

For good measure



Losing weight is often a matter of proper portions

If you're having trouble losing weight, the problem may not be what you eat, but how much - and you may not realize how much that really is.

While it's no secret that overeating will prevent weight loss, it's tough to gauge what constitutes a normal portion in a world where just about anything either comes or can be supersized.

Nutrition experts at UT Southwestern say enormous portion sizes have made it difficult to gauge exactly how much is enough.

Bernadette Latson, assistant professor of clinical nutrition at UT Southwestern School of Health Professions says one way to make sure you're not eating too much is to check your measuring cups at home to see what a recommended serving size really looks like. That will help you learn to know how much to eat when you go out.

"Using smaller plates is another good way to help control portions," she said. "People feel

Continued on page 3

Investigating obesity

NIH funding helps UT Southwestern researchers detect the causes and effects of fat

Thirteen months after UT Southwestern received a \$22 million grant from the National Institutes of

Health to fortify their search for clues to

the causes and results of obesity, the

Friends of the Center for Human

Nutrition were treated to an update on

the investigation.

UT Southwestern is one of nine

interdisciplinary research consortia sponsored by the NIH

Roadmap for Medical Research and the only one focused on

obesity and associated metabolic diseases.

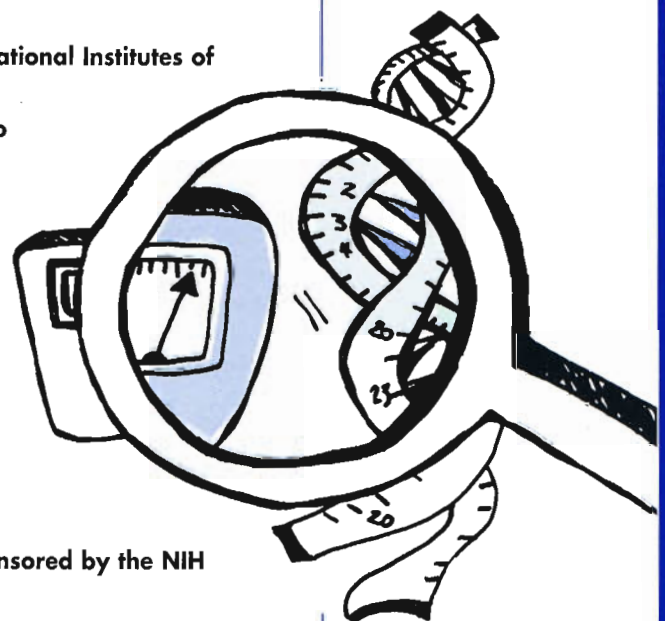
Dr. Jay Horton, professor of internal medicine and

molecular genetics, said the goal of the grant - to

enhance interdisciplinary research among investigators - is

being met.

Continued on page 2



GET MONTHLY NUTRITION UPDATES from the Center for Human Nutrition by e-mail. Send your e-mail address to nutrition@utsouthwestern.edu

OBESITY

Continued from page 1

Four research groups

UT Southwestern's obesity team started with about 30 investigators and has since grown to include about 30 different disciplines, from the research of genetics and molecular biology to clinicians who deal with obesity and its various metabolic complications such as heart disease and stroke. The investigators are divided into four interconnected research groups focused on certain metabolic aspects.

"Each group has already made several significant discoveries such as further defining the neural circuitry that regulates appetite and continuing to decode the pathway that causes fatty liver," Dr. Horton said at the Friends of the Center for Human Nutrition's fall luncheon.

"Just a few weeks ago, our translational group found mutations in a gene that may account for ethnic differences in fatty liver disease,"

Dr. Horton said. "These findings could provide a potential target for treatments for fatty liver disease."

Dr. Horton, holder of the Dr. Robert C. and Veronica Atkins Chair in Obesity & Diabetes Research, joined Drs. Elizabeth Parks, Philipp Scherer and Jonathan Cohen in a discussion on UT Southwestern's emergence as a powerhouse for nutrition and metabolic research.

The taste of fat

Dr. Parks, associate professor of clinical nutrition at UT Southwestern School of Health Professions, said one of the interesting questions her lab has spent the last year studying is whether fat has its own taste.

