

INTERNATIONAL HEALTH NEWS

Your Gateway to Better Health!

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Several items in this month's issue remind us how much still needs to be learned about the effects of hormones and their metabolites. A few years ago human growth hormone (HGH) was hailed as the magic elixir for older people – bound to restore rippling muscles and youthful health. HGH works through its metabolite IGF-1 (insulin-like growth factor 1) and can increase the level of IGF-1 in the body by 200% or more.

Earlier research warned that high IGF-1 levels might be associated with an increased risk of prostate, breast, and colon cancers. In this issue we report that people with high blood levels of IGF-1 have an increased incidence of bladder cancer as well and that high levels can predict the risk of advanced prostate cancer years before the cancer is actually diagnosed. The bottom line is to stay away from human growth hormone and HGH enhancers unless you have been definitely diagnosed with a HGH deficiency.

Also in this issue, the thyroid hormone T3 may be involved in both prostate cancer and heart disease; vitamin C, vitamin E, and vitamin B6 may be helpful for patients with inflammatory bowel disease, and maggot therapy makes a triumphant comeback in the treatment of diabetic foot ulcers.

Enjoy!

*Yours in health,
Hans Larsen, Editor*

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LETTERS TO THE EDITOR

Thank you for your very informative article on the connection between cancer and the use of sunscreens. I am 25 years old and live in Singapore. I have to be out in the sun for at least an hour a day, so I do need to wear a sunscreen. I am concerned about the chemicals in the sunscreens and their possible association with breast and colon cancer. I am trying to avoid

getting a suntan, but don't want to wear a hat as it is not a common sight in Asia.

JA, SINGAPORE

Editor: *See if you can purchase a sunscreen with titanium oxide or zinc oxide as the active sun blocker. Wearing a hat with a wide brim is also a good idea – perhaps you can set a fashion trend in Singapore?! I never advise against a suntan. I believe a healthy tan is a good idea, but it should be acquired gradually through 15-30 minutes of unprotected sun exposure (no sunscreen) every day before 11 am or after 3 pm. It is not sunscreens as such that increase the risk of breast and colon cancer, but rather the fact that they block the production of vitamin D in the skin. A vitamin D deficiency has been linked to an increased risk of cancer.*

I am excited about the possible benefits of fish oil. I currently take a daily dose of Zocor for cholesterol control and Toprol for blood pressure control. Would fish oil supplements have any negative effects on these medications? Should I also begin a vitamin E supplement with the fish oil?

JDJ, USA

Editor: *Fish oil should not interfere with either Zocor or Toprol. It is a good idea to take 400 IU/day of natural vitamin E as well when supplementing with fish oils.*

Do you have any research suggesting that folic acid reduces the length and/or "depth" of depression, in particular postpartum depression?

ES, USA

Editor: *Folic acid in daily dosages of 15 mg or more does reduce depression; however, the use of these mega-doses of folic acid must be administered under the care of a medical doctor. Fish oils (DHA and EPA) are quite effective in combating depression and I would not be surprised if they would be particularly effective for postpartum depression. They are good for the baby too if the mother is breastfeeding. Three to five grams a day would be the recommended dose.*

ABSTRACTS

IGF-1 implicated in bladder cancer

HOUSTON, TEXAS. High blood levels of circulating IGF-1 (insulin-like growth factor 1) have been associated with an increased risk of prostate, breast, colon and lung cancers. Now researchers at the University of Texas report that patients with bladder cancer have significantly higher levels of IGF-1 and significantly lower levels of its binding protein (IGF binding protein-3) than do controls.

IGF-1 is found in the blood both in free form (unbound) and bound to its carrier protein, IGF binding protein-3. It can only exert its effects of stimulating tumour proliferation and reducing apoptosis (programmed cell death) in the unbound form. Thus it would make sense that higher levels of IGF binding protein-3 and lower levels of IGF-1 would be beneficial when it comes to cancer prevention.

