Dr. David Leffell, Detection and Prevention of Melanoma September 7, 2008Welcome to Yale Cancer Center Answers with Dr. Ed Chu and Dr. Ken Miller. I am Bruce Barber. Dr. Chu is Deputy Director and Chief of Medical Oncology at Yale Cancer Center and Dr. Miller is a medical oncologist specializing in pain and palliative care and he also serves as Director of the Connecticut Challenge Survivorship Clinic. If you would like to join the discussion, you can contact the doctors directly. The address is canceranswers@yale.edu and the phone number is 1-888-234-4YCC. This evening, Ken Miller is joined by Dr. David Leffell, Professor of Dermatology and Surgery and Deputy Dean of Yale School of Medicine, he is also the CEO of Yale Medical Group and the author of "Total Skin." Dr. Leffell is here to talk about the latest information on skin cancer prevention and melanoma.Miller Let us talk a little bit about the progress, or lack of progress, in the last decade in getting people to use sun protection.Leffell I think there has been progress. In a moment I will talk about some brand new data that suggests we are not making as much progress as we would like, but I think overall in the last decade we have had a chance to convince people of one important fact; generally speaking the sun causes skin cancer. The scientific evidence that supports that has mushroomed, and that has given physicians and other health care providers a hook to be able to educate listeners about the importance of protecting their skin against the harmful effects of the sun.Miller Along those lines, tanning has become popular. Is it safe?Leffell Tanning has been popular ever since it was popularized by Coco Chanel. It is a durable social statement and fashion statement and it is especially concerning because it has captured the imagination of our youth. The reality is that a tan is the body's response to injury caused by ultraviolet radiation. In addition to that fact there are now many mixed messages out there by different groups who have vested interest in convincing people that tanning is actually healthy. We are dealing with a younger population, particularly women who go out of their way to get a tan using tanning parlors. Tanning parlors are so dangerous from a dermatologist's point of view that in many states they have been tightly regulated. Just this summer new evidence was published showing that the rates of malignant melanoma, the most serious form of skin cancer, are increasing in women born after 1990. A report came out showing an increase in melanoma in young women compared with young men, and this is consistent with what we as practicing dermatologists have been saying. Although the reason for the increase in melanoma in young women is not known, I believe an important role has to be assigned to the use of tanning parlors and aggressive tanning in general. The fact that young people are spending more time in the sun has been demonstrated in several other3:15into mp3 file http://www.yalecancercenter.org/podcast/Answers_Sept-07-08.mp3 studies published over the past couple of years. On the one hand, people are getting the message that the sun can cause skin cancer and therefore proper sun protection is important. On the other hand, we are dealing with the age old phenomenon seen in young people that they believe they are immortal. Because of that, they feel they do not have to take the precautions that older or

more mature people among us recognize as a good idea.Miller It is frightening that it is people that young, and I did not know that so it is an important piece of information to get out there. Looking at the flip side of it, is there one? Is there is any amount of sun exposure that is healthy?Leffell Of course there are many good things about the sun. It has crept into our language, our music and our poetry, and there is a reason for it. We know that the sun makes us feel good and we know conversely, that in the absence of sun, there is a phenomenon called seasonal affective disorder, which some of us in the Northeast may be at risk for. Having said that, everything in nature has its pluses and minuses, so while a big plus of the sun is that we cannot have life on earth without it because it is a source of photosynthesis, the bad side is that when we are immoderate with respect to our exposure to the sun, we set up a cascade of events in our skin that can lead to skin cancer. While the majority of skin cancers are easily treated, we worry the most about the development of malignant melanoma, which does have a potential to not only spread throughout the body once it develops in the skin, but leads to death as a result.Miller There has been a lot in the media recently about vitamin D. We need vitamin D and it may reduce the amount of breast cancer and reduce the risk of recurrence of breast cancer. What are your thoughts about that? Is that a reason people should get more sun?Leffell The vitamin D story is actually one of the issues that I was referring to earlier when I commented on vested interests. For some reason the tanning industry, in another words the people that market tanning booths, had been very aggressive