Chapter 9

Building the Bridge between Mistletoe and Other Integrative Therapies

Dr. Nasha Winters, ND, FABNO

Special thanks to Dr. Paul Faust and Dr. Mark Hancock for their contributions to this chapter

"We can all influence the life force. The tools and strategies of healing are so innate, so much a part of a common human birthright, that we believers in technology pay very little attention to them. But they have lost none of their power."

—Rachel Naomi Remen, *Kitchen Table Wisdom*

"Our biological rhythms are the symphony of the cosmos, music embedded deep within us to which we dance, even when we can't name the tune." —Deepak Chopra

As we've often mentioned, mistletoe is not typically a stand-alone therapy. It works particularly well when paired with conventional care and other anthroposophic or integrative therapies. The following won't be a comprehensive description of all integrative cancer care modalities. There are many other excellent books that have already tackled that expansive topic; several are listed in the Resources section. Rather, we'll focus on six treatment categories that are both well

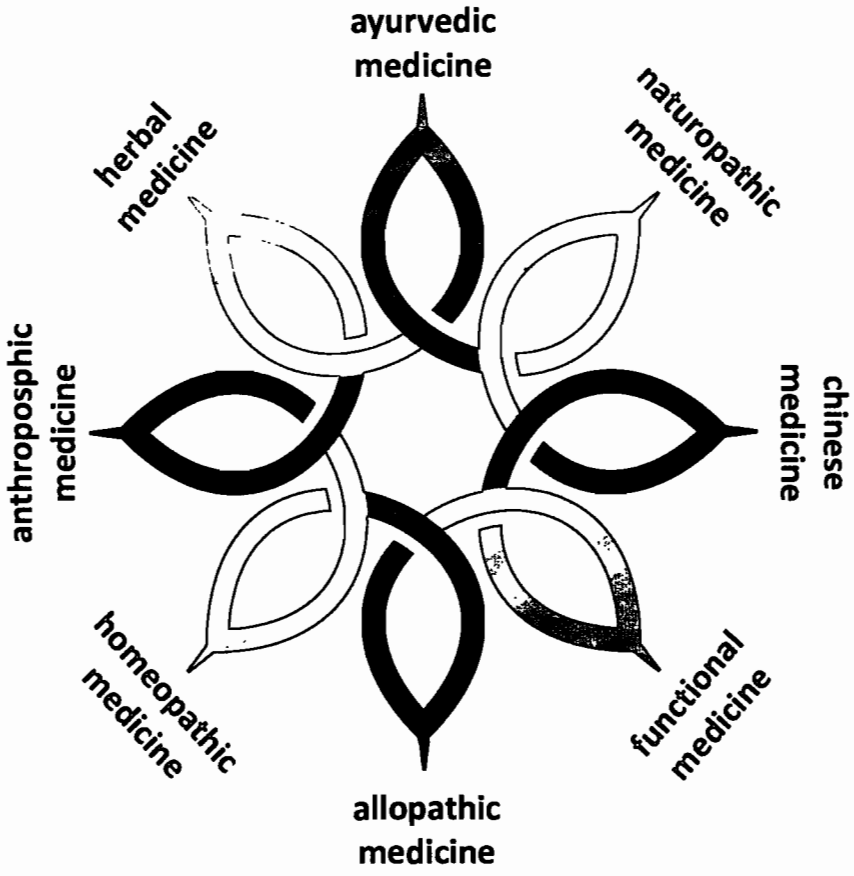
vetted for cancer care and work exceptionally well alongside mistletoe. When developing this list, we also homed in on therapies that do not negatively affect standard of care (SOC) treatments when administered appropriately. If anything, these therapies enhance SOC and mitigate SOC side effects so that patients can stay the course of their conventional treatment programs.

Let's look first at the current landscape of complementary medicine practices, from which we draw these therapies. Then we'll discuss the therapies themselves and review two detailed case stories. These are patients who especially benefited from the unique synergy that stems from pairing mistletoe with multiple integrative and conventional treatments. The body terrain is multi-faceted, and so successful treatment selection always touches multiple terrain points.

Many streams, one river: Patients thrive when practitioners work together

In the world of integrative and holistic medicine, practitioners often speak of the "silo-ing" that happens in conventional care. Specialists focus on one body system or one disease niche, and the hundreds of specialists rarely get to speak with each other. It's not their fault; it's just the nature of our current medical system. In contrast, integrative and complementary practitioners strive to observe the whole body and all its intertwined systems before diagnosing and choosing supportive therapies. We have that sense of holism at our core. But even natural health practitioners can become siloed within their own traditions. We shouldn't be so separated. It would be healthier to view all our rich healing traditions as petals on the same lotus flower.

It's very hard on patients when they feel they must keep their care providers away from each other or hide some of their chosen therapies from their conventional practitioners. Indeed, in the U.S., about 80 percent of patients with cancer utilize some form of natural or alternative cancer care each year.[1] Depending on the study, only 30 to 40 percent of these patients tell their conventional oncologist.[2] This is both



stressful and risky. When we all talk to each other, therapies can be timed better for both optimal effects and safety.

Ideally, true integrative oncology draws from all traditions, including SOC, choosing the best treatment options for the specific patient and situation. All our healing arts have something to offer the complex *body-ecosystem*. Just as the body is an ecosystem, where inputs in one space inevitably affect the whole organism, the multiple healing traditions make up a *healthcare ecosystem*. A healthy ecosystem is defined by strong connections between all its components—whether that's a natural landscape or the human body or the entire field of medical arts. Restorative treatment focuses on rebuilding connections. Optimal healthcare (care that *restores health,* as much as it addresses disease)

builds and nurtures strong connections, both inside the human body and between multiple healing disciplines and treatment modalities. It's all useful, it's all needed.

Along the way, there's a deep need for all of us to shed war metaphor from our discussions of all diseases, but especially in cancer care. A war on cancer can only become a war on the human body. When we rely solely on a scorched earth treatment approach, it destroys internal body–ecosystem connections. Perhaps, as we replace the war-on-cancer metaphor with a new language of *ecosystem restoration*, we will organically begin to see more interaction between all practitioners of all disciplines.

Mistletoe's companions: Identifying and defining diverse integrative treatments

If you're a practitioner, depending on your medical art, some of these therapies will be familiar. Some might be new. Some require deep observation and testing before prescribing them for a specific patient. Two of them—*metabolically flexible diets* and *circadian rhythm restoration*—are universal in their application. Implementing some form of both will significantly increase the efficacy of all other therapies, including conventional care and mistletoe. In fact, I consider both to be foundational with all my patients. Without metabolic flexibility and without an intact circadian rhythm, a patient's immune profile will be characterized by systemic chronic inflammation, and that immune profile translates into treatment failure. With my patients, I often refer my own version of the "CDC," which I define as Circadian Rhythm, Diet, and Community. I regard these as foundational cancer care therapies, not just helpful extras.

1. Dietary transformation: Low-carb, high-fat diets and metabolic flexibility

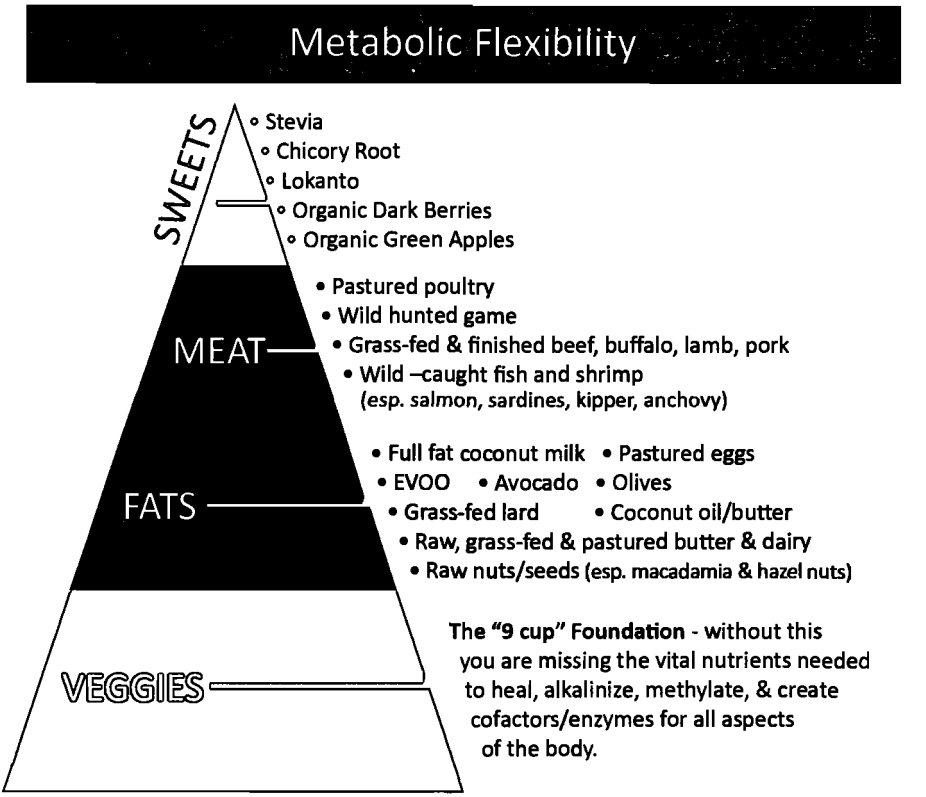
There are far too many magic-bullet cancer diets! In reality, there are many paths to Rome, and any of these low-carb variations can

