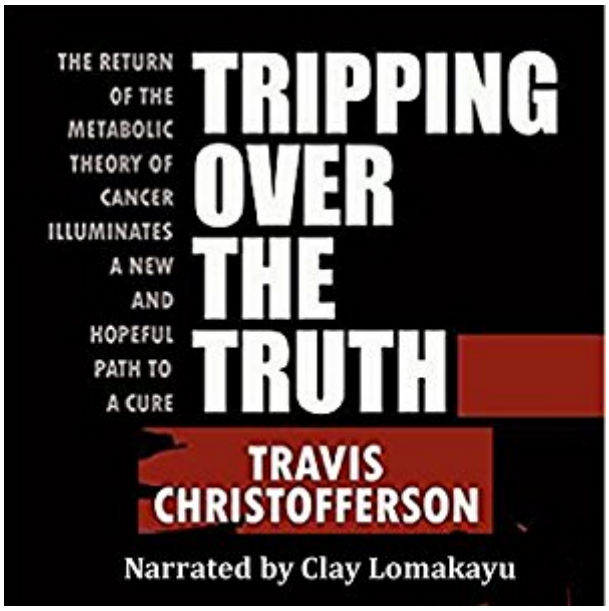
Tripping Over The Truth: The Return Of The Metabolic Theory Of Cancer Illuminates A New And Hopeful Path To A Cure



Synopsis

A masterful synchronization of history and cutting-edge science shines new light on humanity’s darkest diagnosis. In the wake of the Cancer Genome Atlas project’s failure to provide a legible road map to a cure for cancer, science writer Travis Christofferson illuminates a promising blend of old and new perspectives on the disease. Tripping Over the Truth follows the story of cancer’s proposed metabolic origin from the vaunted halls of the German scientific golden age to modern laboratories around the world. The listener is taken on a journey through time and science that results in an unlikely connecting of the dots, with profound therapeutic implications. Transporting us on a rich narrative of humanity’s struggle to understand the cellular events that conspire to form malignancy, it flows like a detective novel, full of twists and cover-ups, blind alleys and striking moments of discovery by men and women with uncommon vision, grit, and fortitude. Ultimately we arrive at a conclusion that challenges everything we thought we knew about the disease, suggesting the reason for the failed war against cancer stems from a flawed paradigm that categorizes cancer as an exclusively genetic disease. For anyone affected by this terrifying disease and the physicians who struggle to treat it, Tripping Over the Truth provides a fresh and hopeful perspective. It explores the new and exciting nontoxic therapies born from the emerging metabolic theory of cancer - therapies that may one day prove to be a turning point in the struggle against our ancient enemy. We are shown how the metabolic theory redraws the battle map, directing researchers to approach cancer treatment from a different angle, framing it more like a gentle rehabilitation than like all-out combat.

