

Sono-Photo Dynamic Therapy (SPDT): Using Light and Sound to Heal Cancer

By Dr. Antonio Jimenez and Dr. Subrata Chakravarty

Sono-Photo Dynamic Therapy (SPDT) is a safe, effective, and proven therapy for treating cancer using sound and light. It is a combination of two individual therapies: Photo Dynamic Therapy (PDT) and Sono Dynamic Therapy (SDT).

The foundations of these healing methods can be found in ancient history, dating back as far as 3,000 BC. However, it was just about a hundred years ago that PDT started evolving as a science-based method of treating a variety of diseases, including cancer.

PDT and SDT work by leveraging the transfer of energy from light and sound sources that transform photo and sono-sensitive compounds, known as "sensitizers." Energy from these sensitizers is released in the form of reactive oxygen species (ROS) that destroy the affected cells.

The ability of specific sensitizer compounds to accumulate in transformed (cancer) cells is a convenient method to selectively destroy those cells by systematically treating them with appropriate light and sound sources, without affecting healthy cells.

A Historical Perspective

In ancient Greek, Egyptian, and Indian civilizations, sunshine was considered a curative approach for many diseases. For instance, ancient healers knew how to combine a variety of healthful herbs such as parsnip, parsley, and Saint John's Wort for the treatment of lesions while simultaneously exposing

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them to the sun. In the second century BC, Hippocrates, the Father of Medicine, called this type of treatment “heliotherapy” – later to be known as “phototherapy.”



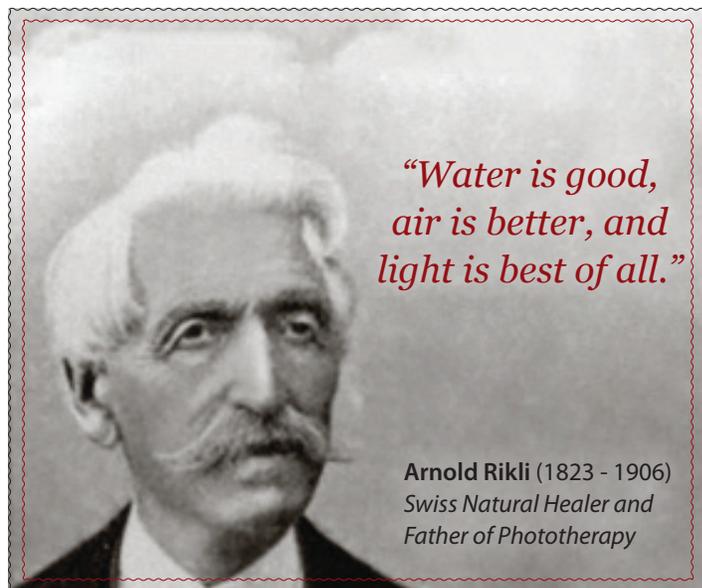
Ancient healers from many civilizations knew about and utilized the curative properties of the sun

In the late 19th and 20th centuries, healers revisited the concept of phototherapy. It became clear that sunshine works in concert with endogenous substances (those found naturally in the body) that absorb its energy to cause specific, beneficial biochemical reactions.

The Swiss natural healer, Arnold Rikli, who is regarded as the father of modern-day phototherapy, said, *“Water is good, air is better, and light is best of all.”* This statement became the guiding principle of phototherapy. Phototherapy started finding applications for the treatment of diseases such as lupus, tuberculosis, and rickets – and it was also found to be useful in the treatment of infections.

At about the same time, the use of externally administered substances that could react with light started gaining in popularity. Most of these substances were highly colored and often used as dyes or stains. The reason why will become apparent shortly.

In 1897, Oscar Raab from the Pharmacological Institute of the Ludwig Maximilian University of Munich discovered that an acridine dye was toxic to paramecia (a primitive, unicellular organism) – but only when exposed to sunlight. He hypothesized that the acridine structure could harvest light energy and convert it into a form of chemical energy that destroyed the microorganism.



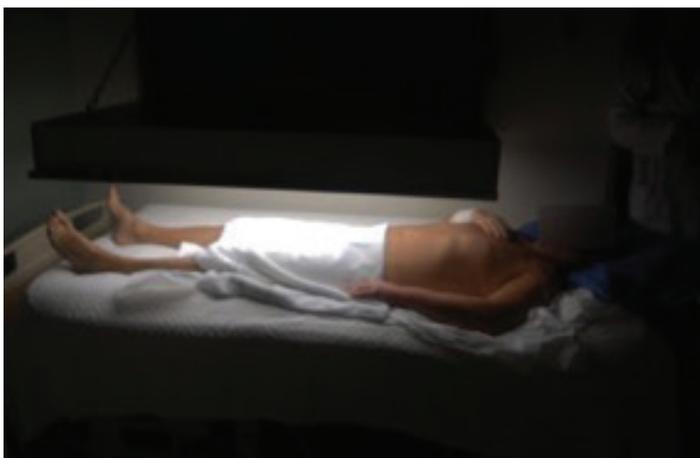
Raab belonged to the Tappeiner group of researchers. Over the next few years these researchers began to use a variety of dyes in disease conditions such as tumors, lupus (skin), and condylomata while exposing the diseased areas to prolonged sunlight or arc-lamp light. (Condylomata is a skin condition characterized by wart-like lesions on the genitals, typically a symptom of syphilis.)

Using this method on facial cell basal carcinoma, the Tappeiner researchers observed total tumor resolution and a 12-month relapse-free period in two-thirds of their patients. They also discovered that “reactive oxygen species” (ROS) were somehow involved in the process of cellular breakdown.

We could continue discussing the fascinating history of this therapy. For those interested in the more detailed story, we recommend you read *Photodynamic Therapy: From Theory to Application* (Abdel-Kader, 2014) from where most of this historical information is cited.

Let it suffice to say for now that, despite its early promise, PDT never accomplished its full potential in conventional oncological practice. PDT (but not SDT) is FDA-approved in the United States for the treatment of certain cancers and scientists continue to study different types of photo- and sonosensitizers to this day. But it is in the hands of alternative cancer physicians that PDT and SDT have truly flourished as anti-cancer treatment methods of consequence.

In 2006, Hope4Cancer Institute embraced SPDT as a treatment opportunity for patients. Over the years we have witnessed many successes – and today, Hope4Cancer Institute is considered the leading global center to offer this therapeutic protocol. This article will describe some of the key features of SPDT as well as our experience with this protocol over the past few years.



SPDT Therapy includes a light treatment bed fitted with full spectrum light, which illuminates the whole body

Why Photo- and Sonodynamic Therapy?

Even in the early years of development of Photodynamic Therapy (PDT), the potential of this approach was undeniable. That is why it's so surprising that it's only now that the conventional therapy establishment is taking note of its true potential. Here are some of the crucial advantages of PDT as an anti-cancer therapy:

1. The use of safe light (within the visible and near infrared wavelengths) and photosensitizers that do not confer acute or long-term toxicity – meaning that PDT can be repeated over and over again without causing harm, offering a rare option for the long-term, side effect free treatment of cancer.
2. The treatment can be adjusted based on the need. For example, localized tumors can be treated with a light source applied locally, while whole body light therapy can treat the entire body systemically.
3. Photosensitizers are selective. In other words, they absorb and stay absorbed in cancer cells, while they are removed from normal, healthy cells. As a result, activation of photosensitizers results only in the damage of cancer cells, leaving healthy cells intact.
4. Scientific literature and our clinical experience have shown that PDT (and SDT) elicits an antitumor immune response as a result of phototoxic damage to cancer cells. In addition to that, an anti-angiogenic effect has been described which disrupts blood supply to tumors, depriving cancer cells of vital nutrients.

Two major drawbacks of PDT quoted in literature are:

1. Lack of penetration of light sources into the body, making the method useful only for surface treatments.
2. Long-lasting skin sensitivity caused by retention of the photosensitizer in skin tissues.

At Hope4Cancer Institute, we have overcome these problems and enhanced the effectiveness of both PDT and Sono-Dynamic Therapy (SDT) as follows:

1. SDT is known to activate the same photosensitizers that light does, and has the advantage of being able to use the body's fluids to propagate sound energy throughout the entire body. As a result, SDT complements PDT extremely well, providing options for their individual or combined use depending on the diagnosis.
2. Our chosen sensitizer, SP Activate, is sublingually administered (under the tongue) and responds both to sound and light frequencies, but does not have the skin sensitivity side effects observed for its previous generation counterparts such as Photofrin or ALA.
3. We have evolved through a variety of light sources, and currently offer pulsed LED light therapy. LED lamps significantly improve penetration of light into the body, while having extremely low heat dispersal – which helps in avoiding overheating or potential burns.
4. We use SDT and PDT in combination with other proven oncolytic therapies such as Hyperthermia, Riggvir Virotherapy, and PNC-27, in addition to

many holistic treatment methods that assist the body's terrain to rebalance to its natural, optimal state. These steps include detoxification, rebuilding the immune system, microbial elimination, oxygenation, nutrition, and restoration of spiritual and emotional integrity. These steps are outlined in our Seven Key Principles of Cancer Therapy (Figure 1).

