

improving
academic
performance
by using



exergames



Barbara Chamberlin, PhD

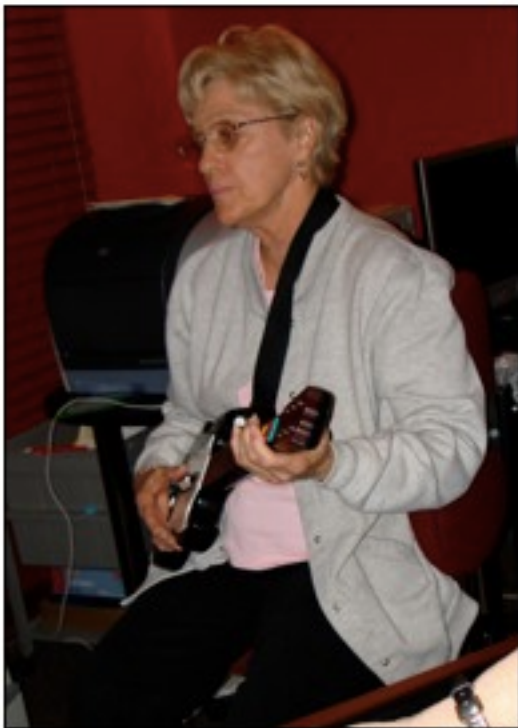
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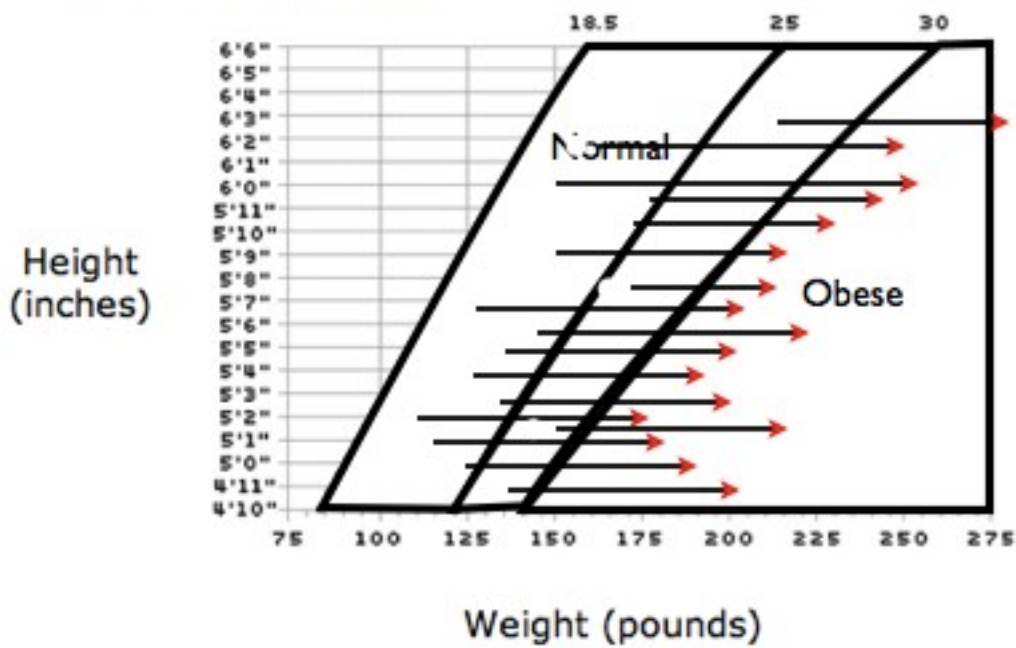


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Body Mass Index Graph



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Kids ages 2-18 need
60 minutes
moderate to vigorous physical activity
every day
adults need **30 minutes**

U.S. Department of Health and Human Services

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attendance scientific inquiry
reading
study skills mathematics
academic performance
writing physical education
health on task time
music

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Physical **Fitness** and **Academics**

- University of Illinois
 - negative correlation between BMI and math scores (Vail, 2006)
- 3rd and 5th grade students (n~259)
 - children who are **physically fit** are more likely to perform well on **standardized exams** (Castelli et al., 2007)

