Obesity: the epidemic of the 21st century

by Nina Mikirova, Ph.D.

In 1999, the Centers for Disease Control and Prevention reported that obesity, defined as a body mass index (BMI) of greater than 30, increased in the adult population of the United States from 12% in 1991 to 17.9% in 1998. Obesity increased overall in the United States population, including children. The World Health Organization described obesity as an "escalating epidemic" and "one of the greatest neglected public health problems of our time with an impact on health which may prove to be as great as smoking." (Consultation on Obesity, Geneva, Switzerland, World Health Organization, June 3-5, 1997). It has serious health consequences that have a disproportionate effect on minorities, women, children, the aging population, and those in lower socioeconomic status.

**Obesity requires lifetime management just like any other chronic disease.**

Obesity is closely associated with the risk of an increasing number of complications. These include hypertension, dyslipidemia (high cholesterol), cardiovascular disease, stroke, type 2 diabetes, respiratory dysfunction, osteoarthritis, and others. The National Center of Health Statistics showed that 65% of obese adults have at least one of these chronic diseases and 27% have two or more.

Obesity has a profound effect on disability. Obesity, especially at a severe level, is itself disabling. More frequently, obesity at lower levels is an independent risk factor for over 30 conditions, many of which are disabling.

The unwanted weight in the obese is the result of triglyceride stores in adipose tissue. Storage of this calorically dense substance is based on the simple thermodynamics expression E=Q-W, where the energy storage E is defined as the difference between the calories we eat (Q) and those we burn (W). The current epidemic of overweight/obesity is most likely related to a combination of increased caloric intake and decreased energy expenditure.

Studies of adipose tissue showed that the number of adipocytes, like the level of fat storage, remains quite constant, but the adipocytes, or fat cells, readily expand or shrink with overfeeding or underfeeding. A clear understanding of adipose signaling and its contribution of the state of obesity will require physiological, cellular, and molecular studies.

Obesity is also associated with abnormal levels of blood lipids. Approximately 38% of patients with a BMI of 27 or greater have high cholesterol levels. In addition, high-density lipoprotein (HDL) and level of HDL/LDL (low density lipoprotein) ratios are typically decreased in obesity.

Proper understanding of obesity requires a multifactor approach. Probably, simple consideration between how much we eat and the level of activity does not explain all the differences between subjects. The etiology of obesity is made up of complex, interrelated factors: biochemical, neurological, physiological, and molecular studies.

Some Americans are short on vitamin C

In the days of sailing ships, sailors would often become fatigued after being out to sea for several months without fruits and vegetables. This fatigue was often caused by scurvy.

Today, we again have to worry about vitamin C deficiency, according to the evaluation of 15,769 children and adults between the ages of 12 and 74 who participated in the Third National Health and Nutrition Examination Survey.

Researchers found that 20% of men and 17% of women were vitamin C depleted, and an additional 14% of men and 10% of women were considered vitamin C deficient. That is what the doctors here at The Center say. We see people who have zero or very little vitamin C in their blood and urine.

The researchers said that "vitamin C supplementation should be discussed [by doctors] with all patients, but especially those who are at greatest risk of vitamin C deficiency: cigarette smokers and poor eaters."
Nutritional Medicine
by Ron Hunninghake, M.D.

A healthy self-concept

One of the less tangible determinants of health is self-concept. In one sense, self-concept is invisible. On the other hand, it is constantly on display. How can this be?

There is an outer and an inner component to our lives. Objectively, our body moves around doing things and having things happen to it. It is very visible and measurable. Our internal physiology and biochemistry, while more hidden, are also objectively measurable. We unconsciously rely on these “hidden” homeostatic mechanisms to help us deal with the life-disrupting forces of injury, malnutrition, disease, and aging.

Our subjective world is even more personal and “inner.” Thoughts, feelings, images, memories, and other states of consciousness exist there completely out of sight to others. Yet, this is the “real” world we live in. These subjective experiences constitute our inner world, which Buckminster Fuller believed account for at least 90% of what it means to be human.

