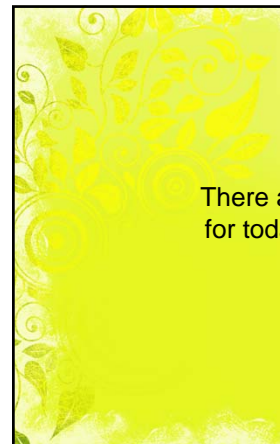
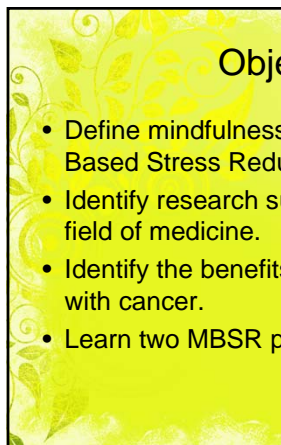


Mindfulness-Based Stress Reduction in Oncology

Aimée E. Todd-Pillman, PsyD
October 11, 2011
The Reading Hospital and Medical Center
Pennsylvania Breast Cancer Coalition

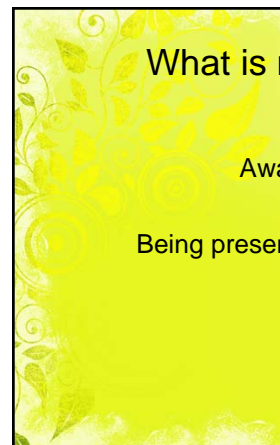


There are no disclosures for today's presentation.



Objectives

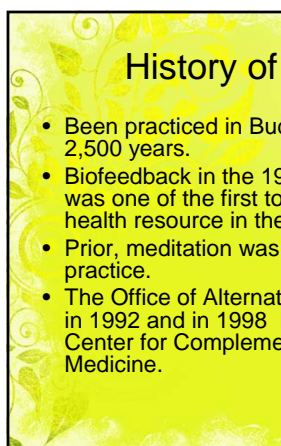
- Define mindfulness and Mindfulness-Based Stress Reduction (MBSR).
- Identify research supporting MBSR in the field of medicine.
- Identify the benefits of MBSR for patients with cancer.
- Learn two MBSR practices.



What is mindfulness

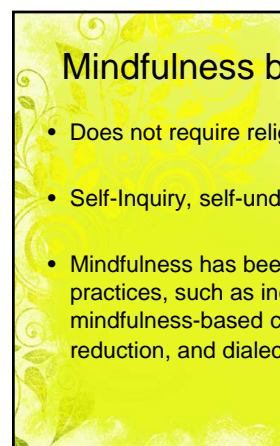
Awareness.

Being present in the moment.



History of mindfulness

- Been practiced in Buddhist meditations for over 2,500 years.
- Biofeedback in the 1960s. Dr. Herbert Benson was one of the first to study meditation as a health resource in the 1970s.
- Prior, meditation was viewed as a religious practice.
- The Office of Alternative Medicine was founded in 1992 and in 1998 became the National Center for Complementary and Alternative Medicine.



Mindfulness beyond Buddhism

- Does not require religion to practice.
- Self-Inquiry, self-understanding, healing.
- Mindfulness has been adapted in various practices, such as individual psychotherapy, mindfulness-based cognitive therapy, stress reduction, and dialectical behavior therapy.

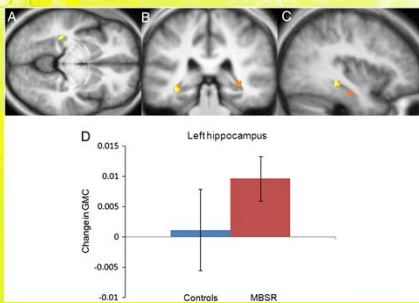
What is Mindfulness-Based Stress Reduction

- Developed by Jon Kabat-Zinn, PhD in 1979.
- Incorporates various meditation practices and gentle yoga to promote healing.

