

THE JOY OF CHEWING

Does anyone still remember "fletcherism," the practice of chewing one's food for what amounted to an eternity before swallowing? The American dietitian, Horace Fletcher, extolled it as the key to good health, but it never really took hold, except among the kind of folks who thought mealtime should serve as an occasion for character-building, not Rabelasian pleasure. My parents got invited once to have dinner with a group of believers. One glance around the table at those solemn, masticating faces and we knew we were in for it. My father gave me a warning look that meant: I don't care if you're only eight, DON'T LAUGH! Throughout the interminable meal everyone sat like stones, concentrating on the number of chews. When I asked the lady across from me to please pass the butter, she looked daggers at me. She was still chewing but I guess I made her lose count.

Science & Saliva

Strictly in the interests of science, researchers at a school of dentistry asked young dental hygiene students to chew mouthfuls of Cheerios for either 20 or 60 seconds, under conditions either of relaxation or stress, as determined by galvanic skin resistance, pulse rate, and blood pressure (*Am. J. Clin. Nutr.* Jan. 1989). "Stress" came from 5 minutes of doing mental arithmetic problems, believe it or not!

The researchers measured both *amylase* and *maltose* in the students' saliva. Amylase is a digestive enzyme that breaks apart the long chains of glucose in starch into small, double-glucose units, known as maltose. Maltose is one step away from pure glucose, the sugar carried by the blood to fuel our body and brain. In this experiment, success depended on how much maltose the students made.

Well, fletcherism won some points, because longer chewing *did* produce more maltose. But the scientists' conclusion was that *"the most important factor in oral digestion of complex carbohydrates appears to be deep relaxation."*

In another victory for joy at mealtimes, they were able to refute authorities who said little starch digestion ever takes place in the mouth, because saliva is acid, and amylase couldn't do its digesting of starch in an acid environment. Lo and behold, the dental researchers discovered from their experiment that STRESS made saliva acidic! When the students relaxed, their saliva became *alkaline*, the proper medium for the action of amylase on starch.

(They also confirmed that, under stress, the students made less saliva which caused less starch to be digested. But we already knew that. Who hasn't experienced a dry mouth from fear?)

So, to those of you who munch on muffins while rushing about in traffic; or choose to wallow in the television's Calamity-A-Minute-news at dinner; or use mealtimes to trumpet the day's transgressions of your nearest and dearest:

RELAX, AND LET THE SPIT FLOW! ■



TAMING BLOOD PRESSURE

It isn't cast in stone, but fluctuates from morning to night, generally going higher when we're rushing around and sinking as we slow down and relax. During sleep blood pressure (b.p.) gets very low, rising and falling a little with our dreams, reaching its lowest point in the early morning. If you're the excitable sort, like me, your pressure can surge just walking into the doctor's office.

Or, you may fit into a newly discovered category--persons with normal b.p. that shoots up *from the mere act of talking!* James J. Lynch at the University of Maryland school of medicine, who has done eight years of research on the phenomenon, says they don't know exactly what happens to the cardiovascular system during speech, but the connection between talking and increased b.p. is not just a theory, "but a law." True hypertensives (persons with chronically high b.p.) can also have the same reaction, which makes diagnosis even more complicated.

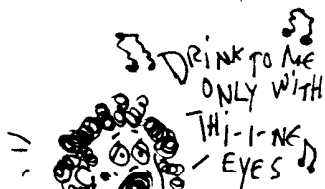
If you know yourself to be an excitable individual who puts high emotional energy into conversations, for your next b.p. exam you might try a rest period before the doctor sees you, then maintain a relaxed silence while your b.p. is being taken.

The New Conservative Therapy

True hypertension, i.e., b.p. that stays high most of the time, is the kind to worry about--except we know that worry can drive b.p. even higher! Instead of resorting first to medication, physicians in many instances are advising patients to modify their diet and begin doing the kinds of physical and mental activities that are proving to have a high success rate in bringing down b.p. These can be aerobic exercises such as swimming, cycling, or brisk walking for 20 to 30 minutes three times a week or more, but not isometric exercises like weightlifting that can raise b.p. temporarily. Practices done on a regular basis that have helped

to take away feelings of stress and promote a more serene outlook include prayer, meditation, biofeedback, self-hypnosis, working in the garden, knitting, whittling, playing a musical instrument, birdwatching---the results are what matters!

NOT SO
GREAT PERFORMANCES.