Self-concept is the subjective homeostatic mechanism that helps us cope with subjective “injuries, malnutrition, disease, and aging.” Life’s disappointments, emotional crises, moments of philosophical despair, the apparent lack of love and appreciation...these are the inner world challenges we all face. Without a strong self-concept, how could we even begin to weather life’s vicissitudes?

Ironically, because as human beings we are brothers and sisters, these very intimate and hidden inner experiences are shared by all of us. Through the exercise of life and living, we are all striving alike to develop a strong self-concept to safely carry us through life’s tempests. Hence, we are all expert “readers” of one another’s self-concept. We can see the subjective in our teachers, our students, our doctors, our patients, our friends, our family, and our spouse. Through the generous mentoring of these caring human beings we are able to feed and strengthen our own self-concepts.

Put in the simplest of all terms: our self-concept is strengthened by their love for us and our love for them.

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physiological, genetic, environmental, cultural, and psychological.

In spite of many studies which demonstrated that a genetic contribution to obesity is significant, our genes have not changed over the past 100 years. As most of the world increased caloric intake and decreased physical activity, the same genes contribute to obesity and poor health.

In addition to the environmental factors that are responsible for the recent “epidemic,” new molecular and physiologic insights into this problem must be conducted to enlarge possibilities for future development of successful therapies.

In our research study, we analyzed the parameters of inflammation, the level of insulin resistance, the level of thyroid functioning, and the level of cell energy metabolism in obese patients and in healthy subjects with a BMI of less than 25. The body mass index or BMI expresses the relationship between weight and height.

A comparison was made between C-reactive protein “the level of cell metabolic activity,” thyroid hormone levels, insulin levels, and vitamin E levels in the plasma of obese subjects or other groups of patients and subjects with a BMI of less than 25. C-reactive protein (CRP) is a cytokine that induces an acute phase protein that increases in concentration as a result of the inflammatory process. After discovery in 1930, CRP has been used as a marker or general indicator of infection and inflammation. Our data support the positive relationship between obesity and serum levels of CRP. The serum level of CRP was significantly

continued on page 3
Obesity—Cont’d from page 2

higher in the obese groups than in subjects with a normal BMI range (p<0.01).

According to our data, an elevated level of CRP and a low-grade inflammation characterize obesity. A comparison of the insulin levels in the blood plasma of patients with obesity and healthy subjects with a BMI of less than 25 demonstrated that obese subjects were associated with higher fasting insulin levels. The mean level of insulin was 8.6 for subjects with a BMI of less than 25, 12.01 for patients with obesity, and 14.7 for patients with obesity and other disorders.

From our analysis, obesity was accompanied by increased levels of fasting insulin. These data support the results of other studies about increased levels of insulin associated with insulin resistance in obesity and in other abnormalities such as type-2 diabetes, hypertension, cholesterol disorder, and cardiovascular disease.

Another parameter was analyzed for patients who had an increased BMI. This was the level of pyridine nucleotides in the serum, which is associated with the level of cell metabolic activity. These changes in the metabolic rate may influence the concentration of these molecules in cells. A lower level of these coenzymes will result in decreased ability of red blood cells to deliver oxygen to the cells in the body.

Comparison of this parameter for two populations (obese patients and healthy subjects with a BMI of less than 25) demonstrates that patients with obesity have a lower level of energy metabolism. The ratio of the number of patients with a level of energy metabolism less than an average normal level to the number of patients with energy metabolism higher than the average normal level was 3.6 for obese patients and 1.0 for subjects with a BMI of less than 25.

We found the association of inflammation with obese patients. The CRP level was higher in obese subjects. The development of inflammation in patients with obesity is an important component from which diabetes and cardiovascular disease may be derived. The level of fasting insulin was increased in obese patients. As the result, continued on page 4

HEALTH HUNTERS AT HOME

Strong circulation, a cure for many ills

Is it strong circulation or sludge blood that is circulating through your body? That is not a question many of us ask ourselves, but it should be foremost in our thoughts, according to Dr. David Williams.

