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SUPPORTING GUT HEALTH THROUGH CANCER TREATMENT

By Marina Silverio, RHN



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Working With Cancer Clients

- Clients come to us as a secondary practitioners
- Our role is one of support
- The biggest issue is making recommendations that are not going to be countered by the MD
- In most cases clients are going to be going the conventional route
- They are looking for more they can do



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Working With Cancer Clients

- In many cases it is the family members who are bringing them to see you
- Both the client and the family members are full of fear and feeling powerless in the situation
- The steps to look at food or supplements is about gaining a measure of control
- Our role is to provide the best support we can



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Probiotics

- There is some research supporting the use of probiotics with radiation and chemotherapy
- The information is limited
- *L. acidophilus* was useful in reducing the PVCR, which is the most important determining factor of prostate position, during radiation therapy for prostate cancer.
- Another study (mice) found that probiotics may prevent injury to the intestines during radiation treatment (may prevent the discontinuation of treatment)



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Probiotics

- Human study of women receiving radiation during cervical cancer treatment – probiotics lowered incidence of diarrhea
- Another human study found VSL-3 help prevent diarrhea in rectal, cervical and sigmoid cancer
- In a mouse study looking at chemo drug Cyclophosphamide found that intestinal flora stimulated the immune response to cancer – the mice had become resistant to the chemo drug



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A Piece of the Puzzle

- "Rspo1" or "R-spondon1." activates our stem cells to rebuild tissue and repair it after chemotherapy
- Mice study given lethal dose of chemo survived (50-75%) when given Rspo1 during treatment
- Gut bacteria is responsible for producing Rspo1 and antibiotics during chemo is harmful to this process
- Unfortunately, Rspo1 is produced when there is normal healthy gut ecology (not present in cancer clients) – dysbiosis is associated with cancer



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Summary of Some Studies					
Study	Cancer Type	Pts	Bacteria	Diarrhea	Stool consistency
Demery et al. (2013)	Cervix, rectum, prostate	248	Lactobacillus acidophilus and Bifidobacterium longum 2-1 times/day	Grade 2-3 in 17% vs. 37% placebo (p=0.04)	Mix of definitive and postoperative radiation therapy (mixed with chemotherapy)
Chittagaram et al. (2010)	Cervix	67	Lactobacillus acidophilus + Bifidobacterium bifidum tablet 2 times/day	Grade 2-3 in 9% vs. 42% placebo (p=0.01)	Loose in 10% vs. 67% placebo (p=0.01)
Griffith et al. (2008)	Cervix or Uterus	85	Lactobacillus (gag) in yogurt drink	Grade 2-3 in 43% vs. 56% placebo (NS)	None
Della et al. (2007)	Colon, cervix	400	Multiple, taken 3 times/day in a sachet	Any diarrhea in 17% vs 32% placebo (p<0.01)	Other dairy products with fermentative bacteria
Urbaniak et al. (2001)	Varied	206	Lactobacillus rhamnosus	Not reported, but lower bacterial apoptosis w/probiotics	Peroperative RT
				Better in experimental arm (p<0.01)	

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The Key Benefits of Probiotics

- Better treatment accuracy
- Fewer breaks in treatment
- Fewer side effects
- Avoiding secondary complications – (C Diff)



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SCFA and Fermented Foods

- Butyrate has been shown to induce apoptosis in colon cancer cells in rats and is chemo-protective
- Kefir anti-cancer and anti-tumoreffect in mice
- Other studies show anti-carcinogenic properties and prevention of tumours
- Most fermented foods have chemicals that are anti-cancer.
- One study found a correlation between increased gastric cancer risk and “pickled foods” in Korea and China



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And Finally

- A 2007 entitled Antioxidants And Other Nutrients Do Not Interfere With Chemotherapy Or Radiation reviewed 280 peer reviewed studies including 50 human studies found no adverse effects nor did they interfere with effectiveness of the treatment
- Vitamins A,C,E, D, K and all the B's and the mineral selenium as well as cysteine and glutathione
- In 15 human studies, they were linked to increase survival rates



<http://centerfornutrition.com/resources/Antioxidants-Nutrients-Chemotherapy+part+1.pdf>

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Type of Treatments

- Allopathic or natural treatments or both?
- There are a lot of options ► clients are scared and confused.
- Help them decide without bias.
- Adjust their protocols to complement their decision.



