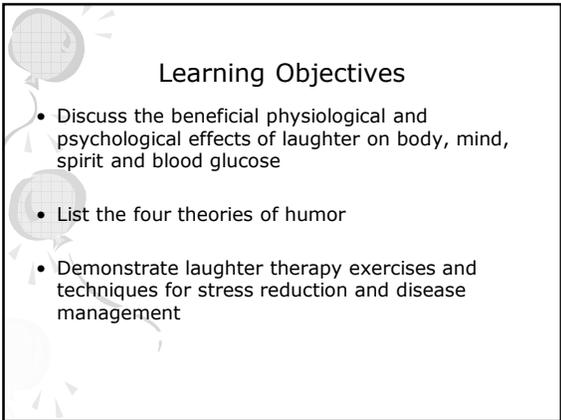


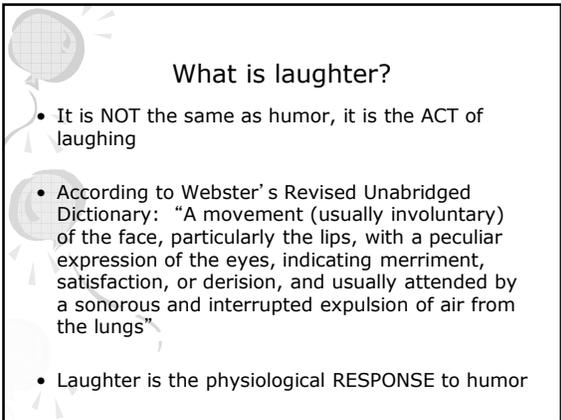
**LET LAUGHTER
LOWER YOUR
BLOOD SUGAR!**

**Trisha Porretti,
RN, BSN, CDE, CLL**



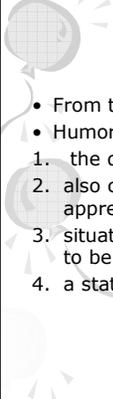
Learning Objectives

- Discuss the beneficial physiological and psychological effects of laughter on body, mind, spirit and blood glucose
- List the four theories of humor
- Demonstrate laughter therapy exercises and techniques for stress reduction and disease management



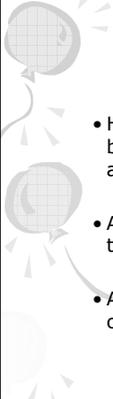
What is laughter?

- It is NOT the same as humor, it is the ACT of laughing
- According to Webster's Revised Unabridged Dictionary: "A movement (usually involuntary) of the face, particularly the lips, with a peculiar expression of the eyes, indicating merriment, satisfaction, or derision, and usually attended by a sonorous and interrupted expulsion of air from the lungs"
- Laughter is the physiological RESPONSE to humor



What is humor?

- From the Free Dictionary On-Line
- Humor (n):
 1. the quality of being funny
 2. also called sense of humor the ability to appreciate or express that which is humorous
 3. situations, speech, or writings that are thought to be humorous
 4. a state of mind; temper; mood



What is humor?

- Humor involves cognitive, emotional, behavioral, psycho-physiological and social aspects
- A “sense of humor” is a psychological trait that varies considerably
- Allows people to respond to different types of humorous stimuli



Gelotology: The physiological study of laughter!

Laughter consists of two parts:

- A set of gestures
- Production of sound
- The brain pressures us to do both simultaneously



Is Laughter Good Medicine?

Diverse literature suggests that laughter can:

- Decrease stress
- Diminish pain
- Increase endorphins
- Improve the quality of life
- Improve immune functioning



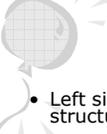
Brain Physiology

- Subjects were hooked up to an EEG & their brain activity was measured when they laughed
- Within 4/10 of a second of exposure to something funny: an electrical wave moved through the cerebral cortex
- Negative charge: laughter resulted
- Positive charge: no response was given



For example

What is the difference between God and a doctor?



