Yale CANCER CENTER

Healthline with Yale Cancer Center

Hosts

Edward Chu, MD Chief of Medical Oncology

Kenneth Miller, MD Director of Supportive Care

WTIC Newstalk 1080

An Update on Pediatric Cancers

Guest Expert:

Jack van Hoff, MD

Associate Professor of Pediatric Oncology,
Interim Chief of Pediatric Oncology,
Yale School of Medicine

Healthline with Yale Cancer Center is a weekly broadcast on WTIC Newstalk 1080
Sunday Mornings at 8:30
Listen live online at www.wtic.com or
Listen to archived podcasts at www.yalecancercenter.org

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 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 Adult Oncologist at the 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 am here on WTIC NewsTalk 1080. Our Healthline program 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 Connecticut.

Miller Each week, Ed and I are joined by a different expert from the Yale Cancer Center. Together we will discuss the myths about cancer, the latest treatment available to people with cancer, and advances in clinical research. Our goal is to give you help by sharing information and also to give you hope. If you would like to submit a question about cancer to Healthline, please email us at Healthline@Yale.edu or call 1-888-234-4-YCC. We will try to answer your questions on the air today, or in a future broadcast. 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 now posted in audio and written format on the Yale Cancer Center website, which is www.YaleCancerCenter.org.

Chu Today our program focuses on the diagnosis and treatment of pediatric cancers. Our special guest is Dr. Jack van Hoff, Associate Professor of Pediatrics and Chief of Pediatric Oncology here at the Yale Cancer Center. Jack, thanks so much for being with us today on Healthline.

Van Hoff You're welcome.

Miller Jack, I want to start off by asking you about the types of cancer children develop.

Van Hoff Childhood cancers are very different than adult cancers. The most common adult cancers either relate to continuous hormone exposure, such as prostate or breast cancer, or exposure to the environment, such as lung cancer or colon cancer. Children don't get these types of cancers. The most common type of childhood cancer is leukemia. Brain tumors are the second most common type. Almost all childhood cancers develop from embryonic tissue, tissue that is normally present as a fetus is developing, that becomes more mature as the baby moves toward term or at birth.

Many childhood cancers arise from this primitive tissue that never fully matures. Then, at some point, a second event causes it to start growing again in a way that's not appropriate, and it becomes a cancer.

Miller How many children would you say develop cancer, just in Connecticut?

Van Hoff One of the challenges with childhood cancer, and also something fortunate, is that it is very uncommon. So, as a pediatric cancer specialist developing programs, you need to be prepared to treat a wide variety of cancers. There are 130 cases, plus or minus, of cancer in children each year in the state of Connecticut. That translates into a risk of about 1 in 500 of a child between the ages of 0 and 15 developing cancer. To compare this with adults, an adult between the ages of 60 and 75 years has about a 1 in 5 chance of getting cancer. Childhood cancers make up less than 1% of the cancers that we see in the state.

Miller Thank goodness.

Van Hoff Yes indeed.

Miller In adult cancers, we can pinpoint some risk factors. What are some risks that put a child at a higher percentage of developing a cancer?

Van Hoff Studies have been done in children that are similar to studies looking for past exposures in adults who get cancer. Unlike some of the well-known exposures, such as smoking in lung cancer, there are very few things which cause a predictable increase in the risk of childhood cancer. Even where careful studies show a slight elevation of risk, the number of children with that type of cancer who have been exposed to that agent is extremely small. So, for the most part we can't identify the risk factors. We can't go to parents and say avoid this.

Chu What is known about the potential role of genetic factors?

Van Hoff There are undoubtedly genetic factors that play a role, but we do not have tests to give to parents that would give them an idea of whether their child is at higher risk of cancer or not. There are a few very rare inherited syndromes that markedly increase the risk of cancer. Altogether those account for 1% to 2% of all the childhood cancers. They make up only a very small percentage of childhood cancers that are seen.

Chu For instance, we know that in children who have Down syndrome there is an increased risk for developing leukemia.

Van Hoff Yes. There is an increased risk of not only leukemia, but other cancers as children age. Down syndrome is one of the most common types of a predisposing inherited, or inborn, condition that

might increase a child's risk for cancer. For the most part we are not clear what it is about Down syndrome that causes the increased risk of cancer.

Chu Is there anything that you can suggest to pediatricians, as to some of the hallmark signs and symptoms they should be made aware of?