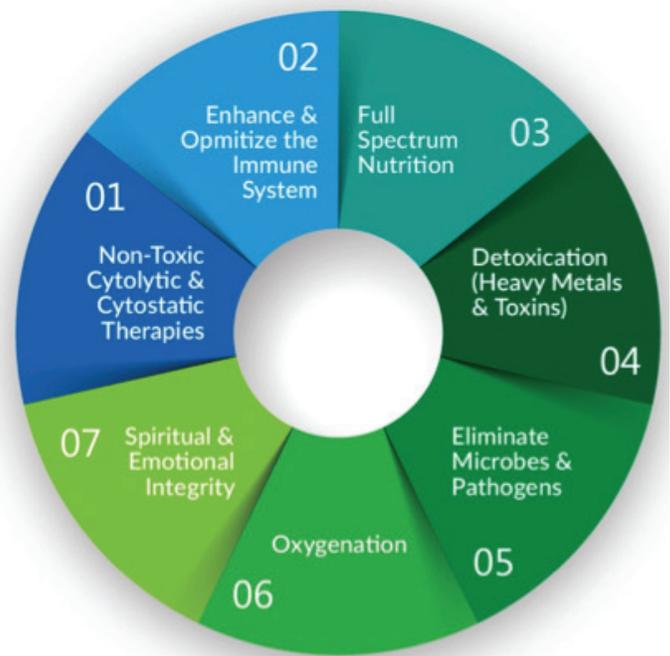


Figure 1. The Seven Key Principles of Cancer Therapy form the guiding principles in the development of protocols for our patients. Powerful cytolytic and cytostatic methods such as Sono-Photo Dynamic Therapy act synergistically with whole body restoration treatments to enhance overall effectiveness of the healing program

Sensitizers and Mechanism of Action

Most sensitizer compounds have a core skeleton known as the porphyrin structure, which is the parent chemical structure for a number of biochemically significant compounds called porphyrins. The porphyrins (which contain the porphyrin core) have widespread biological functions in nature. We see these molecules everywhere – they are responsible for the green color in leaves and the red

color in our blood. These molecules show intense absorption of light in the visible spectrum, which explains why they are often highly colored and used as dyes. Their ability to collect and transfer energy using safe, easily available, visible light makes the generalized porphyrin structure as the ideal sensitizer candidate for SPDT.

In nature, small variations in the porphyrin's structure allow for a variety of functions (see Figure 2 and 3). Porphyrins have two very important properties:

1. Their cage-like structure allows a metal atom to bind to the inner nitrogen atoms of the structure.
2. Their loose, dispersed electronic system allows them to absorb and release energy in the visible spectrum, which in turn can be used to transform oxygen to its excited singlet state.

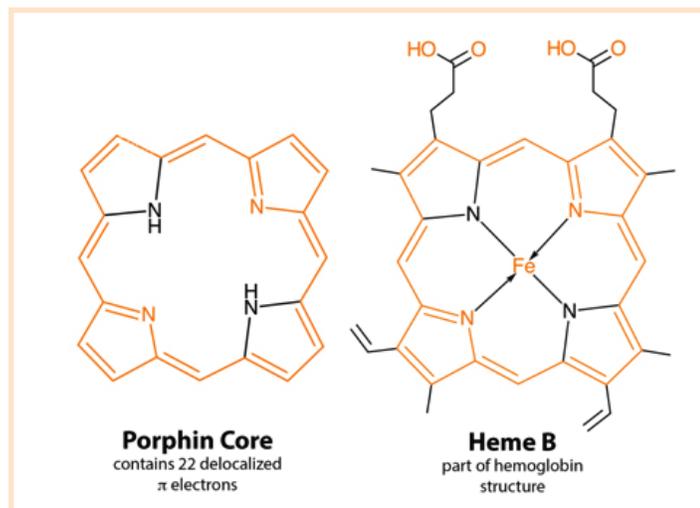


Figure 2. The porphin core of the porphyrin structure (left) can accommodate a metal in its center that coordinates to the four nitrogen atoms. The overall flat shape and the nature of the metal allows these molecules to carry through many biological functions. For example, one of the key components of hemoglobin, Heme B (right) has a porphin core, and an iron attached as the central coordinating metal. The red areas denote the atoms over which the π electrons are delocalized, conferring the structure unique electronic properties utilized, for example, in solar cells

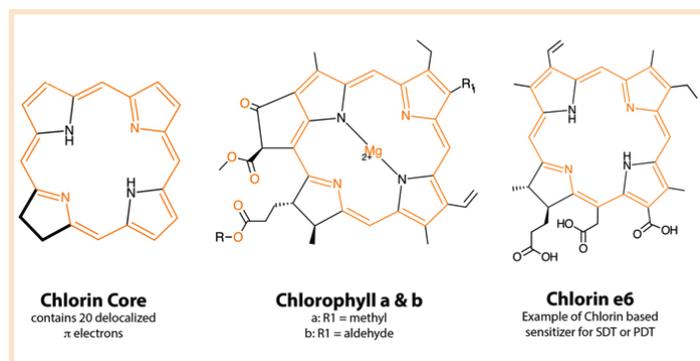
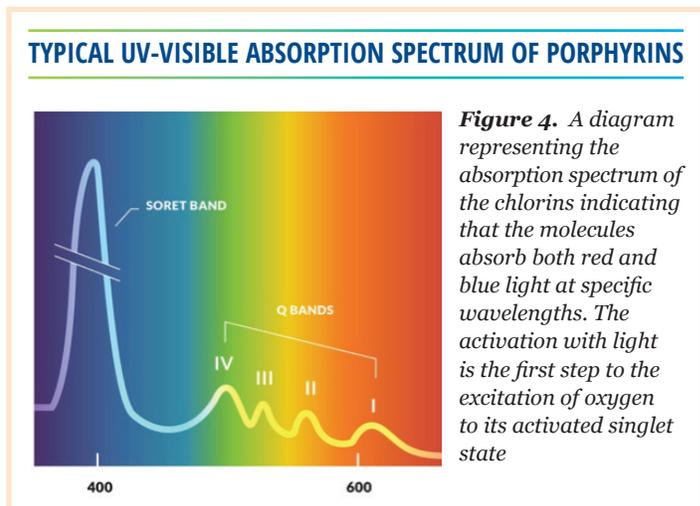


Figure 3. A very small structural difference (highlighted by the thick bonds in the chlorin core on the right) differentiate porphins from chlorins. The chlorin skeleton with 20 electrons (not to be confused with "chlorine") is the core of naturally occurring chlorophylls and many sensitizers useful for SDT and PDT such as chlorin e6

At Hope4Cancer Institute, we use a chlorin-based sensitizer because of its ability to harvest light more efficiently (Figure 3). Chlorins absorb energy both in the red and blue ends of the visible spectrum, and form the structural core for nature's light harvesters, the chlorophylls (Figure 4). Found in cyanobacteria, green algae and plants, chlorophylls are natural green pigments that allow plants to absorb energy from light.

Our chlorin-based sensitizer's mechanism of action is probably identical to that of the chlorophylls by absorbing key light frequencies and converting them into chemical energy.



In order for SPDT to function properly, the following are some key requirements:

1. A Sensitizer Activated Both by Light and Sound – our sensitizer, SP Activate, picks up specific wavelengths of light and sound, exciting the electrons that are involved in the creation of reactive oxygen species (ROS), which selectively kill cancer cells.

2. A Sound and Light Source – the range of wavelengths of sound and light used are specific to the sensitizer. In other words, they need to be in the range where they can cause activation. While light, by nature, is not penetrative, sound can utilize the water in the body as a carrier to transmit its frequencies deep within. As a result, the combination of light and sound allows us to address tumors at various locations in the body, and not just the surface. Our portable, pulsed LED light source is both easy to use and many times more penetrative than a regular light source operating at the same wavelengths (blue, red, and infrared).

3. Molecular Oxygen – using methods such as ozone therapy, oxygen supplements, hyperbaric chambers, and direct administration of oxygen, we strive to improve the cellular concentrations of oxygen, a necessary component for the generation of reactive oxygen species (ROS).

The overall process is explained in Figure 5.

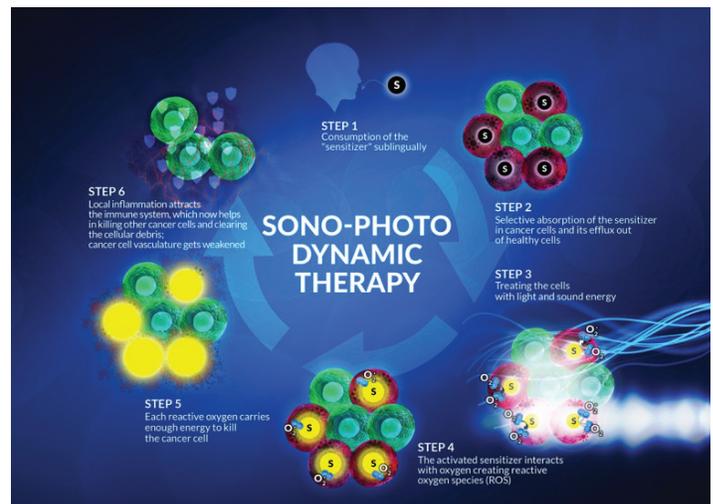


Figure 5. Mechanism of Action of Sono-Photo Dynamic Therapy

How Does Sonodynamic Therapy (SDT) Work?

Our previous sections have focused mainly on PDT – let us briefly switch focus to understand how SDT works.

SDT uses ultrasound waves at frequencies higher than 20 kHz (above the range of human hearing). Sound waves get affected by objects and therefore scatter, reflect, and absorb – in fact these actions, collectively known as acoustic cavitations, can be observed to create three-dimensional images of different parts of the body.

By adjusting the frequency and intensity of the ultrasound waves, a variety of thermal and non-thermal effects can be observed. In fact, some treatments use highly focused, high-intensity ultrasound waves by themselves to cause tissue damage trained on cancer cell populations.

