Information Kit Letter

It is important to mention again that I am not a physician and cannot treat cancer patients or give medical advice.

Attached is the information kit and papers that I send to those who might be interested in learning more about non-toxic metabolic therapy as an alternative or adjuvant to standard treatments for cancer management. Metabolic therapy targets the fundamental metabolic defect that all cancer cells share; their dependence on fermentable fuels (glucose and glutamine) for growth. This abnormality is a universal trait of cancer cells, regardless of the tissue they might originate from or any of the genetic mutations that they may carry. This applies to both solid and blood borne cancers.

In my opinion, metabolic therapy can be effective in managing cancer progression if done correctly and under the supervision of an appropriately trained and knowledgeable physician or nutritionist. The attached information lists professionals who are trained or knowledgeable in implementing metabolic therapy using a ketogenic diet for cancer management.

Unfortunately, most physicians and oncologists are unfamiliar with the concepts and procedures of ketogenic metabolic therapy. This lack of familiarity places much of the burden of treatment on the patients themselves. Some level of ***scientific literacy*** will be needed to understand the attached papers. The attached case report entitled, *Ketogenic Metabolic Therapy, Without Chemo or Radiation, for the Long-Term Management of IDH1-Mutant Glioblastoma: An 80-Month Follow-Up Case Report,* describes how the patient, Pablo Kelly, was able to manage his brain cancer using metabolic therapy, without radiation or chemotherapy.

You can gauge the efficacy of metabolic therapy by measuring your Glucose Ketone Index (GKI) daily while under a medically supervised ketogenic diet. You may need to purchase the KETO-MOJO GK+ Bluetooth Glucose and Ketone Testing Kit, available on Amazon, or any high-quality dual glucose/ketone monitor.

We believe that the greatest potential for therapeutic results requires GKI values of 2.0 or lower, ideally 1.0 or below. Hypoglycemia is not an issue if ketone bodies (beta-hydroxybutyrate) become elevated, according to several clinical reports. It should also be mentioned that any diet that can achieve a GKI of 2.0 or below will have therapeutic efficacy. The GKI can be measured 2-3 hours after eating. Ideally, both blood glucose and ketones can be measured after an overnight fast and again in the afternoon, or before an early evening meal. It might be necessary to take GKI measurements more often during the adaption period (3-4 weeks). The food items that can help maintain a low GKI are listed in Table 1 at the end of this letter from Dr. Jocelyn Tan-Shalaby.

Our paper here describes the concepts and procedures for measuring the GKI (https://t.co/uBghc79esZ). The supplemental Tables A-F show the five-years of GKI measurements that Pablo Kelly collected during his brain cancer management (see Supplementary Material in the attached Pablo Kelly paper). It is important to mention that Pablo remains alive and can be contacted for additional information (smallandhumble@outlook.com).

In addition to glucose, the amino acid glutamine is also a fuel for cancer cells. However, it is more difficult to restrict glutamine than to restrict glucose. While there are no dietary restrictions that can limit the availability of glutamine, blood glutamine levels can be lowered following water-only fasts from 14-21 days. This should be done under medical supervision.

The drug, 6-Diazo-5-oxo-L-norleucine (DON), can be effective in targeting the glutamine pathway, but the drug is difficult to obtain and must be administered intravenously by a trained medical professional. Attached is information from a company that sells DON. I have validated the therapeutic efficacy of their product. Patients would need to find a physician that can order DON from the company and administer this intravenously according to the dosage information in the Magill et al., Sullivan et al., and the Mueller et al., papers (attached). Sodium phenylbutyrate can also be effective in removing excess glutamine from the blood. Any physician can prescribe this medication.

The anti-parasitic drugs, mebendazole (MBZ) or fenbendazole (FBZ), can produce synergistic effects especially when used while under nutritional ketosis (GKI 2.0 or below). These drugs are easily available, relatively inexpensive, and can be administered orally. The attached paper from Canete and information included from Joe Tippens provide information on dosages (youtu.be/yWsXxWcYeV0). Dr. Angie Choi's book, *Whole New Me: Healing From Cancer in Body, Mind, and Spirit*, provides additional information on dosages, timing, and scheduling of the various drugs and procedures needed for the non-toxic metabolic management of cancer. Dosages for MBZ treatment can be found in this paper (http://dx.doi.org/10.1016/j.curtheres.2016.03.001). This paper is also attached.