Brain Physiology

- Left side of cortex: analyzed the words and structure of the joke
- Frontal lobe: became very active
- Right hemisphere of cortex: carried out the intellectual analysis required to “get” the joke
- Brainwave activity then spread to the sensory processing area of the occipital lobe
- Stimulation of the motor sections evoked physical responses to the joke



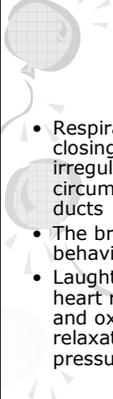
The Limbic System

- When we look more closely at the areas of the brain involved with laughter, the limbic system seems to be central
- A network of structures located beneath the cerebral cortex involved with emotions, behaviors, and survival
- Activated by pain, pleasure, anger, rage, fear, sorrow, sexual feelings and LAUGHTER



Effect on Musculature

- 15 facial muscles contract and relax
- Zygomatic major muscle is stimulated
- Abdominal muscles & diaphragm contract and relax
- Digestion is facilitated
- Back and leg muscles contract and relax
- Oxygenation to muscles is increased
- Muscle tension is decreased



Respiratory System

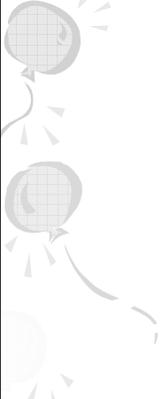
- Respiratory system is upset by the epiglottis half-closing the larynx, so that air intake occurs irregularly, making you gasp & in extreme circumstances, laughter can activate the tear ducts
- The breathing noises that accompany this behavior range from giggles to guffaws
- Laughter can lead to immediate increases in heart rate, respiratory rate, respiratory depth, and oxygen consumption followed by muscle relaxation and decrease in heart rate and blood pressure



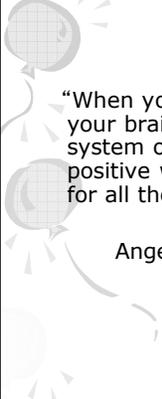
Psychological Benefits

Laughter is believed to:

- Act as a coping mechanism to reduce stress
- Moderate the impact of stressful events
- Improve self-esteem
- Improve the ability to relax
- Reduce psychological symptoms related to negative life events
- Increase endorphins = decrease in stress, pain, depression and negative emotions



The “psychological benefits of humor are quite amazing” according to MD’s and RN’s who are members of the American Association of Therapeutic Humor.

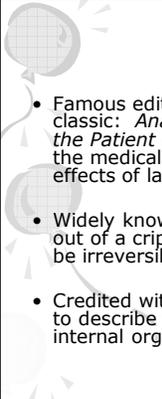


“When you laugh and even when you smile, your brain chemistry changes and every system of the body is affected in a positive way. Laughter is an ambassador for all the positive emotions.”

Angela Mazur, psychotherapist & laughter leader

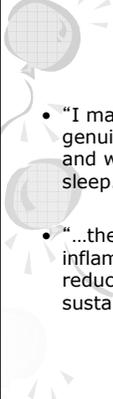
“Laughing is the fireworks of the soul.”

Josh Billings



Norman Cousins

- Famous editor & author of national bestselling classic: *Anatomy of an Illness As Perceived by the Patient (1979)* who attracted the attention of the medical profession to the possible therapeutic effects of laughter
- Widely known as the man who “laughed” his way out of a crippling disease that doctors believed to be irreversible (ankylosing spondylitis)
- Credited with coining the term “internal jogging” to describe the positive effect of laughter on internal organs



Norman Cousins

- “I made the joyous discovery that ten minutes of genuine belly laughter had an anesthetic effect and would give me at least two hours of pain-free sleep.”
- “...the ability of laughter to reduce the inflammation in my joints (was) confirmed by a reduction in the sedimentation rate—both sustained and cumulative.”



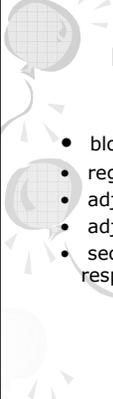
“I was greatly elated by the discovery that there is a physiologic basis for the ancient theory that laughter is good medicine.”

