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WTIC Newstalk 1080

Nutrition and Cancer Prevention

Guest Expert:

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Healthline with Yale Cancer Center is a weekly broadcast on WTIC Newstalk 1080

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This is Healthline, a joint venture of WTIC NewsTalk 1080 and Yale Cancer Center. Yale Cancer Center is a resource for cancer programs throughout Connecticut, developing new advances in prevention, screening, diagnosis, and treatment. On Healthline, you will hear from some of the leading doctors in the country. Healthline is not intended to provide medical advice. Yale Cancer Center urges you to consult with a qualified physician in your community for diagnosis and for answers to your medical questions. And now, our co-hosts, oncologists, Ken Miller and Ed Chu.

Miller Good morning and welcome to Healthline. My name is Dr. Ken Miller and I am the Director of the Survivorship Program at the Yale Cancer Center in New Haven. I am here in the WTIC Studios with my colleague and co-host Dr. Ed Chu, who is the Chief Adults Oncologist at Yale Cancer Center. Good morning Ed.

Chu Good morning Ken. Healthline, with the Yale Cancer Center, is our way of providing you with the most up-to-date information on cancer care every Sunday morning at 8:30 a.m. Healthline features some of the nation's leading oncologists and cancer specialists who are in the forefront of the battle to fight cancer right here in our State of Connecticut.

Miller Each week, Ed and I are joined by a different expert from the Yale Cancer Center. If you would like to submit a question about cancer to Healthline, please e-mail us at healthline@yale.edu. Also, if you are interested in listening to past editions of Healthline, or if you would like to learn more about a specific kind of cancer, all of our shows are archived on the Yale Cancer Center website, www.yalecancercenter.org.

Chu Today, our focus is on nutrition and cancer prevention. Our special guest expert is Dr. Susan Mayne, Director of the Cancer Prevention and Control Program at the Yale Cancer Center, and Professor of Epidemiology and Public Health. Susan, thanks so much for being with us today on Healthline.

Mayne It is my pleasure to be here Ed.

Miller Susan, I would like to start with a question that may help me guide some of my patients. What are some of the guidelines written by the American Cancer Society for cancer prevention and what is 5 a day?

Mayne Beginning with the American Cancer Society Guidelines, it won't be surprising to most of your audience because it is the same nutrition guidelines we use for everything, not just for cancer prevention. Specifically there are four guidelines that the American Cancer Society emphasizes. The first guideline is to choose most of the foods that you eat from plant sources, for example fruits, vegetables and grains; this is the real foundation of the dietary pattern that is recommended by the American Cancer Society. The second guideline is to limit your intake of high fat foods, especially foods from animal sources like meats and dairy. The third guideline, which is really important for cancer prevention, is physical activity and maintaining normal body weight. We are learning more and more about the adverse effects of obesity in increasing your risk of cancer. The last guideline deals with alcohol consumption. We know alcohol is a risk factor for many cancers, so the American Cancer Society Guideline is to limit consumption of alcoholic beverages if you choose to drink at all.

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Your second question was about the 5 a day. The 5 a day is a program that the government has developed to communicate the health message that people should try to consume at least five servings of fruits and vegetables everyday. It does not mean five servings of fruits; what it means is roughly two or three servings of fruits per day and up to three or more servings of vegetables everyday.

Chu Are there any particular types of fruits and veggies that are better than others?

Mayne The guideline at this point is to strive for variety. Some very interesting research in just the past few years has indicated that a variety of fruits and vegetables may be much more important than simply numbers. The reason is, they all contain different constituents, different phytochemicals, different nutrients, and there is increasing evidence that it is the combination of these factors that may be very important for cancer prevention. Therefore, we recommend a variety of fruits and vegetables on a daily basis.

Miller I want to ask you about dairy products. A lot of us grew up hearing from our parents that we have to drink our milk and eat our cheese; can you comment on that?

