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America's kids get fatter and fatter

Type 2 diabetes in kids may have quadrupled or more

There's an epidemic in America that is taking a terrible toll and will take its toll for decades to come. Our children are becoming fatter and fatter — and as a result, they are being consigned to a debilitating adulthood.

Obesity is condemning them to heart disease, diabetes, depression, and social ostracism — all adding up to “a public health crisis of enormous proportions,” says **Fran Kaufmann, MD**, head of the division of endocrinology at Children's Hospital in Los Angeles, and president-elect of the American Diabetes Association in Alexandria, VA.

U.S. Surgeon General **David Satcher** agrees with that assessment: Childhood obesity has reached epidemic proportions in the United States.

A generation ago, fewer than 4% of children diagnosed with diabetes were Type 2, the type of diabetes once known as adult-onset diabetes. Now doctors estimate the proportion of new patients younger than age 18 diagnosed with diabetes has climbed as high as 45%, and virtually all of them are obese, says Kaufman. There are some estimates that Type 2 diabetes in children and adolescents is rising at the rate of 5% annually.

Worse yet, 20% of the overweight kids have a second risk factor for cardiac disease, and they double their risk of high cholesterol and increase their risk of developing insulin resistance 12-fold over those who are in normal weight ranges.

The Centers for Disease Control and Prevention (CDC) in Atlanta

KEY POINTS

- Childhood obesity has reached epidemic proportions.
- With increasingly heavier children, diabetes and heart disease are on the rise in children and adolescents.
- A sedentary lifestyle most often is blamed for the increase in obesity.
- The American diet has become increasingly fat-laden and calorically dense, with larger and larger portions, feeding the obesity epidemic.

issued a preliminary report on childhood obesity in 1999 that estimated that 13% of American children ages 6-11 are overweight, up from 11% in a study conducted from 1988 to 1994. That means 5 million children and teenagers are at risk for diabetes and heart disease.

The American Heart Association in Dallas has even grimmer numbers: It estimates the incidence of obesity in 6 to 11-year-olds has risen by 48% in the past 30 years.

Continuing on this course inevitably will subject these children to complications of diabetes and heart disease decades earlier than the ages at which such complications arose in their parents and grandparents. Imagine the hundreds of thousands or millions of 35-year-olds with diabetic nephropathy who will need dialysis in 20 years. Imagine coronary bypass surgery becoming routine for 30-year-olds. Imagine life expectancy dropping dramatically. That's the road America is taking.

Yes, our society has changed dramatically in one generation. And those changes have presented a double-edged sword of progress and regress.

The Internet revolution has given us the miracle of instant information at our fingertips. At the same time, it has snared our children in its web of intrigue. Computers are gluing kids to their ergonomically correct chairs, frying their close-up vision long before its time, giving them carpal tunnel syndrome, and worst of all, keeping them indoors when the sun is shining and the bike trails and soccer fields are beckoning.

Television can be even more destructive.

With hundreds of channels to choose from on virtually every television, pay per view with an endless supply of movies, and parents' willingness to use the TV as the "electronic baby sitter," it's little wonder that children become couch potatoes even before they can walk. And even though the kids on Sesame Street may be dancing around Big Bird, the kids on the other side of the box are sitting glassy-eyed and motionless in front of the boob tube. **(See box, p. 125.)**

Schools are built without playgrounds and sometimes even without gymnasiums. The

The Five Onlys

A study from Tel Aviv University in Israel offers keys to weight control for all ages:

1. **Only eat when hungry.**
2. **Only eat in the dining room or kitchen.**
3. **Only eat while sitting down.**
4. **Only eat food placed on a proper plate.**
5. **Only eat. Don't watch TV or read.**

Source: Golan M, et al. Role of behaviour modification in the treatment of childhood obesity with the parents as the exclusive agents of change. *Int J Obes Relat Metab Disord* 1998; 22: 1,217-1,224.

numbers are shocking: In 1999, only 29% of American's students attended physical education classes, compared with 42% in 1991, according to the CDC.

"Never before in human history has there been so little reason to move around," says **William J. King Jr., MD**, assistant professor of pediatrics at Temple University in Philadelphia.

"Our children are much more sedentary than they were 20 years ago," says King. "Kids don't necessarily want to sit around, but there is so much to keep them entertained that they are not motivated to do anything else. There are hundreds of television channels, video games, and the Internet. Even most toys do the moving rather than inspiring kids to move."

In the meantime, children also have become increasingly dependent on fat- and calorie-laden fast food — served in portions Kaufman calls "obscene" — even in their school cafeterias.

In Orange County, CA, middle- and high-school cafeterias sell food from Papa John's Pizza, Pizza Hut, and Subway. The county also has contracts with Coca-Cola and Pepsi to sell a variety of their beverages in all middle schools and high schools.

