



Tipping the Scales

The United States has an obesity epidemic, and the impact is expanding.

According to the Robert Wood Johnson Foundation, approximately 40 percent of American adults are obese. That struggle comes with increased risks for a host of illnesses, and even with a \$3 billion diet industry, the price tag of obesity-related medical care weighs in at \$147 billion to \$210 billion annually.

How do we address this thorny issue that can lead to lifelong health problems, reduced work capacity, and even death?

“Evidence shows it’s hard to alter obesity once it exists,” says Human Development and Family Studies Professor Esther Leerkes. So how do we intervene before the scales tip too far?

Much of existing research focuses on preschool-aged children and older, but that,

Leerkes says, may be too late. Almost 40 percent of American children between the ages of 2 and 5

are already overweight or obese, explains Nutrition’s Dr. Lenka Shriver. By their teenage years, they can develop hypertension and insulin resistance, increasing their heart disease and diabetes risks.

For some people, the foundation for weight gain could be laid even before birth.

That’s why a group of UNCG researchers, with a \$2.8 million grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, are launching a study that will follow mothers and their children from the third trimester of pregnancy to age two.

The project is among the first to simultaneously examine the biological, psychological, and social factors that could raise obesity risk, from infancy through toddlerhood, says Leerkes’ departmental colleague Dr. Susan Calkins. A multidisciplinary collaboration of researchers from the Departments of Human Development and Family Studies, Kinesiology, and Nutrition made the complex study possible.

The investigators will recruit 300 families from prenatal classes, obstetric-gynecologist offices, and breastfeeding classes. Undergraduate and graduate students will conduct five two-hour observational visits — prenatal and then at 2, 6, 12, and 24 months — to gather a wealth of biological and behavioral data.

Researchers will collect blood samples from mothers, and saliva and urine from children to analyze which biomarkers can impact a child’s obesity risk. They’ll also measure whether pregnant mothers’ hormone levels, such as leptin and adiponectin, impact children’s hormone levels after birth. These hormones influence metabolism, explains Kinesiology’s

Dr. Laurie Wideman, and play a role in the inflammation that increases our long-term risk for cardiovascular disease. “Currently, we don’t know how early that inflammation begins.”

The team will examine parent-child feeding behaviors, such as whether parents offer food to soothe a distressed child. And they’ll assess development of the children’s self-regulation abilities. “Early self-regulation skills,” says Calkins, “influence how well a child can control their impulses to overeat, eat unhealthy foods, or eat when they are upset.”

The ultimate goal, Leerkes says, is to put children on the right track for healthy weight, right from the start.

“We’re all hoping our findings will influence interventions in the future,” she says. “We’re hopeful the knowledge will be useful to pediatricians, nurses, child development specialists, parents, and educators.”

By Whitney J. Palmer • [Learn more at *igrow.uncg.edu*](#)

The iGrow team’s combined expertise in parenting, child health, and nutrition research was critical to securing NIH funding, says Calkins. Cheryl Buehler, Susan Calkins, Esther Leerkes, Lenka Shriver, and Laurie Wideman lead the ambitious study.

