**Southwestern Black Bean Salad**

**INGREDIENTS**
- 1 can black beans, rinsed and drained
- 1 can cooked corn
- 1 medium tomato, chopped
- 1/3 cup red onion, chopped
- 1/2 – 2 lemons or limes
- 1 tbsp olive oil
- 2 tbsp fresh minced cilantro
- Salt and fresh pepper to taste
- Optional: avocado or jalapeño

**DIRECTIONS**
1. In a large bowl, combine beans, corn, tomato, onion, cilantro, salt and pepper, jalapeño (optional).
2. Squeeze fresh lemon/lime juice to taste and stir in olive oil.
3. Marinate in the refrigerator 30 minutes.

**VARIATIONS**
- Add avocado just before serving. Serve with cooked quinoa for a balanced salad.

**How exercise can boost the health of breast cancer survivors**

A new study from the USC Division of Biokinesiology and Physical Therapy shows how exercise is helpful for female survivors of cancer.

A USC study suggests regular exercise could add to the life expectancy of breast cancer survivors because it lowers their heightened risk of cardiovascular disease, Type 2 diabetes and possibly breast cancer recurrence.

“Many people don’t know the No. 1 cause of death for breast cancer survivors is heart disease, not cancer,” said Christina Dieli-Conwright, an assistant professor of research at the USC Division of Biokinesiology and Physical Therapy and lead author of a study published in the Journal of Clinical Oncology.

Breast cancer has a relatively high survival rate. An estimated 9 out of 10 people who have breast cancer are still alive five years after they were diagnosed, according to the American Cancer Society. An accompanying problem, however, is women tend to gain weight during breast cancer treatment.

The new study suggests female breast cancer survivors should engage in a mix of aerobic and resistance exercise to reduce their increased risk for metabolic syndrome — a cluster of health conditions that includes high blood pressure, excessive body fat and high triglycerides. High triglyceride levels increase the risk of stroke, heart attack and heart disease.

Women with metabolic syndrome are 17 percent more likely to get breast cancer, three times more likely to experience breast cancer recurrence and two times more likely to die from breast cancer, the study cited.

**Exercise improves heart health**

The randomized trial included 100 breast cancer survivors who received cancer treatment less than six months prior to enrolling in the study. The experimental group received three one-on-one exercise sessions per week over four months. The program included resistance training with weights and at least 150 minutes of moderate-intensity aerobic exercise.

When the study started, about 46 percent of the participants were obese, and 77 percent had metabolic syndrome. After the intervention, 15 percent of those in the exercise group had metabolic syndrome compared to 80 percent in the control group. The women who exercised lost fat and gained muscle. They also reduced their risk of heart disease. Their blood pressure decreased by 10 percent and their good cholesterol (high-density lipoprotein or HDL) increased by 50 percent.

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Cancer Research Spotlight: What deep-sea creatures tell us about cancer-fighting therapies

A new tool in the fight against cancer comes from the bottom of the ocean.

A team of scientists at the Keck School of Medicine of USC is looking to some deep-sea dwellers to create a better way to develop cancer-fighting therapies. Harnessing the power of the enzymes that give these marine animals the ability to glow, the team created a test that makes it easy for researchers to see whether a therapy is having its intended effect—killing cancer cells. Results of the study were published in Scientific Reports.

“One of the most promising areas in cancer research is immunotherapy, including chimeric antigen receptor-T [CAR-T] cells. It is also one of the most difficult because the methods for testing immunotherapies are not ideal,” said corresponding author Preet M. Chaudhary, professor of medicine at the Keck School. “Radioactive chromium release assay is the gold standard for testing whether an immunotherapy kills cancer cells. This method is expensive, complicated and requires special disposal practices. Other available methods also suffer from limitations and don’t allow scientists to rapidly screen immunotherapeutic agents to find the best candidates.”

The team set out to develop a simple, precise and inexpensive test based on marine animal luciferases, the enzymes responsible for bioluminescence. A group of small crustaceans and deep-sea shrimp were selected for their bright bioluminescence, and their luciferases became the basis of the test, called the Matador assay. Engineered to get trapped inside cells, the luciferases leak out of cells when they die, causing a visible glow. The level of luminescence can then be measured with a luminometer.