Vending machines selling soft drinks, chips, and candy bars have been staples in schools for years. In fact, many schools rely on vending

COMING IN FUTURE MONTHS

■ **The Medicine Way:** Traditional Native American talking circle relieves stress, improves outcomes for patients with diabetes

■ **Willow bark:** Study shows significant pain relief in osteoarthritis

■ **Vitamin E:** May help control blood sugars, says Harvard study

■ **Cholesterol busters:** Natural ways to reduce cholesterol

machine sales to fund marching bands, scholarships, field trips, and computer centers. These machines are the source of junk lunches for many students.

And when they leave school, kids in search of an after-school snack or dinner load up with 1,000 or more extra calories of fast food, adding to the junk they already have consumed during the day, yet still leaving them hungry for quality nutrients.

How many parents take the easy way out and take the kids to McDonald's for a fat-, cholesterol-, and calorie-laden lunch or dinner? And how many times a week are they doing this? How many let their children suck down gallons of soda, juice, and other sugary concoctions every week? Remember when a soda was a treat, not a beverage with which to wash down dinner?

"The fast-food industry has always been there, but they've increased the size of their meals. It's obscene. That's not what one person should eat," says Kaufman. "And I think the average family no longer understands what an appropriate portion size or a balanced meal is. So we need to start educating in our schools. Why are we selling soft drinks that are loaded with sugar, contain sodium phosphates, and have zero nutritional value?"

This burgeoning epidemic is not a children's problem, not even really a family problem, says King. "It's a social problem that we have to address as a society."

Kaufman agrees. "This is a serious public health issue, and we need to come up with a public health solution."

Kaufman, King, and many of their colleagues agree that something has to be done.

Long-term studies show that comprehensive, family-based behavioral programs for children are effective in reducing obesity. Successful programs involve the child and the parents and address lifestyle modification, nutrition, and physical activity.

A 1998 Israeli study designated parents as the exclusive agents of change, resulting in greater weight loss than in programs that give children responsibility for their own weight loss.

"Parents and adult caregivers, besides serving as role models, exert a powerful influence on young children's eating habits and activities. The powerful influence is due to the fact that parents usually control the children's exposure to food stimuli and food selection and they establish the emotional and physical environment in which obesity may or may not be discouraged,"¹ wrote the study's lead author,

CE questions

After reading this issue, the health care professional will be able to:

1. Identify management, clinical, educational, and financial advantages of complementary therapies for chronic care.
 2. Describe how those therapies affect chronic patients and the providers who care for them.
 3. Describe practical ways to incorporate complementary therapies into chronic disease management based on independent recommendations from clinicians at individual institutions.
17. In the study by Golan and colleagues, children who lost the most weight were in:
- A. the patient-directed group
 - B. the parent-directed group
 - C. the physician-directed group
 - D. the dietitian-directed group
18. Successful, long-term studies aimed at reducing childhood obesity involve the child and the parents, and address:
- A. lifestyle modification
 - B. nutrition
 - C. physical activity
 - D. all of the above
19. A diet that contains a variety of colorful fruits and vegetables can:
- A. reduce the risk of cancer
 - B. reduce the risk of heart disease
 - C. encourage weight loss
 - D. all of the above
20. Elderly Christian patients who undergo religious crises associated with their illnesses are 28% more likely to die than those who do not experience such struggles.
- A. true
 - B. false

Moria Golan, PhD, of the Sackler Faculty of Medicine at Tel Aviv University.

Golan and her colleagues studied 60 obese children who were 20% over ideal weight for age, height, and gender and asked both parents to complete a questionnaire that included sociodemographic information as well as family eating and activity habits.

Participants were randomized to two groups for the yearlong study: parents as agents of change and children as agents of change.

Parents' Quiz

This quiz for parents of overweight children should be used as a tool for discussion of effective weight-management techniques:

- ✓ I do not permit my children to watch television while eating.
- ✓ I limit television and/or computer time to one or two hours daily.
- ✓ I encourage my children to be physically active and participate with them in some form of physical activity three to four times weekly.
- ✓ I discourage the consumption of non-nutritive beverages, such as sodas, iced tea, and fruit drinks, and encourage them to drink water instead.
- ✓ I provide meals and snacks at regular times or arrange for regular meal or snack times.
- ✓ I encourage and model a slow, attentive eating style.
- ✓ I do not use family mealtime as a forum for family quarrels.
- ✓ I make nutritious snacks such as fresh fruits, vegetables, pretzels, and low-fat cheese available for my children.
- ✓ I encourage my children to participate in meal planning, shopping, and preparation.



Source: Drkoop.com.

Hour-long support and education sessions were conducted, and individual sessions were held when necessary. In the active group, only parents participated; the children were not involved in the process of change and had no responsibility concerning the process. The parents' role was to control the quality and pattern of the food environment, but not to restrict the amount of food eaten. Many of the parents also were obese.

Through the course of the study, children in the parent-directed group lost twice as much weight as those in the self-directed group. Neither group significantly increased its exercise time, and neither group decreased its television-viewing time.

