cont’d

MULTIPLE SITES
This study will investigate the effects of a ketogenic diet on cancer growth. Studies in mice have shown that ketogenic diets bodies that are produced by healthy cells when fat is burned. It Growth of cancer cells is inhibited by substances called ketone Dr. Schwartz’s group will study omentin, a protein produced by belly fat and whose production is inhibited in the presence of tumor cells. Laboratory studies have shown that omentin slows the growth of ovarian cancer cells and prevents metastasis. If omentin production is blocked by tumor cells, then the re-induction of omentin synthesis by exercise may inhibit ovarian cancer progression and improve patient outcomes.

PROSTATE CANCER
Steven K. Clinton, MD, PhD
The Ohio State University
Columbus, Ohio
Maximizing the impact of tomatoes for prostate cancer prevention: the impact of tomato variety and carotenoid profiles.

Laboratory studies have found that lycopene-containing tomato foods reduce prostate cancer in animal models. Work from Dr. Clinton’s lab has shown that bioactive phytochemicals are more readily absorbed if the chemical structure of lycopene is in a particular configuration. Tangerine tomatoes are a rich source of this type of lycopene and will be compared with standard red tomatoes. The goal is to use this information to better design tomato juice for future clinical trials.

Jay M. Fowke, PhD
Vanderbilt University Medical Center
Nashville, Tennessee
A prospective analysis of obesity and physical activity with prostate cancer.

This study will examine the role of centralised fat and obesity in prostate cancer progression. Men with high-grade prostatic intraepithelial neoplasia (HGPIN), which is a marker of prostate cancer susceptibility, will be identified and followed for conversion from HGPIN to prostate cancer. Body composition measurements and blood inflammatory markers will be collected. Study results will provide a comprehensive assessment of immune system regulation associated with centralised fat deposition and conversion from HGPIN to prostate cancer.

OVARIAN CANCER
Roxanne Schmidtmann, PhD
University of Texas M.D. Anderson Cancer Center
Houston, Texas
Do-it-yourself chemoprevention: can exercise increase circulating omentin levels to inhibit ovarian tumor growth and metastasis?

Dr. Schmidtmann’s group will study omentin, a protein produced by belly fat and whose production is inhibited in the presence of tumor cells. Laboratory studies have shown that omentin slows the growth of ovarian cancer cells and prevents metastasis. If omentin production is blocked by tumor cells, then the re-induction of omentin synthesis by exercise may inhibit ovarian cancer progression and improve patient outcomes.

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ORAL CANCER
Louise Fong, PhD
Thomas Jefferson University
Philadelphia, Pennsylvania
Dietary zinc deficiency and modulation of gene expression in oral premalignancy in psoriasis.

Oral cancer is a major cause of cancer deaths worldwide. Population studies have shown that zinc deficiency may be a contributing factor in this disease, but its role is unclear. This study will examine the relationship between zinc and genetic factors that are thought to be important in the development of this cancer. The aim of the study is to advance our understanding about how this cancer can be prevented.

Barbara Gower, PhD
The University of Alabama
Birmingham, Alabama
Targeted disruption of cancer cell metabolism and growth through modification of diet quality.

Cancer cells rely primarily on the use of glucose as fuel. Growth of cancer cells is inhibited by substances called lactate bodies that are produced by healthy cells when fat is burned. It is possible that diets that promote use of fat as fuel could boost cancer growth. Studies in mice have shown that ketogenic diets are able to slow cancer growth and decrease death from cancer. This study will investigate the effects of a ketogenic diet on cancer markers, tumor size and metabolic variables in women with recurrent ovarian cancer.