Quick Definition	Low- to no-carb eating, emphasizing vegetables and healthy fats. Triggers the body to begin burning fat instead of glucose as its primary energy source.
Best Contexts	ALL patients with cancer (or any other disease state). Foundational prerequisite dietary therapy. Enhances efficacy of all other therapies.
Contraindications or Considerations	No contraindications. A ketogenic diet should be considered therapeutic, followed for a fixed duration of time and under the guidance of a practitioner skilled in teaching its principles and monitoring its effects.
Monitor These Labs	Insulin (preferably under 3), Hemoglobin A1C (under 5), IGF-1 (near 100). *If any of these are elevated, you aren't metabolically flexible yet.* Also track organic acids profiles; diet diaries and macronutrient counters; and blood, urine, and breath ketone levels.
Affects these Terrain Elements	ALL, but especially Metabolic Function, Inflammation and Hormone Balance

be successful: low-carb vegetarian, ketogenic (high-fat, some protein, no carbs), paleo (veggies, fruit, eggs, and meat), carnivore (all protein), and intermittent fasting. Yes, all of us benefit from incorporating way more vegetables into our diets—ideally at least half of every meal should be non-starchy veggies. We also need some animal-derived proteins, even if they qualify as vegetarian (pastured organic eggs; high-quality, organic, full-fat dairy). In the simplest terms, the best diet is, most importantly, the one that the patient will follow! Plus, it needs to:

Consist primarily of vegetables and healthy fats
Qualify as low- or no-carb
Meet the individual needs and constitution of the patient
Respect that when you eat may be just as important as what you eat (see the next section on Time Restricted Eating)

What do the successful anti-cancer diets have in common? They all help the body become what's called *metabolically flexible*, or able to burn fat for energy in lieu of glucose.[3] Today, in Western culture especially, we eat a carbohydrate-dominant diet. This has turned us *metabolically inflexible*; we are addicted to fast-burning carbohydrates and have trouble restoring our ancestral fat-burning metabolism. Very few Americans are metabolically flexible anymore—only about 12 percent. That means at least 88 percent of people who have cancer (more likely all!) are metabolically broken.[4]



3 cups leafy greens: spinach, chard, kale, collards, bok choy, romaine, arugula, etc.
3 cups colorful veggies: onions, garlic, leeks, mushrooms, asparagus, beets, artichokes, etc.
3 cups cruciferous veggies: broccoli, cauliflower, Brussels sprouts, collards, cabbage, kale, etc.
Also, Spices & Herbs: turmeric, garlic, onions, cinnamon, basil, thyme, oregano, coriander, cumin, cayenne, mint, etc.

Thanks to Dr. Terry Wahl's for coining the 9-cup foundation

A revised food pyramid: The best anti-cancer diets begin with removing grains from the foundation of the food pyramid and emphasize non-starchy vegetables and healthy fats instead.

We were all told in school that grains and starch (bread, pasta, rice, potatoes) formed the base of our food pyramid. Just eat healthy whole grains and you're fine, right? Actually, no. This dietary advice, inspired mostly by an emerging grain-based industrial agriculture initiated in the mid 1800's, has turned our bodies into carb-dependent junkies. For nearly 200,000 years, humans were hunter gatherers. Sugary foods (fruit and honey) were an absolute rarity. It was only 10,000 years ago

that we became Neolithic farmers, and though we increased our carbohydrate intake, we expended a lot of energy to plant, cultivate, harvest, and prepare our foods compared to modern agriculture practices and lifestyles.

Today, even though our lives and environments are massively altered, our bodies haven't changed much. That ancestral diet still matches our cellular metabolism. Our cells know how to thrive on that fuel.[5] Modern foods abound with white sugar and flour, industrial sweeteners, and carbohydrates that break down into yet more sugar. Our cells have turned into hyperactive sugar-burners. This glucose-rich environment is also super friendly to cancer.[6] Our ancestral metabolism prefers to burn fat instead of sugar, but we cannot access that state of *metabolic flexibility* if there is easier-to-burn glucose present in our systems. That's why drastically reducing carbohydrates is the first and primary step toward metabolic flexibility. Turn off the carb faucet, and the body remembers how to burn fat for energy.

You have likely heard of the therapeutic *ketogenic diet*. The ketogenic diet has been found to improve the survival odds in brain cancer. At the time of this book's publication, there were over fifty other clinical trials underway looking at the effects of the therapeutic ketogenic diet on glioblastoma (brain cancer) and several other cancer types.[7,8] Unfortunately, thanks to a swell of misuse and poor description of ketogenic principles in the mass media, there is now a great deal of confusion about what true ketosis is and how to harness it effectively. "Keto" is not an Atkins diet, the focus of which is low-carb, high-protein. Rather, ketogenic eating involves low- to no-carbohydrate eating, with a strong emphasis on *healthy fats*, and not as much emphasis on protein. This diet typically restricts carbohydrates to 20 grams per day and protein to 0.8 grams per kilogram of body weight per day, while fat (healthy, non-inflammatory fats!) makes up over 80 percent of caloric intake. This diet is not easy to follow and takes extensive training and meal planning to do well. However, it is very powerful.

A successful ketogenic diet achieves *ketosis*—the state in which the body is burning fat molecules (ketones) as its primary fuel, instead of

sugar. In true ketosis, the body thrives in this state; it is neither in shock nor desperate for a sugar hit. Ketosis, in turn, creates a microenvironment that is neutralizing to aggressive cancers.[9] Ketosis induces several effects simultaneously on immune, metabolic, and genetic aspects of the cancering process:

1. Reduces glucose and insulin
2. Modulates oxidative stress
3. Reduces inflammation
4. Enhances anti-tumor immunity
5. Alters gene expression
6. Sensitizes tumors to SOC treatments and other adjuvant (supportive) therapies[10]

A therapeutic ketogenic diet should be guided by a practitioner specifically trained in implementing and monitoring this medical therapy. It is a challenging therapeutic choice, but transformative in certain cancering processes.

As mentioned earlier, this is not the only dietary path that can restore metabolic flexibility. Really, any diet that keeps carbs below 50 grams per day can guide the body toward ketosis. (We call that low-carb now, but historically 50 grams was normal!) Pairing low-carb with high-fat is even more effective. Low-carb eating paired with a 70 percent good-fat intake will push the body in the direction of the ketogenic diet and its associated benefits. Whatever the specifics of your dietary approach, it is transformative to replace the carbohydrate foundation with a mix of vegetables and healthy fats.