Mayne The role of dairy in cancer prevention is controversial. At high levels of intake, there is some suggestion that dairy could actually increase the risks of certain cancers like prostate cancer; the other issue is simply the fat content of dairy. If people choose to consume dairy products, the recommendation is to choose lower fat options and to consume in moderation.

Chu In your third guideline you mentioned the important role of physical activity. Are there any general guidelines as to how long one should exercise or the particular types of exercise one should do?

Mayne Different organizations have different guidelines for physical activity. A general guideline would be to strive for 30 minutes of physical activity a day. What we are finding out is that Americans are well below that. Some organizations will strive for even higher guidelines and say an hour of physical activity a day; that is particularly for people who are already overweight or obese. As a general working guideline, if Americans strove for 30 minutes of physical activity a day, that would be a big step forward.

Miller What does this include? Some people are going to be running and swimming, but there are other people who cannot do that.

Mayne Even moderate physical activity, things like walking, taking the stairs, or even gardening, are helpful in terms of increasing calorie expenditure, which is really important in terms of weight control. There is more and more evidence that if you want to control body weight you have to include dietary modifications along with physical activity.

Chu In addition to the 5 a day of eating fruits and vegetables and fibers, are there any other nutritional supplemental recommendations that you might give to the cancer survivors out there listening today?

Mayne In terms of a nutrient supplement, there is no current recommendation that cancer patients or cancer

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survivors should be taking any particular nutritional supplement. There is research looking at the role of nutrient supplements in cancer prevention and improving outcomes of cancer survivors. Today, the evidence does not conclusively indicate that any of these supplements have demonstrated value in preventing cancer or reducing recurrence. So, the current emphasis is on foods where the data is most compelling and most consistent for a cancer patient to improve their odds. Focus on a healthy diet, physical activity and maintaining appropriate body weight.

Miller Is there any value in taking vitamin E, vitamin C, and folic acid supplements?

Mayne The data actually indicates that some of these nutrients can be harmful. A recent analysis suggests that people who are taking high doses of vitamin E actually have an increased likelihood of dying. When you take nutrients at high levels you have to be concerned about adverse effects, and there is more and more evidence coming out that at high doses of nutrients, we can encounter these adverse effect. The government has recently set upper limits for all of the major nutrients to give guidance to consumers about what levels of nutrient supplements seem to be safe and what levels may increase the risk of adverse events. If consumers are interested in looking at the upper levels for these different nutrients, it is all available on the web under dietary guidance.

Miller Patients ask us all the time what they should take to help prevent the cancer from coming back. If someone says I want to take a multivitamin or I want to take vitamin C, are those safe?

Mayne Yes, multivitamins are certainly safe. Whether it can improve the likelihood of recurrence, there really is no clear scientific evidence, so I would say multivitamins are a personal choice. I think the major emphasis has to be on diet. In terms of other nutrient supplements, some data suggests that they can actually cause harm. For example, if someone is a cigarette smoker, we learned that taking supplements of beta carotene is likely to increase their risk of lung cancer, not decrease it. If you are a nonsmoker, it may not have the same effect. What we are learning is that individual characteristics of people help influence whether or not nutrient supplement will be helpful or harmful to them. While the research continues, it is certainly fine to take a multivitamin, but I would steer people away from higher doses of individual nutrients because there is clear evidence that it can have adverse effects.

Miller This is really interesting information for me and hopefully for our listeners too. We would like to remind you to email your questions to us at healthline@yale.edu. We are going to take a short break for a medical minute. Please stay tuned to learn more information about nutrition and cancer prevention with Dr. Susan Mayne from the Yale Cancer Center.