about claiming that ultraviolet radiation does not cause skin cancer, which by the way is scientifically incorrect. Moreover, they are making the claim that people that use sunscreen, for example, are diminishing the amount of sun exposure they need to develop vitamin D. Now it is quite true that vitamin D is a hormone and it is manufactured by the body when ultraviolet light hits the skin and converts cholesterol molecules that normally sit in your skin into precursor molecules that then turn into vitamin D. We have known for a long time that vitamin D is essential for bone health and many other aspects of metabolism, and recently, there has been epidemiologic, though not laboratory data, to6:26into mp3 file http://www.yalecancercenter.org/podcast/Answers_Sept-07-08.mp3 suggest that vitamin D levels may correlate with some of the things that you have mentioned relating to cancer. I caution listeners that that information is far from validated and that the risk of developing skin cancer from excess of exposure to the sun far out weighs any theoretical risk related to vitamin D levels. Besides, you can boost vitamin D levels with oral supplementation. We have supplemented milk for many-many years, in fact, going back to the early to mid part of the last century when school children were developing rickets, it became obvious that they were suffering from a vitamin D deficiency and that is what led to milk supplementation. Sun does stimulate vitamin D production in the skin. You really need about 2, 15 minutes sessions of sun exposure, exposing your arms, face or some relatively small part of your body to noonday sun. One interesting observation is that an excess of sun exposure will actually breakdown vitamin D precursors in the skin. Like everything else in nature,

there is a balance, and the trick for individuals thinking about how they are going to develop a personal sun strategy is to figure out what their personal risk is for skin cancer and how they are going to protect themselves on a day-to-day basis.Miller How does a person assess what their risk is as opposed to their neighbor?Leffell First and foremost you have to take a look in the mirror and see what kind of skin, hair, and eye color you have. The people that are most at risk for developing melanoma are those with fair skin, blonde or red hair, and light colored eyes; green/gray eyes. These individuals know who they are because when they go out in the sun they either burn, or they burn and then tan, and this is an indication that your body lacks the pigmentation necessary to protect you from the harmful effects of the sun. After you look in the mirror and figure out what your so called phenotype is, that is the word that we use to describe what you look like, then turn around and look at the family pictures on the wall and see if you can identify through your family history whether there is a history of melanoma. If you do have a family history of melanoma that is another risk factor that you should pay attention to. If you had a blistering sunburn in childhood, that increases your risk of melanoma. If you fall into any of these categories, you need to be especially vigilant about protecting yourself from the harmful effects of the sun.Miller Along those lines, if someone looks at themselves in the mirror and goes through their family history, if they identify themselves in two groups considered high risk, what would you recommend as a strategy? And if they identify themselves at low risk, what would you recommend as a strategy?9:32into mp3 file http://www.yalecancercenter.org/podcast/Answers_Sept-07-08.mp3Leffell If an individual is identified as high risk for skin cancer, melanoma, they should make sure that they follow the following sun protection strategies:Miller Let me ask you about clothing because my own sort of belief would be that if I have my shirt and pants on I am not getting sun exposure. Is that true or false?Leffell Well it depends upon the fabric. A white T-shirt, for example, which many may choose to run around in during the summer months or fall months, provides sun protection of 4. The sun protective factor, or component of fabric, depends on the tightness of the weave and the color of the fabric. A dark T-shirt actually provides more protection and it is especially attractive for children because remember, we believe that 85% of lifetime sun exposures is acquired by age 18. If you can protect your children from the harmful effects of the sun and buy sun protective clothing for them, even if you think you yourself are a lost cause, which I hope you are not, you can help them minimize those initial genetic injuries caused by the sun that set them up later in life for getting skin cancer.Miller That reminds me, years ago, in my lifetime, people used to put oil on to get a sunburn or a sun tan, and now, thankfully, most of us are using the sun block.Leffell You are absolutely right. There is still a lot of confusion among my12:37into mp3 file http://www.yalecancercenter.org/podcast/Answers_Sept-07-08.mp3 patients and others about what kind of sunscreen to buy. Needless to say, like everything else in the marketplace, there is a lot of advertising and a lot of claims and that is why I would like to keep it simple. Any sunscreen that feels