Time-restricted eating as another powerful metabolic tool

It's important to note that time-restricted eating (TRE) can also help the body achieve ketosis. TRE can be as simple as extending your nighttime non-eating period. In fact, simply *not eating for 13 hours or more* on a daily basis is associated with decreased breast cancer recurrence.[11] TRE means, for example, ceasing to consume anything other than water after 7:00 p.m. each night and then eating breakfast at 8:00

a.m. That's it. TRE is powerful because it requires the body to dip into ketosis every day, particularly during some of the most reparative deep sleep time periods in the night. Too many of us snack all the way up till bedtime, resulting in continued overactive glucose-burning throughout the night. The body never gets to enter a deep reparative state. TRE is, by far, one of the easiest dietary and lifestyle choices with quantitative benefit for patients who have cancer. In my own clinical experience, I've seen it enhance the effects of SOC treatments and other integrative therapies alike. If you are a patient who is limited in how many therapies you can pursue, mistletoe therapy and fasting are an especially effective and simple combination.[12]

Whatever the dietary path, restoring metabolic flexibility is crucial. I no longer work with patients if they want to use mistletoe but continue eating from the drive-through. It's that important. You can have all the firefighting therapies in the world, but if you're still pouring gasoline on the fire, the blaze will only grow. Conversely, when you cut off cancer's favorite fuel, while simultaneously *enhancing the resiliency of your healthy cells*, absolutely every integrative therapy and SOC treatment will be more effective.

2. *Therapeutic warmth: Medical hyperthermia and other heat therapies*

Quick Definition	External heat therapy. Raises body temperature enough to achieve immunomodulating effects or, at high enough temperatures, directly cytotoxic, tumor-damaging effects.
Best Contexts	Especially beneficial for highly aggressive cancers. Medical hyperthermia is often administered alongside conventional cancer care in several European clinics.
Contraindications or Considerations	All heat therapies can enhance detoxification processes. This can be stressful if patients are in a weakened state. Use binders (explained below). True medical hyperthermia is only available in Europe at this time.
Monitor These Labs	VEGF, CRP, ESR, LDH, pulse oximetry, tumor reduction seen on imaging, and self-reports regarding QOL and pain
Affects these Terrain Elements	Immune Function, Inflammation, Angiogenesis (changes microcirculation, improves oxygen perfusion)

While conventional oncology in the U.S. has been aware of medical hyperthermia for decades, and several hospitals are even equipped

to provide it, the therapy has been mostly forgotten here. Occasionally, we will hear of its use alongside radiation for conditions such as sarcoma, head and neck cancers, and cervical cancer.[13] But even these uses have essentially stopped outside of a few locations. That's unfortunate because it is transformative in many cancer scenarios. For now, medical hyperthermia is widely available in Europe, Southeast Asia, and Canada, in a variety of treatment settings. In those regions, it is used as an adjuvant to radiation, chemotherapy, mistletoe, and IV vitamin C.

To clarify, true medical hyperthermia is not a sauna or hot bath. High heat medical hyperthermia is completed only in a hospital setting. The patient is sedated, and they are constantly monitored with multiple thermometers, supported with infusions of sodium bicarbonate to prevent acidosis, and the head is raised and cooled. In this highly monitored and supported state, the body temperature is slowly raised to 107.6 degrees Fahrenheit (42.0 Celsius). At that high temperature, the heat can convey direct cytotoxic effects and damage tumor cells.[14] Patients with highly aggressive, complex, and treatment-resistant cancers can be served very well by this approach. In Europe, this form of hyperthermia is rarely used as a sole treatment. They use it more like a Trojan Horse to drive the primary treatment of choice into the cancer cells to induce cell death. The therapy appears to help overcome drug resistance.[15] It activates NK cells, accentuating that effect that we also see with mistletoe therapy.[16] It ultimately lowers markers of chronic inflammation and enhances perfusion in organs and tissues.[17,18] My colleagues and I have found that hyperthermia is especially effective in complex sarcoma cases (see chapter 10) and in lymphoma. When I have a patient for whom medical hyperthermia could be course-altering, I do send them to Europe to receive this invaluable therapy.

All that said, there are more moderate forms of hyperthermia that are available in North America. They do not warm the body all the way up to that cytotoxic target of 107.6 degrees Fahrenheit (42.0 Celsius). While not directly *cytotoxic*, these therapies can be

immunomodulatory, and that is valuable as well. Moderate hyperthermia includes warming therapies such as FAR infrared sauna and lower-heat local or regional hyperthermia, or it can be as simple as a hot bath or hot compress. Such applications can result in a mild *abscopal effect*. That means the tumor cells in one local area become stressed, and immune cells are drawn to the site. If the immune cells manage to breach the tumor's microenvironment, they will "learn" about the tumor and hopefully take that information to other tumor sites in the body.[19] (We'll learn more about this phenomenon in the next chapter.) All intense heat therapies have at least some potential for this abscopal effect.

Perfusion hyperthermia as a potential new tool in the U.S.

In the U.S., there have been trials for something called *perfusion hyperthermia*. This involves placing the patient on, essentially, a dialysis machine. All their blood is cycled through, heated to 107.6 degrees Fahrenheit (42.0 Celsius), filtered, and returned to the body. I had several of my patients with Stage IV ovarian cancer (failed by multiple lines of therapy), take part in such a trial. It greatly extended both quality and quantity of life.[20,21] The researchers in this trial also discovered, by accident, that this particular hyperthermia treatment managed to clear preexisting Lyme disease, Epstein-Barr, and Hepatitis B infections. Temperatures that high could certainly kill off those infections, and the filtration process likely prevented a massive cytokine release in response to the sudden pathogen die-off. This elimination and removal of a background pathogen burden can only benefit the overly stressed immune system in patients who have cancer.

Detoxification considerations

All forms of hyperthermia can heighten the body's detoxification processes. This can be stressful if patients are already in a weakened state. Often, I recommend waiting on detoxifying therapies (including sauna and other home-based heat therapies) until after an SOC treatment program is complete. But sometimes hyperthermia stands out as

the most effective option for a patient, even during SOC. Whatever the timing, it's crucial to increase hydration and take binders during detoxifying therapies like hyperthermia.[22,23] Binders are molecules that literally bind to toxins, neutralizing them and helping the body flush them out efficiently. Otherwise, newly liberated toxins can cause havoc on their way out or head into circulation and get stuck in some other part of the body. Effective binders include bentonite clay, activated charcoal, and humic or fulvic acid. There are several other anthroposophic, homeopathic, and herbal remedies that promote excretion, and each doctor has their own toolbox.

3. Nutrient therapies: IV vitamin C and other therapeutic vitamins

Quick Definition	High dose (greater than 25 grams) of vitamin C, administered via IV.
Best Contexts	Typically beneficial for all patients with cancer, especially during chemotherapy
Contraindications or Considerations	All IVC patients must be screened for their G6-PD levels prior to treatment; contraindicated for patients with a genetic G6-PD deficiency. Some studies suggest vitamin C can negate the effects of radiation, but that concern should be focused on oral vitamin C. See Further Considerations at end of this therapy description. IVC and VAE should be administered separately, ideally on different days. Glucose monitors cannot differentiate between vitamin C and glucose; readings may spike as high as 550. This is *not* a glucose spike; do NOT treat it with insulin.
Monitor These Labs	CRP (under 1), ESR (under 10), LDH (under 175 or 450, depending on the lab range), CBC focusing on platelets (should normalize to 175-250), NLR (2-to-1), also VEGF (IVC can inhibit VEGF: less than 50 plasma or less than 350 serum)
Affects these Terrain Elements	Immune Function, Inflammation, and Angiogenesis

We refer to IV vitamin C (IVC) as a cooling therapy, somewhat like *Helleborus niger* as described in chapter 8. This is an important distinction to make if we're also providing a warming therapy like mistletoe. Because of these differences, we recommend providing IVC and mistletoe on separate days. Ideally, after VAE therapy, the patient's body temperature should have a chance to naturally come down to normal. Then begin the IVC therapy. It's not that the chemical constituents have poor interactions. It's simply that IVC is cooling enough systemically, that it can compromise some of the warmth-induction

from the mistletoe. That warmth is valuable and needs to be protected. The cooling nature of IVC is beneficial, too, but in a different way. We want the body to receive the full benefits of both therapies, to cycle fully through the warmth of mistletoe, to the cooling of IVC.[24,25] The philosophy is very similar to that used in alternating mistletoe and *Helleborus niger.* The cooling nature of IVC can be quite noteworthy in some patients. They may feel cold and might need a blanket during their IVC treatment.

