

The Servan-Schreiber/Cohen Anticancer Fund

at The University of Texas M. D. Anderson Cancer Center

An Intensive Lifestyle Intervention Program to Modify Cancer Outcomes



Strengthening the Body's Natural Defenses

Recent cancer studies show that tumors grow and become malignant not only through genetic anomalies in the cancerous cells themselves, but also through factors in the cells' microenvironment. These microenvironmental factors include, but are not limited to, the ability of the cells to form blood vessels to feed the growing tumor (angiogenesis), the propensity for inflammation and stimulating inflammatory pathways, and suppressed cell-mediated immunity. The tumor microenvironment is the terrain that largely determines whether cancerous cells will grow or not. The body possesses a number of natural defenses that can create a barren, inhospitable terrain for cancer growth. These natural defenses are influenced and strengthened by healthy lifestyle choices such as a proper diet, physical activity, stress management, social connection and limited exposure to environmental pollutants.

Epidemiological studies provide some of the most compelling arguments for the idea that healthy lifestyle choices strengthen the body's natural defenses against cancer. For example, prostate cancer deaths are ten times less common in Japan than in the United States. Yet, Japanese men in their 50s and 60s have the same number of benign micro-tumors in their prostates as American men of the same age¹. Something about how Japanese men live (diet and physical activity, for example) prevents these micro-tumors from becoming prostate cancer. Examination of different East Asian immigrant groups from China, Japan, and India who have relocated to the United States or Canada, shows that the incidence of cancer changes. These new arrivals develop more cancers related to Western lifestyle such as prostate, breast, and colon cancers and fewer malignancies of the stomach, esophagus, pancreas and liver, as is more common in their homelands^{2,3}. Studies indicate that the increasing incidence of breast cancer in low- and middle-income countries is due to adopting a more sedentary lifestyle and Westernized diet high in fat and sugars and low in fiber and vegetables⁴.

A New Cancer Intervention Strategy to Strengthen the Body's Defenses

Modern oncology treatment is focused on destroying cancer cells. This is an essential aspect of therapy, but it is becoming more and more obvious that truly effective cancer care should simultaneously foster a strong anticancer terrain by strengthening the body's natural defenses. Yet, very little study has addressed how to measure the quality and effectiveness of these defenses, how to strengthen them through lifestyle interventions including diet, nutrition, physical activity, and stress management, and how to tell if a given person's lifestyle program is on track and working as well as possible to help fight off cancer.



Dr. David Servan-Schreiber

Existing initial research that follows the tenets of integrative oncology (making changes in lifestyle and behavior) shows evidence that this approach can, in fact, strengthen natural defenses, modify the terrain of the body, and have an impact on long-term treatment results^{5, 6, 7, 8, 9, 10}. However, this work is quite limited due to funding shortfalls. More evidence from larger studies focusing on biological measures is needed in order to change the standard of care for cancer prevention and treatment at a national and international level.



Dr. Lorenzo Cohen

M. D. Anderson Cancer Center is currently seeking philanthropic funding to advance the goals of the Integrative Medicine Program, led by Lorenzo Cohen, Ph.D., professor of behavioral science and general oncology, and to specifically support the development and testing of a novel, comprehensive integrative oncology intervention. The proposed study will build on previous research by examining the effects of an innovative, standardized integrative oncology program based on the model outlined in the book *Anticancer* by David Servan-Schreiber, M.D., Ph.D. The study will dramatically move the integrative medicine field forward through several ground breaking strategies where previous research has fallen short by:

1. Providing data on the clinical impact of a cost-effective standardized integrative oncology intervention in regard to quality of life, physical outcomes, and biological indices of inflammation;
2. Determining the contribution of different integrative modalities on patient outcomes;
3. Establishing the first web-based integrative oncology information delivery system that facilitates access to safe and effective evidence-based therapies;
4. Maintaining compliance through the innovative use of coaches and spousal involvement;
5. Assessing the impact of the program on spousal morbidity; and
6. Examining cost-effectiveness and healthcare utilization.

