Questions and Answers for Quest Starlight Lecture #1: Diet, Body Composition and Cancer

Questions	Answers (all articles referenced in the answers are posted to the website: https://www.uhcancercenter.org/past-quest-events/diet-body-composition-cancer in the Participant Resources section
What were the Healthy Eating Index items? What were they measuring?	The Healthy Eating Index (HEI-2015) score is calculated based on whether a person follows the guideline on 13 items. Please see the HEI2015-ComponentsAndScoringStandards article.
What does Intermittent Energy Restriction mean? I know what Intermittent Fasting is, but IER is a new concept to me.	Intermittent Energy Restriction is the same as Intermittent Fasting. Researchers tend to use IER, rather than IF, because the approach involves partial fasting, not complete fasting. IER is defined as eating 20-25% of usual caloric intake on the fasting/restricted day, i.e., 70-75% less calories.
How can I measure my VAT?	Visceral Adipose Tissue (VAT) is measured accurately using computed tomography (CT) or magnetic resonance imaging (MRI). We can also obtain a derived estimate using dual energy X-ray absorptiometry (DXA). There are some studies, ours and others', that developed prediction equations, where you can enter some demographic, anthropometry and simple blood marker data to obtain a predicted estimate. We are working to improve and simplify our equation.
Where can I find the recommended readings?	https://www.uhcancercenter.org/past-quest-events/diet-body-composition-cancer
I just looked up the definition of energy restriction--how much calories do they restrict/reduce on this type of diet?	IER is defined as eating 20-25% of usual caloric intake on the fasting/restricted day, i.e., 70-75% less calories. The most common IER methods are 5:2 (2 days of ER per week) and Alternate-Day (3 days of ER per week).
I think of IF as just keeping an eating window, but not necessarily restricting calories.	Researchers define Intermittent Energy Restriction (IER or IF) as the 5:2 diet or Alternate-Day diet, where calories are drastically reduced (by 70-75%) on the fasting or restricted days. But yes, time-restricted eating can be done with or without reducing calories.
is there any data on how IER impacts females with fertility issues? (positive or negative)	Extreme energy/caloric restrictions can affect female fertility (more so than male fertility), whether it's through intermittent or continuous energy restriction. Although the extremes (e.g., amenorrhea) are considered negative, there is evidence from mostly animal studies that moderate energy restriction, especially in obese/overweight individuals, improves reproductive functions. See the review by Sun et al. (2021) article title energy restriction and female fertility
What's the alcohol consumption? was that restricted also?	A moderate amount of alcohol (about 2 drinks for men, 1 drink for women) is allowed on "feeding days" of intermittent energy restriction and on any day of time-restricted eating.
How can I get enrolled in your studies	For those who expressed interest in volunteering in upcoming IER studies, we will follow up with you via email. In general, studies with open enrollment are posted on the Cancer Center website: https://www.uhcancercenter.org/community-outreach/participate-in-a-research-study

