

# Genetics And Obesity

Prader-Willi Syndrome (PWS) is recognized as the most common genetic cause of life threatening obesity, affecting one in 10,000-15,000 children.

Children's Mercy researchers Merlin Butler, MD, PhD, and Doug Bittel, PhD, are leading research to unlock the mystery of PWS and ultimately develop strategies to treat its symptoms including obsessive compulsivity, self-injurious behavior, insatiable appetite and metabolic abnormalities.

The genetic source of PWS has been traced to chromosome 15. Specifically, chromosome 15q11 -q13 region is known to contain imprinted DNA sequences that are differentially expressed, depending on the parent of origin. For example, three GABA-A receptor subunit genes are located here and studies are underway to determine their expression pattern. In PWS patients these receptor genes are either deleted or under-expressed. In collaboration with Children's Mercy colleagues and fellow researchers at Kansas University Medical Center, Drs. Butler and Bittel are focused on the expression status of GABA-A receptor subunit genes as well as other genes in Prader-Willi patients.

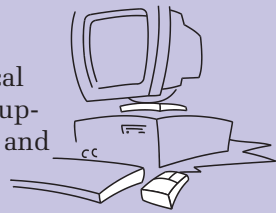
"If we can understand the role of GABA and the expression of other genes such as ghrelin, this may open the door to understanding obesity and obsessive compulsive disorder in PWS and other syndromes that share similar symptoms," says Dr. Butler.



Research by Merlin Butler, MD, PhD, and Doug Bittel, PhD, holds promise for unlocking the mystery of Prader-Willi Syndrome.

## Online Newsletters

Genetics, Pharmacy, Adolescent Medicine, Laboratory and Clinical Pharmacology newsletters are available on-line to keep physicians up-to-date on current news and departmental changes. Several patient and family newsletters are also available at [www.childrens-mercy.org](http://www.childrens-mercy.org).



Visit the Children's Mercy Web site: [www.childrens-mercy.org](http://www.childrens-mercy.org)

# Physician's Update

April 2004

## Success Treating A Weighty Issue

Almost every teenage girl has concerns about her appearance. But for Jessica, 16, excessive weight gain and an elevated insulin level became a cause for real concern.

Working with her primary care physician, Sharon Wilkerson, MD, Jessica made dietary changes and began exercising regularly. During the past year, she has lost 20 pounds and is feeling much better about her health and her appearance.

Jessica's situation is not unusual, but her success is. More than 40% of the children seen in the primary care and teen clinics at Children's Mercy are overweight or obese.

The Children's Mercy Hospital Body Shop program was started specifically to address healthy eating and lifestyle habits in children.

The 10-week program for parents and children involves four components: Nutrition, Physical Activity, Parent Counseling & Support, and Child Counseling & Support.

"This is not a diet program," says Karen Stephens, dietitian and Body Shop coordinator. "This is a lifestyle program. We focus on healthier eating, increased activity, and a positive attitude towards food."

Changing a lifestyle is much harder, but ultimately much more effective, than trying the latest diet fad. While many parents are aware there is a problem, some think they can handle it on their own while others simply don't want to talk about it.

"This is not an issue that should be swept under the rug," says Sarah Hampl, MD, a Children's Mercy advocate for pediatric obesity issues. "It is an issue that needs to be dealt with. If you're seeing signs at age 4 or 5, don't wait until they are 15 or 16 to do something."

The American Academy of Pediatrics recommends pediatricians plot body mass index (BMI) once a year in all children and adolescents and track patients at risk by virtue of family history, birth weight and other factors. The AAP also encourages physicians to promote healthy eating patterns and physical activity.

While prevention is the best solution, programs such as the Body Shop are available to provide assistance.

"If a family completes the program, I'm convinced they will be better off," says Stephens. "They will have made positive health changes."

For more information about the Body Shop or childhood obesity initiatives, contact the Nutrition Department at (816) 234-3498.



Physician's Update is produced monthly by Community Relations and Physician Services. For more information, contact Shawn Arni, (816) 346-1371 or e-mail to [sarni@cmh.edu](mailto:sarni@cmh.edu).

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## News Briefs

### Kudos and Congrats

**Karen Cox, RN, PhD**, vice president of Patient Care Services, and **Angie Knackstedt, RN**, were named "Heroes in Healthcare" in the February issue of Ingram's magazine. The feature highlighted "unsung healthcare heroes" who work in Kansas City hospitals in administration, professional services, nursing, auxiliary staff and as volunteers.

**George Gittes, MD**, the Thomas M. Holder/Keith W. Ashcraft Chair for Surgical Research, has been elected president-elect of the Society of University Surgeons.

### Cultural Resource Guides

The revised Cultural Resource Guide, highlighted in the November 2003 issue of *Physician's Update*, is now available. The guide was compiled to serve as a reference when dealing with families from other cultures. If you did not receive a copy in the mail, please contact Physician Services at (816) 234-1641.

### Correction

In our March issue, we incorrectly listed **Frank Morello, MD**, as the new section chief of Radiology. Dr. Morello is the new Pediatric Radiology Department Chair.

### Inside Out: Building A Better You

On Saturday, April 17, Children's Mercy's Family Health Partners will host Inside Out: Building a Better You from 9 to 11 a.m. at the Brush Creek Community Center, 3801 Emanuel Cleaver II Boulevard, Kansas City.

