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William R. Ware, PhD - Editor

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This issue features an update regarding the subject of salvestrols, which are compounds found in fruit and vegetables that can kill cancer cells by serving as substrate for an enzyme that is highly expressed in cancer cells and present in the cytoplasm at very low levels if at all in normal cells. The enzyme facilitates the conversion of this substrate into a new compound that is cytotoxic and kills the cell. Normal cells are not affected. There has now been over a decade of research directed at identifying the most potent of these compounds and perfecting their extraction and formulation into an oral supplement. Mainstream medicine ignores this achievement. In this issue we report on research that utilizes the presence and action of this unique enzyme for the purposes of identifying circulating cancer cells and monitoring the effectiveness of salvestrols by examining the extent to which they are metabolized. Case studies done to date are also summarized.

Other subjects include the recent report concerning the alleged dangers of calcium supplementation in the context of cardiovascular disease, micronutrients that reduce the risk of colorectal cancer, and the amazing influence caffeine has on the progression of mild cognitive impairment to dementia. Also, a study is reviewed which finds that the progression of carotid artery thickening does not correlate with increased cardiovascular risk, an important observation since measurements of carotid artery thickness are a popular surrogate for coronary atherosclerosis and heavily used by the pharmaceutical industry to demonstrate coronary benefits of their heart drugs. This issue also briefly reviews the interesting observation that the higher a patient's satisfaction with their doctor, the higher their risk of mortality.

It has become traditional that the last issue of the summer includes a list suggested books, perhaps to take on vacation or to the cottage. This issue continues this practice.

The Prostate Monitor will henceforth be included in the INH newsletter only on a quarterly basis, starting with the September or October issue.

If you need to restock your supplements, please remember that by ordering through the on-line vitamin store you will be helping to maintain the web site and the publication of IHN. You can find the store at http://www.yourhealthbase.com/vitamins.htm.

Wishing you and your family a safe, healthy and happy summer,

William R. Ware, PhD, Editor

Highlights

SALVESTROL UPDATE

In previous newsletters the subject of salvestrols was introduced and discussed. Salvestrols are a mixed fruit extract which has remarkable experimentally demonstrated anti-cancer properties, both in the context of prevention and treatment. The original development involved the convergence of two

research paths. A number of researchers had observed that a certain enzyme, belonging to the P 450 class, was what is called overexpressed in cancer cells derived from tissue but not normal cells. This observation was verified for a wide variety of cancer tissue in the late 1990s and early 2000s. Professor Gerry Potter and his colleague Professor Dan Burke investigated and reported that this enzyme, called CYP1B1 was able to metabolize plant-derived polyphenolic and similar compounds to produce metabolites that were cytotoxic, resulting in the death of the cancer cells in which the enzyme was expressed at the protein level (rather than as a nuclear mRNA). This suggested that the existence of this enzyme was part of a mechanism that had evolved to use plant polyphenols and other compounds from the diet to kill off adventitious cancer cells which are always being generated at low levels in humans and obviously destroyed or we would not exist as a species.

One might wonder what triggers the overexpression of CYP1B1? The precursor, mRNA is present in normal and cancer cells and something, apparently general to cancer cells independent of site or type, triggers the translation and migration outside the nucleus to ultimately result in the synthesis of the enzyme CYP1B1, termed expression, at the protein level in the cytoplasm. The answer to this interesting and significant question does not appear to exist. If it did, it might provide additional useful information regarding carcinogenesis. However, most researchers are concentrating their attention with regard to CYP1B1 on inhibition since it is viewed as part of a carcinogenesis mechanism involving aromatic hydrocarbons or estrogen. If the patient has cancer, this appears to be a rather insignificant issue compared to the potential for using the enzyme to create a cytotoxin, i.e. the magic bullet.

Cell culture techniques allowed these researchers to examine a huge variety of fruit and vegetable extracts and extraction methods in search of the most potent cytotoxic metabolites of CYP1B1. It was also postulated that these chemicals were historically also present in fruit and vegetables to guard against natural enemies. They were after all concentrated generally in the skin area, were frequently bitter to the taste and, most interesting of all, in comparison with organically grown produce were at remarkably low levels in modern produce grown with insecticides and from highly inbred varieties. Thus to achieve the goal of a highly active concentrate, it was necessary to be careful regarding varieties and to insist on organically grown items.