"In high school, you would have studied the taste buds on your tongue and learned that you can taste sweet, salty and bitter," said Dr. Parks, associate investigator within the group studying metabolism. "You would have never heard that there's a taste bud for fat, but it turns out that there is. What we're doing right now is trying to figure out why."

One theory, Dr. Parks said, is that the taste of fat is important to the enjoyment of food.

"We've completed one large trial and have started the second one," she said.

The past year also has brought exciting new findings in diabetes.

"Each group has already made several significant discoveries such as further defining the neural circuitry that regulates appetite and continuing to decode the pathway that causes fatty liver."

— Dr. Jay Horton

Dr. Scherer, professor of internal medicine and director of the Touchstone Center for Diabetes Research at UT Southwestern, said a major focus of the lab has been to understand what goes wrong as people gain weight.

"Our efforts currently are directed at learning how we can expand our fat in a healthy way," said Dr. Scherer, who holds the Gifford O. Touchstone Jr. and Randolph G. Touchstone Distinguished Chair in Diabetes Research. "Given that excess calorie intake is a fact for most of us, we want to make sure we put these excess calories in the right places."

Diabetes model

Dr. Scherer's lab also has developed a mouse model in the past year that allows researchers to study the regeneration of beta cells, which make and release the hormone insulin. The model, named the PANIC-ATTAC mouse, mimics what occurs in humans with type 1 diabetes, a condition that develops when the body's immune system destroys pancreatic beta cells, as well as in type 2 diabetes, where beta cells die from working overtime.

Efforts to combat obesity aren't confined to the lab.

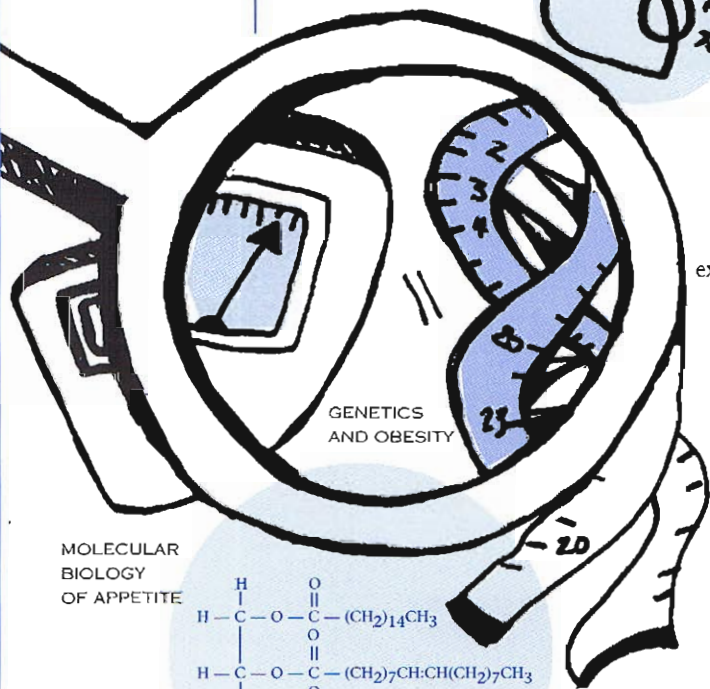
Because obesity is also a social problem, the Center for Human Nutrition, under the leadership of Dr. Scott Grundy, holder of the Distinguished Chair in Human Nutrition, has joined forces with the Episcopal School of Dallas to implement a wellness initiative at the North Dallas private school. The center also is collaborating with the Dallas school district to teach fifth-graders about nutrition.

"It turns out that we're kind of a victim of our own success," Dr. Horton said. "Food is cheap, and unfortunately, if people are given the choice, they'll choose calorically dense foods. We're hoping to instill in these children the idea that choices are important." ❧

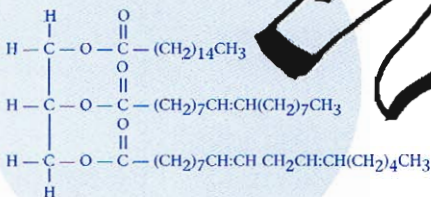
HEART DISEASE
AND STROKE



GENETICS
AND OBESITY



MOLECULAR
BIOLOGY
OF APPETITE



PORTIONS

Continued from page 1

like they're getting more food when their plates look full. You can also use smaller serving dishes, which encourage people to serve themselves smaller portions."