- Clients are **scared and confused** when they are first diagnosed
 - They are **overwhelmed by all the information** out there
 - Allopathic treatments and so many complementary / alternative treatments
 - They hear about the terrible side effects of allopathic medicine
 - They sometimes read so many article or do research on the internet, but don't have the **foundation to be able to discern the validity of the information and if it applies to them.**
 - **Help them decide without bias** → give them all the information they need the risks and benefits of all the treatments
- ☐ we are holistic nutritionists and of course we are very supportive of natural medicine, but it's important to recognize the benefits and pitfall of both sides so we can help our clients. E.g. a client can have a very aggressive cancer that natural medicine alone may not work fast enough and they may need more invasive treatments like surgery, or they may have serious emotional issues and stress that you may not be able to help the client resolve in time to help save them.

These are important things to consider. I'm not suggesting that every cancer client has to include allopathic treatments and it's not up to us as practitioners.

•Adjust their protocols to complement their decision → **it's up to us to support them in what ever decision they make**

→ We have many tools for our clients to help their body fight cancer naturally; however, if they choose to combine our therapies with allopathic treatments, it's important for us to have the tools to support them and help their body cope with the side effects of conventional treatments as well as strengthening their immune system, to fight the cancer and helping them detoxify their bodies post-treatments, **the digestive/intestinal system plays a crucial role in all of this as we will discuss.**

•Hopefully you will have **a good introduction on how you can support a cancer client** by the end of this presentation.

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Intestinal Health

- Intestinal health is a key component when working with cancer clients.
- Our immune system fights cancer everyday.
- There is a proven link between healthy gut flora and an improved immune system.



•There is a **proven link between healthy gut flora and an improved immune system** → the relationship between probiotics and the immune system was already discussed in module 2.

•Our immune system has many cell types and organs that protect us from

pathogens.

- When activated the immune cells release proteins called cytokines (e.g. Interleukins are cytokines found in white blood cells) → cytokines signal immune cells to move to the areas where they are needed → this creates a systemic immune response.

- Lactic acid bacteria or Lactobacillus casei were found to be immunopotentiators that play a part in preventing chemically induced tumors in test subjects.**

- It's been shown that the **bacteria in yogurt increases IgA, T cells, and macrophages which help to inhibit intestinal cancer.**

- The good bacteria has a beneficial effect on the intestinal flora which **impact the mucosal immune system...that's the part of the immune system that protects all the mucus membranes in the body...from infections and preventing antigens from passing through, and**

modulating the immune response.

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Probiotics

- Conventional cancer treatments, like chemotherapy and radiation have been known to damage the intestinal lining which may lead to acute diarrhea and dysbiosis.
- Probiotics have been found effective in treating chemotherapy induced diarrhea in patients with colon cancer and those with late stage breast cancer.



•Chemotherapy is administered to kill cancer cells, but the drug does not only target cancer cell, because cancer cells multiply rapidly, the drugs targets any cells that multiply rapidly whether they are cancer cells or healthy cells. Since the cells in the intestinal lining renew quickly by design, they are targeted by the chemo drugs leading to severe symptoms or nausea, vomiting, diarrhea, and abdominal pain.

•FYI → other cells that multiply rapidly are hair and nails and that's why people doing chemotherapy experience hair loss and blackened nail beds.

•It's been shown that multispecies of probiotics can be very effective in managing chemotherapy induced diarrhea.