Emmeline GRANGER (D)
AT A FAMILY TO-DO
AUGUST 25, 1884

Now, Diet.....

A medical team in Finland studied the b.p. and diets of 722 men, all the same age, 54, to see what correlations would emerge (*Am.J.Clin.Nutr.*, Nov. 1988). They found these diet factors related to high b.p.:

- . High intake of saturated fat.
- . Low levels in blood plasma of vitamin C and the essential trace mineral selenium, reflecting low dietary intake.
- . Low intake of omega-3 alpha-linolenic acid (ALA).

The doctors speculate that vitamin C and selenium may help to keep b.p. normal by scavenging free radicals and peroxides that otherwise keep us from making enough *prostacyclin*. Prostacyclin is a 'good-guy' prostaglandin that helps to keep arteries nicely open, which keeps b.p. normal. Remember how much more water pressure you need to get the flow going past a crimped section of garden hose? Same idea in blood circulation.

Safe & Sane Dietary Approach

1. Cut down on saturated-fat foods, i.e., less full-fat dairy, fatty meat, solid shortening.

2. Ample intake of anti-oxidant nutrients, such as selenium and vitamins A, C, and E.

3. Eating foods that provide the omega-3 fatty acids ALA, EPA, & DHA.

Good ALA foods are flax seeds or flaxmeal; soybeans and other beans, tofu, chia seeds, oat germ, wheat germ, walnuts, pumpkin seeds, green leafy vegetables. High ALA oils are flax, canola, soy, walnut.

EPA/DHA foods are fish, shellfish, wild game, rabbit, organ meats. Fish oils are good supplemental sources.

4. We can cut down on salt and salty foods.

5. We can get more POTASSIUM, a mineral that keeps b.p. normal, from pumpkin & squash seeds, sunflower seeds, sesame seeds, walnuts, almonds (all nuts and seeds UNSALTED); wheat germ, buckwheat, millet, brown rice, avocado, soybeans and other beans, lentils, yams, potatoes, chicken, fish, meat, Swiss chard, beet greens, broccoli, kale, winter squash, asparagus, carrots, bananas, cantaloupe, papaya, peaches, apricots, oranges.

6. MAGNESIUM appears to have a role in preventing hypertension. Luckily, many foods that are high in POTASSIUM and OMEGA-3 also are high in MAGNESIUM (see 3 and 5 above).

More good news. Many of the above foods are super sources of SELENIUM and VITAMINS A, C, and E.

You think nature is telling us something? ■



COLD HANDS, WARM HEART

My father moved us all to Los Angeles in 1937 because he didn't want to endure one more incident of what he called "dead white fingers" that he blamed on the Eastern winters. I still remember his normally ruddy, calloused hands turning a fishy gray-white. Years later, I learned it had a medical name, Raynaud's phenomenon, and it was caused by abnormal constriction of blood vessels in the extremities (usually fingers) from either cold or emotional stress--both of which my papa had plenty of in New York during the Depression!

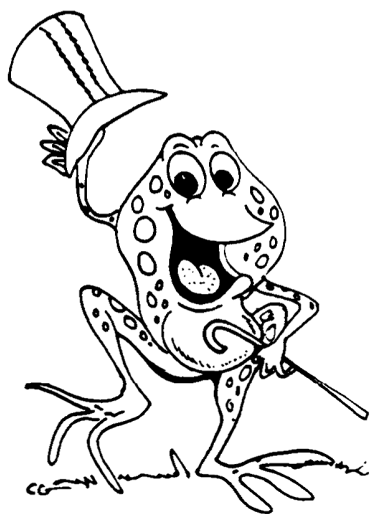
Doctors at the rheumatology division at Albany Medical College in Albany, N.Y. did a double-blind study involving 32 patients with Raynaud's phenomenon (*Am. J. Medicine* Feb 1989). One group got 12 fish-oil capsules daily containing omega-3 fatty acids (4 grams EPA and 2.6 grams DHA per day). The other group got olive oil, which has no EPA or DHA.

Using finger baths of increasingly cold water, the researchers measured patients' blood flow via the time it took for the "dead white fingers" to appear. After six weeks of supplementation, blood flow was so improved in the fish-oil subjects the doctors couldn't even induce the phenomenon in many of them. They weren't altogether surprised, because they had also seen marked improvement in flexibility of joints and reduction of pain in *rheumatoid arthritis* patients to whom they gave fish oil.

