Therapeutic Nutrition
Dr. Gina L. Nick

Longevity Through Prevention, Inc.
www.LTPonline.com
President, California Naturopathic Doctors Association
www.calnd.org

Sickness Syndrome Causes Depression in Cancer Patients

Cancer treatment programs typically focus on eradicating the cancer tumor and/or reducing future incidences of cancer, using any combination of surgery, chemotherapy and/or radiation. Unfortunately, both the disease itself and the therapy designed to control or eliminate it increase the patient's stress level.

According to research, an unhealthy stress response (as opposed to a eustress[1] or a healthy stress response) has been shown to predispose a cancer patient to Sickness Syndrome[2] (an estimated incidence rate of 30 percent, compared to five to 10 percent in the general medical population).[3] [4] [5] [6] [7] [8] Since cancer-related symptoms of Sickness Syndrome are associated with faster tumor progression and shortened survival time (Table 1), it is all the more imperative that cancer patients are taught appropriate strategies to support a healthy stress response.

The Causes of Sickness Syndrome: The Link between Cancer and Depression

One important cause of Sickness Syndrome in cancer patients is chronic stress, or distress.[9] [10] [11] In a normal and healthy state, stress is actually a positive reaction. It enhances your long term memory, fuels your muscles, and helps you to quickly respond to an immediate threat. However, if you experience repeated stressful events (physical, mental or emotional) without giving your body a chance to recover from each one of those events, you will eventually experience distress, which is a negative stress reaction — and the cause of nine out of 10 visits to a doctor's office in the US today.

Distress leads to your body's inability to use cortisol effectively. A hormone secreted by your adrenal stress glands (two glands that sit atop the kidneys that play a major role in regulating the stress response), cortisol is the key to making sure that your body does not overproduce inflammatory cytokines (which cause silent inflammation in the body, associated with heart disease, cancer, rheumatoid arthritis, depression, anxiety and sleep disorders).[12] [13] [14] You can view cortisol as the switch that turns off the production of these inflammatory cytokines when the time is right.

However, chronic stress or insufficient recovery time from stressful events can diminish your body's ability to rely on cortisol to regulate the inflammatory response. This leads to production by your brain of those same inflammatory cytokines — the process that causes Sickness Syndrome.

Sickness Syndrome can be caused by an inflammatory disorder or a somatic illness that has an inflammatory component (e.g. heart disease, Alzheimer's disease, cancer, obesity, rheumatoid arthritis, fibromyalgia, chronic fatigue syndrome), an inability to handle stress in a healthy way (due to post traumatic stress, major traumatic events, or compromised cortisol function), or a hormone imbalance (e.g. menopause, PMS, andropause).

In either situation, depression inevitably shows up as a symptom - and is often more painful to live with than the situation or illness. And for cancer patients, the incidence of depression correlates conversely with both mean length of survival and serum cytokine level, raising suspicions that proinflammatory cytokines are involved in development of feelings of despair, depression and hopelessness that occur in many cancer patients — not simply a neurotransmitter imbalance. And to further exacerbate the problem, chronic stress is being shown in animal models to promote further tumor growth.[15] (See Table 1)

Table 1: Prevalence of Depression in Various Cancer Types Correlates Inversely With Mean Length of Survival and Directly with Serum Cytokine Level [16]

CANCER TYPE	PREVALENCE OF DEPRESSION	5-YEAR RELATIVE SURVIVAL RATE	SERUM IL-6 LEVELS (PG/ML)
Pancreatic	50%	4.4%	Not determined
Gastric	11%	22.5% (stomach)	10.0–12.5
Oropharynx	22%–40%	37.3%	79.6
Colon	13%–25%	62.3%	35.7
Lymphoma	17%	70.6%	2.0–4.6 (median)
Acute leukemia	1.5%	46.3% (all leukemia)	Not determined
Gynecologic	23%	71.4%	55.6 (median, ovarian)
Breast	10%–26%	86.6%	6.0–86.0
General medical	5%–10%	100%	Varies by condition

