

Editorial

The Tomato Effect

It is difficult to accept a phenomenon unless it has a name. The name gives the phenomenon a life of its own, which may be useful or harmful depending on how it is used, but it is difficult to ignore. For centuries we have suffered from a phenomenon which deals with the discovery and application of new treatments. When the medical establishment is confronted with a new treatment it may commit one of two errors. It may accept the treatment as being efficacious when in fact it has no direct therapeutic effect except as a vehicle for the effect of faith, hope, expectation on the part of both the patient and therapist. We have a name for this; it is called the placebo effect. In my opinion this term has been greatly abused and overused because very few physicians understand the placebo effect. They invoke it as an explanation for any therapy which works for which there is no generally accepted explanation.

The other error is to dismiss a treatment as ineffective (usually by calling it a placebo effect) when, in fact, it is highly efficacious. A few years ago I called this type of reaction an "obecalp" reaction (placebo spelled backward), but the term did not take. I do believe we have a useful term at last, "The Tomato Effect."

Professors James S. Goodwin and Jean M. Goodwin, University of New Mexico School of Medicine (1984), illustrated the tomato effect in the Special Communications section of the *Journal of the American Medical Association*. The tomato was introduced to Europe and by 1560 was a staple. But everyone in North America knew it was poisonous and tomatoes were not used as food until 1820 when Robert Gibbon Johnson ate a tomato on the steps of the courthouse in Salem, New Jersey. Only in the past 100 years have tomatoes become a widely used North American staple. The tomato effect occurs when an efficacious treatment is ignored or rejected because it makes no sense in light of generally accepted dogma. Thus, the tomato was rejected because it was known to be toxic. Treatments which are novel are rejected because no common dogma can explain how it could work.

The Goodwins described three examples in the field of arthritis. Colchicine was used for treating gout as far back as the fifth century, but after the thirteenth century colchicine disappeared from therapeutics. It was reintroduced in 1780 as a major constituent of "l'eau medicinale d'Husson." It is one of the highly efficacious specific treatments

discovered in medicine.

It vanished after the Renaissance because scholars rediscovered the teachings of Hippocrates and Galen that all disease was due to a non-specific imbalance of bodily constituents. In light of this theory it made no sense to use colchicine. Instead, bleeding and purging were introduced and used for the next five or six centuries. Sydenham, father of clinical medicine and discoverer of the first rational treatment for smallpox, condemned purging and bleeding.

The second treatment was gold therapy. This was developed because of the infectious theory of arthritis. Koch, at the end of the nineteenth century, found that gold salts inhibited growth of tuberculosis bacillus. This led to the use of gold salts for arthritis and it was helpful. But when the infectious theory of arthritis was given up, physicians also gave up the use of gold. About twenty-five years ago, Dr. Max Hamilton, a well-known psychiatrist, was so convinced gold therapy was totally ineffective he compared our therapeutic work on schizophrenia to the gold effect on arthritis, i.e. totally useless. Yet today, especially using newer gold salts, it has come back as a useful treatment for some arthritis.

Aspirin had been used for several centuries to treat arthritis successfully, but once the infectious theory came in it no longer made sense to use aspirin for arthritis. Now it is once more a useful, respectable treatment.

I can add another example. In 1949, Dr. W. Kaufman reported that Vitamin B3 was a highly efficacious treatment for arthritis, basing his conclusions on several hundred carefully studied

cases, yet, very few rheumatologists even know about this, for again everyone "knows": (1) arthritis is not a vitamin deficiency, and (2) no one needs extra vitamins if they eat a "balanced" diet, i.e. it makes no sense. These are all examples of the tomato effect.

The Goodwins concluded, *We cannot progress in medicine without a theoretical structure. Structure by necessity limits our peripheral vision while allowing us to focus on a particular path. The benefit of such a structure far outweighs the detriment. However, we can reduce the detriment by asking, almost in ritual fashion, certain questions. Before we accept a treatment we should ask "Is this a placebo?" and before we reject a treatment we should ask "Is this a tomato?"*¹

Now we know how to characterize physicians who reject treatments out of hand. They are like the Renaissance scholars "who, with all this written and practical evidence before them chose to see none of it — their learning seemed like a bandage round their eyes".¹

1. GOODWIN, J.S. and GOODWIN, J.M.: The tomato effect. Rejection of highly efficacious therapies. J.A.M.A., 251:2387-2390, 1984.

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