This is exactly what the researchers found. They compared blood plasma levels of IGF-1 and IGF binding protein-3 in 154 bladder cancer patients and 154 age and sex matched controls. They found that study participants in the highest quartile of IGF-1 levels had 3 times the risk of bladder cancer than did participants in the lowest

quartile (OR=3.10). They also found that participants with the highest levels of insulin binding protein-3 had a 3 times lower risk of bladder cancer than did those with the lowest levels (OR=0.38). A combination of high IGF-1 levels and low insulin binding protein-3 levels was particularly detrimental conferring a 4-fold increase in risk. The increased risk remained after correcting for other known risk factors for bladder cancer such as age, ethnicity, and cigarette smoking. The researchers conclude that measuring blood plasma levels of IGF-1 and IGF binding protein-3 may be useful for assessing bladder cancer risk.

Zhao, Hua, et al. Plasma levels of insulin-like growth factor-1 and binding protein-3, and their association with bladder cancer risk. Journal of Urology, Vol. 169, February 2003, pp. 714-17

Editor's comment: Supplementing with growth hormones and growth hormone enhancers (GH enhancers) can lead to increases of 200% or more in IGF-1 levels. Many leading cancer researchers warn that taking growth hormones can lead to cancer and acromegaly in persons who do not suffer from growth hormone deficiency.

Thyroid hormone and prostate cancer

NEW YORK, NY. Prostate cancer usually progresses very slowly and in many cases, especially among older men, requires no other treatment than "watchful waiting". The problem, of course, is to identify those cases that do require aggressive treatment (surgery and radiation) in order to prevent metastasis.

Researchers at Mount Sinai School of Medicine now report that the thyroid hormone, triiodothyronine (T3), may be a useful marker for prostate cancer aggressiveness. It is well established that T3 is required for the growth of prostate cancer cells *in vitro*. The researchers measured T3 levels in 208 men aged 46 to 96 years. Twenty of the men had an enlarged prostate (benign prostatic hyperplasia or BPH), 161 had localized prostate cancer, and 27 controls had neither BPH nor prostate cancer.

The researchers found that men with BPH had significantly higher levels of T3 than did the controls and the prostate cancer patients. Prostate cancer patients also had significantly higher levels than the controls, but lower levels than the men with BPH.

The researchers conclude that T3 may be a useful biomarker for prostate cancer, but that more work is required to definitely establish this. They also suggest that new therapies for BPH and prostate cancer could perhaps be directed towards inhibiting the mitogenic (cell dividing) effects of T3.

Lehrer, Steven, et al. Serum triiodothyronine is increased in men with prostate cancer and benign prostatic hyperplasia. Journal of Urology, Vol. 168, December 2002, pp. 2431-33

IGF-1 and advanced prostate cancer

SAN FRANCISCO, CALIFORNIA. Insulin-like growth factor-1 (IGF-1) is a potent stimulator of prostate cancer cell growth. It is mostly found in the blood bound to its carrier, IGF binding protein-3 (IGFBP-3). Only the unbound form of IGF-1 has a cancer promoting effect.

A team of researchers from Harvard Medical School and the University of California has just completed a major study aimed at determining if IGF-1 and IGFBP-3 levels can predict the risk of developing advanced stage prostate cancer. Their study involved 530 patients with prostate cancer and 534 controls matched for sex and smoking status. All participants were part of the Physicians' Health Study and were between the ages of 40 and 84 years at enrollment in 1982. Almost 15,000 of the men provided blood samples that were stored for future analysis. By the end of 1995, 786 cases of prostate cancer had been diagnosed among the 14,916 participants (5.2%). Sufficient blood plasma for IGF-1 and IGFBP-3 analysis was available for 530 of the cases and their matched 534 controls. The diagnosis of prostate cancer was made an average of 9 years after the drawing of the blood samples.

The researchers observed a strong association between IGF-1 and IGFBP-3 levels and the risk of

advanced prostate cancer, but found no association with early stage disease. They found that men with IGF levels in the highest quartile had a 5.1 times higher risk of later developing advanced stage prostate cancer than did men in the lowest quartile. Men with IGFBP-3 levels in the highest quartile, on the other hand, had a 5 times lower risk of later advanced stage cancer (OR=0.2). Advanced stage prostate cancer was defined as stage C (extraprostatic, but no evidence of distant metastases) or stage D (distant metastatic or fatal). About 10% of the total 530 cases were stage D. The researchers speculate that IGF-1 not only stimulates tumour initiation and growth, but may also facilitate invasion and metastases. They conclude that measurement of IGF-1 and IGFBP-3 levels may predict the risk of advanced stage prostate cancer years before the cancer is actually diagnosed and may thus be helpful in aiding decision making about treatment.