Values shown are means, unless otherwise indicated. IL = interleukin

Diagnosing Sickness Syndrome in Cancer Patients

Central (brain-mediated) Sickness Syndrome symptoms drastically affect the quality of life in cancer patients[17]. The most obvious physiological symptoms of Sickness Syndrome in those individuals suffering from cancer are: anhedonia (an inability to experience joy), decreased cognition and impaired memory and an exaggerated response to pain (lowered pain threshold).[3] [4] [5] [6] [7] Related physical symptoms include difficulty falling asleep or staying asleep, difficulty concentrating and fatigue.**Error! Bookmark not defined. Error! Bookmark not defined.** [18] [19]

The following emotional or physical symptoms are linked to Sickness Syndrome.

Emotional Symptoms

- Sadness throughout the day, nearly every day
- Loss of interest in or enjoyment of your favorite activities

- Feelings of emptiness or hopelessness
- Feeling stressed, nervous, or overwhelmed
- Trouble concentrating or making decisions
- Feelings of worthlessness
- Excessive or inappropriate feelings of guilt
- Irritability or restlessness
- Thoughts of death or suicide

Physical Symptoms

- Fatigue or lack of energy
- Difficulty falling asleep or staying asleep
- Wake up feeling tired
- Change in appetite or weight
- Aches and pains
- Heightened sensitivity to physical pain

Cancer patients experiencing some combination of the above symptoms for more than two weeks are encouraged to take the **Sickness Syndrome Inflammation in the Brain and Depression Assessment** (available at www.sicksyndrome.com). The graded questionnaire takes into account the mechanisms involved in Sickness Syndrome-including symptoms specific for the DSMIV criteria for major depression, adrenal function, vagus nerve function, stress-related lifestyle factors, and hormone function.

The results of the assessment are then paired with 24 hour salivary cortisol/DHEA levels and urinary neurotransmitter levels (serotonin, GABA, dopamine, nor-epinephrine, epinephrine and glutamate). These diagnostic aids provide a clear picture of whether or not a patient is challenged with Sickness Syndrome.

Follow-up tests to further confirm the condition and to assess successful treatment outcomes may include estrogen, progesterone and testosterone levels, a CBC chem panel with 24 hour fasting glucose, and C reactive protein. These all provide data on the level of inflammation in the body but the Sickness Syndrome Inflammation in the Brain and Depression Assessment, paired with cortisol/DHEA and urinary neurotransmitter testing provides the information that is specific for Sickness Syndrome.

Once the diagnosis is confirmed, patients can then be educated as to the available natural treatments, therapies and lifestyle guidelines (www.sicksyndrome.com) that can help ease or eliminate the emotional and physical symptoms of Sickness Syndrome.

Managing Sickness Syndrome in Cancer Patients

Managing Sickness Syndrome in cancer patients must include dietary and lifestyle modifications aimed at reducing stress levels and regulating the hypothalamic-pituitary-adrenal axis. While it is beyond the scope of this article to address specific treatment guidelines for Sickness Syndrome, the following fundamental strategies will assist the physician, or patient interested in self-healing, to successfully reduce inflammatory cytokine levels in the brain. The three week program offers an evidence-based, integrative approach to treating the symptoms associated with stress and inflammation and their impact on depression.

Dr. Nick will be presenting new information to healthcare professionals on ***Sickness Syndrome: The Link between Inflammation and Depression*** at the ACAM Fall 2007 Conference November 14-18 in Phoenix, AZ. For more information visit the American Academy for the Advancement of Medicine at http://www.acamnet.org.