Strong circulation comes from a good heart pumping not too viscous blood that clots well and circulates freely through your body, taking oxygen and nutrients to each cell and bringing back the waste materials to be excreted. Sludge blood (that is my term) is very viscous, clots almost immediately when you scratch or cut yourself outside, and also clots quickly in your arteries that could lead to heart attacks and strokes. No one wants sludge blood.

Dr. Williams has been interested in this circulation problem recently. He wrote, “Besides the obvious fact that heart and vascular disease is now the leading cause of death, dozens of the most common health problems we face today show remarkable improvement when proper circulation can be restored.” These include such problems as chronic fatigue, fibromyalgia, and multiple sclerosis, as well as heart attacks and strokes.

His study of circulation led him to look at Japan. Japan has one of the lowest rates of depression, homicide, and suicide in the world. They also have less prostate cancer, breast cancer, and heart disease and greater longevity. This is certainly related to their high consumption of fish and other seafood, but it also may be that they consume high quantities of soybean products.

If you don’t want to go to the trouble of fermenting soybeans and then eating a couple of tablespoons of it a day, you can purchase nattokinase in capsule form. Nattokinase is the active enzyme of the natto vegetable cheese and works very well, Dr. Williams says.

This brings me to my personal involvement with nattokinase.

A few weeks ago, Jackie (my wife) came to The Center to see Dr. Ron Hunninghake. She wanted to check on her chronic fatigue, fibromyalgia, and depression. The chronic fatigue is essentially gone and the fibromyalgia was greatly reduced by the nutrient regime, but the depression was creeping back recently. He prescribed nattokinase, among other nutrients, to help her not only with her depression but also the chronic fatigue and fibromyalgia as well.

I thought this was interesting since nattokinase has been used at The Center for at least a couple of years to work with some types of cancer. Remember, the Japanese have a low history of prostate cancer and breast cancer.

Then I saw Dr. Ron a couple of weeks ago. Both my parents died of heart attacks at age 69. Since that is my age, I thought I should check this out. I also had some fatigue in my legs and a heaviness in my chest when I work hard at home bailing out the pond to clean it. I also wanted to check on my prostate. He put me on nattokinase also. Both of us came in for completely different reasons and both received nattokinase.

Dr. Ron had presented a Lunch and Lecture on circulation while I was on vacation and this increased his interest in nattokinase.

When I looked at what Dr. Williams was saying about how nattokinase is used, it fits. For Jackie, it was for circulation to improve her chronic fatigue, fibromyalgia, and depression. For me, it was for my circulation causing fatigue in my legs and the dull ache in my chest when I work hard around home.

As Dr. Williams says, “The sooner you put nattokinase to work, the better the outcome.” Just taking two or three pills a day will work to prevent heart attacks and strokes as well as help you overcome chronic fatigue and fibromyalgia. It won’t replace your nutrients, but it will improve your circulation so that they will work better.

—Richard Lewis
Obesity is a multifactorial chronic disease that develops from the genotype and ________.  
   a. birth order  
   b. environment  
   c. time of day you eat  
   d. none of the above

Obesity is one of the major contributors to preventable death in the United States. It plays a part in various health conditions including ________.  
   a. hypertension and osteoarthritis  
   b. type II diabetes and stroke  
   c. gallbladder disease and sleep apnea  
   d. all of the above

A taskforce reviewed the literature in 1998 to come up with guidelines to define obesity. They came up with a formula where BMI over 30 is considered obese. BMI is figured by taking weight/height (inches squared) X 703. BMI will be inaccurate if you are ________.  
   a. under 5 feet tall  
   b. a body builder or have a lot of muscle mass  
   c. very inactive  
   d. all of the above

Modern technology and enlightened citizens have led to a decrease in the prevalence of obesity in adults from the 1978 level to the level in 1999.  
   a. True  
   b. False

National Health and Nutrition Survey (NHANES) has looked at the American diet and found changes since 1978 that might give an idea as to why the level of obesity has changed. These changes include ________.
   a. milk consumption of children under 5 had increased and over 99% of the survey group ate fruit  
   b. sugar consumption had increased from 124.6 pounds per person per year to 149.2 pounds and calories from fat had decreased from 40% to 33% of daily calories  
   c. intake from salty snacks had decreased and over 90% of the surveyed population ate 5 fruits and vegetables per day  
   d. all of the above