The Servan-Schreiber/Cohen Anticancer Fund will support a \$5 million, 5-year research project with the following measurable aims:

1. Develop a comprehensive, novel, standardized, web-based, integrative oncology intervention program based on the model outlined in *Anticancer*. The program will include special diets, physical activity, stress management, social support, control of environmental contaminants, and some supportive natural supplements that many people with cancer are already taking (e.g., vitamin D3, fish oil, and turmeric).
2. Develop reliable techniques to assess a person's natural defenses against cancer through simple objective measures (e.g., blood tests of inflammation, vitamin D levels, stress hormones, omega-6/omega-3 fatty acid ratio, antioxidant capacity, and immune system activity) and determine how these measures are related to clinical outcomes and other existing biological markers.
3. Pilot test the integrative oncology intervention to evaluate to what degree it is possible to improve a person's natural defenses and clinical outcomes as measured by the above tests through the biological assessment of the tumor microenvironment, and conventional psychological and quality of life measures.
4. Evaluate to what degree this comprehensive integrative oncology intervention reduces the progression of disease.

Patients and their spouses will participate in a six-month integrative oncology intervention consisting of:

1. Three one-day group retreats at days 1, 90, and 180.
2. An online web-based, standardized, individually tailored, integrative oncology curriculum. The curriculum will be educational in nature, but it will also provide tailored sections to meet each participant's need relative to where he or she is in terms of behavioral change and motivation to follow the plan. Participants will be able to track all aspects of their progress over time. The curriculum will be culturally sensitive and appropriately geared to educational levels.
3. Regular contact with a coach through one-on-one web video conferences or over the phone as necessary. Coaches will have weekly contact with participants for the first three months and will provide education, support, and motivation. From three to six months, the coach will contact participants twice a month, and from six months to one year the coaches will make monthly contact.

While a great majority of cancer patients use complementary medicine, the utilization of these modalities is often not under the direction of a healthcare professional and could involve therapies with uncertain efficacy and/or safety. The findings of this proposed study at M. D. Anderson will provide critical information on whether lifestyle changes can improve quality of life, biological outcomes, and survival rates.

M. D. Anderson: A Unique Environment for a Unique Study

In 2009, *U.S. News & World Report's* "America's Best Hospitals" survey ranked M. D. Anderson as the top hospital in the nation for cancer care. M. D. Anderson has achieved the top ranking six times in the past eight years and has ranked as one of the top two hospitals for cancer care for 20 years, since the magazine began its annual survey in 1990. The institution places a high value on basic, translational, and clinical research and has developed an effective and efficient infrastructure for conducting research. The research program is considered one of the most productive efforts in the world aimed solely at cancer. The leadership of M. D. Anderson ensures that any innovative and successful research program developed at this institution is likely to influence the course of research in many other cancer centers.

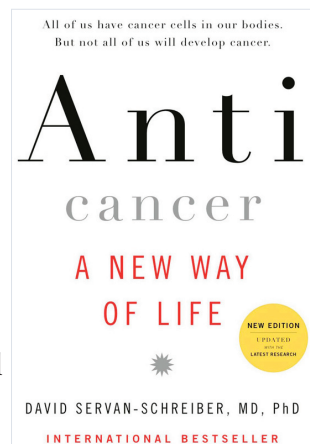
M. D. Anderson's Integrative Medicine Program is one of the largest and most active in the country, and is an important component of the institution's mission to treat the whole person—from prevention and treatment through survivorship. The mission of the program is to conduct closely monitored, responsible research examining intervention programs to improve quality of life and treatment results; provide authoritative, accurate and current information for patients, caregivers and healthcare professionals; offer complementary therapies that may be used in concert with mainstream conventional cancer care to manage symptoms, relieve stress, and enhance treatment results. The Integrative Medicine Program has an active research portfolio in many areas of integrative oncology. However, this is the first project conducting the critically important research to determine the effects of implementing comprehensive lifestyle and behavior change.

