

Nutrition and Your Child/No.2, 2007

Children's Nutrition Res. Ctr. - Baylor College of Medicine, Houston, TX

“Sleep Patterns and Obesity”

Obesity is a major health concern today. A simple explanation for weight gain is excess calories and too little physical activity; however researchers are examining additional factors to help explain the dramatic increase in obesity throughout the world.

Drs. Molly Bray and Martin Young at the USDA/ARS Children's Nutrition Research Center are exploring the role of the circadian clock in the development of obesity. Circadian clocks are defined as fundamental molecular mechanisms that help condition the organism to environmental changes that occur throughout the day.

Biological rhythms, such as sleep/wake cycles, are a central part of all aspects of life. Recent reports suggest that disruptions in sleep patterns, often linked to today's 24-7 lifestyle, are associated with more body fat and altered metabolism. Abnormal sleep/wake patterns may change the intracellular circadian clocks that allow the cell/tissue/organism to anticipate diurnal variations in its environment, such as circulating levels of nutrients (e.g. glucose, fatty acids and triglycerides) and various hormones (e.g. insulin).

Their research of the potential role of the circadian clock in obesity was published in the March 2007 issue of *Obesity Reviews* and is available at www.kidsnutrition.org/faculty/bray2.htm . Although their research focused on mechanisms at the cellular level, they are optimistic that the circadian clock mechanism within fat cells may be a new field of study to help understand the increasing prevalence of obesity, as well as the timing of obesity therapies. Dr Bray adds, “The consistent sleep schedule recommended for young children may not only influence attention and fatigue but may also be optimal for maintaining coordinated circadian rhythms within fat cells.”

For original newsletter: http://www.kidsnutrition.org/images/pdfs_nyc/2007/vol2.pdf