

Exergaming, the newest intervention in a medical fitness facility

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Presenter Disclosures

Ernie Medina, Jr., DrPH, CHFS

- (1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:
- MedPlay Technologies - CEO/Co-founder, shareholder
 - Exergame Fitness - Advisory Board

Presenter Disclosures

Robin Mellecker, BSc

No relationships to disclose

What is "exergaming"



Video game with screen



Interactive digital game (no screen)

Wii raised to mass awareness



23M kids in trouble!

- Poor academic performance
- Declining fitness
- QOL decreasing
- Self-esteem dec.; depression
- Adult diseases
- 70% => obese adults!
- (2008) 91% teens...



Former Acting US Surgeon General
Steven Galson, MD, MPH

"Reducing the prevalence of
childhood overweight and
obesity is among the
foremost health challenges
of our time."



APHA's 136th Annual Meeting, October, 2008, San Diego, CA



Aerobic - Kids
60 minutes daily

Typical clinic patient...



Robin Mellecker, BSc

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Active Gaming for Health

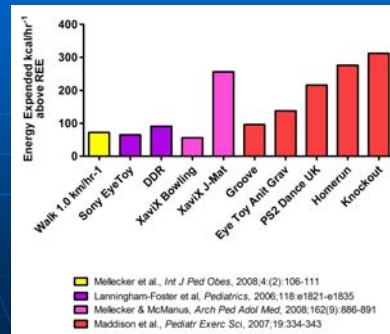
Can exergaming contribute to
improving physical activity levels
and health outcomes in children?

Daley, AJ Pediatrics 2009 124 763-771

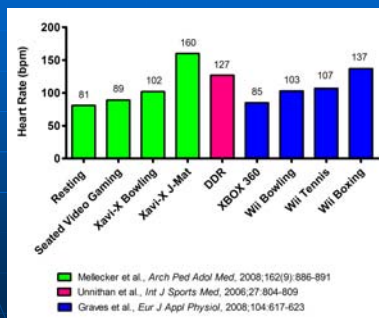
Outline

- Physiological responses
- Acute Effects
- Weight Loss
- Adherence

Energy Expenditure



Cardiovascular Response

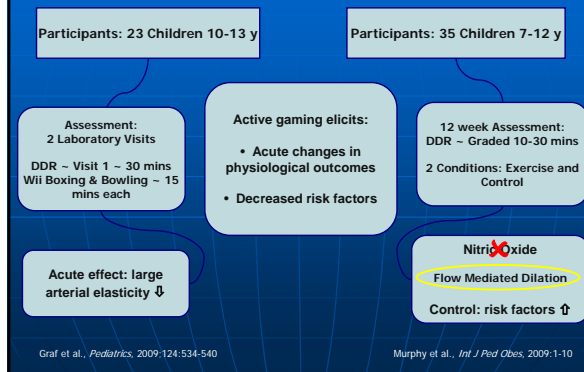


Acute Health Outcomes

- Endothelial dysfunction implicated in the pathogenesis of cardiovascular diseases
- Vascular process of early atherosclerosis can be slowed and possibly reversed with exercise intervention

McCrindle, BW. *Evid Based Cardiovasc Med*, 2006;10: 71-74

Endothelial Function



Weight Loss

- Interventions using active gaming:
 - DDR 3 & 6 mo follow-up: **NO change in BMI**
 - Eye Toy games and dance mat - 12 wk intervention: **trend decrease weight and waist circumference**
 - DDR - 12 wk intervention: **exercise group gained less weight than controls**

Madson et al., *Arch Pediatr Adolesc Med*, 2007;161:105-107
 Ni Mhurchu et al., *Int J Behav Nutr Phys Act*, 2008;5:8-13
 Murphy et al., *Int J Ped Obes*, 2009;1-10

Active Gaming for Health

Can exergaming contribute to improving physical activity level and health outcomes in children?

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Our Thoughts

"The treadmill is FUN but totally unrelated to gaming and more about being active"



"I like being active but it is easier to concentrate when seated but when you are seated you are a couch potato...." "In the Jackie Chan game moving is part of the game."



"I enjoyed stepping and jumping but the games was not that FUN"



Moving Forward

- Unrelated to conventional sport
- Movement incorporated into active game
- FUN, FUN ,FUN!

Thank You

Dr. Ernie Medina

Dr. Alison McManus

APHA Conference Organizers

The University of Hong Kong Conference Grants Council

Exergaming in a Medical Fitness Center

- Beaver Medical Group



Loma Linda University Drayson Center
Loma Linda, CA (Only "Blue Zone in US!)