The energy effects from exposure to ultrasound can also activate porphyrins and stimulate them to produce ROS. The ultrasound intensity required for this process is relatively low, and it appears as though the activation of the sensitizer here happens

through a similar energy transference process as it does for PDT. However, the exact mechanism of the process remains to be understood.

Hypervascularity: Restricting Blood Flow to Tumors

One of the telling, almost immediate effects of SPDT relate to its ability to restrict blood flow in tumors. At Hope4Cancer Institute, our standard monitoring procedures involve conducting a before and after study using High Resolution Power Color Doppler imaging. This method allows us not only to compare changes to the tumor size and shape, but also to the intrinsic blood flow (or hypervascularity) that characterizes the tumor.

Why is hypervascularity important? Tumors need a blood flow supply to ensure the growing demands for their nutrition (see Figures 6 and 7). Can hypervascularity be used as a measuring tool for changes in tumor viability? A literature survey shows that this may indeed be the case.

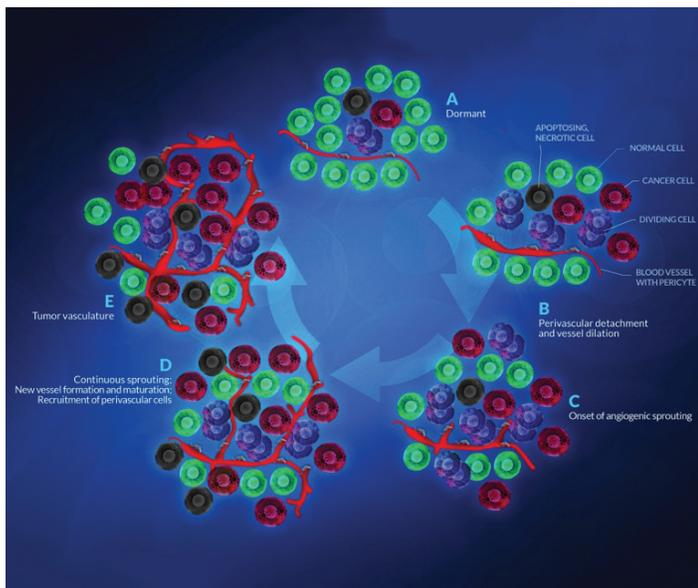


Figure 6. Angiogenesis results in the development of a blood supply network around the growing tumor

Many growing tumors are characterized by higher blood flow. In a study of 16 breast cancer patients with liver metastases followed by MRI-measured blood flow, the hypervascularity of liver metastases was shown to independently predict disease progression.

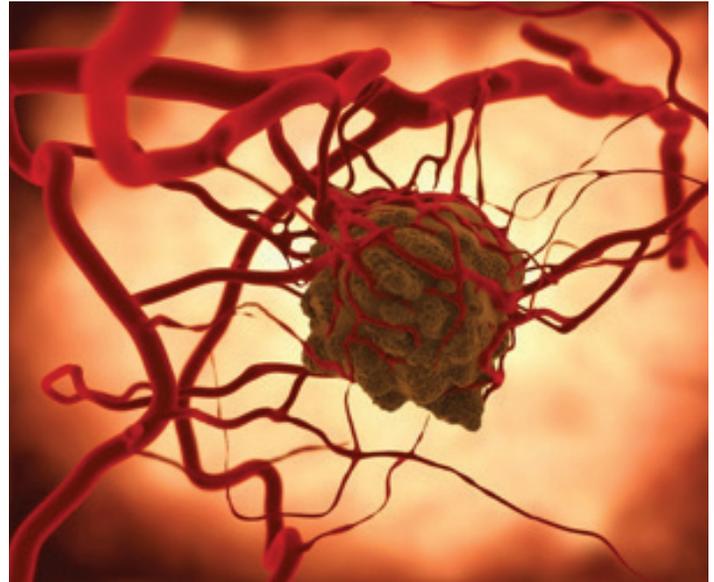


Figure 7. Artist's representation of a tumor and its blood supply

In an evaluation of papillary thyroid carcinomas, intrinsic hypervascularity was a common feature in 69 percent of the cases, while hypovascularity (reduced blood flow) was a relatively uncommon phenomenon. In fact, stopping blood flow in selected hypervascular blood vessels is a surgical approach that was successfully used for the treatment of metastatic thyroid cancer.

In our clinical observations over the years, a moderate to drastic reduction in tumor hypervascularity usually accompanies treatment with SPDT within the first three weeks of treatment, especially when combined with hyperthermia. This effect is maintained for most patients who continue their therapy at home (see Figures 8, 9 and 10).

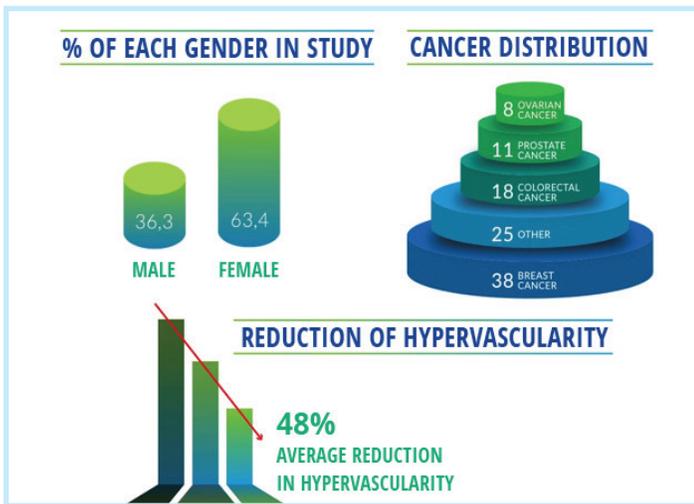


Figure 8. Clinical Study of 100 randomly selected Hope4Cancer Institute patients (age range: 36-80 years) observing an average reduction in hypervascularity of 48% over a period of three weeks of treatment (Jimenez & Chakravarty, Unpublished results, 2014)

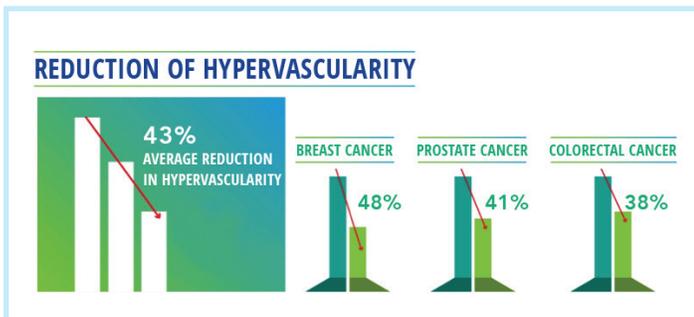


Figure 9. Clinical study of 51 randomly selected patients with breast, prostate, and colorectal cancers. On the average, patients showed an average drop in hypervascularity of 43% following three weeks of treatment with a combination of SPDT with Hyperthermia. Hypervascularity improvements were seen for all three types of cancer, with breast cancer showing the best gains (Jimenez & Chakravarty, Unpublished results, 2014)

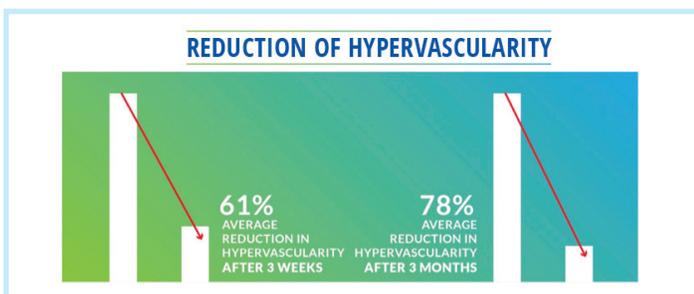


Figure 10. A total of 14 patients were randomly selected and observed during their 3-week clinic treatment, and once again after their return for a follow up, three months later. The average drop in hypervascularity for these patients was 61% in the first three weeks. This effect was sustained at 3 months with a 78% drop in hypervascularity from the initial imaging data (Jimenez & Chakravarty, Unpublished results, 2014)

SPDT Success Stories

More often than not, data cannot do justice to the value observed from actual success. We have been fortunate in having many patients over the years who, by all definitions, are cancer-free. In fact, some of our patients were featured in the “Truth About Cancer: A Global Quest” docu-series.

All the following patients had SPDT as part of their protocol in addition to several other treatments described by the *Seven Key Principles of Cancer Therapy*.



Trina Hammack. Trina arrived at Hope4Cancer Institute in 2008 with a diagnosis of stage 4 ovarian cancer. Following surgical removal of a large, melon-sized tumor, Trina opted to start treatments at Hope4Cancer Institute. Her main treatment was SPDT, which has kept her asymptomatic and recurrence-free ever since.



Michael Stephenson. Michael Stephenson was diagnosed with aggressive prostate cancer in 2011. After intense research, Michael decided to take the trip to Hope4Cancer Institute, where his main treatment was SPDT. Today, he is asymptomatic and cancer free. His passion and gratitude for the clinic and its doctors is apparent every time you hear him speak.



Charles Daniel. After several complications with surgery and other conventional procedures, what was promised to be a routine procedure became a death sentence from bladder cancer back in 2008. Given less than a year to live, Charles Daniel started SPDT at Hope4Cancer Institute. Charles has

enjoyed his cancer-free life with his family and year after year, Charles has sent back clear PETSCANS.