Norman Cousins
Anatomy of an Illness As Perceived by the Patient



Is laughter good medicine?

- Michael Miller, MD, Cardiologist, researcher, & Director of Preventive Cardiology at the University of Maryland Medical Center conducted a study showing for the first time that laughter is linked to the healthy functioning of blood vessels, specifically effecting the endothelium



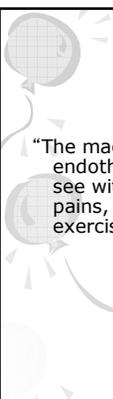
Endothelium has a powerful effect on:

- blood vessel tone
- regulation of blood flow
- adjusts coagulation
- adjusts thickening
- secretes chemicals & other substances in response to wounds, infections & irritation



Is laughter good medicine?

- Laughter-provoking movies were used to gauge the effect of emotions on cardiovascular health
- Laughter appeared to cause the endothelium to dilate in order to increase blood flow
 - ❖ Diameter of artery **INCREASED** by 22% during comedy
 - ❖ Diameter of artery **DECREASED BY 35%** during stressful drama



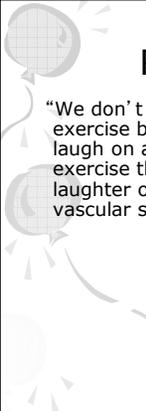
RX=LAUGHTER!

“The magnitude of change we saw in the endothelium is similar to the benefit we might see with aerobic activity, but without the aches, pains, & muscle tension associated with exercise.”

Dr. Miller



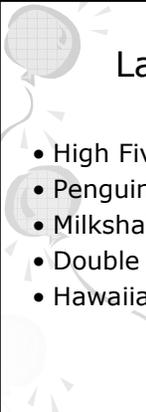
Laughter could be
a total body
workout!!!



RX=LAUGHTER!

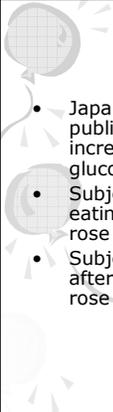
"We don't recommend that you laugh & not exercise but we do recommend that you try to laugh on a regular basis. Thirty minutes of exercise three times a week and 15 minutes of laughter on a daily basis is probably good for the vascular system."

Dr. Miller



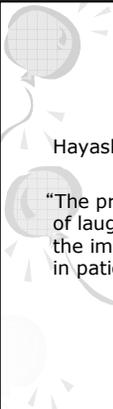
Laughter Exercises

- High Five Near Miss
- Penguin
- Milkshake
- Double Handshake
- Hawaiian Hello (or Good-bye)



Laughter & Diabetes

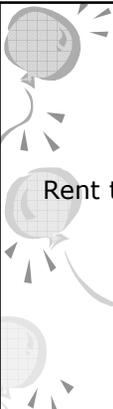
- Japanese researcher Keiko Hayashi, PhD, RN, published her findings that laughter lowered the increase in two hour post prandial blood glucose (PPBG) in people with Type 2 diabetes
- Subjects attended a 40 minute lecture after eating a meal on the first day. Two hour PPBG rose on average 123 mg/dL.
- Subjects attended a 40 minute comedy show after eating the identical meal. Two hour PPBG rose on average only 78 mg/dL.



Laughter & Diabetes

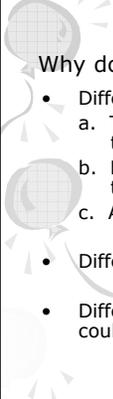
Hayashi & her team concluded:

“The present study elucidates the inhibitory effect of laughter on the increase in PPBG and suggests the importance of daily opportunities for laughter in patients with diabetes.”



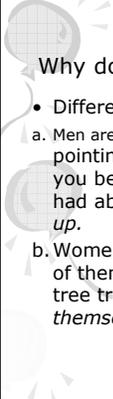
Translation:

Rent two comedies and call me in the morning!