This work was published but ignored. Your editor wrote and had published a review in *Integrative Cancer Therapies*[1] in 2009 in an attempt to give this ground-breaking research wider exposure since he agreed with Potter and Burke that this was one of the most important discoveries in cancer research in decades. At the same time your editor published a paper calling attention to the potential offered by this cancer-specific enzyme for photodynamic therapy, diagnosis and establishing surgical margins.[2]

Very recently a book about salvestrols written by Brian Schaefer has become available. Dr. Schaefer has been involved with this project and is also associated with a research project seeking a blood-based cancer diagnosis protocol that makes use of the presence of CYP1B1 in the circulation. In addition, the salvestrols researchers have been looking for the presence of CYP1B1 metabolites in the circulation.[3] Detecting circulating cancer cells is an area which today is attracting much interest. Some of the highlights he reviews in his book will be discussed.

The original observation that CYP1B1 was not expressed in normal cells was found to not be universally true when highly sensitive detection methods were used, although the levels in the few tissue types studied were still vastly lower than found in tumor tissue. In fact, Schaefer's book lists 26 cancer types where the overexpression has been observed, and for some, there are multiple studies cited. However, the researchers also found considerable problems associated with tissue sampling, extraction and quantification and turned to examining circulating cells in blood. They eventually developed a highly sensitive assay specific for human CYP1B1. In what they call the proteomic approach, they were able to establish a baseline CYP1B1 level in individuals believed to be free of cancer. What Schaefer terms minute but not zero suggests it is normal to have a small number of circulating

cancer cells presumably produced by various agents, toxins, radiation, cellular environment, etc. Normal individuals simply deal with these and it is entirely possible that diet derived salvestrols are involved in killing off these cells, a notion in keeping with the evolutionary explanation of their existence. Schaefer estimates that the present level of sensitivity allows cancer detection about 6 years prior to clinical manifestation.

Readers will note that given the very low but finite baseline serum CYP1B1 levels in healthy individuals, this approach is equivalent to screening with a threshold, a subject that has come up a number of times and discussed at various levels of sophistication. The poster child is PSA. As with all screening using a threshold, there are issues of sensitivity and specificity. Until the results of clinical trials currently underway by this group are published, all we have is some data provided by Schaefer's book from lung cancer patients where CYP1B1 was measured at between 100 and 6000 times normal background and the level was a good match with the degree of disease progression. This suggests a highly successful, perhaps even sensational screening tool.

Schaefer describes a second blood test examined by the research group with which he is associated. It is called the metabolic approach. If one has a sensitive analytical method for testing in blood and urine for both the salvestrol (substrate) and the metabolite produced by CYP1B1, then this offers the opportunity to detect the enzyme and to measure the extent of the cancer by the change in substrate concentration and the amount of metabolite. They first selected a salvestrol that produced large amounts of metabolite not present from dietary sources. They then determined when the peak concentration of the metabolite occurred after ingestion of the salvestrol. This was followed by examining a group of healthy individuals where it was found that salvestrol was recovered unmetabolized in the blood and urine. When cancer patients were given the salvestrol, the presence of the metabolite was found. The analytical method was high performance liquid chromatography, a standard technique. In the cancer patient the amount of substrate metabolized increased with the severity of the disease as estimated from the clinical presentation, and for severe disease they were unable to detect any substrate, only the metabolite. The tumor was large enough to metabolize all the substrate at the dose given. These observations were made on individuals with breast, stomach, kidney, and prostate cancer and an array of stages but skewed towards more advanced cases. He concludes that this can be taken as evidence of the metabolic manifestation of a universal cancer marker. Another view is that this result is further proof in principle of the role of CYP1B1 in cancer prevention and as a unique target for therapy.

The metabolic approach obviously offers the opportunity to measure the effectiveness of any given salvestrol mixture, to examine individual dose dependencies, and then form a non-invasive judgment regarding when a "cure" or significant regression has been achieved. When one considers that the therapy is non-toxic, that the "chemotherapeutic agent" works only on cancer cells and there is no systemic toxicity, that it is made up of natural products extracted from fruit and taken in dry form in a capsule, it hard not to be very enthusiastic about the salvestrol approach to cancer therapy and the CYP1B1 approach to identifying the presence of cancer with a blood test.