Van Hoff The most common findings would be a mass or a swelling. These are obvious things that should alert a pediatrician that something is wrong. Leukemia will often present with anemia, or bruising and infections. There are many things which can cause anemia, bruising, or infections so our comment to parents is that if they are concerned about their children, it is really important to see a trained physician. They are trained to tell the difference between anemia that's from a harmless problem, or something that may be much more serious.

Chu As you probably know, I have a 3-year-old baby girl, and she has nosebleeds at night. My wife and I, both being medical oncologists, tend to think the worst, so the second or third time that she had a massive nosebleed my wife said, our daughter has leukemia. We took her right to the pediatrician's office, which fortunately was 2 minutes away, got a blood test, and everything was entirely normal.

Van Hoff It's a good idea to approach your primary care provider with something like this. The pediatric oncologist is not the best person to see when you are first concerned because it's your primary care specialist that has the whole picture of your child. If they decide that there is a bigger problem, then it's turned over to the specialist.

Miller Jack, any other advice you would give to parents about things that should prompt them to bring their child to the pediatrician?

Van Hoff Since childhood cancers can occur in so many different areas, and cause so many different symptoms, I would say that reoccurring symptoms are something you should be aware of. If your child has a headache, it's not a big problem, but if he has a headache for 7 days in a row, that is a big problem and needs attention. If he bruises himself when he falls on the slide, it's not a problem, but if he starts to bruise very easily, and you see a lot of bruising, then that should be investigated. So, if there are repeated complaints about pain, it may need further investigation.

Miller 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 the treatment of pediatric cancers with Dr. Jack van Hoff.

Medical Minute

The American Cancer Society estimates that in 2006 there will be over 62,000 new cases of melanoma in this country. Twenty four hundred patients are diagnosed annually in Connecticut

alone. While melanoma accounts for only 4% of skin cancer cases, it causes the more skin cancer deaths. Early detection is the key. When detected early, melanoma is easily treated and highly curable; however, patients with advanced melanoma have more hope than ever before. Each day, patients are surviving the disease due to increased access to advanced therapies and specialized care. New treatment options and surgical techniques are giving melanoma survivors more hope than they have ever had before. Clinical trials are currently underway at Yale Cancer Center, Connecticut's only federally designated comprehensive cancer center to test innovative new treatments for melanoma. Patient's enrolled in these trials are given access to newly available medicines which have not yet been approved by the Food &Drug Administration.

This has been a medical minute brought to you as a public service by 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 in the WTIC studios with my co-host Dr. Ed Chu, and our guest Dr. Jack van Hoff, an expert in the treatment of pediatric cancer at the Yale Cancer Center. Jack, lets begin the second segment by having you tell us about how the treatment of children with cancer is coordinated among specialists at the Yale Cancer Center. Is it a team effort?

Van Hoff It is very much a team effort. There is the pediatric oncologist who has been trained specifically in the treatment of children with cancer. They generally do not treat adulthood cancers and their entire focus is on the care of children and children with serious cancers. The team also includes surgeons who are trained specifically for operating on children; along with a radiation therapist, an individual where at a large center like Yale, has been trained specifically in the use of radiation therapy for children. Even in services deemed ancillary, such as radiology or pathology, there are individuals who are specifically trained to look at studies in children and the type of diseases that children get. Our team meets on a weekly basis. We have what's called a tumor board, where new cases are presented and each individual is present in the room. Together, we look at the scans and the pathology. We can make a plan while working together closely.

Chu Does most of the treatment that you give to children take place in the inpatient or outpatient setting?

Van Hoff A large part of it takes place in the outpatient clinic. Much of our treatment can be given while the child is sitting in the clinic, but another difference between childhood cancer and adult treatment is that childhood cancers tend to be more aggressive. Childhood tumors, perhaps because they are a primitive cell, tend to spread more easily than adult cancers. For this reason, we are more likely to use chemotherapy, even in cancers that are localized at the time that they are diagnosed. During treatment, interference with normal life activities is also more tolerated, because our goal is a lifelong result. It's not something to buy 5 or 6 years. It's something to cure the child. A fair

amount of our treatment is received as an inpatient, but the bulk of it takes place in the outpatient clinic.

Chu A key point to emphasize to our listeners is that in pediatric cancers there is tremendous hope and tremendous opportunity for providing long disease-free survivals, and even to cure patients.