If you or your loved one is living with brain cancer, prostate cancer, or breast cancer, I encourage you to refer to the respective sections located at the end of this letter for additional educational information.

I also suggest that persons considering metabolic therapy for cancer management read Miriam Kalamian's book, *Keto For Cancer*. Individuals with brain cancer can reach out to Miriam for help with the details and caveats for implementing an optimal individualized keto nutrition plan. You can learn more about her services on her website. Heidi Pfeifer at MGH, Boston can also help with ketogenic diet therapy (heidipfeiferrd@gmail.com). You can also contact Alicia Halikas-Hickson (alicia.a.hickson@gmail.com), who is knowledgeable in treating cancer patients with metabolic therapy. She practices at LifeSpan Integrative Clinic (lifespan-clinic.com). For inquiries about DON treatment, you can contact Daniel Orrego at daniel@hippocratesresearchfoundation.org.

The definition of cancer is cell division out of control or dysregulated cell growth. As a patient, you can always ask your oncologist if you can do metabolic therapy before standard of care or in combination with standard of care. It is important to know that there are two general categories of ketogenic metabolic therapy (KMT): Dietary metabolic therapy (GKI 2.0 or below), and pharmacological metabolic therapy (using repurposed drugs together with KMT). It will be helpful to find a healthcare provider that is either knowledgeable or open to learn about these non-

toxic, evidence-based therapeutic strategies. Cancer patients and their family members could pose the following simple questions to their oncologist.

1. Will the treatment you are proposing for me be able to reduce the availability of the two fuels (glucose and glutamine) that are driving the dysregulated growth of my tumor?

2. Will the treatment you propose for me be able to target my tumor cells while enhancing the health and vitality of the normal cells and tissues of my body? Blood ketone body levels of $\geq$1-3 mml can enhance the health and vitality of the normal cells, but not tumor cells. Please note that the glucose and glutamine requirements of normal cells can be significantly reduced by switching from carbohydrate-derived foods to fat/protein-derived fuels. This shift places metabolic stress on the tumor cells while, at the same time, enhancing the metabolic efficiency of normal cells. Normal cells can gradually transition their metabolism from carbohydrates to fatty acids and ketone bodies because they have good mitochondria that produces energy from oxygen. The brain is especially adaptable to use ketone bodies when glucose becomes limiting. Tumor cells cannot make this transition to ketone bodies because their mitochondria are defective and cannot produce much energy from oxygen. Consequently, tumor cells, regardless of cell or tissue origin, are depended on glucose and glutamine for their survival and growth. Nutritional ketosis is a healthy, evolutionary-conserved, metabolic adaption to starvation and differs from diabetic ketoacidosis, which is an unhealthy, pathological state. The failure to recognize the above-mentioned facts denotes a lack of knowledge of human physiology and of the published scientific evidence supporting the facts.

3. Finally, is the treatment you are proposing for me based on the somatic mutation theory or on the mitochondrial metabolic theory of cancer? This question should be asked only if you receive satisfactory answers to questions 1 and 2.

The answers received to these three questions could predict the patient's destiny.

Donations to our research: It is important to know that support for my research on cancer comes entirely from philanthropy and private foundations. I update the information in this kit regularly and provide it to you without compensation. If you find that this information is helpful to your situation, please consider donating to the "Foundation for Cancer Metabolic Therapies", which is dedicated to supporting our studies using metabolic therapy for cancer management. The Foundation for Metabolic Cancer Therapies is a 501(c)(3) foundation (EIN #46-4127870). You can find the "donate" tag on the top row of the foundation site (foundationformetaboliccancertherapies.com). The Foundation address is 3213 West Main Street #256, Rapid City, SD 57702. The Foundation encourages donations through the **PayPal Giving Fund** because they process tax information by sending receipts and charge no fees, meaning that 100% of your donation will go to the foundation and research on cancer metabolism. The PayPal Giving Fund or a check are also easy options for larger donations. Please remember that no donation amount is too small or too large.