SIDEBAR: THREE WEEK PROGRAM FOR SICKNESS SYNDROME

STEP 1: REDUCE INFLAMMATION

- **Purification Program** — following a 21-day whole-food based clinical purification program[20] similar to the one outlined in *Clinical Purification: A Complete Treatment and Reference Manual*[21] is a wise first step to long term, successful treatment of Sickness Syndrome.
- **The Anti-inflammatory Diet**
  - **Increase your intake of Omega 3 fatty acids.** These fats decrease inflammation in your body. Examples:
    - Two tablespoons of flax seed oil, or hemp seed oil per day
    - One handful of raw walnuts per day
  - **Eliminate Trans Fatty acids from your diet.** These fats increase inflammation in your body. Examples:
    - Packaged cereal that has "Hydrogenated oil or partially hydrogenated oil" listed ANYWHERE on the label
    - Packaged crackers, chips or pastries that have "Hydrogenated oil or partially hydrogenated oil" listed ANYWHERE on the label
    - Fast food-French fries, burgers or fried chicken
    - Products that have a long shelf life (e.g. Twinkies-they have a 30 year shelf life!)
  - **Avoid fried foods and a high intake of omega-6 fatty acids (found in most cooking oils).** They increase inflammation in your body. Examples:
    - Canola oil, safflower oil, grapeseed oil
  - **Calorie restriction**
    - Cut calories by 30% while maintaining a nutrient dense diet.
    - Graphic representation of what this means is in the book
- **Herbal Medicines for Inflamed Brain**— Take at least one of the following per day:
  - **Holy Basil** — Referred to as the "Queen of Herbs" and the "incomparable one" in Ayurvedic Medicine, it is an excellent choice for Inflamed Brain because it not only reduces inflammation, but also regulates stress and cortisol levels - which are tied to the root cause of Inflamed Brain. 500 mg per day
  - **Proteolytic Enzymes** — Potent anti-inflammatory proteolytic enzymes increase antioxidant enzymes (SOD, catalase, and glutathione peroxidase) while reducing inflammatory cytokines. 200 mg per day
  - **Turmeric**—The popular cooking spice-is proven to be a potent anti-inflammatory medicine. 500 mg per day
  - **Withania somnifera** —Known as Ashwagandha in Ayurvedic literature, the extract derived from the root has potent anti-inflammatory properties. 500 mg per day
- **Nutrients for Inflamed Brain** — Take **at least one** of the following per day:
  - **Sesame Seed oil** — Both sesamin and sesamolin found in sesame seed oil inhibit inflammation. Dosage: 1 tablespoon per day
  - **Coconut** — Coconut oil has potent antibacterial and antiviral properties that reduce inflammation in the body caused by infection. Dosage: 1/2 coconut or 3 ½ tablespoons coconut oil per day= 20-25 grams lauric acid.

STEP 2: SUPPORT YOUR ADRENAL GLANDS

- **Nutrients for your adrenal stress glands**
  - **Get tested for DHEA and Cortisol**. If you are low…Take DHEA- 5-25 mg per day or supplement with an adrenal gland extract.
  - **Vitamin C** (As sodium ascorbate and/or Camu Camu berry extract) — 60 mg per day
- **Herbal medicines for your adrenal stress glands**—Take **at least one** of the following per day:
  - **Withania somnifera** —Known as Ashwagandha in Ayurvedic literature, the extract derived from the root has potent anti-inflammatory properties. 500 mg per day. *
  - **Holy Basil**-Referred to as the "Queen of Herbs" and the "incomparable one" in Ayurvedic Medicine, it is an excellent choice for Inflamed Brain because it not only reduces inflammation, but also regulates stress and cortisol levels - which are tied to the root cause of Inflamed Brain. 500 mg per day*
  - **Rhodiola Rosea**- Clinical trials have demonstrated its efficacy in reducing mental fatigue, improving cognitive functioning, enhancing sense of well being and regulating cortisol levels. Rhodiola also has anti-inflammatory properties. 500 mg per day

    *You will notice that this herb is also listed in Step 1. That is because it has both anti-inflammatory properties and properties that support your adrenal stress glands. So you only need to take 500 mg per day to accomplish both things at one time.

STEP 3: STAY IN THE EYE OF THE STORM

(This means staying in a place of calm and focus irrespective of what is going on around you.)