The Grantsee
influence of lifestyle on breast cancer. Study participants will provide more information regarding the WINS participants. This update of long-term survival of WINS targeting dietary fat intake and weight loss could improve overall and adolescents. The objective of this study is to identify dietary lower breast cancer risk in women who were heavier as children have lower breast density as adults, which could contribute to are at an increased risk of breast cancer. Girls who are heavier are at a decreased risk of breast cancer and if so, how he proposes that omega-3 fatty acids may be safe and inexpensive tools in the arsenal of agents resistance in female rats exposed to a high-fat diet in utero can breast cancer is detected. This study will investigate whether tamoxifen therapy such as tamoxifen either never respond to the treatment (ER+) breast cancer patients who receive anti-estrogen inhibitory effect of dietary pattern. This may lead to new ways of detecting breast cancer and if so, how he proposes that omega-3 fatty acids may be safe and inexpensive tools in the arsenal of agents resistance by acting as HDAC and DNMT inhibitors. This study investigates whether eating carrots, broccoli and other plant foods “deactivate” the levels of HCAs and other carcinogens. Dr. Trudo found that carrots, broccoli and other plant foods may reduce or oppose many of the harmful side-effects of obesity on cells and tissues. Whole walnuts are uniquely rich in many cancer preventive cruciferous vegetables. Dr. Tollefsbol’s group will use a mouse model to determine when early life sulfuraphane-rich cruciferous vegetables are most effective in preventing epigenetic alterations that can lead to breast cancer. Although the sulfaphane in foods such as broccoli sprouts has epigenetic effects in mice, they can help prevent breast cancer. It’s not known how it works or when the best life course exposure is for optimal cancer protection. This study aims to pinpoint the optimal stages of early life that ampic sulfuraphane exposure and its effects on episomal changes that lead to cancer and the mechanisms responsible for these effects. This study evaluates the impact of exercise on body composition and cancer prevention in young women as they are diagnosed with breast cancer and assigns them to an exercise group or a control group. Breast tumor tissue is collected at the time of enrollment and again at the time of breast surgery and is assessed by comparing changes in tissue markers over time in breast cancer patients vs. the control group. Dr. Lightbog’s group will provide information about the cellular pathways that exercise affects in breast cancer cells, providing insight into how exercise could affect cancer formation and prognosis. 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Reversible epigenetic changes are associated with the development of anti-estrogen resistance in breast cancer. However, reversal seems to occur only in individuals who acquired epigenetic change before breast cancer is diagnosed. This study will investigate whether tamoxifen resistance in female rats exposed to a high-fat diet in utero can breast cancer is detected. This study evaluates the impact of exercise on body composition and cancer prevention in young women as they are diagnosed with breast cancer and assigns them to an exercise group or a control group. Breast tumor tissue is collected at the time of enrollment and again at the time of breast surgery and is assessed by comparing changes in tissue markers over time in breast cancer patients vs. the control group. Dr. Lightbog’s group will provide information about the cellular pathways that exercise affects in breast cancer cells, providing insight into how exercise could affect cancer formation and prognosis. 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BREAST CANCER

Melinda L. Irwin, PhD, MPH
Yale University
New Haven, Connecticut

A meta and video-based weight loss trial in breast cancer survivors

Building on the Lifestyle, Exercise and Nutrition (LEAN) approach, we performed a randomized controlled trial examining changes in body weight, diet, physical activity, and quality of life in overweight breast cancer survivors randomized to receive the LEAN book and videos, compared to a control group randomized to receive a weight loss pamphlet. We obtained data at the baseline and after 6 months of intervention. Based on previous studies, we hypothesized that the LEAN intervention would be superior to the control intervention in terms of weight loss, improvement in diet, physical activity, and quality of life. Our results showed that the LEAN intervention was superior to the control intervention in terms of weight loss, improvement in diet, physical activity, and quality of life. This study demonstrates the feasibility of delivering lifestyle interventions to breast cancer survivors, and provides evidence that the LEAN approach is effective in improving weight loss, diet, physical activity, and quality of life in overweight breast cancer survivors.

Rowan Chlebowski, MD, PhD
Harbor-UCLA Medical Center
Los Angeles, California

Women’s Intervention Nutrition Study (WINS) long-term survival analysis

Results from the initial WINS study suggested that a lifestyle intervention targeting dietary fat intake and weight loss could improve overall survival in breast cancer patients. Dr. Chlebowski’s group will perform here a long-term survival analyses of the WINS participants. This update of long-term survival of WINS breast cancer survivors will allow to assess if the benefits of lifestyle changes observed in the initial study persist over time.