Van Hoff 5-year survival rates for pediatric cancers on the whole are about 80%. For an oncologist that's good news, but looking at that as a parent, it's really frightening. We have to realize this when we talk to families. However, we have made tremendous headway just in my lifetime, and we are continuing to make progress.

Miller Can you tell us about childhood leukemia and how it has changed during your career?

Van Hoff I use the example that when I was in grade school, no children with acute lymphoblastic leukemia, the most common type of childhood cancer, were cured. They often went into remission, but the remission would last 1 or 2 years at the most. The leukemia always came back and they would end up dying from it. Now, that same group of kids has a cure rate of about 78% to 80%. It's truly amazing what has happened over a fairly short period of time.

Chu It's a bit of a double-edged sword though, because of the long-term complications that arise from those effective treatments.

Van Hoff A whole area of investigation in childhood cancer therapy is dedicated to this; dealing with, and looking for, the consequences of therapy, and helping patients throughout the rest of their lives. We have a special clinic set up for this very purpose at the Yale Cancer Center. The Survivors Clinic, or HERO's Clinic, is the only clinic of its kind in the state of Connecticut. Its main focus is to look at the consequences of therapy once the risk of disease recurrence has past. Also, it helps young patients get past that point and deal with some of those consequences in a healthy way.

Chu What are some specific consequences that you, as a pediatric oncologist, pay close attention too?

Van Hoff Some of them are very serious but extremely rare, for example, a second cancer. Some of the agents that we use to treat cancer are very powerful, and can increase your risk of getting another type of cancer. We look very carefully for those. This depends on what the agent was, and even the age that you were treated. It's important that someone with a lot of knowledge and understanding is doing the screening. One of the less serious consequences would be learning problems. We've seen, in children who have radiation therapy to the brain, that there are learning problems as a result of the treatment. We are able to deal with this much more effectively, especially if we know what to look for and can do the testing in advance, before the child gets into trouble in school. We can outline changes to the educational program so that the child can maximize his abilities.

Miller Is there any follow-up that you recommend for a young adult who was treated for cancer at a young age? One of the e-mails that we received was a 25-year-old asking a similar question.

Van Hoff This question depends very specifically on the disease that they were treated for, and the agents that were used to treat that disease. We strongly recommend that these individuals make an appointment with the Survivors Clinic, meet someone who is a specialist in this area, and have a program set up for them which can then be followed by their general care practitioner. Many of the follow-up studies can actually be done by their pediatrician, or doctor when they get older, but knowing what schedule to follow is the complicated piece that an expert is needed for.

Miller Thank you. We would like to remind our listening audience to email 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 the new treatment strategies for pediatric cancer with Dr. Jack van Hoff from the Yale Cancer Center.

Survivor Story

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 Guilford.

My name is Kathy. I am a cancer survivor, and I am the mother of 3 girls. I was diagnosed with breast cancer at age 40. I had my baseline mammogram at 36. But with no family history of breast cancer, I was told to return when I was 40 for another mammogram. I got the diagnosis that no one prepares you for, cancer. But I was lucky; I was referred to the Yale Cancer Center were I met Dr. Lannin and I underwent a double mastectomy in the summer of 2004. I still take tamoxifen daily but have been cancer-free ever since. If there is one message that I want to convey to all women, it is to get a regular mammogram. I am a perfect example of how early detection is part of the cure.

This Survivor Story has been brought to you by Yale Cancer Center.

Miller Welcome back to Healthline. This is Dr. Ken Miller and I am in the WTIC studios with my co-host Dr. Ed Chu, and our guest Dr. Jack van Hoff, who is an expert in the detection and treatment of pediatric cancer at the Yale Cancer Center. Jack, we will talk about some of the latest advances in a minute, but I wanted to focus on something else; the family. In general, pediatricians are very in tune with the larger family unit. How does that help in terms of how you treat the child for cancer?

Van Hoff That's an essential piece, and it requires a team of specialists who go beyond the medical experts. Our program at Yale, and at Yale-New Haven Children's Hospital, encourages parents to stay with their kids. We can always accommodate one parent to remain in the room with their child. We usually can accommodate both parents, but occasionally one of the parents might have to stay in a room that's nearby. We also have a social worker who is involved with each of our families and helps them deal with all the pieces of their life that will change while their child is in the hospital. This includes care for their other children and insurance issues. To get through this as a family, it takes a lot of support. There are child life specialists on the wards that work with the kids and give them things to distract them. We have visiting programs that include having pets come in and visit and a Clown Care Unit that comes in twice a week.