- **Meditate** — There are large selections of meditation techniques available. Here is a simple one for you to try:
  Get in water for at least 5 minutes first thing in the morning when you wake up AND right before you go to bed. Ideally you will be in a bathtub, but you can also just stand under a shower. During this time take a deep breath, relax, and ask for any guidance, for the best and highest good that you may receive regarding how to grow and to better yourself. Envision a rainbow when your eyes are closed. Initially, you may not receive any information, or you may feel frustrated or confused. But, with patience and acceptance you will soon "tune in" to your higher self and be guided to a place of calm and relaxation. You will find that as you follow the other steps in this program, your ability to meditate daily will improve and your desire to do so will increase.
- **Practice Yoga Daily-**There are any yoga techniques available. Find one that you are comfortable with and that you are willing to dedicate at least 15 minutes to per day. Visit www.sicksyndrome.com to learn about some simple postures you may want to try.
- **Take Suntheanine** —Research has shown that L-Theanine increases alpha brain wave activity, improves learning performance, heightens mental acuity, and promotes concentration while diminishing social anxiety. 200 mg per day

STEP 4: REST AND RELAXATION

- **Avoid caffeine and white sugar** (including those listed in ingredient labels). These ingredients make relaxing very difficult to do.
- **Sleep well!** Make sure you get enough sleep per night. Ideally you are winding down to go to bed by 10 PM and waking up around 6 AM. Since sleep needs can vary, an indication that you are getting enough sleep is to take note of how you feel when you wake up in the morning. If you have had enough sleep, you will awake refreshed and

ready to experience the day. But if you have insufficient or poor quality sleep, you will feel groggy and in need of a cup of coffee to get going. If you have trouble sleeping, you will find that practicing the other steps in this program will help you to sleep better. Follow the program diligently and the rest will come.

- **Enjoy LEISURE time activities for at least 30 minutes per day, at least 3 times per week.** Leisure time activities are physical activities that you REALLY ENJOY doing, such as playing soccer with friends or family, running along the beach, taking a long walk with someone you love, or enjoying a refreshing swim. Leisure time physical activities not only get your blood flowing, but they also increase activity in a part of your brain associated with "feel good" emotions. This helps you to tolerate stress in a healthy way and to reduce inflammation in your brain.

STEP 5: POSITIVE PERCEPTION

The best researched ways to improve your perception of the world around you and of yourself is to practice the following (pick at least TWO of these daily practices):

- Engage in daily meditation and yoga
- Develop a positive attitude
- Practice forgiveness
- Learn what your skills, abilities and gifts are, and then use them to make a difference in the lives of others
- Laugh often!

SIDEBAR: Beyond the Sickness Syndrome Program

Below is a quick list of sixteen simple and easy to understand vital principles to live by for optimal health. Incorporating these practices into your daily life after you have completed the 21-day Inflamed Brain Program is a wonderful way to create a new, health-giving physical body that will support a clearer, more balanced mental, emotional and spiritual body that thrives and fulfills your desired purposes in Life.

16 Vital Principles to Live by for Optimal Health

1. Avoid eating if you feel stressed or anxious.

2. Listen to your body: don't eat if you're not hungry, and conversely, don't put up with hunger pains. Stop eating once you begin to feel full and no longer have an appetite.

3. Drink 8 to 12 glasses of filtered water daily. Avoid large amounts of fluid with meals.

4. Avoid eating large amounts of sugar — especially refined sugars.

5. Avoid caffeine.

6. Avoid foods you may be allergic to.

7. Chew your food slowly.

8. Limit your intake, and if possible avoid packaged and processed foods containing artificial chemicals such as preservatives, colorings, flavorings and synthetic sweeteners.

9. Try to eat organically-grown fresh produce, free of pesticides and herbicides.

10. Try to eat organically-reared animal products, stay clear of reheated meats and always buy free-range eggs.

11. Obtain your protein from diverse sources (including legumes) not just from animal products such as meat, eggs and fish. You can obtain first-class protein by combining in one meal any three of the four following foods: grains (wheat, buckwheat, rice, barley, rye, oats, millet etc.), nuts, seeds and legumes.

12. Choose your breads wisely. It is important to eat only good quality breads, which provide fiber, minerals and the B and E vitamin complexes. Most bread you find today is made by mass production methods using ingredients like hydrogenated vegetable oils, monoacetyltartaric acid, disodium dihydrogen diphosphate, and other artificial chemicals.