Joanne F. Dorgan, PhD
University of Maryland, Baltimore

Prospective study of diet in youth and adult breast cancer risk

Heavier girls are at a decreased risk of breast cancer throughout life, but the underlying mechanism is not understood. Women with dense breasts are at an increased risk of breast cancer. Girls who are heavier have lower breast density as adults, which could explain the decreased risk of breast cancer observed in heavier girls. The objectives of this study are to identify dietary factors in youth that influence breast density.

BREAST CANCER cont’d

Gregor Kucera, PhD
Wake Forest University Health Sciences
Winston-Salem, North Carolina

Effects of fish oil on lipid metabolites in breast cancer

While studying women who were recently diagnosed with metastatic breast cancer, Dr. Kucera hypothesized that whether fish oil protects against breast cancer and if so, how it works and how to use it as a possible dietary supplement to our arsenal of agents to combat breast cancer.

Jennifer Ligibel, MD
Dana-Farber Cancer Institute
Boston, Massachusetts

Impact of physical activity on tumor gene expression in women with newly diagnosed breast cancer

This study evaluates the impact of exercise on tumor gene expression in women as they are diagnosed with breast cancer and assign to an exercise group or a control group. Breast tumor tissue is collected at the time of enrollment and again at the time of biopsy surgery. Gene expression is assessed by comparing changes in tissue markers over time in each group. The study compares the exercise group vs. the control group. Dr. Ligibel’s project will provide information about the cellular pathways that exercise affects in breast cancer cells, providing insight into how exercise could affect cancer formation and progression.

COLON CANCER

Leonard H. Augsburger, MD
Alpert Medical School of Brown University
Providence, Rhode Island

Mechanistic measurement of dietary induced epigenetic risk using tissue samples from patients with colorectal tumors

Dr. Augsburger’s lab will study how vitamin D affects risk of colorectal cancer. This study will measure the effect of vitamin D on epigenetic changes in colorectal tumor tissue. The study will also measure the effect of vitamin D on the risk of colorectal cancer.

Kana Wu, MD, PhD
Harvard T. H. Chan School of Public Health
Boston, Massachusetts

Sugar sweetened beverages, fructose and sucrose, genetic susceptibility, molecular subtypes and colorectal cancer survival

Dr. Wu’s lab will examine whether intake of sugar-sweetened beverages, refined carbohydrates, fructose, sucrose and glycemic load after a diagnosis of colorectal cancer is associated with worse health outcomes, and whether these associations differ by type of sugar, macronutrient, or genetic susceptibility. The study will also examine the effect of sugar-sweetened beverages on colorectal cancer survival.

ESOPHAGEAL CANCER

Emory Toner, MD, PhD
Sloan-Kettering Institute for Cancer Research
New York, New York

Diet and tumor resistance in survivors of childhood leukemia

Many adult survivors of childhood leukemia (ALL) become obese and develop insulin resistance, but it is not clear why. Dr. Toner will compare the diets, eating behaviors and activity levels of these patients with data from a healthy control group of patients without a history of cancer. This study will lead to dietary recommendations for ALL survivors that would improve their health and longevity.

MULTIPLE SITES

Kirsten Ness, PhD
St. Jude Children’s Research Hospital
Memphis, Tennessee

Impact of resistance training and protein supplementation on immune responses and weight loss among childhood cancer survivors

Young adults who were treated for childhood cancer during childhood have lower lean muscle mass than expected for their age. Dr. Ness’s lab will test the effects of a weight lifting intervention and dietary protein supplementation on muscle mass, physical wellbeing and body mass of survivors. Before and after participation, participants will have a body scan to look at lean muscle mass, be evaluated for their physical abilities and have their blood tested for markers of overall health.

Cheryl L. Rock, PhD
University of California, San Diego
La Jolla, California

Walnut consumption in weight loss intervention: effects on appetite and satiety and potential mediating factors

Obesity is one of the leading causes of cancer. Dr. Rock’s study investigates whether walnuts are associated with improved meal satiety and weight loss and promote weight loss in overweight or obese adults. Results from this study will contribute to the understanding of the role of weight in weight control, and will expand our knowledge of how walnuts in the diet may contribute to the prevention and management of obesity.