Expertise and World Leaders in Integrative Medicine

This proposed research program would be conducted in collaboration with Dr. Servan-Schreiber, physician, neuroscientist, 17-year brain tumor survivor, and author of the world-wide and *New York Times* best seller *Anticancer—A New Way of Life*. His book has brought together many of the most important research findings that point the way to a different approach to preventing and treating cancer. Dr. Servan-Schreiber is committed to participating in the planning and implementation of this research, and he will use his opportunities for fundraising to help bring additional philanthropic support to this effort as necessary.

The M. D. Anderson leadership is extremely supportive of the Integrative Medicine Program, and especially this proposed project. John Mendelsohn, M.D., and president of M. D. Anderson, acknowledges that at least 50 percent of cancer could be prevented through appropriate lifestyle changes that include eliminating smoking, maintaining a proper diet, managing stress, and exercising.

This project will also benefit from M. D. Anderson's internationally renowned faculty of 1,200 physician oncologists and cancer basic scientists. Researchers in areas such as immunology, genetics, proteomics and tumor microenvironment are highly motivated and eager to collaborate with the Integrative Medicine Program on this study.



Although this initial study is to be conducted at a single institution, if the results are proven to be beneficial to patients, it will set an example for other cancer centers around the nation and the world. Ultimately, the goal is to show that lifestyle factors and natural interventions do profoundly influence cancer biology in a directly measurable way. If M. D. Anderson can demonstrate the benefits of a cost-effective, comprehensive integrative oncology program, and produce reliable measures of how the tumor microenvironment predicts the course of disease, the world will pay attention and cancer patients around the globe will be more likely to be treated with an integrative oncology approach.

The Essential Role of Philanthropy

The Integrative Medicine Program is at the cutting edge of the best and most important cancer research today. Yet, it has traditionally been very difficult to obtain federal and industry grant support for research focused on lifestyle and natural interventions. This is because such interventions stand outside the traditional focus on single molecular interventions that lead to the most cleanly interpretable results, and also because they cannot result in patentable (viz., profitable) treatments.

Thus, philanthropists with a vision are absolutely necessary to help foster this type of multi-pronged integrative medicine research endeavor. If such research demonstrates the benefits of lifestyle changes as an effective approach for disease management and starts to change the perspective of the medical and scientific establishment about these interventions, it will be much easier to continue research in integrative oncology with the support of federal grants. In fact, M. D. Anderson researchers have a track record of obtaining \$5 of federal research funding for every initial \$1 of philanthropy invested in a new program.

Philanthropic partners with the foresight to understand the value of investing in the right people and giving them the freedom to follow their creative instincts in pursuing new discoveries are critical to the success of this program. A gift to the Integrative Medicine Program would have impact far beyond M. D. Anderson's laboratories and clinics—ultimately benefiting people worldwide through shared advances. Working together, we can truly make a difference in the quality of life of cancer patients and their families. Your support would be essential not only in achieving the goals of the Integrative Medicine Program, but also in Making Cancer History®.

About Drs. Servan-Schreiber and Cohen

David Servan-Schreiber, M.D., Ph.D., is Adjunct Professor in the Section of Integrative Medicine, Department of General Oncology, at The University of Texas M. D. Anderson Cancer Center and a member of the board of the Society for Integrative Oncology. He is the author of *Anticancer—A New Way of Life*. (Viking)

Lorenzo Cohen, Ph.D., is Professor of Behavioral Science and General Oncology and Director of the Integrative Medicine Program at The University of Texas M. D. Anderson Cancer Center. He is Editor-in-Chief of the *Journal of the Society for Integrative Oncology* and a Founding Member of the Society for Integrative Oncology.

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