Chan, June M., et al. Insulin-like growth factor-1 (IGF-1) and IGF binding protein-3 as predictors of advanced-stage prostate cancer. Journal of the National Cancer Institute, Vol. 94, July 17, 2002, pp. 1099-1106

Chan, June M. Insulin-like growth factor-1 (IGF-1) and IGF binding protein-3 as predictors of advanced-stage prostate cancer. Journal of the National Cancer Institute, Vol. 94, December 18, 2002, pp. 1893-94

Homocysteine and congestive heart failure

FRAMINGHAM, MASSACHUSETTS. Several studies have shown that advancing age, a heart attack, hypertension, diabetes, obesity, and cardiac valve disease are potent risk factors for the development of congestive heart failure (CHF). Researchers at the National Institutes of Health now add high blood levels of homocysteine (a sulfur-containing amino acid derived from the diet) as a risk factor for CHF.

Their study, part of the Framingham Heart Study, included 944 men and 1547 women between the ages of 60 and 95 years. None of the participants had suffered a prior heart attack. All participants had had their level of homocysteine (non-fasting) checked at a complete medical examination carried out between 1979 and 1982 or between 1986 and 1990. The average (mean) homocysteine level was 12.0 micromol/L for

women and 13.0 micromol/L for men. After 8 years of follow-up 156 of the participants (88 women) had developed CHF. The researchers found a clear correlation between the risk of CHF and homocysteine levels. Female participants with a homocysteine level between 11.1 and 13.6 micromol/L had a 3 times higher risk of CHF than did women with a level below 8.9 micromol/L. Men with a homocysteine level between 11.8 and 14.4 micromol/L had a 50% higher risk than did men with a level below 9.5 micromol/L. The researchers conclude that plasma homocysteine level independently predicts risk of CHF in adults who have not suffered a prior heart attack.

Vasan, R.S., et al. Plasma homocysteine and risk for congestive heart failure in adults without prior myocardial infarction. Journal of the American Medical Association, Vol. 289, March 12, 2003, pp. 1251-57

Vitamin B6 and inflammatory bowel disease

MILAN, ITALY. Inflammatory bowel disease (IBD) patients are at increased risk for thrombosis (formation of blood clots) and vitamin deficiencies. Studies have shown that low plasma levels of vitamin B6 (pyridoxine) are an independent risk factor for thrombosis, especially deep vein thrombosis. Researchers at the University of Milan recently concluded a study aimed at determining if a vitamin B6 deficiency could help explain the increased risk of thrombosis found in patients with IBD (Crohn's disease and ulcerative colitis). Their study involved 32 patients with Crohn's disease and 29 with ulcerative colitis. For each patient, 3 sex- and age-matched healthy controls were also evaluated.

The researchers found that patients with IBD had significantly lower blood levels of pyridoxal-5'-phosphate (PLP), the main metabolite of vitamin B6, than did control subjects (22.0 pmol/L versus 31.1 pmol/L). Low levels of PLP were especially

pronounced in patients with active disease (26.9% versus 2.9% in inactive disease). The researchers also discovered a significant correlation between low PLP levels and high levels of the inflammation marker, C-reactive protein. They conclude that low PLP levels in IBD patients are a consequence rather than a cause of active disease. Combining this finding with the fact that oral vitamin B6 reduces the incidence of thrombosis (atherothrombotic events) would lead to the conclusion that supplementing IBD patients with vitamin B6 (especially during the active phase) may help reduce their risk of thrombosis.

Saibeni, Simone, et al. Low vitamin B6 plasma levels, a risk factor for thrombosis, in inflammatory bowel disease: role of inflammation and correlation with acute phase reactants. American Journal of Gastroenterology, Vol. 98, January 2003, pp. 112-17

Editor's comment: Perhaps supplementing with vitamin B6 or PLP prior to a long flight might also help prevent economy class syndrome.

