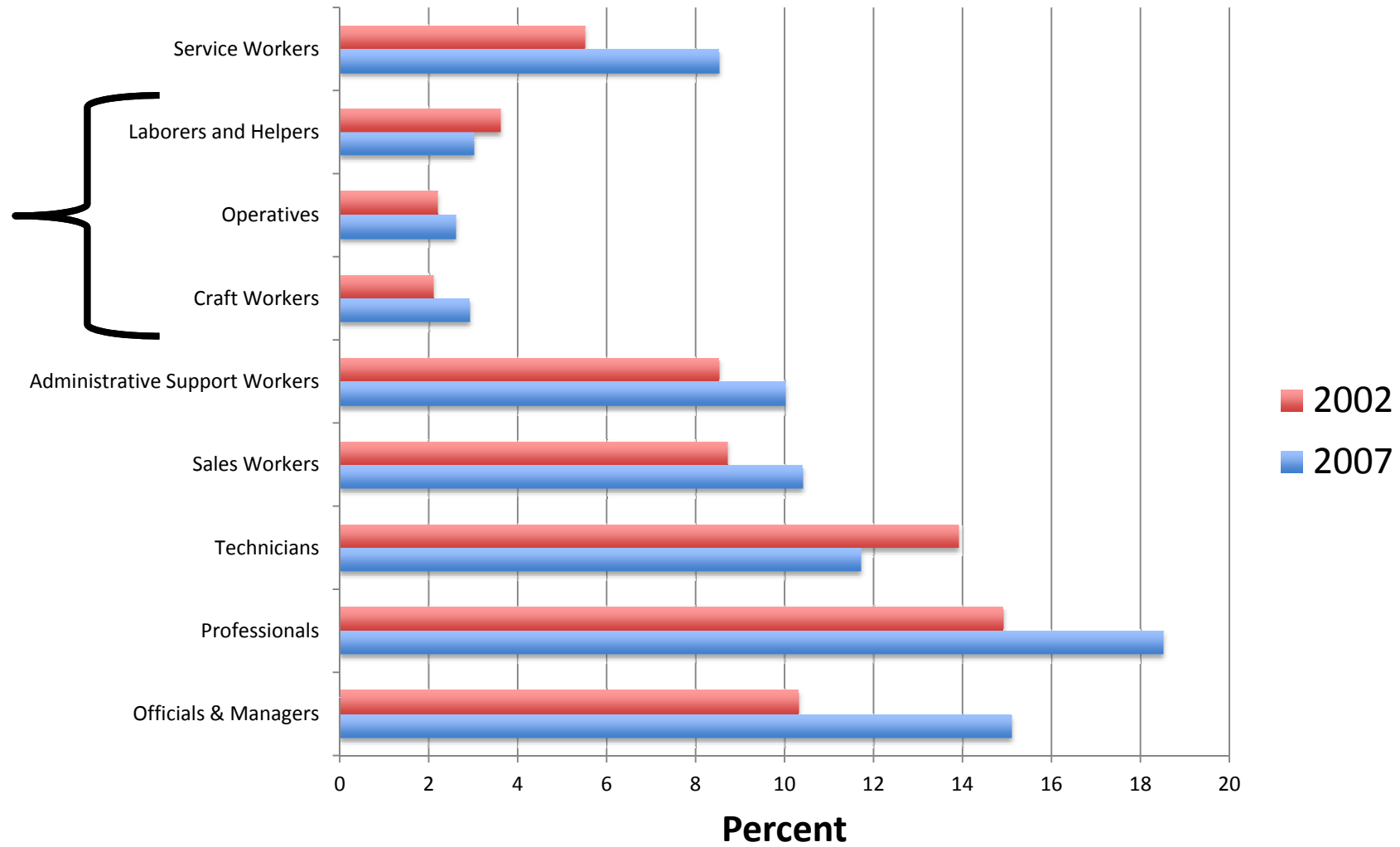
■ But not all workers are equally exposed.



US Workers: Meditation



US Workers: Yoga



Prevalence of worker mindfulness practices: the NHIS

Lifetime Use of Meditation in Workers*		
	Odds Ratio	95% CI
White Collar	1.00	
Blue	0.75	0.59-0.96
Farm	0.80	0.32-1.97
Service	1.03	0.86-1.24
*Adjusted for: age, gender, race, and education		

Prevalence of worker mindfulness practices: the NHIS

Lifetime Use of Yoga in Workers*		
	Odds Ratio	95% CI
White Collar	1.00	
Blue	0.45	0.33-0.60
Farm	---	---
Service	0.84	0.70-1.02
*Adjusted for: age, gender, race, and education		

Prevalence of worker mindfulness practices in the US

Mindfulness practitioners already embedded in many workplaces!