A good way to judge portion size for foods like potato chips is to think of the small snack-sized bags that are sold in variety packs.

"About a handful of chips is considered a serving," said Lona Sandon, assistant professor of clinical nutrition at UT Southwestern.

"One good rule of thumb to keep in mind is that the less processed a food is, the more nutritious it's likely to be and the lower in calories."

Ms. Latson said keeping pre-portioned food on hand such as

frozen pops or ice cream cups is another option. "The success of many weight-loss plans rests on single-serving frozen entrees and other preportioned items," she said.

Research at UT Southwestern has shown that people generally eat more when they're given larger portions.

In one experiment, some participants were given trick bowls so that soup was constantly being pumped into the bowl. Most people didn't stop eating when they'd had the equivalent of a normal serving of soup. Some ate as much as a quart of soup before they gave up.

In another experiment, people were given popcorn at a movie theater. Some had small containers, while others had large containers, and some people were given stale

popcorn. People with large buckets of stale popcorn ate about 30 percent more than those with the smaller buckets, even though they said the popcorn tasted bad.

Ms. Latson says that small or medium-size drinks and dishes, whether at the movies or a restaurant, usually are big enough for the average appetite.

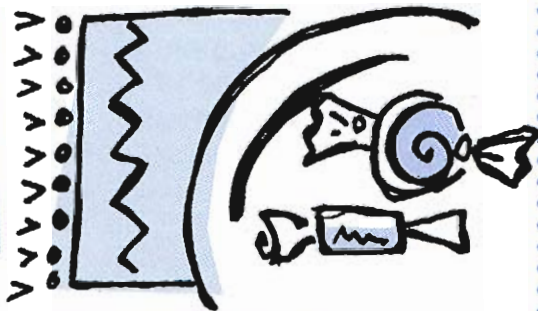
And for those who think size matters and only a supersized helping will do?

"The key is low caloric density," she said. "If you've got to supersize your meal, dish out bigger portions of low-fat, high-fiber options such as raw or steamed vegetables without added fats and sauces." ❄️

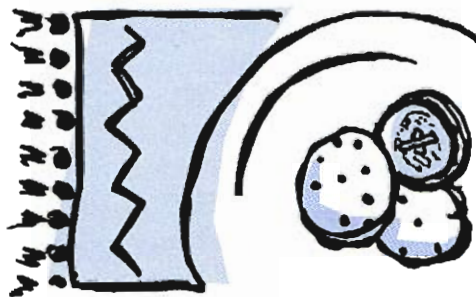
HEALTHY ALTERNATIVES

instead of this...

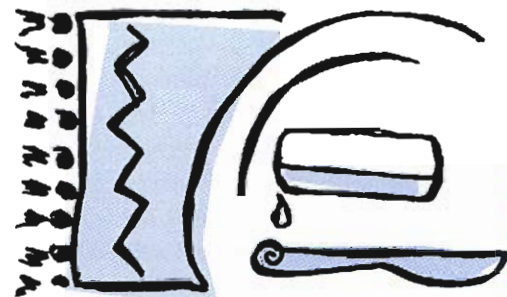
If you like hard candy ... try dried fruit for the sweet taste plus vitamin C and fiber.



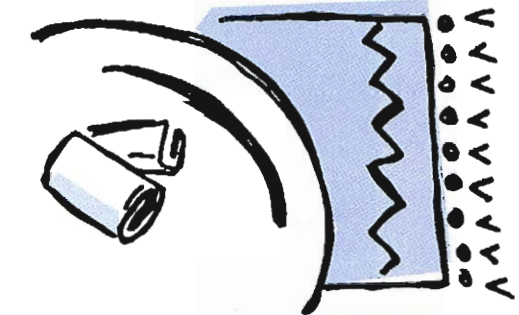
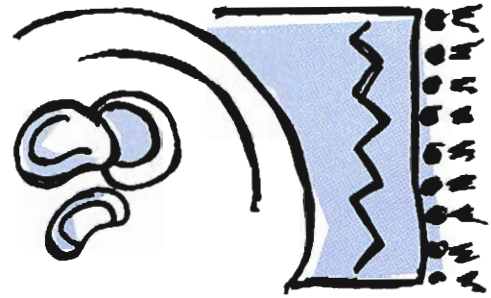
If you like cookies ... try 100 percent whole-grain Fig Newtons. They are lower in total fat and saturated fat. They also have no trans fat or cholesterol. One serving has 2 grams of fiber, and you get the benefits of whole grain in a sweet treat.