This family event, designed to promote fitness and nutrition as a way to combat childhood obesity, will include an exercise session for children and a class for parents on cooking healthy meals on a budget. Various community organizations have been invited to display and distribute information on fitness and nutrition. For more information about Inside Out, call Tyra Miller, FHP's Community Relations manager, at (816) 855-1810.

### New Look

This is the second issue the redesigned *Physician's Update*. As part of our efforts to continually improve, we have listened to your comments and implemented a few changes. While much of the content remains the same, we have tried to shorten articles and upgrade photography. We have also changed the layout to be consistent with the Children's Mercy graphic standards. Watch the May issue for our annual reader survey. We appreciate your comments and suggestions.

## A Primary Care Approach To Obesity

**T**he American Academy of Pediatrics calls childhood obesity the most frequent problem among today's children.

In the General Pediatrics and Adolescent Medicine clinics at Children's Mercy, more than 40% of children and adolescents seen are either overweight or obese. The epidemic of childhood obesity shows no signs of slowing, and few prevention or intervention methods have proven long-term efficacy.

So what can pediatricians do? One of the fundamental aspects of caring for these children is to develop competency in correct diagnosis and management. A second priority is to recognize and accept the role we play in influencing patients and families.

Longitudinal studies have shown that overweight children, especially adolescents, are very likely to maintain their overweight into adulthood. Therefore, it is crucial to diagnose overweight and obesity early. The Expert Committee Recommendations for Obesity Evaluation and Treatment suggest that treatment can begin as early as the age of 2.

Screening for medical and psychosocial co-morbidities is another important aspect

of obesity management. Sixty percent of obese children have one co-morbidity, and at least 25 percent of these children have two or more complications.

In 2003, a local group of pediatricians and other child health professionals compiled "Best Practices in the Diagnosis and Treatment of Childhood Obesity" to assist area primary care providers in detecting these co-morbidities and managing this challenging and chronic condition. You may request a copy by e-mailing [shampl@cmh.edu](mailto:shampl@cmh.edu) or calling the childhood obesity resource line at (816) 983-6908.

Pediatricians have abundant opportunities to advocate for healthy nutrition and physical activity policies via local and state legislation, school districts and community youth organizations. The AAP has released two excellent policy statements to assist pediatricians in developing this advocacy role: "Prevention of Pediatric Overweight and Obesity" (*Pediatrics* 2003;112:424-430) and "Soft Drinks in Schools" (*Pediatrics* 2004;113:152-154).

*Sarah Hampl, MD  
General Pediatrics*

Pediatricians have abundant opportunities to advocate for healthy nutrition and physical activity policies.



## New Docs

**Mark Sinclair, MD**  
Orthopaedic Surgery  
(816) 234-3693  
[mrsinclair@cmh.edu](mailto:mrsinclair@cmh.edu)



**Medical Degree:** University of Michigan, Ann Arbor, MI

**Residency:** General Surgery, Boston University, Boston, MA; Orthopaedic Surgery, Union Memorial Hospital, Baltimore, MD

**Fellowship:** Children's Hospital of Philadelphia, Philadelphia, PA

**Certification:** Orthopaedic Surgery, 1996

**Rangaraj Selvarangan, PhD**  
Pathology and Laboratory Medicine  
(816) 234-3031  
[rselvarangan@cmh.edu](mailto:rselvarangan@cmh.edu)



**PhD Degree:** Medical Biology and Immunology, University of Texas Medical Branch, Galveston, TX

**Fellowship:** Clinical and Public Health Microbiology, University of Washington Medical Center, Seattle, WA

## Case Of The Quarter

## Type II Diabetes Rises With Increase In Obesity

A 7-year-old African-American male with obesity, acanthosis nigricans over the neck, and a family history of type II diabetes presented for well-child exam. A fasting insulin level was measured to be 41, well outside the normal range identifying him at risk for diabetes.

With childhood obesity on the rise, so is the number of children who are being diagnosed with type II diabetes. Nearly 20% of new patient referrals to pediatric endocrinologists are found to be insulin resistant, forcing pediatricians to address at risk lifestyle behaviors earlier than ever.

Addressing nutrition and weight management are keys to helping these high risk families change their lifestyles and lower their risk.

- 1) Limit sugar-containing drinks. Drink water.
- 2) Choose a variety of foods, more whole grains, fruits and vegetables. Choose low-fat dairy and limit fats and sweets.
- 3) Limit fried food and added fat. Choose grilled and baked lean meats.
- 4) Don't SUPERSIZE--portion size is important.

- 5) Snack in moderation. Make healthy choices.
- 6) Make a commitment to healthy eating and exercise.
- 7) Reward yourself in other ways than with food.
- 8) Consider meeting with a dietitian.
- 9) Any increase in activity level will be helpful
- 10) Cut back on TV time.

Screening children at risk for type II diabetes should include the following laboratory studies: fasting insulin level, fasting blood sugar, thyroid studies, and a two-hour post prandial insulin level and blood sugar. If you suspect an androgen producing co-morbidity you can consider obtaining an LH, FSH, DHEA, DHEA-S, and testosterone level in addition to a routine blood pressure on every child.

With early detection and emphasis on healthy lifestyle choices, we can hope to see a decline in the incidence of type II diabetes in the childhood population.

*Sharon Hovey, MD  
Co-Chief Resident, Pediatrics*