

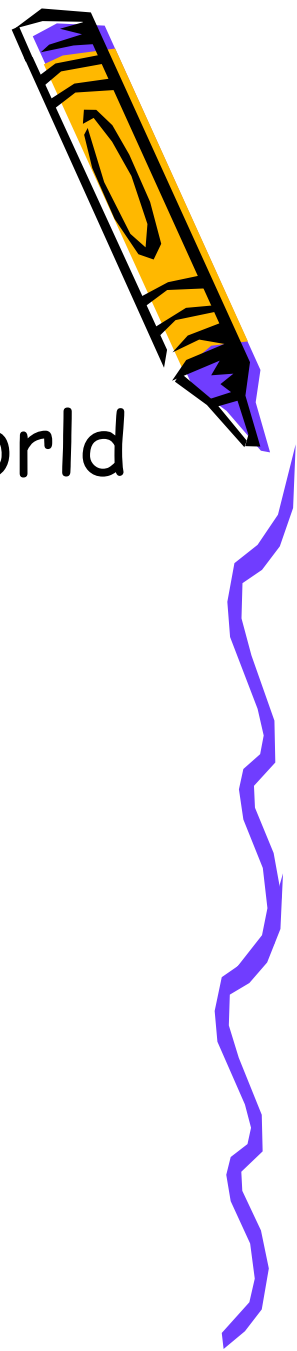


Maintaining Health: Use of Laughter for Ourselves and our Patients

Carrie Horwitch MD, MPH, FACP
Virginia ACP Meeting
Mar 6-7, 2015

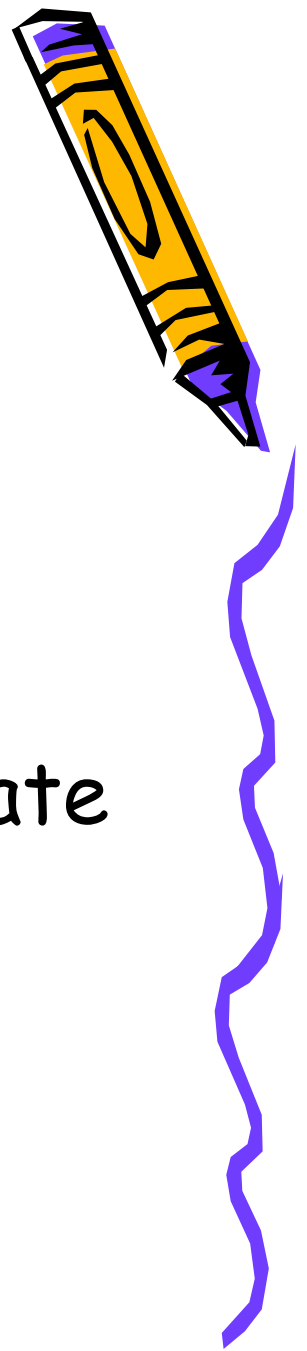
Disclosures

- Certified laughter leader from World Laughter Tour™

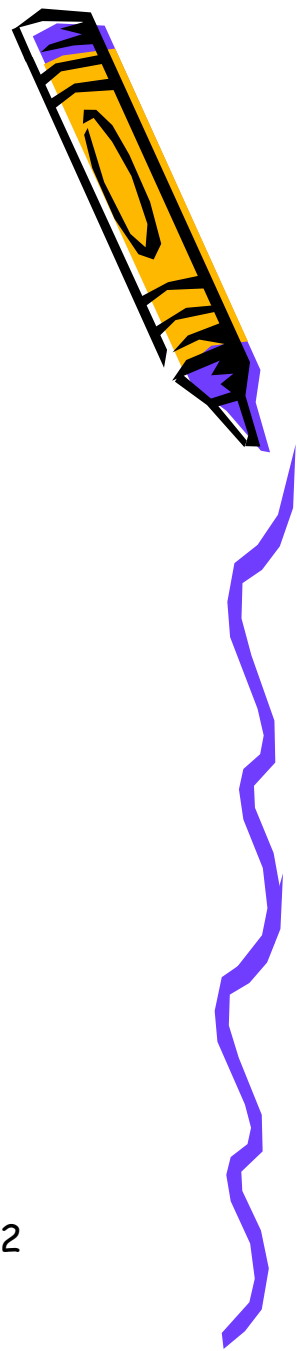


Objectives

- Review the science of humor and laughter
- Practice session
- Discussion of how we can incorporate laughter into our life and our practice