The screening tests under development do not yield site-specific information. The proteomic approach is exquisitely sensitive and close to the state of the art sensitivity for detection of a chemical in the circulation. Thus if screening is done and a positive result is obtained, where is the cancer? A serious problem since it may be small enough as to escape all modern attempts to locate it, e.g. a site specific serum marker or full body CT scan. Thus modern medicine is left helpless since there is no non-specific anticancer treatment in so-called evidence based and officially sanctioned cancer therapy. The integrative therapist might be inclined to try the most modern salvestrol product since it is non-specific, and see if the metabolic or proteomic markers decline, something unthinkable if the problem is being addressed by a modern oncologist.

Mainstream medicine thinks only in terms of their holy grail, the randomized controlled trial, as evidence for even considering a new therapy. Consider the obstacles facing

salvestrols. Salvestrols based on natural products cannot be patented. Only Big Pharma or governments not strapped for cash can finance the series of trials necessary for regulatory approval. Cynics claim Big Pharma is not really interested in a cancer cure. It would be hard to find a physician who would take the professional risk of recommending to a cancer patient that they try the salvestrol approach rather than the conventional approach, which would make recruiting almost impossible. Combining salvestrols with conventional treatment is interesting but probably would be hard to implement in more than a very small trial. A trial that might satisfy integrative physicians or those practicing integrative-complementary medicine can be visualized. It would involve patients who have rejected conventional treatment or have advanced cancer where the absence of merit associated with conventional treatment is so clear that they simply reject it as having a benefit/risk ratio of near zero and a huge adverse impact on the quality of their remaining life. These individuals could easily be recruited for an uncontrolled study or an old-fashioned study where the control is based on the average life expectancy of matched untreated patients. Mainstream medicine would look down on such a study and its results because it is not a randomized, controlled trial following the required phase I and II trials. Held in even higher contempt is the case study, although major journals continue to occasionally publish one.

Instead of clinical published clinical trials, so far all we have are a handful of case studies involving treatment. In his book, Schaefer mentions 11 published case studies which all had complete recovery from cancer.[4,5] Sites and stage included:

- Squamous-cell carcinoma of the lung, stage 2-3
- Melanoma, stage 4
- Prostate, 3 cases, one Gleason 3+3
- Breast, stage 3, 2 cases, one aggressive
- Bladder
- Liver stage 2
- Colon
- Hodgkin's lymphoma, stage 3B

However, aside from some blood-related cancers, the total disappearance of a cancer through conventional chemotherapy is very rare. Oncologists rejoice when they achieve life extension for advanced cancer measured in months.

While total disappearance of any manifestation of cancer has been achieved in these studies, Schaefer in his book points out that there is a large variation in how rapidly the patients respond. Also, not everyone responds and the reasons are unknown, but it is clear that there is a dose dependence that is individual.[6] Interfering drugs or dietary factors have hardly been studied at all. Even dose studies are difficult under the above described circumstances. Your editor has been told that more case studies are about to be submitted for publication and he will report when they appear. But given the fact that salvestrols are merely selected and concentrated fruit extracts found to work well in cell culture studies where they kill cancer cells but not normal cells, it would seem that the risk of trying this approach is not great. After all, many healthy individuals take mixed fruit polyphenols or individual fruit extracts as preventive supplements. Ignoring the absence of randomized controlled trials may be justified.

Taking low doses of salvestrols for cancer prevention is also not unknown and may be significantly superior to fruit extracts available at the health food store or online because they have laboratory proven cancer cell cytotoxicity. While therapeutic doses are rather expensive and obviously not covered by insurance or government plans, a small dose with preventive potential is not.