Miller Those of us in adult medicine can really learn a lot from you. Let's talk about some of the latest advances, and the Children's Oncology Group's clinical trials at Yale. Can you tell us what the COG is, and a little bit about clinical research?

Van Hoff As I mentioned before, childhood cancer is very rare, much less common than adult cancer. There are a large number of diseases for which there are only 1 to 300 cases in the entire United States each year. For this reason, there is no way to accomplish a research study at a single institution. There will never be enough cases to do that. So 25 years ago, pediatric oncologists realized that the only way to accomplish this was to form nationwide groups that agree to do the same studies, treat their children in the same way, and address the same questions. About 5 years ago, the COG was formed, which now covers the entire US, a few countries in Europe, and New Zealand and Australia as well. There are over 200 institutions that participate in the Children's Oncology Group, and we are able to study many different types of cancers including the very rare ones by using this cooperative fashion.

Chu What are some of the clinical trials that excite you being the principal investigator for the COG here at Yale?

Van Hoff There are a large number of different studies, and some of the most interesting ones involve new agents that didn't exist a few years ago. We now have the opportunity to study antibody therapy and to add that with chemotherapy. These studies are being done for acute myelogenous leukemia, or AML, where an antibody is made against that type of cancer and then added to the chemotherapy. However, in pediatrics we have had quite a deal of success with the standard chemotherapy agents, so we are not ready to throw those away and turn to different things. We are in the process of adding innovative types of treatments to what we already have, in order to improve them. Hopefully, we will be able to decrease some of the more toxic agents and replace them with things that have fewer side effects.

Chu Can you give us a number or a website that listeners interested in getting further information can use to access what types of clinical trials are presently available?

Van Hoff They can use the Cancer Center website, *www.YaleCancerCenter.org*. or, www.childrensoncologygroup.org. This is a very good resource that gives the information that is available from a lot of different experts.

Miller Can you tell us a little bit about childhood sarcomas and any advances that have been made lately?

Van Hoff Sarcoma, even in itself, encompasses a variety of different diagnoses. The most common type of childhood sarcoma is called rhabdomyosarcoma, which is an aggressive tumor. Most sarcomas in adults tend to be treated on a localized basis. You perform surgery and radiation therapy and as long as it hasn't spread, chemotherapy is of fairly limited usefulness. With rhabdomyosarcoma, like many other childhood cancers, it is a rapidly spreading tumor. Our approach would be to include chemotherapy in every case. This is also true for some of the bone cancers, either Ewing sarcoma or osteosarcoma.

Miller It sounds like there has been a lot of success with osteosarcoma.

Van Hoff Yes there has, and not only in terms of overall survival rates, but also when it comes to saving limbs.

Chu Is there much in the way of research looking into supportive care aspects of taking care of patient's with pediatric cancer?

Van Hoff There is a wide variety of things that have been done in that regard. At Yale, we have done studies on the anti-nausea medicines, and their affect on children. Some of them have very different toxicity profiles when you compare children to adults. We can't adopt everything that's been effective in adults and immediately do the same thing in kids.

Miller If you have questions for Dr. Jack van Hoff, or for Healthline, I encourage you to go to our website www.yalecancercenter.org for more information about cancer and the resources available to you. Before we sign off, Dr. van Hoff, what are some key points that you would like to share with the listening audience?

Van Hoff First of all, childhood cancers are very different than cancers in adults and they should be managed by a pediatric oncologist. Secondly, we've made a tremendous amount of progress, and being diagnosed with a childhood cancer is not a death sentence. The cure rates have risen dramatically and many of these children are cured and live long, very productive lives. Thirdly, the needs in pediatric oncology are extensive and funding requirements are also extensive. By and large, these needs are not met by government sources, and so each area, our own included, has very specific restrictions on their ability to do research studies in childhood cancer. Opportunities are available for people to contribute towards this, and I would very much encourage that.

Miller I would like to thank Dr. Jack van Hoff for joining us on Healthline.

Chu Thanks for the terrific session, and remember tune into WTIC NewsTalk 1080 every Sunday morning at 8:30 am for Healthline with the Yale Cancer Center. Our next program will feature Dr. Lyndsay Harris discussing new advances in breast cancer. Until then, this is Dr. Ed Chu…

Miller and Dr. Ken Miller, from the Yale Cancer Center wishing you a safe and healthy week.