

I have two primary purposes in writing this volume: First, to present a sound scientific basis and rationale for integrative medical philosophy; and second, to present the results of several integrated clinical trials conducted at the Institute of Integrative Medicine, New York.

In 2003, I recognized the need for a new principle of *integration* for clinical medicine. This principle accepts all established scientific facts of human biology and holds that none of them be used alone in making clinical care decisions. I designated that principle as the Darwin Principle and proposed that it be held higher than all others in clinical medicine.¹ The Darwin Principle incorporates all new scientific observations in the integrative whole and asserts that none of them can *singly* be accepted as the definitive evidence to support any choice of treatment. All new information must be seen through the prism of the existing body of knowledge. The core tenet of the Darwin Principle is: No part can be understood except through an understanding of its relationships with the whole.

Oxygen Homeostasis

I began *Oxygen and Aging* (2000) with the following words: Oxygen is *the* organizing influence of human biology and governs the aging process. Oxygen preserves health and prevents disease by organizing and maintaining the three primary homeostatic (regulatory) mechanisms:

- * Acid-alkali balance;
- * Redox regulation; and
- * Protein clotting-un-clotting equilibrium.

In Figure 1, I schematically express that *fundamental* order of life. The "oxygen king" in this schema occupies a three-legged "O-throne." Oxygen dyshomeostasis may, then, be visualized as an unstable throne when any of the three legs are weakened. The other two legs in this analogy struggle to keep the throne up but only for limited periods of time.

The Three Furies

Greek mythology fascinates me. Those clever Greeks communicated simple truths of life through sharp images. When I attempt to see sickness and suffering of my patients through the prism of oxygen, the images that spring to my mind are those of the Three Furies of Greek mythology. Those Three Furies, it seemed to me, foretold the plight of the sick and dying more vividly than any other figures in the world's mythological traditions.

The ancient Greeks had three goddesses of vengeance: Tisiphone, Megaera, and Alecto. They were daughters of Uranus and Gaea—Gaea having been impregnated by the blood of Uranus when his father Cronus, the sun god, castrated him. The Greeks called their three goddesses of vengeance the Erinyes, and sometimes also spoke of them as the Daughters of the Night. The Romans renamed the goddesses the Furies.

The Furies were wreathed with serpents and dripped blood from their eyes. To strike yet more terror in the hearts of mere mortals, the Furies often morphed some of their body parts into hideous animal parts. Each evil goddess was assigned the task of spreading a different evil: Tisiphone became a torturer and a murderess. Megaera was given the power to create and fan malice and jealousy. Alecto's mission was to incite and perpetuate anger.

In consideration of oxygen homeostasis and the dysox state, my mind drifts to three Greek furies. I see a close parallel between the Greek furies and what I designate as the three "oxygen furies":

- ☼ **The Oxidosis Fury:** excess free radical activity;
- ☼ **The Acidosis Fury:** excess acidity; and
- ☼ **The CUD Fury:** excess clotting of body fluids.

I visualize the oxidosis fury—like Trisiphone, the torturer Fury—tortures its victims with its ever-widening free radical arsenal. The acidosis fury—like Megaera, the malice Fury—produces the "acid temperament" in the cells which bloats them. The third CUD fury—like Alecto, the Fury of anger—clogs and angers the sick. Each fury fans the fires of other furies.

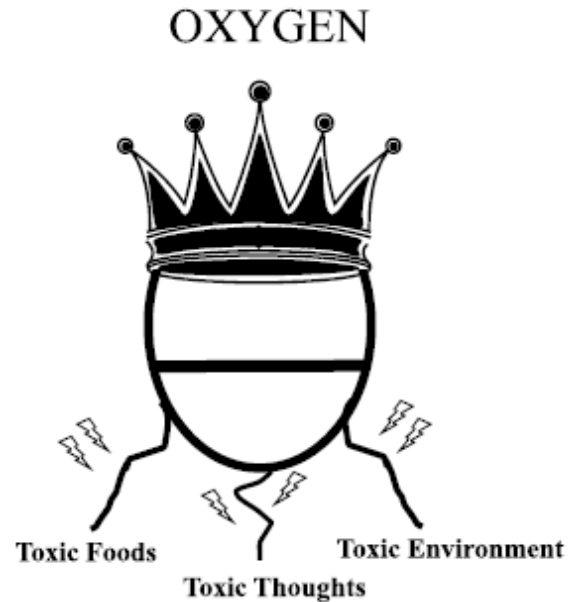
In the context of human biology, I have recognized three global macro-furies of toxic thoughts, toxic environment, and toxic foods (Figure 2).² In past writings, I have recognized three micro-furies of personal health: excess acidity (acidosis), incremental free radical activity (oxidosis), and clotting-unclotting dysequilibrium (Figure 3).^{*} The furies fan each other's fury, and together cause *dysfunctional* oxygen (dysox*).³

* In some earlier writings, I called dysox the third fury. On further reflection, it seems more appropriate to designate clotting-unclotting dysequilibrium (CUD) as the third fury. I discuss the subject of CUD at length in chapter 18 entitled "Cancerization/De-Cancerization Conflicts" and in *Darwin, Dysox, and Oxystatic Therapies*, the third volume of *The Principles and Practice of Integrative Medicine*.