In general, they said, consumption of fish oils appears to create a salutary situation that favors vigorous circulation and reduces inflammation.

That makes sense to me, since nature endows all plants and animals (fish, too) in cold climates or icy waters with abundant omega-3 fatty acids, because these ultrapolyunsaturated fats allow blood to be less viscous, and tissues more flexible, in colder temperatures. On an ample omega-3 diet, I can endure cold weather better than I ever did before. Furthermore, after being a paleface all my life, I'm receiving compliments on my VERY rosy cheeks.

For my papa's sake, I wish science had paid attention to the omega-3's a lot earlier! ■



HELP WHEN YOU NEED IT

Sally Rockwell says she lived too many years of her life depending on alcohol, cigarettes, diet pills, Valium, and foods that were wrong for her. She was sick often and her brain didn't work all that well. "Finally in 1975," she writes, "a wise psychiatrist changed my diet and it turned my life around. My brain began to function! I entered college, earned a BS degree in nutrition."

A drug-free, healthy Sally is working on her Ph.D. now and continues to write and publish some of the best bulletins and books I've seen on how to fight the demons of allergy and addiction. The down-home friendliness and humorous touches in her work mask a tremendous amount of research and scholarship. Having recently decided to take myself off wheat and rye--the grains highest in gluten--I'm finding Sally's recipes a boon. She describes how to use nourishing nongluten grains, where to buy them (exotic ones like amaranth, quinoa), and step-by-step instructions in making muffins, cakes, pancakes, etc. If you want to get started eliminating food allergies, or are battling chronic Candida yeast infections, write her for a list of her publications, tapes, and newsletter: Sally Rockwell, P.O. Box 31065, Seattle, Washington 98103. ■

SAFE AMOUNTS OF TRACE MINERALS

About 40 to 60 percent of adults in the United States use nutrient supplements, the majority on a regular basis. Too few studies have been done to find out if mineral supplements compete with and nullify one another when taken in

larger-than-life doses. The January 1989 *Am. J. of Clinical Nutrition* reports that 50 milligrams of zinc per day given to adult women for ten weeks interfered with their ability to absorb and utilize iron and copper fully.

The RDA for zinc is 3 mg from birth to six months; 5 mg to age one; 10 mg between 1-10 years; and 15 mg thereafter. For pregnant women the RDA goes up to 20 mg, and to 25 mg for nursing mothers.

The women in the study apparently were getting more than 3 times the RDA for zinc from the supplement, plus whatever zinc they were getting from food. This amount was enough to keep them from utilizing to the fullest the iron and copper in their diet.

On the other side of the coin, high doses of iron interfere with our ability to absorb zinc!

I have observed good results with vitamin and mineral supplements for 30 years. I'm lavish in the use of two: vitamins C and E. Other vitamins, I take in modest amounts. Since I generally practice what I preach in my daily diet, I don't panic when days or weeks go by without any of the other supplements.

With trace minerals, I exercise utmost caution. I may take supplements of them once or twice a week, but I don't exceed the RDA. Simply put, I've seen too many studies in the literature that point to the same phenomenon: if we flood the body with one trace mineral, we may knock the others out of the running. If we regularly use supplements of zinc and iron, it makes sense to take them at opposite ends of the day, or even on alternate days. ■



REFLECTIONS IN A NUTRITIONIST'S EYE

You want my best advice on how to be healthy? Pick yourself sturdy, long-lived parents. Those of us not smart enough to do so had to find other ways. Adelle Davis' books in the late 50's hit me like thunderbolts. They illuminated the relationship of nutrition to health so compellingly that, after my kids were grown, I returned to school to earn a degree in nutrition science.

It was touch and go for this middle-aged drop-in. While some of the young hotshots around me could party half the night and ace biochemistry exams the next morning, I had to fall back on marathon drudgery and kvetching. I remember one low point, when Mr. L., my chemistry lab instructor, told me I was wasting my time "in the sciences, at your age. Why don't you take some nice literature classes, like other ladies?" A number of my classmates have gone on to become doctors, psychiatrists, food scientists, public health nutritionists and teachers. Some dropped out from nervous exhaustion--it was a tough curriculum. What kept me going--aside from my need to make Mr. L. eat his words--was I wanted to be a nutritionist because I *knew* that nutrition had the power to turn people's lives around.

