

HEALTH AND STRESS

The Newsletter of The American Institute of Stress

Number 5

1996

STRESSLESS IN SKANEATELES

Stressed out people who are "sleepless in Seattle", might want to consider moving across the country to Skaneateles. From time to time, various listings pop up in the press listing various cities as being "the most" or "the least" stressful, with others receiving numerical rankings in between. The criteria for such rankings vary, but may include such things as reported rates of crime, suicide, divorce, and alcoholism, population density and recent change, air quality and other measures of environmental pollution, public utility services, school and library systems, climate, etc., etc. Such ratings are apt to be self serving, since they often depend on the motives of the sponsoring organization. Several years ago, a lengthy list of the best and worst cities to live in was published just a few weeks after another that attempted to rank the least and most stressful cities. The top 25 and the bottom 25 cities of each list did not contain even one duplicate. It's difficult to believe that anyone would take these reports seriously, but such rating scales can have financial ramifications.

In addition to affecting real estate values and tourism, they can also lead to litigation. When alleged "clerical errors" led to an undeserved low rating for Tulsa, Oklahoma, the city filed a \$26 million lawsuit for defamation of character.

Health criteria, such as hospital and other services, and age adjusted death rates may be other considerations. It is generally believed that the stresses associated with "life in the fast lane" predispose to greater risk for cardiovascular disease. Increased speed of daily activities such as eating, talking, driving, etc., are a characteristic of the Type A coronary prone individual. Support for this comes from one study of pedestrians, bank clerks and postal workers in 36 cities, who were monitored to see how fast they walked, talked, and performed their regular duties. Boston came in first, followed by Buffalo and New York. The researchers found that this correlated precisely with heart attack deaths in these three cities. The only exception was Salt Lake City, which was fourth on the speed list, but way down at 31 for deaths. The researchers attributed this to the large percentage of Mormons. Their religion prohibits them from smoking, and in addition, they enjoy close ties with family and friends. Such strong social support is a powerful stress buster that has been shown to promote health.

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*The Newsletter of
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Some have proposed that it is not the time urgency or competitive component of Type A behavior that is linked to heart attacks, but rather increased hostility. However, this issue was also addressed, and the correlation with speed of activities and coronary events was found to be greater than that associated with hostility assessment. A prior Gallup poll had been designed to measure levels of hostility and mistrust in ten cities with the highest and lowest death rates from heart attacks, to prove that there was a strong connection. The results seemed to support this. The five cities with the highest hostility ratings had 40% more heart attack deaths than those at the bottom of the scale, and the lowest hostility levels were in Honolulu, which also had the least cardiac mortality.

However, the award for most heart deaths, as well as the highest hostility, went to Philadelphia, paradoxically known as "The City of Brotherly Love". The mayor was outraged, and dismissed the slur by suggesting, "they must have caught us in the middle of a Philly's' losing streak". This particular poll just happened to coincide with the promotional efforts of a best seller on the relationship between hostility and heart attacks, and the mayor promised revenge. By coincidence, one month later, another survey conducted by 100 urban experts under the

auspices of a non profit group, found that Philadelphia was one of the nation's "Most Livable Communities". In addition, it also made the top ten All American Cities List of the National Civic League, so who are you going to believe?

One city is not waiting for the pollsters to make up their mind, and is taking active steps to identify itself as the least stressful place to live by official proclamation and the establishment of stress-free zones. Last summer, the Mayor of Skaneateles, a small town located in the heart of the New York Finger Lakes, issued the following proclamation:

Whereas, the Village of Skaneateles has long been recognized as a haven from stress, and whereas the Village of Skaneateles now seeks to formalize and legally protect this status, be it resolved and ordained that the Village of Skaneateles is hereby declared a stress-free zone, with all the privileges, rights and protections that pertain thereto.

"Stress" for the purpose of this ordinance, shall include all emotionally disruptive or disquieting influences including worries, vague uneasiness, sudden apprehensions, frank misgivings, dire forebodings, and free-floating anxiety.

Also prohibited are any and all attitudes, hassles, situations, events and/or behaviors that provoke stressful sensations in residents and visitors.

In keeping with the spirit of this ordinance, enforcement will be relaxed, low-key and affirming.

The village is doing more than paying lip service to this proclamation. The Chamber of Commerce has placed "Stress-Free Zone" signs within the village to serve as reminders to relax. Cleanup crews also stroll around in aprons filled with informational brochures, and serve as "walking information booths" for visitors, as they keep

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things litter free and spotlessly clean. Since 1992, motorists have never had to worry about parking fines when their meter runs out, because the Village donates a nickel to provide another fifteen minutes. Instead of a ticket, an envelope is placed on the windshield so that in lieu of the \$4 fine, grateful recipients can make a small donation to the Courtesy fund so that this, and other stress reducing services, can continue to be provided.