Sleep requirement genetically ordained

BOSTON, MASSACHUSETTS. Some people love to watch television late into the night while others retire before the 10 o'clock news. Is this just habitual behaviour or do some people

actually need more sleep than others? Researchers at the National Institutes of Mental Health have just completed an experiment to shed some light on this question. The study

involved 10 healthy volunteers (5 women and 5 men aged between 20 and 30 years) who habitually got more than 9 hours of sleep every night ("long sleepers") and 14 volunteers (8 women and 6 men aged 21 to 34 years) who slept less than 6 hours a night ("short sleepers"). The long sleepers usually went to bed around 11 pm and woke up around 9 am while the short sleepers went to bed at around 1 am and awoke around 6:30 am. The researchers found that the long sleepers experienced a significantly longer period of high melatonin levels and a longer period of low body temperature than did the short sleepers. The interval of increasing cortisol levels was also longer for long sleepers and the peak cortisol level was reached later (9 am) than in short sleepers (6:30 am).

The researchers conclude that the body's internal Circadian pacemaker, which governs sleep duration, is genetically programmed to stabilize an individual's sleep duration to prevent sleep deprivation which may be implicated in the development of conditions such as diabetes, hypertension, and memory loss. They also point out that the presence of a genetically programmed pacemaker makes it difficult to willfully change sleep patterns and may account for the detrimental effects of shift work.

Aeschbach, Daniel, et al. A longer biological night in long sleepers than in short sleepers. Journal of Clinical Endocrinology and Metabolism, Vol. 88, January 2003, pp. 26-30

Rivkees, Scott A. Time to wake-up to the individual variation in sleep needs. Journal of Clinical Endocrinology and Metabolism, Vol. 88, January 2003, pp. 24-25 (editorial)

Cadmium linked to diabetes

WINSTON-SALEM, NORTH CAROLINA. The growing incidence of diabetes worldwide suggests that the disorder may have an environment component. The heavy metal cadmium is known to cause pancreatic cancer. Because pancreatic cancer and type 2 diabetes are known to be associated it is clearly a possibility that cadmium may also be a risk factor for type 2 diabetes. Researchers at the Wake Forest University School of Medicine recently set out to look for a connection. They analyzed urine samples from 8,722 adults over the age of 40 years who were participants in the NHANES III (1988-1994) cross-sectional health survey. Urine concentration of cadmium (microgram/gram of creatinine) has previously been shown to be a direct indicator of the body burden of cadmium. The analysis results were split into three groups: 0 - 0.99 mcg/g creatinine, 1 - 1.99, and 2.0 or greater. The study participants also underwent fasting glucose testing and were classified as having impaired

glucose tolerance if their level was less than 126 mg/dL but greater than 110 mg/dL and as having diabetes if their level was above 126 mg/dL.

The researchers found that participants with a urinary cadmium level of 1 - 1.99 mcg/g creatinine had a 48% greater incidence of impaired glucose tolerance (IGT) and a 24% greater incidence of diabetes than did participants with a cadmium level between 0 - 0.99 mcg/g creatinine (referent level). Participants with cadmium levels of 2.0 mcg/g creatinine or higher had a 105% increased incidence of IGT and a 45% increased incidence of diabetes when compared to referent level. The researchers conclude that exposure to cadmium (through diet or cigarette smoking) increases the risk of IGT and diabetes.

Schwartz, Gary G., et al. Urinary cadmium, impaired fasting glucose, and diabetes in the NHANES III. Diabetes Care, Vol. 26, February 2003, pp. 468-70

Maggots to the rescue

IRVINE, CALIFORNIA. Non-healing diabetic foot ulcers account for 25-50% of all hospital admissions relating to patients with diabetes. Almost 15% of all diabetics will eventually develop foot ulcers and 15-25% of those will ultimately require amputation. A very serious problem indeed.

Medical researchers at the Veterans Affairs Medical Center and the University of California now report that maggot therapy is highly effective in healing diabetic foot ulcers. Their clinical study involved 18 patients with a total of 20 foot ulcers. Six of the patients were treated with conventional therapy (topical anti-microbials and frequent dressing changes), 6 were treated with maggot

therapy, and 6 were treated with conventional and then with maggot therapy.