Little Miracles

I had seen it happen to my children, husband, and me. When Davis' writings inspired me to get us off our Great American Year-Round Sweets & Grease Celebration onto good food, plus supplements, we *all* stopped having stuffy noses and getting colds, earaches, tonsillitis, bronchitis, and cavities in our teeth. The kids' dispositions got better. *Mine* got better. Why hadn't the doctors thought to tell me about this great way to get healthy, I wondered? Later, much later, I learned they didn't know there was a connection. Most of them still don't.

Physicians up to this century used food and herbs as their main tools, the idea being to employ nature to help the patients heal themselves. Clinicians today who lean in this direction don't get too many Doc of the Year awards from the medical associations. They heal a lot

of patients, though, because they know that what their patients ingest every day has much to do with how they look, feel, and think. This bare-bones truth has hardly penetrated medical training. My father used to tell the old joke about the man peddling bargain jars of home-made stew, which he described as being "half rabbit and half horsemeat." To the irate lady who came back to complain that all she could taste was cheap horsemeat, his cool reply was, "I told you it was half and half: *one* rabbit and *one* horse." Nutrition education in medical school is like the rabbit part.

How else can you explain why more and more hospitals are signing food-service contracts with McDonalds, Wendy's and Burger King?

The Omega-3's Make Medical History

As my years in nutrition pile up enough to qualify me, loosely speaking, for the rank of sage, junior grade, I find my confidence in its wonders stronger if anything than before. Take the omega-3 story. I encountered it six years ago through Donald Rudin's insightful work. Scientists a few decades ago discovered fleeting, hormonelike substances called prostaglandins (PG) that exercised powerful control over almost every function in the body. Moreover, our cells made PG only from certain fatty acids in the fats and oils we got from foods. Runaway amounts of PG were being detected and implicated in everything from menstrual cramps to abnormal blood clots that blocked coronary arteries.

Trouble was, the 'fat' researchers did their work strictly on one essential (vitaminlike) family of fatty acids and PG--the omega-6. By overlooking any role for the other essential family, the omega-3, they ended up stumbling over a helter-skelter, oftentimes contradictory, body of data. Example: while heart specialists were telling folks to avoid coronaries by loading up on omega-6 oils (e.g., corn and safflower), other scientists were saying, Wait a minute! Maybe there are fewer heart attacks, but we're seeing more *cancer* in high oil-consuming populations.

The new evidence that's clearing away the underbrush gives the omega-3's as much to do with keeping us healthy as the omega-6's. The fatty acids most experts ignored for 40 years are turning out to be our cells' fairy godmothers! They work as natural monitors to keep in check any harmful PG made from omega-6 fatty acids. Not only are they proving good for the heart, they show promising anti-cancer properties.

Nutrition & 20th Century Medicine: New Allies?

The scientists who are unraveling the mysteries of how omega-3 and omega-6 fatty acids play 'social directors' of the human immune system, blood pressure, reproductive cycles, digestive functions, body heat, vision, etc.--even mental functions--are as excited as the early workers were in the 1920's and 30's who discovered the vitamins and other essential nutrients. At a symposium in Europe, Alexander Leaf, M.D. of Harvard medical school, and Peter C. Weber, M.D. of the University of Munich, said at the end of their paper, "A New Era for Science in Nutrition," (*Am. J. Clin. Nutr.*, May 1987):

"...The paleolithic diet, during the period when our genetic patterns were established [modern Homo sapiens sapiens appeared about 40,000 years ago] was high in protein and cholesterol but was low in total fat, with a high polyunsaturated to unsaturated ratio. Much of the polyunsaturated fatty acids were the omega-3 alpha-linolenic, eicosapentaenoic, and docosahexaenoic acids [ALA, EPA& DHA].

"In more recent times, the introduction of agriculture [about 10,000 years ago] with dependence of diets on grains led to an increase in total saturated fatty acids and in the omega-6 polyunsaturated fatty acids, linoleic and arachidonic acids. In the past century, the industrial revolution, the emergence of agribusiness with processed foods, grain-fattened livestock, and hydrogenation of vegetable fats have all further reduced the content of omega-3 fatty acids and increased omega-6 fatty acids and saturated fats in our Western diets.

"These changes in diet, together with smoking, hypertension, obesity, some forms of stress, and indolence, have conspired to create the present epidemic of cardiovascular diseases which account for approximately half of all deaths and huge health costs in affluent Western countries.

"Scientific research will surely clarify further our understanding of the role of nutrition in these diseases in which dietary maladaptation plays such a major role. These are again exciting times for great progress in the science of nutrition!" ■



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