Goal
To determine the effects of opposing dietary patterns during weight loss and the progressive effects of body fat loss on surrogate biomarkers of breast cancer recurrence risk.

Question
How does fat loss by different dietary approaches influence biomarkers of cancer risk (glucose homeostasis, inflammation, cellular oxidation, and sex steroid hormone metabolism)?

Recruitment
Physicians identify eligible participants, determine whether BMI falls within study range (25-34.9Kg/m²) and write study referral. Participants also recruited through study fliers and brochures displayed throughout Cancer Clinic.

Screening
Weight and height verified by Clinical Coordinator; Completed Physician Referral Forms obtained; Eligibility Questionnaire administered in person or via telephone; Participants provided with CHOICE consent form and study baseline questionnaires. Baseline appointment date set.

Eligible Participants
Assignment by: BMI, tumor grade/stage, treatment type

Diet Allocation

Diet A: High Fat, Low Carbohydrate
Diet B: Low Fat, High Carbohydrate
Control

Clinic Visits
Visit 1: Consenting
Visit 2: Baseline
Visit 3: Diet Education
Visit 4: Meal Planning
Visit 5: 1 Month
Visit 6: 2 Months
Visit 7: 3 Months
Visit 8: 4 Months
Visit 9: 5 Months
Visit 10: 6 Months

1 Week
1 Week
2 Weeks
2 Weeks
4 Weeks
4 Weeks
4 Weeks
4 Weeks

26 weeks
Visit 1
Visit 2
Visit 10

Group session 1
Group session 2
Group session 3
Group session 4
Group session 5

Endpoint Analysis: Blood and Urine

<table>
<thead>
<tr>
<th>Serum</th>
<th>Plasma</th>
<th>RNA</th>
<th>Anthropometric Measures</th>
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<tbody>
<tr>
<td>Proteomics, Glycated Proteins, CA27.29, CEA, 8-isof2a, Creatinine</td>
<td>Carcinoids, IGF-1, IGFBP-3, IL-6, CRP, Estradiol, TNF-α, SHBG, Metabolomics, Adiponectin, Grehelin, Leptin</td>
<td>Pathway specific arrays, DNA, Genotype, CPT, Lymphocytes, Comet, 8-hydroxy-deoxyguanosine</td>
<td>Weight, Waist to Hip ratio, Tanita Scale: Bioelectrical Impedance Analysis (BIA), BOD POD: fat percentage, fat mass, lean muscle mass, Resting Metabolic Rate (RMR), Pedometer (steps/day), Actiheart Heart rate monitor/accelerometer</td>
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