Rivi Litvin. In late 2012, Rivi Litvin underwent the Whipple surgical procedure to remove an aggressively growing bile duct/pancreatic tumor – but within 4 months, the cancer came back, metastasized to the liver. Rivi refused chemo, and decided to come to Hope4Cancer Institute. In 2013, an MRI report from Cedars-Sinai showed “no evidence of cancer of any kind”. Since then, Rivi has lived her life cancer-free.



Dr. Carl Gugino. A reputed orthodontist and trainer, Carl approached Hope4Cancer Institute in 2011 with a case of invasive bladder cancer. Knowing the truth of conventional cancer therapies, Carl opted for alternative treatment. Carl stayed very disciplined with his treatment protocols and has been cancer free since 2012/3. Despite being in his mid-80s at the time of this writing, Carl lives a robust, active life.

Conclusions

At Hope4Cancer Institute, we pride ourselves in our ability to help our patients achieve survival rates that surpass that observed from conventional therapies. This becomes even more meaningful when we consider that a very large proportion of our patients (approximately 70-80 percent) on admission are Stage 4 patients, the vast majority of whom have already been through surgery, toxic chemotherapy, and/or damaging radiation treatment.

While survival is important, improvement in the quality of life is of great significance to ensure that the patients are able to rebuild their physical, mental, emotional, and social health. Most patients report an eroding quality of life under the influence of conventional therapies. Our goal is to give patients the option of not just getting better, but also feeling better along the way.

SPDT remains a gravely underutilized, yet highly effective cancer therapy. This is one of the few cancer therapies available today that is amenable to long-term use without causing any side effects or deterioration in quality of life. In order for clinical studies using SPDT to be effective, our experience shows that it must be administered alongside synergistic, whole-body treatments that restore the body's natural ability to heal and protect itself.

SPDT has stood the test of time and has been one of our spearhead treatments for many years now. Today, we are using SPDT in conjunction with other non-toxic, oncolytic treatments such as PNC-27 and Rigvir Virotherapy, as we continue seeking to improve our overall protocols.

About Dr. Antonio Jimenez



Dr. Antonio Jimenez, MD, ND, CNC, is the Founder and Medical Director of the Hope4Cancer Institute, which currently has two treatment centers in Baja, California, and Cancun, Mexico. For over 25

years, Dr. Jimenez has dedicated his life to the study, clinical research, and implementation of non-toxic, alternative strategies to treat cancer and other chronic diseases.

Based on his Seven Key Principles of Cancer Therapy, Dr. Jimenez offers a variety of treatment protocols that include effective and non-toxic treatments such as PNC-27, Rigvir Virotherapy, and SPDT, in a comprehensive holistic program.

Dr. Jimenez is a sought after speaker both locally and globally. He has traveled the world to over 70 countries in his life-long voyage of discovery.

About Dr. Subrata Chakravarty



Dr. Subrata Chakravarty, PhD, is the Chief Science Officer of the Hope4Cancer Institute. As a key member of the executive team, he works closely with Dr. Jimenez developing treatment technology and protocols.

Dr. Chakravarty began his career in the pharmaceutical industry as a drug discovery scientist. His work in academia and industry has led to many scientific papers and patents, mostly related to early-stage discovery of potential, new cancer therapeutics.

A chance meeting with Dr. Jimenez opened a brand new world of natural therapies before him. He embraced his new knowledge by changing his career path in the hope of making a tangible difference to the lives of cancer patients. Today, he continues to work tirelessly in the background to ensure a growing and thriving Hope4Cancer Institute for the benefit of all its patients.

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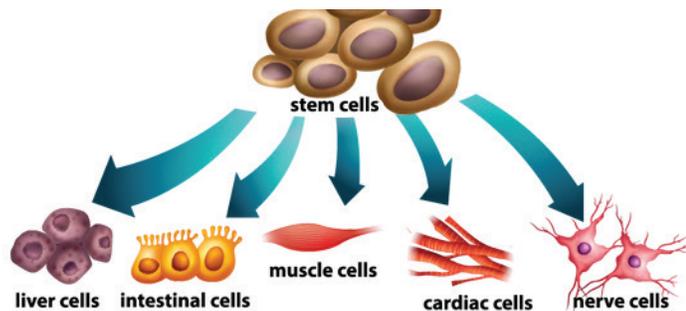
12 Nutrients that Target & Destroy Cancer Stem Cells

By Dr. David Jockers

Lack of adequate nutrition can lead to cancer growth – on the other hand, the right nutrients can inhibit cancerous cells from multiplying.

Scientists have known for decades that cancer cells have the ability to repair themselves, multiply, differentiate, and escape normal cellular processes such as apoptosis or “cell suicide.” Only recently researchers have learned that cancer cells originate from stem cells. Stem cells are unspecialized cells in our body that can, given the right “signal,” be transformed into any “specialized” cell.

Stem cells found in adults are known as adult stem cells, which normally act as a repair system for the body, constantly replenishing our body’s tissues.



Stem cells are undifferentiated cells that, when given the right signal, can become any type of specialized cell

Researchers are also beginning to understand that our diet is perhaps the greatest tool in preventing and treating cancer. Specifically, regular consumption of freshly available, non-irradiated fruits and vegetables is associated with lowered risk of many chronic diseases, including cancer.

Cancer Cells Originate from Stem Cells

What is known as a pro-survival technique enables cancer cells to develop into the invasive and relentless disease that can wreak havoc on any tissue in our bodies. Unlike typical stem cells, cancer stem cells are self-sufficient, resistant to chemotherapeutic drugs and treatments, have the ability to self-renew, increase inflammation, and are not influenced by contact with other stem cells or anti-growth signals.

Cancer stem cells are also sustained by angiogenesis (the physiological process by which new blood vessels are formed, which cancer tumors use to feed themselves nutrients and grow), flawed cellular energy mechanisms, and their ability to evade normal cellular functions such as apoptosis or cell suicide.

Phytochemicals that Fight Cancer

Nutrient-rich plant foods typically contain phytochemicals, which have anti-cancer properties. Phytochemicals are chemical compounds that occur naturally in plants. Some are responsible for color such as the deep purple of blueberries, while others are responsible for smell. For example, the pungent fragrance of freshly squeezed garlic.

Phytochemicals can have specific actions on our body when we consume the plants containing them. It is estimated that there may be as many as 4,000 different phytochemicals in the plant world. Some of these phytochemicals not only target and kill cancer stem cells, but they also reverse the mechanical flaws in our body which cancer cells thrive on.

12 Nutrients to Consume Daily

Consume the following 12 nutrients daily to equip your body with the cancer-fighting tools it requires to prevent and treat cancerous growth.

#1 - Ursolic Acid

A dietary compound found in herbal medicines such as holy basil, as well as in the natural waxy coating of fruits like apples, ursolic acid has extraordinary anti-cancer potential. Ursolic acid has been shown to treat cancers of the skin, colon, breast, lung, cervix, prostate, esophagus, and pancreas.



Holy basil is a good source of ursolic acid, along with other common herbs such as lavender, peppermint, oregano, and thyme

Specifically, ursolic acid reduced tumor size and distant organ metastasis of colorectal cancer cells, likely by blocking the expression of proteins needed for their survival, proliferation, and metastasis.

Researchers are aware of ursolic acid's ability to reduce inflammation-promoting enzymes despite not having a full understanding of all biological functions which ursolic acid affects. Reducing the levels of these enzymes is critical to blocking abnormal cell cycles and preventing the expression of genes which turn off cellular apoptosis. In other words, ursolic acid increases cancer cell apoptosis and prevents DNA replication, a typical characteristic of cancerous growth that would otherwise lead to metastasis.

Increasing the ursolic acid content of your daily nutrient intake can inhibit tumors from forming in your body. Many health practitioners supplement with a dose of 150-300 mg ursolic acid 3 times daily for optimal benefits. This is much more than you could get from using apple peels and holy basil which have between 5-10 mg of ursolic acid per serving. Waxy apple peels and holy basil do have other phytonutrients that are beneficial for the body's immune system, however, and shouldn't be discarded.

2 - Piperine

Every year colorectal cancer kills more than 639,000 individuals worldwide. One of the major causes likely to blame for such a high statistic is a bacterium known as *H. pylori*, which invades the gastrointestinal lining of more than half of the world's population and is carcinogenic. Known as the "King of Spices," piperine – a compound found in black pepper – helps reduce the incidence of cancers relating to the stomach and breast. Piperine has traditionally been used to treat symptoms of cold and fever. Most recently it has gained attention for its cancer fighting properties.



Piperine is found in black pepper and is responsible for its pungent flavor

Direct research suggests that piperine has anti-inflammatory effects on *H. pylori*-induced gastritis and may potentially be useful in prevention of *H. pylori*-associated gastric carcinogenesis. Piperine appears to prevent *H. pylori* growth by preventing it from adhering to the gastrointestinal surface.

Piperine has also been shown to target cancer stem cells of breast tumors in testing. As a result of piperine's actions, the *H. pylori* bacterium cannot release toxins, cause stress, raise inflammation levels, and promote cancer growth. The antimutagenic factors which piperine induces may be due to its ability to prevent proteins from binding which would normally stimulate cancer formation. Add piperine to your daily diet by including freshly ground high quality black pepper in marinades, salad dressings, sauces, dips, and soups.

#3 - Lycopene

Lycopene is a bioactive compound that destroys cancer cell activity. Foods rich in lycopene include red-fleshed colored fruits and vegetables such as tomatoes, watermelons, pink grapefruit, and even so-called "blood" oranges. In fact, red-fleshed sweet orange juice that contains high levels of beta-carotene and lycopene has been shown to have potential chemopreventive effects on leukemia cells in laboratory experiments.



