

CHAPTER THREE

GETTING INFORMED

Triathletes are among the most sociable people I have ever met. I recall during the early days of running, cycling, and swimming, that my questions concerning the three sports were invariably answered totally, completely, and enthusiastically. The sharing of information seemed to be done so joyfully, and I found that I, too, as I learned the tricks of the trade, felt compelled to share with others.

First, I would respond to people who asked for help. Next, I started volunteering to share information—as in “Guess what I just found out!” Now, I share my knowledge in the form of seminars, talk radio shows, books, and videos with the hope of reaching people who never dreamt they ever wanted to know all about the joys of exercise, or running, swimming, and cycling!

As I watched and participated in the sharing of information, experience, and advice, I noticed that there was, unfortunately, from time to time, misinformation that was passed on. Indeed, I had even been a victim of some of these “fads,” and it took me a long time to sort out fact from fancy. It’s a process, by the way, that is far from ended, as the sport progresses and new equipment, techniques, and strategies are developed and become available to the people training and competing.

Consider this method for keeping elephants out of your back yard. All you have to do is, at exactly 6:00 every evening, sprinkle some pure water over the back gate.

“But,” says a friend, “you don’t have any elephants in your back yard!”

“See? It works!”

This is an example of superstitious behavior that sustains itself because it never fails to “work.” This kind of rationale goes on all around you. See if you can spot some real-life examples of elephant repellents.

In the early days of my cancer diagnosis, a number of people would approach me with possible “cures.” Some of them were so far out that I didn’t even consider them. I did wonder, however, why so many others did. There were even glowing testimonies about their success rates.

How “Snake Oil” Cures Work

If you take any large group of patients with a disease, you’ll find that regardless of how serious it is, the course of the disease is not a straight line to inexorable death. There are good days and there are bad days. This is known as “the natural variability of disease.”¹ If you were to give all of these patients a dose of “snake oil,” or some such preparation, you’d catch some of them at the bottom of a series of bad days and starting back up. With the dose of snake oil having just been given, it is assumed that the snake oil made them “better.” We all have a tendency to want to create cause-and-effect links even when there may be none. When this happens, you’ve got a group of believers!

Those who are in-between or are at the top of a series of good days just need to be told they need to keep on taking their doses of snake oil, that it takes time for it to work. You probably won’t hear from most of these patients again, anyway, so your reputation is safe. For those who died, it was “obvious” that they didn’t start their snake oil soon enough.

If a self-proclaimed “expert” were to look deeply into your eyes and give you a diagnosis of “toxins in your lymphatics,” it would be rude of your body not to feel better, especially if you then spent a lot of money on the snake oil remedy to rid your body of these “toxins.” Then when you returned for a follow-up visit a week later, this same “expert” would look deeply into your eyes and pronounce you cured!

I have also observed that when one focuses intently on pain, it frequently changes its nature, sometimes even disappearing. The tendency, again, is to assign a causal relationship to the event.

A useful way to look at the total universe of knowledge and how it relates to us is to think of four boxes. In the first box there is all we know that we know. In the second box there is all we don't know but know we don't know. In the third box is all we know but don't know we know. And, in the fourth box, all we don't know that we don't know. Most of us are pretty comfortable with operating in the first and second boxes. Much of what we do day-to-day is on automatic because of knowing what we know. We know that we know how to get to work, for example. We know that we don't know how to get to a street we've never heard of. Knowing what we don't know usually keeps us from getting in over our heads and out of trouble. We know that we need a map. All the information in the third box keeps us limited. We don't know what we are really capable of because we never think to test it and, preferably, use it. Examples might be untried leadership ability or entrepreneurial skills that are too scary to test.

The fourth box, however—where we don't know what we don't know—is where so much potential lies. There's where the Great Beyond lies, and where our Unconscious has never been able to grasp knowledge by itself. It's only when we open ourselves up to others more knowledgeable than we are that we can be taken to realms we didn't even know existed. This is where I was with respect to diet.