- Reaching out to these employees to inform the design of a more mindful workplace

- Potential pool for train-the-trainer intervention models.

- US-based questionnaire available online:

Download file: qalthealt.pdf at:

ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2012/English

Proven (evidence-based) Mindfulness Interventions

Mindfulness-based Stress Reduction (MBSR)

- Strongest evidence base for improving psychological health/reducing stress reactivity
- 8-week program effective in clinical & non-clinical populations

Proven (evidence-based) mindfulness Interventions

Mindfulness-based Cognitive Therapy (MBCT)

- UK/US intervention drawing from MBSR specifically designed to prevent relapse in those with a history of depression
- **NHS- approved intervention**
- Probably not a viable option for workplace delivery

Benefits of Worker Mindfulness Practices

Most of the available studies in literature limited:

- number of subjects evaluated
- quality of the research designs

■ **MBSR**--- effective in diverse workplace settings?

■ ? Dose— promising but mixed results so far

■ ? Delivery format

One Good Workplace Example

Effective and Viable Mind-Body Stress Reduction in the Workplace: A Randomized Controlled Trial

Ruth Q. Wolever
Duke University School of Medicine

Kyra J. Bobinet
Aetna Inc.

Kelley McCabe
eMindful, Inc.

Elizabeth R. Mackenzie
University of Pennsylvania

Erin Fekete
University of Indianapolis

Catherine A. Kusnick
Headlands Consulting

Michael Baime
University of Pennsylvania School of Medicine

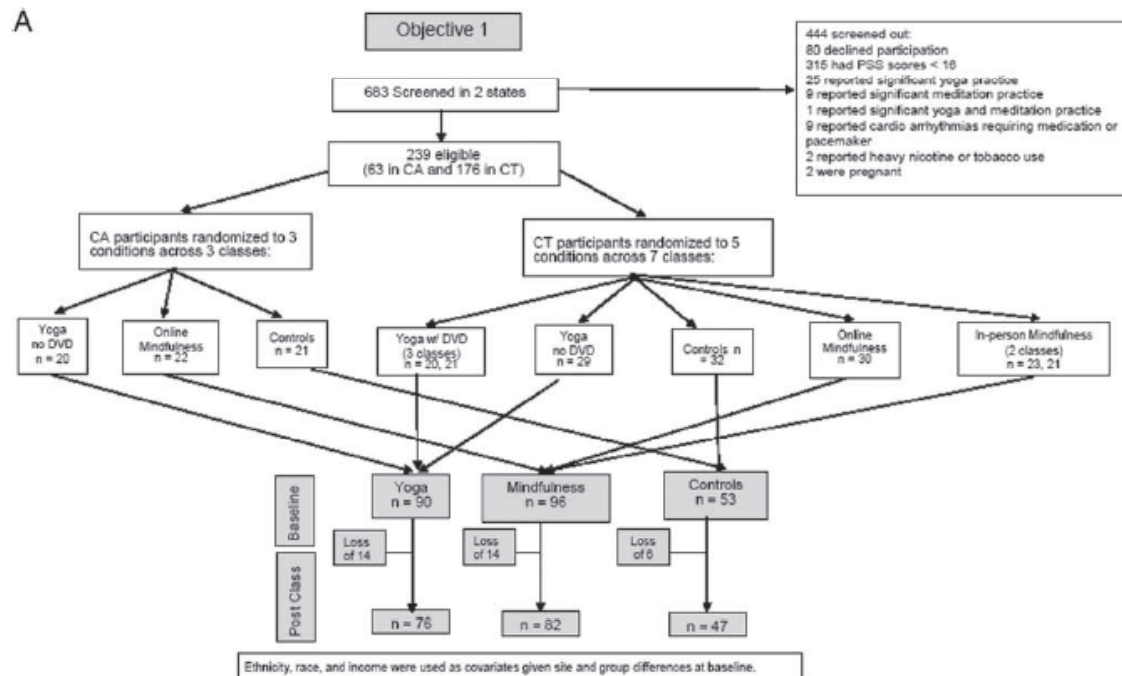
Highly stressed employees are subject to greater health risks, increased cost, and productivity losses than those with normal stress levels. To address this issue in an evidence-based manner, worksite stress management programs must be able to engage individuals as well as capture data on stress, health indices, work productivity, and health care costs. In this randomized controlled pilot, our primary objective was to evaluate the viability and proof of concept for two mind-body workplace stress reduction programs (one therapeutic yoga-based and the other mindfulness-based), in order to set the stage for larger cost-effectiveness trials. A second objective was to evaluate 2 delivery venues of the mindfulness-based intervention (online vs. in-person). Intention-to-treat principles and 2 (pre and post) \times 3 (group) repeated-measures analysis of covariance procedures examined group differences over time on perceived stress and secondary measures to clarify which variables to include in future studies: sleep quality, mood, pain levels, work productivity, mindfulness, blood pressure, breathing rate, and heart rate variability (a measure of autonomic balance). Two hundred and thirty-nine employee volunteers were randomized into a therapeutic yoga worksite stress reduction program, 1 of 2 mindfulness-based programs, or a control group that participated only in assessment. Compared with the control group, the mind-body interventions showed significantly greater improvements on perceived stress, sleep quality, and the heart rhythm coherence ratio of heart rate variability. The two delivery venues for the mindfulness program produced basically equivalent results. Both the mindfulness-based and therapeutic yoga programs may provide viable and effective interventions to target high stress levels, sleep quality, and autonomic balance in employees.