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Probiotics - Colon cancer

- Colorectal cancer is the third most common in cancers.
- Probiotics and prebiotics have protective affects against colon cancer.
- Lactobacillus bulgaricus and Streptococcus thermophilus have been found to be effective in deactivating colon carcinogenesis.



The diagram illustrates a cross-section of the human colon. A yellow, irregular mass representing a tumor is shown on the inner lining of the colon. A blue arrow points from the text 'Probiotics' towards this tumor, indicating a protective or therapeutic effect. The surrounding tissue is shown in shades of pink and red, representing the healthy mucosal lining.

•Probiotics and prebiotics have protective affects against colon cancer by inhibiting tumor progression and reducing oxidative stress because they improve physiology by modulating the microflora and the immune response.

•Lactobacillus bulgaricus and streptococcus thermophilus is derived from milk.

•Taking those probiotics in addition to resistant starch stimulates the production of the enzyme glutathione transferase and butyrate which together they have been found to have a protective effect and deactivate toxic components in the gut.

•Butyrate has been found to protect against toxic affect of nitrosamides and hydrogen peroxide → another good reason to include fermented foods with your meals.

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Probiotics – Oral Cancer

- Probiotics are now being regarded as an option for cancer prevention.
- Lactobacillus salivarius Ren (L. salivarius Ren) has shown to have anticancer effects on oral cancer by suppressing 4NQO- induced oral carcinogenesis.



•4-nitroquioline 1-oxide (4NQO) induced oral carcinogenesis.

•Those stains were isolated from centenarians in China for the purpose of the study.

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Bile Salts

- Diabetes and obesity (disability) has been linked to higher cancer risk especially in the liver and gastrointestinal tract as a result of:
 - Dysregulation of bile acids
 - Increase in toxicity of bile acids
 - Dysbiosis
 - Inflammation in the gut
- All those were found to contribute to a higher risk of cancer especially liver and GI cancers.
- There's a link between bile acid homeostasis and gut microbiome.



•Diabetics and obese people have been shown to suffer from:

Dysregulation of bile acids

Increase in toxicity of bile acids

Dysbiosis

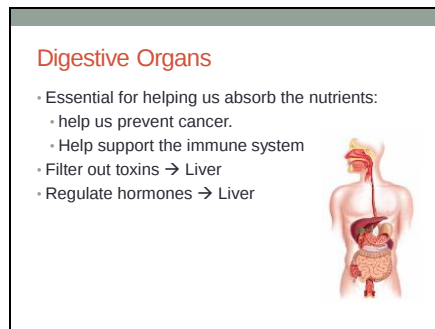
Inflammation in the gut

•All those were found to contribute to a higher risk of cancer especially liver and GI

cancers.

- There's a link between bile acid homeostasis and gut microbiome which can lead to DNA damage and cancer.

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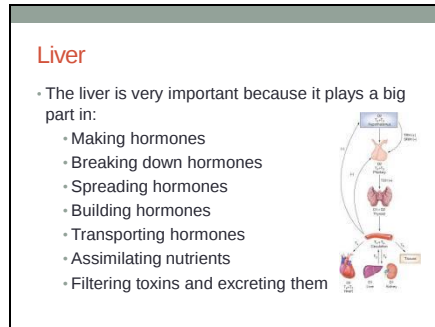


- Proteins to make:

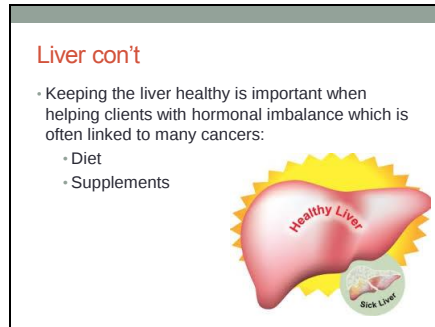
- immune cells that fight disease including cancer

- Enzymes to help digestion of nutrients that prevent and fight cancer: I-3-C, Calcium glucarate.