**Figure 1. THE O THRONE
Supported and Stabilized by the
Three Primary Homeostasis Mechanisms
Governed by Oxygen. CUE Stands for
Clotting/Un-Clotting Equilibrium**



**Figure 2. Three Macro-Furies That Threaten
the O Throne and Create the Dysox State**



The Dysox Model of Disease

There is but one fundamental difference between a healthy cell and an unwell cell: a healthy cell has well preserved oxygen homeostasis and utilizes oxygen, without building incremental oxidative stress (oxidosis) and without accumulating organic acids (acidosis). In contrast, an unwell cell cannot utilize oxygen adequately and

- * Retains excess acids;
- * Generates increased oxyradical activity; and
- * Clots its proteins, as a consequence of the first two characteristics (Figure 2).

I have designated this state as dysoxygenosis (dysox, for short).⁴⁻⁷ For patient education, I use the term dysfunctional oxygen metabolism.⁶⁻⁷

The dysox state is created by the *cumulative consequences* of *each and every* factor that interrupts or impedes 3-M dynamics—the intelligence and energy transactions of the **m**atrix, cell **m**embranes, and **m**itochondria (Figure 4). As for mitochondria, the interruption or impairment of electron transfer events is analogous to an automobile engine which clogs rapidly when it cannot burn fuel completely.

Blockages at different levels of the Krebs cycle result in compromised metabolism of sugars, fats, and proteins, and diminished ATP generations. The existence of the cellular dysox state in a given patient can be established expediently by measuring, in a morning urine sample, the excretion of metabolic intermediates of the Krebs cycle and other metabolic pathways.^{8,9}

The Darwin Principle In Integrative Medicine

In 1831, Charles Robert Darwin (1809-1882) started his journey aboard the British Navy ship *H.M.S. Beagle* around South America. Over a period of five years, he accumulated an enormous number of biologic and geologic samples, studied them intensively,

reflected on their inter-connectedness, and formed his simple—yet comprehensive—theory of natural selection. In 1850, he published *On the Origin of Species* which, in my view, is the most significant work in biologic sciences.

The health/dis-ease/disease continuum can be neither understood nor clinically managed well without a clear understanding of Darwinian notions of ecologic conditions, struggle for life, adaptation to change, and natural selection. Natural selection, in the context of the dysox model of disease, means how the ecologic conditions—acid-base balance, redox regulation, and clotting/un-clotting equilibrium—promote health or set the stage for the development of disease. Equally important are the relationships of human ecosystems with those of the animal and plant kingdoms.

Darwin's core tenet is, indeed, the Darwin Principle: No part can be understood except through an understanding of its relationships with the whole. Most importantly, in integrative medicine Darwin's core message is this: *No treatment plan for any disease can be deemed complete unless all relevant issues of oxygen homeostasis and dysox are identified and addressed.*

Figure 3. Three Micro-Furies That Threaten the O Throne and Create the Dysox State

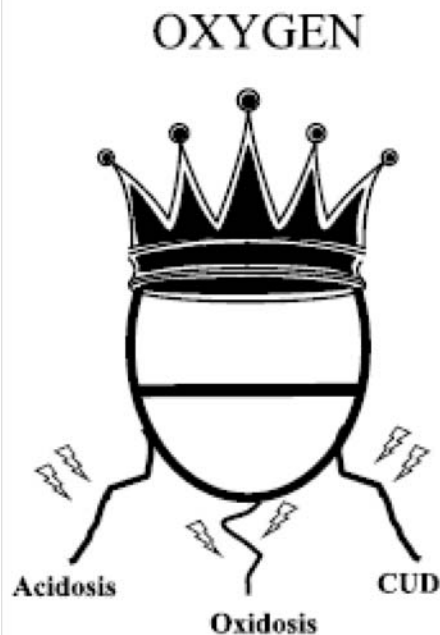


Figure 4. The 3-M Threats to the O Throne: Injury to the Matrix, Membranes, and Mitochondria



The Darwin Principle and Integrated Clinical Trials

The clinical application of the Darwin Principle calls for clinical trials that are radically different from the model of double-blind, placebo-controlled drug trials in vogue today. Double-blind trials are *not* designed to address the relevant issues of macro furies (toxic thoughts, toxic environment, and toxic foods), nor of the three micro furies of disease: oxidosis, acidosis, and dysox.

What is needed are investigations that conduct only open, integrated trials in which *teams* of experienced clinicians enter a sizeable number of individuals with a specific disease into trials. They are then free to address all macro and micro issues on basis of the needs of *individual* patients. The trial outcome is determined by evaluation of the results by *patients as well as clinicians*, employing objective and subjective criteria. The integrity of the outcome is assured by: (1) a sufficiently large number of clinicians participating in the trial who *categorically* have no financial interest in the outcome; (2) inclusion in the study of *all* patients treated at the center for the disease under investigation; and (3) by adequate length of study.

