



Overcoming Myths and Pitfalls of Implementing the Ketogenic Diet:

Fine Tuning and Individualizing Treatment for Your Patient

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Overcoming the myths and confusion on how to properly administer a therapeutic Ketogenic Diet:

- How to assess urine, breath and blood test
- How to assess other laboratory values and epigenetic SNPs in proper application of the diet
- Basic foundation for a nutritional and therapeutic Ketogenic Diet
- How to use this diet to enhance conventional and integrative treatment response, overcome nutritional pitfalls such as cachexia, parenteral nutrition, food allergies and preferences, etc.

OUTLINE

THE EVOLUTION OF FOOD

Hunter/
Gatherer



Neolithic
Farming



Modern
Human



Post Modern
Human

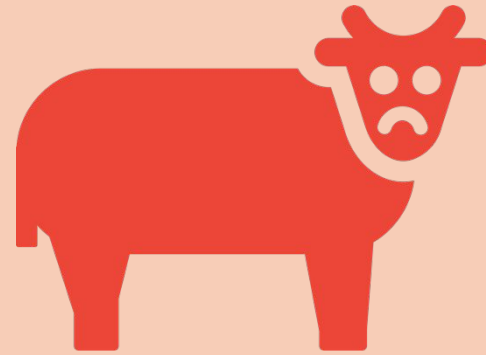


JUST BAD LUCK?

3 major factors have disrupted our internal and external environment over last 50 years...



Addition of large quantities of **highly refined sugar** to our diet.



Changes in **methods of farming** and raising animals.



Exposure to a large number of chemical products that didn't exist before 1940.

CANCER STEM CELLS

Normal Cell

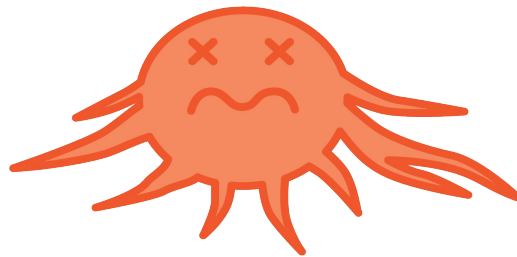


MITOCHONDRIAL TOXINS

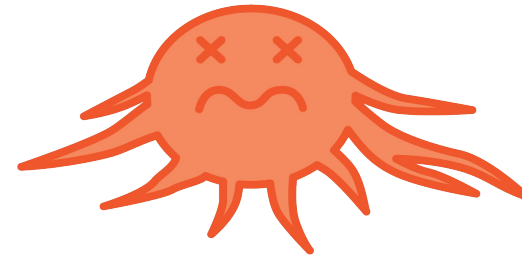
(sugar, stress, mitochondrial poisons)