As mentioned above, the underlying theory of salvestrols is that CYP1B1 represent a rescue enzyme that humans evolved eons ago in order to deal with cancer cells and destroy them with substances present in the normal diet. Salvestrols can be found in a variety of fruits and vegetables and this partly explains why the dietary intake of these foods can impact cancer.[1] However, as Schaefer points out in his book, the salvestrol content estimated in the Victorian diet is considerably higher than the modern diet, thus diminishing the impact of diet on cancer prevention today. Thus someone with a standard American diet

is poorly protected if at all, and the prudent diet rich in fruits and vegetables is only optimally protective in the context of dietary intervention if made up of organically grown fruits and vegetables. Thus if one takes a salvestrol capsule daily with a prudent diet, this provides additional protection and addresses the problem of the scarcity of real organic foods and a selection that is not optimum, but no one knows if this dose is adequate. We may never know. The point is that the selection of the most powerful salvestrols known for the commercial product provides a significant advantage even over what one might judge as an ideal diet. Especially noteworthy is the fact that the potent salvestrols are commonly concentrated in peel or skin of the fruit which may be discarded, and also the fact that the concentration increases upon natural ripening which is absent in produce not locally ripened prior to marketing. These arguments should be compared to the position of mainstream medicine and nutrition that we get all we need from a good diet and do not need supplements. A lot has changed since we ceased to be hunter-gatherers, but our genome was fixed as regards to most of our human biochemistry, microbiology and physiology. Significant aspect of agriculture, diet and lifestyle now do not match that genome. Some call it civilization. Some view it as a disaster.

Salvestrols can be ordered on line at www.salvestrol.ca. Dr. Schaefer's book can be ordered via this link: http://www.salvestrolbook.com. Your editor has no financial interest in salvestrols, does take a daily low dose for prevention, and emphasizes that the above information does not constitute a recommendation, but merely provides information.

CALCIUM AND HEART ATTACKS

A study just published in the journal *Heart*, a publication of the British Medical Association, deals with calcium supplementation and the risk of heart attack (myocardial infarction or MI), stroke and cardiovascular death.[7] This study received considerable media attention since it suggested an 86% increase in the risk of having a MI for users of calcium supplements. Big number, published in a high profile journal, multicenter, almost 24,000 participants. Obviously something to avoid on the basis of evidence-based medicine. Who would want to argue with this? Dump your calcium supplement.

Let's look at the data from the tables and focus on MIs. For those who did not use any supplements, the number of MIs was 256. For those who took only calcium, it was 7, for those who took calcium along with other supplements it was 13. According to the footnotes to their table 4 there were 256 taking only a calcium supplement, and 695 taking other supplements plus calcium. Table 1 lists 15,959 who took no supplements. Thus over 11 years, 1.6% of non-takers of anything had MIs, 2.73% of those who took only calcium had MIs and 1.87% of those who took calcium plus another supplement had MIs. These translate into numbers needed to harm over 11 years of one MI for 89 taking just calcium, and one MI for 370 taking calcium along with a supplement. The 86% relative risk increase for calcium alone that was featured on the evening news became a non-significant 20% when the statistical analysis involved confounders and as well took into account cumulative supplementation.

No statistically significant association was found for calcium supplementation with or without other supplements or other supplements alone and either stroke or CVD mortality. There were 32 individual non-significant results presented. But people are now alarmed about the "danger" of calcium supplements. However, the authors are careful to use the word "may" to describe the risks the biostatisticians have uncovered. But they get high marks triggering media coverage that scares everyone and adds to the perception that supplements in general are to be avoided.

When the researchers looked for associations between MI, stroke or CVD mortality and dietary calcium intake, which ranged from 500 to 1100 mg/day in 4 quartiles, no statistical

associations were found (36 non-significant results). Supplementation was on average equivalent to being in the highest two quartiles of dietary intake, and thus presumably those who supplemented could have approximately doubled their total calcium intake.

When a study of calcium supplementation and MI is stratified by endpoint and tries up to four different statistical models and provides over 80 results, almost all of which are statistically insignificant, this makes one wonder about the two or three that turn out to show statistical significance. In addition, the result that made the news with its 86% relative risk increase is based on a very small number of MIs when only calcium was taken, and one also wonders if enough cases were observed to have any meaning. Out of 274 MIs observed while following up on almost 24,000 individuals, only 20 MIs were observed in the subgroup "exposed" to supplemental calcium. Thus when the abstract claims that taking calcium supplements *might* raise MI risk, it would perhaps have been better just to keep quiet until the question was settled, which it most certainly is not.