At high enough levels, IVC has been found to be directly cytotoxic to cancer cells.[26] When administered via IV, we can reach vitamin C plasma concentrations that are 70 times higher than those reached through oral ascorbate.[27] These high concentrations ultimately yield some extracellular H_2O_2, which healthy cells can address, but cancer cells can't (they have no ability to clear it). IVC also provides powerful mitigation of common chemotherapy side effects by protecting stomach cells (nausea prevention)[28] and protecting hair follicles (mitigation of hair loss).[29] Yet it does not hinder the desired effects of the chemotherapy treatment.[30] These dramatic SOC-supporting effects are often prominent enough that they catch the attention of conventional oncology teams. IVC often starts conversation and builds bridges with the conventional care world, because of its noteworthy effects during chemotherapy. Not only does it minimize weight loss and hair loss; it also generally improves QOL[31] and provides immunomodulating[32] and anti-angiogenic effects.[33,34]

To achieve these benefits, we need to hit vitamin C tissue saturation. Do not guess at a correct dosage for a specific patient. Tissue saturation can be measured using a glucose monitor, because glucose monitors cannot differentiate between glucose and vitamin C. (Both patients and their conventional providers must be aware of this issue, so they don't accidentally treat a "glucose spike" that isn't from glucose!) Vitamin C tissue saturation is reached when a glucose monitor reads 350 to 450 after IVC treatment. The Riordan Clinic (www.RiordanClinic.org) provides a fantastic IVC protocol guide, which is a free download on their website.

Further considerations: Concerns about G6-PD, oral vitamin C support, and vitamin C during radiation treatment

All patients considering high-dose IVC therapy must be screened for G6-PD levels prior to initiating treatment. G6-PD is an enzyme that patients must have at a healthy level before they can receive this therapy. There is a genetic mutation that can result in chronically low levels of G6-PD (which would disqualify the patient for IVC therapy). If a patient is missing this enzyme and takes high-dose vitamin C, it can result in hemolysis (RBC breakdown), which can be fatal. It is also important to note that even in patients without that mutation, chemotherapy can induce a temporary G6-PD deficiency. The deficiency may last for days or weeks, depending on the chemotherapy drug used, the patient's genetic single nucleotide polymorphisms (SNP), and their liver function. Retesting is crucial. With your chemotherapy patients, always rerun their test before initiating or re-initiating IVC. Years old tests do not count if the patient is going through or recently had chemotherapy.[35]

Ideally, patients should be supported with oral vitamin C between IVC treatments. This is to help maintain tissue saturation and extend its positive benefits. I prefer a whole food sourced liposomal (non-ascorbic acid) form of vitamin C at a dosage of 2 to 4 grams per day.

Some studies suggest vitamin C can negate the effects of radiation, but that confusion lies in the difference between oral and IV administration. Oral dosing has more of the antioxidant effect, which does suggest contraindication with radiation. In contrast, IVC in high dose has a *pro-oxidant* effect and is possibly synergistic with radiation.[36] It is best to discuss this with your trained high-dose IVC practitioner to determine whether this therapy combination is appropriate for you.

Other nutrient therapies common alongside mistletoe

Again, we don't have the space in this context to provide a comprehensive list of nutrient therapies, and many other books have covered this ground extensively. But there are three more nutrients that we rely

on heavily when providing mistletoe therapy. As mentioned in chapter 5, maintaining healthy vitamin D levels is pivotal to the success of mistletoe therapy. Macrophages must be bound to vitamin D to be activated.[37] When we're vitamin D deficient or insufficient, our macrophages are not working efficiently. Numerous studies have also found a correlation between low vitamin D levels and higher cancer risk.[38,39] If we're about to embark on an immunomodulating therapy like mistletoe, we want to make sure the immune cells have all they need to function at their best. So, it's ideal to address low vitamin D levels before starting mistletoe.

The same goes for Omega-3 status. Poor Omega-3 levels can compromise the effects of mistletoe.[40] Omega-3, especially the Omega-3 to -6 ratio, can throw off the inflammatory balance in the body. Too much Omega-6 (a common theme if you're eating the Standard American Diet) can send chronic inflammation into overdrive.[41] This is another issue to address before starting mistletoe therapy if you want to achieve optimal benefits.

Vitamin A is crucially important as well, but for a different reason. Vitamin A induces cell differentiation. Cancer is always trying to *de-differentiate.*[42] It's trying to go back to that stem cell state because, in that state, it can do what it wants and continue evading the immune system. If there is a breast cancer cell sitting over in a bone, the immune system can identify it and say "you don't belong there." But if a cancer cell de-differentiates, it doesn't look like a cancer cell, and the immune system will miss it. Supplemental vitamin A can help restore cell differentiation, making cancer cells more visible.[43] Again, if we're going to start an immunomodulating therapy like mistletoe, we want to equip the immune system with its most basic building blocks. It's always wise to test nutrient levels like vitamin A before supplementing, since vitamin A is fat-soluble. Unlike water-soluble vitamins, excess cannot be flushed out in the urine. If a vitamin A deficiency or insufficiency is found, we supplement only with retinol, *not* beta-carotene. This molecular form is crucial for successfully reversing deficiency.

4. Botanical medicines: Cannabis and the endocannabinoid system

Quick Definition	Cannabis provided in a variety of forms to improve endocannabinoid function, mitigate pain and nausea, promote immune function, restore sleep, and increase appetite.
Best Contexts	Benefits most patients if they have no SNPs that may negatively affect their experience of cannabis.
Contraindications or Considerations	No contraindications. However, do not recommend cannabis for patients with CYP2C9*3 or FAAH associated SNPs, as described later in this section.
Monitor These Labs	CRP (under 1), ESR (under 10), LDH (under 175 or 450, depending on lab range), as well as CBC, NLR, organic acids testing. Also, self-reported changes in QOL.
Affects these Terrain Elements	Immune Function, Inflammation, Stress & Biorhythms, Mental and Emotional Health, Microbiome & Digestive Function (appetite and nausea).

Medicinal cannabis use continues to grow as more patients hear about success stories. For practitioners, it's important to cut through the hype and base our clinical recommendations on science—thankfully there is a growing research base now. We can also empower ourselves with an understanding of the genetic SNPs that can influence a person's experience of cannabis, quickly ruling out those who would likely have a bad encounter with this powerful herbal medicine. We'll discuss that nuance at length in a moment.

Human use of cannabis as medicine has been noted for over 10,000 years. More recently, an Irish physician, Sir William Brooke O'Shaughnessy, was known for studying cannabis while working in India, validating its medicinal uses, and introducing it to Western medicine.[44] U.S. physicians were the main opponents when the Treasury Department introduced a Marijuana Tax Act in 1937. Despite the opinions of physicians who often witnessed the clinical benefits of wise cannabis use, it was removed from the U.S. Pharmacopoeia in 1942. By 1970, it was classified as a Schedule 1 drug (as bad as heroin) and was wrongly described as having no medical benefit.[45,46] Cannabis is finally being rediscovered and recognized for its genuine therapeutic benefits.

To understand its wise use, we first need to understand the endocannabinoid system (ECS). We are still learning so much about cannabinoid

receptors, but here's what we do know. In simplest terms, the ECS can be thought of as lipids, which are produced by all mammals and interact with and modulate the nervous system and receptors throughout the body. This system is key in how we process pain and anxiety and how we self-calm and resolve intense stimuli. It's also deeply involved in maintaining circadian regulation.

As investigative journalist Martin A. Lee put it, "Cannabinoid receptors function as subtle sensing devices, tiny vibrating scanners perpetually primed to pick up biochemical cues that flow through fluids surrounding each cell."[47] The ECS is involved in how nerve cells signal to each other, how those cells decide to fire again, and when they decide to stop firing. That process is deeply involved in chronic pain challenges, in which nerves begin to fire a pain-related signal and then get stuck transmitting that information again and again. The cannabinoids in cannabis aren't foreign to our bodies. They look and act like molecules that our bodies recognize and naturally make to keep the ECS working properly.

We have two main categories of cannabinoid receptors and two naturally occurring compounds in the body that illicit similar effects to cannabis when interacting with these receptors:

CB1: Associated with the brain, central nervous system (CNS) and organ function. This is primarily neuromodulating.[48] It interacts with the body's naturally occurring compound anandamide (AKA the "bliss molecule"), and it also interacts with the THC in marijuana.

CB2: Associated more with immune cells and pain management receptors outside of our brain and spinal column.[49] These reach into the periphery, involving the body's more distal tissues and extremities.