Why don't we all laugh at the same things?

- Differences in age
 - a. Toddlers & children: ridiculous, surprising things, "toilet humor"
 - b. Pre-teen & teenagers: use humor as a tool to protect themselves or to feel superior
 - c. Adults: laugh at the issues that stress us
- Differences in community, culture, religion
- Differences in viewpoint: joke or situation could be viewed as sexist, racist, offensive



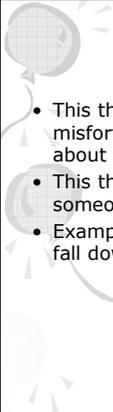
Why don't we all laugh at the same things?

- Differences in Gender
 - a. Men are from Mars. They see humor in playfully pointing out the other guy's flaws: e.g. "Who did you bet on? The loser? Remember when you had abs under that gut?" *Men talk themselves up.*
 - b. Women are from Venus. They playfully make fun of themselves: e.g. "My thighs are like hidden tree trunks under this black skirt". *Women talk themselves down.*



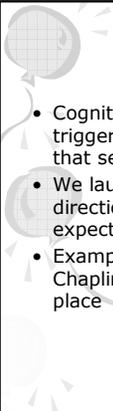
What makes us laugh?

- Laughter is triggered when we find something humorous
- Four Theories
 1. Superiority theory
 2. Incongruity theory
 3. Relief theory
 4. Divinity theory



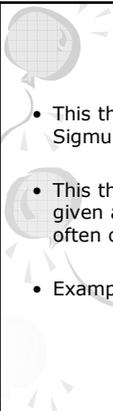
Superiority Theory

- This theory says that we laugh at other people's misfortune—because it makes us feel better about ourselves
- This theory is at work when we laugh “at” someone instead of “with” them
- Example: a child laughs when he sees someone fall down in the school yard



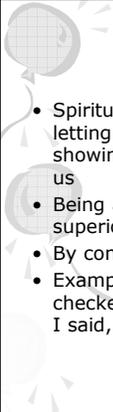
Incongruity Theory

- Cognition-based theory that says laughter is triggered by connection of two or more concepts that seem absurd or incongruous
- We laugh when we think we are being lead in one direction, only to discover something we did not expect—a clever twist and a surprise
- Example: Charlie Chaplin entered a Charlie Chaplin look-alike contest and he came in third place



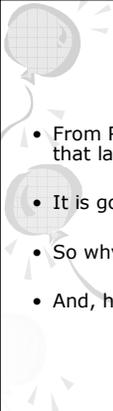
Release/Relief Theory

- This theory was suggested by (of course) Sigmund Freud
- This theory states that we laugh when we're given an outlet to release repressed thoughts—often of a sexual nature (of course)
- Example: “dirty” or off-color jokes



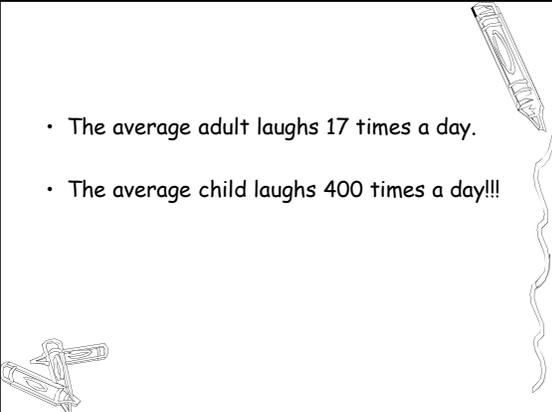
Divinity Theory

- Spiritual growth can come through humor by letting us see difficult truths about ourselves, by showing us that the world doesn't revolve around us
- Being able to see our own arrogance and superiority and laugh at our absurdity
- By connecting people through a shared laugh
- Example: The first time my blood glucose was checked in the hospital, the meter displayed "HI". I said, "What a sociable little machine!"



Rx = Laughter?