Cancer Cell



Cancer Cell



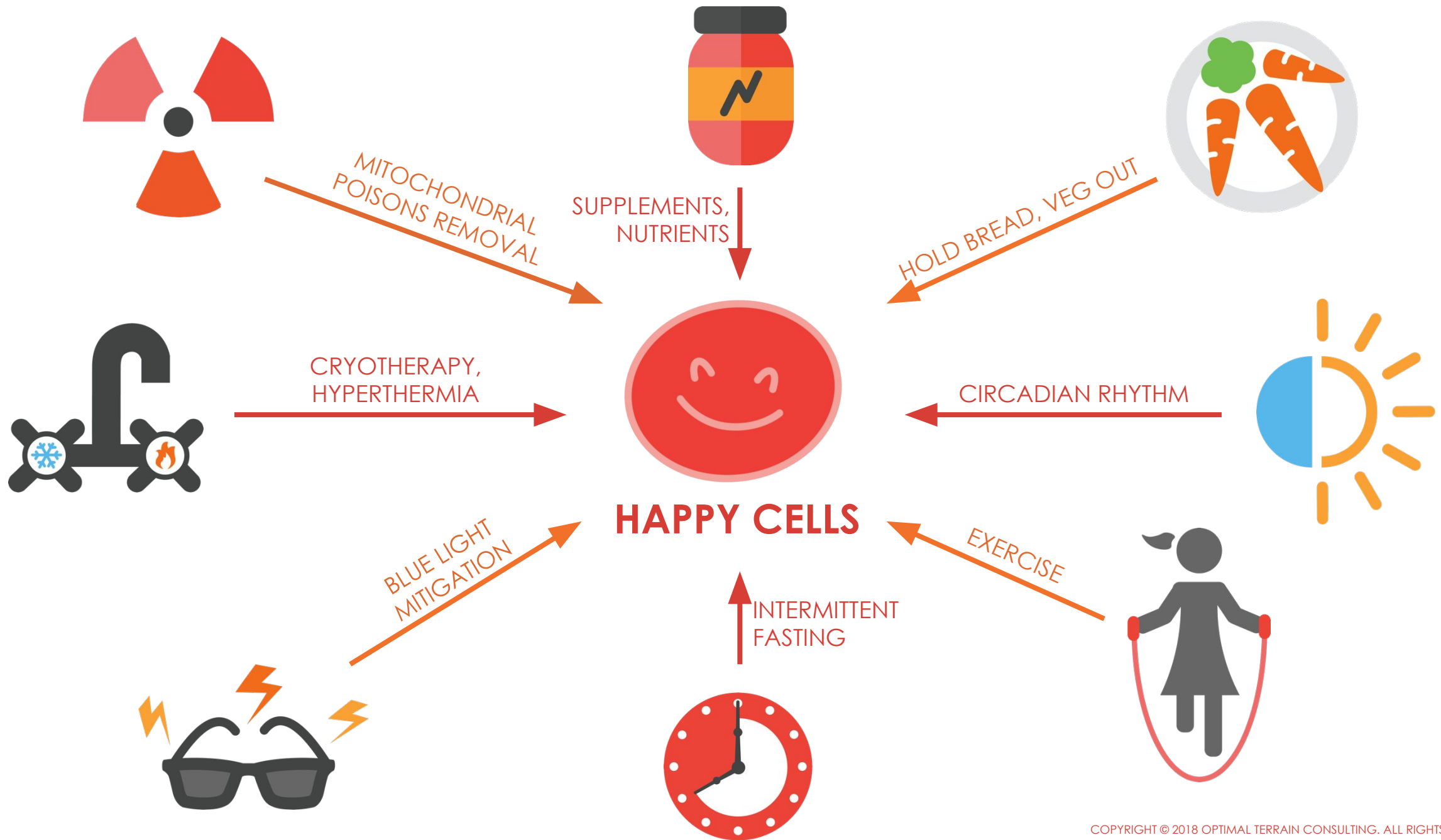
**RESTORE MITOCHONDRIAL
FUNCTION**

(intermittent fasting, CoQ10, HIIT exercise)