Everyone's ECS is unique. You could say that we each have an endocannabinoid (ECB) fingerprint. This includes a few genetic SNPs that can affect ECS constitutional tendencies and how people experience cannabis. Too many regard cannabis as a magic-bullet therapy: *it's good for everyone!* But when you talk to patients, you begin to run into

fairly extreme responses. They either say they've had a terrible reaction, or they feel it's been completely transformative. SNPs are coming into play here. *Patients need to know their SNPs before they try cannabis.* There are several testing companies that elucidate these epigenetic SNPs related to the patient's ECB fingerprint. This helps us learn whether THC is friend or foe. This, along with patient's symptoms, can further specify appropriate *chemovar profiles* (referring to specific terpenoid content of cannabis varieties), which help the individual choose the right cannabis product for their specific health goals.[50–52]

When reviewing a patient's SNPs, those with CYP2C9*3 SNPs should exercise caution with THC. These individuals have trouble breaking down THC, so it stays in their bodies longer and makes them feel crazy! Another SNP that can affect cannabis response is related to the FAAH (fatty acid amide hydrolase) gene. The FAAH gene, or bliss gene, is involved in how we metabolize anandamide (the bliss molecule) into arachidonic acid. A genetic SNP here can result in a temperament that struggles with achieving bliss and contentment. Interpersonally, this individual might be described as a "Debbie-downer." On a clinical level, this person has a downregulated ECS. These patients don't tolerate medicinal marijuana well. The THC can make them more depressed or anxious. With them, pure CBD is a much better and useful option.[53]

Once a patient has been properly screened and deemed a good candidate for trying cannabis, the potential benefits of this medicinal plant are extensive. Cannabis is another true poly-pharmacy plant (like mistletoe), so its benefits are diverse:

Appears to improve metabolic flexibility and the ability to adapt to changing environments (both key functions of a healthy ECS)
Mitigates pain, particularly chronic pain challenges involving a stressed nervous system
Provides anti-emetic (anti-nausea) effects and stimulates appetite
Soothes anxiety and depression, and promotes healthy sleep[54,55]

Those pain, nervous system, and mood benefits are fairly well-known. International researchers are looking at more direct anti-cancer

benefits, too. Medicinal marijuana contains compounds that appear to convey anti-angiogenic effects as VEGF inhibitors and direct cytotoxicity for some cancers.[56] These effects convey whether smoked or ingested (though ingested cannabis, of course, takes longer to convey its benefits).[57]

Just as we see plenty of nutrient deficiencies in our patients who have cancer, we can also clinically diagnose a more subtle *endocannabinoid deficiency.* This deficiency can compromise the effects of other therapies, including mistletoe. All the following are associated with lower levels of anandamide, which is at the heart of ECS deficiency: inexplicable pain, musculoskeletal complaints, nausea, IBS and gut issues in general, migraines, and low seizure threshold.[58] If you see these symptoms clustering in a patient, and they have no concerning ECS-related SNPs, they are prime candidates for therapeutic cannabis. When mistletoe therapy and cannabis are combined, we often view mistletoe as resetting the body's inner rhythms. Simultaneously, cannabis increases the body's ability to adapt to new stimuli that might jar that rhythm. It helps the body roll with the punches and then return to its own rhythm (homeostasis) once more.

5. Well-vetted OLDU therapies: Low-dose Naltrexone (LDN)

Quick Definition	An opiate antagonist that indirectly increases the body's production of its own endorphins.
Best Contexts	Immunomodulatory and mood stabilizing for most patients. Good alternative for patients who opt against cannabis.
Contraindications or Considerations	None, except for when using opiate therapies (may negate their effects).
Monitor These Labs	Vitamin D, immune panels, eosinophils, CRP (under 1), ESR (under 10), LDH (under 175 or 450, depending on lab range), hormones (thyroid, adrenal, and sex hormones). Self-report on stress management, sense of well-being, and pain levels.
Affects these Terrain Elements	Epigenetics (affects gene expression), Immune Function, Microbiome & Digestive Function (can lessen IBS symptoms), Inflammation, Hormone Balance, Stress & Biorhythm, Mental & Emotional Health

Just as we frequently see patients with endocannabinoid deficiency, we also see a similar *endorphin deficiency syndrome* as well. These two deficiency states are like twins. They are similar in how they work

and in the systems they affect, even if the signaling pathways involved are different. Endorphins are the body's own naturally produced, feel-good chemicals. People with endorphin deficiency often struggle with depressed mood, poor energy, and a lack of enthusiasm—not unlike those with endocannabinoid deficiency.[59] Of course, a recent cancer diagnosis only aggravates this baseline state.

Naltrexone, a pharmaceutical drug better known for its labeled use in preventing relapse in serious opiate addiction cases, conveys a different set of benefits when micro-dosed. Low-dose Naltrexone (LDN) serves as an opiate antagonist that temporarily blocks endorphins from entering cells. This triggers a signal to the pituitary to produce more endorphins. LDN seals off the receptors for a few hours, then releases. Then the body experiences its own heightened endorphin production.[60,61]

LDN is considered a legitimate Off-label Drug Use (OLDU) of Naltrexone. There are a lot of other OLDU options being discussed in various books and cancer-related social media forums, and I even offer a course for physicians on the topic. In all honesty, I'm not enamored with the hype surrounding OLDU pharmaceuticals. Typically, the molecular pathway that these drugs target can be hit just as easily with a natural therapy, but with far fewer side effects. In my own clinical practice, I find LDN to be the exception to that rule. It has a long history of safe use with few to no side effects for most patients. Meanwhile, its benefits are quite diverse.[62,63]

The heightened endorphin-production is the most studied benefit, and it cascades into many improvements in mood, energy, and pain-perception. Other benefits that are being researched include:

Immunomodulatory effects: Increases T-lymphocytes, while calming overzealous immune response (balances TH-1 and TH-2 activity)[64–66]

Adjuvant support: Calms side effects of conventional immunotherapies[67]

General adaptogenic effects: Helps restore circadian regulation and improves QOL[68]

My colleagues and I sometimes experience patient resistance to cannabis use, even among people who would be good candidates. Some simply don't want to have to go to a marijuana dispensary. When this is the case, LDN is an ideal inexpensive and accessible alternative. In my clinical experience, as far as OLDU options, LDN is also the most synergistic with mistletoe therapy.

6. Circadian rhythm restoration: Acknowledging ourselves as part of nature

Quick Definition	Lifestyle choices and some supplements that help restore natural cycles of physical activity, mental states, and behavioral and physiological changes, under the influence of light and darkness, as well as temperature and the seasons.
Best Contexts	All patients. Foundational prerequisite lifestyle choices.
Contraindications or Considerations	None
Monitor These Labs	D3, melatonin, Adrenal Stress Index (ASI), immune profile, and gut microbiome tests. Self-report of QOL and daily patterns/choices.
Affects these Terrain Elements	ALL, with emphasis on Stress & Biorhythms, Immune Function, Microbiome & Digestive Function

Modern humans appeared on Earth about 200,000 years ago. Civilization, including familiar forms of agriculture, settlement, and governance, began about 6,000 to 10,000 years ago. Up until very recently, as a species, our lives were defined by the hard work of food-finding and survival. We lived like that for tens of thousands of years. For most of our existence, even in early agrarian times, our daily schedules were governed by the sun. We worked during the day. We slept at night. Yearly activities were guided by the seasons. We worked hard during growing seasons, we rested and huddled to keep warm during winter or rainy seasons, we made significant migrations to follow food supplies, and we ate foods according to seasonal and geographic availability.

Human lifestyles just 200 years ago are almost unrecognizable compared to how we live today. On an evolutionary timescale, within a few generations, we have fully upended the circadian rhythms that our bodies depend on for optimal health. We stay up well past dark, working under electric light and looking at screens emitting EMF radiation

and endocrine-disrupting blue light. We eat the same carbohydrate-rich foods year-round. We live in temperature-stable indoor environments—night and day, regardless of season.

Most people understand that modern life has disrupted circadian rhythm in terms of day-night cycles. Sure, we're all a little sleep deprived. But circadian rhythm refers to, and is involved in, all those other natural rhythms, too: heat and cold, seasonal food availability, amount of time spent outdoors in each season, and seasonal rhythms in how we move (types of exercise) and to what intensity. These rhythms, in turn, affect every other aspect of our inner terrain, but are especially influential as far as immune response, stress response, and the microbiome.