The matter of *patients deciding the efficacy of treatment* is likely to raise some eyebrows. We have raised generations of doctors who think clinical trials must not be considered valid when patients have any say in determining the outcome of the trial. However, who can gauge the quality of sleep or energy—may I ask—better than the patients themselves? Or the freedom from toxic thoughts? Or the qualities of mood, memory, and mentation? Or digestive and menstrual health? Or sexual drive? Or absence or presence of dry skin and muscle suppleness? For decades, I have been baffled by otherwise intelligent doctors mindlessly insisting that the patient's voice must be vigorously excluded from clinical trials. I return to this subject later in this preface for additional critical commentary.

Ecologic Thinking

We physicians, by and large, are not ecologic thinkers. We need to be. In this preface, I briefly examine what happens when we fail to think ecologically and ignore the Darwin Principle in clinical medicine. I suggest that the primary reason why the critical issues of toxic thoughts, environment, and foods are essentially neglected in the prevailing medical model in the United States, as well as among public health policy makers, is that the Darwin Principle is neither recognized nor heeded. To support my assertion, I ask the reader to pick up any issue of *The New England Journal of Medicine* and scrutinize it for what it teaches its readers about the three core issues of toxic thoughts, toxic environment, and toxic foods. Or, about the issues of oxygen homeostasis, redox equilibrium, and acid-base balance *as applied to clinical care in doctors' offices*. There will be no useable information on these subjects in the *Journal*, which is committed to other goals. As a consequence, the non-integrative doctors are neither sensitive to the clinical problems caused by the three macro furies, nor to the possibilities of restoring health by addressing issues of molecular biology created by the three micro furies.

Science and Drug Use in the Prevailing Medical Model

I often hear claims of the scientific method by doctors whose practice is limited to synthetic drugs. Such claims bring to mind the complexity of genetic, enzymatic, and mediator pathways of human biology. There are an estimated 30,000 genes and 100,000 proteins in the body. I do not know a single internist

who can even name 100 genes or 125 proteins. With that profound level of ignorance, it is hard for me to see any merit in the claims of "scientific" medicine by doctors who use multiple blocker drugs concurrently and who never address issues of toxic thoughts, environment, and foods. How often do those who measure their effectiveness by the percentage of filled prescriptions ever consider the critical issues of oxidosis, acidosis, and dysoxygenosis in their office practices?

Evidence-Based Medicine

For several years, evidence-based medicine has been a euphemism for pharmacologic medicine in which issues of toxic thoughts, environment, and foods are *consistently and completely* neglected. Nor is any consideration given to the three *primary* issues of molecular biology: oxidosis, acidosis, and dysoxygenosis. For an equally large number of years, I have been amused by the use of the *evidence-based medicine* phrase by doctors with total commitment to first finding the name of a disease, then prescribing the "drug-of-choice" to treat that disease. That becomes even more unfortunate when we recognize that nearly all clinical drug trials are conducted by doctors on the payroll of companies that make those drugs. This is considered good science, while astute clinical observations of physicians who have no conflict of interest are dismissed as unscientific.

The following are several serious problems with the double-blind, placebo-controlled clinical trials in use today:

- ★ Blinded trials begin with a carefully selected patient population entered on the basis of highly exclusive entry criteria;
- ★ The drugs under investigation do not remain blinded for the patients for long because they have pharmacologic effects experienced by patients;
- ★ The drugs under investigation do not remain blinded for the doctors for long since physicians are generally astute enough to recognize whether or not the patient is responding to the drug;
- ★ The drugs under investigation reveal their identity because they alter the results of laboratory tests performed as integral parts of the trial;
- ★ Patients almost never undertake the trial drugs

exclusively, and they rarely refuse natural measures (including nutrient supplements and self-regulatory approaches) for the entire duration of the study;

- ★ Each patient is a unique individual with a unique set of life circumstances that profoundly influence response to the drug under investigation; and
- ★ Most importantly, trials for individual drugs are conducted as *single* agents for some *months* but doctors commonly prescribe drugs *concurrently* with two, three, four, five, or more agents for *years*.

For the above seven reasons, I do not believe double-blinded, placebo-controlled drug trials can be accepted as valid science. That model serves drug makers well and doctors poorly. As for patients, they suffer in silence, often totally unaware that they are victims of a reprehensible perversion of science. Some readers might be irked by my choice of words in the above text. For them (and others), I next present the case of statin drugs, used for primary disease prevention to support my view.

Here, I include some verbatim text from the November 13, 2005 issue of *The New England Journal of Medicine*¹⁰ to illustrate my point:

Personal Metrics for Practice —How'm I Doing?

Part of the challenge of being happy in medical practice arises from the difficulty of ascertaining whether we are truly succeeding as doctors. In primary care, we take on complex problems and often feel as if we're failing.

Those are noble sentiments of an internist who is struggling to be a good doctor. Now consider some text that follows the opening passage:

So it was gratifying to learn that ... 90 percent said it wasn't a problem to get prescriptions refilled. Current LDL cholesterol test results were available for 19 of the 21 patients; of these levels, 12 were less than 100 mg per deciliter and 3 were more than 130 mg per deciliter.

