Fall Prevention and Reduction of Fear of Falling

Proactive Approaches to Health & Wellness

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St. Mary’s Wellness Center
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Take Out Your Pens…
QUIZ TIME!

1) True or False: The United States is a worldwide leader on average life expectancy

2) Regarding Healthcare:
Per Capita Spending to Average Life Expectancy
Rank United States: Ahead, Behind or Approximately Same

a) Australia       b) Italy       c) Cuba
3) Causes of Illness
Total = 100%

Genetics Causes _____% 
Unable to Access Care Causes _____% 
Environmental Causes _____% 
Health Behaviours / Lifestyle Choices Causes _____%

4) What % of US healthcare costs are spent on chronic – largely preventable diseases?
   a) 35%     b) 75%     c) 25%

5) What % of all physician visits are related to stress?
   a) 30-50%   b) 60-90%  c) 10-35%

6) According to The New England Journal of Medicine (2007), Angioplasties and stents do not prolong life or prevent heart attacks in ______% of stable patients who receive them
   a) 95%     b) 65%     c) 35%
   and
   Bypass surgery prolongs life in less than
   a) 3%      b) 20%     c) 55%

7) Changing lifestyle behaviours could prevent _______ of all heart disease (Lancet. 2004 Sep)
   a) 90%     b) 20%     c) 65%
8) __________ is the leading cause of hospital admissions and injurious death for age 65 and above, with annual direct medical costs associated with it totaling nearly $30 billion dollars in the US (2010) (Center of Disease Control Prevention)

9) Check health problems now seen in children, due to obesity, that culturally in the past were regarded as adult or later-in-life conditions:

- High Blood Pressure
- Type 2 Diabetes
- Elevated Blood Cholesterol Levels
- Depression

10) One in a) Five b) Three c) Ten American kids and teens are currently overweight or obese which is a) One b) Two or c) Three times the rate in 1963

11) True or False: Approximately 50% of the states in the US have an obesity rate of 10-20%?

12) True or False:
- Obesity issues are rather simple. Obesity occurs when a person consumes more calories from food than he or she burns; overeating and under exercising/sedentary behavior.
13) The average sugar consumption per person per year in America is _______.
   a) 150 lbs   b) 75 lbs   c) 35 lbs

14) True or False: Cardio exercise has consistently by proven through research to be the most effective way to lose weight.

15) Please Put “T” or “F” for true or false:
   What conditions/symptoms have been linked to Stress and/or High Levels of Hormone Cortisol/Low Levels of DHEA:
   1) Impaired function of The Immune System
   2) Decreased Bone Density
   3) Fat Deposited in Abdomen
   4) Increased Blood Sugar
   5) Increased Triglycerides
   6) Impaired Wound Healing
   7) Increases Sensations of Pain
   8) Problems with Memory
   9) Weight Gain
   10) Increased Resistance to Insulin
   11) Increase Cholesterol
   12) Increased Blood Clotting
   13) Poorer Sleep
   14) Increased Performance

ANSWERS
1) True or False: The United States is a worldwide leader on average life expectancy

2) Regarding Healthcare:
   Per Capita Spending to Average Life Expectancy
   Rank United States: Ahead, Behind or Approximately Same
   a) Australia   b) Italy   c) Cuba

The Economics and the Outcomes

3) Causes of Illness
   Genetics causes 20%
   Unable to Access Care causes 10%
   Environmental Causes 20%
   Health Behaviours / Lifestyle Choices causes 50%
4) What % of US healthcare costs are spent on chronic – largely preventable diseases?
   b) 75%

5) What % of all physician visits are related to stress?
   b) 60-90%

6) According to The New England Journal of Medicine (2007), Angioplasties and stents do not prolong life or prevent heart attacks in % of stable patients who receive them
   a) 95%

   and

   Bypass surgery prolongs life in less than
   a) 3%

7) Changing lifestyle behaviours could prevent _________ of all heart disease (Lancet. 2004 Sep)
   a) 90%

8) _______ is the leading cause of hospital admissions and injurious death for age 65 and above, with annual direct medical costs associated with it totaling nearly $30 billion dollars in the US (2010) (Center of Disease Control Prevention)

   Falls
9) Check health problems now seen in children, due to obesity, that culturally in the past were regarded as adult or later-in-life conditions:

   YES - High Blood Pressure
   YES - Type 2 Diabetes
   YES - Elevated Blood Cholesterol Levels
   YES – Depression

10) One in b) Three American kids and teens are currently overweight or obese which is c) Three times the rate in 1963

11) True or False: Approximately 50% of the states in the US have an obesity rate of 10-20%

Obesity Trends* Among U.S. Adults
BRFSS, 1985

(*BMI ≥30, or ~ 30 lbs. overweight for 5’4” person)

Source: Behavioral Risk factor Surveillance system, CDC
Obesity Trends* Among U.S. Adults
BRFSS, 2005
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)

<table>
<thead>
<tr>
<th>No Data</th>
<th>&lt;10%</th>
<th>10%–14%</th>
<th>15%–19%</th>
<th>20%–24%</th>
<th>25%–29%</th>
<th>≥30%</th>
</tr>
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</table>

Source: Behavioral Risk factor Surveillance system, CDC

11) False….no states at 10%-20%

12) Obesity issues are rather clear & simple. Obesity occurs when a person consumes more calories from food than he or she burns; overeating and under exercising/sedentary behavior.

