

Physical Arcade Games Get Hearts Pumping

BY SHARON WORCESTER
Southeast Bureau

NEW ORLEANS — Video and arcade games that require physical activity can increase heart and metabolic rates enough to elicit a training response, Andrea Brandt reported at the annual meeting of the American College of Sports Medicine.

A training response requires a minimum heart rate increase to 50%-85% of heart rate reserve, and a minimum caloric

expenditure of 150-400 Kcal per day through physical activity, according to guidelines from ACSM.

Ms. Brandt, a student at California State University, San Bernardino, reported her findings in poster at the meeting. In her study of 13 adults with a mean age of 26 years, participants burned an average of 226 gross Kcal per 30-minute game session (for a net expenditure of 184 Kcal) and were able to attain a heart rate well above 60% of calculated heart rate reserve.

The study was conducted at an arcade where participants used games, including 3-Kick, a kick-boxing game in which the player hits or kicks stacked pads on posts as they light up; Jackie Chan Studio Fitness Power Boxing, a game in which the player wears boxing gloves with sensors and is matched against a virtual opponent, and Disney's Cars Piston Cup Race, which involves the use of a stationary bike to propel a car in the video game.

Mean resting VO_2 was 3.74 mL/kg per

min, and mean resting caloric expenditure was 1.39 Kcal/min, compared with 7.54 Kcal/min during exercise. Mean resting heart rate was 82 beats per minute, compared with 163 beats per minute during game playing, which was equal to an average of about 72% of heart rate reserve.

The findings suggest that such games could be recommended as an alternative form of exercise, and could be incorporated into an overall aerobic exercise program, Ms. Brandt concluded. ■

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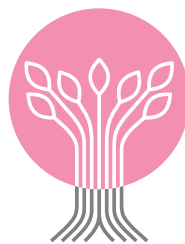
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Doping Is of Little Benefit to Casual Athletes

TORONTO — The short-term use of either growth hormone or testosterone alone does not significantly improve physical performance among recreational athletes, according to research presented in a poster at the annual meeting of the Endocrine Society.

However, the combination did significantly increase sprint capacity in men.

Dr. Ken K.Y. Ho, of the Garvan Institute in Sydney, Australia, and his colleagues conducted a prospective, double-blind, placebo-controlled study looking at the effects of growth hormone and testosterone supplementation among 97 recreational athletes aged 18-40. The mean age of the study participants was 27 years. The researchers defined a recreational athlete as someone who exercised at least 2 hr/wk for at least 1 year.

The study was funded by the World Anti-Doping Agency and the Australian Government Anti-Doping Research Program. The supplements were provided by Novo Nordisk and Organon.

Sixty-four men were randomized to receive either placebo, growth hormone (Norditropin), testosterone (Sustanon), or a combination of growth hormone and testosterone over the 8-week study period. The study also included 33 women who were randomized to receive either placebo or growth hormone.

The level of the hormones given was high, but safe, Dr. Ho said in an interview. Study participants in the growth hormone or combination arms received up to 2 mg/day of growth hormone for 8 weeks. Men in the testosterone or combination arms received 250 mg/wk of testosterone for 5 weeks. The researchers assessed endurance, strength, power, and sprint capacity using a variety of physical tests.

There was no significant change from baseline among any of the treatment groups in terms of endurance, strength, or power. The only significant finding was among men who took a combination of growth hormone and testosterone. In that group, there was a statistically significant increase in sprint capacity, which was calculated using a 30-second cycle Wingate test for anaerobic sprint capacity that measured total work and peak power.

—Mary Ellen Schneider