To test the Matador assay’s effectiveness at measuring cell death, several different types of cancer cells, including chronic myelogenous leukemia, acute myelogenous leukemia, Burkitt’s lymphoma and solid tumors, were treated with a variety of immunotherapies, including CAR-T cells, bispecific T-cell engagers and monoclonal antibodies. Results showed that the assay was so sensitive that it could detect the death of a single cell, a level of sensitivity far exceeding existing assays. Chaudhary’s lab has since developed more than 75 cancer cell lines expressing the marine luciferases and used them successfully in the Matador assay to develop next-generation CAR-T cells.

The assay is fast, inexpensive and can save time and reagents. “In our hands, the Matador assay can detect cell death in as little as 30 minutes, which can ultimately translate to more expedient treatments for patients getting cellular immunotherapies such as CAR-T cells,” Chaudhary said.

The Matador assay has many potential applications in biomedical research and cellular therapy manufacturing, such as potentially playing a role in screening other types of anticancer agents or even measuring environmental toxins, he noted.

Donor Spotlight: A Twenty Year Legacy of Giving

Since 1998, David Muñoz and his family have hosted an annual golf tournament fundraiser in memory of his father, Augustine L. Muñoz, in support of pancreatic cancer research.

In the summer of 1998, David Muñoz’s father, Augustine Muñoz, better known by family and friends as “Augie,” passed away from a rare form of pancreatic cancer.

For Augie, his pancreatic cancer diagnosis came just five weeks prior to his unfortunate passing.

In the United States, pancreatic cancer is the third leading cause of cancer-related deaths. More than 53,000 Americans were diagnosed with the disease in 2017 alone. Although pancreatic cancer is one of the deadliest forms of cancer, research in this area has been limited. Early pancreatic cancers often do not exhibit any warning signs or symptoms. By the time a symptom appears, the cancer has often already spread outside the pancreas.

To honor his father and support early detection of pancreatic cancer, David Muñoz, an alum of the USC Marshall School of Business, along with family and friends, hosts an annual golf tournament fundraiser.

Held on the second weekend in July, the event includes a fun afternoon of golfing followed by entertainment, cocktails, and dinner. To date, the tournament has raised close to $300,000 in funding for pancreatic cancer research, with proceeds going to the USC Norris Comprehensive Cancer Center in Augie’s name.

“This year will be the 20th anniversary of our golf tournament, and I’m proud of what it has become. It raises money for pancreatic cancer research, increases awareness for its cause and most importantly, keeps the legacy of my father alive,” David said.

When asked why he chooses to direct their philanthropic support to the USC Norris Comprehensive Cancer Center, David said there’s no better place to get on the front lines to fight this disease and ultimately find its cure.

“We see firsthand what could be accomplished here. From the research labs and clinical studies, to the caring nature and expertise of the doctors and nurses, we know our donations to the USC Norris cancer center are being put to good use.”

To honor the Muñoz family’s legacy of support, USC Norris dedicated a research laboratory and examination room in honor of Augie.

“It meant everything to see my father’s name on that wall. I feel really proud that the memory of my father will live on through our efforts,” David said. “His name will be seen every day and people will know that he was a fine man. It’s a great feeling to know that this way he’ll still be able to help other people in their time of need.”

Donors like David and his family are the driving force behind our cancer-fighting therapies and pioneering research. Thanks to their continued support, we are able to provide world-class care to countless patients and their families, while honoring Augie’s memory for generations to come.
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How exercise can boost the health ...continued from page 1

Inflammation and more

“Obesity causes inflammation, which may promote tumor growth and cause cancer recurrence,” said Dieli-Conwright, who regularly works with patients from the USC Norris Comprehensive Cancer Center and Los Angeles County + USC Medical Center.

In a previous study, she analyzed blood samples and fat biopsies from 20 obese patients. She found that exercise improved systemic inflammation and reduced inflammation in fat cells.

“Exercise is a form of medicine,” Dieli-Conwright said. “Both of these studies support that idea, and we will continue to conduct studies to supplement traditional cancer therapies.”

Our mission is to make cancer a disease of the past by advancing and integrating research, education, and personalized patient care.

Carla Sanchez works out with Christina Dieli-Conwright. (Photo/Christina Gandolfo)

Newsletter

Spring 2018

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