Lycopene is found in fruits and vegetables with red flesh such as blood oranges and pink watermelon

Consuming a lycopene-rich diet is as easy as snacking on watermelon on hot summer days, or adding a bowl of grapefruit to your yogurt in the winter. Add pulp back into your beverage when juicing citrus foods containing lycopene. Increase the bioavailability of lycopene in foods by simmering tomato skins before consumption and enjoy homemade pasta sauce and salsa.

Lycopene's anti-cancer properties stem from its ability to increase cytotoxicity and apoptosis in cancer cells. This nutrient disrupts cancer stem cells' communication signals which help a cancer cell to flourish – and instead increases its risk of dying. Cancers which lycopene may be effective at preventing include cervix, colon, lung, and prostate cancer.

If you are looking to avoid carbohydrates and stay on a ketogenic diet, you may want to consider supplementing with 30-50 mg of lycopene, 1-2 times daily. This is about the same amount you would get from eating 2 servings of organic tomato sauce.

#4 - Isothiocyanates

Isothiocyanates are derived from naturally occurring sulfur-containing compounds called glucosinolates. Cruciferous vegetables such as broccoli, cauliflower, kale, Brussels sprouts, wasabi, horseradish, mustard, radish, and watercress contain many types of glucosinolates, each of which forms a different isothiocyanate when hydrolyzed in our body.

Isothiocyanates such as sulforaphane may help to prevent cancer by eliminating potential carcinogens and by enhancing production of so-called "tumor suppressor proteins." In other words, consuming isothiocyanates through cruciferous vegetable consumption may decrease cancer risk – although

boiling and microwaving cruciferous vegetables is known to reduce the bioavailability of isothiocyanates. Depending on the particular vegetable, either consume raw (eg. broccoli sprouts and watercress) or lightly steam (eg. Brussels sprouts, kale, and cauliflower) to retain the most nutrients.



Three-day-old broccoli sprouts contain 10-100 times higher levels of sulforaphane than a mature head of broccoli

Isothiocyanates promote detoxification, enhance immunity, activate cancer inhibiting agents, and prevent against tumor growth related to the breast, stomach, spleen, prostate, and colon. Isothiocyanates inhibit cancer in many ways. They:

- Prevent toxins from accumulating
- Prevent inflammation
- Stimulate antioxidant potential
- Increase healthy gut microflora and remove carcinogenic bacteria linked to stomach cancer
- Promote phase 2 enzymes which stimulate antioxidant powerhouses such as glutathione
- Increase Nrf2 signaling pathways known to block tumor formation

You too can benefit from the many health benefits of isothiocyanates by adding them to your diet. Although cruciferous vegetables are excellent sources of these powerful compounds, it turns out their sprouts are far more powerful cancer fighting foods. For instance, did you know that cruciferous sprouts can contain up to 100 times more of the glucosinolate compounds needed for the body to produce isothiocyanates than an entire head of broccoli can provide?!

If choosing to supplement with sulforaphane, many health practitioners advise taking 300-600 mg, 1-2 times daily. This is especially useful for complementing treatment against hormone-sensitive cancers, as isothiocyanates are very good estrogen detoxifiers.

#5 - Curcumin

Turmeric is a herbaceous perennial plant of the ginger family. The rhizomes of this plant are boiled, dried, and ground into a deep-orange-yellow powder that is used as a spice in Indian cuisine, for dyeing, and to impart color to mustard condiments. One active ingredient of this turmeric powder is curcumin.



Turmeric is a member of the ginger family that has been used for centuries in traditional Ayurvedic and Chinese medicine

Curcumin has antioxidant, anti-inflammatory, and anti-cancer properties. Curcumin prevents chronic inflammation and can also decrease risk of cancer

development. Curcumin regulates various factors and substances involved with cancer stem cells and manipulates multiple signaling pathways that are necessary for cancer formation.

Curcumin has shown to target cancer cells by turning off factors which normally would suppress apoptosis, preventing angiogenesis which supplies nutrients and blood flow to cancer cells, and inhibiting tumor invasion and metastasis.

The following types of cancers have been shown to be suppressed by curcumin:

- Non-Hodgkin lymphoma
- Leukemia
- Kidney
- Renal
- Bladder
- Brain
- Ovarian
- Liver
- Lung
- Colorectal
- Cervical
- Breast
- Prostate

Many health practitioners recommend taking 500-1000 mg doses, 3-4 times daily with food. Curcumin should also be mixed with piperine from black pepper and taken with a fat-based meal for optimal absorption.

#6 - EGCG

Epigallocatechin-3-gallate, also referred to as EGCG, is a polyphenol found in green tea. EGCG is linked to numerous health benefits including its ability to treat cancer.



EGCG and other green tea antioxidants have been found to stop cancer cells from growing, kill cancer cells, and prevent the formation and growth of new blood vessels in tumors

Did you know that sipping on green tea regularly can reduce your risk of breast, colon, prostate, and lung cancer? You could also make a green tea base instead of water to add to your smoothies.

EGCG prevents cancer cells from multiplying, causing inflammation, and invading new tissue – and it also interrupts cancer stem cells communication pathways. Researchers have found that EGCG inhibits critical proteins required for cancer cell survival from binding and shuts off mechanisms which induce cancerous cell growth.

Matcha green tea is the most potent form of EGCG. One glass of Matcha is equivalent to 10 glasses of a commercial green tea in terms of its nutritional value and antioxidant content. One could also supplement with 400-800 mg of EGCG, 1-2 times daily. Always use this earlier in the day as it can be stimulating.

One caveat is that green tea does reduce folate absorption. If using green tea daily, it is advisable to consume extra raw green vegetables (that are rich in folate) in salads or juices or to supplement with an extra 500 mg of methylfolate or calcium folinate.

#7 - Vitamin D₃ (Cholecalciferol)

Did you know that approximately 10,000 cancer cells are produced daily in your body and have the ability to invade, multiply, and spread to other areas? Vitamin D₃ deficiency is one of the most common factors associated with the pathogenesis (development) of cancer. Unfortunately, our lack of time spent outdoors in natural sunlight and the increase in use of synthetic drugs has lowered our body's ability to absorb nutrients from the sun and vitamin D sources from food. Needless to say, proper intake of vitamin D₃ daily is required for the prevention of cancer.

Vitamin D₃ has been shown in doses of 20,000 IU to act as an effective therapy in delaying the onset of cancer and alleviating systemic inflammation. Perhaps most vital for D₃ daily intake is the production of GcMAF, a protein which inhibits cancer cells and boosts the immune system's natural response to invasive agents such as cancer. GcMAF can eradicate tumors completely but requires adequate vitamin D₃ levels for its activity.



Vitamin D₃ deficiency is one of the most common factors associated with the development of cancer

Ideal levels for vitamin D₃ (25-hydroxy vitamin D) are between 60-100 ng/ml with the ideal range between 80-100 ng/ml for individuals looking to prevent or

slow cancer growth. As a general rule, take 1,000 IUs per 25 pounds (11.3 kg) of body weight to slowly raise your vitamin D levels into range or take 2,000 IUs per 25 pounds of body weight to quickly raise your vitamin D levels.

Because vitamin D is a fat-soluble nutrient, it is important to take the supplement with a fat-based meal for optimal absorption.

#8 - Resveratrol

Resveratrol is a natural phenol produced naturally by several plants in response to injury or when under attack by bacteria or fungi. Food sources of resveratrol include the skins of grapes (as well as wine made from grape skins), blueberries, raspberries, and mulberries.



While grape skins are one of the highest sources of resveratrol, it's nearly impossible to get enough of this nutrient through diet alone

This phenolic compound has a profound ability to prevent and heal metabolic conditions such as cancer. It is designed to protect our cells from damage and assist in extending their lifespan and improving normal cell's processes which cause repair. The cancer-protective properties of resveratrol have been shown to prevent and heal cancers related to the prostate, liver, colon, pancreas, skin, and various other organs.

Adding a resveratrol supplement to your daily diet may be needed as getting enough of this cancer fighting nutrient solely from your diet is not possible given its low concentrations in foods and beverages. Patients combating cancer can take more than 200 mg of resveratrol daily. Non-cancer patients can take 20-100 mg of resveratrol every day to reap optimal anti-cancer benefits.

#9. 6-Gingerol

Ginger is an excellent source of the phytonutrient 6-gingerol, which reduces nitric oxide production associated with inflammation and other cellular disturbances. 6-Gingerol protects against free radical damage and possesses powerful neuroprotective capabilities. Studies show that 6-gingerol stimulates antioxidant defenses and pharmacological pathways for healing.



The unique fragrance and flavor of ginger come from its natural oils – the most important of which is gingerol – which has been studied for its powerful anti-inflammatory and antioxidant effects

To get the benefits of 6-gingerol, try sipping on ginger in your tea, add it to meat marinades, shave on vegetable dishes and include in your recipes for coleslaw and salad dressings to improve the chemoprotective properties of your meals. It is also advisable to consume fermented ginger, which is commonly used in Asian dishes such as sushi and in the Korean dish kimchi.



Silymarin is the main active ingredient in milk thistle. Silymarin is both an anti-inflammatory and antioxidant and is commonly used as a natural treatment for liver problems

#10 - Silymarin

Also known as milk thistle, Silymarin is a flavonoid which protects against skin and colon cancer. This healing nutrient acts as a strong detoxifying substance able to promote the function of the liver, kidneys, and gastrointestinal tract. Silymarin has shown therapeutic potential in preventing and treating cancers of the skin, prostate, cervix, and breast.

