



# Nutrition, Physical Activity, Body Weight, and Cancer Survivorship

**2022**

A 6-Part Informational Series for Healthcare Teams



## Topics of Interest to Cancer Survivors





## TOPICS OF INTEREST TO CANCER SURVIVORS

This is brief 6 of 6 in the *Nutrition, Physical Activity, Body Weight, and Cancer Survivorship* series for healthcare teams that work with cancer survivors.

### Supplements

The use of vitamins, minerals, and other dietary supplements remains controversial.<sup>1</sup> There is compelling evidence against the use of select supplements in certain oncology populations,<sup>2</sup> and many cancer experts advise against taking supplements after treatment or limiting supplements to those needed to treat a deficiency.

There are several ways that supplements can cause problems for people during cancer treatment. For example, some dietary supplements can cause skin sensitivity and severe reactions when taken during radiation treatment. People who are getting radiation treatments should talk to their doctors before taking any supplement.

People getting chemotherapy may be at higher risk for drug interactions if they take dietary supplements. There is also concern that antioxidants might interfere with cancer cell-killing treatments. Cancer experts often recommend that patients avoid dietary supplements altogether until their cancer treatment is over.<sup>3</sup>

It is important to approach supplements with caution because poorly-regulated supplements can cause harm.<sup>4</sup> Patients should be assessed for nutritional deficiencies before supplements are recommended. Also, consider reserving the use of supplements for chronic conditions such as osteoporosis and macular degeneration that are supported by evidence for the likelihood of benefits and low risk of harm.<sup>1</sup>



## Special Diets

While undergoing treatment for cancer, good nutrition is vital.<sup>5</sup> The scientific support for some special diets is described below.

### Vegetarian or Vegan Diet

Vegetarian diets tend to be lower in saturated fat, high in fiber and vitamins, and do not include red or processed meat, and therefore may be helpful for cancer risk reduction. Many studies of vegetarians indicate a lower risk of cancer overall compared to people who also eat meat. But it is less clear whether vegetarian diets provide special health benefits over diets that include smaller amounts of animal products than are typically consumed in Western diets.

There is very little evidence on the helpfulness of vegan or vegetarian diets while undergoing cancer therapy. The available evidence supports the recommendation of a dietary pattern containing mostly foods from plant sources, with limited if any intake of red and processed meats, to reduce new cancers.

### Macrobiotic Diet

A macrobiotic diet is a high-carbohydrate, low-fat, plant-based diet consisting of 35-to 50% (by weight) whole grains, 25-35% vegetables, 5-10% cooked vegetables, and sea vegetables, 5-10% fish, and 5-10% soup. There are anecdotal reports of the effectiveness of such a diet, but no peer-reviewed studies of the diet have been published in scientific journals. Concerns about the diet include potential delays in conventional treatment for cancer and risks associated with nutrition deficiencies.<sup>6</sup>



### Ketogenic Diet

A ketogenic diet is a low-carbohydrate diet that encourages the body to get its energy from fats and protein. In theory, following a ketogenic diet during cancer treatment will reduce the availability of glucose for use by tumors and may reduce tumor activity.

Some preliminary studies in mice, and small studies in humans, suggest a benefit for certain types of cancer. However, more research is needed before any recommendations can be made as to the effectiveness of a ketogenic diet for symptom and disease management. In addition, some studies indicate that a ketogenic diet may be contraindicated for some cancer patients depending on cancer type and treatment, so patients should consult with a registered dietitian before adopting this diet.

### Intermittent Fasting

Intermittent fasting is a dietary pattern where people interleave periods of fasting and regular eating. There are many interleaving patterns variations, which are often expressed in hours (16 fasting / 8 eating) or days (alternate-day fasting). In some variations, a portion of the normal daily caloric intake (such as 25%) may be consumed on fasting days.

Recent reviews of the evidence on intermittent fasting during cancer treatment suggest that there may be some benefit for slowing tumor progression, reducing toxicity, and increasing the effectiveness of chemotherapy.<sup>7</sup> However, most of the studies to date are preclinical (animal and in vitro) and not generalizable to humans. More clinical studies are needed to establish clinical efficacy and safety before recommendations for intermittent fasting can be made for cancer patients.<sup>8</sup>



## Sleep

Many cancer survivors have difficulty sleeping, even years after they are diagnosed. Almost 40% of cancer survivors have trouble sleeping up to five years later. Sleep issues can be due to cancer-related physical or emotional distress, fears about cancer recurrence, or financial worries. Sleep problems can affect all aspects of daily life.<sup>9</sup>

Because most sleep problems are self-reported by patients, it is vital to give them the tools they need to identify and manage their sleep problems. Some signs of sleep problems are trouble falling asleep or staying asleep, waking up too early, waking up in the middle of the night, and feeling tired during the day. A more comprehensive list of questions to ask patients about their sleep habits can be found on the ACS [Managing Sleep Problems](#) web page. Many patients find it helpful to keep a sleep diary.

