

Kids Connection

a monthly newsletter from MUSC Children's Hospital



October 2007

Letter from the Chair

Dear faculty, Children's Hospital staff and friends,

Perhaps, America has faced no more frustrating epidemic than the epidemic of obesity in children. If we look at the average body mass index ((wt in kg)/(ht)²), body mass index anchored after the 1990 census demonstrates that over 30% of all children are obese. This rapid and disturbing trend has led to many projects and programs, but we have only just begun to make a dent in reversing this trend. Traditional programs emphasizing diet and exercise have not been effective. This suggests that the "thumb" exercise generation is not the only cause. The fact that society has become more sedentary (watching every football game on Sunday versus playing in the yard) and has also decided to "super size" everything-happy meals, sodas, cookies, and ourselves.



L. Lyndon Key, MD
Professor and Chairman
Department of Pediatrics

There are a number of new programs that are getting started in South Carolina that have a chance to stem the tide of increasing obesity. One is a program funded by the Duke Endowment (SCICORD) or South Carolina Institute for Childhood Obesity and Related Disorders and another is a fun iteration of this, the "Lean Team." In the lean team,

they go out and rout out the evil calories and smash them out of the diet. This concept of using marketing-type concepts could hit us where we live.

Over the next few years, you will see changes to correct this major health problem. If we succeed, then we will have a chance to reduce health costs and extend the life span, as we have seen in every generation during the past 100 years. If we do not, our medical resources will become an unbearable burden for future generations.

It is ironic that partaking in the bounty of vegetables, fruits, and meats that are available in our rich land can allow us to bypass the sugars and deep-fat frying that has been the trademark of the fast food revolution. It is also remarkable that getting out and enjoying running, swimming, yard work, and athletic competition can give us pleasure, as well as, a leaner body.

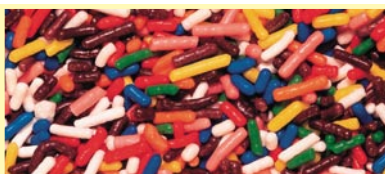
It is up to us, working together to create an anti-obesity revolution that will ensure life, liberty, and the pursuit of happiness.

Think lean!

Sincerely,

L. Lyndon Key, MD

Chair, Department of Pediatrics



FEATURE STORY

Lean Team aims to tackle obesity within schools – and beyond
See page 2.

Lean Team aims to tackle obesity within schools – and beyond

The obesity rate among South Carolina's youth is a big problem. So big, says nutritionist Mary Joan Oexmann, MS, RD, that she came out of retirement from MUSC to work on a new educational outreach program focused on tackling it.



Dr. Janice Key
Director, Division of
Adolescent Medicine

Developed by Dr. Janice Key, MD, the Lean Team program is MUSC's response to the South Carolina Institute of Childhood Obesity and Related Disorders, a Duke funded initiative for the prevention and treatment of childhood obesity among the children's hospitals of Greenville, Columbia, Florence, and Charleston.

"We aim to improve health by preventing and treating childhood obesity through individual, family and community change," explains Oexmann.

A national survey determined that nearly 36 percent of South Carolina's children are overweight and/or obese, so it's a program whose time has come, says Oexmann.

This year the Lean Team got a jump-start by forming partnerships with two local high schools, Burke High in downtown Charleston, and Baptist Hill High in Hollywood. Working with health science and culinary arts teachers Valerie Nesmith and Carol Rivers, Oexmann and her team are teaching students about obesity prevention by educating them about their risks, showing them how to increase exercise, and explaining ways to improve nutrition.

"We teach these teens what a normal weight is, and help them set goals with that in mind," she explains.

One thing that always surprises the students is learning how much sugar is in certain foods. "They're amazed to find out there are 10 packets of sugar in a can of soda."

Classes involve fun ways to tackle weight gain, such as timing how fast each student walks and then figuring out how many calories they burn if they walk a certain amount of time.

The program is set up so that educated and motivated students who

improve their health will, in turn, inspire, teach and encourage their peers, families and the community.

If you're a parent of an overweight kid, Oexmann has this advice: Take them for a walk. "Do something you haven't done before, maybe walk over the new Cooper River bridge." Share meals together. Talk to your doctor. Parents who want to know more can listen to Dr. Key's podcast at www.muschealth.com/multimedia/Podcasts/displayPod.aspx?podid=230&autostart=false&groupid=32.