The ability of Silymarin to promote oxygenation to blood cells and increase enzymatic activity of antioxidants like glutathione and superoxide dismutase (SOD) are believed to contribute to its chemotherapeutic effects. Silymarin inhibits carcinogens from accumulating in organs of the body, which assists in detoxification processes and decreases the risk of cancerous cell growth.

Lower your risk of developing cancer by supplementing your diet with 200-600 mg of milk thistle daily to prevent against toxic waste build up and inflammation.

#11 - Quercetin

Quercetin is a dietary antioxidant found in fruits, vegetables, teas, and wine. Quercetin has been shown to specifically interfere with cancer stem

cells by blocking communication to processes which stimulate free radical production. As a result, hazardous and cancer-stimulating free radicals such as reactive oxygen species are drastically reduced.

Quercetin exhibits anti-cancer properties which improve the production of other antioxidant levels such as glutathione and SOD, thereby further preventing free radical damage and cancer growth. High doses of quercetin may be used to impair the expression of cancer stem cell-activating genes linked to leukemia. Quercetin can relieve inflammation and acts as an antihistamine due to its impact on lowering immune cell responses.

Consuming organic apples (including the skin), red onions, green tea, raspberries, and dark colored tomatoes are great ways to increase quercetin in your diet and lower your risk of cancer. If choosing to supplement with quercetin, it is recommended to take 400-500 mg, 2-3 times per day.



Primary dietary sources of the antioxidant quercetin include citrus fruits, apples, onions, parsley, sage, tea, and red wine

#12 - Anthocyanins

Over 600 types of anthocyanins are found naturally in plants such as berries (especially bilberries), grapes, red cabbage, red onions, eggplant, tea, and specific varieties of oranges. Anthocyanins increase the function of genes which act to inhibit tumor

growth pathways in cancer stem cells. Anthocyanins are also equipped to trigger apoptosis by manipulating cell signaling between cancer stem cells and tumors.



The name anthocyanin is derived from “cyan” in Greek which means dark blue. The deep blue and purple colors of anthocyanins are created at the cellular level and provide sun protection for plants and us when we consume them

Anthocyanins enable the body to naturally heal – making them potentially useful in treating colorectal cancer, reducing breast cancer tumors, and limiting leukemia cells from spreading. These dietary components have the ability to control cancer stem cells which otherwise are uncontrollable. Anthocyanins enhance the productivity of genes which suppress tumors, induce apoptosis in colon cancer cells, and create dysfunction in leukemia cells.

Consuming nutrient-dense, anthocyanin-rich foods can help to protect your body from developing cancer and fight already present tumors. Having a handful of organic blueberries or blackberries each day is a fantastic way to get more of these nutrients into your system.

One of the best ways to get anthocyanins is to [make fermented sauerkraut](#) with red cabbage and red onions. The final product is rich in isothiocyanates, anthocyanins, and other sulfur compounds that boost glutathione and cancer stem cell-killing compounds.

Committing to an Anti-Cancer Diet

The solution to killing cancer stem cells is found in our diets. This is a resolution which must be committed to for the long-term. Plant-based diets rich in nutrients which fight chronic inflammation, slow cellular aging, stimulate normal cellular functioning – and most importantly, target and destroy cancer stem cells – is vital to living a cancer-free life.

Shutting down the signaling pathways which stimulate pro-survival mechanisms in cancer stem cells is necessary to living a cancer-free life and can be accomplished with the 12 nutrients discussed in this article.

So... how do you plan to implement these nutrients into your lifestyle on a regular basis to give you and your family the best cancer protection?

About Dr. David Jockers



Dr. David Jockers is a Maximized Living doctor, functional nutritionist, corrective care chiropractor, exercise physiologist, and certified strength & conditioning specialist.

He runs one of the hottest natural health websites: DrJockers.com and is the author of *SuperCharge Your Brain*, the complete guide to radically improve your mood, memory, and mindset, and the *SuperCharged Recipe book* with over 180 full-color recipes to help you take back control of your health. He is a regular contributor to thetruthaboutcancer.com and has well over 1,200 professionally published natural health articles on the web and in print magazines.

Dr. Jockers is a sought after speaker around the country on such topics as weight loss, brain health, functional exercise, natural detoxification, and disease prevention. He currently owns and operates Exodus Health Center in Kennesaw, Georgia.

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Charlene's Cancer Fighting Kitchen

A Berry Cancer Stem Cell Killing Smoothie



This smoothie features six of the cancer stem cell killing superstars: 6-gingerol, anthocyanin, silymarin, quercetin, resveratrol and EGCG. It is good in the morning, afternoon, or anytime you want an energy boost.

*Yield: Two 8-ounce servings
Preparation time: 10 minutes*

For all recipes, please use fresh, organic, locally-grown ingredients whenever possible, including organic, non-irradiated spices. This will give you the maximum cancer fighting benefits.

Ingredients:

- 1 cup deep purple or red grapes (with seeds), washed
- ½ cup strawberries, washed
- ½ cup blueberries (can use frozen if unsweetened), rinsed
- 1 teaspoon fresh ginger, chopped
- 1 teaspoon Moringa powder*
- ½ teaspoon Matcha powder*
- 2 teaspoons raw milk thistle honey** or other raw honey (optional)
- ½ cup spring or filtered water OR substitute your favorite nut milk for a creamier smoothie

Directions:

1. Add all the ingredients to a blender and process on medium speed until blended. Then switch to high speed for 30 seconds.
2. Pour into glasses and serve immediately for optimal nutritional value.

**Moringa powder and matcha powder are commonly found at most health food stores. Trader Joe's online is another option.*

***Source for milk thistle honey: <https://www.nhrorganiccoils.com/products.php?id=11976> <http://www.famillemary.com/milk-thistle-honey.html>*

Red Cabbage, Apple, and Kale Salad



This delicious salad contains anthocyanins, ursolic acid, isothiocyanate, turmeric, lycopene, and quercetin to name a few of the cancer stem cell fighting compounds.

It is also a tasty antioxidant, anti-inflammatory enzyme-rich meal that keeps your body healthy and energized.

Yield: Two 6-ounce servings

Preparation Time: 20 minutes

Ingredients:

- ½ medium red cabbage, thinly sliced
- 1 red apple, diced
- 2 handfuls of kale, finely chopped
- 1 handful of fresh mint, finely chopped
- 5 medium sized romaine lettuce leaves, chopped
- 4 sun dried tomatoes, diced and soaked for 5 minutes in filtered water
- ½ red onion, julienned

Spices:

- 1 clove garlic, crushed and minced
- ½ tablespoon fresh turmeric root, minced OR 1 teaspoon turmeric powder
- Splash of organic Balsamic vinegar
- 1 tablespoon (or more) cold pressed extra virgin olive oil, to taste
- Freshly ground black pepper, to taste
- High quality salt such as pink or sea salt, to taste

Directions:

1. Wash all vegetables carefully. Then mandolin the red cabbage into a large bowl. If you do not have a mandolin then slice it thinly. Chop the remaining vegetables and add to the bowl.
2. Mix spices with olive oil and balsamic vinegar and toss into the salad. Add the sun dried tomatoes with the soaking water. Let it rest for ten minutes or more for the flavors to meld and the cabbage to soften.
3. Garnish with apple slices drizzled with lemon juice.
4. Serve in bowls along with your favorite entree or enjoy alone.

Tomato Zucchini Casserole



This casserole features tomatoes with the phytochemical lycopene that actively destroys cancer stem cells. The zucchini flaunts its anti-oxidative properties, is rich in potassium and the B complex vitamins. These work together to restore intracellular balance while lowering blood pressure and cholesterol levels.

As an added bonus, the spices keep cancer cells at bay while feeding the body with digestive, metabolic, and detoxifying enzymes.

*Yield: Four 12-ounce servings
Preparation Time: 20 minutes*

Ingredients:

- 4 medium organic zucchinis, thinly sliced
- 2 cups cherry tomatoes OR 2½ cups grape tomatoes, halved
- 2 tablespoons sun dried organic tomatoes, finely chopped
- ½ cup onion (white, yellow, or purple), julienned or sliced in rings
- 2 cloves garlic, peeled, crushed, and minced
- ½ cup parsley, chopped

Spices:

- 1½ teaspoons fresh turmeric root finely chopped
OR substitute ¾ teaspoon powdered turmeric
- 1 tablespoon fresh oregano, finely chopped OR 1 teaspoon dried oregano
- 1 teaspoon pink or sea salt
- ½ teaspoon or more to taste of freshly ground black peppercorns
- 2 tablespoons freshly squeezed lemon juice
- 1½ tablespoons high quality Balsamic vinegar
- ¼ cup or more of cold pressed extra virgin olive oil
- ½ tablespoon cold pressed coconut oil

Directions:

1. Remove the top and bottom tips of the zucchinis. Then, using a mandolin or sharp knife, cut the zucchinis into thin circles (about a 1/16th inch) in a large bowl.
2. Add all of the remaining ingredients to the bowl and mix them together gently so as not to bruise the tomatoes. Set aside covered with a clean kitchen towel and allow flavors to marinate for 15 minutes.