Disturbing epidemiology



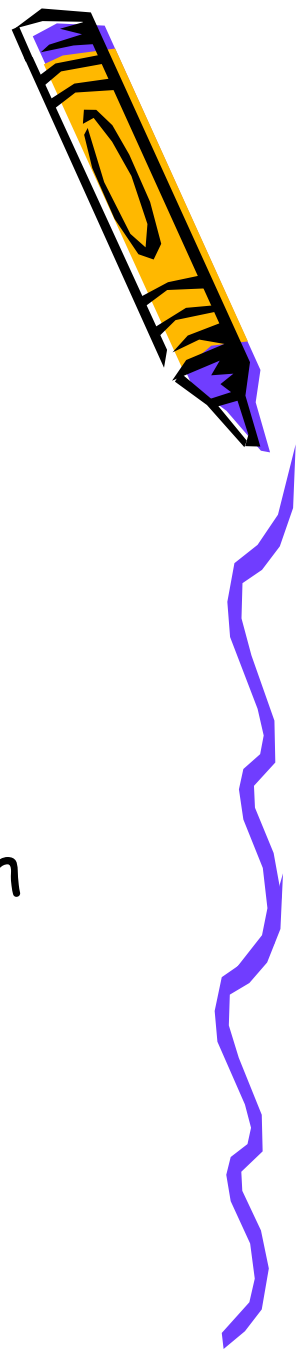
- Suicide rates of physicians
 - Male MD 2x that of US men
 - Women MD 3-4x that of gen population
- Burnout is common
 - Estimates 25-60% affected
- Decreased physician well being
 - Higher rates of depression
 - More use of alcohol
 - Decreased empathy



» Schernhammer et al. Am J Psychiatry 2004;161:2295-2302

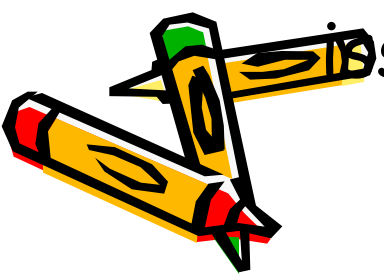
British survey

- Adults laugh 6 min per day
- Average child laughs 400 x per day
- Adults worry avg of 36 min/day
- 1 in 10 adults feel stressed out >2hrs/d
- 1 in 2 worry to point of affecting health
- 1 in 6 reach for ETOH as stress relief
- 1 in 5 sit in front of the TV



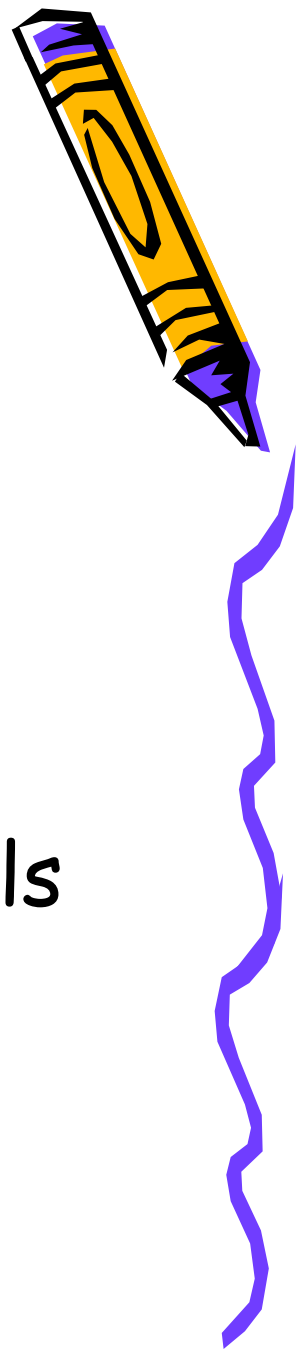
Stress Reaction

- Acute
 - "fight or flight reaction
 - Increased pulse and blood pressure
 - Acute hyperarousal
- Chronic
 - Dis-regulation and maladaptive coping
 - Persistent elevated BP, pulse, sleep issues, lower immune function



Resiliency

- Definition: capability of a strained body to recover its size and shape after deformation caused by compressive stress
- Psychological resilience*: individuals ability to properly adapt to stress and adversity