■ Brings together scientists, the private sector, and employer.

■ Real challenges to make the science sound and ethical

■ Perfect storm of opportunity? Aetna exec claims 11:1 ROI

One Good Workplace Example



■ Sophisticated research design comparing workplace-feasible mindfulness offerings + examination of delivery approaches (n=297)

Benefits of Worker Mindfulness Practices

Outcome Measures	Control (<i>n</i> = 53)	Mindfulness (<i>n</i> = 96)	Yoga (<i>n</i> = 90)	<i>F</i>	η^2
	%	%	%		
PSS				8.89***	.07
Pre	23.52 (.52)	24.72 (.38)	24.93 (.40)		
Post	19.34 (.86)	15.86 (.64)	16.74 (.66)		
Current pain				3.56*	.03
Pre	1.44 (.30)	1.82 (.22)	2.24 (.23)		
Post	1.38 (.24)	1.21 (.18)	1.24 (.18)		
HRV Coherence ratio				15.86***	.12
Pre	-.25 (.07)	-.33 (.05)	-.30 (.05)		
Post	-.12 (.05)	.02 (.04)	.33 (.04)		

- Most examined components not significantly different from the control group
 - Each point on the PSS scale associated with nearly \$100 increase in medical costs in this workforce

UK Resources for Bringing Mindfulness into the Workplace



- Brings together:
 - Teacher training opportunities
 - Review of emerging mindfulness research
 - Listings for mindfulness courses offered to the public

<http://www.exeter-mindfulness-network.org/>

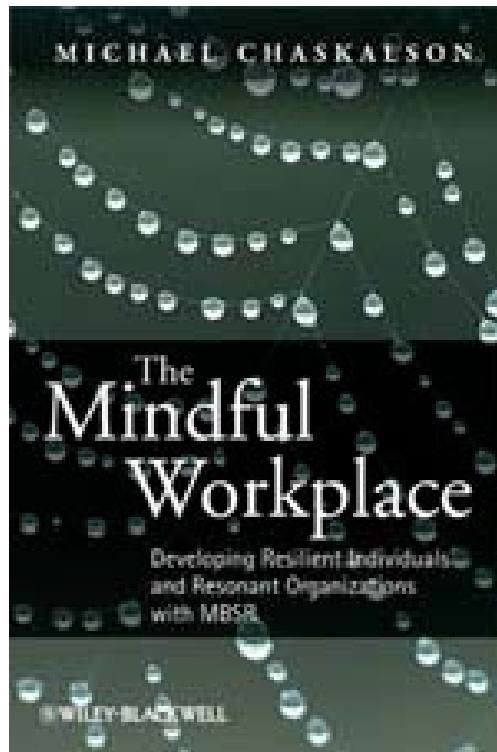
UK Resources for Bringing Mindfulness into the Workplace



<http://bemindful.co.uk/>

- Website sponsored by the Mental Health Foundation
- Search feature allowing users to locate local mindfulness offerings
- Online PSS test and
- Access to online mindfulness course with preliminary evidence of efficacy

UK Resources for Bringing Mindfulness into the Workplace



■ Brings MBSR into
the workplace



<http://www.mindfulness-works.com/index.php>

UK Resources for Bringing Mindfulness into the Workplace



Breathworks specialises in helping people to:

- reduce work related stress and the impact it has on health
- self-manage any health condition(s) they may have
- reduce the suffering associated with their health condition(s)
- return to work after periods of sickness
- transition back into activity, creativity and productivity.