Medical Minute

It is estimated that over 2 million men in US are currently living with prostate cancer. One in six American men will develop prostate cancer in the course of his lifetime. Yet major advances in the protection and treatment of the prostate cancer have dramatically decreased the number of men who die from the disease. New treatment options now provide hope for all men diagnosed with prostate cancer. Screening for prostate cancer can be performed quickly and easily in the physician's office using two simple tests, a physical exam and a blood test. With screening, early detection, and a

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healthy lifestyle prostate cancer can be defeated. Clinical trials are currently underway at Yale Cancer Center, Connecticut's only federally designated comprehensive cancer center to test innovative new treatments for prostate cancer. The patients enrolled on these new trials are given access to experimental medicines, which have not yet been approved by the food and drug administration. This has been a medical minute brought you as a public service by the Yale Cancer Center. For more information visit our website at www.yalecancercenter.org.

- Miller Welcome back to Healthline. This is Dr. Ken Miller, and I am here with my co-host Dr. Ed Chu and our guest Dr. Susan Mayne, an expert in cancer prevention and nutrition at the Yale Cancer Center. Susan, I want to start up by asking you how high fat diets contribute to the development of cancer.
- Mayne What the evidence seems to indicate is that high-fat diets are associated with higher body mass and higher weight gain. What really seems to be driving the relationship is obesity. The evidence is quite clear and quite consistent that obesity increases the risk of cancer. It becomes more controversial when we talk about high fat diets. This is a little unclear because there are different types of fats in our diet. We know that foods that are high in saturated fat and trans fats, are associated with adverse health effects; not just in terms of cancer but also in terms of cardiovascular disease and other chronic illnesses. Where we have to be careful is that some fats are actually healthy. There is research looking at polyunsaturated fats, specifically omega 3 fatty acids and fish oils, which may actually help to reduce the risk of certain cancers. One of the complexities is that we tend to group all fats together when we give health messages to the public, when in fact, they are all very different and may have very different health effects. If we are talking about diets that are rich in saturated fats and trans fats, then the data is quite clear that this is not the way to go in terms of the dietary recommendation, but I do not think we should mislead individuals into thinking that all fats are bad for them because they clearly are not.
- Chu I want to talk about healthy fats for a minute. If you are preparing a meal for your family, or if you want to give some advice, what are some foods that have healthy fats in them?
- Mayne Thinking about general disease prevention and not specifically cancer, again fish oils are a class of fat that is being widely studied for cancer prevention as well as for cardiovascular disease prevention. There is strong evidence supporting the consumption of fish as a healthy dietary practice. Other examples are monounsaturated fats and some of the polyunsaturated fats found in nuts. People who consume things like nuts have a lower risk of cardiovascular disease and there is no indication that a diet rich in that type of fat increases your risk of cancer. For this reason, we have to be more careful in our health messages to differentiate between healthy fats and not so healthy fats.
- Chu I believe that almonds actually have a particularly high concentration of good healthy fats.
- Mayne That is correct, and walnuts and many other nuts as well. I do not think we should be steering people away from fatty foods if they contain healthy fats, but watch out for saturated fats and trans fats. Food labels are now required to list trans fatty acid contents. It is a reasonable approach for people to look at food labels and look at saturated fats and trans fats. If you are cutting those foods from your diet, you are going to be eating a healthier dietary pattern overall.