good on your skin with a sun protection factor of 30, which also provides UVA protection, is good. The continuous spray products made by many different companies now are very effective, especially with kids who are not especially eager to sit still while you smear them with cream. You can actually spray the sunscreen on as they run by.Miller We would like to remind you, you can email questions to us at canceranswers@yale.edu. We are going to take a short break for medical minute. Please stay tuned to learn more information about melanoma and sun exposure with Dr. David Leffell.Miller Welcome back to Yale Cancer Center Answers. This is Dr. Ken Miller and I am joined today by Dr. David Leffell who is the author of the book Total Skin. He is also a dermatologist here at Yale Cancer Center and he is discussing the latest information on melanoma detection and treatment. We are also talking about the sun and sun exposure. David, I want to ask you a little bit more about the sun and then about skin cancer. Can you tell us a little bit about the different types of UV, ultraviolet rays?Leffell There are three types of ultraviolet radiation that come from the sun that we typically think about. There are only two that we are concerned about; ultraviolet B rays and ultraviolet A rays. Ultraviolet B rays are those that cause sunburn, and a good way to remember it using a mnemonic device is to say, ultraviolet B, B for burning. Ultraviolet A rays penetrate more deeply into the skin and are thought to be responsible in large part for the ageing of the skin, premature wrinkling, pigmentation, spots and that sort15:21into mp3 file http://www.yalecancercenter.org/podcast/Answers_Sept-07-08.mp3 of thing. It is true though that ultraviolet A rays do play a role in causing cancer, though they are probably not as problematic from that point of view as the ultraviolet B rays.Miller Let's talk about melanoma, how common is it? How many patients each year develop melanoma?Leffell Melanoma is increasingly common. Fortunately, the death rate from melanoma is going down. What that suggests is that we are diagnosing it earlier. Typically about 8000 people a year die from melanoma so it certainly is not one of the more common causes of death. The important point is that unlike other cancers, which may be hard to diagnose, melanoma for the most part originates on the skin where it can be identified early at its most curable stage.Miller What should lead a person to go the doctor? What kinds of things might they see on skin that should be of concern?Leffell I think that individuals should, #1, have a full body skin examination with a dermatologist, or other individual properly trained in doing a skin exam, once a year. But you yourself should learn how to examine your body and be alert to any moles that come up or any spots. The typical things we advise is any sore that bleeds and does not go away or heals up and then comes back; that could be any form of skin cancer, but when it comes to melanoma we are specifically concerned about moles or spots that grow in size that are asymmetrical, in other words, if you folded them over in your mind's eyes, the size would not match, or if they have irregular pigmentation. Most moles are an even tan or brown color, but melanomas tend to have a variety of colors in them because they actually reflect the biological processes going on as the body is trying to fend off that cancer from developing, and also moles that

have irregular edges or sharp angles. Basically, any mole that looks odd or funky, and I have just described the classic signs of melanoma. You typically do not want to wait until your lesion or your spot is ulcerated or bleeding because that is a more advanced stage of melanoma. You want to get it at the first sign that it is abnormal. I have been impressed over the past 20 years how well patients can identify lesions themselves, it is really quite remarkable. People with no special knowledge or background in medicine will come in for a full body skin examination and I will go through it and not identify anything that is of concern to me, but the patient will ask, "What about this thing here?" And I will look at it again and it is not especially concerning but I will say, what do you not like about it? They will say, "I do not know, I just do not like it." We train our residents at Yale that if this happens, that lesion comes off. If the patient does not like a spot, even though the18:20into mp3 file http://www.yalecancercenter.org/podcast/Answers_Sept-07-08.mp3 majority of the time it is benign, it comes off because there have been enough occasions in my experience where patients identify lesions that otherwise reflect nothing, but prove to be problematic. It emphasizes the point that the doctor needs to listen to the patient, but that can only happen if the patient speaks up.Miller It is a good lesson for all parts of medicine, if people feel something is not right with their body, it is important to tell the doctor and to ask that it be