WEBVTT

00:00:00.000 --> 00:00:01.965 Funding for Yale Cancer Answers

NOTE Confidence: 0.840919729285714

00:00:01.965 --> 00:00:03.930 is provided by Smilow Cancer

NOTE Confidence: 0.840919729285714

00:00:04.004 --> 00:00:05.708 Hospital and AstraZeneca.

NOTE Confidence: 0.844474644615385

00:00:07.940 --> 00:00:10.022 Welcome to Yale Cancer Answers with

NOTE Confidence: 0.844474644615385

00:00:10.022 --> 00:00:12.419 your host doctor Anees Chagpar.

NOTE Confidence: 0.844474644615385

00:00:12.420 --> 00:00:14.305 Yale Cancer Answers features the

NOTE Confidence: 0.844474644615385

00:00:14.305 --> 00:00:16.621 latest information on cancer care by

NOTE Confidence: 0.844474644615385

00:00:16.621 --> 00:00:18.105 welcoming oncologists and specialists

NOTE Confidence: 0.844474644615385

00:00:18.105 --> 00:00:20.574 who are on the forefront of the

NOTE Confidence: 0.844474644615385

00:00:20.574 --> 00:00:22.410 battle to fight cancer. This week,

NOTE Confidence: 0.844474644615385

00:00:22.410 --> 00:00:24.235 it's a conversation about nuclear

NOTE Confidence: 0.844474644615385

00:00:24.235 --> 00:00:26.069 medicine and cancer management with

NOTE Confidence: 0.844474644615385

00:00:26.069 --> 00:00:27.749 Doctor Darko Pucar. Dr. Pucar is

NOTE Confidence: 0.844474644615385

00:00:27.749 --> 00:00:29.955 an associate professor

NOTE Confidence: 0.844474644615385

00:00:29.955 --> 00:00:31.840 of radiology and biomedical imaging

NOTE Confidence: 0.844474644615385

00:00:31.840 --> 00:00:34.240 at the Yale School of Medicine,

NOTE Confidence: 0.844474644615385

00:00:34.240 --> 00:00:37.440 where Dr. Chagpar is a professor

NOTE Confidence: 0.844474644615385

00:00:37.440 --> 00:00:39.387 of surgical oncology.

00:00:39.910 --> 00:00:41.464 Darko, maybe we can start off by you

NOTE Confidence: 0.874027326315789

00:00:41.464 --> 00:00:43.041 telling us a little bit about

NOTE Confidence: 0.874027326315789

00:00:43.041 --> 00:00:44.739 yourself and about what you do.

NOTE Confidence: 0.681772986

00:00:45.260 --> 00:00:48.010 I am a nuclear radiologist.

NOTE Confidence: 0.681772986

00:00:48.010 --> 00:00:50.726 That means I have received training in

NOTE Confidence: 0.681772986

00:00:50.726 --> 00:00:53.059 general radiology and nuclear medicine.

NOTE Confidence: 0.681772986

00:00:53.060 --> 00:00:54.460 In my case I did that

NOTE Confidence: 0.681772986

00:00:54.460 --> 00:00:56.070 at Cornell and Sloan

NOTE Confidence: 0.681772986

00:00:56.070 --> 00:00:58.350 Kettering and I'm certified by the

NOTE Confidence: 0.681772986

00:00:58.350 --> 00:01:00.630 American Board of Radiology and

NOTE Confidence: 0.681772986

00:01:00.708 --> 00:01:02.988 the Board of Nuclear Medicine.

NOTE Confidence: 0.681772986

00:01:02.990 --> 00:01:05.531 I also have a science degree from

NOTE Confidence: 0.681772986

00:01:05.531 --> 00:01:08.096 Mayo Clinic and I provide clinical

NOTE Confidence: 0.681772986

00:01:08.096 --> 00:01:10.391 service and I conduct research

NOTE Confidence: 0.681772986

00:01:10.391 --> 00:01:12.990 in general nuclear medicine.

NOTE Confidence: 0.681772986

00:01:12.990 --> 00:01:15.740 and nuclear medicine therapy,

NOTE Confidence: 0.681772986

00:01:15.740 --> 00:01:16.442 and aeronautics,

NOTE Confidence: 0.681772986

00:01:16.442 --> 00:01:18.548 which I will explain in a minute.

NOTE Confidence: 0.817783005714286

00:01:18.790 --> 00:01:20.890 Let's breakdown

NOTE Confidence: 0.817783005714286

00:01:20.890 --> 00:01:24.298 some of those things,

NOTE Confidence: 0.817783005714286

00:01:24.300 --> 00:01:27.380 tell our audience a little bit more about

NOTE Confidence: 0.817783005714286

00:01:27.380 --> 00:01:30.380 what exactly is nuclear medicine.