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- Chu There was recent news that said there are a number of restaurants in New York City that are actually advertising themselves as not having any trans fat foods being served or prepared in the restaurants.
- Mayne That is correct, and there is certainly a movement throughout the US to try to eliminate trans fats from diets. The major reason for this is cardiovascular disease prevention, but again, that type of a diet would be associated with the reduction in risk of other chronic diseases like cancer.
- Chu It's important to emphasize that a good healthy lifestyle is good not only to prevent cancer, but also for general well being.
- Mayne When we look across the different nutrition guidelines that are put out by the different organizations, whether it's the American Cancer Society or the American Heart Association, it is interesting how concordant those guidelines are. If you are following this type of diet you are going to be reducing your risk of many different chronic diseases, not just cancer.
- Chu Susan, in the last segment we were talking about the potential benefits of vitamins and nutritional supplements. In our clinic, we hear about a lot of patients who are going on the internet and looking for herbal medicines and herbal supplements. What are your thoughts on their potential role?
- Mayne This is a tricky area and the reason is that herbal products are not currently regulated anywhere close to how other medications are in the United States. There is no pattern process on herbals or quality control in terms of what the concentration of active ingredients is in different preparations. It is a difficult thing to even advise people about in terms of what are they taking and what is in the product. In terms of scientific evidence, there is research being supported by the National Cancer Institute to try to investigate if some of these herbal products may have health benefits. The research is going on all the time. If listeners want to go to the web and get information, one legitimate source to get information is the Office of Dietary Supplements at the NIH. They have a website with fact sheets on all the different herbals and what the current scientific evidence supports in terms of herbal products.
- Chu One line of research is a trial going on now called Selectra which looks at the prevention of prostate cancer. Can you tell us a little bit about that?
- Mayne Selectra is a major trial that is underway right now. Over 35,000 men have been recruited into this trial. This trial is testing the hypothesis that supplements of vitamin E and selenium may have benefits in reducing prostate cancer incidence. The trial was done because of some unexpected findings from other clinical studies involving vitamin E and selenium. At this point in time, we do not know whether or not these two nutrients have value in prostate cancer prevention. It is going to take a long time because we are looking at prevention of new prostate cancers and it is a 13-year study. Hopefully in the next 5 to 10 years, we will have more information about whether this is something we can recommend to patients as a way to reduce the risk of prostate cancer.
- Chu Are there any foods that are particularly rich in either vitamin A or selenium?
- Mayne Vitamin A is a lipid soluble nutrient that largely comes from vegetable oils. High fiber foods contain a

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significant amount of vitamin E, because it is found in wheat bran as well. People who are following a typical dietary pattern with fiber-rich foods and with some vegetable oils will get a significant amount of vitamin E. Selenium is tougher because it is a trace mineral, and the amount of selenium in food is a function of the soil in which it was grown. The selenium content of food is something that people cannot really assess or measure, at least the general public. What we do know is that most people get enough selenium so we avoid any selenium deficiency diseases. What Selectra is testing is really higher doses of selenium that can only be achieved through supplementation.

Chu If a patient were to listen to this and think that maybe they should start taking selenium and vitamin E today, what would be your response?

Mayne Again, we have to be a bit cautious because data does indicate that vitamin E can increase the risk of cardiovascular disease and overall mortality. It is really a risk and benefit decision and the trial is trying to gather that information; is there a potential benefit for prostate cancer prevention that may outweigh the known risks of vitamin E? This is the same with selenium. Selenium is a nutrient that has a pretty narrow safety margin between the upper limits and the doses that are currently being studied. Therefore, these trials are carried out with the data safety monitoring committees that are looking at the data to make sure that there are no adverse events. If a person chooses to take supplements on their own, there is nobody monitoring to make sure there are no adverse events as there are in the clinical research studies.

Miller We have an e-mail from Barbara who lives in West Hartford. She says,

Is organic food better than nonorganic food?" What does it mean?

Mayne This has actually become a lot clearer than it used to be in the past. In the past, the term organic could mean anything that anybody wanted to apply it to. Now, the term organic is regulated to a certain extent. We know a little bit more about what organic foods do and do not contain. From a health point of view, the nutrient content in organic foods is probably pretty similar to what you get in conventional nonorganic foods. People may choose to purchase organic foods because they are concerned about pesticides and other factors. The real issue with organic is the effect on the environment more so than health effects. We have been unable to demonstrate so far that there is a clear health benefit from a disease prevention point of view by eating organic foods; however, it may be a practice that is supportive of the environment.

Miller We would like to remind you to e-mail your questions to us at healthline@yale.edu. We are going to take a short break to listen to a survivor story. Please stay tuned to learn more information about nutrition and cancer prevention with Dr. Susan Mayne.