Normal Cell





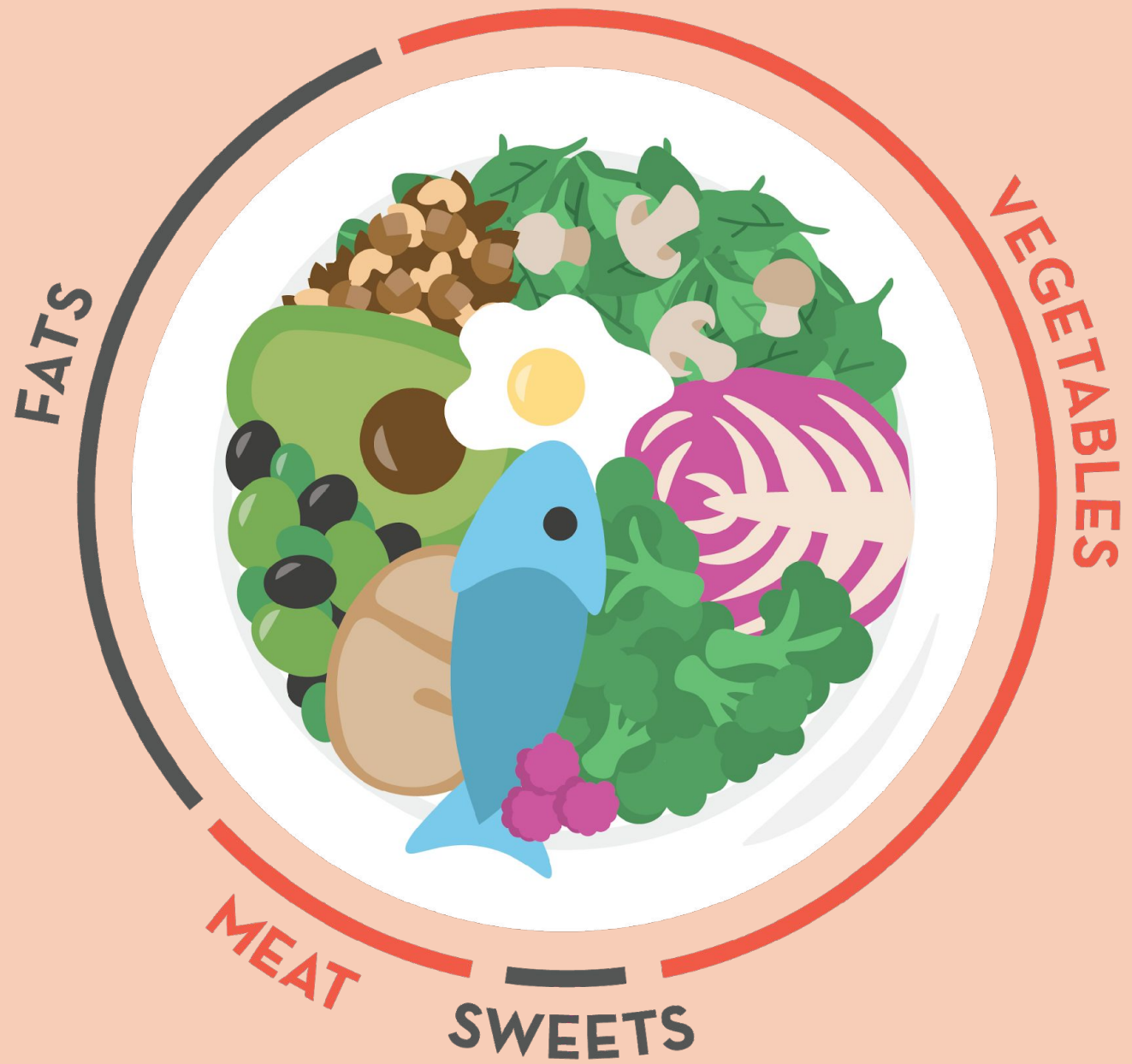


“With all I’ve learned over these years of research, if I were asked to design a diet today that promoted the development of cancer to the maximum, I couldn’t improve upon our present diet. **-RICHARD BELIVEAU, PHD**”

FOOD = LOVE

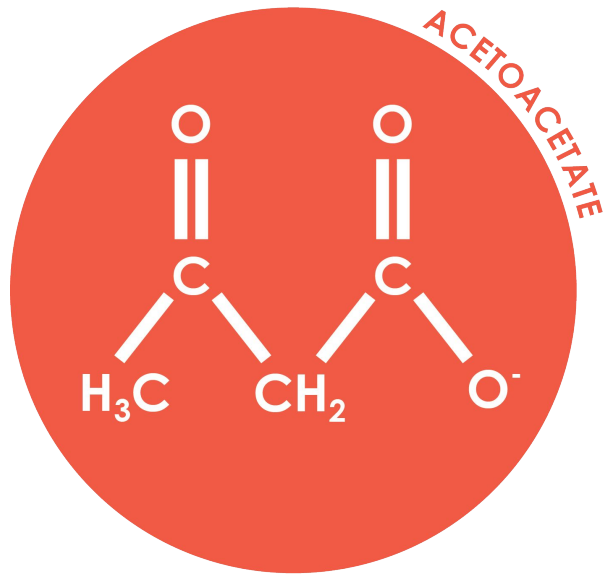
- Our first taste is of sweet and releases **endorphins and oxytocin**
- **Cultural connection**
- **Sugar impact** on dopamine
 - Opiates in gluten and dairy
 - Food as reward
 - Addiction