LEUKEMIA

Emily Tonorezos, MD
Sloan-Kettering Institute for Cancer Research
New York, New York

Diet and physical activity among survivors of childhood leukemia

Many adult survivors of childhood leukemia (ALL) become obese and develop insulin resistance, but it is not clear why. Dr. Toner will compare the diets, eating behaviors and activity levels of these patients with data from a healthy control group of patients without a history of cancer. This study will lead to dietary recommendations for ALL survivors that would improve their health and longevity.


BREAST CANCER

Melinda L. Irwin, PhD, MPH
Yale University
New Haven, Connecticut

A meta-analysis of randomized controlled trials comparing exercise alone to usual care for breast cancer survivors randomized to exercise plus usual care compared to usual care resulted in reductions in the risk of breast cancer recurrence and all-cause mortality. This study was not based on the successful completion of the clinical phase of a 6-month weight loss intervention, but rather a comparison of overweight breast cancer survivors randomized to receive the LEAN book and videos vs. controls. The impact of these results on breast cancer recurrence and all-cause mortality in breast cancer survivors randomized to receive the LEAN book and videos vs. controls.

Henry Thompson, PhD
Colorado State University
Fort Collins, Colorado

Breast cancer risk factors for overweight breast cancer survivors. This project will use the CHOICE intervention, referred to as CHOICE, in post-menopausal breast cancer survivors randomized to receive the LEAN book and videos vs. controls. The impact of these results on breast cancer recurrence and all-cause mortality in breast cancer survivors randomized to receive the LEAN book and videos vs. controls.

Colleen G. Tucker, PhD
Wake Forest University Health Sciences
Winston-Salem, North Carolina

Effects of fish oil on lipoxygenase expression in breast cancer cell lines. This study evaluated the impact of exercise on the expression of lipoxigenase enzymes in breast cancer cell lines. The study found that exercise training decreased the expression of lipoxigenase enzymes in breast cancer cell lines. The impact of these results on breast cancer recurrence and all-cause mortality in breast cancer survivors randomized to receive the LEAN book and videos vs. controls.

Jennifer Ligibel, MD
Dana-Farber Cancer Institute
Boston, Massachusetts

Impact of physical activity on tumor gene expression in women with newly diagnosed breast cancer. This study evaluated the impact of exercise on the expression of tumor gene expression in women with newly diagnosed breast cancer. The study found that exercise training increased the expression of tumor gene expression in women with newly diagnosed breast cancer. The impact of these results on breast cancer recurrence and all-cause mortality in breast cancer survivors randomized to receive the LEAN book and videos vs. controls.

COLON CANCER

Leonard H. Angschutzen, PhD
Alfred I. duPont Hospital for Children
Newark, New Jersey

Mechanism establishing dietary induced colon cancer susceptibility in mice. Dr. Angschutzen’s lab will study how dietary induced colon cancer susceptibility in mice is established. The study will help to identify dietary factors that affect the risk of colon cancer recurrence and all-cause mortality in breast cancer survivors randomized to receive the LEAN book and videos vs. controls.

Kana Wu, MD, PhD
Harvard T. Chan School of Public Health
Boston, Massachusetts

Sugar sweetened beverages, fructose and sucrose, genistein susceptibility, molecular substrates and overall survival in colon cancer survival. Dr. Wu’s lab will examine whether higher intake of sugar-sweetened beverages, refined carbohydrates, fructose, sucrose, and glycemic load after a diagnosis of colon cancer is associated with worse overall survival, and whether these associations differ by form or source of sugar, molecular substrates, and overall survival in colon cancer survivors.

MULTIPLE SITES

David Christiani, MD, PhD
Harvard T. Chan School of Public Health
Boston, Massachusetts

Gene-environment interactions among circulating vitamin D status, vitamin D pathway gene polymorphisms, BMI and obesity-colon cancer link. Esophageal cancer incidence is rapidly increasing in the United States. Dr. Christiani will study at DNA, serum vitamin D and other data from approximately 700 esophageal cancer patients. The findings will provide information on how multiple factors may affect survival.

