Some schools in the Houston area have implemented software in their cafeterias that allows parents to intervene on their children’s food selections in the cafeteria.

A recent study published in the Journal of School Health showed that many parents were not taking advantage of the software; however, Dr. Karen Cullen of the USDA/ARS Children’s Nutrition Research Center
The evidence continues to mount that video games designed to encourage youngsters to eat more fruits and vegetables may be having a positive impact.

A recent study by researchers at the USDA/ARS Children’s Nutrition Research Center at Baylor College of Medicine showed that youngsters who played two video games designed to impact health behaviors did in fact increase their fruit and vegetable intake. The results appeared in the American Journal of Preventive Medicine.

The study was the fourth in a series of studies that have examined the impact that video games can have on children’s diet and other health behaviors.

“Most behavior-changing programs aren’t having an effect and those that do have only a small effect,” said CNRC researcher Dr. Tom Baranowski, lead author of the study and professor of pediatrics at BCM. “Frankly, existing interventions are boring to kids so we’ve got to find better ways of reaching children using a medium they enjoy.

“Since more money is spent in the U.S. on video games than on movies, video games seem like a very promising kind of vehicle to bring about behavior change,” he said.

The most recent study included 150 children ages 10 to 12. Children assigned to the treatment group played two video games—“Escape from Diab” and “Nanoswarm: Invasion from Inner Space” for nine 40-minute sessions. Those in the control group visited websites that offered educational information and activities, including video games. However, Baranowski emphasized these games were knowledge based, not behavior-change based.

“Diab” and “Nanoswarm” are both commercial-quality video games that incorporate a broad diversity of behavior change procedures woven in and around engrossing stories.

The results were measured using two different methods—one that showed the children in the treatment group increased their fruit and vegetable intake by a whole serving per day and another that showed an increase of two-thirds of a serving of fruits and vegetables per day.

This study also sought to determine if the video games had any impact on the children’s physical activity levels, water consumption and amount of television they watched each day. Again, two different methods were used as measure—one showed an increase of 7 minutes per day in physical activity while the other showed no change. There were no changes in any of the other behaviors.

The next steps in the video game research include conducting a similar study but in a larger group of children as well as developing video games and phone apps geared toward parents.

“Our thinking here is that rather than focus on kids alone, let’s focus on the parents too. So we’re developing a game for parents to train them in more effective vegetable parenting practices,” said Janice Baranowski, assistant professor of pediatrics at BCM and co-author of the study.

The study was funded by the National Institute of Diabetes and Digestion and Kidney Diseases. Others involved in the research include Debbi Thompson and Noemi Islam, of the CNRC; Melissa Juliano Griffith and Kathleen Watson, formerly with the CNRC; Nga Nguyen, of the M.D. Anderson Cancer Center; Richard Buday, of Archimage Inc.; and Russ Jago of the University of Bristol United Kingdom.

Because the risk for obesity is higher in children from low-income families, only schools that served mostly low-income families were able to take part in the study.

Researchers established a route for the students to get to school and staff members walked the children to and from school for up to five days a week. Children and their parents chose how often they would walk to school as opposed to riding in a car or bus.

Baseline data were collected on all students, including socio-demographic information, how far they lived from school and their regular method of transportation to school. To measure physical activity, students wore accelerometers, devices similar to pedometers, that measure physical activity for up to seven days.

Researchers collected follow-up data four to five weeks after the program began. At the baseline, 24 percent of children in the intervention group walked or biked to school, whereas 40 percent in the control group walked or biked to school. At the follow-up, researchers found that 54 percent of students in the intervention group walked or biked to school.
Through her research using animal models, Davis has found that after a meal, the rise of amino acids, the building blocks of protein, and the hormone insulin in the blood stimulates the synthesis or making of protein, particularly in skeletal muscle. This ability for insulin and amino acids to stimulate protein synthesis is heightened in an infant and decreases with age. Davis and colleagues have identified components in the intracellular signaling pathways, the pathways by which information is communicated from one cellular structure to another, that result in protein synthesis in the muscle. They have also found that the activity of these signaling components is altered by the rise in amino acids and insulin after a meal.

Davis’ research applies to many low birth weight infants, for whom providing enough protein to meet their requirements for growth can often be a challenge. She has researched how the level of protein in baby formula affects the growth of muscle and the mechanisms that regulate the growth. The consumption of formula moderately low in protein reduces the growth of muscle and other tissues in the body because it reduces the activity of the signaling pathway that regulates protein synthesis.

Recently, in a paper published in the Journal of Nutrition (http://jn.nutrition.org/content/140/12/2145abstract?sid=78b5d ddc-9f3f-49e4-9661-fd9ae073a288) Davis and colleagues showed that the activity of the signaling pathway can be enhanced by supplementing a low protein diet with a single amino acid called leucine. Amino acids are the building blocks of protein, and in this case, leucine increases the synthesis of proteins in muscle and other tissues in the body. Supplementation with leucine can potentially be used to help manage the nutrition of infants who are unable to tolerate full formula feeding.

“Anything we can do to improve the growth trajectory is important,” said Davis.

She continues her work to improve strategies for the nutritional management of infants and children by examining the impact of different feeding methods on protein synthesis and growth of muscle in infants. Her lab is also looking at the effectiveness of a novel functional amino acid supplement to improve protein accumulation.

Davis was recently elected vice president of the American Society for Nutrition. The ASN is the world’s premiere nutrition organization dedicated to bringing together outstanding researchers, clinical nutritionists and industry to advance our knowledge and application of nutrition. She will serve as president in 2012-2013. Davis has worked with ASN to advance the careers of young nutrition scientists throughout the world. ASN provides numerous career activities for graduate students and postdocs including leadership opportunities, career resources, awards and travel grants and networking opportunities.
SCHOOLS USE SOFTWARE TO GIVE PARENTS POWER (continued from page 1)

at Baylor College of Medicine suggests it could provide a learning opportunity for school children.

“Parents can use this as an opportunity to talk with their children about healthy lunch choices,” said Cullen, one of the authors of the study. “Parents could use this as a teaching tool and encourage children to select the reimbursable meal, and discourage them from purchasing extra food items.”

The point-of-sale software systems were designed for many different uses, Cullen said, including keeping track of students’ food allergies and setting spending limitations for kids.

Parents can also set food restrictions, such as specifying that their children cannot purchase chips or ice cream.

Cullen said that when parents use the POS system to place restrictions on what their children may buy in the lunchroom, they should take the opportunity to talk to their children directly as well.

For example, they can use it as a chance to talk about the new USDA MyPlate food guide that emphasizes fruit, vegetable, grains, protein and dairy food groups.

Some school districts, said Cullen, let parents go online to see exactly what their child is purchasing in the cafeteria, depending on the software the school has implemented in its cafeteria.

Different schools use various types of POS software in their cafeterias, so parents are encouraged to find out what capabilities their school provides in order to efficiently use the service.

Others involved in this research include Emily Andrepont of Cypress-Fairbanks ISD and Dr. Wendell Taylor of University of Texas School of Public Health.