NOTE Confidence: 0.818412022222222

00:01:30.390 --> 00:01:33.825 We do use radioactive

NOTE Confidence: 0.818412022222222

00:01:33.825 --> 00:01:36.573 tracers to detect cancer,

NOTE Confidence: 0.818412022222222

00:01:36.580 --> 00:01:39.200 monitor cancer, and treat cancer.

NOTE Confidence: 0.818412022222222

00:01:39.200 --> 00:01:41.620 So radioactive tracers are a chemical

NOTE Confidence: 0.818412022222222

00:01:41.620 --> 00:01:44.703 compound in which one or more

NOTE Confidence: 0.818412022222222

00:01:44.703 --> 00:01:47.558 atoms have been replaced by radioisotope

NOTE Confidence: 0.818412022222222

00:01:47.560 --> 00:01:49.919 in the process that we call labeling.

NOTE Confidence: 0.818412022222222

00:01:49.920 --> 00:01:51.904 So these chemical compounds are

NOTE Confidence: 0.818412022222222

00:01:51.904 --> 00:01:54.384 participants in body functions that

NOTE Confidence: 0.818412022222222

00:01:54.384 --> 00:01:56.879 are usually altered by cancer,

NOTE Confidence: 0.818412022222222

00:01:56.880 --> 00:02:00.918 and we have two options.

NOTE Confidence: 0.818412022222222

00:02:00.920 --> 00:02:03.000 One is to label the

NOTE Confidence: 0.818412022222222

00:02:03.000 --> 00:02:04.664 radioisotope with the gamma rays,

NOTE Confidence: 0.818412022222222

00:02:04.670 --> 00:02:06.885 in which case we can

NOTE Confidence: 0.818412022222222

00:02:06.885 --> 00:02:09.100 produce images or we can

NOTE Confidence: 0.818412022222222

00:02:09.100 --> 00:02:10.985 use radioisotopes that

NOTE Confidence: 0.818412022222222

00:02:10.985 --> 00:02:12.870 emit the high energy particles,

NOTE Confidence: 0.818412022222222

00:02:12.870 --> 00:02:15.006 in which case we can kill the cancer.

NOTE Confidence: 0.8946515145

00:02:15.380 --> 00:02:17.432 It sounds like nuclear

NOTE Confidence: 0.8946515145

00:02:17.432 --> 00:02:20.408 medicine has a role to play both in

NOTE Confidence: 0.8946515145

00:02:20.408 --> 00:02:22.712 diagnostics as well as in therapeutics.

NOTE Confidence: 0.8946515145

00:02:22.720 --> 00:02:25.288 So let's look at the diagnostics.

NOTE Confidence: 0.8946515145

00:02:25.290 --> 00:02:27.383 To begin with, many of

NOTE Confidence: 0.8946515145

00:02:27.383 --> 00:02:29.419 us have heard about PET scans.

NOTE Confidence: 0.8946515145

00:02:29.420 --> 00:02:31.400 Is that really the main modality

NOTE Confidence: 0.8946515145

00:02:31.400 --> 00:02:33.078 that's used in nuclear medicine

NOTE Confidence: 0.8946515145

00:02:33.078 --> 00:02:35.136 for cancer and tell us a little

NOTE Confidence: 0.8946515145

00:02:35.136 --> 00:02:37.048 bit more about how that works?

NOTE Confidence: 0.664799706

00:02:37.770 --> 00:02:39.720 Yeah, you are absolutely right.