In order to “control” weight it is helpful to stick to just one diet plan no matter what happens.  
   a. True  
   b. False

It is helpful to consider doing weight management rather than weight control. Factors that influence successful weight management include ________.
   a. motivation and problem solving skills  
   b. can-do attitude rather than all or nothing  
   c. keeping records of weight, food consumption, and activity levels  
   d. all of the above

Obesity—Cont’d from page 3

Obesity is associated with insulin resistance-hyperinsulinemia.

In addition, we found that energy metabolism is decreased in obese patients. This effect can be explained if the obese subjects have cells showing insulin resistance—a forerunner of type 2 diabetes. An increased level of insulin in the blood plasma and insulin-resistance is shown by a decrease in the level of glucose oxidized by cells and a decrease in levels of energy production in the cells.

In summary, we would like to emphasize that obesity cannot be simply “cured” by different diets, drugs, or nutritional counseling. Obesity requires a lifetime management just like any other chronic disease. Obesity may be treated through the use of a slow rate weight loss program, a decrease in calorie intake, an increase in calorie expenditure through exercise, behavior modification, and lifestyle changes.

Green tea good for poisons, arterial plaque

Green tea leaves contain several antioxidants that are good for your body (as you could probably guess). All antioxidants are good for you—either those you get from supplements or phytochemicals that you get from the food you eat.

Recently, researchers in Japan reported in the Journal of Agricultural and Food Sciences that green tea helps get rid of dioxins, a cancer causing byproduct of many combustion processes that occur naturally. These dioxins accumulate in the cells of our bodies.

They also found that among the antioxidants in green tea, the primary one is epigallocatechin gallate (EGCG). In this study, the researchers assessed the potency of 20 different green tea compounds, including EGCG, in blocking dioxins from finding docking sites in your cells.

In another study reported in Circulation, researchers found that antioxidants in green tea might prevent development of atherosclerotic plaques in the arteries of the blood.
The Garden and the gardener
by Melvin D. Epp, Ph.D.

As herbs begin to flower, the essential oils or flavor components in plant parts reach their highest potency. That is the time to put herbs into storage to enhance your dining pleasures this fall.

Prior to harvest, check your herb plants and prune out any diseased or insect damaged leaves and branches. The morning before you harvest, you may want to gently mist the herb plants from all sides to wash off any dirt.

The best time to harvest herbs is mid to late morning after the dew has dried. Harvest the herbs in small, manageable batches. Immediately bring them into a cool room. As long as the herbs are cleaned thoroughly the day before you cut, herbs destined for the drying rack need not be washed again. Sort stem size and bundle together with small rubber bands and hang in a warm, airy place out of direct sunlight for drying, or dry in a slow oven, dehydrator, or on a clean piece of window screen fitted onto a frame. Use one quarter to one third as much of a dried herb as you would the fresh herb.

An alternative method for the preservation of herbs is freezing. Rinse herbs you plan to freeze. Herbs like parsley, cilantro, and basil lose their flavor when dried, but will keep well when chopped, heaped into empty ice cube trays, and then covered with water before freezing. You can use the same technique with mint leaves in cubes of apple or cranberry juice.

Also consider freezing chervil, chives, garlic chives, nasturtium, rosemary, sage, sorrel, and tarragon. Spread whole or chopped leaves on a jellyroll pan lined with waxed paper or foil. Cover with plastic wrap and freeze. When frozen, place in heavy-duty labeled plastic freezer bags. Use the same amount of frozen herbs as you would fresh.

For convenience, herbs such as dill, parsley, and chervil may be pureed in a food processor with a little water and the puree frozen in ice-cube trays. Herbs such as basil and tarragon preserve better when pureed with olive oil.

Enjoy the bounty and flavors of your summer garden all winter.

Herbal History

Ivy extract beneficial in pediatric bronchial asthma

Ivy is lovely as a ground cover, on university buildings, and even on homes. Now research shows that ivy leaf (Hedera helix) extracts may be valuable in treating bronchial asthma.