12) Not so simple or clear….

The issue is: regulation of Fat (Adipose) Tissue. Fat accumulation is regulated fundamentally by insulin and carbohydrates (sugars) Hormones/Insulin/Fat Storage.

Paradigms: A disorder of excess fat accumulation

13) The average sugar consumption per person per year in America is ______________ 150 lbs. (Institute of Integrative Nutrition Presentation, Mark Hyman, MD)
14) Cardio exercise has consistently been proven through research to be the most effective way to lose weight.

   False

   Three month study, women did 45 minutes of cardio a day, 5 days a week, and lost no more weight than those who dieted alone.


   Subjects did 50 minutes of cardio, 5 days a week, and once again lost no more weight than those who dieted alone.

   Redman et al. Effect of calorie restriction with or without exercise on body composition and fat distribution. J Clin Endocrinol Metab. 2007 Jan 2

   One year study, subject performed aerobic exercise for 60 minutes/day, 6/week and only lost 3.5 pounds on average in an entire year.


15) Please Put “T” or “F” for true or false:

   What conditions/symptoms have been linked to Stress and/or High Levels of Hormone Cortisol/Low Levels of DHEA:

   1) Impaired function of The Immune System
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   14) Increased Performance

   High Cortisol – Low DHEA

   Linked To:

   Obesity (Marin 1992)
   Diabetes (Nestler, 1992)
   Hypertension (Shafago, 1992)
   Heart Disease (Barret-Conner 1986)
   Cancer (Bhatavdekar, 1994)
   Alzheimer’s (Nasman, 1995)

   Research - those who are regularly stressed have:

   • A five-fold increased risk of dying from heart-related problems
   • Double the risk of developing diabetes in men
   • A 65% increased risk of developing dementia
   • Double the chance of developing obesity

   National Concern

   Relevant to Falls?
The Real Healthcare Recovery Plan

Chronic conditions consume more than 75% of healthcare costs and are largely effected by health behaviors.

Our current model is problem based and disease oriented.

The current healthcare model doesn’t work because we do not have a core competency in optimizing health.

Approximately 95 cents of every dollar spent to treat disease after it had already occurred.

Reactive…vs…Proactive

Short Term/Long Term Healthcare
Opportunities for Intervention

Source: Ralph Snyderman, MD, Chancellor Emeritus, Duke University

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Micro Healthcare Change

Individuals do not change their lifestyle choices and health behaviors until we know what matters to them.

Behavior changes are sustainable when they have deep personal significance.

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A Transformative Model
Healthcare /“Health” “Care”

Contemporary
- Disease oriented
- Find it, fix it
- Biomedical interventions
- Reactive
- Sporadic
- Individual left to enact
- Physician-directed

Integrative Care
- Health oriented
- Identify risk, minimize it
- Whole person approaches
- Proactive
- Lifelong planning
- Support in implementation
- Partnership-based

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Source: Ralph Snyderman, MD, Chancellor Emeritus, Duke University
No quiz…
just questions….

If you were just made aware of a medically researched “technique” that has clinically shown to:

- Reduces pain
- Reduces stress
- Improves quality of life
- Improves sleep
- Enhances immune system
- Shown to be beneficial for lowering blood pressure

Wisconsin Medical Journal

Mayo Clinic has included “another new technique”...

Mayo Clinic Wellness Solutions for Diabetes
Mayo Clinic Wellness Solutions for Heart Health
“Mayo…” High Blood Pressure
“Mayo…” Fibromyalgia
“Mayo…” Arthritis
“Mayo…” Menopause
“Mayo…” Irritable Bowel Syndrome
“Mayo…” Back Pain
“Mayo…” Insomnia

EVIDENCE RATING

**Decreases stress and anxiety**  A

- Improved physical and quality-of-life measures in elderly  A
- Improves functional status and symptoms in low back pain  A
- Improves subjective and objective outcomes in asthma  A

**Implements functional status and symptoms in low back pain**  A

- Improves functional status and symptoms in low back pain  A

**Improves subjective and objective outcomes in asthma**  A

- Decreased fatigue in Multiple Sclerosis patients  B

**Is beneficial in patients with eating disorders**  B

Harvard Medical School & Brigham & Women’s Hospital: 2012

**Juniors and Seniors:**

- Control Group  1) scored higher for mood problems or anxiety
  2) self-reported more negative emotions