If you like to use butter for stir frying or sautéing ... try broth to save more than 100 calories per tablespoon.



....try this



MEENA SHAH, PH.D.

As an undergraduate student, Dr. Meena Shah knew she wanted to go into nutrition research.

"I wanted to do one of two things: study the impact of energy and nutrient intake on pregnancy outcomes among rural Kenyan women, since that's where I'm from, or look at the etiology of obesity," said Dr. Shah, clinical associate professor of clinical nutrition at UT Southwestern School of Health Professions and associate



"The aim of this study is to prove that bariatric-surgery patients can perform large amounts of exercise and improve their physical fitness levels and other health parameters."

— Meena Shah, Ph.D.

professor of kinesiology at Texas Christian University in Fort Worth. "I wasn't able to study pregnancy outcomes because of regulatory constraints in Kenya, so I ended up studying obesity."

Dr. Shah said she particularly is interested in the effect of exercise and diet interventions on physical fitness,

energy expenditure, weight loss and maintenance, and lipid and glycemic control in bariatric-surgery patients.

"The most common type of bariatric surgery in the United States is either gastric bypass or banding," she said. "Both strategies are effective at helping people lose weight. The problem is that over time, many patients start to regain some of the weight."

As patients regain weight, other conditions, such as hypertension and diabetes, that generally improve with the weight loss may also return, she said.

Dr. Shah is collaborating with Dr. Abhimanyu Garg, professor of internal medicine and holder of the Endowed Chair in Human Nutrition; Dr. Peter Snell, associate professor of internal medicine; Dr. Sneha Rao, postdoctoral researcher with the Center for Human Nutrition; and Claudia Quittner, senior registered nurse, to develop strategies to help bariatric patients keep the weight off.

"We know from the non-bariatric literature that one of the factors that help individuals maintain weight loss is exercise," she said. "However, when you use exercise as a strategy, you've got to burn at least 2,000 calories per week at moderate or vigorous intensity. We're conducting a pilot study to see whether individuals who have undergone bariatric surgery can actually burn enough calories at moderate intensity."

For the study, Dr. Shah and her colleagues randomized participants into either a diet program or a diet plus exercise program. The study is ongoing, but Dr. Shah said preliminary data show that many of the participants have been able to expend 2,000 calories a week and improved their fitness levels and metabolic parameters.

Dr. Shah said she hopes to wrap up the pilot study by next summer.

"The aim of this study is to prove that bariatric-surgery patients can perform large

amounts of exercise and improve their physical fitness levels and other health parameters," she said. "If we can do that, then we can apply for a large grant where we can study the effect of high amounts of exercise on weight loss maintenance over several years. We know exercise helps nonbariatric patients, and we're one of the first studies focusing on weight loss maintenance in bariatric populations."

LINDA MICHALSKY, PH.D., R.D., L.D.

In 2007, one in three Texas high school students and two out of three adults were either overweight or obese. Unfortunately, the numbers are only expected to grow.

If the trend continues, three-quarters of all Texas adults may be overweight or obese by 2040, according to a 2004 report by the Texas Department of State Health Services.



"Some people have at times joked about me being a food Nazi, but I'm not, I'm a chocoholic. The old adage is true - everything's OK in moderation."

— Linda Michalsky, Ph.D., R.D., L.D.

Dr. Linda Michalsky, assistant professor of clinical nutrition at UT Southwestern School of Health Professions, is determined to reduce those numbers.

While her position also entails teaching clinical dietetic students, Dr. Michalsky's primary focus is directing the Center for Human Nutrition's obesity outreach efforts.

"Medical students have already started giving presentations on eating healthy and exercising to fifth-graders throughout the Dallas school district," Dr. Michalsky said. "That part of the program is still in the early stages, but we're really going to be out in force in the spring."

Dr. Michalsky said the partnership with the district is geared toward individual classrooms, but the medical students have worked with up to 100 children at a time. The goal, she said, is to reach students early and help them understand why it's important to eat healthfully and exercise.

Children aren't the only ones Dr. Michalsky hopes to reach. She also plans to reach out to the students' parents by giving presentations after school and during PTA meetings.