5210 Countdown

Another important message the Lean Team wants to get across: "Countdown to 5210."

That's code for five servings of fruits and vegetables, two hours of screen time, one hour of exercise and zero sweetened beverages.

"It's a strong message that easily addresses weight management," says Oexmann.

It's a message the community is readily embracing. During a recent presentation to Charleston County School District nurses, Oexmann got an overwhelming 100 percent positive response when she inquired about interest in an obesity program for schools.

"The community is ready for a change," says Oexmann. "The momentum is happening, and it's an exciting time, an exciting project."

The plan, she says, is to secure funding to eventually take the Lean Team to the entire school district. "We're already thinking ahead of the game, and really working towards partnerships.

"We're working with the mayor and DHEC to build consensus in the community among all groups that are concerned about childhood obesity." With partnerships comes funding and the ability to address the whole county.

Heart Health program continues success and expands

The new Lean Team reinforces MUSC's ongoing efforts to tackle childhood obesity through its Heart Health program, a pediatric weight management and preventive cardiology program.

Heart Health was developed in 2004 to focus on children with abnormal weight gain and cardiovascular risk factors such as high blood pressure, high cholesterol, and pre-diabetes. "Obese kids are at higher risk for developing these problems as they get older," explains Dr. Melissa Henshaw, MD, medical director of the Heart Health program.

"We provide both individual sessions and group orientations, and →

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stress lifestyle-oriented and family-based approaches,” says Dr. Henshaw. “We encourage small changes that these kids can then build upon. Even modest reductions in weight improve health.”

Hundreds of kids have come through the program, which serves children and young adults from ages two to 21. The program is replicating some its best practices and incorporating new ideas, such as telemedicine visits for outlying areas.

“To prevent obesity, you need outreach programs, so the Lean Team is a great complement to our clinical program,” says Dr. Henshaw. “The more we can do to combat this problem from a number of angles, the more successful we’ll be.”

“It’s a big, complex problem – there’s no single quick fix,” agrees Oexmann. “But things are happening in terms of vending machines, in terms of school lunches, in terms of roads and sidewalks so that kids can to walk to school. On the research side, “there is more and more in basic sciences research conducted in the Darby Children’s Research Institute (DCRI) including work in Dr. Singh’s lab on compounds that target fat cells”, says Dr. Maria, DCRI executive director.

“I’m hopeful about this or I wouldn’t have come out of retirement to do it,” she says frankly.



Childhood Obesity: Addressing the Obesity Epidemic

<http://www.muschealth.com/multimedia/Podcasts/displayPod.aspx?podid=229&auto>



Childhood Obesity: Basic Nutrition Principles

<http://www.muschealth.com/multimedia/Podcasts/displayPod.aspx?podid=231&auto>



Childhood Obesity: Tips for a Healthier Family

<http://www.muschealth.com/multimedia/Podcasts/displayPod.aspx?podid=230&auto0>

Photos from the Lean Team’s visit to Burke High School on September 5, 2007



Dr. Mike Oltmann



Mike, Elizabeth, & Audrey Teaching



Valerie Nesmith and Carol Rivers



Dr. Elizabeth Penn



Audrey Burry



Students Taking BP

Message from our Medical Director



J. Philip Saul, MD
 Medical Director
 Pediatric Cardiology

One of the features of this month's newsletter is on childhood obesity. I am sure the story will adequately describe the depth of the problem in our US population, but perhaps the best testimony to its severity is that all of you reading this are already well aware of it. As an institution whose mission is to promote the health and well being of children, we would certainly be remiss to not be pro-active in this area and strongly support weight management and lifestyle programs designed for kids. I have multiple administrative opportunities to promote these programs and have tried to take advantage of all of them in doing so. Our Children's Heart Program of South Carolina, which I direct, began the Heart Health Program described in this issue by its director, Dr. Melissa Henshaw. Although a general pediatrician, she is now a faculty member in Pediatric Cardiology and operates the program in the afternoon hours in our cardiology clinic. As the Medical Director of the hospital, we have supported the program dietician, Janet Carter, in that clinic as well. We have also made sure that the inpatient facility has the capability of caring for adolescents patients who may undergo bariatric surgical procedures (gastric bypass), and have provided strong support recruiting Dr. Andre Hebra, a leader in minimally invasive surgery, to the position of Chief of Pediatric Surgery. Finally, the hospital participates in numerous community based activities aimed at fighting the epidemic of childhood obesity. Even though so many of our faculty and so much of our resources are used to fight the least common but most severe diseases of childhood, there may be no more important way we can promote the future health of our children than addressing childhood obesity head on. We intend to continue to do so!