Skaneateles comes from Skeh-ne-a-ties, an Onondaga Indian term for "long water", and "Lac Scaneateres" can be seen on a map drawn in the 1600's by a Jesuit missionary. It was named Skaneateles by the Iroquois, and along with the other four nearby large lakes, were called the Finger Lakes because they looked like fingers pressed into the ground. According to Indian legend, the formation represents God's hand print, which he left after creating the earth. The village itself began after the Revolutionary War, when tracts of land were awarded to those who had fought for independence. It was rather inaccessible, but grew rapidly following the arrival of the railroad in 1867.

The village does seem to have a lot of serene, Old World charm and calm, but there is plenty to do. The calendar is packed with year round activities, including the critically acclaimed Skaneateles Chamber Music Festival, Sunday polo matches, and the yearly Antique and Classic Boat Show, in addition to other festivals and celebrations. The annual Dickens' Christmas celebration starts in November, with horse-drawn carriage rides, carolers in period costumes, and visits from Santa. The old brick sidewalk shopping area includes gourmet restaurants, antique shops, and specialty clothing stores, and there are museums, art galleries, sailing and water sports, fishing, hunting, hiking trails, camping facilities, etc.

There are so many appealing attractions, that the problem for visitors and residents is usually not finding things to do, but finding enough time to do them. And for those who want an occasional taste of big city life, Syracuse is only 20 miles away. However, few will want to leave the magnificent scenery provided by the crystal-clear 16 mile long lake, and the quaint and quiet tree lined streets.

Nature has provided Skaneateles with a stress reducing, tranquil environment. Its natives should be congratulated for doing all they can to reinforce this, by reducing the stressful intrusions of modern civilization.

Paul J. Rosch, M.D., F.A.C.P.

Editor

"White Coat" Normotension?

"White coat" hypertension refers to people whose blood pressures rise sharply when taken by a physician or health care professional in an office or clinic setting, but have normal readings when taken by themselves and others in a less stressful or threatening environment. Ambulatory monitoring studies have also demonstrated significant increases in many individuals during stressful daily activities, such as heated arguments, especially during telephone conversations. The significance of such cardiovascular hyperreactivity to stress has been a subject of considerable debate. In the absence of predisposing factors, such as a strong family history, there is little proof that it is associated with any significantly greater likelihood of developing permanent hypertension. On the other hand, not everyone agrees, and there is also some suggestion that individuals with marked elevations in blood pressure and heart rate due to emotional stress, are at greater risk for future coronary events, despite the absence of persistent hypertension.

A recent study evaluated 16 hypertensive individuals and 16 normotensive controls, comparing office blood pressure measurements with those obtained during ambulatory monitoring. Five of the 16 hypertensive patients had mean office blood pressures of 146/95, in contrast to 135/83 during ambulatory monitoring, clearly classifying them as white coat hypertensives. The remainder had high readings in both settings. Surprisingly, 4 of the 16 normotensive controls exhibited the reverse phenomenon, with hypertensive ambulatory readings (mean of 148/94), compared to a mean of 120/74 in the office. The remaining 12 had normal pressures throughout. Cardiovascular reactivity was calculated from three clinic blood pressure measure-

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ments, each of which was separated by a 4 minute rest period, to promote acclimatization to testing. "White coat" hypertensives showed a greater increase in heart rate than any of the other groups during the final blood pressure measurement procedure. Although heightened heart rate reactivity was not observed among the "white coat" normotensive patients, self-report ratings revealed higher perceived levels of psychological distress, compared to all of the other groups. These findings are difficult to explain. Possibly "white coat" normotensives have predominantly parasympathetic responses to stress, that result primarily in vasodilatation, and a resultant lowering of blood pressure. The lack of any significant associated lowering of heart rate or compensatory increase to maintain normal cardiac output, suggests that these individuals may have some disturbance in vagal function.

Psychosomatic Medicine 1996; 58:61

"White Coat" Diabetes?

As indicated, "white coat" hypertension refers to elevated blood pressures associated with the stress of the testing procedure being performed by a physician. Such individuals generally have normal blood pressures when measurements are made at home, or during ambulatory monitoring. In an office setting, these high readings can often lead to drug therapy, causing additional stress. On repeat visits, blood pressures measurements are apt to be even higher, and the physician may increase the dosage, or add other medications, usually with little success. This scenario can continue for several successive visits, resulting in annoying and sometimes harmful side effects.