Dr. Michalsky stressed that she's not out to rid the world of snack cakes, processed meat sticks or potato chips.

"Some people have at times joked about me being a food Nazi, but I'm not," she said. "I'm a chocoholic. The old adage is true - everything's OK in moderation."

A registered dietitian, Dr. Michalsky holds a master's in nutrition and a Ph.D. in nutritional sciences from UT Austin. She previously taught clinical nutrition to dietetic students and has worked as a dietitian in a family-practice residency program, a cardio-

pulmonary program and in psychiatric and general patient care facilities. Dr. Michalsky joined the faculty in August.

VINAYA SIMHA, M.D.

The metabolic complications of obesity aren't limited to obese patients. They also occur in people with lipodystrophy, a disorder of the fat cells that causes partial or total loss of fat – the exact opposite of what happens in those who are obese.

Nutrition and metabolism researchers at UT Southwestern believe that studying individuals with this condition could shed new light on the mechanisms of insulin resistance.

Dr. Vinaya Simha, assistant professor of internal medicine at UT Southwestern and staff physician at the North Texas Veterans Affairs Medical Center, is one of the researchers working to unravel those mysteries.

"These disorders have not been widely recognized until recently, but we think what we're learning from treating lipodystrophy patients could be relevant to obese patients with abnormal fat distribution," said Dr. Simha, who works with Dr. Abhimanyu Garg, professor of internal medicine.

Dr. Simha said he's particularly interested in understanding the role of the hormone leptin, a powerful stimulus for fat burning, as a mediator between fat and insulin action and its potential therapeutic role. Leptin, which is produced by the body's fat cells, is involved in the regulation of body weight.

"I'm involved in several ongoing clinical trials in which we're studying leptin therapy for lipodystrophy



"These disorders have not been widely recognized until recently, but we think what we're learning from treating lipodystrophy patients could be relevant to obese patients with abnormal fat distribution."

— Vinaya Simha, M.D.

patients," Dr. Simha said. "I'm also trying to uncover the mechanism behind HIV-associated lipodystrophy and its therapeutic options."

In the past decade, many HIV patients being treated with a class of drugs known as protease inhibitors have developed various forms of lipodystrophy, helping to raise awareness of these rare illnesses.

Researchers believe that improved knowledge of these disorders will help them understand more prevalent disorders that occur as a result of obesity, like diabetes, which affects more than 23 million Americans.

Dr. Simha received his medical degree from All India Institute of Medical Sciences in New Delhi, India. He completed a residency in internal medicine at Interfaith Medical Center in Brooklyn, N.Y., before moving to Texas in 2000 for the first of two fellowships at UT Southwestern. His first fellowship was in endocrinology, diabetes and metabolism; the second was in nutrition and metabolic diseases. Dr. Simha returned to UT Southwestern in 2005 after working as an endocrinologist in Midland, Texas, for two years. ❧

Nutrition tips: Making better choices in the battle of the fats



With dietary diligence, it's OK to be a little nutty

WE ALL LOVE NUTS. The tasty morsels are showing up everywhere – toasted walnuts on salads, pecan-crusted fish and macadamia nut oil in the latest diet. But is it wise to add nuts to your diet? Although fat- and calorie-laden, nuts provide healthy, cholesterol-lowering fats, vitamin E and fiber.

Dr. Jo Ann Carson, professor of clinical nutrition at UT Southwestern School of Health Professions, warns that although including nuts frequently can be a healthy move, they should be substituted for other foods. "Adding rather than substituting nuts can tip the energy balance in favor of weight gain," she said.

For example, replace some of the chicken in chicken salad with pecans and celery for a delightfully crunchy

texture; substitute an afternoon candy bar with trail mix that includes nuts; or instead of a ham sandwich, build a brown bag lunch around fruit, yogurt and nuts.

Several nuts are especially heart-healthy.

English walnuts contain primarily polyunsaturated fats, including alpha-linolenic acid, an omega 3 fatty acid. Our bodies convert a small amount of alpha-linolenic acid to the longer chain fatty acids found in fish oils. Research suggests walnuts have cardiovascular benefits.

Pecans, peanuts and macadamia nuts, however, are high in mono-unsaturated fats that can lower your low-density lipoproteins, or "bad" cholesterol.

Almonds and pistachios are among the lowest in fat and calories, while macadamia nuts have the most fat and calories per ounce.

