Scientific Support for Chapter 2

"I've **lost 27 lbs since using the PEOs and feel energetic,** and find that by example, people around whom I work are asking about what is different, and **I'm sharing."**

—Lawrence Cibula, MD (USA)
Radiation Oncologist

More about False Positives

To calculate the number of false positives, divide the number of healthy people tested sick (9,999) by the total of all people who tested sick either correctly or incorrectly (9,999 + 99). [A group of 9,999 (healthy people tested sick) /10,098 (99 sick people tested sick + 9,999 healthy people tested sick) = 99% incorrect results.]

Because we tested a large number of people (1,000,000), even a small degree of inaccuracy—just 1% (typically considered very small)—produces a large error compared with the number of people who really have the disease.

When it comes to statistics, being correct is not always as simple or obvious as they may appear.

Proving the Point: The Folly of Raising HDL Levels

"These results challenge several established views about plasma HDL cholesterol."

"On the basis of the association between the *LIPG* Asn 396Ser allele and HDL cholesterol, the 5.5-mg/ dL *increase in HDL* **should have translated into a 13%**

decreased risk of MI. "The people who are carriers of the HDL-boosting variant should have had a reduced risk of heart attack, *but to our surprise, there was no association between the gene variant and heart-attack risk*."

"So we have these two lines of evidence, one from the single variant and another from a group of 14 variants, that lead to the same conclusion—that people who are genetically predisposed to having *higher HDL-cholesterol levels are not protected from heart-attack risk, as would be expected*."

"…What is not known is whether that association [lower HDL=increased heart disease risk] *is a causal relationship or an indirect [a mere association]...*"

Stat-Smart example from *New York Times*

Excerpts from *New York Times* article on Wednesday, October 17, 2012, page A18, by Anahad O'Connor, titled, "Cholesterol is falling in adults, study finds":

"Researchers examined a nationally representative sample of tens of thousands of Americans over the last two decades and recorded a decline of 10 points in average total cholesterol—to 196 mg/dL from 206 mg/dL….

"Two other trends in the last decade may have also been factors, the researchers said: declines in smoking and a drop in carbohydrate consumption.

"Dr. David J. Frid, a cardiologist at the Cleveland Clinic, said the findings were unexpected given the high rates of obesity and Type II diabetes. He pointed to a *30 percent drop in deaths from heart disease nationwide, and said the cholesterol data might be related.*"

This last statement should give you great pause.

Two current examples of poor "studies"

In the analysis published online April 9, **2012** titled, "**Efficacy of Omega-3 Fatty Acid Supplements (Eicosapentaenoic Acid and Docosahexaenoic Acid) in the Secondary Prevention of Cardiovascular Disease:** A Meta-analysis of Randomized, Double-blind, Placebo-Controlled Trials**,"** Sang Mi Kwak, et al., *Archives of Internal Medicine,* published online April 9, **2012**. doi:10.1001/archinternmed.2012.262. *They retrieved* 1007 articles but only found a mere 14 trials *with 20,000 patients that were qualified as adequate to include in the analysi*s.

In the analysis titled "Association Between Omega-3 Fatty Acid Supplementation and Risk of Major Cardiovascular Disease Events: A Systematic Review and Meta-analysis," Evangelos C. Rizos, et al., published in *Journal of American Medical Association* (JAMA), **2012**;308(10) 1024-1033, *they reviewed* **3635 citations but only accepted 20 studies** *of 68,000 patients that were adequate for analysis*.

Confirmation that physicians get misled regarding intervention effectiveness

From the book, *Cancer and the Search for Selective Biochemical Inhibitors* by E. J. Hoffman, CRC Press (**2007**), pages 333-336:

"In *Chances Are...: Adventures in Probability*, by Michael Kaplan and Ellen Kaplan, an exercise is described in which **doctors and hospital administrators graded four different cancer-screening programs**.

- In Program A the death rate was **reduced by 34%.**
- In Program B there was an **absolute reduction in deaths by 0.06%**.
- In Program C, the **survival rate increased from 99.82% to 99.88%.**
- With Program D some **1592 patients would have to be screened to prevent 1 death**.

The **doctors and administrators overwhelmingly advocated Program A**, but the authors note that the **four sets of numbers pertain to the *same program***. Thus, it all depends on how the statistics are presented."

Chapter 3 gives you the details so you won't ever be misled again.