The major difference was that parents did not bring tempting high-calorie, high-fat foods into the house. They asked the child if he or she was hungry when he or she requested food, and they asked the child to sit at the table and eat all food from a plate without the presence of outside stimuli such as television or reading.

Golan's group implemented a list of criteria for eating, called the "Five Onlys," which it credits with a substantial portion of the weight loss

among the children in the parent-directed group. **(See box, p. 122.)**

"Our results support the argument that parents play an important role in the weight status of their children, and intervention for obesity should be family-based," wrote Golan. "We suggest that the responsibility for behavioral change in the obese young child should lie exclusively with the parent."

Health care professionals and even legislators currently are working on a wide range of creative ways to encourage healthy eating and healthy weight among children:

- Sen. Tom Larkin (D-Iowa), chairman of the Senate Agriculture Committee, has introduced a bill that would subsidize the cost of giving fruit to school children every day in an effort to get them to eat less junk food.

- Cut back, or cut off, the juice, says King. "We've made our kids into juice-aholics under the mistaken impression that juice is good for them. Even pure fruit juice is calorically dense and consists of concentrated fruit sugar. The average American child drinks 24 ounces of juice a day — that could provide an additional 500 calories a day or more, which actually is about 200 calories more than 24 ounces of Coca-Cola. That's a substantial portion of the 1,800-2,000 calorie intake recommended for children.

"It's deceptive to see how many calories you can build up drinking juice — calories that you'd never dream of consuming as fresh fruit," says King.

"For example, to get 24 ounces of cranberry juice, it would take almost a bushel of cranberries. Nobody would eat that many cranberries, but many parents think it's healthy to let their children sip juice all day long," he explains.

The American Academy of Pediatrics recommendations on juice consumption include:

- Juice should not be given to infants younger than 6 months of age.

- After 6 months of age, infants should not get juice from bottles or cups that allow them to consume juice easily throughout the day.

- Infants should not get fruit juice at bedtime.

- For children ages 1-6, intake of fruit juice should be limited to 4-6 ounces a day.

- For children ages 7-18, juice intake should be between 8-12 ounces a day.

- All children should be encouraged to eat whole fruits.

King also offers a few practical tips for parents:

- Don't force your children to eat all the food

on their plates. Put less food on their plates to begin with.

- Make fruits and vegetables more palatable by making veggie casseroles and fruit salads. “Nobody wants to eat that dried up apple or the wilted lettuce on the back of the refrigerator shelf,” King says.

- Make sure every dinner has at least two vegetables, preferably one dark green and one yellow-orange. “If the child has had a piece of fruit for breakfast and perhaps some salad or a few carrots for lunch, you’re almost home with the five-a-day fruit and veggie regimen,” he says.

- Pack nutritious lunches. School lunches and “Lunchables” are convenient, but “You might as well buy your child a membership to the chubby farm right now if that’s what you’re sending for lunch,” King adds.

- Parents should be encouraged to learn a sport with their children and stick with it. “You should all be doing this at least every weekend and preferably at least once during the week,” he says.

- Limit television and computer time to no more than one to two hours a day.

Kaufman recommends a public approach to the problem. “We need to take the bull by the horns and mount a public health campaign on an even bigger scale than the anti-smoking campaign. There should be junk-free zones in places where kids gather, most particularly in schools. We need better labeling of foods so the calorie, fat, and sodium contents are easy to understand. We need

better education programs across the board. This is a tremendous opportunity for public and private entrepreneurs, and it needs to be done now.”

Reference

1. Golan M, et al. Role of behaviour modification in the treatment of childhood obesity with the parents as the exclusive agents of change. *Int J Obes Relat Metab Disord* 1998; 22:1,217-1,224. ■

Their eyes are bigger than their stomachs

Killing the fast-food monster

Everywhere we turn, we’re being assaulted with messages to “Super Size” or “Biggie Size.” There’s a quick, easy secret here: You and your patients don’t have to buy it.

Yes, fast food is easy. It’s cheap, too. In fact, Chicago-based Northwestern University weight control expert **Robert Kushner**, MD, says never in human history has food been so plentiful and so cheap. He’s quick to add that never before in human history have we been so harried and so involved in so many tasks that we haven’t got a moment to breathe. And consequently, never before in human history have so many of our patients and their children been so fat.

Here are some mind-boggling numbers:

- Children ages 4-6 should eat no more than 1,800 calories a day.

- Children ages 7-10 should eat no more than 2,000 calories a day.

- In reality, the average 8-year-old eats about 2,700 calories; a third more than he or she should.

- This could mean a weight gain of 10-20 pounds a year — more if the child is sedentary.

You can see where this is going: By the time a child is 14, he or she could be in serious trouble.

Where’s it coming from? First, let’s put Ronald McDonald on the hot seat, just as an example. But Ronald is not alone: All fast food falls into similar categories.