Butter or margarine: Which is the better spreader?

A SOFT MARGARINE SPREAD is the healthier choice in the long-debated butter-or-margarine battle, said Dr. Jo Ann Carson, a professor of clinical nutrition at UT Southwestern School of Health Professions.

Margarine, made from vegetable oil, is cholesterol-free and higher in polyunsaturated and mono-unsaturated fats, which help reduce a person's "bad" low-density lipoprotein (LDL) cholesterol level. Butter, made from animal fat,



"The best choice is a soft tub margarine or liquid spread because they tend to incorporate water and other ingredients that reduce the potential for trans fats and calories."

— Dr. Jo Ann Carson

contains dietary cholesterol and saturated fat, which tend to raise that "bad" cholesterol level.

But not all margarines are created equal, Dr. Carson warned.

Stick margarine contains trans fats, which are created when oils are hydrogenated to make the margarine solid. Trans fats, like dietary cholesterol and saturated fats, raise "bad" cholesterol.

"The best choice is a soft tub margarine or liquid spread because they tend to incorporate water and other ingredients that reduce the potential for trans fats and calories," Dr. Carson said.

If you're having trouble selecting which soft margarine might be best, look for a product that is low in both saturated and trans fats, she added.

And, of course, people aren't required to use butter or margarine.

"Another option is to do as people in the Mediterranean do," Dr. Carson suggested. "Dip your bread in seasoned olive oil instead of butter or margarine." ❧

A Question of Nutrition? Ask Dr. Carson



Q: There's been a lot of news lately about vitamin D's role in preventing cancer, heart disease and other chronic diseases. What do we know – and what questions remain?

A: For many years we have known that vitamin D is important for absorption of calcium and mineralization of bones. As we have learned more about DNA, we have learned that a form of vitamin D regulates how our genes produce many different proteins. These proteins influence our body's ability to fight disease, kill off cells that could become cancerous, and keep the body's immune system from attacking our own cells. Current research suggests that having enough vitamin D may help keep us from developing cancer, heart disease and specific auto-immune diseases such as multiple sclerosis. Further research is needed to determine whether taking a vitamin D supplement could intervene to prevent these diseases.

In the meantime, it is wise to eat three servings of foods rich in vitamin D (milk, yogurt, fatty fish) each day and/or take a supplement that provides 400 to 800 IU of vitamin D daily.

If concerned, you could ask your physician about measuring the 25-OH vitamin D levels in your blood to determine whether you are getting enough vitamin D.

Q: What's the best way to increase iron absorption? If you take an iron supplement, is it better to take it with meals or on an empty stomach?

A: Iron is better absorbed when iron-containing food or pills are taken with vitamin C. For instance, pinto beans provide iron. Having some vitamin C-rich tomatoes with the beans increases the absorption of the iron. Iron is most easily absorbed when it comes from meat, so if you need more iron, include some lean red meat, such as sirloin strips in a stir-fry or a slice of eye-of-round roast. When you consume plant sources of iron, such as dried beans or spinach, include a vitamin C-rich food. Some iron pills include vitamin C (also called ascorbic acid) to promote absorption.

Iron tablets are notorious for upsetting one's stomach or causing constipation. Taking an iron supplement with food can reduce these problems. Another helpful strategy is to use slow-release iron supplements.



Q: I love cheese, but it's full of fat and calories. What are the best options if you're trying to lose weight?



A: To keep the calories lower and reduce the artery-clogging saturated fat, choose low-fat or fat-free cheese. Although earlier fat-free products seemed a little like plastic, the newer versions can be quite delicious. Supermarkets with large cheese sections offer lower-fat versions of Cheddar and Swiss, as well as great-tasting, lower-fat processed cheese options. You can also keep the calories and fat lower by eating smaller amounts of cheese with a tasty fruit such as grapes, apples or pears. If you do not like to drink milk, remember that although an ounce of cheese provides as much calcium as two-thirds of a cup of milk, it does not contain much vitamin D. I recommend varying your dairy sources. Include some yogurt and milk to receive both calcium and vitamin D.