What that writer finds gratifying are the high rates of filled prescriptions and what he considers the right blood levels of LDL cholesterol. I read the article carefully looking for a mention of any of the following pertinent facts:

- ★ Cholesterol is an antioxidant;
- ★ Blood cholesterol levels rise in people who are subjected to incremental oxidative stress caused by toxic thoughts, toxic environment, and toxic foods¹¹;
- ★ Blood cholesterol levels begin to fall when *all* issues of incremental oxidative stress are effectively addressed;
- ★ Statin drugs lower cholesterol by inhibiting enzymes in the liver and are known to cause hepatotoxicity, fatigue, myalgia, and other adverse effects; and
- ★ The clinical benefits of expensive long-term statin therapy for the primary prevention of coronary artery disease are *not* established.

The last-mentioned item is crucially important and requires specific citations. Consider the following quote from *The New England Journal of Medicine*¹²:

[The] West of Scotland study [for the prevention of coronary heart disease found an absolute reduction in cardiac mortality of 0.7 percent after five years of pravastatin therapy (40 mg per day, costing \$100 per month). Therefore, 143 men with hypercholesterolemia must spend a total of \$858,000 (drug cost only) to delay 1 such death...The problem is that outcome events in primary prevention are always rare, even in coronary disease, leading to the paradox that pravastatin is both highly effective and of very little benefit.

Both highly effective and of very little benefit!
That's the reality of the real value of statin drugs for preventing deaths from coronary heart disease.

The internist who wrote the *How'm I Doing?* article quoted above claimed credit for his finding that "90 percent said it wasn't a problem to get prescriptions refilled." He also congratulated himself for the fact that 12 of his 21 patients had LDL cholesterol levels below 100 mg per deciliter. I want to make three points here.

- ✪ First, the credit for filling and refilling 90 percent prescriptions goes to the efficiency of pharmacists, not to the doctor writing those prescriptions.
- ✪ Second, it would be useful to know how many of the patients had demanded that the prescriptions for statin drugs be written specifically for the drug they had seen advertised on TV and in print media. That would tell us about the success of drug companies' marketing efforts and how much influence he really has on his patients.
- ✪ Third, who set the standard of LDL cholesterol levels below 100 mg per deciliter to which he is so dedicated? Also, who was paid—and how much—by statin makers to establish that standard?

In 1997, in an extended review of the subject published in *The Journal of Integrative Medicine*¹³ my colleague Omar Ali and I marshalled 13 lines of evidence to support our view that the use of statin drugs is ill-advised for the vast majority of people taking such drugs. Specifically we asserted that there is no evidence that statin drugs used for the primary prevention of coronary artery disease, statins confer any survival benefits on women. Ten years later, our statement was fully validated by *The Lancet*.¹⁴

In its January 20, 2007 issue, *The Lancet* published a remarkable article exposing the shameless fraud concerning the use of statins for the primary prevention of coronary artery disease in women.¹⁴ In this article professors John Abramson (Harvard University) and James Wright (University of British Columbia), analyzed published data for over 40,000 individuals who were given statin drugs for primary prevention. The authors aptly titled their article "Are lipid-lowering guidelines evidence-based?" Here is a quote from that article:

The last major revision of the US guidelines, in 2001, increased the number of Americans for whom statins are recommended from 13 million to 36 million, most of whom do not yet have but are estimated to be at moderately elevated risk of developing coronary heart disease. In support of statin therapy for the primary prevention of this disease in women and people aged over 65 years, the guidelines cite seven and nine randomised trials, respectively. *Yet not one of the studies provides such evidence* [italics added].

Concerning the use of statins for the primary prevention of cardiovascular disorders among women, the authors wrote the following:

Statin did not reduce total coronary heart disease events in 10990 women in these primary prevention trials. Similarly, in 3239 men and women older than 69 years, statins did not reduce total cardiovascular events.

Now, let us examine the closing comments in the above-cited article:

Our analysis suggests that lipid-lowering statins should not be prescribed for true primary prevention in women of any age or for men older than 69 years. High-risk men aged 30-69 years should be advised that about 50 patients need to be treated for 5 years to prevent one event. In our experience, many men presented with this evidence do not choose to take a statin, especially when informed of the potential benefits of lifestyle modification on cardiovascular risk and overall health.

To shed further light on this issue, I offer the reader the following three quotes from *On the Take*,¹⁵ an eye-opening book on corruption among the standard setters of American medicine. This bombshell book was written by Jerome Kassirer, M.D., who was the editor-in-chief of *The New England Journal of Medicine* for over eight years:

How much the meeting coordinators and speakers get paid for doing this is a closely guarded secret, but another prominent cardiologist bragged to a young colleague that he had made more than \$100,000 at a single meeting of the American Heart Association for these "extracurricular" activities (page 17).

The lead editorial in the October 2002 issue of the *Lipid Letter* by Dr. Antonio Gotto, the dean of Cornell Medical School in New York and Dr. Peter Libby, Chief of Cardiovascular Medicine at Brigham and Women's Hospital in Boston (of Harvard Medical School) and Co-chairs of ESLM (Emerging Science of Lipid Management) "challenge[d] the medical community to consider whether our present criteria for therapy [with

statins] are too conservative," meaning that statins should be used much more widely. Both Drs. Libby and Gotto as well as the six "national faculty" listed in the *Lipid Letter* have financial arrangements with Pfizer (page 97).