Stress also causes a rise in blood sugar, as well as heart rate and blood pressure. In some anxious diabetic patients, transient but significant elevations due to the stress associated with a visit to the doctor, may result in increased insulin doses that can cause serious hypoglycemic reactions. "White coat" diabetes should be suspected when office measurements are much higher than those obtained at home, or under less stressful conditions. Glycohemoglobin and protein bound glucose tests

reflect average blood sugar levels over the previous two or three weeks. They are useful in identifying diabetics who are poorly controlled because they don't follow advice about diet or medication. However, blood sugars obtained at the time of their office visit may be satisfactory, because they deliberately behave for a few days prior to the test. Similarly, "white coat" diabetes should be suspected whenever these tests are normal, but office blood sugars are elevated.

Arch. Fam. Med.-May, 1994

Man may be the captain of his fate, but he is also the victim of his blood sugar.

Wilfrid G. Oakley

Good News For Good Guys

The usual cliché is that "good guys finish last", but "good guys last longer" might be more accurate, according to a recent report. Around 75 years ago, Lewis Terman began his studies of a group of California school children, gathering detailed information about the attitudes, moods, personalities, and motivations of each one. Other scientists subsequently continued his research, keeping close tabs on these individuals, affectionately referred to as "Termites", throughout their adult life. They found that those who were conscientious, dependable, honest, and agreeable, lived 2 to 4 years longer than their more self-centered counterparts. In general, these "good guys" tended to be more truthful, attentive, dependable, and determined. In addition, they were less apt to exhibit moody, egotistical, impulsive, reckless, or arrogant traits. What puzzled the researchers, was that they didn't have any fewer health problems or accidents that could account for this very significant difference, nor did there seem to be any marked contrast in their lifestyles that was relevant. After scrutinizing all the psychological test data that had been gathered over the years, they concluded that the best explanation for their greater longevity seemed to be related to a superior ability to handle stress.

There is considerable evidence that stress accelerates the aging process, one obvious mecha-

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nism being an increased production of free radicals. While stress is different for each of us, feeling that you have no control over an unpleasant situation is always distressful. Conscientious people may be more stress resistant because they tend to anticipate and prepare for potential stressful situations by making contingency plans. Some examples might be making sure you have an extra set of car or house keys, or adequate insurance, in the event of an unanticipated illness or accident, especially if it turned into a catastrophe. Truthful, dependable individuals are also apt to maintain more stable marriages and friendships than those who are more impulsive. Strong social support is a powerful stress buffer associated with a healthier and longer life. Conscientious and virtuous people might also be more likely to avoid smoking, alcohol, drugs, and other health hazards, and to recognize and avoid other sources of stress.

American Psychologist 1995;

65, 1:176 & 68, 4:969

Science News 1995; Vol. 147, 8:124

Be virtuous and you will be eccentric.

Mark Twain

Parental Care In Early Life Predicts Subsequent Health

As emphasized above, strong social support is a powerful stress buster, and is associated with improved health and lower death rates from numerous causes. On the other hand, social support is difficult to measure scientifically, since objective ratings are not as meaningful as personal perceptions. For adults, social support is derived mostly from close ties with friends, as well as family. However, during the first two decades of life, the most important aspect of social support appears to be the feeling of how much your parents really love you, but this is a matter of perception. Parents can care a great deal for their children, but may not express their love in a meaningful fashion, or the message doesn't get across for other reasons.

An ongoing long term prospective study from Harvard has provided an unusual opportunity to

evaluate this premise, as well as the role of social support in promoting health. In the early 1950s, ratings of parental caring were obtained from healthy undergraduate men enrolled in the Harvard Mastery of Stress Study, along with tests to evaluate stress levels, mental and physical health. Detailed medical and psychological histories were periodically obtained following graduation, and this information was analyzed in a 35 year follow-up study.

Researchers found that those participants who could be identified in mid-life as suffering from stress related disorders such as coronary artery disease, hypertension, duodenal ulcer, and alcoholism, had indeed given their parents significantly lower ratings on perceived parental caring questions during their college years. This relationship was independent of the individual's age, family history of illness, smoking behavior, and death or divorce of their parents. Furthermore, an astounding 94% of those who showed a combination of low scores on perceived parental caring, as well as severe anxiety during one or more mental stress tests while in college, were found to have suffered a significant medical disorder in later life. This study confirms that parents are the most important sources of social support during the first two decades of life. In addition, the perception of parental love and caring can have important influences on subsequent health patterns.