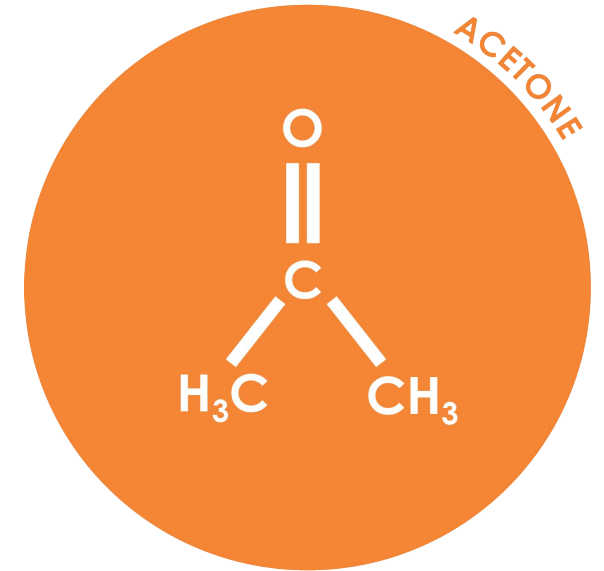
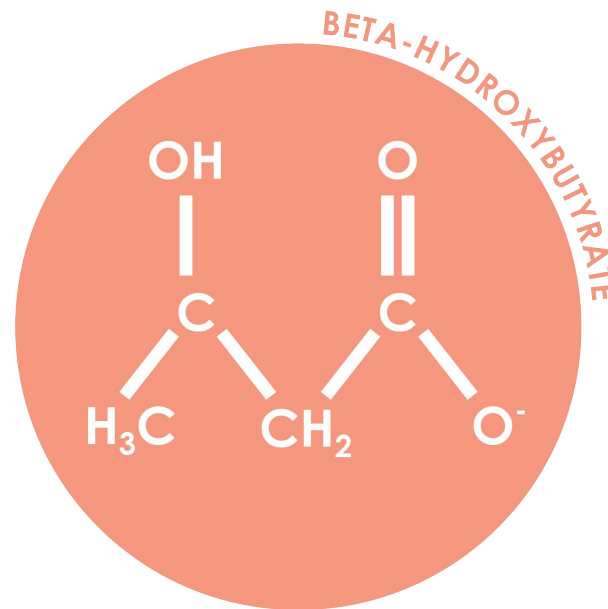


MEASURING KETONES

BLOOD



URINE



BREATH

BHB:

0.5-3.0 mmol/L

NUTRITIONAL

VS

THERAPEUTIC

BHB:

3.0-7mmol/L

GKI

(Glucose Ketone Index)

CALCULATOR

SOURCE:

<https://nutritionandmetabolism.biomedcentral.com/articles/10.1186/s12986-015-0009-2>



KD Mechanisms of Action:

- Restores normal apoptosis in cancer cells
- Lowers angiogenesis (impact on HIF1 and VEGF)
- Destabilizes tumor tissue DNA, causing effects which damage cancer cells
- Reduce tumor size over time
- HDAC inhibitor
- Mitochondrial Biogenesis
- Lowers inflammation via autophagy
- Reduces levels of insulin and IGF-1, mTOR
- Upregulation of SIRT1 and AMPK
- Enhances action of standard treatments while reducing common side effects
-and more

FOOD AS MEDICINE

*“Ingesting known foods to combat cancer is **more** effective than a session of chemotherapy done every few weeks.”*

-DR. AGGARWAL, MD ANDERSON CANCER RESEARCHER



Fact from Fiction:

- One can achieve therapeutic ketosis without proper testing
 - Food Quality doesn't matter
 - Achieving ketosis versus Fat Adaptation
 - Glutamine, methionine concerns
 - Fat is bad
 - Whatever you do, don't lose weight
 - This is a fad
 - This is a high protein diet
 - There is no research
 - It is too difficult, deprivation



CASE EXAMPLES:

- Plant-Based, Vegan, Vegetarian, IF, CRKD
- Cachexia
- Feeding Tubes
- Ketone Supplements
- Molecular Markers
- Epigenetic Markers
- Laboratory Assessment

RESOURCES/REFERENCES

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LEARN MORE

We recognize people as more than a cancer diagnosis.

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BOOK: *The Metabolic Approach to Cancer*



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WHO ARE WE?

Optimal Terrain is a client driven healthcare consulting service who understands that the cancer diagnosis may be overwhelming. We collaborate with other healthcare practitioners to provide clients a supportive and integrated team approach. And, we lighten the load by partnering with clients in their journey to optimal health.

We at Optimal Terrain strive to educate, empower, and assist clients and physicians in knowing the body and the process from a perspective grounded in scientific research and years of mentoring under well-known oncology MDs and NDs internationally, as well as direct patient care, for more than 20 years—all to target the root(s) of the cancer process.

We take the guesswork out of treatment choices by actively assessing the Terrain Ten™ patterns via laboratory analysis, a thorough intake process and a comprehensive look at every possible trigger that landed you or your patient with a cancer diagnosis while wading through the volumes of information and research to create a focused personal guide to optimal health.

We recognize people as more than a cancer diagnosis.