Cancer research is finally catching up with what anthroposophic practitioners, naturopathic doctors, and many other natural health traditions have known for generations. Our loss of connection to natural rhythms of all kinds is making us sick. Indeed, in 2007 one of the better-known circadian rhythm studies put night shift work on the list of known carcinogens.[69,70] Another study questioned the impact of night shift work on breast cancer, since there seemed to be confounding factors: people who work graveyard shifts are often poor, the poor often struggle with access to high-quality food, and their lives are also high-stress. Was "working at night" really the primary risk factor?[71]

Point taken. But researchers since then have pried away at that question even further.[72] A more recent study corrected for the socioeconomic influences by looking solely at women who were flight attendants—half who flew at night, half who flew during the day. Sure enough, those who flew the red eye flights for years had a higher risk of breast cancer.[73]

Another study went on to postulate that the effect might be coming from compromised melatonin levels. Researchers looked at women who had breast cancer, versus age-matched controls. The women with breast cancer had consistently lower melatonin levels.[74] This raised the next logical question: Is melatonin active for cancer? In a 2017 animal study, mice with cancer were injected with melatonin, and a clear anti-cancer benefit was seen.[75] Since then, an Italian

research group has been looking at various cancer types, beginning with breast cancer, then progressing to prostate, lung, and colon cancers. In every cancer they've looked at, patients have severely compromised melatonin levels, and supplementing with it seems to lead to significant anti-cancer benefit.[76]

Circadian dysregulation has major impacts on our immune system rhythms. We're still learning the molecular "how," but the relationship is definitely there. Yes, melatonin has been a powerful adjuvant for many of my patients and is especially effective in working alongside mistletoe to reset deep internal body rhythms. Melatonin supplementation is neither a quick fix, nor can it replace major lifestyle choices to better honor our natural rhythms. But it can be a powerful turning-point helper as patients begin the transition to a healthier way of life. Not only does melatonin get them sleeping again, it appears to have definite antioxidant, DNA-protective, and even anti-angiogenic effects. It is not only the body's "sleep hormone," but also the repair-worker, too.[77]

Therapeutic melatonin dosages during cancer care are much higher than those you may be familiar with. If someone has an active cancering process, I typically recommend 40 mg per day at bedtime. If it's a hormonally mediated cancer (prostate, ovarian, or breast cancer), I recommend up to 180 mg daily for a few months and then reassess. For a patient with a hormonally driven cancer with metastasis to the bones and rapid progression, I might even increase the dose with an additional 60 mg three times daily to slow the process. This strategy has been proven beneficial clinically.[78] Once a patient is in remission, I let them drop down to 20 mg for maintenance, and most tend to remain at that dosage for life. It is interesting that doses like this would be expected to cause daytime drowsiness. Yet, we don't find that to be the case. Low doses of melatonin (0.5 to 5 mg at bedtime) can have profound impact on inducing sleepiness and supporting healthy sleep patterns. However, at the higher doses, we see a paradoxical effect: It is no longer so helpful for sleep, and instead optimizes other physiological effects, as noted above. We also don't see problems titrating up rapidly or stopping cold turkey as one might expect. Still, these are

very high doses, and they need to be managed by an anthroposophic or integrative provider trained in therapeutic melatonin administration.

For patients with highly dysregulated circadian systems (that's most people today), melatonin supplementation is only an initial, rhythm-resetting step. Cancer diagnosis, unlike any other disease, demands lifestyle reinvention. I work with my patients to educate them about the power of their daily and seasonal life rhythms and their boundaries regarding exposure to electronics and screen time. Some of the most impactful anti-cancer lifestyle choices include:

Pairing melatonin with a consistent bedtime close to sunset!
Keeping electronics out of the bedroom and sleeping in full dark
Minimizing all screen time: Setting time limits on computer and device use and wearing "blue light blockers"
Incorporating high-intensity interval training (HIIT) or similar exercise two to three times per week
Taking daily walks out in nature, experiencing the elements
Trying simple cold exposure therapies: Ending every shower with cold water, intentionally experiencing cold temperatures outdoors, or even more high-tech interventions with cryotherapy (two to three sessions per week can encourage mitogenesis)[79]

Essentially, sleep in a dark, cool room and get outside way more! Also, "sitting" really is the new "smoking." Combining sedentary work postures with hours of EMF and screen time exposure makes for an especially dysregulated life. Get up. Take breaks. Exercise outdoors whenever possible. HIIT-style exercise is especially powerful for people who have cancer, once they're at a point in their recovery when they can tolerate the exertion. The same goes for occasional cold exposure. Both high intensity movement and cold therapies make us more adaptable to stress in day-to-day life, enhance metabolic flexibility, and even enhance immune function. All that makes our internal microenvironment less friendly to cancer. In the end, that's really our goal. It's not so much that we're fighting cancer. We're creating an environment where it can't even take root.

OTHER WELL-VETTED THERAPIES:
Well-researched options that play well with mistletoe

Artemisinin
Boswellia
Curcumin
Fractionated radiation (repurposed SOC treatment)
Green tea extract
Medicinal mushrooms (AHCC, chaga, cordyceps, lion's mane, reishi, turkey tail)
Mental health therapies: Support groups, meditation, trauma resolution work and guided psychedelic therapies
Metformin/berberine: To lower insulin growth factor (IGF-1)
Metronomic chemotherapy (repurposed SOC treatment)
Modified citrus pectin: To lower Galectin-3
Oxygen therapies: Hyperbaric oxygen therapy (HBOT), ozone therapy
Photodynamic therapy and UVBI
Poly-MVA (form of ALA)
Pulsed electromagnetic field therapy (PEMF)

A Note to Patients: Like the featured therapies in this chapter, the therapies above have been selected particularly for their ability to complement, and not interfere with, mistletoe therapy. They are also the least likely to cause any unwanted interactions with SOC treatments. Of course, your anthroposophic or integrative provider should still guide you in incorporating any of these remedies. To learn more about any of them, read:

Outside the Box Cancer Therapies by Dr. Mark Stengler and Dr. Paul Anderson,
Naturopathic Oncology: An Encyclopedic Guide for Patients and Physicians by Dr. Neil McKinney
Textbook of Naturopathic Oncology: A Desktop Guide of Integrative Cancer Care by Dr. Gurdev Parmar (Dr. Tina Kaczor, ed.)

All three of these books are excellent resources that explore well-researched natural and alternative cancer therapies.

CASE STORY ONE: ELLEN

Power of IV Mistletoe in Clear Cell Endometrial Cancer				
Physician: Dr. Nasha Winters	**Patient:** Ellen	**First seen:** Oct 2013; diagnosis May 2013	**Age:** 65 (at dx)	**Sex:** Female
Cancer Type & Stage:	Diagnosed May 2013 with Stage IV clear cell carcinoma of the endometrium. Metastasis to vaginal cuff, colon, peritoneal cavity, and lung.			
Risk Factors:	Toxic Burden: History of multiple root canals and mercury filling Hormone Balance: HRT following years of OCP use, paired with COMT, CYP1B1, CYP1A1, GST and VDR SNPs Stress & Biorhythm: Prone to anxiety and caregiver for her ailing husband			
Significant Labs:	Low protein/albumin (cachexia). Diabetic with A1C of 6.2, IGF-1 237, insulin 13. Elevated estrone, estradiol levels, high 4-OH, and poor 2:16 estrogen ratios. Trifecta (LDH, ESR, CRP) all elevated. Elevated CEA and CA 125 (cancer markers).			

I first met Ellen in late 2013 after she was failed by her first line of treatment: chemotherapy (Carbo/Taxol) and TAHBSO (total abdominal hysterectomy with bilateral salpingo-oophorectomy and omentectomy). She found her way to one of my cancer retreats for women, which I was facilitating back then. Ellen was desperate to find other options. She'd been offered palliative radiation and more chemotherapy, but since her first round of chemotherapy took her to the brink of extinction, she was hesitant to dive back in.

Diving into her personal and medical history, Ellen noted an enormous amount of stress, including a traumatic childhood, racism (she came from a mixed ethnic background), a nasty divorce, and several years of caring for her current ailing husband. It was difficult for her to say no. Even in her depleted state, she still ruminated with an intense anxiety about everything. Her constitution reminded me of a hummingbird. Despite all that, she was no stranger to integrative medicine and had been an anthroposophic-trained nurse decades before, when she lived in Europe. But over the years, she'd drifted from that ideology.