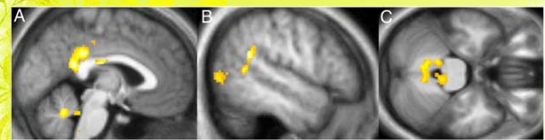
Effects of mindfulness on the brain

- Increases in gray matter concentration in the left hippocampus, posterior cingulate cortex, temporo-parietal junction, cerebellum.
- MBSR is associated with brain areas involving learning and memory processes, emotion regulation, self-referential processing, and perspective taking.

Hölzel, B., Carmody, J., et al. (2010). Mindfulness practice leads to increases in regional brain gray matter density. *Psychiatry Research: Neuroimaging*. 191(1): 36-43.

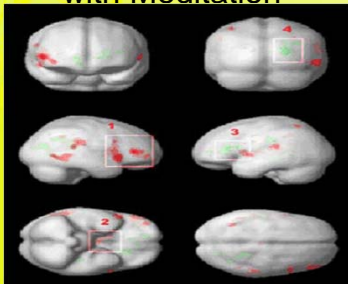


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Alterations in Brain Functioning with Meditation

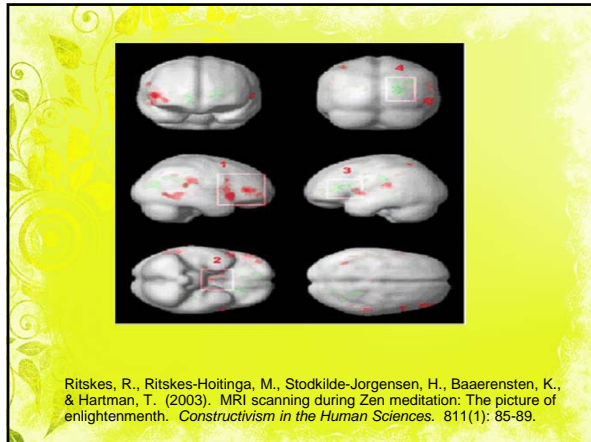


Ritskes, R., Ritskes-Hoitinga, M., Stodkilde-Jorgensen, H., Baaerensten, K., & Hartman, T. (2003). MRI scanning during Zen meditation: The picture of enlightenment. *Constructivism in the Human Sciences*. 811(1): 85-89.

Zen Meditation and Brain Functioning

- Increased activity in the gyrus frontalis medius in the frontal lobe.
- Increased activity in the basal ganglia.
- Decreased activity in the gyrus occipitalis superior and anterior cingulated.

Ritskes, R., Ritskes-Hoitinga, M., Stodkilde-Jorgensen, H., Baaerensten, K., & Hartman, T. (2003). MRI scanning during Zen meditation: The picture of enlightenment. *Constructivism in the Human Sciences*. 811(1): 85-89.



Amygdala changes

- Neuroplastic changes are associated with improvements in a psychological state variable.
- Reductions in perceived stress positively correlated with decreases in right basolateral amygdala gray matter density.

Hölzel, BK., Carmody, J., et al. (2010). Stress Reduction Correlates with Structural Changes in the Amygdala. *Social Cognitive Affective Neuroscience*, 5(1): 11-7.

Benefits of MBSR to patients with cancer

- Breast and Prostate Cancer: Enhanced quality of life and decreased stress. Potential changes in hypothalamic-pituitary-adrenal axis functioning.
- Breast Cancer: Significant decreases in anxiety levels from pre to post test, as well as beneficial changes for mental adjustment to cancer diagnosis.

Carlson, LE., Speca, M., Patel, KD., Goodey, E. (2004). Mindfulness-Based Stress Reduction in relation to quality of life, mood, symptoms of stress and levels of cortisol, dehydroepiandrosterone sulfate (DHEAS), and melatonin in breast and prostate cancer outpatients. *Psychoneuroendocrinology*, 29(4): 448-74.