Researchers surveyed MEDLINE for information relating to pediatric bronchial asthma from 1966 to 2001 and EMBASE from 1974 to 2001 (both computer databases) for the same information. They looked for "ivy," "Hedera helix," and "Efeu" (German for ivy) in relation to children and bronchial asthma. Three randomized trials fit their requirements for this study. All three used the same product manufactured in Europe containing ivy extract.

In the first double-blind trial using 24 boys and girls between the ages of 4 and 12 years, the researchers wanted to establish the superiority of ivy leaf extract cough drops as opposed to a placebo. The children took a total of 35 mg of ivy leaf dry extract a day in the form of cough drops or a placebo. The researchers found a treatment difference worked well in favor of the ivy leaf extract.

In the next study using the same age children, the researchers wanted to compare the results of suppositories and cough drops with ivy leaf extract to a placebo. Again, they found comparable efficacy for the suppositories and cough drops.

The final trial used 25 boys and girls between the ages of 10 and 16 in a double-blind study. The children took cough drops containing 45 mg of ivy leaf extract, syrup containing 105 mg of ivy leaf extract, or a placebo. The results demonstrated a comparable efficacy for the ivy leaf extracts.

Food of the Month
by Donald R. Davis, Ph.D.

PINE NUTS are the seeds of various pine trees, most commonly pignoli pines in the Mediterranean area and pinyon pines in the American Southwest and Mexico (piñon in Spanish). Pinyon nuts were to some Southwest Indians what buffalo were to plains Indians—their staple food and the focus of their social and spiritual life. Tribes migrated annually for the long, fall harvest in sacred upland forests. Pignolias shown here are most common in U.S. markets; pin­ yons have about 50% less protein and amino acids, but notable amounts of omega-3 fat. Try them plain, in meat, grain, fruit and vegetable dishes, and on salads.

The length of each bar shows the amount of one nutrient. If a bar extends out to the inner circle, the food has enough of that nutrient to match the calories it contains. The numbers show nutrient amounts in RDAs per serving shown. The pie charts show the sources of calories (left) and the types of fat (right).

NutriCircle

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I like the harder you try the more weight Americans who struggle to manage you gain? Every day someone discovers the way to manage her/his weight effectively. How can they do that?

The first thing that helps is motivation. Sometimes having to go up a clothing size or two is enough to bring a desire for change. Jim Ryan said, “Motivation is what gets you started. Habit is what keeps you going.” What has motivated you in the past? Was it small successes, seeing challenges rather than problems, or having the support of those you love?

Determination goes along with motivation. Alexander Graham Bell said, “What this power is I cannot say; all I know is that it exists and it becomes available only when a man is in that state of mind in which he knows exactly what he wants and is fully determined not to quit until he finds it.” I’ve had that experience a couple of times in my life. A deep knowledge that I could do it even when the goal seemed unattainable kept me on task. Studying the outcome that I wanted, reading stories of success, and a strong focus on what I wanted played a part in developing that feeling.

Perseverance or keeping on when you want to quit is part of the success equation. If we look at past experiences as information, discard what has not worked and incorporate what has worked, rather than seeing it all as failure, then we are on the road to successful weight management.

Paul Harvey said, “I hope someday to have so much of what the world calls success, that people will ask me, ‘What’s your secret?’ and I will tell them, ‘I just get up again when I fall down.’” Let’s get back up and take part in another epidemic, an epidemic of health!

**CENTER UPDATE**

**Intravenous vitamin C for cancer, a study**

Both oral and intravenous vitamin C in the treatment of cancer was evaluated in a recent study published in the *Annals of Internal Medicine*. Hugh Riordan, M.D., the director of The Center, the Bio-Communications Research Institute, along with Mark Levine, M.D., with the National Institutes of Health were among the researchers.

Dr. Riordan and The Center have used intravenous vitamin C for over 20 years in treating cancer, and the Bio-Communications Research Institute has been studying it for more than 12 years.