At the time of our initial consult, Ellen was on daily NSAIDS, Dexamethasone, Zofran, and opiates. Her pain remained unchanged, and she was severely cachectic. She had rapid disease progression in her bowel, causing obstruction. She'd had numerous GI issues her whole life, only to have them worsened by surgery and subsequent chemotherapy.

Ellen also had an autoimmune history of Hashimoto's and Raynaud's. She was a self-professed sugar junkie, and rice was a staple in her diet. She was simultaneously extremely anxious and fearful about what to eat. She went through cycles of avoiding food all together and then, when she got hungry enough, she'd binge on carbohydrate laden foods.

Though Ellen was given less than three months to live, we managed to spend the next nine months restoring her terrain and general nutrition. We focused on a very low-glycemic diet, which also lowered her estrogen dominance load. We weaned her off the steroids and opiates and enrolled her in a Mindfulness Based Stress Reduction (MBSR) course. She began using those tools daily to change up her stress response.

Ellen's initial transformation really began at the women's retreat that she attended. At registration, she was extremely anxious and fearful. She was so cachectic, in such a very painful place physically, it almost seemed the anxiety was keeping her going. One of the major goals of these retreats was to speak frankly with each other about both life and death, in a safe space of like-hearted women. We focused on replacing fear with hope. Ellen responded deeply to this. In a matter of days, she became more rooted, grounded, and embodied. I really believe she had to address this spiritual shift before we could be successful with any other therapies.

After the retreat, we instituted all those dietary therapies and kept in touch via telemedicine. She was originally planning on going straight from the retreat to radiation treatments. I was deeply concerned about this and told her. She was so frail, and her insulin was high. Radiation does not work well if insulin or VEGF are high. My impression was that radiation would provide her little benefit and only stress her system more. "Would you be willing to work on your metabolic issues first?" I asked. "You could get your insulin under control, then reconsider radiation." Surprisingly, she was open to trying this approach.

I always check my patients' monthly CBC, Trifecta Labs (see chapter 5), and cancer markers till they're 100 percent within my limits. Over those first nine months of care, Ellen saw progressive improvement, particularly for her metabolic health (A1C, IGF-1,

insulin). Her quality of life (QOL), energy levels, and general outlook radically improved.

Despite her QOL improvements and improving labs, Ellen's scans still showed metastasis in the colon, vaginal cuff, and lungs along with carcinomatosis (metastases throughout the body) and peritoneal implants (tumor deposits). Her oncologists continued to push for more systemic treatments: chemotherapy and local radiation. Ellen was still too traumatized from her previous experience to consent immediately. But she eventually succumbed to the pressures and opted for radiation. Unfortunately, this devastated all the progress she had made over the previous months and sent her spiraling back into rapid disease progression and loss of QOL, including daily rectal and vaginal bleeding and excruciating pain.

Because of her condition and the prognosis offered by her palliative care team, Ellen decided to make one last trip to say her goodbyes to family members who still lived in Europe. But she was so ill and weak and in so much pain, we knew the two-week trip would be impossible without support. I found an anthroposophic hospital near her family home that could help with supportive care. The doctor who reviewed her records noted they could offer palliative support only, but they were willing to care for Ellen while she was there.

I recall getting a call from Ellen only about a week into her care with this hospital. She sounded brighter and more hopeful than ever. She had been receiving daily escalating doses of IV mistletoe therapy (fraxini) and SC Iscador® Mali, along with *Helleborus niger.* She also received whole body and local regional hyperthermia, hydration IVs, eurythmy, hydrotherapy, and art therapy. She felt a sense of homecoming on so many levels—seeing one side of her family of origin and being at peace with them, as well as accessing healing methods that she remembered from many years before. Ellen finally had a space where *she* was the one being cared for and not the one doing all the caring. She experienced a complete shift in her pain, her QOL, and her outlook.

Once Ellen returned home, her AM physician and I encouraged her to continue the fraxini mistletoe, along with her low-carbohydrate diet, and stress reduction practices. Now that she was off the opiates, we added LDN to her treatment program. I was new

to providing IV mistletoe, but embraced learning how, especially after seeing Ellen's transformation.

Ellen continued to feel better and gain strength. By the time she had returned from Europe, she could no longer palpate the vaginal or abdominal masses. Her labs, over the next two months, reflected this transformation as well, with her Trifecta Labs near perfect (only a slightly elevated CRP), and the lowest CEA and CA125 we had seen in our work together. Ellen was no longer cachectic, and her A1C was 5.3, near normal range. Her insulin was 4 and her IGF-1 was elevated at 167, but this was still an improvement and was likely in relation to her still having somewhat poor sleep and her estrogen-dominance patterns.

She had a scan at one month after her return from Europe. *All metastasis had resolved,* outside of one residual spot on her colon. Her conventional oncology team chose to focus entirely on that one spot, telling her she was still expected to be dead soon and that she needed palliative chemotherapy. Ellen was devastated and reached out to me. I was devastated that her team overlooked the miracle of her health and the improvements in the rest of her terrain, and instead focused on one tiny spot. None of us expected her to survive, but we certainly expected at least curiosity about her improvements and some willingness to celebrate any victory, big or small.

I encouraged her to contact the doctor back in Germany. His response: "Continue your current protocol, and come back in two months for one more round of anthroposophic treatment."

Ellen had a major choice to make at that moment: to give in to fear or to choose to continue the path that was clearly working for her body. She chose. She didn't let fear dictate her decisions from then on. In September of 2014, she returned to the European hospital and received another series of IV mistletoe and hyperthermia. A month after returning home, she had a follow-up scan. It showed no evidence of disease (NED)! Despite that news, her team at a well-known cancer center insisted that it wouldn't hold, and her prognosis was the same.

Ellen continues to be cancer-free today. I have lost touch with her in recent years, but we check in periodically, and I keep finding her thriving. It was thanks to her that I learned how to apply

IV mistletoe therapy here in the U.S. That led to consulting with a team of researchers at Johns Hopkins Hospital on how to incorporate this protocol into their current clinical trial. I remain grateful for what Ellen's cancer journey taught me. Her experience has blessed hundreds, if not thousands, of others.

CASE STORY 2: GEORGE

Many Roads to Melanoma				
Physician: Dr. Nasha Winters	**Patient**: George	**First seen**: Spring 2011; third diagnosis Dec 2016	**Age:** 56 in 2011	**Sex:** Male
Cancer Type & Stage:	Initially undisclosed previous diagnosis: 2005 Stage I, fully excised, right arm melanoma. 2011 biopsy confirmed prostate cancer Gleason 7 2016 metastasis of the 2005 melanoma; in colon, lungs, and nodes in right armpit.			
Risk Factors:	Toxic Burden: Alcoholism. Immune Function & Biorhythm: Low Vitamin D3 levels, high stress from corporate world. Metabolic & Digestive Function: Diet of highly processed foods, heavy red meat, no vegetables.			
Significant Labs:	High trifecta (CRP/ESR/LDH), high ferritin, high RDW and serum calcium, high fibrinogen, and high homocysteine. Autoimmune thyroiditis. HbA1C, insulin, and IGF-1 showed he was diabetic. *During Stage IV Melanoma:* CRP 14.7, ESR 56, and LDH 629 (after SOC). LDH served as tumor marker to monitor therapy response.			

George sought my care regarding adjuvant support during prostate cancer treatment in 2011. He came to me thanks to the urging of his wife—he was *very* skeptical of all I had to offer and questioned me relentlessly. (Later that became my favorite thing about him, as he pushed me to be ready with answers to such scrutinizing questions.) George was from a very conservative background with great trust in the SOC model. But he was also concerned about losing sexual function if he followed the treatment recommendations of his medical team. This prompted him to consider other options.

George had been watching his rising PSAs for years, with negative findings on his digital rectal exams (DRE). But he finally submitted to a biopsy, which revealed an adenocarcinoma diagnosis and Gleason score of 7. He refused the SOC interventions of prostatectomy, local radiation, and androgen deprivation therapy.

For decades, George's diet and lifestyle were characterized by excess alcohol, red meat, processed foods, late-night business meetings, international travel, hours of sitting, no exercise, and obesity. All of it had finally caught up with him. He knew it too. Just before meeting with me, he'd made some significant lifestyle changes. He recently quit drinking and joined a twelve-step program, transferred from his stressful company, and was attending marital counseling.