We also help people to:

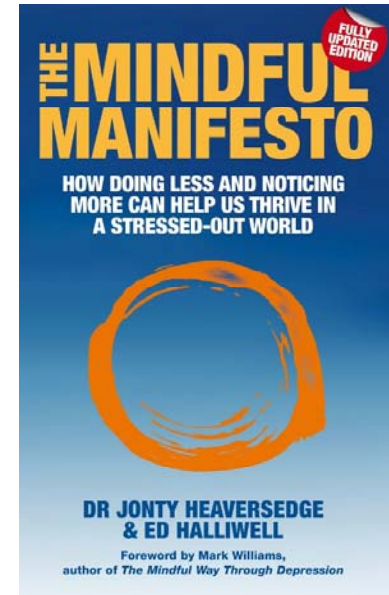
- stay at work with greater resilience and better self awareness
- return to work happily, willingly and voluntarily

<http://www.mindfulnessworks.co.uk/index.html>

UK Resources for Bringing Mindfulness into the Workplace

Work With Mindfulness

Tuning people to themselves and each other.



We offer [mindfulness training and consultancy for organisations](http://workwithmindfulness.com/index.htm) in the UK and internationally. Mindfulness is an awareness-based approach to life that helps people relate skilfully with circumstances. It means paying attention to thoughts, feelings, body sensations, others and the environment in a way that cultivates understanding, helps manage difficulties, and leads to wise choices. Rooted in ancient traditions of meditation, mindfulness has become the subject of increasing [scientific study](#) in recent years, and research is showing it helps people manage many situations more effectively, including at work.

<http://workwithmindfulness.com/index.htm>

!

A Tentative Mindful Workplace Agenda

- Well established mindfulness interventions already in UK workplaces
 - Research on these interventions making it to peer-reviewed literature?
 - Are research partnerships viable?
 - The collision of priorities?
 - Practical limitations with respect to research design and funding
 - Process evaluation focus?

A Tentative Mindful Workplace Agenda

Process Evaluation of a Workplace Health Promotion Intervention Aimed at Improving Work Engagement and Energy Balance

Jantien van Berkel, MA, Cécile R.L. Boot, PhD, Karin I. Proper, PhD, Paulien M. Bongers, PhD, and Allard J. van der Beek, PhD

Objective: To evaluate the process of the implementation of an intervention aimed at improving work engagement and energy balance, and to explore associations between process measures and compliance. **Methods:** Process measures were assessed using a combination of quantitative and qualitative methods. **Results:** The mindfulness training was attended at least once by 81.3% of subjects, and 54.5% were highly compliant. With regard to e-coaching and homework exercises, 6.3% and 8.0%, respectively, were highly compliant. The training was appreciated with a 7.5 score and e-coaching with a 6.8 score. Appreciation of training and e-coaching, satisfaction with trainer and coach, and practical facilitation were significantly associated with compliance. **Conclusion:** The intervention was implemented well on the level of the mindfulness training, but poorly on the level of e-coaching and homework time investment. To increase compliance, attention should be paid to satisfaction and trainer-participant relationship.

A Tentative Mindful Workplace Agenda

Type of Data	Items	Resources	Measurement
Process	Reach	Information about demographics of the workers of the participating organizations and questionnaire	Assessment of proportions and representation of subgroups
	Proportion actual users of intended users Representation of subgroups Proportion of actual users of intervention components		
	Compliance	Questionnaire	Self-reported use/dose
	Mindfulness training E-coaching Fruit Buddy system Materials		
	Fidelity	Face-to-face interview with trainer	Open-ended questions
	Adherence to protocol mindfulness training and e-coaching Barriers for adherence to protocol		
	Judgment	Questionnaire	10-point scales (1, lowest score; 10, highest score) 3-point scales (1, too little; 3, too much) 7-point scales (1, totally agree; 7, totally disagree)
	Satisfaction Extent Usefulness Worth time investment Quality		
	Context (barriers and facilitators)	Face-to-face interviews with participants	Open-ended questions
	Individual		
	Social		
	Organizational		
	Provider Intervention		

- Perceived organization and supervisor support for participating in the intervention was positively correlated with compliance.
- Trainer/coach relationship associated with higher satisfaction and compliance
- Given the association between compliance and satisfaction:
 - Organizational context should not be ignored and that program development should include the involvement of employer and employee.