Picture this: Mom is driving down the street after picking up the kids from after-school activities. It’s already 6 p.m. because she got stuck in a traffic jam on the way home. She’s tired. She’s stressed. The kids are wired and wrestling in the back seat when one of them spies the beckoning Golden Arches. In unison, they begin to chant

The Boob Tube

The average American child spends 36 hours in front of the tube a week, according to a 1999 study by the Minneapolis-based National Institute on Media and the Family (NIMF).

Time in front of the screen breaks down to 25 hours of television, seven hours of computer or video games, and four hours on the Internet.

“There have been several studies that have correlated time spent watching television to risk for diseases like diabetes and heart disease,” says **David Walsh**, PhD, president of NIMF.

Walsh recommends what he calls the “TV Diet,” which includes taking TV sets out of children’s bedrooms (studies have shown that kids with TVs in their bedrooms don’t do as well in school as those with TV-free zones); making appointments for television watching; choosing as a family shows everyone wants to watch; and sticking with the decisions to limit time spent in front of a screen. ■

“McDonald’s! McDonald’s!” Having reached her limit and thinking how nice it would be to get out of cooking dinner, Mom relents. Loaded down with an armload of Happy Meals and soft drinks, she sinks into a booth with a sigh of relief.

What has just happened?

First, the kids have done what they are conditioned to do by endless television commercials: Apply pressure on parents for high-fat foods with the enticement of a cheap, Happy Meal toy.

Here’s what they have in their boxes with the cheesy plastic toys:

☐ hamburger: 260 calories, 13 g of fat, 30 mg of cholesterol, and 34 g of carbohydrates;

☐ small fries: 210 calories, 25 g of fat, no cholesterol, 68 g of carbohydrates;

☐ small Coke: 100 calories, 27 g carbohydrates.

But what are the nutritional numbers in that Happy Meal?

☐ 570 calories;

☐ 38 g of fat — more than two-thirds of the daily allotment of 50 g;

☐ 30 mg of cholesterol;

☐ 129 g of carbohydrates — almost half the recommended carbohydrate intake of 300 g a day, and they’re not good quality carbs since a lot come from sugar.

Now this would be fine if the children ate McDonald’s for dinner and nothing but rabbit food the rest of the day, but it’s likely that’s not the case. That’s not to speak of what Mom is doing to herself with the even more appalling 1,166 calories, 51 g of fat, and 95 mg of cholesterol she’s sucking down with that quarter-pound cheeseburger, large fries, and 16-ounce Coke.

So what can Mom do? She DOES have options. Here are some:

☐ Grit her teeth, yell at the kids, and drive right on by McDonalds. That’s not realistic? OK.

☐ Pull in — but not more than once a week. Remember, Mom and Dad are the CEOs of dietary management in the household. Whining will get the kids nowhere. Order burgers for everyone, and sides of salad. If you have to go the soft drink routine, go for diet, although there are dozens of reasons not to do that either. Better yet, persuade them to drink water.

What has been accomplished?

☐ burgers — still 260 calories, 13 g of fat, 30 mg of cholesterol, and 34 g of carbs;

☐ salad — 100 calories, 6 g of fat, 75 mg cholesterol, and 4 g of carbs;

☐ fat-free vinaigrette dressing — 30 calories, 4 g of carbs;

☐ diet soft drink — zero of everything.

That cuts the fat by one-half, the carbs by about two-thirds, and the calories by about 40%. The cholesterol is still a little high, but it’s not a problem if this is a rare treat. Congratulations! This is a filling, nutritious meal. Mom and Dad have taken back their power!

(For a list of Centers for Obesity Research and Education locations where primary care physicians and their staffs can receive training in managing weight for all ages, visit: www.uchsc.edu/core.) ■

Rainbow colors of foods yield cornucopia of health

Wide variety combats many chronic diseases

You’ve been telling your patients forever that they need to add more fruits and vegetables to their diets. You’ve probably hyped the “High Five” until you’re blue in the face.

Now there’s an amazingly simple and easy-to-follow recommendation that not only adds more fruits and veggies to the day’s intake, but provides a cornucopia of nutrients that many Americans are missing. Tell your patients to eat the rainbow.

That means, in the simplest terms, eat at least one food a day from each of the major color groups: red; orange/yellow; green; blue/purple; and white/green. The bright, beautiful colors are as close as the nearest supermarket. It’s not necessary to remember to take handfuls of pills or cook anything particularly unusual. It’s easy to remember and works like a charm. **(See box, p. 127.)**

“Look at the typical American dinner plate. It’s probably got meat, potatoes, perhaps some corn, and maybe a piece of bread. What are the colors? Beige and white,” says University of California,

KEY POINTS

- Vividly colored foods contain the highest quantity and quality nutrients.
- Easy-to-remember diet recommendation: eat at least one serving a day of red; orange/yellow; green; blue/purple; and white/green vegetables.
- This diet has been shown to prevent cancer and heart disease, and encourages weight loss.