MICRONUTRIENTS AND RISK OF COLORECTAL CANCER

Results from a large population-based case-control study concerning the risk of colorectal cancer (CRC) associated with various micronutrients has just been reported.[8] Participants were drawn from the Canadian provinces of Newfoundland, Labrador and Ontario. Earlier evidence presented by the authors suggested that there might be significant risk reductions associated with calcium, folate, vitamins D, B6, C, and E, and certain carotenoids. A total of 1760 cases were matched by age and gender to 2481 controls. The intake of micronutrients from foods and supplements was estimated from self-administered questionnaires.

When the odds of CRC were computed for increasing micronutrient intake from both food and supplements and the first vs. the fifth quartile compared, the following statistically significant relative risk reductions were found:

Micronutrient	RR	Mean intake (mg/day)
Calcium	41%	1787
Vitamin C	33%	776
Vitamin D	27%	0.017*****
Riboflavin	39%	5.4
Folate	28%	1.07

***Equivalent to 690 IU/day**

Iron intake from food and supplements was found to considerably enhance the risk by 34% for a mean intake of 37 mg/day vs. 12.6 mg/day when the first and fifth quartiles of intake were compared. When users of iron supplements were compared with non-users, those with a high intake of iron from food as well had a 70% enhanced risk of CRC. While the risk reductions for retinol, alpha-tocopherol, thiamin and vitamins B6 and B12 were not statistically significant, no elevated risk was observed.

The levels of micronutrient intake found protective can be found just in many multivitamin preparations. Advice to avoid supplemental iron has been common for a number of years except for individuals suffering from anemia. This advice appears relevant for both cancer and cardiovascular diseases. Iron content of food can be found on the internet. Heme iron from meat is highest in liver, steak and ground beef. For non-heme iron, fortified breakfast cereal can range from 4.5 to 18 mg per cup. Other significant sources are pumpkin seeds, blackstrap molasses, soybean nuts, bran and spinach. The commonly used marker for iron burden is ferritin and oral iron chelation is used in cases of high levels.

CAFFEINE AND PROGRESSION OF MILD COGNITIVE IMPAIRMENT TO DEMENTIA

In a special 2010 issue of the *Journal of Alzheimer's Disease* (Volume 20, supplement 1), considerable evidence was presented suggesting that caffeine/coffee can reduce the risk of Alzheimer's disease. A study has just reported which examined the impact of caffeine on the progression of mild cognitive impairment (MCI) to dementia (DEM).[9] A total of 124 subjects between the age of 65 and 88 were randomly selected from those previously recruited through the Florida Alzheimer's Disease Research Center. Subjects represented a range from normal through demented. Blood caffeine levels and cognitive status were determined at baseline and the group followed for 2-4 years to monitor changes in cognitive status. It was found that plasma caffeine levels > 1200 ng/mL at baseline resulted in no conversion from MCI to DEM. Normal individuals who remained normal had average blood levels of about 1750 ng/mL. The authors point out that coffee would appear to be the major and perhaps only caffeine source for the stable MCI patients and that this study provides the first direct evidence that caffeine/coffee intake is associated with reduced risk of dementia or delayed onset, particularly for those who already have MCI.

The authors also discuss the obvious question of how much coffee is required. The plasma level of 1200 ng/mL is typically present several hours after the intake of 1-2 cups of coffee and given the half-life of 3-4 hours, peak plasma caffeine levels, which occur after about an hour from this level of coffee consumption, would be in the range of 2000 to 4000 ng/mL. Thus, this study suggests that even rather modest coffee consumption is remarkably protective. In this study, the range of plasma caffeine was from about 300 to 2800 ng/mL.

CAROTID ARTERY ULTRASOUND AND PREDICTION OF CARDIOVASCULAR RISK

Part of the conventional wisdom in cardiology is that the carotid artery intima-media thickness (cIMT) is related to the risk of cardiovascular events in the general population. This belief ignores the very poor correlation between cIMT and the plaque burden of the coronary arteries. It is so poor that a scatter plot looks totally random, consistent with a low correlation coefficient. It is a corollary to the conventional wisdom that changes in the cIMT are associated with changes in cardiovascular risk. This is a very convenient assumption since cIMT is measured both non-invasively and without the use of ionizing radiation whereas if one wishes to non-invasively examine the extent of coronary atherosclerosis, the various CT scan approaches involve exposure to X-rays. Those who deny the existence of radiation hormesis, in spite of a large body of supporting evidence, believe that this exposure is dangerous for adults. This is a subject that has been discussed and documented several times in this newsletter and is related to the controversial "linear-no-threshold" model of cancer and radiation.