Other studies have also shown a strong link between poor parental care and higher rates of depression in later life. In one Australian community report, parental care was assessed by analyzing responses to a questionnaire designed to evaluate parental bonding. Those with a history of a major depressive episode, were significantly more apt to report low closeness and caring from both parents.

Psychosomatic Medicine 1996; 58:84

J Affect Disord-March 14, 1995

Aust N Z J Psychiatry-September, 1995

If we had paid no more attention to our plants than we have to our children, we would now be living in a jungle of weeds.

Luther Burbank

Not so much attention is paid to our children's minds as is paid to their feet.

A.V. Neale

Depression And Heart Disease

Depression is quite common in patients with coronary heart disease, and has been shown to be correlated with poor recovery following a heart attack, and an increase in cardiovascular morbidity and mortality. In contrast to what might be expected, the severity of coronary disease does not appear to be related to the degree of depression. However, the degree of depression is a significant predictor for future coronary events, regardless of the seriousness of cardiac damage or disability. A variety of explanations have been offered for this observation such as the adverse cardiovascular side effects of anti-depressant drugs. However, the relationship between depression and increased cardiovascular morbidity was well documented long before these medications became available. Most cardiac patients who are depressed are not treated with these medications because of this possible hazard. Depression has been shown to be associated with evidence of increased sympathetic tone, as well as a decrease in vagal activity in some studies. Either one can cause serious cardiac arrhythmias and sudden death, and in combination would be even more lethal. Sudden variations in the balance between sympathetic and parasympathetic influences can also cause cardiac damage. Healthy individuals who engage in the physically and mentally stressful contest of "orienting", which produces these wide fluctuations, have high rates of heart attacks and arrhythmias. Patients with existing coronary heart disease would be even more prone to such depression induced disturbances. Depression can frequently interfere with adherence to diet, medication and exercise instructions that are important components of cardiac treatment programs. It may also be associated with an increase in other established risk factors, such as smoking and hypertension.

Finally, there are a variety of disturbances in endocrine and neurotransmitter function. Depressed patients have deficiencies in serotonin, which is why serotonin reuptake inhibitors like Prozac are the most effective and popular drugs used for treatment. Cortisol levels are inappropriately high, and

fail to respond to normal regulatory influences. Increased cortisol is the hallmark of the response to stress, and stress is a major contributor to depression. Altered melatonin secretion patterns have been described in patients with coronary heart disease, but the significance of this is not clear with respect to cause versus effect. Disturbances in melatonin secretory rhythms are thought to be responsible for the depression seen in seasonal affective disorder that responds to light therapy. It is not unlikely that associated disturbances in the endorphins, dopamine and other neurotransmitters that affect mood will be uncovered in the future, both with respect to depression and coronary heart disease. Determining whether they represent cause or effect will likely be quite difficult. However, there appears to be little doubt that depression is a risk factor for coronary heart disease. Further insights into the mechanism of this relationship could provide important prophylactic and therapeutic rewards.

Annals of Behavioral Medicine 1995; 17:142

Phytochemicals - The Hidden Powers Of Plants

Many fruits, vegetables, beans and natural grains have anti-cancer and cholesterol lowering effects that cannot be attributed to their content of antioxidant vitamins. As indicated, green tea and red wine, which have few vitamins, contain powerful antioxidants that may provide superior health benefits with respect to reducing risk for cancer, atherosclerosis, and other health problems. Unfortunately, there is little incentive to fund research in this area, since the potential for obtaining protective patents is minimal. However, The National Cancer Institute has now begun a multimillion-dollar project to find, isolate, and study the effects of these fascinating phytochemicals. In addition to carotenoids, catechins, and others previously discussed, some of those that have already been identified, include:

- flavonoids, which block free radical damage and atherosclerosis, and are found in fruits and