13. Avoid constipation by eating plenty of raw fruits and vegetables and drinking plenty of water during the day. Supplement with a whole food based gastrointestinal purification product.

14. Avoid excessive saturated or hydrogenated fats and incorporate essential fatty acid oil blends into your diet as a replacement. Recommended oils include coconut oil, cold pressed organic hemp seed oil and flax seed oil.

15. Help someone out, no matter how small or grand the task, each day.

16. Smile…Laugh

References

1 http://en.wikipedia.org/wiki/Eustress

2 Illman et al. Are inflammatory cytokines the common link between cancer-associated cachexia and depression? J Support Oncol 2005;3:37-50.

3 Sharpe M, Strong V, Allen K, et al. Major depression in outpatients attending a regional cancer centre: screening and unmet treatment needs. Br J Cancer 2004;90:314–320.

4 Carr D, Goudas L, Lawrence D, et al. Management of cancer symptoms: pain depression and fatigue. Evidence Report/Technology Assessment No. 61. AHRQ Publication No. 02-E032. Agency for Healthcare Research and Quality. July 2002.

5 Ballenger JC, Davidson JR, Lecrubier Y, et al. Consensus statement on depression, anxiety, and oncology. J Clin Psychiatry 2001;62(suppl 8):64–67.

6 Chochinov HM. Depression in cancer patients. Lancet Oncol 2001;2:499–505.

7 Demetrashvili M, Raison CL, Miller AH. Depression in at-risk populations. Cent Nerv Syst News 2002;4:9–12.

8 McDaniel JS, Musselman DL, Porter MR, Reed DA, Nemeroff CB. Depression in patients with cancer: diagnosis, biology, and treatment. Arch Gen Psychiatry 1995;52:89–99.

9 Glaser JK, Glaser R. Depression and immune function: central pathways to morbidity and mortality. J Psychosom Res 2002;53:873–876.

10 Song C, Lin A, Bonaccorso S, et al. The inflammatory response system and the availability of plasma tryptophan in patients with primary sleep disorders and major depression. J Affect Disord 1998;49:211–219.

11 Kiecolt-Glaser JK, Preacher KJ, MacCallum RC, et al. Chronic stress and age-related increases in the proinflammatory cytokine IL-6. Proc Natl Acad Sci U S A 2003;100:9090–9095.

12 Dantzer R. Cytokine-induced sickness behaviour: a neuroimmune response to activation of innate immunity. Eur J Pharmacol. 2004 Oct 1;500(1-3):399-411.

13 Hellhammer J, Schlotz W, Stone AA, Pirke KM, Hellhammer D. Allostatic load, perceived stress, and health: a prospective study in two age groups. Ann N Y Acad Sci. 2004 Dec;1032:8-13.

14 Dantzer R. Innate immunity at the forefront of psychoneuroimmunology. Brain Behav Immun. 2004 Jan;18(1):1-6.

15 Thaker, P.H., et al. Chronic stress promotes tumor growth and angiogenesis in a mouse model of ovarian carcinoma. Nature Medicine. 2006; 12:939 - 944 (2006)

16 Illman et al. Are inflammatory cytokines the common link between cancer-associated cachexia and depression? J Support Oncol 2005;3:37-50.

17 Raz Yirmiya. Depression in medical illness: The role of the immune system. West J Med. 2000 November; 173(5): 333–336.
18 Tchekmedyian NS, Kallich J, McDermott A, Fayers P, Erder MH. The relationship between psychologic distress and cancer-related fatigue. Cancer 2003;98:198–203.

19 Raison CL, Nemeroff CB. Cancer and depression: prevalence, diagnosis, and treatment. Home Health Consultant 2000;7:34–41.

20 Standard Process offers a Purification Program that is based on the recommendations outlined in Clinical Purification: A Complete treatment and Reference Manual. Dr. Nick does not receive royalties or other remuneration for sale of the products included in the program. The program is only available through licensed healthcare professionals. For more information visit www.standardprocess.com.

21 Nick, G. Clinical Purification: A Complete Treatment and Reference Manual. LTP Publishing, 2001.