

## Even Active Video Games Not Good Enough For Kids' Fitness

By Todd Neale, Staff Writer, MedPage Today

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LIVERPOOL, England, Dec. 20 - Microsoft's Project Gotham Racing 3 for XBOX 360 can't hold a candle in fitness for teens to bowling, tennis, or boxing on Nintendo's Wii Sports, researchers found here.

But neither compared with fitness gains from playing live sports, reported Gareth Stratton, Ph.D., of Liverpool John Moores University, and colleagues in the Dec. 22 issue of BMJ.

The bottom line was that video games that get children up and moving help burn at least 51% more calories than do more idle games, but the difference is largely meaningless and the comparison was essentially moot.

"Predicted energy expenditure was greater during active gaming than during sedentary gaming," said Stratton and colleagues. This annual end-of-year issue of BMJ is eagerly awaited for its off-beat and humorous, albeit legitimate, research results.

In their comparison of active and idle gaming, the investigators wrote that "this equates to an increase in energy expenditure of 250 kJ (60 kcal) an hour during active gaming compared with sedentary gaming. In a typical week ... active gaming rather than passive gaming would increase total energy expenditure by less than 2%," they wrote. "Although this figure is trivial, it might contribute to weight management."

It is recommended that children under 18 get at least an hour a day of moderate to vigorous exercise, a goal many do not meet. It can be difficult to stop children from playing video games, and getting them to play livelier ones may be useful in increasing physical activity, the researchers said.

Eleven teenagers (six boys and five girls) ages 13 to 15 were selected for the study. They were all physically fit, with the girls regularly playing netball -- a non-contact sport similar to basketball -- or field hockey and the boys regularly playing rugby or soccer. Their mean BMI was 21.2 kg/m<sup>2</sup>.

After having their resting energy expenditure measured (mean, 81.3 kJ/kg/min), each participant played 15 minutes of a sedentary video game (Project Gotham Racing 3 for XBOX 360) followed by 15 minutes each of bowling, tennis, and boxing on Wii Sports, with a five minute break between each game.

Energy expenditure was measured using the IDEEA (intelligence for energy expenditure and activity) system, which measures type and intensity of physical activity using five sensors placed around the body.

Playing all four of the games significantly ( $P=0.001$ ) increased the amount of energy burned compared with resting levels, but the active Wii Sports games used the most:

For Project Gotham Racing 3, the mean energy expenditure was 125.5 kJ/kg/min. For Wii Sports bowling, it was 190.6 kJ/kg/min. For Wii Sports boxing, it was 198.1 kJ/kg/min.

For Wii Sports tennis, it was 202.5 kJ/kg/min.

The boys burned significantly more energy than the girls only during tennis (222.2 versus 178.9 kJ/kg/min,  $P=0.013$ ), which may "indicate enhanced

interactive effects of active gaming in boys and additional advantages in terms of energy expenditure," the researchers wrote.

Dr. Stratton and colleagues pointed out that more energy is consumed when playing the actual sports simulated in the Wii Sports games, and that the exercise during video game play "was not of high enough intensity to contribute towards the recommended daily amount of exercise in children."

"Nevertheless, new generation computer games stimulated positive activity behaviors," they concluded. "Given the current prevalence of childhood overweight and obesity, such positive behaviors should be encouraged."

Primary source: BMJ Source reference: Graves L, et al "Energy expenditure in adolescents playing new generation computer games" BMJ 2007; 335: 1282-84.

[Additional Exercise & Fitness Coverage](#)

This study was funded by Cake, the marketing arm of Nintendo U.K. The authors did not declare any competing fin

### Some Questions to Ask and Answer:

- 1) What is the research question this paper is trying to answer?
- 2) What is their answer to the research question?
- 3) What were the methods they used to collect data?
- 4) Is the conclusion appropriate for the methods used to collect data?
- 5) To what population do the conclusions apply?
- 6) Have the results been replicated (that is, reproduced) in other articles? Are the results consistent with what other researchers have suggested?

[source: Gould & Ryan, Introductory Statistics: Exploring the World Through Data. Available January 2012, Pearson.]

## Aspirin Helps in Reducing Cancer Deaths, a Study Finds

By RONI CARYN RABIN (New York Times, December 7, 2010)

Many Americans take aspirin to lower their risk of heart disease, but a new study suggests a remarkable added benefit, reporting that patients who took aspirin regularly for a period of several years were 21 percent less likely decades later to die of solid **tumor** cancers, including cancers of the stomach, esophagus and lung.

As part of the new **study**, published online Monday in the journal *Lancet*, researchers examined the **cancer** death rates of 25,570 patients who had participated in eight different randomized controlled trials of aspirin that ended up to 20 years earlier.

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But even as some experts hailed the new study as a breakthrough, others urged caution, warning people not to start a regimen of aspirin without first consulting a doctor about the potential risks, including **gastrointestinal bleeding** and bleeding in the brain (hemorrhagic strokes).

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While Dr. Jacobs said the study design was valid, relatively few women were included in the trials, making it difficult to generalize the results to women.

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The findings do not come entirely as a surprise, Dr. Rothwell said, because aspirin has been found to slow or prevent the growth of tumor cell lines in the laboratory. Observational studies have reported that people who took aspirin were at lower risk for colorectal cancer recurrences, while other studies have pointed to similar reductions in cancers of the lung, stomach and esophagus.

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There are several ways in which aspirin may work to slow the development of cancers, experts say. Inflammation may play a role in cancer, and aspirin blocks the synthesis of prostaglandins, which are mediators of inflammation, and may affect early tumor promotion.

## Resources

### Internet

**American Statistical Association:** <http://www.amstat.org/education>

**CAUSE:** <http://www.causeweb.org>

**Chance News:** [http://www.causeweb.org/wiki/chance//index.php/Main\\_Page](http://www.causeweb.org/wiki/chance//index.php/Main_Page)

**Correlation or Causation?:**

[http://jonathan.mueller.faculty.noctrl.edu/100/correlation\\_or\\_causation.htm](http://jonathan.mueller.faculty.noctrl.edu/100/correlation_or_causation.htm)

**GAISE College Report:** <http://www.amstat.org/education/gaise/index.cfm>

**Statistical Literacy:** <http://www.statlit.org/StatLit2009.htm>

### Continuing Education

**INSPIRE** (register by Jan 4). <http://inspire.stat.ucla.edu>

**Open Learning Initiative: Causal and Statistical Reasoning:**

<http://oli.web.cmu.edu/openlearning/forstudents/freecourses/csr>

**CAUSE/AMATYC SCHEMATYC** program. Look for traveling workshops beginning Summer 2011 and online course at [www.causeweb.org](http://www.causeweb.org)

### **Books**

•Berk, R., *Regression Analysis: A Constructive Critique*. (2004), Sage. (Chapter 1)

•Cobb, G. (1999), *Introduction of Design and Analysis of Experiments*. Key College Publishing.

•Freedman, D., Pisani, R., Purves, R., *Statistics*, fourth edition, (2007) Norton & Company. (Particularly Chapters 1,2)

•Freedman, D., (2005) *Statistical Models: Theory and Practice*, Cambridge University Press. (Chapter 1)

•Gould, R. , Ryan, C., *Introductory Statistics: Exploring the World Through Data* (2012), Pearson. (See Chapters 1, 12.)

**Conference: US Conference on Teaching Statistics**, May 19-21, 2011.

[www.causeweb.org/uscots](http://www.causeweb.org/uscots)