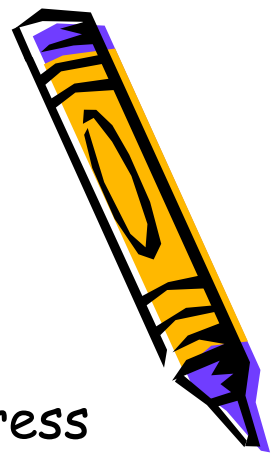


Audience question

- If there was a drug that could lower cardiac disease, improve lung function, reduce stress and have other positive benefits with minimal to no side effects...would you take it?
- Yes
- No



Pioneers of Laughter Therapy and Research



- **Hans Selye:** studied *General Adaptation Syndrome* (stress syndrome) and body's response to distress. His work forged a new study of biological stress and its effects
- **Norman Cousins:** wrote "Anatomy of an Illness" about his personal journey of healing and pain relief using humor and alternative therapy for severe ankylosing spondylitis
- **Prof William F Fry:** "Father of Gelotologie". psychiatrist who examined the physiologic effects of laughter. His work showed that most of the major physiologic systems of the body are stimulated by mirthful laughter, including heart rate, increase endorphins for pain relief, and improved immune function



Pioneers of Laughter Therapy and Research



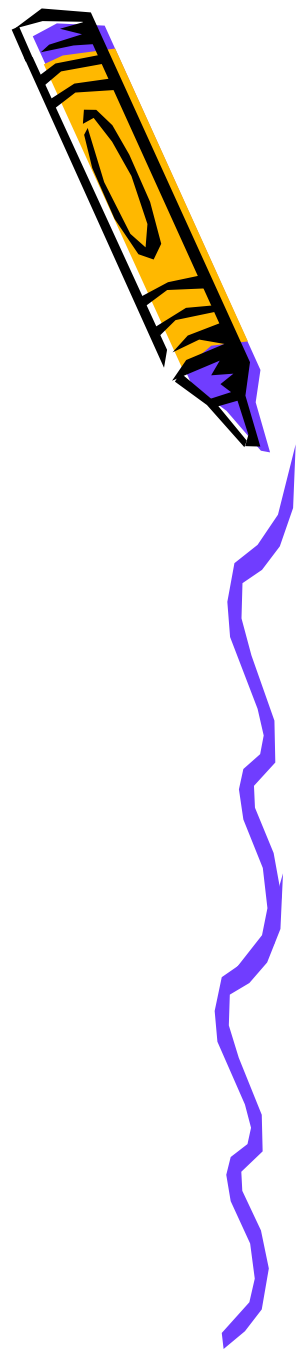
- **Dr. Lee Berk:** suggested that humor and laughter can change one's physiology. His studies have confirmed that happiness is good for you.
- **Dr. Hunter (Patch) Adams:** founder of the *Gesundheit* Institute. Inspired millions by bringing laughter and compassion back into the hospital world.
- **Dr. Madan Kataria:** family physician from India who stated the first laughter club in 1995 using laughter exercises rather than humor. His work has led to thousands of laughter clubs around the world
- **Dr. Steve Wilson:** founder of World Laughter Tour and creating laughter clubs and training certified laughter leaders in the US and abroad



Benefits of laughter

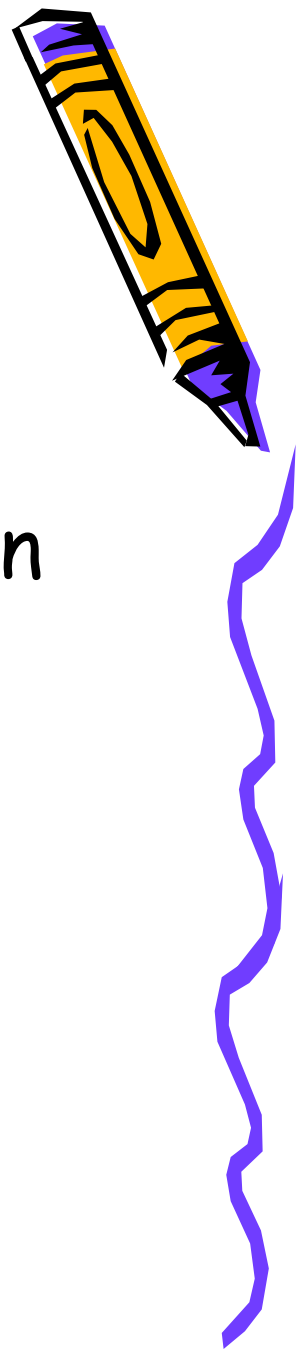
- Reduces cortisol (stress reliever)
- Eases muscle tension
- Favorable effect on arterial stiffness
- Increases immune function
- Improves ventilation/oxidative status
- Increases pain tolerance (endorphins)
- Burns calories