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Customer Reviews

This is a must read for those interested in cancer. The author uses a historical framework to explain the science, and makes a strong case for cancer as a metabolic disease (as contrasted to a genetic one). More importantly, cures are to come from studies of metabolism, rather than from narrowly targeted treatments aimed as particular mutations. The treatment is historical, telling the story through the great researchers and their findings, using their stories to explain the science. This makes the book very readable. Telling these stories is not necessary to understanding the science, but it may be necessary to understanding why, and when it was accepted. After running through various historical figures, such as Warburg (who got his Nobel prize for demonstrating the metabolic abnormality of cancer), the story moves to various interesting modern figures. By page 93, he reaches the research in Pedersen's lab at John Hopkins University, and the story of the bright Korean biochemist, Young He Ko. She discovers that a simple chemical, 3-bromopyruvate, kills cancer cells better and quicker than most chemotherapy drugs. She achieves the almost unprecedented feat of curing cancers in all of 19 rats, who remain free of their original cancers to the end of their natural life. One would expect to learn how she got a professorship, fame, and lots of research money. Instead, the academic politics at John Hopkins results in her being terminated, and a law suit, leaving the breakthrough unexploited. (Some believe that this will provide the plot for a movie, and speculate as to which actress should play Dr. Ko). For now, it just makes part of the book read like a novel. There is drama (starting on p. 109) when the father of a teenager near death from liver cancer hears of the new drug, and obtains approval for it to be administered in Germany (approved only because it was his only hope of evading his impending death). The unemployed biochemist travels there, and waits nervously while the first human receives it. He was being kept alive by tube feeding. There are no serious side effects, and he asks to eat. The outcome is that instead of not surviving to his 17th birthday as the doctor's predicted, he recovers enough to go to John Hopkins Medical school to lecture, reaches his 18th birthday (a party which the still unemployed Dr. Ko attends). Alas, he eventually dies from an unrelated pneumonia, but the drug had achieved a "miraculous" cure. Heart breaking drama here. The story then moves on to the cutting edge research on the genetics of cancer, and how when the genomes of various tumors were sequenced, there was found there was no pattern to the mutations, creating an embarrassment for those whose careers had been based on the genetic theory of cancer. Naturally those who had dedicated their career to cancer as a genetic disease were disappointed, and elaborate new theories, but several of the leaders have shifted their focus to metabolism. Although it is easy to say the hundreds of millions spend on genetic research was wasted, it was something

that should have been done, and it appears we now know approaches that do not work. As a subplot (p152) is the story of James Watson (whose Nobel prize was for discovering the genetic code) and his shift from emphasis on genetics (which naturally served his self interest), to efforts to get the Ko formulation, and him expressing support for the metabolic theory (when famous geneticists abandon the genetic theory, it is more convincing). The story moves on to Dr. Seyfried (p. 167) and how he drifts into cancer research on discovering that starving mice slowed tumor growth, and a drug that seemed effective against cancer actually seemed to work by stopping the mice from eating as much (the control mice not given the drug died much quicker, but control mice restricted to eating only as much as the treated mice chose to eat, did just as well). This resulted in the publication of a path breaking book, The Metabolic Theory of Cancer. " While this is a very good book, and a must read for professional cancer researchers, the biochemistry is tough for non-professionals. For laymen, one can get an understanding from "Tripping over the Truth" with much less work. Even the professional may find that the historical narrative of this book makes it easier to understand Seyfried's book (Cancer as a Metabolic Disease: On the Origin, Management, and Prevention of Cancer), with much less work, and without being lost in the details. Such reader's may wish to skip the first two parts, which provide historical and scientific background). Christofferson's book is cheaper, slightly more up to date (in a field that is moving fast, partially due to Seyfried's recent book), and more fun to read. After reading Christoffer's account of how Seyfried came to write his book, and what he found, the professionals will be motivated to read the more technical book written by the great scientist himself. Dr. Seyfried explores ketones as the explanation for why calorie restriction works, and shows that a ketogenic diet can be effective (at least in mice). The story moves on to the history ketogenic diets, and to a Florida researcher, D'gostino (p.211), who gets good results in mice from such a diet, especially when combined with hyperbaric oxygen therapy. Small scale human tests of ketogenic diets for brain cancers begin (p. 196) and produce encouraging results. Since many reading this review will be those suffering from cancer, what are the conclusions for such patients The first is the high potential of 3-bromopyruvate. Patients should not rush out and try to get this and treat themselves. If incorrectly formulated, it could be fatal. However, they should keep their eyes open for trials (which are overdue, but virtually certain to come). Those with advance, metastatic cancer should try to be included, even if this requires traveling overseas, and paying their own expenses. The preliminary evidence is that a ketogenic diet is beneficial, and the book includes an appendix on "Putting Metabolic Therapy to Work". If I was dying from cancer, I would certainly try this. What are the weak points in the book? One is that it lacks an index (so those interested in a particular topic can find it). Even the chapter