- The liver is a very important organ when it comes to cancer prevention



Excess hormones like estrogens are detoxified by the liver through a process called glucuronidation in which estrogen is bound to glucuronic acid and then **shuttled into the intestinal tract** to be excreted via the stool or urine. If gastrointestinal health is not optimal, and there is a lack of good bacteria in the intestines, the bond between glucuronic acid and estrogen can be broken – allowing the estrogen to be released back into the blood stream leading to estrogen dominance → leading to risk of hormone related cancer.



•**Diet:** Lemon water, eat organic, cruciferous vegetables because they have a nutrient called **Indole-3-carbinol (inactivate harmful estrogens)**

•Artichokes, bitter greens, staying hydrated, no alcohol, no smoking, no drugs, no processed foods.

•**Raspberries have ellagic acid** which has been shown to **increase glucuronidation by 75%.**

•High **fiber** in diet or supplements will also help **improve glucuronidation.**

•**Supplements:** Milk Thistle, dandelion leaf, Schizandra, Globe artichokes → With supplements, you can recommend that you clients take **liver herb for 1 or 2 months and repeat twice per year** (don't forget to support the kidneys and urinary system because it tries to filter the excess toxins) ? Parsley is good for kidney health.

•**Glucuronidation can also be improved with the use of probiotics, fish oil, and B6**

(must take a B-complex first as to not throw out the balance of all the B's in the body).

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Coffee Enemas

- Proven beneficial results in cancer treatments.
- Organic gold roasted coffee high in palmitic acid and caffeine.
- Increase Glutathione S-Transferase (GST) by 700%.
- GST quenches cancer causing free radicals.
- Increase bile salts which bind to toxins.
- Toxins are excreted from the body.



- Special kind of coffee → gold roasted to maintain its therapeutic effects → **high in caffeine and palmitic acid** → increase the production of GST (Glutathione S-Transferase)
- Coffee is administered through the rectum and sits in the bowels → Retain in the gut for an optimal period of 12 – 15 minutes → it's absorbed through the intestinal wall into the bloodstream through the portal vein.
- The blood vessels dilate including the hepatic portal vein → the **bile duct fills with blood and causing the bile flow to increase.**
- **Blood is detoxified** as it passes through the caffeinated liver → the quart of coffee and **water passing through the bowels to the liver and gallbladder dilute the bile and increase bile flow. Bile binds to toxins** and flushes out of the body
- The **palmitic acid** in the coffee promotes activity of the enzymatic catalyst called "glutathione S-Transferase (GST)" → **GST is then increased in the small intestine by 700 %.**
- **GST binds to Billirubin** → this glucuronidation allows it to be

eliminated from the liver.

- **GST detoxifies** and protects against **chemical carcinogens**, and **quenches free radicals**.

- **Peristalsis** which is **increased** because the visceral nervous system is stimulated by the all the fluid that is being retained in the bowels.

- All the toxins are carried away and excreted from the body.

- This process was discovered and implemented by Max Gerson, M.D. ☐ He has a much more elaborate protocol that includes, specific type of juicing, soups, raw foods, and more ☐ if you're interested in more information on that there are published books on "The Gerson protocol"

- To maintain the good bacteria in the colon, I usually recommend **adding probiotics to the solution** (break open 2 capsules and mix in) ☐ also I recommend that the client takes a **probiotic with a glass of water and chlorophyll after they do the coffee enema**.

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Mucositis

- Mucositis common side effect of conventional cancer treatments.
- Mucositis ► Inflammation and ulcerations in the mouth and digestive tract.
- It's very painful and can cause a lot of damage.



- Chemotherapy and radiation therapy for cancer can lead to a common side effect of Mucositis depending on the type of drug used.
- Mucositis is damage done to the mucus membrane that lines the intestinal tract → these treatments cause inflammation and ulcerations in the mouth, throat, and all through the GI tract.
- It's very painful and can damage gums and lead to tooth decay and loss.