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So is the reduction in cancer risk from IF or TRE mostly due to the loss in one's weight/fat? Or are there other mechanisms at play?	It is generally accepted that achieving and maintaining healthy weight can reduce cancer risks through a number of different mechanisms, including improving on inflammation, insulin resistance, hyperlipidemia, oxidative stress, and others and through yet-unknown pathways. Although long-term studies of IER/TRE on cancer are not available, study participants of IER/TRE for reduced calories have been observed to lose weight and body fat and improve on intermediate (cancer risk) biomarkers. The review studies comparing intermittent vs. continuous energy restriction methods have not detected substantial differences in the amount of weight or fat lost but suggest there may be some metabolic benefits, e.g., more insulin reduction on IER than on CER (see Cioffi et al. (2018)). One caveat is that weight loss, either on IER or CER, involves muscle loss, and it is advised to consume high-quality diet with sufficient protein and to combine exercise to minimize muscle loss.
How does the normal person get the imaging to determine his/her characteristics, without being in a clinical trial?	Body composition can be done off study, but there is a cost involved. Please visit https://www.uhcancercenter.org/research/shared-resources/body-composition-laboratory for contact information and lab price list.
What about studies of the Dr Dean Ornish program or any plant based diets? Would you promote this intervention?	We support any balanced plant-based diets.
do you know of any off-island places where we can do the 3d fit scan	Unfortunately, there aren't any other clinics or research centers in Hawaii that have optical scanners, that we know of….There are optical scanners on the mainland.
How does intermittant fasting affect the amount and distribution of fat in people who are not overweight (perhaps wanting to change their diet to improve health, gain muscle, or the like) ?	Most studies on IER have included obese/overweight individuals, some of which like our HDLS observed a shift in body fat distribution as well as total body fat loss. The review by Harvie et al. (2017), article title "Potential benefits and harms of IER" who developed the 5:2 diet, describes the limited evidence of IER on normal-weight individuals and suggests that more studies are needed. However, IER may improve the adiposity and metabolism of some normal-weight individuals who have metabolic disorders. In our Multiethnic Cohort study, we found, e.g., 15% of normal-weight people to have fatty liver.
Adipose tissue also create a low-inflammatory milleau with production of inflammatory cytokines. Do you plan to investigate also some cytokine level and their possibble correlation with WBC changes?	In our study within the Multiethnic Cohort, we observed C-reactive protein to be more correlated with visceral fat than cytokines (IL1-beta, IL2, IL4, IL5, IL6, IL8, IL10, TNF-alpha, interferon-gamma, GM-CSF). In our HDLS pilot of IER, we did not measure CRP but saw improvement in ALT (liver inflammation). In the upcoming HDLS2, we plan to measure more biomarkers.
can you define macro nutrients again?	Macronutrients include carbohydrates, fat and protein.
Many of these diets do not reflect local tastes. Are there diets like the Mediterranean diet that incorporate foods that more closely reflect local foods, produce and tastes?	In the HDLS pilot of IER combined with the Mediterranean diet, we advised our participants based on the Mediterranean-style Pattern recommendations from the Dietary Guidelines for Americans. This document provides helpful information on how to find local ingredients for the Mediterranean-style diet.
What was the thought process behind having two consecutive days when following IER versus a 5:2 approach, which may have calorie restricted days once every 2-3 days?	The 5:2 diet can be done with energy restriction on either 2 consecutive or non-consecutive days. For our HDLS pilot, we collaborated with Dr. Harvie, who developed the 5:2 diet, and followed her protocol of 2 consecutive days of ER for maximum effects.

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what is the time period with intermitent fasting	The IER studies to date have been for up to 6 months, mostly in individuals with excess weight or with metabolic disease like Type 2 diabetes. Dr. Harvie suggested that the 5:2 IER may transition to 6:1 IER once people achieve weight loss or improved metabolism, to sustain weight loss and metabolic sensitivity.
Have there been any studies regarding numbers of cell mitochondria in people doing alternate day fasting or time restricted fasting? What would be the significance of more cellular mitochondria on overall health or disease prevention?	Although we do not see any research studies on IER/TRE and mitochondria, the review by Harvie et al. (2017) describes postulated metabolic flexibility of these ER diets, likely involving mitochondria metabolism.
Do we need to be in the study to get a 3d measurement or can we just go to the Center to do a 3d measurement?	Body composition can be done off study, but there is a cost involved. Please visit https://www.uhcancercenter.org/research/shared-resources/body-composition-laboratory for contact information and lab price list.
I'm interested in finding out more about your study.	For those who expressed interest in volunteering in upcoming IER studies, we will follow up with you via email. In general, studies with open enrollment are posted on the Cancer Center website: https://www.uhcancercenter.org/community-outreach/participate-in-a-research-study
Are all the additives used in vegan food to taste and look like real food safe for our bodies and mind?	Assuming this question refers to imitation meats, we refer to two references (Rubio et al. 2020 and Hu et al. 2019). Rubio et al. describes that additives to Plant-Based Meats (PBM) have already been approved for use in foods in general and caution more for Cell-Based Meats (CBM). Hu et al. suggests more studies on plant-based meat alternatives regarding long-term health effects.