Please email me to acknowledge that the information I have provided is educational and not medical advice. It is my deepest hope that this information will guide you or your loved one towards a path of healing and recovery.

Sincerely,
Professor Seyfried

Additional Educational Information & Materials
I discuss further aspects of cancer as a metabolic disease in the following videos
youtu.be/APwnkpD_BfI
https://youtu.be/wY-JZ6TTNh8
youtu.be/1ebPZP9hBPA
https://youtu.be/SEE-oU8_NSU
https://youtu.be/06e-PwhmSq8
https://youtu.be/6PJfOFTaYow

Brain cancers:
It is critical to note that we have found that radiation therapy for malignant brain cancer can contribute to rapid tumor recurrence and reduced patient survival. Brain tumor radiotherapy increases glucose and glutamine in the tumor environment thus increasing the aggressiveness of remaining tumor cells and rapid tumor recurrence. The evidence supporting these statements appears in the attached paper: *Provocative Question: Should Ketogenic Metabolic Therapy Become the Standard of Care for Glioblastoma?* (DOI: 10.1007/s11064-019-02795-4), and in, *Metabolic management of microenvironment acidity in glioblastoma* (https://t.co/osb1ONvKmw). Please read these papers very carefully so that you are informed of the risks. Unfortunately, many oncologists do not know about this information or choose to ignore it. Please know that the recurrence rate for glioblastoma (GBM) is near 100% with less than 1% of patients surviving 10 years after diagnosis and treatment with steroids (dexamethasone) the current standard of care involving radiotherapy, temozolomide chemotherapy). It would be prudent for people diagnosed with GBM to read carefully publications mentioned above that provide the evidence supporting this information. We also present novel preclinical data for managing pediatric high-grade glioma (like adult GBM) in the online link to following publication (https://doi.org/10.1101/2023.06.09.544252).

Dr. Jethro Hu is also treating GBM patients with metabolic therapy at Cedars-Sinai Hospital in Los Angeles, CA (Jethro.Hu@cshs.org). Dr. Kris Smith also treats brain cancer patients with metabolic therapy Barrow Neurological Institute, Phoenix, AZ USA (Kris A. Smith, neuropub.smith@barrowneuro.org). Preliminary evidence suggests that MBZ could be more effective than fenbendazole for managing glioblastoma.

The following additional videos and papers may also be useful.

- youtu.be/cNvt8L3SlNI
- youtu.be/KusaU2taxow

Links to additional publications on the metabolic management of malignant brain cancer
1. *Role of ketogenic metabolic therapy in malignant glioma: A systematic review*
(http://dx.doi.org/10.1016/j.critrevonc.2017.02.016).

2. Ketogenic Metabolic Therapy for Glioma (doi: 10.7759/cureus.26457).

3. Here is the report on Pablo Kelly. *Ketogenic Metabolic Therapy, Without Chemo or Radiation, for the Long-Term Management of IDH1-Mutant Glioblastoma: An 80-Month Follow-Up Case Report* (https://t.co/LK5plxc200).

4. *Management of Glioblastoma Multiforme in a patient treated With Ketogenic Metabolic therapy and Modified standard of Care: a 24-Month Follow-Up (*DOI: 10.3389/fnut.2018.00020*).* Unfortunately, this patient passed away after 30 months from radiation-induced brain liquefactive necrosis.

5. Antiparasitic mebendazole shows survival benefit in 2 preclinical models of glioblastoma multiforme (DOI: 10.1093/neuonc/nor077).

Prostate cancer:
I suggest contacting Mr. Guy Tenenbaum, who successfully managed his advanced metastatic prostate cancer using metabolic therapy (guytenenbaum@gmail.com). It is likely that most of the therapeutic benefit could be attributed to his strict ketogenic diet, calorie restriction, and his extended (18-20 day) water-only fasting producing GKI values of 1.0 and below. It is our opinion that the SCOT enzyme does not play a significant role in cancer progression. It is therefore not necessary to use any drug or supplement to inhibit the SCOT enzyme. We do not rule out the possibility that the mentioned SCOT inhibitors could have anti-cancer effects independent of SCOT inhibition.

