

*AN EXAMINATION OF CHANGES IN SEDENTARY TIME WITH THE  
INTEGRATION OF TECHNOLOGY FOR CHILDREN PARTICIPATING IN A  
MORNING FITNESS PROGRAM*

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**Abstract:**

Schools have played a large role in providing physical activity opportunities to children for more than a century. However, 21st century health trends show that children have high proportions of sedentary time and are not taking the initiative to be physically active (Anderson & Butcher, 2006a & b; Pate et al., 2006). The promotion of physical activity in schools has been shown to improve the overall health and physical fitness level of children by offering alternative activity times such as before, after, and throughout the school day to increase daily physical activity levels (Pate et al., 2006; Stanford Prevention Research Center, 2007).

Three hundred K-5th grade students from one elementary school in a rural Nebraska town were invited to participate in a cross-sectional study. The investigator used a quantitative method to determine the association between morning physical activity, technology, total daily physical activity, cardiorespiratory fitness, and sedentary behaviors in children. Approximately 232 children participated in the study by wearing an accelerometer for four consecutive days and a strapless heart rate monitor periodically throughout the testing time frame. The Statistical Analysis System (SAS® version 9.1, Cary, N. C.) was used to analyze the data. When a significant omnibus result was obtained for an analysis of variance, the Duncan post hoc analysis was used to examine pairwise mean differences when more than two means were being compared. The level of significance chosen for all statistical analyses was 0.05.

The study analyzed the statistics, discussed relevant themes found from the statistics, related the results to previous research, and presented suggestions for further research. The principal findings indicated no significant difference in total daily sedentary time or moderate to vigorous physical activity time when integrating a morning physical activity program. However, a significant difference did exist between morning activities and total daily sedentary time and physical activity time when analyzing Wii™ Just Dance, Wii™ Dance Dance Revolution, a running/walking program and no physical activity. There was also a significant difference between the morning activities offered and sedentary or moderate to vigorous physical activity during only the morning timeframe of 7:15 a.m.- 8:15 a.m



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decrease sedentary levels  
of children today