Still, just looking at George's health picture and labs, even aside from the cancer, there were so many complicating factors. He had autoimmune thyroiditis. He was fully diabetic. He had gout. He had hyperlipidemia. Basically, he was a hot mess.

I kept it simple. First, I strongly encouraged his sobriety and therapy, then added some targeted supplements: fish oil, vitamin D3, an herbal anti-inflammatory blend, and modified citrus pectin. The biggest change was the process of cleaning up his diet. He absolutely had to do this. I prescribed a Mediterranean low-carbohydrate diet with no grains or legumes and predominantly fish as his protein source. We also initiated subcutaneous (SC) mistletoe therapy with Helixor A, three times per week.

George had been in serious trouble, and this therapeutic plan was focused simply on turning off the spigot of pro-inflammatory foods, providing targeted supplements according to his labs, and incorporating mistletoe therapy. That's it. The transformation this fostered was dramatic. Within two months, George lost 36 of the 80 pounds he needed to lose, he was no longer symptomatic with gout or his other aches and pains, and his outlook on life was more positive.

Within three months, his PSA went from 11.5 to 6.7, his HbA1C dropped from 6.7 to 5.6, and his insulin plummeted from 22 to 7. His PAP went from 4.5 to 2.3 (I like it below 2). His CRP went from 8.4 to 1.2! Essentially, his inflammation was drastically reduced and near normal levels. His wife noted a huge change in his personality, too. His usual rage patterns were now few and far between, and they were enjoying a rekindled connection with one another. We continued with three-month check-ins and labs for two years.

Across the board, George's health turned around. Eventually he lost the full 80 pounds that he wanted to lose, and he felt fantastic. His conventional practitioners wanted him to come in for follow-up exams, but in George's usual way, he refused. He was watching the labs that I had insisted on, and he was personally experiencing the vast improvements in his health. He felt that was good enough. But after two years of our ongoing health-oriented care, he did go in for a follow-up MRI, DRE, and blood tests. All these confirmed that his prostate cancer was in remission. He and his wife were trying to retire and move to another town, so I congratulated him, and we agreed to check in annually. But I didn't hear from George again for quite some time.

In December 2016, after three years of no communication, I received a phone call. George had been hospitalized with severe GI symptoms (serious pain and constipation), which led to a CT scan that noted a mass in his transverse colon. An emergency surgery to remove the mass and create an ostomy elucidated a malignant melanoma. Further imaging revealed metastasis to his lungs and lymph nodes in his right armpit—the same arm where he'd had melanoma before. Only now did George mention his history with this other cancer. He'd had melanoma, six years before he first consulted with me. It had been fully excised, and he thought it didn't matter, so he didn't mention it during our intake. Melanoma has a very high recurrence rate; his conventional team should have been monitoring him for this. I would have myself if I'd known about it! Now he had a Stage IV recurrence.

Though George had completely recovered from prostate cancer, he had slowly let his diet and lifestyle slide back to his pre-cancer ways, gaining back about half of the 80 pounds he had lost and taking on another major work project that was loaded with stress.

While recovering from his most recent GI surgery, he and his wife went to MD Anderson to discuss immune therapies. He was placed in a Phase I Clinical Trial, using a combination of a BRAF inhibitor (Tafinlar) and a MEK inhibitor (Mekinist), though no one ordered a molecular profile on his recently resected tissue to see if he even had the two targets addressed by those drugs.

Because he was hesitant to try anything else while on the clinical trial, he just wanted me to know his status and said that he'd

"be in touch again, once the trial was over." Then we could "get back to the terrain work." I urged him to include an integrative approach while on the trial, as I had seen some poor outcomes with such therapies, but he was insistent about waiting. At our last 2013 check-in, his Core Terrain Labs (see chapter 5) were perfect. Now, following surgery and initiating the trial therapy, his labs were more concerning than ever. I had to just hold space for him and pray he found his way back to some supportive therapies before it was too late.

Within a few months, when most of the trial participants were already succumbing to their cancers or the subsequent side effects of this drug combination, George realized this trial was not the miracle he'd hoped for. His own labs and symptoms were worsening, and his scans showed minimal (if any) response. He finally had another consult with me. He admitted he was terrified to stop what they were doing at MDA, but he was the only one still alive in his trial arm! He knew he had to do something different. We evaluated his Single Nucleotide Polymorphisms (SNPs) and learned that his VDR, CYP2R1, and MAO SNPs made him prone to depression, fear, anxiety, and addiction. His SNPs also made him vulnerable to low circulating vitamin D levels—a vitamin crucial to keeping his immune system in balance and dopamine levels on track.

On his own, George sought the counsel of a local nutritionist who put him on a raw food vegan diet that was unfortunately sugar-laden (tons of grains, legumes, and fruits). This caused his tumors to explode and progress wildly. His D3 levels worsened down to a level of 17—another major driver of melanoma process. The nodes in his armpits were now visible as well as palpable and causing discomfort and loss of mobility. His breathing was getting worse, and his recent scan also noted some new activity around the colon surgical borders. Even more, a new biopsy showed he was both BRAF- and MEK-negative, meaning the MDA trial was *never* appropriate for him, and likely worsened his outcomes.

In March 2017, again without checking with me, George started a TIL (tumor infiltrating lymphocyte), an IL2 (think fever therapy), and a PD-1 inhibitor (checkpoint inhibitor, pembrolizumab). George did have PD-1 targets on his tissue assay, so that wasn't completely off base. He took all these along with Cytoxan and

Fludarabine to wipe out his stem cells, with the plan of re-infusing his own T cells. This all sounded wonderful, but the reality was a horrifying failure.

George described the first round as "intolerable." The medical community was just beginning to learn that people with non-functioning immune systems were not good candidates for immune therapies, particularly those with high platelets, poor NLR ratio, elevated LDH, or liver disease, as well as those over the age of 52. Patients with three or more of those factors should not pursue these therapies. George had all those rule-out factors. So, this therapy combination shot him into autoimmune gastritis, worsened his Hashimoto's autoimmune thyroiditis, and caused other joint issues that we suspected were autoimmune as well. At this point, George had pursued an assortment of mis-applied therapies for his recurrent melanoma for almost two years. Finally, he was ready to allow me to support him again.

His CRP was 14.7, ESR was 56, and LDH was 629. Believe it or not, George still had a chance to remedy some of the damages—both from his own lifestyle choices and from poorly applied SOC. But I wasn't sure that we could do more than stabilize him and improve his quality of life (QOL). He agreed to take a break from the MDA therapies and work on stabilizing all his systems. I immediately started him on LDN and provided an autoimmune flare protocol that included: high-dose vitamin D3, emulsified vitamin A, fish oil, probiotics, a five-day water fast, and then two weeks of an autoimmune paleo diet, along with intermittent fasting.

We managed to stabilize George with this autoimmune protocol. Then he resumed the supportive diet that we had established for him three years before. He was able to enter into therapeutic ketosis, and I started him on SC mistletoe (pini), three times per week.

After three months of this approach, George had not only stabilized, he felt good. His LDH was seriously improved (218), and other labs were responding too. After six more months, George got confirmation via tests and scans that he was in remission. This was completely unexpected!

In addition to celebrating his remission, we were all celebrating his change in outlook and attitude as well. This second experience

with cancer had brought him through a much deeper spiritual shift. He had a clear resolve that he was never going back to the stressful, unhealthy lifestyle, and a poor diet that had set the stage for his cancers. He joined a faith community, and he and his wife were in a much better place relationally once again.

George has never resumed the MDA immunotherapy treatments, simply because he hasn't needed them. We've continued to regularly monitor his LDH as his main tumor marker. We run a twice-yearly CBC with full Trifecta Labs, and MDA continues to monitor him too. George continues his terrain-based dietary care (primarily a modified ketogenic diet) and SC mistletoe therapy. He has not taken any other treatments in the past three years. He still has some lung and lymph activity on his scans, though it is stable and not symptomatic. His labs have completely normalized, and his QOL is exceptional. He has connected deeply to his faith, and he is now finally retired and enjoying the fruits of his labor.

MISTLETOE

and the Emerging Future of Integrative Oncology

STEVEN JOHNSON, DO
NASHA WINTERS, ND, FABNO

with ADAM BLANNING, MD
MARION DEBUS, MD
PAUL FAUST, ND, FABNO
MARK HANCOCK, MD
PETER HINDERBERGER, MD

Portalbooks