The maggot therapy involved placing disinfected fly larvae on the wound (under a loose gauze dressing) for periods up to 48 hours once or twice a week. After 4 weeks of treatment all dead (necrotic) tissue had disappeared from the maggot-treated wounds and healthy granulation tissue covered about 56% of the wound surface. In contrast, wounds treated with conventional

therapy still had 33% necrotic tissue after 5 weeks of treatment and healthy granulation tissue covered only about 15% of the wound surface. The researchers conclude that maggot therapy should no longer just be used as a last resort before amputation, but should be considered as a first or second-line treatment option.

Sherman, Ronald A. Maggot therapy for treating diabetic foot ulcers unresponsive to conventional therapy. Diabetes Care, Vol. 26, February 2003, pp. 446-51

Crohn's disease and antioxidants

TORONTO, CANADA. Previous work carried out at the University of Toronto and the Toronto General Hospital has shown that Crohn's disease (CD) patients are under increased oxidative stress and have lower antioxidant levels than do healthy controls. Now the medical researchers involved in this early work report that daily supplementation with vitamin C and vitamin E markedly reduces the level of oxidative stress and substantially increases antioxidant levels in CD patients. The clinical trial involved 57 CD patients with stable, inactive or mildly active disease. The patients were randomized to receive a placebo or 800 IU of vitamin E plus 1000 mg of vitamin C daily for a 4-week period. At the end of the period all participants were tested for blood level of antioxidants and degree of oxidative stress. Oxidative stress was measured by breath pentane and ethane output, plasma lipid peroxides, and F2-isoprostane levels. The patients also completed a 7-day dietary record

and were advised regarding their intake of saturated and polyunsaturated fatty acids.

After four weeks the average plasma level of vitamin C was 90 micromol/L in the supplemented patients versus only 57 micromol/L in the placebo group. Corresponding values for vitamin E were 69 mmol/L and 25 mmol/L respectively. Breath pentane and ethane output, plasma lipid peroxides, and plasma isoprostanes levels were also very significantly reduced in the vitamin group over the 4-week period. The researchers conclude that supplementation with vitamins C and E is highly effective in increasing blood levels of these antioxidants and also markedly reduces oxidative stress in CD patients.

Aghdassi, Elaheh, et al. Antioxidant vitamin supplementation in Crohn's disease decreases oxidative stress: a randomized controlled trial. American Journal of Gastroenterology, Vol. 98, February 2003, pp. 348-53

Taurine may help prevent atherosclerosis

DUBLIN, IRELAND. Endothelial dysfunction is an established precursor for atherosclerosis and has also been implicated in diabetes and abnormal cholesterol levels. Endothelial dysfunction, in turn, is a disorder of the lining of the blood vessels manifesting itself by reduced arterial blood flow and greater platelet activity. It is believed that impaired synthesis of nitrogen oxide (NO), which acts to relax blood vessel linings, is the major cause of endothelial dysfunction.

Endothelial dysfunction is particularly rampant among smokers and is no doubt an important cause of the cardiovascular disease

accompanying smoking. Medical doctors at Dublin's Beaumont Hospital recently reported that supplementation with vitamin C and in particular, the amino acid, taurine markedly reduces endothelial dysfunction in young smokers.

Their clinical trial involved 15 healthy smokers (aged 20 to 37 years) and 15 healthy controls. The extent of endothelial dysfunction was measured in all participants at the start of the trial and after 5 days of supplementation. Flow-mediated dilation (FMD) of the brachial artery was determined through ultrasound images. FMD is a direct indication of endothelial dysfunction.

Vitamin C supplementation (2000 mg/day) significantly increased FMD in smokers, but did not bring it to the level of the controls. Supplementation with taurine (1.5 grams/day), on the other hand, brought FMD levels in smokers back to the level of the controls, thus essentially eliminating the endothelial dysfunction. The researchers also performed test tube (*in vitro*) experiments that clearly showed that taurine

supplementation restores normal NO production. They conclude that taurine has a beneficial effect on macrovascular endothelial function and may be useful in dealing with problems caused by high cholesterol and triglyceride levels.

Fennessy, FM, et al. Taurine and vitamin C modify monocytes and endothelial dysfunction in young smokers. Circulation, Vol. 107, January 28, 2003, pp. 410-15

Thyroid hormone implicated in heart disease

PISA, ITALY. Thyroid hormones act directly on the heart to control heart rate and force of contraction. The biologically active hormone triiodothyronine (T3) is mostly (80%) formed in peripheral conversion of the prohormone thyroxine (T4). Research has shown that heart attack patients and patients with heart failure often have very low levels of circulating T3. Researchers at the National Council Research Institute of Clinical Physiology now report that low T3 levels are a strong indicator of early death in heart disease patients.