Clinical studies aimed at assessing the efficacy of a drug on cardiovascular risk frequently use cIMT and regard rather small changes as significant in this context. TV ads claiming that a drug reduces atherosclerosis carry the implication that this is coronary atherosclerosis, but instead an extrapolation is being made between the carotid artery results and coronary vascular systems. Thus, a recent study which tested the association between changes in cIMT and cardiovascular risk is of particular interest.

The study in question, termed the PROG-IMT collaborative project involved a meta-analysis of 16 studies with about 37,000 participants with a mean follow-up of 7 years. Of the 20 authors of the paper, only one had a conflict of interest involving the pharmaceutical industry. The study excluded individuals with previous heart attack (MI) or stroke, and the endpoint was the risk of cardiovascular events, i.e. MI,

stroke, vascular death or a combination of these. Progression of cIMT was based on two ultrasound scans separated by a median of 4 years. When the results were adjusted for age, sex and the mean cIMT, or were also adjusted for vascular risk factors, the results suggest no significant association between cIMT progression and the cardiovascular event endpoint. Quintiles of cIMT progression were not associated with difference in risk. As was pointed out in a comment in the *New England Journal of Medicine Journal Watch* (June 6, 2010), one of the strengths of this study was that it amassed 71% of the data (in terms of person-years of follow-up) from all published general-population cohort studies.

These results call into serious question the use of cIMT progression as a surrogate endpoint for cardiovascular risk, not only for screening but in clinical trials of drugs. The contrast with the coronary artery calcium score (CACS) is of interest. It is well known that CACS is directly and strongly related to the risk of coronary events and has been frequently suggested as a powerful addition to risk assessment. As the CACS progresses, the risk increases.

DIABETES AND MATERNAL AND EARLY CHILDHOOD VITAMIN D DEFICIENCY

A case-control study has examined the association between maternal blood levels of 25-hydroxyvitamin D (25(OH)D) and the risk of type 1 diabetes in offspring.[10] This study was prompted by the observation that the intake of vitamin D supplements during pregnancy or in the early child hood of the offspring reduced the risk of type 1 diabetes. For this study, levels of 25(OH)D were available for 109 women whose child developed type 1 diabetes before 15 years of age. The odds of type 1 diabetes was twofold higher for the offspring of women with the lowest levels of 25(OH)D (≤ 54 nmol/L or 22 mg/dL) compared to those with levels above the upper quartile (≥ 89 nmol/L or 37 mg/dL). This result was statistically significant and is consistent with the earlier supplementation studies. The authors call for a randomized intervention trial to prevent type 1 diabetes in children by enhancing vitamin D status. The results add to the rapidly growing body of evidence of the multiplicity of elevated health risks associated with vitamin D deficiency.

COST OF PATIENT SATISFACTION

The *Archives of Internal Medicine* recently published a study which addressed the association between patient satisfaction and health care utilization, expenditures and mortality,[11] along with an invited commentary.[12] The study found that in a nationally (U.S.) representative sample, higher patient satisfaction was associated with less emergency department us, greater hospital inpatient use, higher overall health care and drug expenditures, and increased mortality. In comparing the highest satisfaction quartile with the lowest, it was found that the former had a 26% increase in mortality which further increased to 44% when patients with the poorest overall heath were excluded. The simple explanation for these results is that patient satisfaction goes hand in hand with unwise treatment to meet a patient demand, over treatment, over aggressive treatment and when unintended adverse results occur, they are not always recognized as such or regarded as more than compensated for by the perceived benefit obtained.