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Physical **Fitness** and **Academics**

- California State Exams (2004)
 - **positive relationship** between **test scores** and **fitness** for men and women (California Department of Education, 2011)
- West Virginia 5th Graders (n>1900)
 - measured BMI, gender, and meal program status, **aerobic capacity** and effects on **standardized exams** (Wittberg et al., 2010)
- Massachusetts K-12 Graders (n~1100)
 - odds of passing state math and English exams improved with **number of fitness exams passed** (Chomitz et al., 2009)

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Active **Video Games** and **Activity**

- **Enjoyment** of intervention (Wollersheim et al., 2010, Trout, 2008)
- Game **exertion is not a deterrent.**
(Haddock, Siegel, & Wilkin, 2010; Shubert, 2010, Sit, Lam, & McKenzie, 2010)
- **Attendance and participation** is increased (Warburton et al., 2007)
- **Perceived exertion** is lower (Wittman, 2010)

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Active **Video Games** and **Activity**

- Many games increase energy expenditure from **sedentary or light to moderate levels**, but not to vigorous levels

(Biddiss & Irwin, 2010; Graves, Stratton, Ridgers, & Cable, 2008)

- Games requiring **upper and lower limb movements**, offer the opportunity to achieve **vigorous** physical activity levels

(Siegel, Haddock, Dubois, & Wilkin, 2009; Warburton et al., 2007, Biddiss & Irwin, 2010; Trout & Christie, 2007)

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Classroom **Activity**

- “Energizers”
 - had a positive effect on **physical activity levels** and **on task classroom behavior**
(Mahar et al, 2006)
- Take 10! Activity
 - physical activity **integrated with the academic curriculum**, could promote meaningful **energy expenditure** among school-aged children (Stewart et al., 2004)

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Classroom **Exergames**

- Vern Patrick Elementary, Oregon
 - Exergaming kids had **fewer absences, increased leisure reading, decreased negative behaviors, additional skills** (Shasek, 2009)
- 4-week program in California
 - improved **attendance**, improved **math scores** (Young et al., 2007)

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Ten 3-minute bouts
= 30 minutes

*with the same beneficial outcomes as
one 30-minute activity*

(McKay et al., 2005; Miyashita, Burns, & Stensel, 2006, 2008; Strong et al., 2005).

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let's

do the math

60 minutes/day, 5 days/week = **300 minutes needed**

physical education = **40** minutes/week

recess = **70** minutes/week

20 daily minutes at home = **100** minutes/week

walk to school 2x/week = **40** minutes/week

classroom: 10 minutes/day = **50** minutes/week

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What exactly are

(another term for
"exergames")

active
video games

and

how

can

I use them?

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active video games

require physical activity to play

Wii

PlayStation
Move

xBox
Kinect

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It's time to play

active video games

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Wii Package- ~\$430

- **Standard Wii Bundle- \$199.99**
 - Includes
 - **Wii console**
 - *Wii Sports* or *Wii Sports Resort* **game**, **Wiimote** controller, **Nunchuk** controller
- **Additional 3 Wiimotes - \$113.97**
- **Charging Station** and rechargeable batteries - \$23.43
- **Additional Nunchuck - \$19.95**
- **Additional Games**
 - *Just Dance 2* - \$34.99
 - *Zumba Fitness*- \$39.99



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PlayStation3 Move Package - ~\$495

- Bundle includes **PlayStation 3 Console**, DualShock 3 wireless controller, PlayStation **Move motion controller**, PlayStation **Eye camera** and *Sports Champions* Blu-ray game
- **Additional Move motion controller - \$49.99**
- **Quad Charger - \$16.00**
- **PS3 Move Game Racquet Sports Game - \$29.96**



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Xbox 360 Kinect - ~\$385

- 4GB Bundle includes **xBox console**, wireless controller, **Kinect** sensor, *Kinect Adventures Game*- \$299.99
- Zumba Fitness - \$43.40
- Dance Central - \$39.99



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Now, let's make sense of all this...

think about...

- 1 **how** would you use it?
- 2 what would you **need**?
- 3 what are your **goals**?
- 4 how will you know if you are **successful**?

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