- Experimental Group reported  1) self-reported fewer negative emotions
  2) scored lower for mood problems and anxiety

---------------------------------------------------------------------

**2003 study of 5th graders:**

- reduced feelings of helplessness and aggression
- increase emotional balance
- reduced fears

Hope for brighter tomorrows…

Other Kid/Teen Studies:

- Teens who had suffered **traumatic abuse** showed significant decreases in depression & anxiety

- Food disorder teens- 75% reported an increased sense of well-being

- Anorexic adolescents:  reduced starvation-induced stress
  safely reintroduced physical activity for weakened body
  minimized fatigue
  corrected distorted self-perceptions

- Teen musician performance anxiety and mood disturbance reduction
What if there were easy tools & techniques that had to do with
the power of the heart /emotions
heart function and cognitive performance
20 + years of published research including peer-reviewed journals such as
American Journal of Cardiology, Stress Medicine, Preventive Cardiology and Journal of the American
College of Cardiology
- Increase in cortical facilitation (brain’s ability to process information)
- Increase in creative problem solving, intuition.
- Increase functioning in the Immune System
- A decrease in the level of stress hormone (Cortisol)
- An increase in vitality hormone (DHEA) (di-hydro-epi-andro-sterone)

Studies:
Blood Pressure in Hypertensive Employees (HP)
20% reduction in diastolic and systolic blood pressure

Stress and Health Risk Reduction in Correctional Officers
Significant reductions in
total cholesterol
mean heart rate
blood pressure.
Patients with Type 2 Diabetes who received -- reported a host of improvements:

- Far more likely to take their medication
- Their blood sugar levels improved
- They felt more engaged in their own health, with a greater understanding of the resources available to them and more confidence that they could impact their health.
- They had an increased sense of social support and tangible support
- Were more likely to exhibit “benefit finding”
- Stress and depression went down
- Exercise went up

Duke Integrative Medicine, Duke University Medical Center Supported by drug maker GlaxoSmithKline.

Integrative Health Coaching for Patients with Type 2 Diabetes Randomized Clinical Trial

Spurred by the fact that 50% of people with Type II diabetes do not take their medication as prescribed and 90% of them do not adhere to all aspects of their overall treatment regimen.

Stress Reduction Programming
Self Awareness/Mindfulness Practices
Health, Wellness, Well-being Programs

Integrative Practices
Complimentary Practices
Holistic Practices
Holistic Care
Body Mind Spirit Practices
Leading Medical Publications

JAMA – Journal American Medical Association
New England Journal of Medicine
Archives of Internal Medicine
New England Journal of Medicine
Duke
Harvard
Stanford
University of Massachusetts
National Institute of Health
US Dept of Health & Human Services
American Journal of Psychiatry
Journal of Nursing Administration
Journal of Affective Disorders
Neurology
Biological Research for Nursing
Journal of Gerontology
Journal of General Internal Medicine
American Journal of Hypertension

Experiential

There is Research

There are Options

There Are Choices
FALLS...Leading cause of hospital admissions for people age 65 and older:

- with 1 in 3 experiencing a fall each year
- Older adults are hospitalized for fall-related injuries five (5) times more often than they are for injuries from other causes
- 2.4 million nonfatal fall injuries treated in Emergency Dept. (2011); 689,000 had to be hospitalized
- 20-30% suffer moderate to severe injuries that make it hard to get around or live independently and increase their risk of early death

Center of Disease Control Prevention

FALLS

Average hospitalization costs for a fall injury is $34,294 (2012)

Annual direct medical costs associated with falls $30 billion dollars in the US (2010)

Significant U.S. challenge; elderly population is expected to double by 2030

Center of Disease Control Prevention

FEAR OF FALLING

Major health problem among community-dwelling older persons

Prevalence of this fear ranges from 29%-77%.

Indicates importance of developing effective strategies to reduce fear of falling among elderly adults

Journal of Advanced Nursing, Nov. 2010
Elderly fallers – as compared with nonfallers, have:

- significantly weaker muscles strength in ankle dorsiflexors, hip flexors, or knee extensors
- marked decrease in ankle range of motion
- greater postural sway
- have significantly more disabilities in performing activities of daily living than nonfallers

A PERSONS ABILITY TO BALANCE CAN BE INFLUENCED BY MANY FACTORS SUCH AS:

- Vision
- Inner-ear functioning
- Blood Pressure
- Muscle Strength
- Posture
- Brain integration
- Medical Condition
- Medication
- Depression
- Diabetes

GOOD NEWS
Although Risk of Falls and Fall Related Injuries Increases With Advancing Age

They Are Not Inevitable Consequences of Aging

(Carter et al., 2001; Nied & Franklin, 2002)

There is Research
There are Options
There Are Choices

National Institute on Aging & Emory:
Tai Chi program reduced risk of falling by 47.5%.

