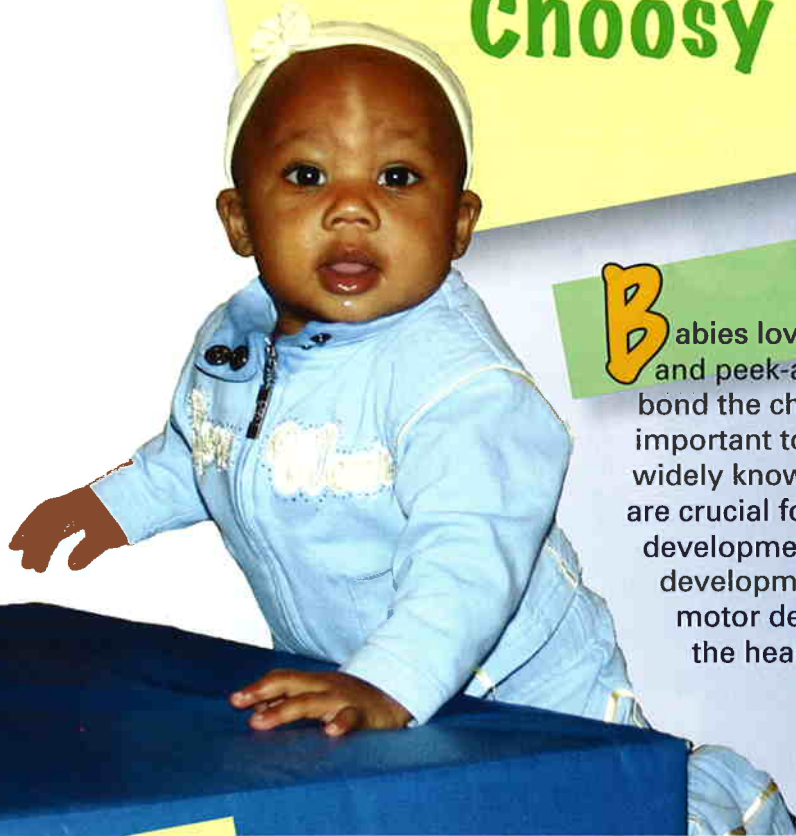


Developing Healthy, Choosy Children



Babies love to smile, coo, and play patty cake and peek-a-boo. These games are fun and help bond the child and the caregiver. They also are important to a child's early development. It is widely known that the early years of a child's life are crucial for cognitive, social, and emotional development. What is not factored into this developmental equation is the importance of motor development and its lifelong effect on the health and wellness of children.

The Problem with Kids These Days ...

Obesity has increased at an alarming rate over the past two decades in the United States, and is now considered to be at epidemic proportions in both adults and children.

The American Obesity Association reports that the number of adults and children who are overweight or obese has continued to increase.

Currently, 64.5 percent of US adults, age 20 years and older, are overweight, and 30.5 percent are obese. Among our children, approximately 30.3 percent of children (ages 6 to 11) are overweight, while 15.3 percent are obese. For adolescents (ages 12 to 19), 30.4 percent are overweight, and 15.5 percent are obese.

In West Virginia, the trend is even more disturbing. West Virginia ranks among the top three states in the nation in levels of obesity over the past three years. According to the West Virginia Bureau for Public Health, over 60 percent of West Virginia citizens are overweight. Approximately 30 percent are obese. West Virginia has the highest incidence of childhood obesity in the country for children under the age of nine.

These increasing rates raise concerns because of their health implications. Being overweight or obese increases the risk of many diseases and health conditions, including hypertension, Type-2 diabetes, coronary heart disease, stroke, osteoarthritis, sleep apnea and respiratory problems, and elevated cholesterol levels.

Dr. Linda Carson, the Ware Distinguished Professor in the WVU School of Physical Education and director of the West Virginia Motor Development Center, has been a faculty member for 25 years. Recognized for designing innovative children's programs with a focus on healthy living and active learning, Dr. Carson understands the importance of motor development in children. She has developed physical activity programs for infants, babies, toddlers, and preschool and elementary age children (and their parents/caregivers) in both land-based and water-based learning environments.

Ask her how she has gone about her teaching and research, and she will readily tell you that she has devoted her career to acquiring knowledge from children—knowledge she then passes on to parents, caregivers, and WVU students. She puts this knowledge to work as she creates and develops programs that educate, encourage, and demonstrate ways for children, and adults, to make



West Virginia Motor Development Center

Developing Children by Choice, Not by Chance

It is all about having choices. Having options is motivating and empowering, for adults and children alike. When children are very small, adults make their decisions for them. As children move into elementary school they begin making their own choices: critical decisions about making friends, using drugs, alcohol, and tobacco, good nutrition, and physical activity.

The West Virginia Motor Development Center (WVMDC) was developed by Dr. Carson as a way to improve the lives of West Virginians. The mission of the Center is to serve as a state resource center that promotes appropriate

movement experiences for skill acquisition and physical performance for individuals of all ages and abilities, including developmental disabilities.

From its humble beginnings as an elective, lecture-lab course in the School of Physical Education in 1981, to its establishment as a Center in 1994, to its current success and impact on every school in the state, WVMDC programs are a model for enhancing the daily health and well-being of children and their families.



changes in height and weight. Members of the Choosy Kids Club learn how their participation in vigorous physical activity affects their well-being. The children can choose from rope jumping, in-line skating, power walks, games and activities, and equipment such as rowers and bikes.

Who Is Choosy?