Emily Tenorezos, MD
Sloan-Kettering Institute for Cancer Research
New York, New York

Diet and nutrition in survivors of childhood leukemia. Many adult survivors of acute lymphoblastic leukemia (ALL) become obese and develop colorectal cancer. But it is not clear why. Dr. Tenorezos will compare diet, eating behaviors and activity levels of survivors who have died of leukemia to those without a history of cancer. This study may lead to dietary recommendations for ALL survivors that would improve their health and longevity.

Leona Hildavski-Clarke, PhD
Georgetown University
Washington, District of Columbia

Role of genistein in reversing tamoxifen resistance by activating HDAC and DMAP inhibitor. walnuts in the diet may contribute to the prevention and control of obesity-colon cancer link.

More than 50% of estrogen receptor positive breast cancer patients experience recurrence and therapy such as tamoxifen often either respond to the treatment or eventually develop resistance to it. Reversal of epigenetic changes are associated with the development of anti-estrogen resistant breast cancer. However, reversal seems to occur only in individuals who acquired epigenetic change before breast cancer development. This study will investigate whether tamoxifen resistance in female rats exposed to a high-fat diet in utero can spread, and to nutritional interventions that may lower the risk of these tumors from ever developing in the first place.

Walnut consumption in a weight loss intervention: effects on obesity, satiety and potential mediating factors. Obesity is now one of the leading causes of cancer. Dr. Smith’s lab investigates whether walnuts are associated with increased meal satiety and slow down the rate of passive intake and promote weight loss in overweight or obese adults. Results from this study will contribute to an understanding of the role of walnuts in weight control, and will expand our knowledge of how walnuts in the diet may contribute to the prevention and management of obesity.

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Lea Huffman, PhD
University of Kansas Medical Center
Kansas City, Kansas

Epigenetics of early life exposure to dietary fat and breast cancer risk in women. Dr. Huffman’s group will examine whether early life exposure to dietary fat exposure increases the risk of breast cancer recurrence and all-cause mortality in breast cancer survivors randomized to receive the LEAN book and videos vs. controls.

Impact of physical activity on tumor gene expression in women with newly diagnosed breast cancer. This study evaluated the impact of exercise on the expression of tumor gene expression in women with newly diagnosed breast cancer. The study found that exercise training increased the expression of tumor gene expression in women with newly diagnosed breast cancer. The impact of these results on breast cancer recurrence and all-cause mortality in breast cancer survivors randomized to receive the LEAN book and videos vs. controls.

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OVARIAN CANCER

Rosemarie Schmandt, PhD
University of Texas M.D. Anderson Cancer Center
Houston, Texas

Do-it-yourself chemoprevention: can exercise increase circulating omentin levels to inhibit ovarian tumor growth and metastasis?

Dr. Schmandt’s group will study omentin, a protein produced by belly fat and whose production is inhibited in the presence of tumor cells. Laboratory studies have shown that omentin slows the growth of ovarian cancer cells and prevents metastasis. If omentin production is re-established in cancer cells, then the re-induction of omentin synthesis by exercise may inhibit ovarian cancer progression and improve patient outcomes.

PROSTATE CANCER

Steven K. Clinton, MD, PhD
The Ohio State University
Columbus, Ohio

Maximizing the impact of tomatoes for prostate cancer prevention: the impact of tomato variety and carotenoid profiles.

Laboratory studies have found that lycopene-containing tomato foods reduce prostate cancer in animal models. Work from Dr. Clinton’s lab has shown that bioactive phytochemicals are more readily absorbed if the animal models. Tangerine tomatoes are a rich source of this type of lycopene and will be compared with standard red tomatoes. The goal is to use this information to better design tomato juice for future clinical trials.

Jay M. Fowke, PhD
Vanderbilt University Medical Center
Nashville, Tennessee

A prospective analysis of obesity and progression from high-grade prostatic intraepithelial neoplasia (HGPIN) to prostate cancer.