Patients can also develop a sleep hygiene plan that includes sleep testing, lifestyle or medication changes, or sleep therapies. Cognitive-behavioral interventions can be implemented to help with relaxation, and exercise can help to promote better sleep.

## Emotional and Mental Health

Cancer has many psychosocial effects on both patients and their loved ones. These effects include difficulty coping, feelings of isolation, struggles with decision making, financial stress, difficulty sharing emotions, grief, and fear of death and dying, among other things. Cancer can also generate feelings of anxiety, depression, and distress.<sup>10</sup>

There are many resources to help cancer patients and survivors deal with mental health and the psychosocial effects of cancer. Common mental health supports include counseling, education, and support groups. Physical activity has also been shown to improve symptoms of depression and anxiety in cancer survivors (see Brief #3 [Physical Activity for ACSM Physical Activity Guidelines](#)). Patients should be encouraged to consider their options and find the support that is right for them.

Most insurance plans cover some counseling. However, providers should also stay informed about free services in their hospital or clinic so they can refer patients who cannot pay for counseling services.<sup>10</sup>



## Marijuana/Cannabis

The use of marijuana, also called cannabis, is currently legal for medical reasons in 36 states and the District of Columbia. A number of small studies of smoked marijuana found that it can be helpful in treating nausea and vomiting from **cancer chemotherapy**, and a few studies have found that inhaled (smoked or vaporized) marijuana can be a helpful treatment of **neuropathic pain** (pain caused by damaged nerves). There are no studies in people of the effects of marijuana oil or hemp oil.<sup>11</sup>

There are currently two drugs based on marijuana compounds that have been approved by the US Food and Drug Administration (FDA) for medical use – **Dronabinol (Marinol®)** contains THC and is approved to treat nausea and vomiting caused by cancer chemotherapy; and **Nabilone (Cesamet®)** is a synthetic cannabinoid that acts much like THC and can be used to treat nausea and vomiting caused by cancer chemotherapy when other drugs have not worked.

While there have been some early clinical trials of cannabinoids in treating cancer in humans, there is not currently sufficient evidence to indicate they can help to control or cure the disease. Thus avoiding or delaying conventional medical care for cancer and relying on marijuana alone as treatment may have serious health consequences.

Marijuana effects are not always beneficial. For example, it can cause disorientation, reduce control over body movements, and can cause unpleasant feelings of anxiety or paranoia. Moreover, smoked marijuana delivers harmful substances such as those found in tobacco smoke to the user and people close by. Finally, some chronic users can develop a dependence on marijuana.

The patient and the healthcare provider should use a shared decision-making process when considering marijuana, balancing the evidence of benefit and harm to the patient, the patient's preferences and values, and any laws and regulations that may apply.



## Stress

Cancer affects many dimensions of a survivor's life and can create high levels of stress and a poor quality of life that can hinder progress toward recovery. Acknowledging that anxiety and distress are normal symptoms in cancer survivors is a good first step in helping them to manage their stress levels.

Many interventions can help to manage stress, including simple strategies such as spending time outside, eating well, sleeping well, relaxing, journaling, and engaging in new hobbies. Deep breathing, visualization, meditation, and yoga can also help survivors to relax and manage their stress.<sup>12</sup> Other methods include acceptance and commitment therapy, cognitive-behavioral therapy, storytelling, exercising together, and telehealth consultations for those who live in rural areas.<sup>13</sup>

Combined medical and psychological interventions (MPI) that include psychoeducation, relaxation technique-guided imagery, and cognitive therapy can have positive impacts on the stress and quality of life of cancer patients.<sup>14</sup>