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L-Glutamine – Benefit vs. Risk

- Studies have shown positive results in the treatment of Mucositis.
- L-glutamine is needed for the growth of normal cells, but the possibility that it can enhance tumor growth is being examined.



- Studies have revealed that **L-glutamine** has been effective in **reducing the severity and duration of oral Mucositis** and the gastrointestinal mucosa.
- Some studies indicate that a cancer tumor changes the body's metabolism and as such may **increase the tumor's requirement for L-glutamine** which may **accelerate tumor growth**, but **there is not enough evidence to support this**.
- **More evidence in support of L-glutamine becoming an essential nutrient** during cancer treatments because it's been shown to **lessen infections and decrease duration of hospital stays**.
- L-glutamine has been shown to **repair intestinal lining and reduce inflammation, which is essential for**

gut health, so when it comes to cancer clients, it's your call because there is not enough evidence to suggest L-glutamine would be harmful.

•Personally, until I see more studies indicating the safety and benefits of this amino acid, I feel better to recommend rinsing with L-Glutamine supplements for repair or prevention of oral mucositis, but not ingesting the supplement form of glutamine.

•And instead of supplementation, I would recommend **Glutamine rich foods like bone broth, cabbage juice, Legumes, peas, lentils, peanuts, Parsley, Beets, Spinach, Celery, Corn, Nuts, Kale, Wheat, barley.**

•**Dairy products:** milk, yogurt, kefir, ricotta cheese and cottage cheese.

•**Animal foods such as:** beef, chicken, pork, all types of fish, eggs

•Recommendations of course have to be **adjusted for clients with food sensitivities.**

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Food

- I-3-C
- Calcium D-glucarate
- Organic foods
- Sulfur containing foods
- Fermented foods
- High fiber diet
- Liver friendly foods



Cruciferous phytochemical I-3-C found to inhibit the development of cancer:

broccoli, cauliflower, brussels spouts, cabbage, asparagus, collards, kale, kohlrabi

Foods with phytochemical Calcium D-glucarate for removing cancer causing toxins and hormones from the body: apples, pears, oranges, grapefruits, and

other fruits and veggies →
Calcium D-glucarate can bind
to excess estrogen for
excretion.

Organic: to reduce toxic load
on the body and especially
the liver.

**Sulfur containing foods to
support the immune system**
→ garlic, onions, leeks, and
cruciferous veggies.

**Fermented foods for all the
reasons discussed for the
good bacteria** → kefir,
yogurt, miso, tamari, tempeh,
cheese, sourdough, kimchi,
etc.

High fiber diet: needed for
healthy digestion and
elimination ☐ to help with
elimination of toxins and GI
health.

Liver friendly foods:
lemon/lime, all berries,
jerusalem artichokes,
artichokes, beets, garlic,
onions, bitter greens,
cruciferous veggies ☐ also
herbs and spices like:
rosemary, sage, oregano,
turmeric, cloves, lemon grass,
milk thistle, ginger,
cinnamon, and fennel.

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Advanced Stage Cancer

- Healing the gut takes time.
- Important to be cautious when client is in advance stage cancer.
- E.g. client is depleted, has cachexia, unable to eat, but also has severe intestinal/digestive issues.



• **Healing the gut takes time**

→ it may require many steps depending on how bad the client is [?] if they have candida, parasites, leaky gut, food sensitivities, and in some cases the cancer is in the intestinal tract or colon.

• It's important to address all those conditions, but we have to consider what stage of cancer the client is in [?] **The detox process may be more than they can handle and we have to take it very slowly** → we may have to start with **recommendation that help build their body first** → e.g. protein drinks, M.A.P., Salvestrols, probiotics, and food to help strengthen the immune system (fermented

foods, raw honey, garlic, onions, ginger, and many types of fruits and veggies).

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When you're unsure
where to begin with
cancer clients, go with
the gut.