It's Free

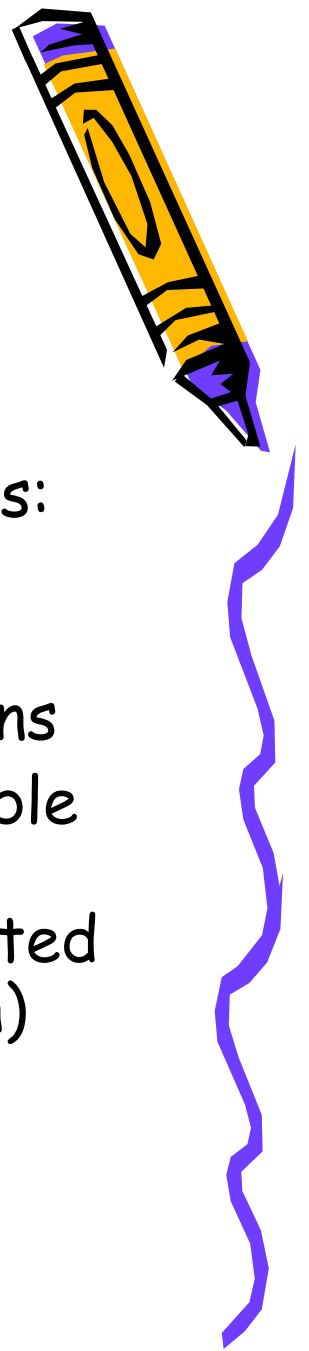


Sir William Osler

- "Hilarity and good humour...help enormously both in the study and in the practice of medicine"
- "Bubbling spontaneously from the..child or man, laughter is the music of life"



Humor vs Laughter

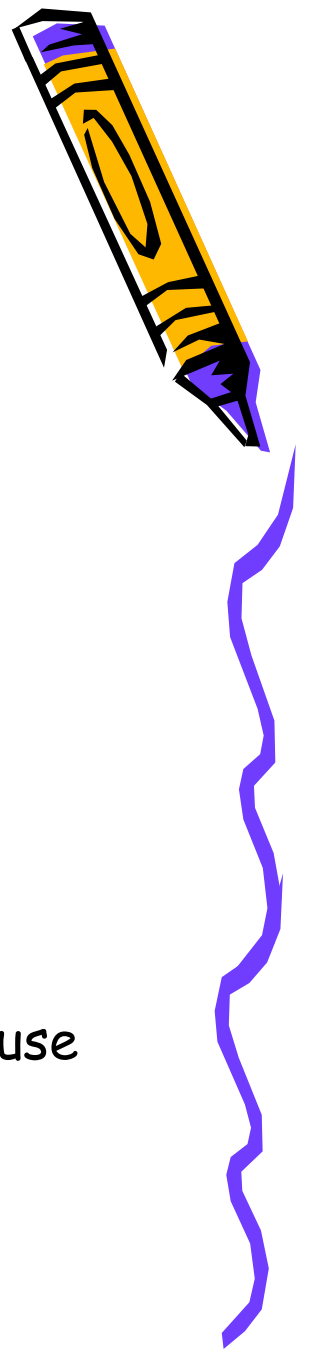


- Humor: a personal, subjective, psychological phenomenon of shifting perception. (Webster's: body fluids)
- Laughter: a universal physical act, often stimulated by humor, but also for other reasons
- Therapeutic laughter: systematic, programmable activity combining laughing exercises and attitudinal healing to achieve general or targeted goals (ie pleasure, pain reduction, socialization)



Optimism vs cynical hostility

Incident CHD and mortality



- Women's Health Initiative: N=97,000+
- Optimism: life orientation test
- Cynical hostility: Cook Medley questionnaire
- AHR (adjusted hazard ratio) reduced in optimists
 - 16% incident MI
 - 30% CHD related mortality
 - 14% all cause mortality