In the invited commentary, Dr. Brenda Sirovich points out that while patients can accurately assess how well many aspect of daily life "work," their evaluations of physicians and health care interventions may be of limited validity. She points outs that numerous studies have found that patients are consistently highly satisfied with false-positive test results and the downstream events that follow. The PSA test was given as an example. Regardless of the true net effect, which can be either beneficial or harmful, the physician who ordered the test experiences a favourable personal outcome. This satisfying perception of providing favourable outcome can occur

when the patient with a normal PSA goes away happy and reassured, when a patient is grateful for being helped to cope with a false positive result, or when the physician is able to please a patient by offering potentially life-saving treatment for someone whose cancer has been "caught early" even though the outcome may be worse because of early detection. This is called a positive feedback system, which can have a profound effect on physician behaviour. She also provides as an example the nodules found in a routine carotid artery ultrasound where the radiologist also looked at the thyroid *en passant*. These small nodules are almost always benign, but trigger a cascade of additional tests, follow-up and worry, and a patient grateful for the high level of vigilance even though there may have been much more harm than benefit. She also suggests that the effect size observed for mortality is so large that it may indicate confounding. The authors of the study comment on the mortality issue by saying that the factors association with patient's satisfaction are not fully understood.

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SUGGESTIONS FOR SUMMER READING

The Creative Destruction of Medicine. How the digital revolution will create better health care. By Eric Topol, M.D. Basic Books, New York, 2012. Topol's credentials alone should be enough to serve as a strong recommendation. A famous cardiologist and one of the top ten most cited researchers in medicine, he has led many of the trials that have shaped contemporary heart disease treatment. This book moves from a severe critique of some aspects of modern medicine to a vision of the future grounded in profound reforms, many based on cutting edge science technology. It provides a glimpse of the future and grounds for optimism.

Bombshell: Explosive medical secrets that will redefine aging. By Suzanne Somers. Crown Archetype, New York (Random House) 2012. Readers are probably familiar with some of the earlier books by Suzanne Somers. In this book she again uses the interview format with a collection of experts, mostly medical doctors, who are working at the cutting edge of anti-aging, and what makes the book especially interesting is that many are quite unconventional in their thinking and practice.

White Coat Black Hat. Adventures on the dark side of medicine. By Carl Elliott. Beacon Press, Boston 2010, Elliott is a professor at the Center of Bioethics, University of Minnesota. In six chapters he digs deeply into the conflicts of interest, corruption and deception and their consequences in clinical trials and especially the use of paid guinea pigs, i.e. individuals generally from the lowest end of the social and economic scale who are paid subjects, in the ghostwriters for clinical trials, in the drug office-to-office salespersons (detail men and women), in the academic thought leaders, the advertising aspects of drug marketing, and the problems that confront the ethicists.

Pharmagedon. By David Healy. University of California Press, Berkeley and Los Angeles, 2011. Healy is a professor of psychiatry at Cardiff University in the UK. He is the author of a number of popular books including *Let Them Eat Prozac*. This a detailed and authoritative attack on the pharmaceuticalization of medicine and the corrupted medical system viewed as evidence-based. Healy covers much more than just problems with psychiatric drugs, although this class of drug provides some wonderful examples of what is taking place.

Childhood Under Siege. How big business targets children. By Joel Bakan. Allen Lane (Penguin Group) and Simon & Schuster, 2011. Bakan is a professor of law at the University of British Columbia in Vancouver with law degrees from Oxford, Harvard and Dalhousie University. He is well known for his best seller, *The Corporation.* The present book investigates the impact of marketing practices whereby companies exploit the special vulnerabilities of children, manipulate parents' fears, and operate with callous disregard for the well-being and health of children. Bakan describes an unrelenting commercial assault and how children are being constantly exposed to frightening harm. Every parent (and perhaps even grandparents) should read this highly perceptive analysis of the present milieu in which children live.

ERRATUM – ISSUE 228 – JUNE 2012
www.yourhealthbase.com/ihn228.pdf
THE HIDDEN DANGER IN OUR MIDST AND HOW IT KILLS US
Page 3, first point, penultimate sentence should read as follows:

One liter of an aspartame-sweetened drink represents, in terms of methanol, 1 to 5% of the lethal or potentially harmful dose depending on body weight and based on numbers given by Monte on pages 23 and 58 of his book, taking into account the possibility of low body weight of young individuals who are among the most frequent consumers and the variation of aspartame in widely-consumed, sweetened drinks.

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