Their study involved 573 heart disease patients (most with heart failure or a former heart attack) who had their T3 levels measured between January 1, 1999 and January 1, 2000. The patients were divided into two groups. Group 1

(173 patients) with a free T3 level less than 3.1 pmol/L and group 2 (400 patients) with a T3 level greater than or equal to 3.1 pmol/L. During the year following T3 measurement 25 patients in group 1 died (14.4%) versus only 12 patients in group 2 (3%). There were 13 cardiac deaths (7.5%) in group 1 and 6 (1.5%) in group 2. The researchers conclude that a low T3 level is a strong risk factor for early death in heart disease. They also suggest that long-term T3 replacement therapy may be beneficial for heart disease patients, but caution that large scale studies will be required to prove or disprove this.

Iervasi, Giorgio, et al. Low T-3 syndrome: A strong prognostic predictor of death in patients with heart disease. Circulation, Vol. 107, February 11, 2003, pp. 708-13

NEWSBRIEFS

Arginine aids malaria. Children with cerebral malaria have lower blood levels of the amino acid arginine than do healthy children and those with milder forms of malaria. An Australian doctor, Nick Anstey, says that low levels of arginine impair the immune system's ability to kill the malaria parasite. He says that arginine may be of benefit if given together with malaria drugs.

New Scientist, March 8, 2003, p. 27

New technology may prevent asthma attacks. About 1.7 million asthma sufferers in Britain need to monitor their condition daily so that their doctor can decide whether to change their medication. Monitoring involves blowing into a flow meter twice a day and recording the results manually. It can sometimes take months before the results make their way through the system and a medication change is prescribed. A British

company has now developed a special cell phone and software that will prompt the user to do the measurements. Abnormal results are transmitted immediately to the doctor who can then phone or e-mail the patient with a medication change if required. The system could help prevent serious asthma attacks and may also be useful in monitoring diabetes and cystic fibrosis patients.

New Scientist, March 8, 2003, p. 21

Topical beta-blockers implicated in asthma. Topical beta-blockers such as timolol are often used in the treatment of glaucoma. British researchers now report that the use of these drugs can lead to asthma (airways obstruction). They checked 2645 glaucoma patients who had received topical beta-blockers and 9094 patients who had not. Their study showed that patients who had been given beta-blockers were twice as

likely to have received a prescription for asthma medication within 6 months of having started on the therapy than were glaucoma patients who had not taken beta-blockers. They warn that a repeat prescription that includes topical beta-blockers and drugs for asthma should automatically sound the alarm.

British Medical Journal, Vol. 325, December 14, 2002, pp. 1396-97

Fish oils for heart health. The American Heart Association has acknowledged that the omega-3 fatty acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are essential for heart health. They now recommend that people without heart disease eat fish 2 or more times per week and consume a diet rich in alpha-linolenic acid. Heart disease patients should consume about 1 gram of EPA and DHA daily. Patients with high triglyceride levels may benefit from supplementing with 2 to 4 grams of EPA plus DHA per day in capsule form. EPA and DHA are the main components of fish oils.

Arteriosclerosis, Thrombosis and Vascular Biology, Vol. 23, February 2003, pp. e23-e31, 151-52

No change in survival rates for colon cancer. Cancer of the colon and rectum (colorectal cancer) is common in North America. It is estimated that 148,300 people will be diagnosed with the disease in 2002 and that 56,000 will die

from it. Researchers at the Department of Veterans Affairs now report that, while the incidence of colorectal cancer has declined over the last 15 years, there has been no improvement at all in survival rates; this despite the greater use of screening and supposedly more sophisticated methods of treatment. The researchers ascribe the decline in incidence to a trend towards a healthier diet (more vegetables and less red meat) and a healthier lifestyle (more physical activity and a decline in smoking).