headings and table of contents are non-informative. This is why I mentioned page numbers above. While it has a list of sources in the back, it is not as well documented as a researcher would want. Fortunately, more can be found in Seyfried's book. It is clear from the sources he gives, that much of his information derives from traveling around the country interviewing the researchers themselves. This permits him to provide the background that makes the book so readable (even novel like). A benefit of these interviews is that he sometimes mentions results that have not yet been written up and published. This could be valuable to researchers and funders wanting to know what is going on in a fast moving field. Those interested in the history and politics of science will enjoy the stories of the researchers, and how what should have been obvious leads and inconsistencies were not followed up on. It also becomes clear how problems of funding, human egos and ambitions, and desire not to confess to having wasting time on exploring a blind alley (even though this may keep others from wasting time by going down the same blind alley) has impeded research. Possible cures that are hard to make money from such as 3-bromopyruvate (a known chemical that cannot be patented) and nutritional approaches are not as promptly followed up on as those that can result in a highly profitable drug of marginal use (and he points just how marginal many of the hyped drugs are). Those in funding positions (government, foundations, and those with money to donate) would benefit from reading this book and thinking about the implications. Drug companies naturally would like funding decisions that lead to new drugs them to patent and market, and research that shows the utility of their products (and lobby for such). However, much higher returns should result from research private firms are unlikely to pursue, research on unpatentable molecules like 3-bromopyruvate, and nutritional therapies.

Cancer: It's a terrifying diagnosis, often eventually resulting in one of two possibilities: either a prognosis that amounts to a death sentence, or, if more optimistic, a likelihood of "beating it," with the prospect of then spending the rest of one's life with back-of-the-mind worry that it will come back someday. Why have we made so little progress in treating this illness? Why, over four decades after President Nixon declared "war on cancer," do millions of people still experience the ravages of this disease and its toxic conventional treatments? When we set out to build an atomic bomb, we had the Manhattan Project, and we accomplished it. When we decided we wanted to land a man on the moon, we threw money at the idea, and we accomplished that, too. So why, after forty years, billions of dollars, and thousands of biochemists and researchers devoting their careers to solving the mysteries of cancer, have we made shamefully few inroads?Is there a chance we've approached things from the incorrect angle? Is there a chance that we've mischaracterized the etiology of

cancer, and because of this, our therapies, medications, and prevention strategies are misguided and ineffectual? What if, all these years, cancer has had most of us fooled, and all but a few brave and persistent scientists have been so distracted by the *effects* of cancer that we've inadvertently ignored the underlying cause?These are the questions Travis Christofferson explores in Tripping Over the Truth. In a book that covers cancer from its earliest recognition centuries ago, to therapies and drug trials that are ongoing now, Christofferson makes a stunning case suggesting that the reason our go-to treatments of surgery, radiation, and chemo ("slash, burn, and poison") so often fail to restore health and save lives is that they're targeting the wrong thing. You can't provide an effective solution if you don't know what the problem is. And a growing number of researchers believe we've been throwing solutions around in what amounts to either a guessing game or an ultra-high-stakes version of "whack-a-mole," where as soon as one problem goes away, another pops up somewhere else. But if we could find the root cause--the fundamental underlying problem in cancer--then we can attack it head-on and get rid of it once and for all.Christofferson details the differences between two competing theories of cancer etiology, with well-researched timelines covering the political, economic, social, and academic forces behind both. The one more widely-held right now is the "somatic mutation theory" (SMT). It posits that cancer is caused by mutations to DNA. Carcinogenic substances cause errors in DNA replication, and this leads to cells that misbehave--they gobble up fuel, they create their own blood supplies (angiogenesis), they poison nearby cells, and they divide and multiply like crazy. They never die, like normal cells are programmed to do (apoptosis), and eventually, they spread from their site of origin and take root somewhere else in the body (metastasis). This theory makes sense, because cancerous cells do have mutated DNA.However, the competing theory--the metabolic theory--holds that mutated DNA is merely an *effect* of cancer, not the cause. This theory suggests that cancer is the result of an energy problem inside cells--specifically, the mitochondria have lost the ability to adequately perform "cellular respiration" and oxidative phosphorylation--making ATP. In other words, it's an energy generation problem. When mitochondria lose the ability to "respire" and create energy, they revert to fermentation instead, a primitive, highly inefficient survival mechanism that requires enormous amounts of glucose to power a cell. One of the products of fermentation is lactate (lactic acid), which accounts for the acidosis so common in cancer patients, and this is why alkalinizing therapies fail: people don't get cancer because their blood is acidic; their blood becomes acidic because the cancer cells generate so much lactate. It's also why advanced cancer patients waste away (cachexia): the cancer cells "steal" glucose from the rest of the body, growing and spreading, while the rest of the body starves and shrinks.Think about it: When you haven't slept in a while, you