Tomato Zucchini Casserole

(continued)

3. Grease the bottom of a 9x13 inch glass or stainless steel baking pan with the coconut oil to prevent the casserole from sticking. Pour the vegetable mixture into the pan spreading it evenly to the sides. Place in the oven on the center rack and bake at 55 degrees Celsius or 125 degrees Fahrenheit for 2½ hours. Gently stir the casserole each hour to ensure even heating of the ingredients.
4. Garnish with your favorite untoasted nuts, sunflower or pumpkin seeds, and more olive oil for added flavor and nutrients.
5. Serve immediately. Enjoy!

About Charlene Bollinger



Charlene Bollinger is a devoted Christian, happily married wife, joyful mother of 4 beautiful home-educated children, health freedom advocate, co-founder of CancerTruth.net, former model/actress/fitness buff, and lover of healthy food and healthy living.

After losing various family members to conventional cancer treatments, she and her husband, Ty, learned the truth about cancer and the cancer industry and together work tirelessly helping others learn and live free, healthy lives.

Currently, Charlene is working on compiling a cookbook to help families learn that they can indeed cook healthy, delicious food in this toxic world. Along with her husband, Ty, she is also the co-owner of Infinity 510 Squared Partners Publishing Company.

Infrared Saunas and Cancer: What You Need to Know

By Ty Bollinger

When you hear the word sauna, what goes through your mind? Perhaps a small, scorching room lined with wooden benches centered around a pile of rocks – very hot rocks. Or maybe you think of steam blasting all around you in a similarly close-quartered space filled with strangers in towels.

Whatever the word sauna conjures up in your mind, detoxification and healing probably aren't all that high on the list. At least they weren't for me before I learned what I'm about to share with you concerning the amazing therapeutic potential of the sauna.

A healing tradition that dates back more than 2,000 years, the routine use of a sauna (sauna literally means "bathhouse" in Finnish) is one of the most effective means by which to detoxify the body, rejuvenate its cellular system, and promote a vibrant, disease-free life.

Saunas continue to be wildly popular throughout the Middle East and Europe, and particularly in Scandinavia where the concept is believed to have originated. They're now becoming increasingly popular throughout North America.

Historians note that the sauna is, by and large, a Finnish invention. Traditionally a heated room or cave made out of wood and/or stone that provides shelter during cold, winter months, as well as a year-round bathing environment for hygienic purposes. Immersing oneself in a high-temperature

sauna environment causes the body to sweat, which even in primitive times was recognized as an effective way to cleanse the body and eliminate waste via the skin.

The sauna wasn't meant to be a rich person's retreat, but rather a practical cleansing space accessible to all. An ancient Finnish proverb sums it up like this: *"The sauna is Finland's medication...and a poor [person's] apothecary."*



In Finland (where saunas originate) it is common practice for all members of the family to use the sauna on a regular basis

The traditional use of a sauna involves pouring water onto hot rocks, which generates a rapid burst of vapor that the Finnish refer to as *löyly*, or "spirit of life." All this really does is help humidify circulating hot air so it's not overly dry and irritating to the lungs, but some cultures have taken to a much more mystical interpretation of this ritual.

“In an authentic Finnish sauna, the heat emanating from the special stones feels velvety soft to the skin, and it is more penetrating than the heat in a cloud of steam,” writes John O. Virtanen in his book *In the Finnish Sauna: Peace of Mind, Body and Soul*. *“The difference is so important that sometimes a person must experience more than one sauna to fully appreciate the distinction between genuine and imitation saunas.”*

Cycling from a hot sauna to cold water in between sweat cycles, which modern science has shown confers unique therapeutic benefits in its own right, is another traditional way to use a sauna. For the purposes of this article, though, I'd like to focus on the heat aspect of sauna therapeutics, and the ways in which modern infrared saunas are tying in this cultural tradition with progressive medicine.

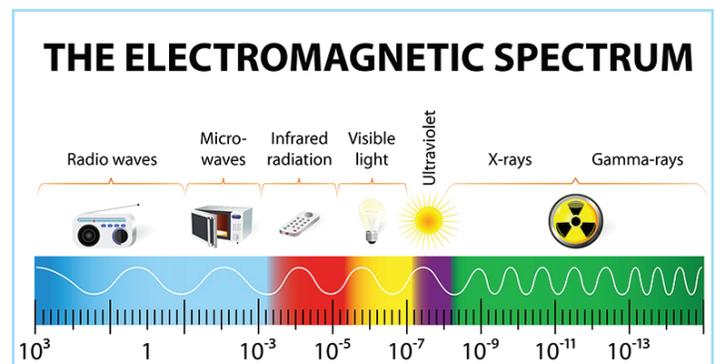
Near, Mid, and Far: The Three Types of Infrared

The use of heat therapy really isn't anything new in the realm of the healing arts. But the use of radiation to generate said heat – radiation that falls within the invisible infrared spectrum – is something that, up until a few years ago, was relatively obscure. Technological advances that capitalize on infrared energy have made it possible to generate heat in just the right spots with pinpointed precision, hence the advent of the infrared sauna.

There are three distinct types of infrared radiation that generate energy within their own respective wavelengths: near infrared, mid infrared, and far infrared. Because they penetrate the skin and cells at varying depths, each type provides different therapeutic benefits depending on its use.

Low infrared uses special LEDs to permeate the outer surface of the skin and promote cell health and skin rejuvenation. **Mid infrared** has been shown to help aid in pain relief and weight loss. And **far infrared**, which is by far the most common type used in commercial infrared saunas, helps pull toxins from the body and lower blood pressure.

As you can see, each type of infrared comes with its own unique set of health benefits, and one isn't necessarily better or worse than another. However, exposing oneself to all three types will clearly offer the most comprehensive health benefits, hence why many healing practitioners now encourage their patients to use or invest in a full-spectrum sauna.



Infrared falls on the electromagnetic spectrum between microwaves and visible light and is categorized as either near, mid, or far infrared

Full-spectrum saunas that emit all three wavelength ranges (near, mid, and far) are the only types capable of providing a thorough body rejuvenation experience. Dr. Antonio Jimenez, MD, Founder and Medical Director at the Hope4Cancer Institute in Mexico, told me he leans more towards near infrared saunas as being the most effective for detoxification, and here's why:

“Near infrared light has a greater depth of penetration than far infrared. Near infrared light is more detoxing. You know that saunas and infrared light pull out toxic

and heavy metals. Also, most far infrared saunas on the market have too much EMF – electromagnetic fields – that are toxic, like a cell phone,” says Dr. Jimenez.

There’s a lot of truth to this, but I personally believe that there are benefits to be had from all types of infrared saunas – including the far infrared varieties which are the most common type available to consumers. These machines will still warm the body at the cellular level, helping to release toxins that can then be expelled through the skin via sweat, which is exactly what you want from your sauna experience. Other health experts agree:

“Infrared’s deep penetrating heat is what most effectively stimulates metabolic activity, which in turn triggers the release of stored toxins through sweat, as well as through the liver and kidneys,” says Dave Asprey, Founder and CEO of Bulletproof Executive, a popular health blog site for high performers.

Infrared Saunas vs. Traditional Saunas: What’s the Difference?

The most noteworthy differences between an infrared sauna and a traditional sauna have to do with temperature and heating method. A traditional sauna uses convection heat, much like the stove in your kitchen, to warm the body from the outside. It typically does so at higher temperatures around 185 degrees Fahrenheit (85 degrees Celcius). Many people find traditional saunas to be too hot and drying, making them intolerable to sit in for longer than just a few minutes.

An infrared sauna, on the other hand, can provide health benefits at much lower temperatures ranging between 120 and 140 degrees Fahrenheit (49 to 60 degrees Celcius). This is due to the fact that radiating heat is more evenly distributed and penetrates more

deeply into the skin, gently warming the body, rather than “charring” it with blasts of higher-temperature heat. This is an important distinction because infrared heat is much more effective at drawing out toxins from the deep tissue areas where they’re hiding, allowing them to be more effectively and efficiently expelled from the body.

Despite the lower temperature thresholds, infrared heat also causes the body to sweat much more profusely than it otherwise would with convection heat. It’s been shown that the cardiovascular demand imposed upon the body by infrared heat – not only the vigorous sweating but also vasodilation, increased heart rate, increased cardiac output, and decreased afterload – is equivalent to what one might experience while walking at a moderate pace.



Infrared heat will initiate profuse sweating and can be the cardiac equivalent of walking at a moderate pace or even running

Comparatively speaking, if infrared heat and convection heat were two different types of bedding, the former would be a high thread count linen that’s cozy and soft, while the latter would be like a burlap sack – rough, scratchy, and mostly uncomfortable. Infrared heat uniformly and

comfortably warms the core of the body, while convection heat abrasively sizzles the outer skin while barely penetrating the surface.

Infrared saunas are also about seven times more effective at drawing out toxins from deep tissue than traditional saunas. This, again, has to do with the penetrative capacity of infrared radiation. Infrared rays are capable of penetrating up to one-and-a-half inches deep into bodily tissue, heating both muscle tissue and internal organs (a process known as hyperthermia) in a way that hypothalamically increases heart rate and heart-pumping volume.

Convection heat simply can't match this, and isn't nearly as capable of pulling out the most damaging toxins that build up deep within cellular tissue over time. Convection heat from a traditional sauna is thus an inferior or more crude form of detoxification.

The Science Behind Infrared Saunas

There's plenty of anecdotal evidence to show that infrared saunas are helping people detoxify their bodies, increase their energy levels, and even overcome chronic disease. But what does the science say? I'm glad you asked. Here's what a faculty member at Canada's Northern Health discovered after conducting an extensive review of the published research back in 2009:

- At least four separate studies support the use of far infrared saunas in treating patients with cardiovascular disease. One study found that patients with congestive heart failure (CHF) who had been experiencing more than 200 premature ventricular contractions (PVCs) per day saw major relief after just ten, 15-minute sessions using a far infrared sauna over the course of two weeks.