American Journal of Gastroenterology, Vol. 98, February 2003, pp. 471-77

Aspirin warning. Concern was raised at a recent American Heart Association conference about the growing use of aspirin to prevent heart disease in people of low risk. A daily aspirin is recommended for patients with a cardiovascular heart disease risk of 10% or more per 10 years based on the Framingham risk score; however, it is not recommended for people at lower risk. Nevertheless, it is estimated that 52% or more of low-risk men take a daily aspirin while about 31% of low-risk women do. Dr. Russell Luepker of the University of Minnesota told delegates that taking a daily aspirin increases the risk of a hemorrhagic stroke and serious bleeding.

AHA, 43rd Annual Conference on Cardiovascular Disease and Prevention, Miami, Florida, March 7, 2003 (abstract)

BOOK REVIEW

EAT, DRINK, AND BE HEALTHY

The Harvard Medical School Guide to Healthy Eating

Walter C. Willett, M.D., Dr. P.H.

Simon & Schuster, 2001, Fireside Edition (paperback), 2002

New books on diet and health appear monthly on bookstore shelves. The discriminating reader will have long since discovered that many, ranging from the bizarre to the mundane, are not worth a second look. Walter Willett's new book *Eat, Drink and Be Healthy* is different, and in fact has little in common with the majority of books that aim to provide guidance on what to eat and drink. We now live in a world where "evidence based medicine" has become the norm, at least among many physicians and medical scientists, and this book may well have the soundest and most extensive foundation in nutritional science of any diet book recently published.

Walter Willett is chairman of the Department of Nutrition at the Harvard School of Public Health and a professor of medicine at Harvard Medical School. He is one of the principal architects of three major and highly significant investigations, the Nurses' Health Study, the Physicians' Health Study, and the Health Professionals Follow-Up Study. These epidemiologic studies are the basis of much modern thinking on health and nutrition. Willett is one of the world's leading nutritional epidemiologists and author of a definitive textbook on nutritional epidemiology. This new book, written for the lay public, offers his

views on diet and health based on a careful and thoughtful analysis of the underlying science. One-third of the book is devoted to recipes, which serve as illustrations of the principles set forth.

Central to the book's basic philosophy is a new food pyramid, Willett's so-called "Healthy Eating Pyramid," which is radically different than the pyramid promoted for decades by the U.S. Department of Agriculture—the so-called USDA Food Guide Pyramid, which Willett describes as follows: "At best, the USDA Pyramid offers wishy-washy, scientifically unfounded advice on an absolutely vital topic, what to eat. At worst, the misinformation contributes to overweight, poor health, and unnecessary early deaths. In either case it stands as a missed opportunity to improve the health of millions of people." This represents a strong condemnation of what has been for decades the basis of nutritional advice, and sets the tone of the book. Willett's pyramid is based on seven fundamental principles: (a) exercise and watch your weight; (b) eat fewer bad fats and more good fats; (c) eat fewer refined-grain carbohydrates and more whole-grain carbohydrates; (d) choose healthier sources of proteins; (e) eat plenty of vegetables and fruits but hold the potatoes; (f) use alcohol in moderation; and (g) take a multivitamin for insurance. Chapters 3-11 address the scientific basis of this advice and provide valuable details, while gently introducing the reader to the mysteries of randomized trials, cohort studies, case-control studies and what has been learned

from metabolic studies. Chapter 4, titled "Surprising News About Fat" provides the basis for the growing consensus that very low-fat diets are not necessarily healthy and instead one must be selective about their fat intake to make sure that healthy fats are plentiful. In fact, each chapter (except perhaps the recipes) is likely to provide "surprising news" for many.

Readers will find the chapter on vitamins and minerals of particular interest. The author discusses the role of selected micronutrients in health and disease, discusses relevant studies, and provides useful information on food sources. He concludes that many diets are probably deficient in vitamins E, D, B6, B12, and folic acid, and, while encouraging the reader to derive their micronutrients from food, nevertheless recommends a daily multivitamin or vitamin-mineral containing the recommended daily allowance (RDA), advice that one does not often hear from mainstream medicine. Some readers, while agreeing with the author's position that this insurance is desirable, will in fact want more insurance than is provided by the RDA.

Willett's stated goal is to "...offer straightforward, no-nonsense advice on nutrition based on the best information available," and anyone reading this book will probably agree that he has achieved this objective. Anyone interested in diet, health and longevity should definitely read this book.

Reviewed by William R. Ware, PhD

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