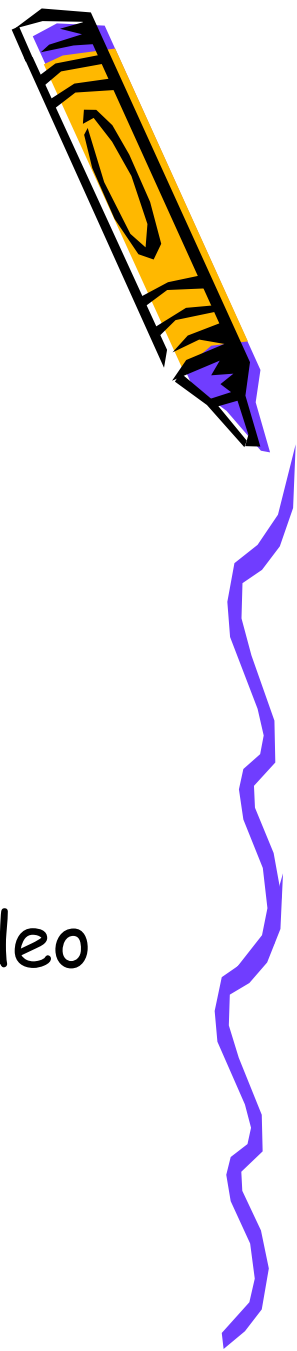
Cynical hostility associated with higher AHR for all cause and cancer related mortality

» Tindle et al. *Circulation* 2009;120:656-662



Humor, Laughter and pain perception in children

eCAM 2009;6:271-6



- N=18 children age 7-16
- Humor video before, during, after pain task (cold H₂O)
- Recorded humor indicators (smile/laugh/child rating)
- Greater pain tolerance while viewing video
- Suggests humorous distraction helps children tolerate pain better



Laughter and vascular function

- Sugawara et al evaluated endothelial function and central artery compliance after watching comic movies vs documentary
- N-17 healthy adults watched 30 min of comedy
- Measured: brachial blood pressure and carotid artery compliance (with US)
- Result: carotid artery compliance increased after comedy and associated with baseline flow mediated dilation
- Effect lasted up to 24 hours



Effect on renin-angiotensin system



- Nasir et al. Intl J Mol Medicine 2005
- Evaluate effect of laughter on plasma levels of renin, angiotensinogen and prorenin in pts with Type 2 DM not on insulin
- N=18 pts
- Methods: nonrandomized. 30-40 min laughter therapy weekly for 6 months. Subjects estimated their laughter level on scale of 1 (low)-5 (high)
- Measured: plasma renin, angiotensinogen and prorenin at baseline, 3 months and 6 months



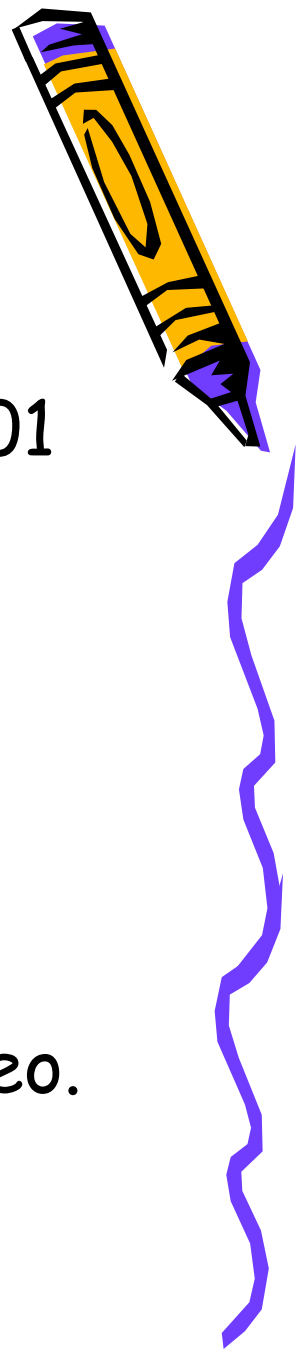
Nasir et al



- Results:
- Baseline renin: 24.6 ± 12 (5 x higher than normal)
- 3 months: 8.2 ± 3.4 ng/ml
- 6 months: 7.7 ± 1.7 ng/ml
- Baseline angiotensinogen: 0.19 ± 0.08 ug/ml
- 3 months: 0.47 ± 0.12 ug/ml
- 6 months: 0.42 ± 0.14 ug/ml
- Prorenin levels: no change
- Conclusions
- Plasma renin levels were significantly decreased due to laughter therapy. This may have implications for reducing the microvascular complications of diabetes



Modulation of neuroimmune parameters during mirthful laughter



- Berk et al. Altern Ther Health Med 2001
- Obj: determine efficacy of mirthful laughter to modulate neuroimmune parameters in normal subjects.
- Design: 5 separate studies based on multivariate measures
- N= 52 healthy men
- Intervention: viewing 1 hr of humor video.