NOTE Confidence: 0.664799706

00:02:39.720 --> 00:02:42.870 PET scans really are the main modality

NOTE Confidence: 0.664799706

00:02:42.870 --> 00:02:45.350 used for cancer diagnostics,

NOTE Confidence: 0.664799706

00:02:45.350 --> 00:02:48.002 and it's basically a hybrid machine

NOTE Confidence: 0.664799706

00:02:48.002 --> 00:02:50.631 or hybrid scanner that consists of

NOTE Confidence: 0.664799706

00:02:50.631 --> 00:02:53.354 the CT scanner which is X ray

NOTE Confidence: 0.664799706

00:02:53.354 --> 00:02:55.971 machine that produced 3D map of body

NOTE Confidence: 0.664799706

00:02:55.971 --> 00:02:58.272 density and of the PET scanner,

NOTE Confidence: 0.664799706

00:02:58.272 --> 00:03:00.858 which is basically a gamma ray

NOTE Confidence: 0.664799706

00:03:00.858 --> 00:03:02.751 detector machine that again gives

NOTE Confidence: 0.664799706

00:03:02.751 --> 00:03:05.005 us 3D map of tracer distribution

NOTE Confidence: 0.664799706

00:03:05.005 --> 00:03:07.879 in the body and then at the end

NOTE Confidence: 0.664799706

00:03:07.880 --> 00:03:11.444 you fuse CT and PET images to get images

NOTE Confidence: 0.664799706

00:03:11.444 --> 00:03:14.847 that show both anatomy and function in

NOTE Confidence: 0.664799706

00:03:14.847 --> 00:03:18.108 the normal tissue and in the cancer.

NOTE Confidence: 0.81930874375

00:03:18.160 --> 00:03:21.256 Do all cancer patients get a pet CT?

NOTE Confidence: 0.81930874375

00:03:21.260 --> 00:03:24.284 Or is this only for particular patients?

NOTE Confidence: 0.78647408625

00:03:25.200 --> 00:03:28.056 Well, it would depend from cancer to cancer,

NOTE Confidence: 0.78647408625

00:03:28.060 --> 00:03:30.598 but usually PET scans in most

NOTE Confidence: 0.78647408625

00:03:30.598 --> 00:03:33.903 cancers but not in all I use for

NOTE Confidence: 0.78647408625

00:03:33.903 --> 00:03:36.029 more advance patients with cancer.

NOTE Confidence: 0.78647408625

00:03:36.029 --> 00:03:38.747 So those are the patients where

NOTE Confidence: 0.78647408625

00:03:38.750 --> 00:03:41.844 the cancer is either very large locally,

NOTE Confidence: 0.78647408625

00:03:41.850 --> 00:03:44.265 it is spread to the nodes nearby

NOTE Confidence: 0.78647408625

00:03:44.265 --> 00:03:46.695 to the cancer site or has

NOTE Confidence: 0.78647408625

00:03:46.695 --> 00:03:48.895 metastasized to distant body sites.

NOTE Confidence: 0.935333225294118

00:03:49.780 --> 00:03:51.866 And so the pet scan really gives

NOTE Confidence: 0.935333225294118

00:03:51.866 --> 00:03:54.466 us an idea of how far the cancer

NOTE Confidence: 0.935333225294118

00:03:54.466 --> 00:03:55.768 has spread. Is that right?

NOTE Confidence: 0.823717242666667

00:03:56.110 --> 00:03:57.181 Absolutely, and the

NOTE Confidence: 0.823717242666667

00:03:57.181 --> 00:04:00.102 main advantage of the PET scan is that it

NOTE Confidence: 0.823717242666667

00:04:00.102 --> 00:04:02.244 can detect very small lesions that

NOTE Confidence: 0.823717242666667

00:04:02.244 --> 00:04:04.373 are not visible on the conventional

NOTE Confidence: 0.823717242666667

00:04:04.373 --> 00:04:06.690 imaging like a CAT scan or MRI.

NOTE Confidence: 0.85152207

00:04:07.170 --> 00:04:10.564 But then you also mentioned that the

NOTE Confidence: 0.85152207

00:04:10.564 --> 00:04:12.260 same nuclear medicine technologies

NOTE Confidence: 0.85152207

00:04:12.260 --> 00:04:15.799 can be used in the therapeutic arena.

NOTE Confidence: 0.85152207

00:04:15.800 --> 00:04:17.228 So tell us more about that.

NOTE Confidence: 0.920320475714286

00:04:17.540 --> 00:04:20.830 Yeah, so this is very exciting development.

NOTE Confidence: 0.920320475714286

00:04:20.830 --> 00:04:24.206 I mean for years we have treated cancers,

NOTE Confidence: 0.920320475714286

00:04:24.210 --> 00:04:26.849 but it was mostly limited to the

NOTE Confidence: 0.920320475714286

00:04:26.849 --> 00:04:29.130 iodine treatment for thyroid cancer.

NOTE Confidence: 0.920320475714286

00:04:29.130 --> 00:04:32.050 But now we are getting many new exciting

NOTE Confidence: 0.920320475714286

00:04:32.050 --> 00:04:34.498 compounds for prostate cancer for

NOTE Confidence: 0.920320475714286

00:04:34.498 --> 00:04:36.970 the new rendering tumors and probably

NOTE Confidence: 0.920320475714286

00:04:37.042 --> 00:04:39.674 would spread to other cancers as well.