- From Reader's Digest to the Bible we are told that laughter is good medicine
- It is good for us in EVERY way
- So why don't we do it more?
- And, how often do we do it?



- The average adult laughs 17 times a day.
- The average child laughs 400 times a day!!!



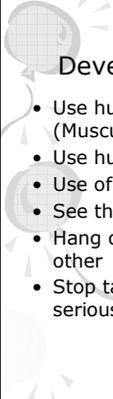
Rx = Figure out what makes YOU laugh

- WATCH IT
 - Comedies & sit-coms & U-tube
 - Stand-up comics: rent/buy/tape/TV
 - Comedy Clubs
- READ IT
 - Erma Bombeck
 - Stressed is Desserts Spelled Backward
 - Comics in the newspaper



Rx = Laughter

- DO IT
 - Laughter Exercises
 - Start a laughter club
 - Laughter List/notebook/jar/voice messages
- GOOGLE IT (about 95,400,000 results)
 - www.laughtertherapy.com
 - www.worldlaughtertour.com
 - www.holisticonline.com (humor therapy)



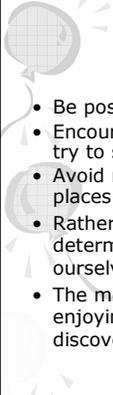
Develop your OWN sense of humor

- Use humor to ease your own stress and tension (Muscular tension & laughter cannot co-exist)
- Use humor to make light of a bad situation
- Use of exaggeration & irony
- See the funny in things
- Hang out with your friends and imitate each other
- Stop taking everything (especially yourself) so seriously!



"God gave us humor so we could laugh at ourselves and not take ourselves too seriously."

Ancient Proverb



Attitude is Everything

- Be positive and see the cup half-full
- Encourage those around you to be positive and try to surround yourself with positive people
- Avoid negative thoughts, words, actions, people, places and situations
- Rather than waiting for external events to determine our happiness we can find it inside ourselves
- The more we practice smiling, laughing & enjoying life for no reason, the more we will discover that we already have what we seek



Whatever feelings you have within, you are attracting your tomorrow

- Worry attracts more worry
- Anxiety attracts more anxiety
- Unhappiness attracts more unhappiness
- Dissatisfaction attracts more dissatisfaction
- Joy attracts more joy
- Peace attracts more peace
- Happiness attracts more happiness
- Kindness attracts more kindness
- Love attracts more love



Good-Hearted Living

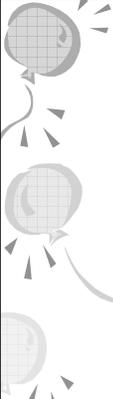
- Monday – **Compliments** - *antidote for judgment*
- Tuesday – **Flexibility** - *antidote for rigidity*
- Wednesday – **Gratitude** - *antidote for neediness*
- Thursday – **Kindness** - *antidote for meanness*
- Friday – **Forgiveness** - *antidote for anger*
- Saturday & Sunday – **Chocolate** (Rest, Recreation, Relaxation) - *antidote for workaholics*



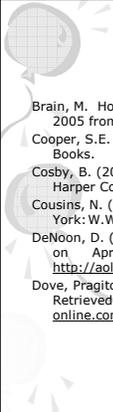
www.words4ever.com

Michael Pritchard

You don't stop laughing because you grow old.
You grow old because you stop laughing.



***Laughter is
contagious,
go out &
spread it!***



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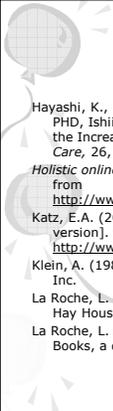
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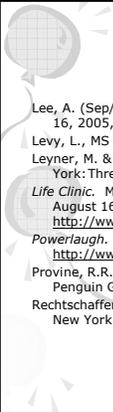
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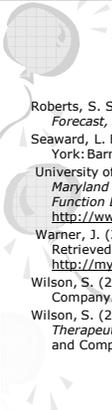
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