These realms are different for each one of us. It's like living in a forest, never even suspecting there are such things as deserts, mountains, oceans, and space beyond the forest. These forest-dwellers may never know what they don't know. Or, take fish, for example. They know a lot about water but they don't know they know! This is why there is so much potential in our mental capacities. If we can tap into the tremendous resource of our brain-power, who knows what we can accomplish?

Here's an example of a myth and “not knowing that I didn't know” but thought I “knew what I knew.” As a child I was told to always wait an hour before going into the ocean to swim. This was, after all, “common sense,” because you could get stomach cramps and drown. As I started my heavy swim training and had to swim hard for two to three hours at a time, I found I couldn't sustain that workout without eating first. Then I found out that other hard-core swimmers ate first,

too. This told me that the eat-swim-drown belief was a myth, so I revised my “knowing what I know.”

It has been more than forty years since I've taken my college level philosophy and deductive logic courses. During this time I realized that I could really use a lot of the information I'd gained in those courses that I'd labored through as a college student, taking courses primarily to fulfill graduation requirements. Information that previously seemed to have little application to everyday life suddenly was a necessity in sorting out valuable information from mere coincidence.

It was ten years later, in 1969, while working on my Masters degree and a Ph.D., that I was sweating through graduate level statistics and courses in research design. It was another ten years before I really realized the value of being able to evaluate facts, hypotheses, raw data, theories, conjecture, trial-and-error, bell-shaped curves, improbable events, and freak accidents.

What little remained in my head after passing these courses suddenly had applications I'd never dreamed of. It was like discovering a Swiss Army knife in my back pocket when I'd been limping along using my fingernails as a screwdriver and my teeth as pliers. I marveled at how smart those professors of old were!

I started to see cancer patients on bell-shaped curves and placed people in the middle or ends of human distribution. I started thinking in terms of sample sizes and sampling errors. So what did it really mean if a friend had taken the latest electrolyte replacer and got his fastest ever time? There was also another friend who'd taken the same potion and bonked (hit the wall) so badly he'd had to drop out of the race. So here was one athlete swearing by this product and another cursing it.

When I tried it, I couldn't tell any difference because of the countless variables that varied so wildly I didn't know what was going on. The night before one race, I'd gotten an excellent night's sleep but had not had time for my usual pre-race bowl of oatmeal. The next race I'd been up half the night stewing about a problem, had awakened feeling totally exhausted, but had had plenty of time for the usual oatmeal breakfast. I may have also not bothered to put my fancy twelve-spoke racing wheels on, or decided to wear a tri-suit instead of making clothing changes. As I contemplated the al-

most infinite number of variables, I realized how nearly impossible it was to truly “know” anything!

To really “know” something, I would have had to have two large groups of athletes, one a control group with nothing varying, and the other the experimental group with one, and only one, variable. This is the only way to identify the effect of a variable; otherwise, you don’t know which cause had which effect.

Can you imagine taking a hundred athletes and, for example, ensuring that they all got eight hours of quality sleep, all had four ounces of oatmeal with apple juice, all wore the same clothing, all used identical equipment, and all had the same level of motivation to win, etc? Next, I would have to randomly assign each one to either the control group or the experimental group. Then I would have to put on a race where the water conditions were identical for each swimmer, the winds the same speed and direction for each cyclist, and “footstrikes” identical for each runner. Then I would have to look at the finish times of both groups and calculate the mean (arithmetic average) finish times of both groups, and then determine if the difference, if any, was statistically significant (meaning that it is unlikely that this was a chance variation).

If there was a difference between the two groups, I might be able to conclude that the electrolyte replacer was the variable that made the difference. But, to be sure, the test would have to be repeatable by others.

The Placebo and Halo Effects

Do we dare consider the “placebo” and “halo” effects? The fact that one of the top triathletes recommends a particular electrolyte replacer sets the stage for this common phenomenon of “getting what you expect to get” (placebo effect). Or, when an “expert” predicts an event, whatever happens is frequently interpreted in terms of the expectation (halo effect), primarily because experts in one area tend to be viewed as authorities in other areas.