Some physicians become known as whores. Whore is a strong descriptor but I heard it repeatedly from colleagues about physicians who tour the country for drug companies, changing their talks repeatedly to hawk the products of the company that is sponsoring their visits. Still, I held back using the "W" word until the wife of a prominent academic physician in a major medical center used it to describe her husband (page 25).

Like Dr. Kassirer, I have also heard some doctors described as whores. I find such comparison grossly unfair to whores. Hookers are always forthright in presenting their wares. They are forthcoming in the exact cost of their services. They deliver what they promise, and at the pre-determined value. They risk their own lives in the practice of their profession, not those of others. Dr. Kassirer and I cannot say the same about many doctors of Imperial Medicine. I discuss the larger subject of intellectual bankruptcy of doctors of Imperial Medicine in my book *The Rooster, the Flu, and the Imperial Medicine of the New Empire*.¹⁶

Lies and More Lies

The idea of writing *RDA: Rats, Drugs and Assumption* (1995)¹⁷ occurred to me in a moment of frustration at reading, then re-reading, blatant lies in an article published by *The New England Journal of Medicine*.¹⁸ Recently, I pulled that paper out and read it again. Here is a direct quote from that paper. The reader will decide whether the title of this section "Lies and More Lies" is justified or not.

The cumulative rate of cardiac end points at five years was 27.3 per 1000 in the gemfibrozil group and 41.4 per 1000 in the placebo group—a reduction of 34.0 percent in the incidence of coronary heart disease.

27.3 per 1000 come to 2.73%, and 41.4 per 1000 to 4.1%. If we subtract 2.73 from 4.1, the difference is 1.4%. How did the *Journal* turn that 1.4% reduction into 34%? At the time of this writing, I carefully read that sentence three times. The report was authored by 19 drug researchers. I wondered why none

of them had caught the obvious error. Self-doubt arose again within me. 1.4% is a world apart from 34%. I asked six doctors on our staff to carefully read the *Journal* text and tell me if any of them could make sense of that. They carefully read the text. None of them could explain how the *Journal* had magically turned 1.4% into 34%.

Let us move to the issue of death statistics in this report. The abstract of the report included the following sentence:

There was no difference between the groups in the total death rate.

Imagine my amazement when I read the following on the sixth page of that article:

There were 45 deaths (rate 21.9 per 1000) in the gemfibrozil group and 42 deaths (20.7 per 1000) in the placebo group.

So, there were 1.2% more deaths in the group treated with the drug than those given the placebo.

Fascinating! How the *Journal* outright denies in the abstract the higher rate of death in the drug group, and then celebrates a 1.4% reduction in the incidence of "heart disease." Here is a friendly challenge to the reader: Take any statin trials for the primary prevention of coronary heart disease published in *The New England Journal of Medicine* and do an analysis of the raw data included in it. The actual rate reduction will be about 1% while the distorted risk reduction number will be 30%, 40%, or higher. The simple truth is that people simply would not take statin drugs for the primary prevention if they recognized the deception perpetrated by the *Journal*. I return to this subject for an in-depth discussion of this subject in chapter 25 entitled "Why Statins Do Not Work For Women."

Lies, Damn Lies, and Statistics: Herceptin and *The New England Journal of Medicine*

There is another aspect of medical standards established by the prestigious medical journals. To illustrate one of those problems, I present the case of Herceptin, the antibody that blocks the human epidermal growth factor receptor, and which is used to treat breast and other types of cancers.

Mark Twain must have known *The New England Journal of Medicine* well. He wrote, "There are lies, damn lies, and statistics." These words of the celebrated wordsmith come to mind when I read reports about "major breakthroughs" in cancer treatment. In this section, I include brief commentary on two articles and an accompanying editorial about the use of the drug Herceptin for treating breast cancer, published in the October 20, 2005 issue of *The New England Journal of Medicine*.^{19,20} First, I give a sense of the excitement those articles created in the newsmedia, cancer "experts," and women with breast cancer.

The results of these studies represent in quantitative terms the largest improvement in outcome for any group of women with breast cancer in 25 years.¹⁹

In 1991, I didn't know that we would cure breast cancer and, in 2005, I'm convinced we have.

A cancer expert
at the National Cancer Institute.²¹

Next, see how an editorial in the *Journal* celebrated the great promise of Herceptin for breast cancer treatment:

The strength of the evidence is so overwhelming at this point that it would be almost impossible to withhold this drug from the appropriate group of patients.²²

The author of the above *Journal* editorial, according to *Townsend Letter*, received between \$10,000 and \$90,000 from the drug maker.

Next, let us consider how some others chimed in to salute what was being projected as a great medical advance in the treatment of breast cancer: "For some women, [this] breast cancer drug could equal a cure."

And, from the same editor of *Houston Chronicle*:

We don't have to wait ten more years for data. The data is here today. So I'm happy. I am also humble to be part of this great study.

Another cancer expert paid by the drug maker, speaking on *ABC Evening News*:

Major breakthrough (describing
Herceptin for breast cancer).