The signature feature of Dr. Carson's play programs is a character named Choosy. Choosy, an ambassador for healthy children and families, is a role model who promotes healthy decision-making by children and adults in the fight to help prevent childhood obesity. Choosy's name is tied to his behavior: Choose Healthy Options Often and Start Young. His message is simple—be choosy, be healthy!

Very particular about nutrition, physical activity, and remaining tobacco and drug free, Choosy sets a good example.

Through songs, activities, and resource materials, Choosy helps to reinforce healthy

messages and behaviors. Dr. Carson and Choosy Kids have trained the staff of Head Start, corporate wellness sites,

health clubs, child care centers, public health agencies, recreation departments, physical therapy clinics, and public schools throughout West Virginia.



Current Initiatives

West Virginia Games for Health

What began with a walk through a shopping mall in 2004 has resulted in an initiative to incorporate the total-body video game *Dance Dance Revolution* (DDR) into all 765 West Virginia public schools by 2008. Sound like something is lost in the translation here? Well, it's not.

Linda Carson's first introduction to DDR occurred when she noticed children waiting in line to play it in a mall arcade. "There were many other games in this arcade, but this one required them to move their bodies," says Dr. Carson, "They were sweating, they were drinking water. It was the light bulb moment for me." After contact with West Virginia Public Employees Insurance Agency (PEIA), the Games for Health pilot project began to take shape.

Dr. Carson and Emily Murphy, a research instructor in the WVU School of Medicine Department of Pediatrics, led an interdisciplinary research team that studied the health benefits of playing DDR for overweight children in West Virginia.

Based on the success and initial findings of the pilot project, a second program was proposed. The second stage incorporated DDR into the physical education programs of 20 West Virginia schools. This attracted national and international media attention and support and funding from Konami Digital Entertainment, PEIA, Mountain State

WVMDC Programs

Skills and Splash Programs (Four Months to Five Years of Age)

These gym-based (Skills) and water-based (Splash) programs focus on body movement, management, action, and fun in different environments. Children and parents or caregivers take the classes together, with WVU students participating as helpers for the adults. All of the programs serve as instructional laboratories for WVU students in a variety of disciplines, including early childhood, child development, physical education, recreation, physical therapy, and special education. The Skills and Splash programs also tap the knowledge of electrical and mechanical engineering students in the design and development of play equipment that is used for research and program enhancement.

Choosy Kids Club (Six to Eleven Years of Age)

With an emphasis on promoting healthy, active lifestyles, children in the Choosy Kids Club learn a variety of strength development activities and are encouraged to make choices about being active and eating nutritious foods. The children are guided by WVU students who serve as their personal trainers, and the children and students

Governor's Office, the West Virginia Department of Education, and the Claude Worthington Benedum Foundation. But that is not where this story ends.

As of November 2006, physical education teachers from 127 middle and high schools have been provided DDR equipment for their schools and taught how to use it. By 2008, DDR programs will be in place and implemented in all 765 public schools in West Virginia. Each school is encouraged to form a DDR Club and to make the gaming system available before or after school, in addition to during health or physical education class times. It's envisioned that DDR Clubs will compete in county, regional, and state competitions. Kids of all abilities and athletics levels, from the soccer team member to the chess club member, are on a level playing field. They have fun while improving their health.



Games for Health

The Study

- The participants were 85 children between seven and twelve years old
- Most subjects reported low levels of physical activity and eating a high-fat diet
- Variables studied included insulin and glucose levels and aerobic fitness
- Subjects were randomly assigned to either an exercise group or a delayed-treatment control group

Preliminary Results

- After twelve weeks, those playing *Dance Dance Revolution* showed increased fitness
- Participants showed improved self-esteem, better coordination, and were more willing to perform other physical activities
- Many subjects' parents and siblings also began to play

Future Plans

- Train physical education teachers about the benefits of DDR
- Introduce the game into school physical education programs
- Host *Dance Dance Revolution* competitions

I Am Moving, I Am Learning

In October 2006, Dr. Carson was recognized with the National Honor Award from the US Department of Health and Human Services for her leadership in an obesity prevention project for the National Office of Head Start. Known as "I Am Moving, I Am Learning," the initiative is a comprehensive health promotion and obesity prevention enhancement for Head Start children, parents, and staff. The goals of "I Am Moving, I Am Learning" are:

- Increase the quantity of time spent in moderate to vigorous physical activity during daily routines to meet national guidelines for physical activity
- Improve the quality of structured movement experiences intentionally facilitated by teachers and adults
- Improve healthy nutrition choices for children every day

Piloted in West Virginia and five other mid-Atlantic states, the initiative is being expanded in 2007.

Linda Carson, Ware Distinguished Professor of Physical Education and Director, WVMDC
304-293-3295
LindaCarson@mail.wvu.edu
Emily Murphy, Pediatrics Research Instructor,
WVU School of Medicine
304-293-4451
EMurphy@hsc.wvu.edu

Related Web sites:

WVU School of Physical Education: <http://www.wvu.edu/~physed/>
West Virginia Motor Development Center (WVMDC): <http://www.bechoosy.org>
Choosy Kids Club: <http://www.choosykids.com>
American Obesity Association: <http://www.obesity.org>
West Virginia Bureau of Public Health: <http://wvdhr.org/bhp/>
Kansas State University: <http://www.k-state.edu/~kshd/>



Linda Carson (left) and Amy Requa (center), Region III Health Start, were part of a national childhood obesity-prevention team presented with the Administration for Children and Families (ACF) Assistant Secretary's 2006 Partnering for HHS Excellence Award. Carson and Requa accepted their award from Dr. Wade Horn, assistant secretary of the ACF. The award recognizes the work of partnerships to advance the goals and mission of the Department of Health and Human Services and ACF.