# Resources and References





## Resources – For Patients

Source	Resources	Link
American Cancer Society	What you need to Know First about Dietary Supplements webpage	<a href="https://www.cancer.org/treatment/treatments-and-side-effects/complementary-and-alternative-medicine/dietary-supplements/intro.html">https://www.cancer.org/treatment/treatments-and-side-effects/complementary-and-alternative-medicine/dietary-supplements/intro.html</a>
American Cancer Society	What are Sleep Problems webpage	<a href="https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/sleep-problems/what-are-sleep-problems.html">https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/sleep-problems/what-are-sleep-problems.html</a>
American Cancer Society	Coping with Cancer webpage	<a href="https://www.cancer.org/treatment/survivorship-during-and-after-treatment/coping.html">https://www.cancer.org/treatment/survivorship-during-and-after-treatment/coping.html</a>
American Cancer Society	Six Tips for Managing Stress webpage	<a href="https://www.cancer.org/latest-news/6tipsformanagingstress.html">https://www.cancer.org/latest-news/6tipsformanagingstress.html</a>
National Association of Chronic Disease Directors	Talk to Someone: Anxiety and Distress simulated conversation for cancer survivors	<a href="https://simulations.kognito.com/ncsw/anxiety/">https://simulations.kognito.com/ncsw/anxiety/</a>
American Cancer Society	Marijuana and Cancer	<a href="https://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/complementary-and-integrative-medicine/marijuana-and-cancer.html#references">https://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/complementary-and-integrative-medicine/marijuana-and-cancer.html#references</a>
American Cancer Society	Social Support - Cancer Survivors' Network Webpage	<a href="https://csn.cancer.org">https://csn.cancer.org</a>



## REFERENCES

1. Rock CL, Thomson C, Gansler T, et al. American Cancer Society guideline for diet and physical activity for cancer prevention. *CA: A Cancer Journal for Clinicians*. 2020;70(4):245-271. doi:10.3322/caac.21591
2. Miller Mf, Bellizzi Km, Sufian M, Ambs Ah, Goldstein Ms, Ballard-Barbash R. Dietary supplement use in individuals living with cancer and other chronic conditions: a population-based study. *Journal of the American Dietetic Association*. 2008;108(3). doi:10.1016/j.jada.2007.12.005
3. American Cancer Society. Risks and Side Effects of Dietary Supplements. Cancer.org. Published August 30, 2021. Accessed December 29, 2021. <https://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/complementary-and-integrative-medicine/dietary-supplements/safety.html>
4. American Cancer Society. Dietary Supplements. Cancer.org. Published 2015. Accessed December 29, 2021. <https://www.cancer.org/content/dam/CRC/PDF/Public/6730.00.pdf>
5. Lis Cg, Gupta D, Lammersfeld Ca, Markman M, Vashi Pg. Role of nutritional status in predicting quality of life outcomes in cancer—a systematic review of the epidemiological literature. *Nutrition journal*. 2012;11. doi:10.1186/1475-2891-11-27
6. Lerman RH. The macrobiotic diet in chronic disease. *Nutrition in clinical practice: official publication of the American Society for Parenteral and Enteral Nutrition*. 2010;25(6). doi:10.1177/0884533610385704
7. Sadeghian M, Rahmani S, Khalesi S, Hejazi E. A review of fasting effects on the response of cancer to chemotherapy. *Clinical nutrition (Edinburgh, Scotland)*. 2021;40(4). doi:10.1016/j.clnu.2020.10.037
8. de Groot S, Pijl H, van der Hoeven JJM, Kroep JR. Effects of short-term fasting on cancer treatment. *J Exp Clin Cancer Res*. 2019;38. doi:10.1186/s13046-019-1189-9
9. Strollo SE, Fallon EA, Gapstur SM, Smith TG. Cancer-related problems, sleep quality, and sleep disturbance among long-term cancer survivors at 9-years post diagnosis. *Sleep medicine*. 2020;65. doi:10.1016/j.sleep.2019.10.008
10. American Cancer Society. Psychosocial Support Options for People with Cancer. Cancer.org. Published September 3, 2020. Accessed December 29, 2021. <https://www.cancer.org/treatment/survivorship-during-and-after-treatment/coping/understanding-psychosocial-support-services.html>
11. American Cancer Society. Marijuana and Cancer. Cancer.org. Published August 4, 2020. Accessed December 29, 2021. <https://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/complementary-and-integrative-medicine/marijuana-and-cancer.html>
12. American Society of Clinical Oncology. Managing Stress. Cancer. Net. Published 2019. Accessed December 29, 2021. <https://www.cancer.net/coping-with-cancer/managing-emotions/managing-stress>
13. National Cancer Institute. Managing Anxiety and Distress in Cancer Survivors. Cancer.gov. Published April 30, 2020. Accessed December 29, 2021. <https://www.cancer.gov/news-events/cancer-currents-blog/2020/cancer-survivors-managing-anxiety-distress>
14. Barre PV, Padmaja G, Rana S, Tiamongla. Stress and Quality of Life in Cancer Patients: Medical and Psychological Intervention. *Indian J Psychol Med*. 2018;40(3):232-238. doi:10.4103/IJPSYM.IJPSYM\_512\_17.