Berk et al



- Measure: blood draw 10 min before, 30 min into video, 30 min after and 12hr after intervention
- Outcome measures: natural killer cell activity, plasma Ig, functional phenotypic markers for leukocytes
- Results: increases found in natural killer cell activity, IgG, A and M with several effects lasting 12 hrs
- Conclusion: modulation of neuroimmune parameters following laughter may provide beneficial health effects and wellness



Laughter and pain



- Dunbar et al. 2011 Proc R Soc.
- Series of experiment design to see effect of laughter on pain threshold
- N= 15 F, 20 M
- Used humor video vs non-humor documentary
 - Humor video also shown alone and in group
 - Documentary shown in group
 - Measured pain using frozen vacuum wine cooler sleeve or BP cuff inflation to 260-280 mmHg before and after intervention
 - Subjects asked when they could no longer take the pain

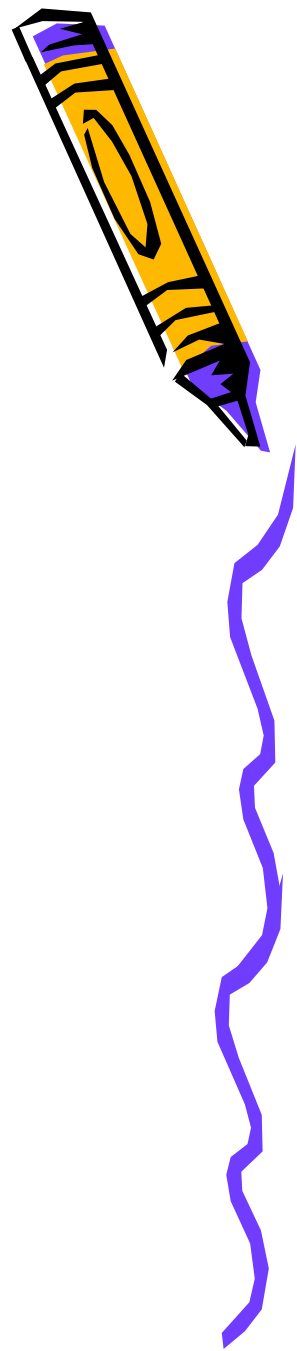


Laughter and Pain



- Results:
- Laughter increased pain thresholds in all experimental groups with humor video
- Pain thresholds did not change or were lower with documentary



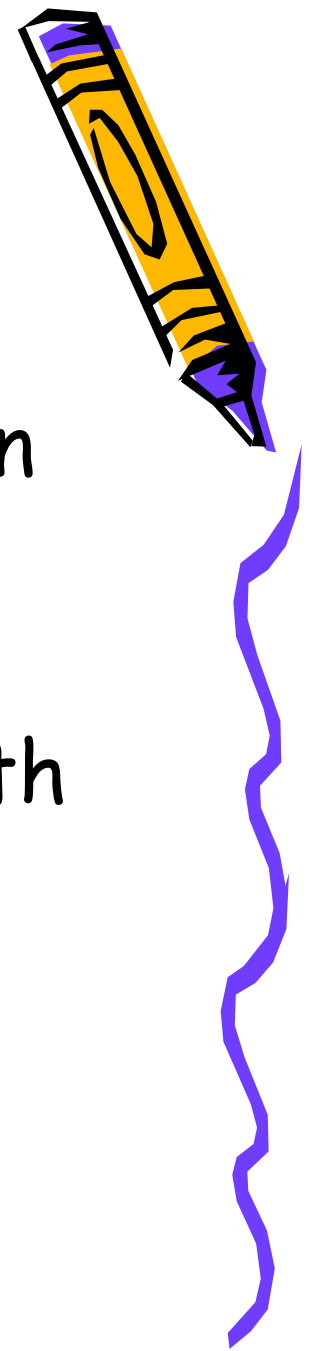


- "Laughter is the most inexpensive and most effective wonder drug. Laughter is a universal medicine.