NOTE Confidence: 0.920320475714286

00:04:39.680 --> 00:04:42.830 There are two types of

NOTE Confidence: 0.920320475714286

00:04:42.830 --> 00:04:45.162 therapies that we conduct.

NOTE Confidence: 0.920320475714286

00:04:45.162 --> 00:04:48.660 One is if we use chemical

NOTE Confidence: 0.920320475714286

00:04:48.776 --> 00:04:51.020 compounds that image

NOTE Confidence: 0.920320475714286

00:04:51.020 --> 00:04:53.140 these high energy particles

NOTE Confidence: 0.920320475714286

00:04:53.140 --> 00:04:55.260 to kill the cancer,

NOTE Confidence: 0.920320475714286

00:04:55.260 --> 00:04:58.060 but we do imaging still with a

NOTE Confidence: 0.920320475714286

00:04:58.060 --> 00:05:00.053 conventional PET scan which

NOTE Confidence: 0.920320475714286

00:05:00.053 --> 00:05:01.677 usually maps the glucose.

NOTE Confidence: 0.920320475714286

00:05:01.680 --> 00:05:03.192 It's called fluorodeoxyglucose and

NOTE Confidence: 0.920320475714286

00:05:03.192 --> 00:05:05.850 then there is a new exciting process

NOTE Confidence: 0.920320475714286

00:05:05.850 --> 00:05:07.830 which is called theranostics in which

NOTE Confidence: 0.920320475714286

00:05:07.830 --> 00:05:10.320 we can use the same chemical compound

NOTE Confidence: 0.920320475714286

00:05:10.320 --> 00:05:12.480 which is important to the function of

NOTE Confidence: 0.920320475714286

00:05:12.480 --> 00:05:15.192 cancer which are labeled either

NOTE Confidence: 0.920320475714286

00:05:15.192 --> 00:05:18.250 with the isotopes that can be detected

NOTE Confidence: 0.920320475714286

00:05:18.250 --> 00:05:21.505 by gamma ray detectors and give us

NOTE Confidence: 0.920320475714286

00:05:21.510 --> 00:05:24.129 imagine or it can be labeled with a high

NOTE Confidence: 0.920320475714286

00:05:24.129 --> 00:05:26.307 energy particles and kill the cancer.

NOTE Confidence: 0.920320475714286

00:05:26.310 --> 00:05:28.908 So probably the most common

NOTE Confidence: 0.920320475714286

00:05:28.908 --> 00:05:31.083 examples that are probably even

NOTE Confidence: 0.920320475714286

00:05:31.083 --> 00:05:33.631 known to our audience is dotatate

NOTE Confidence: 0.920320475714286

00:05:36.040 --> 00:05:38.290 and is the treatment for neuroendocrine cancer.

NOTE Confidence: 0.920320475714286

00:05:38.290 --> 00:05:40.606 So if we label them with

NOTE Confidence: 0.920320475714286

00:05:40.606 --> 00:05:42.150 some isotopes like gallium 68

NOTE Confidence: 0.920320475714286

00:05:42.150 --> 00:05:44.966 we will get images but we can label

NOTE Confidence: 0.920320475714286

00:05:44.966 --> 00:05:47.490 with other allies like lutetium,

NOTE Confidence: 0.920320475714286

00:05:47.490 --> 00:05:49.810 in which case we can kill the cancer

NOTE Confidence: 0.920320475714286

00:05:49.810 --> 00:05:52.706 and what is up and coming and many

NOTE Confidence: 0.920320475714286

00:05:52.710 --> 00:05:54.298 prostate cancer patients are

NOTE Confidence: 0.920320475714286

00:05:54.298 --> 00:05:57.232 waiting for that eagerly is to get

NOTE Confidence: 0.920320475714286

00:05:57.232 --> 00:05:59.622 both imaging and treatment with

NOTE Confidence: 0.920320475714286

00:05:59.622 --> 00:06:01.534 prostate specific membrane antigen.

NOTE Confidence: 0.9213599875

00:06:01.930 --> 00:06:05.241 It sounds like these

NOTE Confidence: 0.9213599875

00:06:05.241 --> 00:06:07.094 technologies, if you're able

NOTE Confidence: 0.9213599875

00:06:07.094 --> 00:06:09.384 to identify a specific antigen,

NOTE Confidence: 0.9213599875

00:06:09.390 --> 00:06:13.506 a specific protein on a particular cancer,

NOTE Confidence: 0.9213599875

00:06:13.510 --> 00:06:17.251 and target that with a particle that

NOTE Confidence: 0.9213599875

00:06:17.251 --> 00:06:19.339 can kill it, it would seem to me

NOTE Confidence: 0.9213599875

00:06:19.339 --> 00:06:21.455 that this would be a very specific

NOTE Confidence: 0.9213599875

00:06:21.455 --> 00:06:23.620 way to kill cancer cells.