Loma Linda University Drayson Center XRtainment Zone



Family Fit Zone

- 7-week program
 - Referred by primary care/pediatrician
 - Self-referred
- English & Spanish
- 90 mins
- Curriculum approved by CA Dept. of Health
- Covered benefit of Inland Empire Health Plan if at 85%-tile BMI-for-age or higher



Orientation



Pre- & Post- assessments



Cardio test – 5 min Jackie Chan Run on Xavix



Grip test



Tanita TBF-300

45 mins of nutrition instruction:

- Label reading
- Food Choices (Nutripoints, NuVal, Pyramid)
- Physical activity
- Portions
- Eating out
- Modifying recipes

45-mins of exercise
Exergaming Rx – circuit of games

Encourage the parents to exercise with their kids!

"I don't like to exercise, but playing here I get a great workout and it doesn't feel like exercising!"
 Gunnar, age 12

Challenges

- Access
 - If they don't have at home
 - Zone is too far to visit more than weekly

Over 450 locations in 7 countries!
 (South Korea, China, Dubai, Philippines, Canada, Netherlands, USA)

Once the newness wears off...

Gluco-boy
 MyPyramid.gov
 LAUNCH GAME
 The Incredible Adventures of Dr.Awesome's AMAZING FOOD DETECTIVE
 Food Fury, Playnormous

New games for health, but...

YOUR SHAPE
 FITNESS THAT'S FUN AND FOCUSED ON YOU
 JENNY MCCARTHY
 PERSONALIZED WORKOUTS
 DETECTS YOUR MOVEMENTS
 CORRECTS YOUR FORM
 100% CONTROLLER-FREE
 Due out late November

active
 PERSONAL FITNESS
 Wii

My Fitness Coach
My Weight Loss Coach
The Body Coach

Gateway to "Traditional" PA?

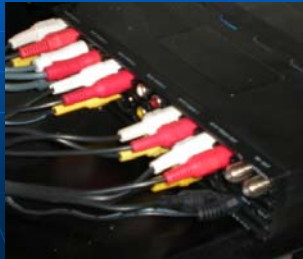


Keep engaged, long-term compliance?



Steep learning curve?

- Healthcare practitioners (40+), "video game immigrants", casual gamers



Exergame Research | About the Project | Exergaming in the Media | Home

exergames unlocked

Why Exergames Unlocked?
 Exergames are quickly growing in popularity as ways to promote exercise and healthy lifestyles in a variety of settings. Here, you'll find help in determining the best and most effective games and programs to use for varying audiences and settings, strategies for software evaluation, and research regarding effectiveness of those games as internet-based tools.

Practical guide for using exergames

Getting Started	How To	Success Stories
<ul style="list-style-type: none"> Equipment Guide for Beginners Will Set Up Video Will Recommendations PS2 Set Up Video PS2 (DDR) Recommendations 	<ul style="list-style-type: none"> Use One Console with a Large Group or Audience Use Exergames at Public Events (Use Exergames at Home (A Parent's Guide)) Prescribe Exergames (A Physician's Guide) Help Exergamers Think About Nutrition Tips 	<ul style="list-style-type: none"> After-school Setting Classrooms Community Programs Programs for Seniors

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Parent's negative perceptions of "video games"

- Should be outdoors
- Too much screen time
- Violent games
- Not "real" exercise
- Any cognitive dangers?



Overcoming healthcare's negative perception



Acceptance and utilization by traditional healthcare systems?

Humana Games 4 Health, www.humanagames.com

The first TRAQ 3D health and fitness experience at the Cleveland Clinic

TRAQ is a medically-based, health, fitness and performance enhancement resource now being showcased at the Cleveland Clinic's Western Medical Campus. TRAQ 3D offers both profitable private-pay prevention and performance enhancement programs, as well as medically-reimbursable clinical services.

<http://www.traq3d.com/Healthcare/Healthcare.aspx>

home legal/privacy help contact us downloads links disabilities news/research

390+ in first 10 days!

Games for health in healthcare?

EXERCISE GAMING is MEDICINE

Better use of resources
Increased pt satisfaction
Improved outcomes!

Starts here...

Besides pediatric obesity...

Special needs

Athletic training

Rehab

Senior physical, cognitive, & social fitness



Newest intervention for increasing PA!

- Think out-of-the-box
- Try for yourself
- Do research!

Exergaming: Where working out is all play!

Thank you!

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