Los Angeles nutrition researcher **David Heber**, MD, director of the University's Center for Human Nutrition. "Instead of recommending more fruit and vegetable intake, the trick is to add variety so they're eating as many colors as possible every day."

There are more than 25,000 phytonutrients known to science — and the typical American diet is sadly limited to a few hundred found in commonly eaten foods, Heber says. Americans eat about 20 fruits and vegetables on a regular basis, while the long-lived Mediterranean people enjoy twice that number regularly and the Japanese, with their low cancer rate, average nine vegetables in a single meal.

"Humans are genetically coded to be attracted to brightly colored foods that are nutritionally essential," says dietitian **Carol Haggans**, RD, MSRD, spokeswoman for the American Institute for Cancer Research in Washington, DC. "It is interesting that research bears out that the more intense hues we find in fruits and vegetables, the more helpful they are to maintaining health, especially in view of the growing body of research that indicates these foods help protect against cancer."

Eating the rainbow brings with it scientifically validated protection against cancer and heart disease and helps bring about weight loss, further reducing the risk of many chronic diseases. Haggans suggests that combining brightly colored foods provides a phytonutrient soup that may work synergistically to create and even restore health, and does it much more efficiently than supplements.

Heber notes the results of several scientific studies that show:

- The risk from many common forms of cancer are reduced by 50% in countries where a pound of fruits and vegetables is the common daily intake.
- Virtually every disease of aging — heart disease, diabetes, and many common forms of cancer, such as breast and prostate cancer — results from damage to DNA, which can be reduced by substances found in fruits and vegetables. About 80-90% of all cancers are not inherited, but result from the defects in DNA occurring throughout a lifetime from accumulated damage that could be prevented by increasing fruit and vegetable intake.
- More than 90% of all diabetes is associated with overeating and obesity (which Heber calls "diabesity") and will account for 70-80% of all heart disease deaths in the next 10 years.
- Damage to DNA results from excess oxygen

Eat the Rainbow

- 🍅 **Red:** Tomatoes and all tomato-based products, including tomato sauce, salsa, and juice; watermelon; and pink grapefruit.
- 🍊 **Orange:** Squash, carrots, mango, pumpkin, sweet potato, cantaloupe, and mango.
- 🍌 **Orange/yellow:** Nectarine, orange, papaya, tangerine, peach, pineapple, and yellow grapefruit.
- 🍌 **Yellow/green:** Corn, avocado, cucumber, peas, green beans, green bell peppers, honeydew melon, mustard greens, romaine lettuce, spinach, and zucchini.
- 🍷 **Green:** Broccoli, cabbage, Brussels sprouts, cabbage, kale, cauliflower, and Swiss chard.
- 🍇 **Blue/purple:** Blueberries, grapes, red wine, prunes, plums, cranberries, eggplant, cherries, beets, red peppers, apple, strawberries, and red cabbage.
- 🍄 **White/green:** Onions, garlic, asparagus, celery, mushrooms, artichoke, endive, and leeks.

radicals that are produced as part of normal cell function. The production of oxygen radicals increases with aging and probably is involved in Alzheimer's disease, other brain disorders, and the process of aging itself.

- The body depends on phytochemicals to back up natural DNA defense mechanisms, and this becomes more important with aging.

"Although this is not a weight-loss diet per se, many people lose some weight as they begin to eat more fruits and vegetables and substitute healthy foods for sugary, high-fat snacks," Heber says.

Here's a breakdown of the health benefits associated with brightly colored foods:

- **Red:** Crimson foods get their color from lycopene, a powerful antioxidant effective in mopping up cell-damaging free radicals and cutting the risk of certain cancers — including breast and cervical cancers — by 35% or more. Unlike many other foods, tomato products are best eaten cooked and/or canned, such as in spaghetti sauce, tomato juice, salsa, and tomato soup, because heat breaks down the cell walls of the plant, making the lycopene more bioavailable. More than 80% of the lycopene consumed by Americans comes from tomato products.

- **Orange:** The old saying about eating your carrots and being able to see at night has some basis in truth. Heavily orange-hued foods are abundant sources of alpha- and beta-carotene, often known as carotenoids, which the liver converts to vitamin

A and retinol, key nutrients needed for retinal health, immune system strength, and healthy cell division. Orange-colored fruits and vegetables include mangos, sweet potatoes, squash, and cantaloupe. Tomato products, in the red group, also are good sources of carotenoids.

- **Orange/yellow:** This group, which includes oranges, tangerines, peaches, papayas, and nectarines, contains a unique carotenoid called B-cryptoxanthin that has its own antioxidant capabilities. Although B-cryptoxanthin is available in other foods, Heber strongly suggests selecting foods from this group that likely contain other plant nutrients that contribute to a diverse diet.

- **Yellow/green:** The carotenoids ladder continues through this food group with spinach, collard, mustard, and turnip greens and a variety of other vegetables that provide lutein and zeaxanthin, carotenoids essential to eye health. Low intakes have been associated with cataracts and age-related macular degeneration, the primary preventable cause of blindness in the United States.