looked into further, but especially in the case of skin cancer. There was an article in the paper several years ago about dogs that were trained to identify skin cancer, is that truth or myth?Leffell Well, I have not seen followup scientific studies. My guess is that because dogs have such a strong sense of smell, they may have been keying into the smell of blood. Tumors have an increased blood flow if they are ulcerating and bleeding, and that becomes a unique spot on the person's body that the dog might horn into, but I probably would not rely on the canine approach to diagnosis. It is much better for you to learn your own body and if you see a mole that bothers you, that is new, that you have not seen before, or has changed, that is in anyway worrisome, pick up the phone, call your dermatologist, and if they cannot get you in soon enough ask for a reference to another one so you at least have that spot evaluated.Miller If we put the canine approach to the side, which is probably a good idea, how do you make the diagnosis of melanoma?Leffell Well it starts with the examination that I have described, and if I see a mole that is of concern, that just does not fit into the right pattern for a normal mole, then I discuss with the patient what my concern is and recommend a biopsy. A biopsy, at least the way we do at Yale Cancer Center, is a very simple procedure. We simply numb up the area with a little injection of anesthetic that takes literally just a few seconds, and then with a blade we simply shave across the undersurface of the lesion to ensure that we got it all and send it off to the pathologist. The whole procedure takes just a couple of minutes and it allows us to evaluate the lesion. In cases where there is a very large spot that cannot be biopsied in that fashion we might take a little punch biopsy that's like a little cookie cutter and take a small sample of a larger area. Many years ago, there was concern, as there was for many types of cancers, that if you cut into it you could spread it, but there is not evidence

that that is the case. Most of the time when you "biopsy a melanoma" in the approach that we do, and the approach we train our residents and fellows, the biopsy itself removes a lesion and if it is a melanoma, an early stage melanoma, we have to go back and perform some definitive skin surgery.21:18into mp3 file http://www.yalecancercenter.org/podcast/Answers_Sept-07-08.mp3Miller When the pathologist looks at that sample, what are some other features that they are looking for that can help guide them, what happens next with the patient?Leffell They are looking first to make the diagnosis of melanoma and to see the abnormal pigment cells. Melanoma is a cancer of the pigment cells, but the single most important thing that pathologist look to identify is the depth or the thickness of the melanoma because there is a huge amount of data which suggests that the thickness of the melanoma is directly related to the prognosis. The vast majority of early melanomas are up to 1 mm in depth and they have better than 96% cure rate with simple office surgery. The melanomas that go deeper than that, of course, can be more problematic. By and large, patients do well with proper treatment. The fact that there is a relationship between the depth of the melanoma, how long it has been there in many cases and the prognosis for the patient, highlights the importance of early diagnosis and treatment.Miller After the patients have a biopsy and you have established the diagnosis, what happens next?Leffell Well if it is a early stage melanoma, then an individual simply has to have a re-excision with typically 1 cm margins, or third of an inch, all around the growth, however, if it is a more advanced melanoma, there is a procedure that is commonly done now by surgical oncologists specially trained in the procedure. It is called, sentinel lymph node mapping. With this procedure it allows the surgeon to evaluate the lymph node chain to which the particular melanoma might be draining. When that is done, you can sample the lead lymph node, or the sentinel lymph node, and if there is no cancer in it you know you do not have to take any more lymph nodes and you also have some additional information about prognosis. If there is already melanoma in that sentinel lymph node then there is a decision made to remove the lymph nodes and consider what kind of chemotherapy or other treatment might be indicated.Miller You are very, very well known for Mohs surgery. One of the e-mail questions we received was about that and the woman was asking if it is something that would be useful for her husband who was just diagnosed with melanoma?Leffell That is a great question. Mohs surgery is an office-based technique for removing non-melanoma skin cancer, basal cell cancer, and squamous cell cancer. The reason it works so well there is because success in removing those cancers depends on removing all the cancer cells and as little normal tissue as possible. The procedure is done in the office by a specially24:11 into mp3 file http://www.yalecancercenter.org/podcast/Answers_Sept-07-08.mp3 trained dermatologist, and one is able to go ahead and do plastic reconstruction if necessary at the same time, however, treatment and cure of melanoma depends on taking that margin of safety I talked about, so there is really no advantage to doing the Mohs procedure. There is a form of melanoma that is increasing that we did not mention, and that is called melanoma in situ. This