Reality Check

The real story on Herceptin was dramatically different. When I read the two articles that prompted the above quotes, I wondered how many doctors who read *The New England Journal of Medicine* would have the curiosity to look beyond the hype. This succinct quote from an editorial in the prestigious British journal *The Lancet* written in response to the Herceptin papers sums it up:

The best that can be said about Herceptin's efficacy and safety for the treatment of early breast cancer is that the available evidence is insufficient to make reliable judgments.²³

Herceptin is known to be toxic to the heart. Furthermore, cardiotoxicity of the drug is significantly potentiated by the cardiotoxicity of Adriamycin and Cytosin, two drugs that are often prescribed along with Herceptin. The oncologists and journalists on the Herceptin bandwagon made little, if any, effort to warn the frightened and gullible women with breast cancer against the heart toxicity of the drug.

What might—one may ask—can be made of all that Herceptin hoopla among the American oncologists and media? The simple answer is that the Herceptin maker stood to rake in an estimated \$1 billion *a year* from the sale of the drug. The drug costs nearly \$40,000 a year for a *single* patient. The drug maker hopes to use its paid oncologists to recruit 30,000 or more women to take the drug. What is a mere few hundred thousand paid out as bribes to oncologists for their exultation!

This story becomes even more troubling when we consider the following quote from the *Journal* article:

Overall survival of the two groups (the one receiving Herceptin and the other used as a control) was not statistically significant.

The New England Journal of Medicine.¹⁹

Translation: Women may not expect to live longer if they take Herceptin. That's the reality in the sad story of the brazen promotion of Herceptin. No wonder *International Herald Tribune* (11.9,2005) included the following in its report on the sordid Herceptin affair: "In a telephone interview, The Lancet's chief editor, Dr. Richard Horton, said he was "quite angry" that Herceptin has been portrayed as such a wonder drug in The Lancet's U.S. counterpart, the New England Journal of Medicine."

Vioxx and Calcium Channel Blockers

Next, let us focus on the celebrated case of Vioxx. The drug maker first withheld crucial information about drug toxicity, and then paid editors of major journals to write exuberant editorials extolling its virtues. Next, it was intensely marketed to the ill-informed body of doctors who take editorial advice about drug therapies as divinely ordained. Vioxx rapidly became a darling drug of doctors. Later there were many drug-related deaths, followed by lawyers swarming the courts for their loot. Doctors were saved from liability suits. The lawyers knew where the real money was: the drug maker. When they won, victims of the ill-advised use of the drug saw only a small part of the settlement money.

The Vioxx story is replayed every day in doctors offices, albeit without much media noise. Occasionally there are reports of drug toxicities, but they soon disappear. This quote from a report on calcium channel blocker drugs appeared in *Time* magazine (9.11.2000):

Many patients suffering from high blood pressure were probably surprised last week to hear that one of the most popular class of drugs for treatment of their conditions —calcium channel blockers—was being blamed for some 85,000 avoidable heart attacks and heart failures a year.

I recognize that the long-term use of drugs can never be completely safe. However, the issue highlighted here is different. How many internists *diligently* consider the issues of toxic thoughts, toxic environment, and toxic foods that cause hypertension before prescribing calcium channel blockers to their patients who have hypertension? Indeed, how many internists are set up to *effectively* address any of those three issues?

I often hear that there is no proof that non-drug therapies work for hypertension. That can be true only for those internists whose entire study of medicine is limited to the use of drugs, or those who do not have the courage to try and test some non-drug therapies.

The Aristotle Principle and Nutritional Therapies for Cancer

In my clinical work, I tried to walk in Darwin's footsteps. However, I recognize that there were others before Darwin, some of whom Darwin credited for his work. Foremost among them was Aristotle. He is the first among empirical scientists. I include here brief comments about the Greek empirical scientist, biologist, embryologist, and philosopher, whose work has evident relevance to my clinical work with individuals with cancer.

Aristotle (384-322 BC) was the great empirical scientist of the Greek civilization. He was a biologist who lucidly documented the embryology of chicken. He rejected Plat's mystical speculation and established the inductive method. In 335 B.C., he founded the Lyceum (library). His most notable scientific achievement, in the present context, was his classification of animals in an ascending scale, reaching all the way to humans. Darwin acknowledged his debt to Aristotle in his work with evolution. Based on his extant works, it is often stated that Aristotle never implied evolution in his classification of animals. That does not seem right to me. How could a man of his towering intellect and astute empiricism have missed that relationship?

Aristotle's extant works essentially come from the lecture notes taken by his students and edited in the 1st century B.C., and include *Organum, De Anima, Discourse on Conduct, Politics, and Ethics*. Concerning observable phenomena, Aristotle proposed four principles of explanation of causally of physical phenomena:

- ☛ The principle of the material (substance of the thing) cause;
- ☛ The principle of the formal (design) cause;
- ☛ The principle of the efficient (the maker) cause; and
- ☛ The principle of the final (purpose) cause.

In the context of clinical medicine, what did Aristotle mean by material (the substance of the thing)

except nutrition? What did he mean by the formal (design) except metabolism? What did he mean by the efficient (maker) except the toxic environment? What did he mean by the final (purpose) except the desired outcome in the treatment of disease? How often do those who consider themselves leaders in medicine ask themselves any of those Aristotelian questions? Do they even remember any of the precepts of Aristotelian empirical science? That brings me to what may be called the "Aristotle Principle."

