

“Naturopathic Oncology: Evaluating & Treating the Oncology Terrain”

Webinar Questions Answered by Dr. Jen Green, ND, FABNO

From Dr. Green: Please remember, the 5 Foundations of Health are more important than herbs or supplements. Healthy movement, eating real food/drinking water, having healthy social connections/managing distress, sleeping well, being connected to meaning in life – these are what matter most. These are so easily neglected in our current healthcare system. They don't generate questions from folks, but if you take one thing from this lecture, please remember these foundation.

- Can you talk about how immunity-focused nutrition works when someone is undergoing immunotherapy treatment for their cancer? It's my understanding that it can blunt the impact.

Here is a wonderful 2025 article by Dr Nina Fuller Shavel on how best to support immunotherapy (checkpoint inhibitors): <https://pmc.ncbi.nlm.nih.gov/articles/PMC10890979/>

- What are the best markers in blood for inflammation?

CRP & NLR (beginning of lecture notes)

- What are the next steps you can take when a patient's hsCRP is around 17 without a pre-existing cancer diagnosis?

Try to find out the root cause, which may involve re-checking it to see how it tracks over time. Consider if it is elevated from; acute illness, sports injury, arthritis, inflammatory bowel disease, inflammatory skin disease? hsCRP isn't specific so you have to go hunting for where the inflammation is coming from.

- Can you speak about bloodroot topically for skin cancer? It is intended to help your immune system fight cancer. Lots of "internet testimonies" about this but I'm not sure about the science and efficacy.

I have sadly saw one person truly injure herself with an overly concentrated “cancer salve”. The bloodroot in it wasn't the problem, but other additives burned her chest wall. I would recommend conventional approaches (precision laser and surgical excision) for skin cancer, especially if melanoma is suspected because that is not one to mess around with/delay treatment. There is a study on niacinamide orally for preventing skin cancers: <https://pubmed.ncbi.nlm.nih.gov/22297641/>

- Is NLR useful for lymphoma?

Yes, the cut off is a little higher at 3.5-4 (<https://pubmed.ncbi.nlm.nih.gov/41143544/>)

- Is Omega-3 supplementation beneficial after chemotherapy?

Yes. Probably don't need such high doses anymore though, or can work on getting omegas through diet instead.

- When you discussed natural anti-inflammatory nutrients, do you mean encouraging those supplements or real food? Supplements can be a tricky area in oncology patients.

Whenever possible, food is first best option. However, some natural agents like EGCG or curcumin, have specific studies on specific doses so in those cases, if it is within your scope of practice, I would always try to use the same dose/type as a study eg. <https://pubmed.ncbi.nlm.nih.gov/31132111/> or <https://pubmed.ncbi.nlm.nih.gov/40898993/> I would use the same dose and actual form of curcumin to match the study.

- I have had patients ask about avoiding foods containing copper. Any evidence of this?

I haven't seen any and I don't encourage limiting copper rich foods unless it is someone who is actively doing copper chelation.

- I thought probiotics during Chemo/radiation aren't recommended. Thoughts?

The benefits of using probiotics alongside chemotherapy and radiation are extensive. There is a very slight risk of infection in severely immunocompromised individuals. Here is a summary limited to systematic reviews from KNOW AI:

Systematic reviews have extensively evaluated the role of probiotics in supportive cancer care, highlighting their potential benefits in managing treatment-related side effects and improving patient outcomes. Below is a summary of findings from systematic reviews:

- **Reduction of Chemotherapy- and Radiotherapy-Induced Diarrhea:** Probiotics have been shown to significantly reduce the incidence and severity of diarrhea caused by chemotherapy and radiotherapy. For example, a systematic review of 24 studies found that probiotics reduced chemotherapy-induced diarrhea and improved gut microbiota balance in patients with gastrointestinal cancers [1] ↗. Another review reported that probiotics reduced the incidence of diarrhea in cancer patients receiving fluoropyrimidine- or irinotecan-based chemotherapy, with a number needed to treat (NNT) of 3-5 [2] ↗.
- **Improvement in Surgical Outcomes:** Probiotics and synbiotics have been associated with better surgical outcomes in colorectal cancer patients. A systematic review of 24 randomized controlled trials (RCTs) found that supplementation reduced postoperative complications, shortened hospital stays, and improved the return to normal gut function [3] ↗. Similarly, another review highlighted that probiotics reduced surgical site infections and complications in cancer patients undergoing surgery [4] ↗.
- **Management of Oral Mucositis:** Probiotics may help prevent and reduce the severity of oral mucositis, a common side effect of cancer therapy. A meta-analysis of five RCTs showed that probiotics decreased the risk of severe oral mucositis (grade ≥ 3) and reduced its overall incidence in patients undergoing chemotherapy or radiotherapy [5] ↗.
- **Reduction of Inflammatory Markers:** Probiotics have been found to modulate inflammation in cancer patients. For instance, a systematic review on gastric cancer-related inflammation reported that probiotics reduced levels of interleukin-6 (IL-6) and increased CD4+ T-cell levels, suggesting a role in controlling cancer-related inflammation [6] ↗.
- **Improvement in Quality of Life and Cancer-Related Fatigue:** Probiotics and synbiotics have shown potential in improving quality of life and managing cancer-related fatigue (CRF). A systematic review involving colorectal and breast cancer patients found that probiotics reduced CRF severity and improved quality of life during chemotherapy [7] ↗.
- **Safety Profile:** While probiotics are generally considered safe, some systematic reviews have reported rare cases of probiotic-related infections, such as bacteremia or fungaemia, particularly in immunocompromised cancer patients. For example, a review of 25 studies identified five case reports of such infections, emphasizing the need for careful patient selection and monitoring [8a]: [8b] ↗.
- How do you feel about powdered turmeric as far as effectiveness?

Wonderful addition to food but hard to get high enough doses of curcumin from it to actually lower CRP.

- Any thoughts on using intermittent fasting for those undergoing chemotherapy?

Great question! KNOWai answer:

Several studies, including systematic reviews and clinical trials, have explored the effects of intermittent fasting (IF) as an adjunct to chemotherapy. Below is a summary of findings:

1. Reduction in Chemotherapy-Induced Toxicity:

- *A systematic review titled "Intermittent Fasting in Breast Cancer: A Systematic Review and Critical Update of Available Studies" found that IF during chemotherapy was feasible, safe, and reduced chemotherapy-induced adverse effects such as fatigue, nausea, and headaches. It also reduced chemotherapy-induced DNA damage and improved glycemic regulation (e.g., serum glucose, insulin, and IGF-1 levels). However, the data were of low quality, and no significant effects on tumor recurrence or quality of life were identified[1] ↗.*
- *A randomized clinical trial, "Intermittent fasting during adjuvant chemotherapy may promote differential stress resistance in breast cancer patients", demonstrated that IF reduced gastrointestinal toxicity (e.g., diarrhea, vomiting, and nausea) in breast cancer patients undergoing chemotherapy. The IF group also showed improved metabolic profiles, including stable glucose and reduced insulin levels[2] ↗.*

2. Improvement in Quality of Life and Fatigue:

- *A systematic review, "The effects of intermittent fasting on anthropometric indices, glycemic profile, chemotherapy-related toxicity, and subjective perception in gynecological and breast cancer patients", reported that IF reduced fatigue and improved quality of life in some studies. However, the effect on chemotherapy-related adverse effects was uncertain[3] ↗.*
- *Another study, "The effects of short-term fasting on quality of life and tolerance to chemotherapy in patients with breast and ovarian cancer", found that short-term fasting (60 hours around chemotherapy) improved quality of life and reduced chemotherapy-induced fatigue without serious adverse effects[4] ↗.*