The object of this study was to convince the National Institutes of Health to consider high dose intravenous vitamin C as a treatment consideration for cancer. The results were excellent.

For instance, the researchers found that “oral vitamin C produces plasma concentrations that are tightly controlled.” This means that in their research, vitamin C given orally, even at doses higher than the recommended daily requirements, has a maximum level it won’t go above.

They went on to say that intravenous vitamin C produces substantially higher plasma concentrations than one could expect from taking oral vitamin C. Using a 10-gram dose of intravenous vitamin C for ten days and following with an oral dose of 10 grams orally indefinitely, people survived 150 to 300 days longer than subjects not getting the intravenous vitamin C.

The researchers concluded that “intravenous vitamin C is expected to have little toxicity compared with conventional chemotherapeutic agents. In this context and in light of our new pharmacokinetic data, a role for intravenous vitamin C in cancer treatment should be reevaluated.”

The Center will continue to use intravenous vitamin C for treating cancer with excellent results.

**Case of the month**

When this 46-year-old man came to The Center in September of 2001, he was in terrible shape. In addition to hepatitis C, he had anxiety, depression, memory loss, tinnitus, severe and frequent panic attacks, cardiac arrhythmias, and nicotine addiction. His liver enzymes were over 600 when the normal range is 0 to 40, which indicated how active his hepatitis C actually was.

After Dr. Riordan’s initial evaluation, he had laboratory testing done. When he came back in three weeks to see nurse practitioner Mavis Schultz, she gave him the results of his tests. She started him on intravenous vitamin C infusions as well as vitamin B2, Tri Amino Sorb, Emergen C packets, and evening primrose oil to cover his low levels on his tests. She also started him on zinc because of a high pyrroline level, Probiofluids for elevated indican level, and also alpha lipoic acid.

In November of 2001, he began seeing Dr. Hunninghake and continues seeing him today. Dr. Hunninghake increased his intravenous vitamin C to 25 grams, along with magnesium. These infusions were given to him twice a week. This continued until June 2003 when it was reduced to once a week. By this time he was doing very well.

Recently he said, “The Center’s done me great,” even though he had been told before coming to The Center that there was nothing that could be done to improve his hepatitis C. “The IVC and lipoic acid got me to where I could function as a salesman and assistant manager. Before The Center I could not function at either because of the panic attacks and the hepatitis C. I recently walked 36 holes of golf carrying my golf bag. My golf partners call me grandpa, but I beat them regularly.”

He is not sure what has gotten him to this point—the IVCs, the colonics he is doing outside The Center, his medication, his nutrients, or the combination of all of these.

But, he said, “The doctors at The Center listen, not like the other doctors—they listen to you.” And then they respond to your questions and ideas.
**SPECIAL DISCOUNTS**

Audio Tapes: Regular Price—$7.95; **Health Hunter** Price—$7.16
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**OBESITY: WHY ARE WE GETTING SO FAT IN THE USA?**
*With Rebecca Kirby, M.D., R.D.*

Is your waistline expanding? Have you noticed that so many Americans are overweight and just can’t seem to get a handle on it? Learn what obesity is, the astounding prevalence it has in today’s society, and the risk factors of this new epidemic in children. Dr. Kirby discusses treatment modalities, nutrition, exercise, and behavior modification.

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Simple Ways to Overcome Depression and Bipolar Illness
...AND MORE!

Beginning September 21 - Yoga at The Center
Tuesdays & Thursdays - 8 week session
October 21 - Health Hunter/Beat The Odds Mini Presentations
and "Ask the Doctors"
October 22 & 23 - Health Hunter/Beat The Odds Days

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Body measurements may contribute to breast cancer

In postmenopausal women, obesity appears to be a significant and modifiable risk for breast cancer, say researchers in an article to be published in the *International Journal of Cancer*, according to Clinician Reviews. In their study, researchers found that large hip circumference alone was also a risk factor, regardless of menopausal status.

The researchers followed 176,886 women from 10 European countries for about 4.7 years. Waist circumference of about 39 inches or larger and hip circumference of about 50 inches or larger increased the risk by 81 percent and 70 percent respectively.