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- vegetables, like apples, celery, cranberries, grapes, and onions. They are particularly abundant in green tea, red wine, and other beverages that have few vitamins, but promote health.
- allylic sulfides in garlic and onion that protect against stomach cancer. One of these, allicin, reduces the production of cholesterol in the liver. Just half a clove of garlic a day can cause more than a 10% reduction in blood cholesterol.
- p-coumaric acid and chlorogenic acid, two of the estimated 10,000 different phytochemicals in tomatoes that neutralize cancer causing chemicals. They are also found in other fruits and vegetables, including green peppers, pineapples, strawberries and carrots.
- lycopene is another powerful antioxidant found in tomatoes. A nine-year study of 47,000 men revealed that those who had 10 or more servings a week of tomatoes, or tomato-based products like pizza and spaghetti sauce, had almost 50% less prostate cancer. Surprisingly, cooked tomato products seem to provide more lycopenes than raw ones. Antioxidant vitamins provided no such protection from prostate cancer.
- terpenes in ginkgo biloba, which inhibit platelet activation and clot formation.
- sulforaphane in broccoli, which prevents breast cancer in experimental animals.
- phenethyl isothiocyanate, a closely related compound found in turnips and cabbage (including cole slaw and sauerkraut), which inhibits lung cancer caused by carcinogens in laboratory animals.
- ellagic acid in strawberries, raspberries and grapes, which also neutralizes cancer causing chemicals.
- genistein found in soybeans prevents prostate cancer from growing, by interfering with the capillary vessels that feed nutrients required by the tumor.
- saponins and isoflavones found in soy products and tofu, also lower cholesterol and prevent cancer. Some of these are classified as phytoestrogens or plant estrogens, since they closely resemble human estrogen, and have been successfully used to treat hot flashes.

- indoles found in broccoli, cabbage, brussel sprouts, kale, and turnips. These convert estrogen into a harmless by-product, rather than one which is potentially carcinogenic.
- Isothyocyanates, chemical compounds which reduce the risk of breast cancer, are also found in these vegetables.

Concern has been expressed that the widespread use of megadoses of antioxidant vitamins to prevent cancer or promote health may not be warranted. As one authority commented in the *New England Journal of Medicine*, "We should have a moratorium on unsubstantiated health claims for antioxidants and cancer." Phytochemicals would appear to offer far more promise for a magic potion, that is more powerful than vitamins alone.

Newsweek-April 25, 1994

New England Journal of Medicine-April 14, 1994

Behold I have given you every herb bearing seed which is upon the face of all the earth, and every tree, in which is the fruit of a tree yielding seed; to you it shall be for meat.

Genesis 1:29

A cucumber should be well sliced, and dressed with pepper and vinegar, and then thrown out as good for nothing.

Samuel Johnson



Book Reviews • Meetings and Items of Interest

Book Review

Practical Stress Management: A Comprehensive Workbook For Managing Change And Promoting Health, Romas, J.A., and Sharma, M., Allyn & Bacon, Needham Heights, MA, 1995, 285 pages, \$22.00

Practical Stress Management was the original title of our Newsletter, because this was the area of greatest interest to our membership in 1978. As our coverage broadened to include other stress related subjects, the title has also changed to reflect this. However, this in no way negates the importance of this topic or the need to obtain up-to-date information on steady advances in this field, and to identify those which are the most promising. This offering admirably achieves these goals in a succinct but comprehensive fashion. Chapters are devoted to explaining and understanding stress, the importance of stress management, explaining various stress reduction procedures and relaxation techniques, the importance of developing effective communication, how to manage anger and resolve conflicts, as well as cope with anxiety. Others address the role of diet and exercise, and the importance of learning proper time management.

Practically every stress management procedure or technique, from the use of biofeedback, to the application of biodots is covered in an objective fashion. Each chapter concludes with summary points, a discussion of the principles underlying the techniques covered, an up-to-date list of references, and suggestions for further readings. What also

distinguishes this volume are the very useful worksheets for each chapter, that encourages the reader to keep track of the progress made in mastering each procedure. This attractive and comprehensive compendium volume is unusually reader friendly, and is highly recommended.

Meetings and Items of Interest

June 10-12 The Second Annual International Congress on Alternative & Complementary Medicine, Radisson Plaza Hotel at Mark Center, Alexandria, VA, call (800) 5BIOCON

June 21-24 ISSSEEM Sixth Annual Conference, Evolution of a New Paradigm: Science and Inner Experience, Boulder, CO, contact C. Penny Hiernu at (303) 278-2228

Aug. 12-16 Psychopharmacology and Its Role in Clinical Practice, write to: Seventeenth Cape Code Institute, Albert Einstein College of Medicine, 1308 Belfer Bldg., Bronx, NY 10461

Aug. 19-23 Behavioral Medicine Applications, write to: Seventeenth Cape Code Institute, Albert Einstein College of Medicine, 1308 Belfer Bldg., Bronx, NY 10461

Aug. 24-27 Beyond the Brain: New Avenues in Consciousness Research co-sponsored by The Scientific and Medical Network and the Institute of Noetic Sciences, Cambridge, England, call 011-44-1432-276966

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