Oregon Research Institute:
Risk for multiple falls in Tai Chi group 55% lower than that of stretching control group

Tufts:
Tai Chi is effective in treating knee osteoarthritis
Tufts:
Tai Chi Improves Pain & Functional Status in Adults with Rheumatoid Arthritis: Pilot single-Blinded Randomized Controlled Trial

American College of Rheumatology (ACR) 20 response criterion, functional capacity, health-related QOL & depression index. 12 wks/Tai Chi,. ACR 20% response compared to 0% control.

New England Journal of Medicine: Tai Chi beneficial in easing the pain of fibromyalgia

Wisconsin Medical Journal: Therapeutic Benefits of Tai Chi Exercise Research Review:

Improved Balance & Fall Prevention
Pain Reduction - Stress Reduction - Improved Quality of Life
Improved Aerobic Capacity
Blood Pressure Reduction
Improved Sleep Quality
Physical Function including activity tolerance & cardiovascular function
Enhancing immune system
Improving flexibility & strength

Research In Sports Medicine:
An International Journal: Review of Tai Chi as an Effective Exercise on Falls Prevention in Elderly, Jan 2012

24 Articles Reviewed

All studies reported significant improvement with the Tai Chi intervention except for one study*

Majority of the studies demonstrated
- Significant improvement in number of falls and fear of falling and
- Significant improvement in laboratory-based balance measures.
In addition to reducing risk of falls and Fear of Falling (FOF), improving balance…

- Tai Chi has benefits in physical and psychological functioning
- Tai Chi found to reduce FOF significantly more than other exercise programs for older adults

94% of the elders who participated in a 12-week Tai Chi intervention improved their functional status and confidence

100% of participants agreed that the Tai Chi movements were appropriate and safe to perform and they intended to continue doing the activity and to recommend it to others

STUDY RESULT

Yoga education has a positive effect on pain, physical functions, social functions, general health perception and balance.
YOGA-BASED EXERCISE PROGRAM TO REDUCE THE RISK OF FALLS IN SENIORS: A PILOT AND FEASIBILITY STUDY

The Scripps Research Institute, La Jolla, CA. Brown et al., Division of Arthritis Research, Division of Biomathematics, Dept of Molecular and Experimental Medicine

45 minutes, 8 weeks (68-97 years old)

14 of 22 Improved Berg Balance Scale
13 of 22 Improved Activities-Specific Balance Confidence Scale
15 of 22 Improved One Leg Standing Test

Exit Questionnaire:
- Improvement in posture (25%)
- Improvement in Breathing (21%)
- Stepping or Walking Improvement (15%), Coordination (13%), Flexibility (13%)

Health Benefits Within
- Blood Pressure Reduction
- Circulation Improvement
- Pulse Rate Reduction
- Immunity Strengthened
- Quadrilateral Function Improve
- Post Surgery, Pain Decrease
- Respiration Rate Decrease

DISEASE PREVENTION
- Reduction in risk of heart disease
- Osteoporosis
- Type II Diabetes
- Possible slowing on Alzheimer’s onset

Symptom Reduction/Alleviation
- Asthma
- Arthritis
- Headaches
- Fibrinolysis
- Chronic Fatigue
- Eating Disorders
- Parkinson’s
- Migraines
- Sciatica
- Chronic Bronchitis
- Epilepsy
- Chronic Fatigue
- Eating Disorders
- Back Pain
- Menopausal Symptoms

Health Benefits External:
- Improve posture
- Increase strength
- Increase energy
- Sleep pattern improvements
- Balance Improvement

Body Chemistry:
- Lowers Cholesterol
- Supports strong lymphatic system
- May lower glucose levels
- Lowers levels of triglycerides
- Increase red blood cells
- May lower glucos levels

ENERGY
Reminder.....
60-90% Of all physician’s visits related to STRESS

But...Are We All Desensitized to the Word????

What conditions/symptoms have been linked to Stress and/or High Levels of Hormone Cortisol/Low Levels of DHEA:

1) Impaired function of The Immune System
2) Decreased Bone Density
3) Fat Deposited in Abdomen
4) Increased Blood Sugar
5) Increased Triglycerides
6) Impaired Wound Healing
7) Increases Sensations of Pain
8) Problems with Memory
9) Weight Gain
10) Increased Resistance to Insulin
11) Increase Cholesterol
12) Increased Blood Clotting
13) Poorer Sleep
Sobering

There is Research
There are Options
There Are Choices

Opportunities
Self-Care
Self-Inquiry
Self-Awareness
Lifestyle Behavior Change
If you do not make any changes in your life what does your health and well-being look like in 3-5 years?