REFERENCES


Do active video games increase food intake?

Dear Sir:

In the July issue of the Journal, Maddison et al (1) showed that active video games have a small but definite effect on BMI in overweight and obese children. In this 6-mo randomized controlled trial, 322 overweight and obese children, who were current users of sedentary video games, were assigned to receive either an active video game upgrade package (intervention group) or to have no change (control group). The authors observed that the change (±SE) in BMI from baseline increased in the control group (0.34 ± 0.08) but remained practically the same in the intervention group (0.09 ± 0.08). However, no significant treatment effect was shown for the change in average daily time spent in moderate-to-vigorous physical activity measured by an accelerometer (1.65 min; \(P = 0.66\)) or for physical fitness (0.58 mL·kg\(^{-1}\)·min\(^{-1}\); \(P = 0.60\)). In fact, both groups showed a similar small decrease in overall levels of physical activity from baseline to 24 wk.

This trial, the largest of its kind to evaluate the effects of active video games on body weight, suggests that active video games are unlikely to be clinically useful in reducing body weight. This finding is not surprising and agrees with decades of research showing that the effect of any intervention taken in isolation on body weight is expected to be small.

With the use of a randomized crossover design, we recently showed that sedentary video game playing increases food intake in adolescents (2). Interestingly, we reported that the overconsumption of food associated with video game play was observed without increased sensations of hunger and appetite, as previously observed with television viewing (3). However, it is unknown for the moment whether this “eating in the absence of hunger” associated with the practice of seated video games is related more to an impairment in satiety signal capacity or to the mental stress–induced reward system.

Unfortunately, energy intake was not assessed in the study by Maddison et al (1), thereby precluding any overall effect of active gaming on an energy balance standpoint. Thus, significant increases in energy expenditure as a result of active video game play might be of little importance if one compensates by increasing energy intake. This issue is of particular relevance in the field of obesity prevention and management because acute exercise-induced increase in energy expenditure has been reported to be accompanied by compensatory adjustments in energy intake (4). High levels of physical activity are generally associated with a tight coupling between energy intake and expenditure, thereby facilitating the maintenance of energy balance (4). However, the coupling between energy intake and expenditure and, in a broader sense, appetite control in general seems to be disrupted at low levels of physical activity (4). On the basis of the latter observation and previous evidence that seated video games increase food intake (2), it seems realistic to postulate that the increase in energy expenditure promoted by the new generation of active video games is offset by compensatory changes in food intake.

The observation that body weight did not change after this 6-mo active video game intervention strongly suggests that a compensation in food intake occurred. This hypothesis is reinforced by the fact that objectively measured moderate-to-vigorous physical activity did not significantly change over time. Although a compensatory decrease in energy expenditure for the remainder of the day is not completely excluded (eg, via nonexercise activity thermogenesis), the theory of an increase in food intake to maintain energy balance is more probable. Thus, a clinical implication of this new study is to rethink the strategy of promoting active video games as an intervention tool for the prevention of overweight and obesity in children and youth. Future studies aimed at examining the effects of playing active video games on adiposity indicators will need to carefully measure “energy intake” to adequately assess energy balance. Given that a growing proportion of children and adolescents play active video games, we don’t want to convey the wrong message to the population. In the meantime, the “take home” message should be that active video games cannot prevent weight gain, and they definitively do not induce weight loss.

The author did not declare any conflicts of interest.

Jean-Philippe Chaput

Healthy Active Living and Obesity Research Group
Children’s Hospital of Eastern Ontario Research Institute
401 Smyth Road
Ottawa, ON, K1H 8L1
Canada
E-mail: jph Chaput@cheo.on.ca

REFERENCES

doi: 10.3945/ajcn.111.022400.