A Tentative Mindful Workplace Agenda

Need for a focus on employer needs:

- Are workplace mindfulness interventions cost-effective?
 - Can they accelerate return-to-work (long term sick absence)?
 - Can they prevent cases of long term absence?
 - Can they improve productivity?

A Tentative Mindful Workplace Agenda

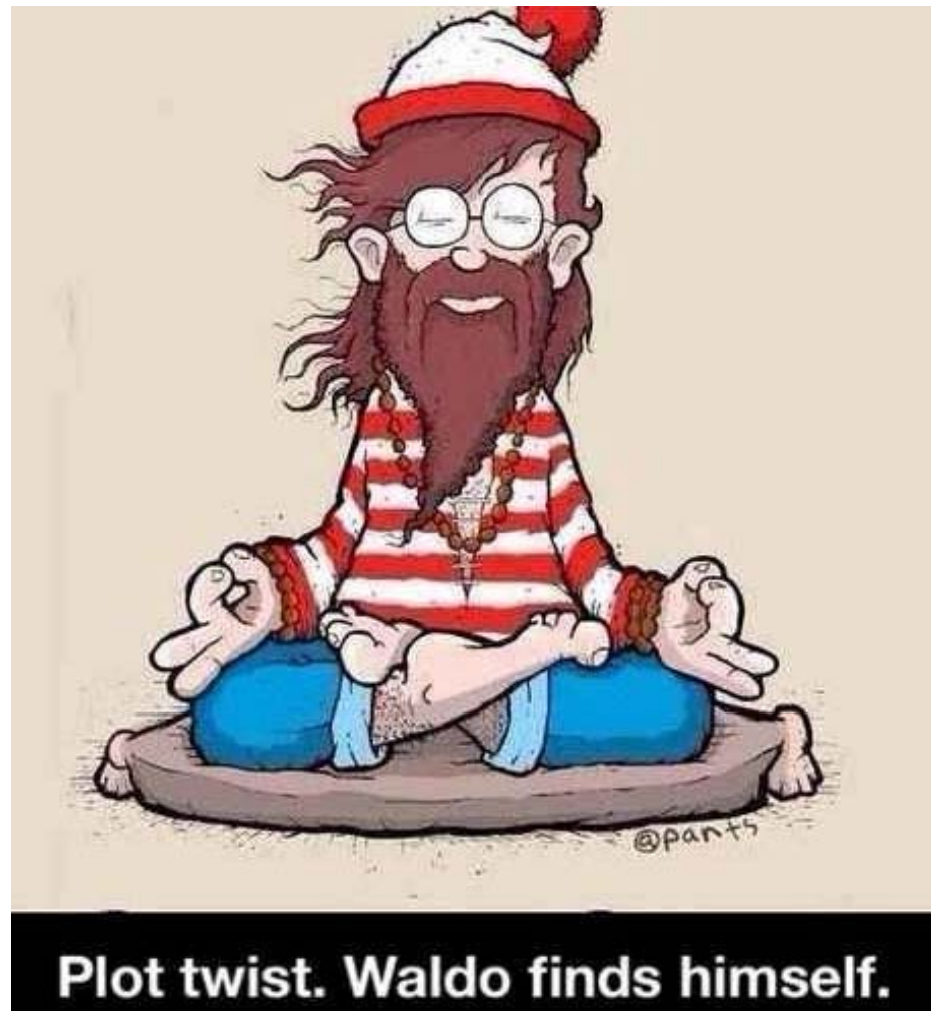
Eyes on the prize: reach and sustainability

- Optimizing effectiveness by matching person to practice
 - No easy task
- Continuous qualitative research to address sustainability

“Take-Away”

- Research on the **beneficial health effects of mindfulness practices** well established
- Research on the benefits of establishing **workplace mindfulness offerings** more limited, but suggestive of **benefits to the employee and possibly, employer**
- **Resources** for establishing mindful workplaces particularly **strong in the UK**
- Just beginning the journey!

Thank you



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