is actually the least serious form of melanoma because it is non-invasive, it remains confined to the epidermis or the top layer of the skin, and this is also removed surgically in the office, but sometimes the edges are hard to see and you have to go back a second time. Even for that we do not use the Mohs technique because, in my opinion, looking at the tissue right away after it has been frozen and stained is not as reliable as the permanent section method where we actually embed the tissue in paraffin.Miller This question is based on things that I have heard people ask, are melanomas always black?Leffell That is a myth. Melanomas can sometimes be variegated. Horticulturalists among the listeners would know that word for sure. They can have varying coloration. In addition, there is an especially challenging type of melanoma called amelanotic melanoma. In very fair individuals, melanoma can develop that has no pigmentation and does not look like anything special at all and dermatologists are always on the look out for that and I find the patient's own sense of whether there is something wrong can often be a good cue in that situation.Miller All right truth or myth, melanoma only develops in sun-exposed areas.Leffell Myth. The reason for doing a full body skin examination is because melanoma can occur where the sun does not shine, and I think all dermatologists have seen melanomas in the groin area and other sun protected areas such as the palms and soles. The fact is that a certain percentage of melanomas are not related to the sun. The result of genetic or familial tendency will develop whether or not there is sun exposure.Miller Another question I've heard, can African Americans develop melanoma?Leffell Absolutely, people with dark skin tend to develop melanoma on the palms, soles or in the nails, and that is why careful examination of those areas is so critical.Miller Let me ask you a little bit about multidisciplinary care for people who have had melanoma. If someone had lets say, initial surgery, they have had a wider excision and you do find a lymph node involved, what26:54 into mp3 file http://www.yalecancercenter.org/podcast/Answers_Sept-07-08.mp3 progress has been made in that situation?Leffell There has been a great deal of progress, but it all begins with the multidisciplinary approach that you are referring to. For the earliest stage melanoma that is easily treated in the doctor's office, it is important to have regular followup and regular exams, but for the more advanced melanomas, presentation to a multidisciplinary melanoma panel is important. At Yale Cancer Center, we have had a melanoma panel shared by Dr. Stephen Ariyan that goes back many, many years. It is an opportunity to bring together a variety of specialists who can review the patient's case and make recommendations about further treatment, studies that might be helpful and how to best manage that particular case.Miller It sounds like a number of efforts are being made at Yale and elsewhere to really harness the power of the immune system.Leffell It is interesting, melanoma is one of the few cancers that is directly impacted by the immune system. I could go on for hours talking about it, but all I will tell you is that when I talked before about irregular pigmentation, one of those colorations you see in melanoma is white, sometimes even red, and that is a sign of regression of the melanoma being auto-digested by the body's immune system. For some reason, melanoma is very susceptible

to immune function and immuno-biologists at Yale, and elsewhere, are trying to figure out what the best approach is. It is not uncommon to read about a new vaccine for melanoma in which individuals are trying to harness the body's native, or actual immune system, to fight off melanoma either by developing a vaccine to a protein of the melanoma or the patient's own melanoma cells.Miller Which is exciting. We learned a lot today about diagnosis and about risk factors. I want to encourage people, even though we are starting the fall season, it is still important to wear sun block. David is that true?Leffell It is true. The sun continues to shine and the best approach to sun protection is to make a daily habit of it. In that way, you do not even have to think about it.Miller I want to thank Dr. David Leffell for joining us on Yale Cancer Center Answers. Until next week, this is Dr. Ken Miller from the Yale Cancer Center wishing you a safe and healthy week.If you have questions, comments, or would like to subscribe to our podcast, go to www.yalecancercenter.org where you will also find transcripts of past broadcast in written form. Next week, we will examine the latest information on ovarian cancer. I am Bruce Barber and you are listening to the WNPR health forum from Connecticut Public Radio..