haven’t been eating right, and you’re under stress, you make mistakes, right? You’re tired, and you get sloppy and clumsy. Cells work the same way: when the mitochondria are damaged and can no longer produce energy effectively, cells get sloppy. They make errors in DNA replication--so we can see the mutations here as consequences, not causes.The real crux of the metabolic theory is the glucose issue. Researchers have known for years that cancer cells are "sugar junkies." They thrive on glucose, and because their mitochondria are either inadequate in number or are dysfunctional, they fail to effectively metabolize fuel sources that healthy cells can use just fine: fatty acids and ketones. The mitochondria are so broken that even in the presence of oxygen, cancer cells must ferment glucose--the "Warburg effect," and an unmistakable hallmark of most cancers.Cancer cells’ "Achilles’ heel" is their reliance on glucose for survival. If the metabolic theory holds true, then targeting cancer cells not at the level of DNA, but at the level of metabolism, might hold the key to developing successful therapies. We are still in the early stages of exploring this in the clinical setting (largely using ketogenic diets and hyperbaric oxygen), but Christofferson makes a powerful case for why these non-toxic therapies stand a much better chance of hitting cancer where it hurts than the chemo and radiation, which often take people’s lives faster and more brutally than the cancer itself would have, if left untreated. (Moreover, unlike chemo & radiation, metabolic therapies would *spare* healthy tissue -- and in the case of a ketogenic diet, possibly even *strengthen* it. At the very least, metabolic therapies prime the body to better tolerate the harsh effects of conventional treatment.)Christofferson details the origins of the SMT, and then systematically dismantles its every tenet. For each weakness in the SMT, the metabolic theory has a fascinating strength. Pitted head-to-head, the metabolic theory fits the evidence much more logically and scientifically. It’s unfortunate that so much time, money, and research effort have been expended to hit all those "whack-a-moles" one by one with the plastic hammer, when the answer all along might have been simply to unplug the machine and cut off its power supply altogether.Borrowing from the work of many scientists, Christofferson has written a book appropriate for medical professionals as well as laypeople interested in this topic. The more scientifically minded might go on to tackle Dr. Thomas Seyfried’s book, Cancer as a Metabolic Disease. But for those who just want to begin exploring these concepts, Tripping Over the Truth is a great introduction to the beauty and elegance of the metabolic origins theory, without the intimidating biochemistry and physiology. I applaud the author for writing a book about a complex scientific subject that reads like a novel. The prose is highly readable, and the descriptions of the major players provide a good sense of who they are and what motivates them.If the metabolic theory of cancer proves true, we will have these courageous scientists to thank, for persisting in their beliefs and holding fast to the notion that cancer is not an

unsolvable riddle, but rather a biologically and evolutionarily conditioned response to an energy crisis due to mitochondrial insufficiency and dysfunction. And the most beautiful part of all: there are perfectly logical, *non-toxic* therapeutic avenues that can drive a stake right through cancer's heart.