- At least five studies support the use of far infrared saunas in the treatment of coronary risk factors. One of these studies revealed that fourteen, 15-minute sessions in a far infrared sauna over the course of two weeks helped patients at risk of coronary heart disease significantly lower their systolic blood pressure.



One study showed that just 2 weeks of a 15-minute daily session in a far infrared sauna significantly lowered systolic blood pressure in at risk patients

- At least one study supports the use of far infrared saunas in treating chronic pain. Four weeks of 15-minute daily sessions in a far infrared sauna helped patients who previously couldn't function normally due to chronic pain sleep better and return to work.

Another researcher from the Southwest College of Naturopathic Medicine in Tempe, Arizona, put out a paper several years earlier highlighting the benefits of infrared sauna use as a way to trim body fat and eliminate toxic xenobiotics (foreign chemicals) from the body. Just 15 minutes of sauna use every day, he found, helps reduce blood pressure and enhance blood flow, while longer sessions under proper supervision by a qualified health specialist can help mobilize both toxic xenobiotics and heavy metals for rapid elimination from the body.

“Saunas can be used very effectively for certain cardiovascular problems and as a means to enhance the mobilization of fat-soluble xenobiotics,” the author concluded. “...saunas are safe and effective and should be used more frequently to benefit the health of our patients and ourselves.”

A 1981 study published in the *Journal of the American Medical Association (JAMA)* found that regular use of an infrared sauna exerts a weight-loss effect on the body. This is due to the fact that infrared radiation raises core body temperature, mimicking the cardiovascular exertion brought about by aerobic exercises such as running.

The paper concluded that *“[r]egular use of a sauna may impact a similar stress on the cardiovascular system as running, and its regular use may be as effective [at] burning calories.”*

There is also copious emerging research demonstrating benefits from infrared sauna use in the treatment of musculoskeletal problems, rheumatoid arthritis, joint stiffness, muscle spasms, edema, soft tissue injury, sciatica, eczema, pelvic infection, pediatric pneumonia, and even cancer.



Infrared sauna has proven beneficial for relieving symptoms of a range of inflammatory conditions such as arthritis

The Effect of Infrared Sauna on Cancer Cells

For cancer specifically, infrared sauna treatments are exceptionally promising because of the selective toxicity they have on cells. In a nutshell, the hyperthermic effects of infrared radiation are only harmful to malignant cells, as was explained to me by Dr. Irvin Sahni from the Spine Surgeon Pain Management Clinic in Texas.

Dr. Sahni told me that normal healthy cells are essentially immune to infrared radiation, while cancer cells are hyper-thermally challenged:



Infrared radiation is harmful to cancer cells, but not to normal healthy cells

“...by exposing your body to that heat, you’re selectively killing or eradicating those less viable cells, those cancer cells, without hurting your normal cells. And so a far infrared sauna is useful because it can help you sweat, excrete toxins, and in theory eliminate cancer cells which can’t survive the heat as well as the normal cells”

Another study published in the *Journal of Cancer Science and Therapy* found that after just 30 days of infrared treatment, tumor-infected mice saw reductions in their cancerous masses of up to 86% – even with low-temperature infrared exposures of as little as 77 degrees Fahrenheit (25 Celcius).

And if that isn't enough, another study out of Japan found that infrared-induced, whole-body hyperthermia helped strongly inhibit the growth and spread of breast cancer cells in mice, without causing any harmful side effects.

How to Choose the Right Infrared Sauna for You

Between this internal heating mechanism and the sweat it produces, infrared saunas offer a one-two punch for powerful detoxification and cellular maintenance and regeneration. As long as you're continually replenishing your body with both clean hydration and electrolytes, the sky's the limit: the more you heat your core and sweat, the better off you'll be health-wise.

So how do you go about choosing the safest and most effective infrared sauna for maximum results? If you're serious about taking advantage of the full infrared spectrum and all that it has to offer for your health, my recommendation would be to check out the [Sunlighten line](#) of full-spectrum infrared saunas. Sunlighten saunas are backed by 56 clinical studies showing that they effectively deliver all three types of infrared radiation at the proper amounts for achieving your desired health goals.

Whether it's detoxification, relaxation, pain relief, weight loss, cardiovascular, or anti-aging benefits you're after (or if you want all of these things!), Sunlighten saunas are custom-designed and equipped to deliver. They're also extremely low in harmful EMF emissions, which is something important to look out for when choosing any infrared sauna, Sunlighten or otherwise.

The company claims its "Ultra Low EMF Technology" produces "virtually no EMFs" at all, and it has the

third-party test results to back this. After looking through the test results myself, I have to say that I'm thoroughly impressed with this particular sauna brand, and if you have the money to shell out for this top-of-the-line product, it's definitely at the top of the list.



Sunlighten infrared saunas come in a range of sizes, with models compact enough for home installation

Just so you know, I have no connection with the Sunlighten company – I just really appreciate the quality of the product, as well as the time and effort that was put into developing one of the safest infrared technologies on the market. I also like the fact that Sunlighten infrared saunas cover the complete infrared spectrum, which to recap offer the following benefits:

Far Infrared: Deep-tissue detoxification, decreased blood pressure, and relaxation

Mid Infrared: Improved circulation, pain relief, and weight loss

Near Infrared: Cellular health, wound healing, immunity, anti-aging, and tissue oxygenation

As far as I'm aware, there's no other sauna brand on the market besides Sunlighten that offers a three-in-one system capable of delivering an optimal balance of all three infrared spectrums. Sunlighten saunas also have high emissivity – upwards of 99% – which simply means that they're extremely efficient in infrared heat output.

Strictly far infrared saunas, which as I mentioned earlier tend to be the most common, are also beneficial and shouldn't be overlooked. They're typically much less expensive than Sunlighten saunas, and for many people work just as well at raising core body temperature to induce sweating and the release of toxins.

There's much debate over which type of heating element is preferable in these units: ceramic or carbon. Ceramic heaters tends to be more powerful and emit more heat, but they also produce therapeutically-inferior, shorter-wavelength infrared radiation. Carbon heaters generate a higher-quality, longer-wave heat, but tend to be weaker.

And then there's the problem of EMFs, which tend to be (but aren't always) more of a problem in carbon heaters, which account for the vast majority of the heaters used in today's commercial far infrared saunas. [Clearlight Infrared by Sauna Works](#) developed a "True Wave Heater Technology" that combines the best of both worlds: a combination carbon/ceramic heating element that, like Sunlighten's full-spectrum technology, is virtually EMF-free.

The three most important factors to look for when purchasing an infrared sauna are: even heat output, high emissivity rate, and low (or no) EMF pollution. You should also opt for radiant rather than reflected heating technology, as radiant heat is more evenly distributed, efficient, and effective.

Another good rule of thumb is to look for a sauna with large heating panels that, while emitting powerful heat, stay relatively cool on their surface. These types of heating panels produce the longer infrared waves that will most effectively penetrate your skin and cells, allowing for the greatest toxic release and greater amounts of sweat.

So whether you choose to go with a far infrared, a near infrared, or an all-in-one infrared sauna, be sure to pick one with:

- Even, radiant heating
- Low (or no) EMFs, and a
- High emissivity rate

Be sure to also find out how long the company that manufactures the sauna has been in business and what kind of warranty is offered. Some companies like Clearlight offer a lifetime residential warranty on their products, ensuring you'll be happy with your sauna for years to come!

About Ty Bollinger



After losing several family members to cancer (including his mother and father), Ty Bollinger refused to accept the notion that chemotherapy, radiation, and surgery were the most effective treatments

available for cancer patients. He began a quest to learn all he possibly could about alternative cancer treatments and the medical industry.

Ty has now made it his life's mission to share the most remarkable discovery he made on his quest: the vast majority of all diseases (including cancer) can be easily prevented and even cured without drugs or surgery.

Ty is a happily married husband, the father of four wonderful children, devoted Christian, best-selling author, medical researcher, talk radio host, health freedom advocate, former competitive body-builder, and also a certified public accountant.

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This month has been one of new adventures for me and Charlene and the entire Truth About Cancer team. I really hope you took time to read all the great articles we put together for you this month. I also hope that you enjoyed the Encore presentation of “The Truth About Cancer: A Global Quest” that we recently aired.

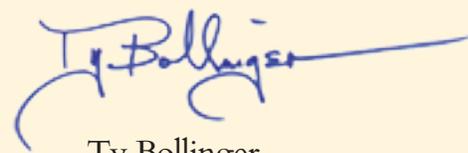
It’s been so busy that I haven’t taken the time to properly give you the thanks lately that you deserve... you’re the reason we’re able to keep spreading our message about the best ways to prevent and heal from cancer.

Every month we strive to get you the latest, most effective, and most importantly, usable information about what’s happening on the very front lines of cancer research. The Heroes Against Cancer Newsletter is where I share this information with you. In the next couple of months we’ve got some new

and very exciting things we’re working on and more events on the horizon where you can come and discover in person some of the amazing healing that’s taking place across the globe.

I hope you look forward to this newsletter popping into your inbox each and every month with new cancer fighting content. As you know, the information you learned during “A Global Quest” was just the beginning.

I’m grateful to have you all as active members of our Truth About Cancer community and there are great things still to come this year. Thank you for being a part of it!



Ty Bollinger

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