- **Green:** Cruciferous vegetables — broccoli, Brussels sprouts, cabbage, bok choy, and kale — are all powerful sources of sulforaphane, indoles, and isothiocyanates, which form complexes in the digestive tract that bind chemical carcinogens and trigger detoxification enzymes. Stomach acid helps to form the indole-carcinogen complexes. In addition, research suggests that indoles stimulate enzymes that make estrogen less effective, a potential help in fighting breast cancer.

- **Red/purple:** Anthocyanins in red/purple foods such as cherries, plums, blueberries, cranberries, apples, and beets offer antioxidant protection that has been shown to have a cardioprotective effect by inhibiting platelet aggregation. They also are rich sources of bioflavonoids, which have an anti-inflammatory effect similar to the Cox-2 inhibitors used to relieve symptoms of arthritis. There are studies currently under way to determine what role anthocyanins may have in lowering cholesterol and preventing certain types of cancer.

- **White/green:** Plants in the onion family contain alliin, which has been shown to have anti-tumor effects. Foods in this group, such as celery, mushrooms, and asparagus, are rich sources of flavonoids (quercetin and kaempferol) and antioxidants, which have been shown to protect the digestive system against ulcers and inhibit the growth of ovarian cancers. Garlic and other members of the onion family have long been used as remedies for high blood pressure and high cholesterol. ■

Crisis of faith can lead to increased risk of death

Although religion, prayer, and church attendance have long been shown to reduce the risk of death, a new study suggests that elderly Christian men and women who experience a religious struggle in connection with their illnesses may be at an increased risk of death.

Patients who felt “alienated from or unloved by God” or attributed their illness to “the devil” had a 28% increased risk of dying during the two-year period, according to results of the study from Bowling Green (OH) State University.¹

Researchers, led by **Kenneth Pargament**, PhD, a psychology professor at Bowling Green, conducted the study to evaluate religious coping strategies, including potentially helpful and harmful religious expressions. They found that those who experienced a religious struggle, such as spiritual discontent and questioning God’s powers, were at increased risk of death, even after controlling for baseline health, mental health status, and demographic factors.

Why does spiritual doubt bring about an increased risk of death? “That’s the \$64,000 question,” Pargament says. “It’s our best guess that religious struggle somehow compromises the immune system.” He also suggests that religious struggle in itself may cause poorer health or that it could be associated with emotional or personality differences that relate directly or indirectly to mortality.

Pargament suggests that religious struggle may result in social alienation, depriving the patient of the support of a congregation, clergy, perhaps even friends and family and in turn, a loss of social and emotional support. He looked at 595 patients ages

KEY POINTS

- Elderly Christian patients who undergo religious crises associated with their illnesses are 28% more likely to die than those who do not experience such struggles.
- Researchers suggest crises may suppress immunological function.
- Health care professionals who are cognizant of the increased risks associated with religious struggle can help their patients by turning a sympathetic ear and recommending chaplain care, if it seems appropriate.

55 and older who were medical inpatients at Duke University Medical Center in Durham, NC, and at the Durham Veterans Affairs Medical Center. Participants were predominantly Christian — the majority representing conservative (e.g. Baptist) or mainline Protestant (e.g. Methodist) denominations. Patients were suffering from serious heart disease, cancer, and gastrointestinal disorders. Religious coping and religious struggle were measured by RCOPE, a 14-item questionnaire that assesses the extent to which the patient uses specific methods of religious coping.

Positive religious coping consists of seven items that measure seeking spiritual support, seeking a spiritual connection, collaboration with God in problem solving, religious forgiveness, and benevolent religious appraisals of the illness. Religious struggle was measured by the negative religious coping subscale made up of seven items that assess feelings of being punished by God, interpersonal religious discontent, demonic appraisals, spiritual discontent, and questioning God's powers. Participants also were asked how often they attend church or other religious meetings; how much time they spend in private religious activities, such as prayer, meditation, or Bible study; and how important religion is in their lives.

After two years, researchers found survivors at baseline were significantly younger, more educated, and more likely to be white; and have fewer active medical diagnoses, less severe ratings of illness, better subjective health, more independent functional status, and better cognitive functioning. Both survivors and patients who subsequently died reported some degree of religious struggle, but survivors attended church more frequently than those who died during the study. Mortality was not predicted by gender, race, diagnosis, cognitive functioning, independence in daily activities, depressed mood, or quality of life.

Furthermore, Pargament's group analyzed the depth and duration of religious struggle by comparing those who had no religious struggle at all, those who had a short crisis, and those who engaged in a chronic struggle.

"Mortality was directly linked to the length and intensity of the struggle," he says. "People who got stuck in the struggle and seemed unable to work out their crisis definitely did not do as well as those who worked their way through the struggle, whether by their own steam or with the help of clergy or other religious supporters."

