Overview

• Obesity Epidemic and its toll on our nation

• ACSM’s Top 20 List: Science behind some trends

• How can Campus Recreation improve student, faculty, and staff wellness?
  • Services, Coaching, Programming

• Wellness and Healthy Campus Collaborations
Obesity Trends* Among U.S. Adults
BRFSS, 1996

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

No Data       <10%      10%–14%  15%–19%

This is the same year that the first “smart phone” was introduced.
Obesity Trends* Among U.S. Adults
BRFSS, 1998

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

Obesity Trends* Among U.S. Adults
BRFSS, 1999

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

No Data <10% 10%-14% 15%-19% ≥20
Obesity Trends* Among U.S. Adults
BRFSS, 2000

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

Obesity Trends* Among U.S. Adults
BRFSS, 2001

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2002
(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” person)

Obesity* Trends Among U.S. Adults
BRFSS, 2003
(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 2004

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

No Data       <10%        10%–14% 15%–19%       20%–24%          25%–29% ≥30%

Obesity Trends* Among U.S. Adults

BRFSS, 2005

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

The Blackberry, aka “Crackberry” and similar devices are introduced and on the rise in the U.S....
Obesity Trends* Among U.S. Adults
BRFSS, 2006
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)

Obesity Trends* Among U.S. Adults
BRFSS, 2007
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)

2007...the I Phone is introduced.
Obesity Trends* Among U.S. Adults
BRFSS, 2008
(*BMI ≥30, or ~ 30 lbs. overweight for 5’4” person)

Obesity Trends* Among U.S. Adults
BRFSS, 2009
(*BMI ≥30, or ~ 30 lbs. overweight for 5’4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2010

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

No Data          <10%           10%–14% 15%–19%           20%–24%          25%–29%          ≥30%

Obesity Trends* Among U.S. Adults
BRFSS, 1990, 2000, 2010

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

1990

2000

2010
U.S. Obesity Facts

- 69% of adults living in the U.S. are overweight or obese
- The Midwest and the South leads in obesity rates at 29.5% and 29.4% respectively
- 40 states have an obesity rate of 25% or higher
- 13 states have an obesity rate of 30% or higher
- Louisiana leads with 34.7%
- Colorado is the leanest with a 20.5% obesity rate
  - One of the most active states—hiking, biking, snowboarding, skiing, mountain-biking

CDC, 2014

The Cost of Inactivity

- Estimated that 250,000 premature deaths annually in the US are attributed to physical inactivity.
- Physical inactivity and obesity are second only to tobacco use as the leading causes of preventable death in the US.
- Physical inactivity estimated to account for approximately 6% of global deaths.
  - Accounts for 21.5% of ischemic heart disease
  - 11% of ischemic stroke
  - 14% of diabetes
  - 16% of colon cancer and 10% of breast cancer
- CVD costs the U.S. over $300 BILLION each year

www.cdc.gov
Inactivity Over Time can Result in an Altered Metabolic Profile

- Atherosclerosis
- Insulin Resistance
- Hypertension
- Hypercholesterolemia
- Insulin Resistance
- Type 2 Diabetes
- Hypertriglyceridemia

How much do you sit?

Primary purpose in this analysis was to examine the relation of leisure-time sitting to all-cause death rates

- 123,216 individuals
  - 53,440 men
  - 69,776 women

Sitting for >6 hrs per day (vs. <3 hrs/day):
- 68% greater risk of being overweight/obese
- Total sitting time = increased BMI

- Women who reported sitting for more than 6 hours during their leisure time versus less than 3 hours a day = approximately 40% higher all-cause death rate
- Men = approximately 20% higher death rate

Evidence supports that reducing time spent sitting, regardless of activity, may improve the metabolic consequences of obesity.”- Patel et al.

Patel et al. Am J Epid 2010
ACSM ACTIVITY GUIDELINES

AEROBIC EXERCISE
- Moderate exercise at least 5 days/week for at least 30 minutes
  - 30 minute increments equaling 30 minutes
- OR, vigorous exercise at least 3 days/week for at least 20 minutes
  * These are MINIMUM guidelines to prevent disease. Increased levels ARE encouraged.

STRENGTH TRAINING
- 2-3 day/week, all major muscle groups, at least 1 set of 8-10 reps

FLEXIBILITY
- Minimum of 2 days/week, all major muscle-tendon groups for a total of 60 seconds per stretch to maintain flexibility for ADL

If we do not work to maintain what we have...
Decrease in 5% of our muscle mass each decade after 35 years of age.