Children's Research Institute News Brief



Bernard L. Maria, MD, MBA
 Executive Director
 Darby Children's
 Research Inst.



Inderjit Singh, PhD
 Scientific Director
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 Research Inst.

Safer, more effective cardiac ablation for kids

For children with heart rhythm abnormalities, Dr. Dieter Haemmerich's research aims to make treatment safer and more effective.

Kids with arrhythmia benefit from cardiac catheter ablation, during which an electrophysiologist locates the tissue responsible for the abnormal heart beat and then destroys it using either heat (radiofrequency ablation) or cold (cryo ablation), via a catheter inserted into the heart.



"Though heating is the most effective method, coronary vessel shrinkage is a considerable concern," says Dr. Haemmerich, PhD, assistant professor in pediatric cardiology.

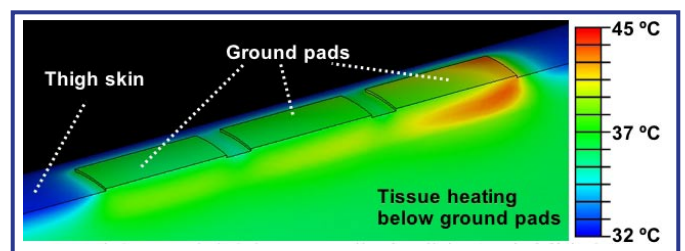
"This is especially risky for kids, who have smaller coronary arteries than adults. When you perform this treatment in children, the chance of coronary stenosis is higher because there is less blood flow to protect the vessel from heat-induced shrinkage."

Freezing offers a much larger safety margin.

"The safety window is wider because during cryo, when heart tissue stops working, you have time to stop treatment before it's destroyed, and tissue function resumes. With heating, when the tissue stops working there's no way of bringing it back," he explains.

This is particularly problematic when treating close to the AV-node, because if it's destroyed the child will need a permanent pacemaker.

Because of these hazards, the preferred treatment for children is cryo-ablation. But while freezing avoids the danger of vessel shrinkage and damage, it's not as effective as heat.



That's where Dr. Haemmerich's work comes in.

"We're working to improve cryo ablation because, although there are fewer dangers than with radiofrequency ablation, the downside is you're not able to kill as large an area," he explains.

To optimize the effectiveness of this safer treatment, Dr. Haemmerich is collaborating with Dr. Phil Saul and pediatric cardiology fellows Drs. Kelly Gajewski and Tom Pilcher to characterize parameters that affect the tissue destruction zone during ablation.

"We're using computer models to determine temperature distribution and treatment parameters. For instance, is it advantageous to treat the area for a longer amount of time? How is blood flow affecting the size of the treatment zone? Can we shield the catheter from blood flow to create a larger zone?"

Using computational models and experimental work, Dr. Haemmerich whose work has already resulted in clinically available ablation devices for the treatment of large tumors is developing devices that improve upon the current ablation technology.

A recently funded NIH grant is powering another of his improvements on ablation: possible ways to reduce burns caused by grounding pads.

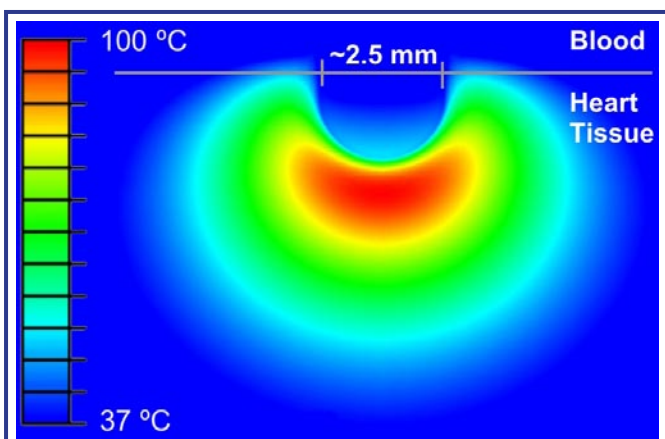
Burns from the electric current concentration below the gel pads, which are used as a return path for electrical currents, are becoming increasingly common during ablation and other procedures requiring high power.