3. Impact on Tumor Response and Immune Modulation:

- *The study "Fasting mimicking diet during neo-adjuvant chemotherapy in breast cancer patients: a randomized controlled trial study" showed that a fasting-mimicking diet (FMD) reduced chemotherapy toxicity, improved metabolic parameters (e.g., lower glucose and inflammatory markers), and increased tumor response rates (e.g., higher pathological response and radiological response rates)[5] ↗.*
- *Similarly, the "Fasting mimicking diet as an adjunct to neoadjuvant chemotherapy for breast cancer in the multicentre randomized phase 2 DIRECT trial" found that FMD improved radiological response rates and reduced chemotherapy-induced DNA damage in T-lymphocytes. However, there was no significant difference in overall toxicity between the fasting and non-fasting groups[6] ↗.*

4. Hematological and Metabolic Benefits:

- *A pilot study, "The effects of short-term fasting on tolerance to (neo) adjuvant chemotherapy in HER2-negative breast cancer patients", found that short-term fasting reduced hematological toxicity (e.g., higher erythrocyte and thrombocyte counts) and mitigated chemotherapy-induced DNA damage in peripheral blood mononuclear cells[7] ↗.*

5. Mixed Evidence on Chemotherapy Toxicity:

- *A systematic review, "Therapeutic Fasting in Reducing Chemotherapy Side Effects in Cancer Patients: A Systematic Review and Meta-Analysis", concluded that fasting regimens did not*

significantly reduce chemotherapy-related side effects compared to non-fasting diets. The evidence was moderate to high quality, but the pooled results showed no significant difference in adverse events, including neutropenia[\[8\]](#) ↗.

6. Potential for Long-Term Benefits:

- *An observational study, "The effects of short-term fasting on quality of life and tolerance to chemotherapy in patients with breast and ovarian cancer", suggested that prolonged nightly fasting (≥13 hours) may reduce breast cancer recurrence risk and improve glucoregulation, though this was not specific to chemotherapy*[\[9\]](#) ↗.

- Turkey tail in supplemental form and other herbal supplements interfere with chemotherapy, so how are you handling these contraindications with conventional therapy and naturopathic therapies?

I recommend working with someone with experience in herb drug interactions in oncology who is evidence-based. Please look at the Turkeytail slide to review the many RCT's showing a survival benefit from combining the two. This does not mean by any stretch of the imagination that many or all natural products are safe or beneficial alongside chemotherapy. It just means that we have evidence on select agents that we should consider putting into practice where the evidence is good.

- What are examples of natural health products for cortisol?

See the Cortisol slide with research links – ashwagandha is perhaps most common one used.

- Does ground beef liver as a supplement have benefits?

It can provide an alternative to supplemental iron that is well absorbed because it is heme iron. Just need to be mindful of the quality of the source because liver is a filter organ for toxins.

- Can you speak to the pros and cons of cannabis for cancer patients, either during or after treatment?

Here is a fairly recent article by Dr Donald Abrams on this topic:

<https://pmc.ncbi.nlm.nih.gov/articles/PMC8882944/>

- I've heard L-glutamine feeds cancer. What are your thoughts?

Highly controversial area and also very context dependent. Also, theoretical concerns vs animal studies vs human studies yield opposite conclusions. May not be good to use it IV during BMT but good to use it orally alongside FOLFOX. Glutamine use is highly context dependent. When in doubt, please always check the research on it before considering.

- Aren't there 2 different serum vitamin D levels to check?

I just do 25-OH vitamin D3 for simplicity.

- Immunocompromised blood cancer patients are told to avoid fresh fruits and vegetables, black pepper, due to possible food contamination. What are your thoughts?

Out of date thinking about fresh fruit/veg/neutropenic diet (although black pepper is rather spicy/hot for during chemo). Here's *KNOW* ai answer:

Recent research has increasingly questioned the efficacy of the neutropenic diet in preventing infections and improving outcomes in neutropenic cancer patients. Below is a summary of findings from the latest studies:

- **Systematic Review and Meta-Analysis: "Neutropenic diets to prevent cancer infections: updated systematic review and meta-analysis" (2019)**
This study analyzed six comparative studies (five randomized) involving 1,116 patients, 69.1% of whom underwent hematopoietic cell transplantation. The findings showed no statistically significant difference between neutropenic and regular diets in rates of major infections (relative risk [RR] 1.16; 95% CI 0.94–1.42) or bacteremia/fungemia (RR 0.96; 95% CI 0.60–1.53). In hematopoietic cell transplant patients, the neutropenic diet was associated with a slightly higher risk of infections (RR 1.25; 95% CI 1.02–1.54). No difference in mortality was observed between the two diets (RR 1.08; 95% CI 0.78–1.50). The study concluded that there is no evidence to support the use of neutropenic diets or other food restrictions in neutropenic cancer patients, recommending adherence to safe food-handling guidelines instead[1] ↗.
- **Meta-Analysis: "Effect of Neutropenic Diet on Infection Rates in Cancer Patients With Neutropenia: A Meta-analysis of Randomized Controlled Trials" (2019)**
This meta-analysis included five randomized controlled trials with 388 patients, primarily with acute myeloid leukemia (AML), acute lymphoblastic leukemia (ALL), or sarcoma. Infection rates were similar between the neutropenic diet group (53.7%) and the unrestricted diet group (50%), with a pooled risk ratio (RR) of 1.13 (95% CI 0.98–1.30; $p=0.10$). The study concluded that neutropenic diets were not associated with a decreased risk of infection, questioning their continued use[2] ↗.
- **Systematic Review: "Lack of Efficacy of the Neutropenic Diet in Decreasing Infections among Cancer Patients: A Systematic Review" (2019)**
This review evaluated 11 studies and found no evidence that neutropenic diets reduce infection rates or mortality among cancer patients. It highlighted the lack of a uniform definition for neutropenic diets across institutions and recommended adherence to FDA food safety practices instead of restrictive diets[3] ↗.
- **Systematic Review: "A Neutropenic Diet in Haemato-Oncological Patients Receiving High-Dose Therapy and Hematopoietic Stem Cell Transplantation: A Systematic Review" (2025)**
This review included five randomized controlled trials with 510 adult patients undergoing high-dose chemotherapy for hematological malignancies. None of the analyzed endpoints (fever, systemic infections, gastrointestinal infections, mortality, nutritional status, or hospital length of stay) showed a significant advantage of the neutropenic diet compared to the control group. On the contrary, the neutropenic diet tended to negatively affect nutritional status, suggesting the need for clinical practice adaptations[4] ↗.
- **Clinical Practice Guideline: "Use of food restrictions to prevent infections in paediatric patients with cancer and haematopoietic cell transplantation recipients: a systematic review and clinical practice guideline" (2025)**
This guideline, based on a systematic review of eight randomized controlled trials, made conditional recommendations against the routine use of food restrictions in pediatric cancer patients undergoing chemotherapy or hematopoietic cell transplantation. The panel emphasized the importance of adhering to local food safety practices rather than implementing restrictive diets, citing a lack of clinically significant benefits and potential negative impacts of food restrictions[5] ↗.
- **Observational Study: "Evaluating the efficacy and impact of neutropenic diet in pediatric hematology patients: a longitudinal cohort study on adherence, clinical outcomes, and socioeconomic factors" (2025)**
This study followed 100 pediatric hematology patients over 18 months and found no correlation between adherence to a neutropenic diet and reduced hospitalizations, febrile neutropenia, sepsis, or mortality. Adherence rates declined over time, and the diet imposed financial burdens on families. The study concluded that strict adherence to the neutropenic diet is not supported by evidence and recommended focusing on safe food handling and hygiene practices instead[6] ↗.

*Could you please explain more about magnesium deficiency? I have always used blood tests to test for deficiency and had never heard of this being inaccurate before. Notes from a paper: **Evaluating Mg in oncology patients is challenging because Mg is largely intracellular. Only 0.3% of body Mg is present in the plasma and less than 1% is located in the extracellular space. A body deficit can easily be present with a normal serum Mg. In one study of patients taking Cisplatin, serum Mg was not a sensitive or reliable indicator of depletion compared to skeletal muscle Mg levels [1]. Despite the apparent lack of sensitivity of serum Mg to tissue Mg depletion, hypomagnesaemia is still very prevalent, highlighting how severe Mg deficiency can be in this population. Urinary Mg may provide a sensitive measure of Mg status for PBC treated patients (with less than 1 mmol/day indicating deficiency) and can be considered for future trials. The parenteral Mg load test is another potentially more accurate measure [1]. However, both tests require lengthy urine collections which are not realistic for daily practice. Clinical screening for Mg deficiency is advised as an adjunct to current testing of serum Mg.***

- Do you see patients in all states if we wanted to refer to you?