What if we stay active?

Jack LaLanne
“Godfather of Fitness”
- Opened first U.S. gym
- Starred in 1st U.S. fitness show
- At 70, swam 1.5 miles of Golden Gate bridge towing 70 people behind him

WHY IS OUR NATION INACTIVE?
CDC Top 10 polled reasons for inactivity among adults

• Do not have enough time to exercise
• Find it inconvenient to exercise
• Fear being injured or have been injured recently
• Lack self-management skills, such as the ability to set personal goals, monitor progress, or reward progress toward such goals
• Lack encouragement, support, or companionship from family and friends
• Do not have parks, sidewalks, bicycle trails, or safe and pleasant walking paths convenient to their homes or offices
• Do not have enough time to exercise
• Find it inconvenient to exercise
• Lack self-motivation
• Do not find exercise enjoyable
• Find exercise boring
• Lack confidence in their ability to be physically active (low self-efficacy)
• Exercising isn’t fun...

Well, what if we make it quick?
What if we make it fun?
IT'S ALL ABOUT MIND SET!

The Fun Theory
(Sallis and Hovell, 1999; Sallis et al., 1992)

www.cdc.gov

HOW DO WE HELP & WHAT’S EFFECTIVE?

Top Worldwide Fitness Trends 2014*
1. High-Intensity Interval Training (HIIT)*-Quick-
2. Body Weight Training-Quick, Effective, Done Anywhere
3. Educated, Certified, and Experienced Fitness Professionals
4. Strength Training
5. Exercise and Weight Loss
6. Personal Training
7. Fitness Programs for Older Adults
8. Functional Fitness
9. Group Personal Training-FUN
10. Yoga

11. Children and Exercise for the Treatment/Prevention of Obesity
12. Worksite Health Promotion
13. Core Training
14. Outdoor Activities
15. Circuit Training
16. Outcome Measurements
17. Wellness Coaching
18. Sport-Specific Training*
19. Worker Incentive Programs
20. Boot Camp

* Trends with a top 20 position new for 2014.
Moving People to Total Wellness

Our goal is to help individuals discover activities that they enjoy doing; activities that will keep them active and provide a sustained quality of life.

Most Common Goal Requests @ FSU

- Improve overall health/getting back into a workout routine and eating right
- Family history and worried about own health
- Improve nutrition and gain knowledge of RMR value
- Often with athletes: improve Vo2 value/fitness level for race or event
- #1 Goal: Lose weight, improve body composition

Wellness Services Offered @ FSU

- Bod Pod
- RMR
- Glucose/Cholesterol Panel
- Vo2 sub-max and max testing
- Starting Line Package
- FREE Polar Tri-Fit testing
- FREE ACE Health Coach consultations
**Endurance activity can...**

- ↓ cardiovascular disease risk factors
  - ↓ cholesterol and ↑ good cholesterol (HDL)
  - ↓ blood pressure
  - ↓ blood sugar and type II diabetes
  - ↓ body weight and abdominal obesity
- ↓ risk of some cancers
  - breast cancer
  - colon cancer
  - may ↓ risk of endometrial and lung cancer
- improve mental health and mood
- ↑ ability to perform activities of daily living
- ↑ balance to prevent falls
- ↓ risk of dementia

U**ltimately ↑ chances of living longer disease free and improve the quality of life**


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**HIIT TRAINING...WHY?**

HIIT = Short bursts of intense exercise (≥ 90% max.) alternated with relief breaks of varying lengths

- Time-efficient

  **CARDIOVASCULAR BENEFITS**
  - Produces greatest improvements in V02 max values (min 8–20 wks)
  - Correlates to decrease in CVD risk
  - Improved insulin sensitivity
  - Increased HDL “good” cholesterol (8 wks min)
- With moderate ↓ in body fat %, improvements in total, LDL, and triglycerides can be seen

  **BODY COMPOSITION**
  - Decreased body fat % (12 wks min)
  - Increase in lipolysis and release from subcutaneous and intramuscular stores

Good Source: Gibala et al.
Aerobic Capacity with Interval Training

40 healthy subjects

8 wk training 3 days/wk

1. LSD (70% max HR)
2. Lactate Threshold (85% max HR)
3. 15/15 interval (15 s of running @ 90-95% HRmax followed by 15 s recovery at 70% max HR)
4. 4 x 4 min interval running (4 min running at 90-95% HRmax followed by 3 min of active resting at 70% HRmax)

Interval training is more effective at improving VO2 max in moderately trained individuals.