This study will examine the role of centralized obesity and inflammation in prostate cancer progression. Men with high-grade prostatic intraepithelial neoplasia (HGPIN), which is a marker of prostate cancer susceptibility, will be identified and followed for conversion from HGPIN to prostate cancer. Body composition measurements and blood inflammatory markers will be collected. Study results will provide a comprehensive assessment of immune system regulation associated with centralized fat deposition and conversion from HGPIN to prostate cancer.

Our Vision

We want to live in a world where no one develops a preventable cancer.

Our Mission

We champion the latest and most authoritative scientific research from around the world on cancer prevention and survival and help people make informed lifestyle choices to reduce their cancer risk.

AICR Research Grants Program

We fund and analyze the science that investigates the links between lifestyle and cancer. For over three decades, we have dedicated ourselves to understanding how our weight, activity and diet play a role in cancer risk. This knowledge has revolutionized the understanding of cancer prevention. It's now transforming the medical and scientific community’s approach to cancer treatment and survival.

The Grants

The therapy will use an energy restricted ketogenic diet, which has only 12 to 15 months. Dr. Schwartz will conduct a 12-week pilot study of a metabolic nutritional intervention in patients who are diagnosed with a certain kind of brain cancer 6 months after surgery. This will involve patients who have an average life expectancy of only 12 to 15 months. Dr. Schwartz will conduct a 12-week pilot study of a metabolic nutritional therapy in patients with brain cancer. The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice.

The Grantees

American Institute for Cancer Research (AICR) is a 501(c)(3) charity. AICR's tax identification number is 52-1268466. All donations are tax-deductible to the extent permitted by law.
This study will investigate the effects of a ketogenic diet on cancer growth. Studies in mice have shown that ketogenic diets may be a contributing factor in this disease, but its role is unclear. This study will examine the relationship between vitamin D deficiency and omentin production by healthy cells when fat is burned. It will determine whether omentin plays a role in cancer growth and prevention, and if so, what role it plays in cancer growth. This study will examine the role of vitamin D on the growth of ovarian cancer cells. Vitamin D deficiency may be a contributing factor in the development of ovarian cancer, and it is possible that diets that promote use of fat as fuel could block the growth of ovarian cancer cells and prevent metastasis. If omentin production is inhibited in ovarian cancer cells, then the re-induction of omentin synthesis by exercise may inhibit ovarian cancer progression and improve patient outcomes.

**OVARIAN CANCER**

**ROSEMARIE SCHMADT, PhD**

University of Texas M.D. Anderson Cancer Center

Houston, Texas

Dr. Schwartz's group will study omentin, a protein produced by fat cells whose production is inhibited in the presence of tumor cells. Laboratory studies have shown that omentin slows the growth of ovarian cancer cells and prevents metastasis. If omentin production is inhibited in ovarian cancer cells, then the re-induction of omentin synthesis by exercise may inhibit ovarian cancer progression and improve patient outcomes.

**PROSTATE CANCER**

**STEVEN K. CLINTON, MD, PhD**

The Ohio State University

Columbus, Ohio

Maximizing the impact of tomatoes for prostate cancer prevention: the impact of tomato varieties and cultural profiles.

**ROBBIE WILSON, PhD**

University of California, San Diego

La Jolla, California

The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice. The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice. The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice. The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice. The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice.

**STANLEY SMITH-WARNER, PhD**

Harvard T.H. Chan School of Public Health

Boston, Massachusetts

Carbohydrate quantity and quality and advanced prostate cancer risk: mice injected with prostate cancer cells and randomized to a diet with or without carbohydrates. Dr. Smith-Warner will examine whether men who eat foods that elevate insulin and glucose levels have a higher risk of advanced prostate cancer risk in the Pooling Project of Prospective Studies of Diet and Cancer. In comparison study, mice will be injected with prostate cancer cells and randomized to a diet with or without carbohydrates. Diet and cancer risk in the Pooling Project of Prospective Studies of Diet and Cancer. In comparison study, mice will be injected with prostate cancer cells and randomized to a diet with or without carbohydrates.

**CANCER PREVENTION**

**ROBERT WILSON, PhD**

University of California, San Diego

La Jolla, California

The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice. The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice. The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice. The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice. The therapy will use an energy restricted ketogenic diet, which has been shown to decrease tumor growth in mice.