Tacón, AM., Caldera, YM., & Ronaghan, C. (2004). Mindfulness-Based stress Reduction in Women with Breast Cancer. *Families, Systems, & Health*, 22(2): 193-203.

Sleep Quality and MBSR for the patient with cancer

- Patients with cancer and some spouses participated in an MBSR program.
- Sleep and mood disturbances were both reduced, as well as symptoms of stress.

Carlson, LE., Garland, S., Speca, M. (2004). Improvements in sleep quality in cancer outpatients participating in Mindfulness-Based Stress Reduction. *Psycho-Oncology*, 13(S2), S137.

Fatigue in Cancer Outpatients

- The less fatigue, the less stress and moodiness present.
- The less sleep disturbance, the less depression and emotional irritability.
- The yoga aspect of MBSR may significantly contribute to fatigue.

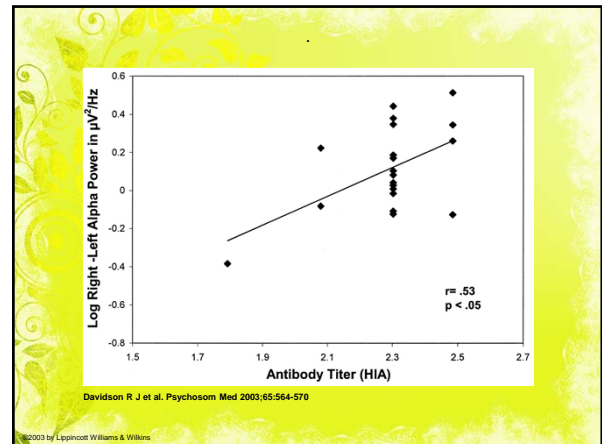
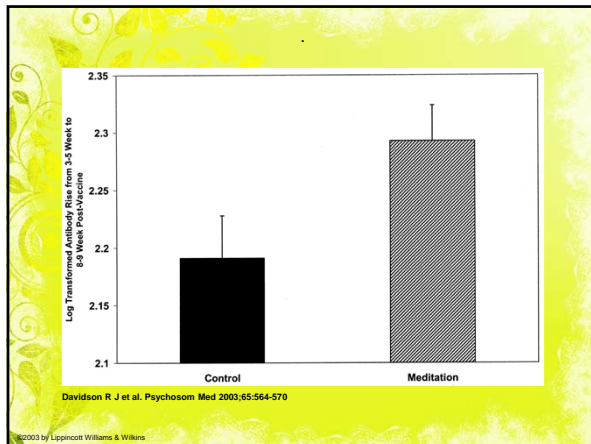
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Carlson, LE., & Garland, SN. (2005). Impact of Mindfulness-Based Stress Reduction (MBSR) on sleep, mood, stress and fatigue symptoms in cancer outpatients. *International Journal of Behavioral Medicine*, 12(4): 278-285.

Immune Function and MBSR

- Participants in an MBSR program experienced a greater immune response to a flu vaccine four months following the eight week program.
- Activation in the left anterior brain, correlated with positive affect, were also noted and significant with the increase in titre response.

Davidson, RJ., Kabat-Zinn, J., et al. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, 65L 564-70.



Immune Function Continued

- Immune function over the year showed decreased levels of Th1/pro-inflammatory cytokines.
- Cortisol levels decreased, as did blood pressure and heart rate.

Carlson, L., Speca, M., Patel, K., & Farris, P. (2007). One year pre-post intervention follow-up of psychological, immune, endocrine, and blood pressure outcomes of mindfulness-based stress reduction (MBSR) in breast and prostate cancer outpatients. *Brain, Behavior, and Immunity*, 21(8): 1038-49.

What are the components of MBSR

- Breath work
- Sitting meditation
 - Sitting with breath
 - Sitting with breath and the body
 - Sitting with sound
 - Sitting with thoughts and feelings
 - Sitting with choice-less awareness
- Walking meditation
- Body Scan
- Yoga

MBSR practices

- Raisin eating exercise
- Walking meditation

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