Helgerud et al. 2007. MSSE

IS HIIT A TIME EFFICIENT EXERCISE STRATEGY TO IMPROVE HEALTH AND FITNESS?

• Gillen and Gibala, APNM, 2014
• As little as 3 HIIT sessions per week
  • ≤10 min of intense exercise
  • ≤30 min per session, including warm-up, recovery between intervals and cool down
  • Improve aerobic capacity, skeletal muscle oxidative capacity, exercise tolerance and markers of disease risk after only a few weeks
  • Seen in both healthy individuals and people with cardiometabolic disorders
Cholesterol Reality

- Increases in HDL “good” cholesterol
- Helps to clear cholesterol from blood stream and protect artery walls from plaque buildup
- Possible decreases in total (HDL, LDL, 20% tri), LDL “bad” cholesterol, and triglycerides
- High levels of triglycerides in blood looks like this...

BODY COMPOSITION

Who has heard of the “fat burning” zone??

<table>
<thead>
<tr>
<th>Activity Level</th>
<th>Protein</th>
<th>Carbs</th>
<th>Fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resting</td>
<td>1%</td>
<td>33%</td>
<td>66%</td>
</tr>
<tr>
<td>Low Intensity</td>
<td>5%</td>
<td>71%</td>
<td>15%</td>
</tr>
<tr>
<td>Moderate Intensity</td>
<td>2%</td>
<td>41%</td>
<td>56%</td>
</tr>
<tr>
<td>High Intensity</td>
<td>2%</td>
<td>91%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Contribution of the four major fuel substrates to energy expenditure after 30 min. of exercise at 25%, 65% and 85% of maximal oxygen uptake in fasted subjects. – Romijn et al. (1993).
How do you maintain muscle...

- Aerobic exercise is proven to decrease body weight and body fat % HOWEVER...
- Without ST, a decrease in lean muscle mass is also likely...
- Decreases in muscle mass= similar initial body composition ratio of lean mass/fat mass
- Decreased resting metabolic rate
- Decrease in overall strength
- Lack of muscle “TONE”
Healthy Campus Collaborations

Academics

• Med School/Family & Child Sciences
  • How do we prevent “school burnout”?

• Developing a National Model to Enhance the Health, Academic Success and Retention Rates of Undergraduate Students
  • Examine the effectiveness of aerobic exercise and computer based stress reduction training in decreasing stress and increasing academic performance as well as improving overall physical and mental health

• Pre, Post Vo2 measures
  • HIIT group, EmWave computer group
  • Pre and Post cognitive function and emotional survey

**FMC Usage, Students meet trainers and learn about programs and improve health

![Figure 1. Academic Impediments in FSU Students (NCHA, FSU 2013)](image)

WHAT IS THE BODY PROJECT?

The Body Project is a dissonance-based body-acceptance program designed to help high school girls and college-age women resist cultural pressures to conform to the thin-ideal standard of female beauty and reduce their pursuit of unhealthy thinness. The Body Project is supported by more research than any other body image program and has been found to reduce onset of eating disorders.

Pilot program starting Fall 2014
Healthy Campus Initiatives/Events

- Couch to 5k program
- FREE cooking classes for students
- Every Step Adds Up Campaign/Flash Fit
- Campus Map Pens
- Salad Shakers
- Healthy Noles Pop Up Tent

Please join us for the wellness round table this afternoon!!

SUMMARY

- We know there is an obesity epidemic in our country but being in campus recreation places us in a unique position to make an impact on the health of future generations.
- Students have learned health behaviors from childhood but college is also a key phase when lifelong habits are formed.
- By using current trends and research, we can carve out a program unique to each of our own universities to meet the demands of students, provide education, and help them reach realistic, healthy goals.
- Must take the time to find out what each student likes, enjoys, and why they have the goals that they have before helping them set goals.
- Opportunity with the growing wellness trend to reach all students, find what moves them, and educate them with accurate health information so that they can make educated lifestyle choices.
- Never too late to make an improvement in your life to better yourself and those around you so this applies to staff and faculty as well.

LIVE LIFE FIT
References

- Booth, F. et al. Waging war on physical inactivity: using modern molecular ammunition against an ancient enemy. JAP; 93: 3-30; 2002.
- www.cdc.gov
- www.knowyournumber.com
- IDEA Health and Fitness Journal Image, July 2014