The following additional video and papers may also be useful.

- youtu.be/wiGVsUtCZwI (Guy Tenenbaum's story).
- Also see the **Martin Friedel** treatment plan for prostate cancer (attached). This plan could also be effective for managing other cancers.
- Please also read *Seyfried, Prostate Cancer*, Nature (attached)

Breast cancers:
I recommend Susan Wadia-Ells' book, "*Busting Breast Cancer: Five Simple Steps to Keep Breast Cancer Out of Your Body*." For breast cancers, we believe that the use of fenbendazole is preferrable to the use MBZ.

Links to additional publications on the metabolic management of breast cancers

1. *Metabolically Supported Chemotherapy for Managing End-Stage Breast Cancer: A Complete and Durable Response* **(**PMCID: PMC8072186, DOI: 10.7759/cureus.14686**)**

2. *Consideration of Ketogenic Metabolic Therapy as a Complementary or Alternative Approach for Managing Breast Cancer* present additional information on breast cancer management including the **biopsy-induced spread of cancer cells**.(https://doi.org/10.3389/fnut.2020.00021)

Lung Cancer & Other Cancers

I have attached other case reports on how metabolic therapy was able to manage other cancers. It will be important to know how various metabolic therapies have been used to manage a range of cancers including, colon, bladder, uterine, bone, kidney, liver, pancreatic, and various blood cancers.

Here are links to additional supporting publications for the metabolic management of various malignant cancers.

1. *Press-Pulse Therapeutic strategy* **(**https://t.co/mvcKo4wXKE**).**

2. *Modified Atkins diet in advanced malignancies* (doi:10.1186/s12986-016-0113-y).

3. **Managing** *Metastatic Thymoma With Metabolic and Medical Therapy: A Case Report.* (https://t.co/uOL74ZsTCJ).

4. *Feasibility study of metabolically supported chemotherapy with weekly carboplatin/paclitaxel combined with ketogenic diet, hyperthermia and hyperbaric oxygen therapy in metastatic non- small cell lung cancer.* (https://www.tandfonline.com/loi/ihyt20).

5. *Promising Effect of a New Ketogenic Diet Regimen in Patients with Advanced Cancers (*DOI: 10.3390/nu12051473).
6. *Restricted Ketogenic Diet Therapy for Primary Lung Cancer With Metastasis to the Brain: A Case Report (*DOI: 10.7759/cureus.27603*)*

Table 1 Modified Atkins Diet

Food category	Allowed	Prohibited
Fruits	None	All, fresh, dried, canned.
Beverage	water, diet drinks or diet sodas, liquor, black coffee, tea, tonic water, broth	Wine, beer, milk, fruit juices, regular soda
Vegetables	green leafy vegetables,cucumbers, celery, cauliflower, brussel sprouts, broccoli, mushrooms, onions, peppers, kale, spinach, asparagus, 5 olives a day.	Carrots, Potatoes, Squash, Beans, Tomatoes, corn, peas, squash, sauerkraut
Meats and protein	Beef, pork, poultry, turkey, lamb, venison, game fowl, fish, clams, lobster, shrimp, scallops, deli meats, bacon, lunchmeat, eggs, sliceable cheese, sour cream, cream cheese, block cheese	Breaded meats or breaded fish products, soft cheeses, processed cheese products, milk, yogurt
Miscellaneous	Salt, pepper, spices, splenda, aspartame Oil, lemon juice, ghee, coconut oil, butter, full cream, nuts (small amounts), pork rinds, canola oil, real mayonnaise, oils (limit to 2 T or <4 g of carbohydrate Oil based salad dressings	Sugar, honey, molasses, sugar alcohols, juices, maple syrup, catsup, prepared salad dressings with added sugar, fructose, corn syrup, sugar free candy or chocolates fat free dressing, low fat dairy products, peanut butter, ice cream, chips, cream based dressings
Breads, pastries and cereals	None	All rice, cereals, grains, breads, flour products, popcorn, chips, pretzels, pancakes, muffins, bagels, waffles cakes, pies.