The Aristotle Principle is the principle of empiricism in clinical medicine that requires *all* relevant nutritional, metabolic, and environmental issues must be vigorously addressed with empirically-validated measures in *every* patient. In integrative medicine, the Aristotle Principle means the following:

- ✪ No disease treatment plan can be considered *scientifically valid* if it does not address *all* relevant nutritional issues;
- ✪ No disease treatment plan can be considered *scientifically valid* if it does not address *all* relevant metabolic issues; and
- ✪ No disease treatment plan can be considered *scientifically valid* if it does not address *all* relevant environmental issues.

Medicine Once Was A Calling

Medicine once was a calling. Then it became a profession, then a business, then the big business. No group of people suffered from the transition of medicine from a calling to big business more than the one with cancer.

When medicine was a calling, it attracted women and men with a passion for healing. The practitioners became passionate advocates for their patients. Then some practitioners of medicine wanted prestige. They saw a possibility for that in getting organized, and began calling medicine a profession. In pursuit of seeking control over patients and peers, the organized medicine established standards of practice. In a shameful act of professional misconduct, the leaders in the field of oncology chose to ignore the crucial issues of toxic foods, toxic environment, and toxic thoughts. There are few, if any, oncologist today who vigorously prescribe nutrient therapies, diligently work to remove toxins (toxic acids, metals, and pollutants), and effectively address issues of toxic thoughts.

Next, medicine became an industry. The drug industry turned out to be the most callous. It hired "thought leaders" in every field of medicine and established "standards of care," which, in reality, were schemes for pushing more and more drugs. The industry enriched itself enormously by its clever (and perverse) scheme of primary prevention of disease with drugs, which, in reality, was drugging people for diseases they did not have. Not unexpectedly, those riches did not escape the notice of real men of money in the country. They jumped in and turned the industry into a mega-business, which secured absolute control over hospital, insurance, and licensing boards. They relentlessly persecuted practitioners who attempted to address the issues of toxic thoughts, toxic environments, and toxic foods, and so minimize the use of drugs.

Human Intellect, Holism, and Integration

Human intellect evolved through spiritual, philosophic, and scientific explorations. Those three forms of explorations were integrated by the following three simple notions:

- ✪ First, all exploratory beginnings occurred as mere imaginings—speculations in the contemporary vernacular;
- ✪ Second, the natural order of things could not be understood unless it was regarded in its settings as a whole; and
- ✪ Third, the exploratory endeavor had to be continued beyond the established knowledge at any given time.

The above notions appear to be as old as human consciousness. I define science as the aggregate of physical observations of physical phenomena. I designate science as the conquered territory of philosophy and spirituality and, therefore, must be considered true only when it seeks to be holistic—Darwinian.

The whole is the reality, was the central theme of G.W.F. Hegel's (1770-1831) *Encyclopedia of the Philosophical Sciences*. However, Hegel was a Johnny-come-lately. The notion of wholeness was the prize bequeathed to us by the pre-Socratic Parmenides (515-450 B.C.), often considered the greatest of the Eleatic School and celebrated by Plato. He taught that all existence is in perpetual change and that the true explanation of natural phenomena lies in the conception

of a universal unity of being—All is One, was his summation. The mathematical philosophers—yes, mathematics was spawned by philosophy—of the Pythagorean School held that *all things were numbers*. Socrates answered questions by raising more questions—a telling evidence of his preoccupation with the *relatedness* of everything with everything else, which is seldom, if ever, recognized among modern doctors. In Plato, we see a merging of the ethical and the scientific.

Akhenaten (1353 BC-1336 BC) was a Pharaoh of the Eighteenth dynasty of Egypt. He was first known as Amenhotep IV. He took the name Akhenaten (meaning Effective Spirit of Aten) to symbolize and popularize his restructuring of the Egyptian religion to monotheistic worship. So, he pre-dated the Eleatic School by nine centuries in his notion of the oneness of the existence.

Returning to integrative medicine, fourteen centuries after Parmenides founded the Eleatic School, the Persian physician al-Razi (Abu Bakr Muhammad ibn Zakariyya al-Razi, 865-925 A.D.) addressed that subject with the following words:

The truth in medicine is a goal that one cannot attain, and everything that is written in books is worth much less than the experience of a physician who reflects and reasons.²⁴

There have been some dissenting voices concerning the integrative notions of the insightful people of the ancient times. The core tenet of wholeness of the human condition and its place in the continuum of human explorations was challenged by the French philosopher René Descartes (1596-1650), who denounced all his prior thinking by proclaiming *Cognito ergo sum* (I think, therefore I am). His celebrated *duality of the soul and body* can be traced to these words, with which he expounded his philosophy:

...that is to say, the soul by which I am what I am, is entirely distinct from body, and is even more easy to know than is the latter; and even if body were not, the soul would not cease to be what it is.²⁵

Descartes's words puzzle me. Clearly, humans were humans long before Descartes conceived the notion of *Cognito ergo sum*. As much as I have tried to

make sense of those words, I have not succeeded. Notwithstanding, what intrigues me is how much of his obfuscated words chosen to profess his theme of the essential dichotomy of the soul and the body had to do with his fear of the "righteous" of his time. He must have known about the fate of Giordano Bruno (1548-1600). Bruno believed in the indivisibility of all matter and supported Copernican thought, for which he was burnt on a stake by the lieutenants of the Pope. The Dutch philosopher Baruch Spinoza (1632-77) was not as cagey as Descartes in pronouncing his love of the intellect—and challenge to the "righteous" of his time—in his *Ethics* (1677). He paid dearly for his lack of Descartes's talent with words. He paid dearly for it. Thinkers in the past have not had it easy, nor do integrative physicians have it easy today. Brazen distortions and the fiats about drug prescriptions (promulgated as the "standards of care" of *The New England Journal of Medicine*) prevail. Integrative physicians are Spinozas of our time.