DR. JO ANN CARSON

If you have "A Question of Nutrition" for the "Ask Dr. Carson" column, please mail to: "Ask Dr. Carson" Office of News and Publications UT Southwestern 5323 Harry Hines Blvd. Dallas, TX 75390-9060

Make
the Friends
of the Center
for Human Nutrition a
part of your balanced
information diet

Joining the Friends makes you part of the effort to improve the quality of life today and for the next century. Your membership will support the research of promising young scientists and ensure that excellent nutrition research continues well into the future. Your membership also entitles you to receive the *Center for Human Nutrition Newsletter*, the *Fresh News* postcard eight times a year, to attend regular meetings with other members and distinguished nutrition scientists, and to receive letters from Dr. Scott Grundy clarifying and updating current nutrition issues.

Annual membership in the Friends is a tax-deductible contribution of \$1,000 per individual or couple. Membership in the Younger Friends, which has activities oriented toward those 40 or younger, is \$250. A new category has been added to the Younger Friends for those who are 41 to 45 years of age. That fee is \$500 per year. To join the Friends of the Center for Human Nutrition, call 214-648-2344. ☎

The *Center for Human Nutrition Newsletter* is published by the Center for Human Nutrition at The University of Texas Southwestern Medical Center at Dallas, 214-648-3404. It is made possible by the generous donations of an anonymous friend of the Center for Human Nutrition.

Director - Dr. Scott Grundy
Editor - Robin P. Loveman
Writer - Kristen Holland Shear
Designer - Jan Putts

The Friends of the Center for Human Nutrition

Peter O'Donnell Jr., Founder
Charles M. Best, Past Chairman
C. Thomas May Jr., Past Chairman
S. Roger Horchow, Past President

OFFICERS

Mrs. Dan Busbee, Chairman
Mrs. John P. Locke, President
Will Montgomery, President-Elect
Mrs. George Poston, Vice President-Events
Daniel G. Routman, Vice President-Communications
Lyda Hill, Secretary
Mrs. R.B. Caldwell, Treasurer
Scott M. Grundy, M.D., Ph.D.,
Director, Center for Human Nutrition
Kenneth H. Cooper, M.D.,
Scientific Advisory Committee

BOARD OF DIRECTORS

Edward M. Ackerman
Mrs. Louis A. Beecher III
Duncan E. Boeckman
Edward O. Boshell Jr.
Mrs. Robert P. Buford
Stephen W. Butt
C. Vance Campbell
Mrs. William P. Clements Jr.
Mary McDermott Cook
Catherine A. Corrigan
W. Bennett Cullum
John W. Dayton
Richard D. Eiseman Jr.
Vernon E. Faulconer
Mrs. Richard E. Gutman
Mrs. Jeffrey M. Heller
J. Peter Kline
Mrs. Robert Lavie
Nancy O. Lemmon
John I. Levy
Mrs. Henry D. Lindsley III
Tom E. Marsh
Mrs. Cappy R. McGarr
Mrs. William S. McIntyre IV

Frederick M. Meyer
Mrs. Jerry M. Meyer
Mrs. R. Clayton Mulford
Mrs. Brian Mutch
Mrs. Robert H. Pickens
Ann Duckett Reed
Mrs. George A. Shutt
Paul T. Stoffel
Mrs. Richard C. Strauss
Peter M. Tart
Robert C. Vaughn
Mrs. John R. Watson
Mrs. James R. Wikert

YOUNGER FRIENDS STEERING COMMITTEE

D. Capera Ryan, Co-Chair
Jeff Axley, Co-Chair
Mr. and Mrs. W. Allen Custard III
Mr. and Mrs. Joseph B. Lynch
Mr. and Mrs. Allan W. McBee
Mr. and Mrs. Edward Oglesby
Mr. and Mrs. Corey G. Prestidge

FACULTY

Scott M. Grundy, M.D., Ph.D., Director
Jonathan Cohen, Ph.D.
Abhimanyu Garg, M.D.
Vinaya Simha, M.D.
Gloria Lena Vega, Ph.D.

NUTRITION SCHOLARS

Anil Agarwal, Ph.D.
Jo Ann Carson, Ph.D.
Elizabeth Parks, Ph.D.

Center for Human Nutrition
 SOUTHWESTERN
MEDICAL CENTER

5323 Harry Hines Blvd.
Dallas, Texas 75390-9060

ADDRESS SERVICE REQUESTED

Nonprofit Org.
U.S. POSTAGE
PAID
Dallas, Texas
Permit No. 4994