Yes, thank you for thinking of referring.

- What does detox support with weight loss consist of?

Treatment is always individualized but think about supporting all of the ways we eliminate: hydration for urine, fiber for stool, baths/exercise/sauna for sweat, lymphatic massage/castor oil packs for lymph, cholagogues/choleretics for liver etc.

- What is the range of supplements that you would recommend for a patient? And how do you reconcile adding supplements when patients with no appetite can barely get food in?

It is our job to meet people wherever they are at. If appetite is low, supplements must be limited. Some people prefer powders to capsules and visa versa, some people will take a smoothie with added support, others won't use a blender. Our job is to meet our patients wherever they are. The goal is not to stuff them full of supplements – it is to prioritize the ones that are most important for the unique individual and the unique context. In Naturopathic Oncology we do have an obligation to always address the 5 Foundations of Health...(most important slide in my talk, but not controversial so no one asks about it.)

- How much melatonin do you usually recommend?

Most studied dose is 20mg at night (multiple meta-analysis).

- What type of zinc supplement did you say was the best?

Citrate or glycinate

- What is the evening cortisol formula?

¹ loading dose of Mg sulphate (0.25 mmol kg⁻¹ body weight) in 250ml 0.9% saline over 1 h and collecting urine for 24h. Excretion of less than 80% of the loading dose indicates deficiency.

There are multiple brands who offer combinations. I use more than one brand because they differ slightly in which herbs they contain so I customize them to the person (no one size fits all). Some examples include Cortisol Manager, Cortisol Calm and Sleep Thru.

- What about copper deficiency concerns with long-term Zinc supplementation? I worked with an oncologist to identify Cu deficiency in a patient related to chronic Zn supplementation. I've always abided by a limit of 3 months, but perhaps I should reconsider based on these recommendations. Thoughts?

If someone is unlikely to recur, I agree with keeping copper levels normal. However, if someone has a very high chance of recurrence e.g. Triple negative breast cancer stage 3, or has an advanced cancer, then I would allow the deficiency because there are studies and current ongoing clinical trials on maintaining copper below normal level for years with TM.

- For patients at increased risk, such as BRCA 1/2+, do you recommend a specific mushroom or mushroom blend for prevention specifically?

Since this will be long term support, you can rotate the mushrooms over time. I teach a 90 min class on the difference between the various medicinal mushrooms from both a Chinese Medicine perspective and a co-morbidities perspective. Best to individualize them as a person since we don't have any BRCA specific research on mushrooms. It's also OK to use combinations e.g. 5 Defenders by Real Mushrooms for example.

- High-dose vitamin C during cancer treatment has been controversial. What are your thoughts?

I assume you are talking about IV Vitamin C vs oral. In curative intent chemotherapy, I don't personally recommend either high dose oral or IV vit C. In pancreatic cancer, IVC alongside chemo greatly extended survival: <https://pmc.ncbi.nlm.nih.gov/articles/PMC11491967/> It all depends on the context.

- What are your thoughts on high-dose omega-3 (over 1 g) being a risk factor for a-fib?

Great question! Yes, there is a slight risk of new A Fib: Meta-analyses of randomized controlled trials demonstrate that high-dose omega-3 supplementation (1.8-4 g/day) increases AF risk by approximately 24% (absolute risk 4.0% vs 3.3%). So, the absolute risk is 0.7% more. Have to balance the 0.7% risk with what the expected benefits are e.g. Better survival rates in some contexts.