The connectedness of everything in all imaginable realms was the central and recurrent theme in the wisdom of the East—a millennia before any documented notions of relatedness among things were recorded in the West. Specifically, the problems of the human condition—physical and emotional included—were not seen discrete from the matters of the soul, nor from the cosmic considerations in the ancient Indian, Chinese, and Tibetan schools of philosophy and spirituality. However, until recently, there was little appreciation of this in the West. Nobelist Bertrand Russell (1872-1970) wrote:

For in some vital respects the philosophic tradition of the West differs from the speculations of the Eastern mind. There is no civilization but the Greek in which a philosophic movement goes hand in hand with a scientific tradition.²⁶

The Wisdom of the West

That is a remarkable statement from one of the most celebrated twentieth-century literary figures of the West. One can only wonder how serious students of the ancient literatures of the East might respond.

Doing Integrative Medicine

Why are the environmental and nutritional

causes of illness *essentially* neglected by the practitioners of drug medicine? It is so because their "thought leaders" are not interested in those issues. The leaders do not integrate environmental and nutritional therapies in their practices because they do not fit into the mindset of drug medicine created and perpetuated by *The New England Journal of Medicine*. They simply do not have the courage to question any of the fiat of the *Journal*. They cannot think beyond the blessed placebo-controlled, double-blinded methodology of the *Journal*. In their myopic view, the *Journal* is the only acceptable form of medical science. The ecologic dynamics—interaction of environmental elements with human metabolism—cannot be blinded. Nor can people, I might add, be blinded to what they eat, nor to the presence or absence of physical fitness with exercise. Another lament I have heard from some otherwise thoughtful physicians is that environmental issues cannot be addressed in a doctors' office. Why? It is so because it is not permitted by *The New England Journal of Medicine*.

"The only way to find out what philosophy is, is to do philosophy," wrote Bertrand Russell. He contended philosophy cannot be defined, since any definition of philosophic exploration confines it to some specific philosophic attitude. So, he concluded that one had to do philosophy to know philosophy.

Taking Russell's lead, I suggest the following to the practitioners of drugs and scalpel medicine: *The only way to find out what integrative medicine is, is to do integrative medicine. The only way to find out what dysox medicine is, is to do dysox medicine.*

Birth of a Belief

Have we humans inflated our sense of intellectual faculties, or have some clever people learned to use belief to subvert the intellect of the masses?

A belief begins with an impulse created by neuronal firing—whether triggered from within or by an external stimulus. The belief gels as that impulse repeats itself. It ossifies with passing time. I will explain this with a thought experiment. A man in a desert cave engages in an extended fast. He becomes severely dehydrated, hypoglycemic, and excess acidity develops. His low blood sugar triggers strong neurohormonal responses to cope with the extreme stress on his biology. He continues his fast and

becomes dysoxic. In a few days, his brain cells involved with perceptions and imagery begin to falter and misfire, creating distortions of the mind. He thinks his neighbor is abusing his wife back in his village. He persists in his fast. His paranoia deepens. Eventually, he begins to hallucinate and develops a belief that he must go back and kill the abuser. He returns and kills his neighbor.

Could a little water and food for that man have prevented all that? Is this scenario reflective of the process of indoctrination which medical residents undergo during training that creates a particular mindset? With this way of thinking, years later as practicing doctors, they venomously discredit *all* natural therapies for the treatment of various disorders, of which they have no knowledge. Could a little knowledge of nutrition during their training have saved them from this perverse bias against nutritional therapies? Could a little education in environmental causes of disease have saved internists, neurologists, cardiologists, rheumatologists, and oncologists from their clinical blindness to environmental toxicities? Could a bit of integrative philosophy save their patients from the serious consequences of their subservience to the fog of the double-blind—and brazenly deceptive—drug trials?

A Matter of Courage

No amount of mere reading can give any clinician a clear sense of what integrative medicine is and how it can prevent illness, reverse disease, and ameliorate suffering. What is required is deep reflection and courage to embark upon a journey of the exploration of fundamental cellular energetics and molecular dynamics of health and disease, basing clinical decisions on objective and quantifiable changes observed in those energetics. I also present in this volume a large body of data obtained with integrated clinical trials conducted at the Institute.

It is my hope that such information can help readers reach beyond the myopia of the mind, a myopia created and perpetuated by blind subservience to the placebo-controlled, double-blinded model of drug trials—trials that seldom, if ever, can really keep doctors and patients in the blind for long in real life. Then, they can go on to develop an ecologic, integrated, and synoptic view of clinical medicine.

Medicine is artful application of the facts of human biology to the care of the sick. It will always remain so for clear-minded and thoughtful clinicians.

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