Medical Minute

A few years ago, the diagnosis of cancer was a death sentence for many patients, but today, thanks to advances in clinical research we are turning the corner in the battle against cancer. There are over 10 million cancer survivors now living in the US. They are the true heroes in the war against cancer. Here is the story of a hero from Hamden.

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Ten years ago, when I was diagnosed with aplastic anemia, there was no cure. After teaching math for thirty-five years, I was forced to retire. Then I met Dr. Tom Duffy at the Yale Cancer Center. He told me about a new procedure called a mini stem cell transplant. He encouraged me to put my life in the hands of Dr. Stuart Seropian, one of the few doctors in the country doing this procedure. On January 17, 2004, I had a stem cell transplant at the Yale Cancer Center. At age 70, I feel like a new man. I owe a great debt of gratitude to the terrific staff at Yale Cancer Center. They literally saved my life.

This survivor's story has been brought to you by Yale Cancer Center.

Miller Welcome back to Healthline. This is Dr. Ken Miller, and I am here with Dr. Ed Chu and our guest Dr. Susan Mayne, the Director of the Cancer Prevention and Control Program at the Yale Cancer Center. Susan, I want to ask about your work in nutrition. Can you talk about nutritional research that you do at Yale.

Mayne Some of the research we are involved in is trying to identify nutrients or dietary patterns that may reduce the risk of cancer. Diet is a really complex thing to study, because we have to address it on the level of nutrients, foods, food groups and dietary patterns. So, some of our researchers are trying to identify dietary patterns, food groups etc., that are associated with a lower risk of cancer. One of the difficulties in doing research in this area is that we often rely upon self report of what people are consuming. Recent research has indicated that self reports of diets are not always completely accurate, which I am sure is not surprising to anybody who has ever filled out a dietary questionnaire. Some of our work and other work that is going on around the US is looking at biomarkers of nutrient intake. For example, we can measure nutrient levels in the body that are more indicative of exactly what people are consuming rather than having to rely exclusively on self report. Some of our own work is looking at biomarkers of dietary intake that can be used as objective indicators to validate what people are telling us in terms of their nutrient intake patterns.

Chu Are you measuring things in the blood or taking specimens from parts of the body to look at the nutrient levels?

Mayne For different nutrients we use different methodologies. For example, if we wanted to know the types of fats that people are consuming, we would get a blood sample and collect the red blood cells to look at the fatty acid profile as an indicator of the dietary pattern. We have done this in some of our research studies. Some nutrients are measured in blood samples. The obvious problem with this is that people are not always willing to donate blood samples and it adds to the research cost because we have to use phlebotomists, or nurses, to collect blood samples and there are issues in instability and storage. An area that we are currently moving into is using technology to assess nutrients noninvasively. A study that we are currently working on is using laser light to measure nutrient levels in skin noninvasively. It is really exciting that we have the opportunity to have quick indicators of nutritional status using technology that will improve the quality of the research on diet and health.

Miller If someone listening wants to participate in the trial and they hear about the use of a laser, will this hurt? What does it mean when you say you use laser light?