» Bertrand Russell, Nobel Prize Winner



Take Home Points



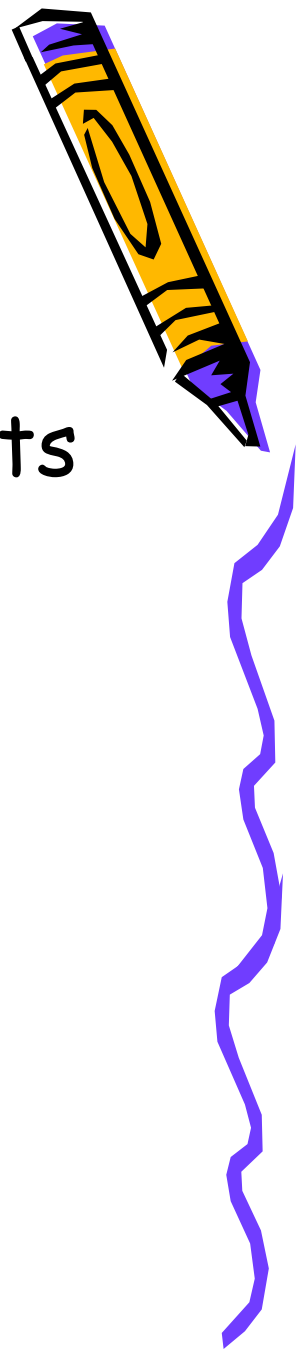
- Burnout is common in medicine- can start early
- Improving resiliency by stress reduction could have positive health benefits and reduce burnout
- Many options for "mindfulness"
- Other practices: exercise, tai chi, yoga



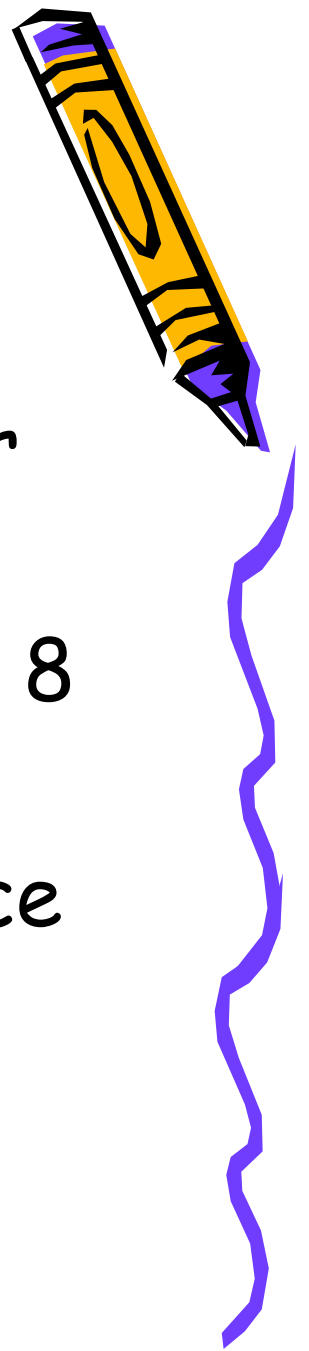
Practice makes habit

Take Home Points

- Laughter has lots of health benefits including stress relief
- Laughter exercise can be used personally or for patient care
- Laughter is contagious, start an epidemic^{WLT}



What can you do?



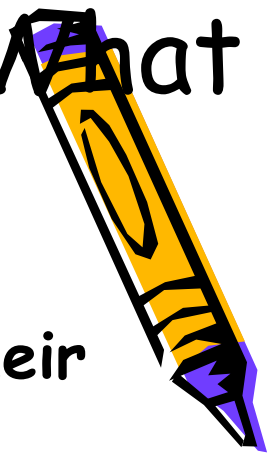
- Identify a strategy that works for you
- Practice technique for minimum of 8 weeks
- Discuss this issue at your workplace
- ACP meeting 2015- 2 workshops offered-free, reserved sessions



Mindfulness

- Laughter and meditation

Promote the Joy of Practice: What ACP is doing



To help ACP members experience more joy in their professional lives by

- (a) Advocating reducing the unintended consequences of administrative mandates and other complexities for both physicians and their patients.
- (b) Providing information and developing tools and resources to decrease administrative complexities, increase practice efficiency, and decrease professional isolation
- (c) Encouraging initiatives that increase satisfaction and fulfillment derived from clinical practice.