His colleague, **Richard Penson**, MD, director of clinical research in medical gynecological

oncology at Massachusetts General Hospital in Boston, agrees.

"There is no doubt that patients who don't have much spiritual faith are disadvantaged." Penson has observed that when his patients experience religious crisis, they frequently give up. "They simply lose hope."

Penson and Pargament also agree that it is incumbent on health care professionals to address the spiritual needs of their patients.

"A spiritual history is just as important as a medical history. It should become routine," says Pargament. By spiritual history, Pargament says, he means that practitioners should ask about religious and church affiliations and ask questions that would determine how important religion is in the patient's life.

Doctors, nurses, and other practitioners often may feel uncomfortable or unqualified to raise spiritual issues with their patients, but Penson asserts that patients often raise these issues themselves. "I think it is definitely part of our jobs to encourage people to make realistic positive adjustments to their illnesses and particularly to help them cope with feelings of guilt if the illness goes badly."

Penson also says health care professionals shouldn't open the subject of religious struggle, but they should not be fearful if the subject is raised.

Be ready to listen

Nurses often become confidantes of hospitalized patients undergoing religious struggle, and an awareness of the increased risk associated with religious struggle may give nurses a signal to suggest a chaplain visit. "Sometimes it's enough to just talk about it," he says.

Pargament suggests that health care professionals should be more vigilant in observing their patients (particularly elderly patients with serious illnesses), treat them for depression if it's appropriate, and consider referrals to a chaplain.

"Acknowledging and addressing anger or guilt, common sources of suffering, are essential to adjustment," says Penson. "Simply being there for the patients and being open to their hurt can help resolve their spiritual crises, a responsibility that is shared by the whole health care team."

Pargament, who says his research has, over the years, "brought me closer and closer to my religious life," warns that the results of his study "shouldn't in any way undermine religion as an

unusually potent personal resource for so many people with serious illnesses. Most people don't report religious struggles. They're not that common, but a religious struggle should be a red flag for every health care professional that the patient's health may be at increased risk," he says.

Reference

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Fibromyalgia, chronic fatigue: Follow the clues

Expert recommends listening more to patients

The biggest problem I had was not my disease, but getting any doctor to even believe I was sick. I know they all thought I was simply fat and lazy," says a 29-year-old Tennessee woman who suffered from extreme fatigue, weight gain, depression, chronic infections, and muscle and joint pain for two years.

Eight doctors failed to diagnose her condition. The ninth finally had an inkling what her problem might be, and low T3 and T4 thyroid levels confirmed his suspicions: She has chronic fatigue immune deficiency syndrome (CFIDS).

And she's not alone. More than 800,000 Americans, the vast majority of them women, suffer from CFIDS, and 6 million have the closely related condition called fibromyalgia syndrome (FMS). The Tennessee woman's experience is unfortunately the norm: On the average, people eventually diagnosed with CFIDS or FMS have seen nine doctors and have experienced symptoms for two years.

Over the years, their biggest problem has been getting anyone to listen to their complaints or even to believe such a condition exists, says **Jacob Teitelbaum**, MD, director of the Annapolis (MD) Research Center for Effective FMS/CFS Therapies. "Doctors have got to regain their ears and listen to their patients, like the doctors before us did," he says.

The complexity of CFIDS and FMS makes a diagnosis an onerous task. "That's partly because the symptoms of CFIDS and FMS are so vague

that it is hard to pin them down. There's no uniform definition, and it's an open-ended discussion that often is very anecdotal," says Miami endocrinologist **Neil Goodman**, MD, FACE. "So many people disagree about what these diseases are. Defining them is nearly impossible."

Teitelbaum takes the whole tangled mess and attempts to unravel each patient's case individually. "I have found that the key to eliminating chronic fatigue is to treat all of the underlying problems simultaneously, since most sufferers of chronic exhaustion have a mix of at least five or six underlying problems."

Tracing a complex tangle of symptoms that may trigger a cascade of events leading to FMS and CFIDS, Teitelbaum has devised an extensive diagnostic questionnaire to help pinpoint a diagnosis. Coupled with the results of a battery of laboratory tests, Teitelbaum says, a program can be tailored specifically to the needs of an individual patient. His published randomized, double-blind, placebo-controlled study of 72 FMS and CFIDS patients shows individually tailored protocols provided 76% symptom relief in three months and 90% in two years.¹

The cascade of physiological events that some patients call the descent into hell, in Teitelbaum's opinion, often begins with hypothalamic and thyroid dysfunction. He starts with T3 and T4 thyroid tests, but does not rule out thyroid dysfunction if the results are normal.

Goodman is skeptical about the endocrinological foundation of the diseases, and suggests that endocrinological dysfunction could be caused by the CFIDS and FMS symptoms themselves. "It could be a chicken and egg situation. I'm not saying he's wrong, but I think we need to look at it a little more deeply," says Goodman.