Tripping Over the Truth: The Return of the Metabolic Theory of Cancer Illuminates a New and Hopeful Path to a Cure Cancer: Cancer Cure: Natural Cancer Cures And Chemo Alternatives (Cancer,Cancer Cure,Cancer Diet,Coping With Cancer,Cancer Books,Breast Cancer,Lung Cancer,Cancer Prevention,Colon Cancer) Cancer: Coping With Cancer: Controlling and Understanding Emotions of Cancer (Cancer,Cancer Books,Breast Cancer,Colon Cancer,Lung Cancer,Cancer Diet,Preventing Cancer,Cancer Prevention,Cancer Cure) Cancer: Cancer Prevention: Killing Cancer By Preventing It. Instantly Prevent Cancer (Cancer,Cancer Prevention,Cancer Cure,Coping With Cancer,Cancer Books,Breast ... Cancer,Leukemia,Colon Cancer,Skin Cancer) Outsmart Cancer: The Proven Cure For Beating Cancer With Healthy Nutrition And Vitamin B17 (Cancer,Cancer Cure,Cancer Diet,Coping With Cancer,Cancer Books,Breast Cancer,Lung Cancer,Cancer Prevention) Cancer: Coping With Cancer: How To Cope When A Loved One Has Cancer Without Any Grieving (Cancer,Coping With Cancer,Cancer Books,Breast Cancer,Colon Cancer,Lung ... Cure,Prostate Cancer,Cancer Prevention) Alternative Cancer Therapies (Cancer,Cancer Cure,Cancer Diet,Coping With Cancer,Cancer Books,Breast Cancer,Lung Cancer,Cancer Prevention,Colon Cancer) (Alternative Medicine Book 1) Tripping over the Truth: How the Metabolic Theory of Cancer Is Overturning One of Medicine's Most Entrenched Paradigms The Cancer Cure Diet: The Complete Cookbook of 20 Cancer Diet Recipes That Work And Why (Cancer Cure, Cancer Nutrition and Healing, Cancer Prevention, ... Cancer Diet Guide, Cancer Recipe Books) Metabolic Conditioning: Rapid Fat Loss and Enhanced Athletic Performance Using Metabolic Training Techniques (Metabolic Conditioning and Rapid Weight Loss Book 1) Cancer: Taboo Cancer Cures 6 Impressive and Secret Cancer Cures that Most People do not know about (Cancer, Cancer Cures, Yoga, Cancer Treatments, Cancer Medicine, Cancer Patient Book 1) Breast Cancer Prevention and Recovery: The Ultimate Guide to Healing, Recovery and Growth: prostate cancer, bone cancer, brain cancer, breast cancer, colorectal, ... cancer killers, cancer is not a disease,) Anesthesia for Genetic, Metabolic, and Dysmorphic Syndromes of Childhood (Baum, Anesthesia for Genetic, Metabolic, and Dysmorphic Syndromes of Childhood) Colon Cancer - A Cancer Prevention and Cancer Cure Guide to Understanding the Facts of Colon Cancer for Treatment, Diet, and Nutrition Winning The Cancer Battle: Nutritional Help for Breast Cancer, Prostate Cancer, Intestinal Cancer, Vaginal Cancer, and Various Other Cancers Fatty Liver :The

Natural Fatty Liver Cure, Proven Strategies to Reverse, Cure and Prevent Fatty Liver Forever ! (Fatty Liver Cure,Fatty Liver diet,Fatty ... Cure, Detox, Fat Chance, Cleanse Diet,) The Ultimate Herpes Cure - How to Eliminate Herpes for a Life Using Natural Cure Methods (Herpes Cure, Herpes Protocol, Herpes Cure Treatment, Herpes Treatment, Herpes Zoster, Herpes Simplex Virus) Herpes: Herpes Cure: The Natural Herpes Cure Method To Eliminate Genital Herpes For Life! (Herpes Cure, Herpes, Genital Herpes, Cold Sore, Elimate Herpes, How To Cure Herpes, Herpes Treatment) The Herpes Cure: Permanent Solutions To Treating Herpes (Cold Sore, Genital Herpes Cure, Genital Herpes Book, herpes cure, cure herpes Cancer as a Metabolic Disease: On the Origin, Management, and Prevention of Cancer