- Since the FDA does not regulate supplements, how do you instruct patients to find a quality product, and what brands do you recommend?

I rely on ConsumerLabs and EmersonEcologics quality assurance programs. I also like brands like Nature's Way/Integrative Therapeutics which go through Germany's quality controls, and small, more accountable family owned brands like Now Foods, NBI, Seeking Health, Vitanica, HerbPharm, Gaia. Other trusted brands are Designs for Health, Thorne, Metagenics, Klaire Labs. Really, none of them are perfect is the truth. Please don't trust amazon though because there is widespread fraud being reported by pretty much all the major brands (imposters on amazon). Fullscripts is preferred to amazon for this reason.

- Best protein supplement if plant-based Mediterranean is considered healthy and anti-inflammatory, is a plant-based protein supplement recommended? You mentioned that you typically recommend Whey protein.

For active treatment and cachexia (I'm Canadian so I say it cahexia), I recommend whey protein. For survivorship, protein requirements aren't so high, so I love things like organic soy milk, hemp hearts, sprouted pumpkin seeds, Orgain vegan protein powder, etc.

- What is the dosage for turkey tail during chemo and do you recommend a dosage for prevention?

3g (5 caps typically) is dose used during chemo. For prevention, it's a judgement call for how many pills they can handle (or if they'll agree to put the powder in their coffee).

- What is your thoughts on hair testing for values?

Not sure how valid it is.

- I work in acute long-term care, and many of the MDs do not allow supplements like this from home to be taken (turkey tail, etc.) or they would not pass our pharmacy. What can I do to help offer these to patients in-house?

The 5 Foundations of Health are more important than supplements. Healthy movement, eating real food/drinking water, sleeping well, having healthy social connections/managing distress, asking people what matters most to them right now – these are what matter most.

- Is there a preferred way of providing curcumin? Natural root, tablets, liquid, as in wellness shots?

I use a variety of forms depending on the context – Curcumin phytosome, C3 curcumin, theracurmin (water based), BCM95 are main kinds. New liposomal forms are also being studied but not commercially available. Curcumin is very poorly absorbed so all of these are attempts to get it better absorbed.

- Can turmeric act as an anticoagulant, and isn't somewhat estrogenic?

A few studies to look at: In healthy volunteers, curcumin 500 mg/d 3 weeks, alone or with aspirin 100 mg did not increase antiplatelet effects or bleeding riskⁱⁱ.

In an RCT, perioperative oral curcumin 2000mg doses 8 times over 4 d had no beneficial effects in people undergoing abdominal aortic aneurysm repair. Curcumin did not affect risk of bleedingⁱⁱⁱ.

Turmeric is not estrogenic in mice and people (but it is in some petri dishes): In a small study, women with breast cancer who took curcumin had breast cancer cell death that occurred through the p53 pathway: [Disposition of Dietary Polyphenols in Breast Cancer Patients' Tumors, and Their Associated Anticancer Activity: The Particular Case of Curcumin - PubMed \(nih.gov\)](#)

In two systematic reviews involving many animal studies on curcumin for breast cancer, curcumin actively shrinks breast cancer volume and reduces cancer stem cells [In Vivo Efficacy and Toxicity of Curcumin Nanoparticles in Breast Cancer Treatment: A Systematic Review - PubMed \(nih.gov\)](#)

[Antitumor Properties of Curcumin in Breast Cancer Based on Preclinical Studies: A Systematic Review - PubMed \(nih.gov\)](#)

It's extremely common to see in vitro studies contradict mouse studies and human studies. It's especially frustrating when mouse studies contradict human studies, which happens a lot in oncology research. That's why KNOWoncology is limited to human-only studies...

ⁱ. Lajer H, Bundgaard H, Secher NH, Hansen HH, Kjeldsen K, Daugaard G. Severe intracellular Mg and potassium depletion in patients after treatment with cisplatin. *Br J Cancer* 2003; 3;89(9):1633-7

ⁱⁱ <https://pubmed.ncbi.nlm.nih.gov/28732813/>

ⁱⁱⁱ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6205831/>

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