FMS differs from CFIDS because it is characterized by many tender knots in the muscles. "For many people, CFIDS and FMS are the same illness," says Teitelbaum.

Teitelbaum gets his results through a cocktail of pharmaceuticals and supplements that may require the patients to take 30 or more pills a day. He also begins with the admonition that restful sleep is the key to good outcomes. "Many resist taking so many pills, but when they start seeing the results, they see that it's worthwhile."

Every patient diagnosed with CFIDS or FMS gets melatonin and valerian (to promote regular sleep patterns), a daily multivitamin, and magnesium with malic acid. Also, he makes available to all patients low doses of any or all of the following:

zolidem (Ambien), trazodone (Desyrel), cyclobenzaprine (Flexeril), carisoprodol (Soma), amitriptyline (Elavil), and clonazepam (Klonopin).

Individualized treatments may include the following as warranted by laboratory exams or symptomology:

- Ferrous fumarate (Chromagen) if ferritin levels are lower than 40 ng/mL or iron saturation is lower than 22%.
- Vitamin B₁₂ by injection if B₁₂ levels are lower than 540 pg/mL.
- Thyroid support with Synthroid or Armour thyroid if thyroid-stimulating hormone is lower than 2.5 U/mL, total T3 is less than 95 ng/dL, or free T4 is less than 1.0 ng/dL, and the patient has three or more of the following symptoms: weight gain, oral temperature of 93.3 ° Fahrenheit or less, dry skin, thin hair, constipation, achiness, and cold intolerance.
- Cortisol (Cortef) if the cortrosyn stimulation test with cortisol baseline is less than 12 ug/dL and/or 30 minute increases are less than 7 ug/dL

and/or patient has three or more of the following:

- sugar craving;
- shakiness relieved by eating, dizziness, moodiness, recurrent infection, high stress at illness onset, and low blood pressure.
- DHEA-5 if DHEA-sulphate levels fall below specified ranges.
- Testosterone enanthate (Delatestryl) for males and females if free testosterone is in the lowest quintile for age;
- Estrogen replacement (Ovcon) for female patients if estradiol is less than 57 pg/mL and/or follicle-stimulating hormone and luteinizing

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hormone are greater than 10 ml U/mL and/or if they experience irregular periods, hot flashes, inadequate vaginal lubrication, low libido, or flaring of FMS symptoms before periods, or have had tubal ligation.

- Oxytocin if patient shows severe cold hands and/or feet and pallor.
- Fludrocortisone (Florinef) if patient has blood pressure of less than 100/60 mm Hg or orthostatic dizziness or FMS symptoms are worsened by standing against a wall for 10 minutes.
- Sertraline (Zoloft) if depression or persistent severe pain is present.
- Nystatin, plus in severe cases, Itraconazole (Sporanox) if stool microscopic exam showed higher than normal fungal levels or symptoms suggesting fungal overgrowth such as thrush, recurrent yeast vaginitis, or antibiotic use.
- Metronidazole (Flagyl) followed by iodoquinol (Yodoxin) if stool was positive for *Clostridium difficile* or if metronidazole-sensitive parasites were present.
- Doxycycline if recurrent body temperatures are less than 98.6 ° F.

“There is no lack of scientific basis for treatment, just a lack of awareness of the treatment,” Teitelbaum wrote in his book *From Fatigued to Fantastic* (New York City: Avery; 2001).

Teitelbaum admits he was surprised by the results of his study. “We expected some improvement, and we have seen it in practice, but we were stunned to see that such a large percentage of symptoms could be relieved in such a short period of time, and they almost completely disappeared with two years of treatment in the active group.”

Of the 33-member active group, 16 reported they were greatly improved, 14 said they were better, two said they were the same, and only one reported being worse. In the 33-member placebo group, only three reported great improvement, nine said they were better, 11 said they were the same, six were worse, and four were much worse. Nearly 50% of the active group reported a 133% increase in energy and a 58% reduction of pain after three months.

“This is 25 to 30 times more effective than any treatment previously shown to be effective in long-term, placebo-controlled studies,” he says. Teitelbaum concedes that some doctors may be uncomfortable with a study that uses multiple interventions adjusted for each patient and that treats patients on symptoms despite lab values being within normal range, yet he contends that

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“Neither of these concerns has any significant impact on the scientific or clinical validity of the study data.”

He argues that alterations in the patient's regulatory system “can cause multiple marginal deficiencies, which, in the aggregate, may cause severe dysfunction.” He notes that recent data show that normal thyroid values often are found when hypothyroidism actually exists. “Because this is a complex syndrome, there is no magic bullet cure. Treatment is most effective if you address the whole process instead of individual symptoms.”

(Editor's note: The Centers for Disease Control and Prevention has a web site with specific information on CFS: <http://www.cdc.gov/ncidod/diseases/cfs/index.htm>. The site provides diagnostic criteria and a wealth of other information for health care professionals and for patients.)

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