The mind is so powerful that it’s quite possible that if you’re told this little pill will make you go faster, you will! You can’t possibly eliminate the placebo or halo effects when you are trying different food, equipment, or psychological processes. Even if you, the sub-

ject, don't know whether or not there's an active ingredient in a pill, there's a possibility of bias if the person giving you the pill knows. This is why experiments aren't valid and reliable unless they are double-blind, meaning neither knows what's in the pill. Some people want so badly to believe something, that no amount of evidence to the contrary will shake their faith.

This is especially true in the area of beliefs about food. How do you account for the fact that three-quarters of the world's population is vegetarian and yet most Westerners believe that to be healthy one must have dairy products and meat? This is especially baffling when there is a great deal of scientific evidence that animal foods are responsible for more than seventy percent of deaths in Western civilization.² Nobody wants to die and yet we keep eating the very same foods that cause heart disease, cancer, stroke, diabetes, osteoporosis, arthritis, and on and on. After I changed my diet and saw firsthand the very positive result, I wondered what other beliefs I might have that are so firmly entrenched that I dare not question them.

What about the people who think if "x" quantity is good, then "2x" will be twice as good, and "3x" will be three times as good? If I ran my best race on forty miles a week of running, just think what could do with eighty miles a week, the logic goes. And there are people who, incredibly, run 120 miles a week or more. The problem comes when some of us try to increase our training mileage to these levels and are rewarded only with injury. To go back to the example of the electrolyte replacer, if our experimental group was significantly faster, we then need to look at the quantity they drank. Assume it was twenty-four ounces. What would have happened if they had drunk only ten ounces, or fifty-two ounces? Now you see that we'd have to run another experiment, holding all other variables the same again, and have one control group and three experimental groups. And, are fluid levels of ten, twenty-four, and fifty-two enough levels to give us the optimum level of fluids? What if twenty-four ounces is too little and fifty-two too much? What if performance level increases up to forty-four ounces and starts to decrease with greater input? Our experiment with three levels could show that twenty-four and fifty-two are the same, with our "scientists" concluding that performance does not improve over twenty-four ounces.

The Fallacy of the Truncated Scale

Another factor to be considered in assessing the value or truth of data is the range or number of “data points” on the scale. Does the scale go high enough, low enough, or miss the optimum in the middle? This problem was vividly demonstrated in the so-called Harvard Nurses Study of the diets of 89,494 women where one of the findings was that fat in the diet did not influence breast cancer rates.³ The trouble with this conclusion was that all the subjects had a high-fat diet, so there was naturally no difference in the breast cancer rates! In the meantime, however, a lot of damage is being done as women, and some of their physicians, are told not to worry about fat in the diet causing breast cancer. If the data points had gone low enough, with the dietary fat down to ten percent for example, the results would have been very different.

The error was repeated in this study with regard to exercise as well. The finding was that the breast cancer rates were no different between the “heavy” and “light” exercisers, the error being that their definition of “heavy” was too light. This is another example of the data points not going far enough—the fallacy of the truncated scale. Recognizing the problem, though, the survey-takers at least concluded that women should exercise anyway.

In addition to this, there are many arguments for individual differences. Some people assume that we are all basically alike, and others assume that we are so different we can't learn anything from each other. The truth lies in between. Within a broad range, we humans are remarkably similar, and within a narrow range we are as individual as our fingerprints. As a result, when assessing the outcome of someone else's experimental results, we need to consider whether the results fall within the narrow or the broad range. It's the similarities that allow blood tests to tell us, for example, that our iron and cholesterol levels are normal, or allow surgeons to perform the same basic operation on all of us. After all, it's pretty rare for a surgeon to open us up and find a real surprise! Of course, there are differences, and that's why we need, most of all, to keep an open, inquisitive mind, and be very careful about drawing conclusions. Once having drawn a conclusion, it needs to be held in the light of advancing knowledge. Know that

when you find you are wrong about something, you are on the way to being right.

The essential thing to understand here is that you should get yourself informed about your health, but be sceptical about graphs and charts. My fitness plan, however, involves listening to your body, challenging what you can do, not depriving yourself of food or energy, and enjoying life.