"This is particularly a problem in children, whose skin area is limited and the heat, therefore, much more concentrated," explains Dr. Haemmerich.

Working with Dr. Michael Swindle of the department of comparative medicine, Dr. Haemmerich is testing prototype devices in animals, which he hopes will result in commercial devices.

"This has applications beyond cardiac ablation to many other procedures that use electrical currents, including electro-surgery, tumor ablation and more," he notes.

Drs. Singh and Maria who direct the DCRI are especially proud of programs like Dr. Haemmerich's that bridge basic science laboratory research and clinical care in the Children's Hospital.



Evidence-Based Tip

The Obesity Epidemic: Guidance from Practice Guidelines

Last month, we looked for evidence about the effectiveness of programs aimed at preventing and reducing obesity. We found studies and a systematic review of programs for children, many of which were school based. This month, let's take a look at what we can learn from our practice guidelines.

There are several places to go to look for practice guidelines. The most obvious is the American Academy of Pediatrics. However, finding practice guidelines is a little less than obvious on the web site! Once on the home page [<http://www.aap.org>], scroll down to find a box on the right-hand side that says "For Medical Professionals." The second link is to "Policy Statements and Practice Guidelines." There you can find not only guidelines, but also clinical and technical reports.



Laura Cousineau, MLS
MUSC Library
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EBM Faculty



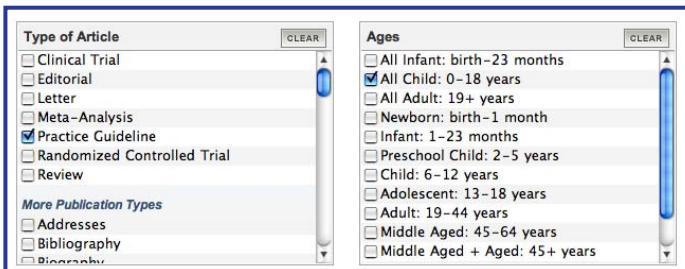
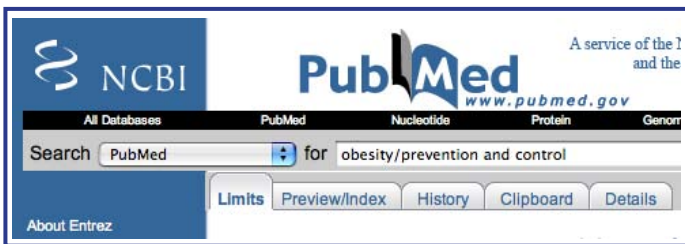
Because obesity is a hot topic today, there is an easier way to find AAP's information about obesity. Again, from the AAP home page, about halfway down the page on the left, there is a section for "Children's Health Topics" where "Obesity" is listed. That offers professional as well as parent information, and provides a link to a special website developed by the AAP for this subject with a link to a dedicated space for AAP Obesity Resources.



There are other places to look for guidelines on obesity, such as the National Guideline Clearinghouse. Despite its name, it contains guidelines from private and public, national and international sources.



Practice guidelines are often published as articles in journals. To locate those articles in PubMed, do your subject search as usual, then use the "Type of Article" limit to select "Practice Guideline. Don't forget to limit by "Ages" to children, instead of using an age as a search term.



When looking at guidelines, one must always ask how the guidelines were formed, and on what the recommendations are based. The AAP Policy Statement "Active Healthy Living: Prevention of Childhood Obesity Through Increased Physical Activity" punctuates its recommendations with references to the evidence. In the section "Prevention of Overweight in Children and Youth" references the Cochrane systematic review discussed in last month's EBM Tip. A guideline is only as good as the evidence on which it is based!

A special thanks to the following individuals for their efforts in putting together Kids Connection each month.

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