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- Mayne We are using very safe low levels of laser light. The laser strength that we are using is safe for up to many hours of irradiation on the skin, and we are using it for one minute. It is certainly safe in terms of the application that we are using it for.
- Chu Could explain what chemoprevention means; we hear about it a lot these days.
- Mayne Chemoprevention basically refers to using a compound for cancer prevention. That compound could be a nutrient, a medication, something like aspirin, and there are many different nutrients and compounds that are being studied for their ability to help prevent cancer and it is an ongoing area of research. There are many prevention clinical trials on the way. Many of these are studying patients who have already had one cancer and we are trying to prevent a second cancer. There are a couple of reasons that this is one of the research models we use. These people certainly are at a greater risk for cancer and so doing interventions, or clinical trials, in this patient population is really efficient and it is also clinically relevant. Some clinical trials were looking at dietary patterns. A very interesting study recently looked at lowering the fat content of the diet in breast cancer survivors. The study showed you could reduce the risk of a second breast cancer through a dietary intervention. All of this would be encompassed in the term chemoprevention.
- Chu Are there any nutritional supplements or nutrients that have been shown to reduce the risk of cancer?
- Mayne At this point, not definitively in all populations. There are some studies that suggest certain subgroups may benefit, but our knowledge at this point is really premature to recommend it as a global approach for people. If people want to reduce the risk of second cancers, what the data clearly indicates are strategies like quitting smoking if you are currently smoking and consuming less alcohol. Those types of lifestyle modifications are where the data is much clearer.
- Miller I think it is fascinating what they found out about consuming fats related to breast cancer. Can you tell us more about that study?
- Mayne In that study they randomized a large number of woman, over 2,000 women who had breast cancer, and assigned them into either a dietary intervention group or were told to continue their usual diet. What we found was that the breast cancer went down in the women who reduced their fat intake. What the mechanism is remains a little bit unclear, but we do know that these women did lose some weight and this may account in part for their benefit. There are other studies currently underway at Yale looking at physical activity interventions in breast cancer survivors as another mechanism to help reduce the risk of second breast cancers.
- Miller There was a large trial recently completed called the Women's Health Initiative, what were some of the findings from that study?
- Mayne The Women's Health Initiative was what we call a primary prevention trial. It was studying people who did not have cancer yet, and asked them to lower their fat intake in one group, and continue what they were doing in the other group. It was a multiyear study and they simply tracked people forward in time to see if there was a difference in the variety of different end points, including breast

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cancer. What the trial results showed was that there was a reduction in breast cancer, but it was not a large enough effect to be statistically significant. The interpretation of that study is up in the air. We saw that the pattern was in the right direction, but it was not as large as we would have expected. At the same time, one of the problems with that dietary intervention is that it did not differentiate the different types of fats as we discussed previously. Some women may have been lowering their intake of the healthy fats and not differentiating those from the harmful fats. We have learned a lot since that trial was designed and implemented many years ago. Nonetheless, the data was supportive of dietary fat potentially being a risk factor, but again that study had some limitations as well.

- Chu If the patient, or someone in the public, wants to access some of the cutting edge research that you are doing, how would they do that?
- Mayne If they are interested in knowing more about the Cancer Center, they can certainly go to our website, www.yalecancercenter.org. I head the Cancer Prevention and Control Research program which is listed on the Yale Cancer Center website. They can also contact any individual investigators if they have studies open and available. Sometimes we have patients contact us and say that they are interested in a physical activity intervention study for example. You are certainly welcome to call and see if a certain trial is available.
- Chu Any key points you want to leave us with?
- Mayne Nutrition and cancer prevention is pretty basic information. The message we communicated earlier, eat fruits, vegetables and whole grains, reduce animal fats and maintain appropriate body weight, is really the crux of nutrition and cancer prevention.
- Miller If you have questions for Dr. Susan Mayne, or for Healthline, we encourage you to go to our website, www.yalecancercenter.org for more information. We want to thank you Susan very much for joining us on Healthline today.
- Mayne It is my pleasure. Thank you.
- Chu Remember to tune in to WTIC NewsTalk 1080 every Sunday morning at 8:30 a.m. for Healthline with the Yale Cancer Center. Please join us next week when we will be discussing all the exciting new developments that are ongoing here at the Yale Cancer Center. Our guest will be the Director of Yale Cancer Center, Dr. Richard Edelson. Until then, this is Dr. Ed Chu and Dr. Ken Miller from the Yale Cancer Center wishing you a safe and healthy week.

You have been listening to Healthline, a joint venture of Yale Cancer Center and WTIC NewsTalk 1080. Join us next Sunday morning from 8:30 to 9:00 a.m. for another addition of Heathline on WTIC NewsTalk 1080.