NOTE Confidence: 0.761757825652174

00:06:24.250 --> 00:06:26.903 You are correct. So in most cases

NOTE Confidence: 0.761757825652174

00:06:26.903 --> 00:06:29.717 our therapy has produced results that

NOTE Confidence: 0.761757825652174

00:06:29.717 --> 00:06:32.367 are comparable to other systemic

NOTE Confidence: 0.761757825652174

00:06:32.367 --> 00:06:35.170 therapy like chemotherapy but with

NOTE Confidence: 0.761757825652174

00:06:35.170 --> 00:06:37.278 substantially lower adverse effects.

NOTE Confidence: 0.761757825652174

00:06:37.278 --> 00:06:41.003 So we kind of achieve similar results

NOTE Confidence: 0.761757825652174

00:06:41.003 --> 00:06:44.356 but with less morbidity to our patients.

NOTE Confidence: 0.84551554

00:06:44.590 --> 00:06:46.678 Is this widely available or is

NOTE Confidence: 0.84551554

00:06:46.678 --> 00:06:49.240 this still in the research arena

NOTE Confidence: 0.84551554

00:06:49.240 --> 00:06:51.420 and undergoing clinical trials?

00:06:54.214 --> 00:06:56.278 As I mentioned before,

NOTE Confidence: 0.7317970725

00:06:56.280 --> 00:06:58.950 we had iodine for treatment

NOTE Confidence: 0.7317970725

00:06:58.950 --> 00:07:01.620 of thyroid cancer for decades,

NOTE Confidence: 0.7317970725

00:07:01.620 --> 00:07:04.938 and more recently we have an already

NOTE Confidence: 0.7317970725

00:07:04.938 --> 00:07:06.597 clinically approved drug,

NOTE Confidence: 0.7317970725

00:07:06.600 --> 00:07:08.168 which is called Xofigo,

NOTE Confidence: 0.7317970725

00:07:08.168 --> 00:07:09.736 which is actually labeled

NOTE Confidence: 0.7317970725

00:07:09.736 --> 00:07:10.980 radioactive labeled radium,

NOTE Confidence: 0.7317970725

00:07:10.980 --> 00:07:13.460 that can kill metastatic disease

NOTE Confidence: 0.7317970725

00:07:13.460 --> 00:07:16.440 from prostate cancer in the bone,

NOTE Confidence: 0.7317970725

00:07:16.440 --> 00:07:17.457 and most recently

NOTE Confidence: 0.7317970725

00:07:17.457 --> 00:07:19.491 and obviously they've got a lot

NOTE Confidence: 0.7317970725

00:07:19.491 --> 00:07:21.515 of press attention is lutera,

NOTE Confidence: 0.7317970725

00:07:21.515 --> 00:07:23.375 which is again labeled

NOTE Confidence: 0.7317970725

00:07:23.375 --> 00:07:25.700 dotatate that can kill

NOTE Confidence: 0.7317970725

00:07:25.700 --> 00:07:27.548 advanced neuroendocrine tumors.

NOTE Confidence: 0.835613684117647

00:07:28.470 --> 00:07:32.046 And for those that are approved

NOTE Confidence: 0.835613684117647

00:07:32.046 --> 00:07:35.672 are those now taking over instead

NOTE Confidence: 0.835613684117647

00:07:35.672 --> 00:07:37.972 of being treated with chemotherapy,

NOTE Confidence: 0.835613684117647

00:07:37.972 --> 00:07:40.042 or are these now being treated

NOTE Confidence: 0.835613684117647

00:07:40.042 --> 00:07:41.780 with these theranostics?

00:07:44.820 --> 00:07:48.425 It's more like they're

NOTE Confidence: 0.836609918461538

00:07:48.425 --> 00:07:51.404 getting incorporated in the treatment

NOTE Confidence: 0.836609918461538

00:07:51.404 --> 00:07:54.258 algorithms, our patients might have heard

NOTE Confidence: 0.836609918461538

00:07:54.260 --> 00:07:56.810 there is something called the

NOTE Confidence: 0.836609918461538

00:07:56.810 --> 00:07:58.510 National Comprehensive Network which

NOTE Confidence: 0.836609918461538

00:07:58.580 --> 00:08:00.792 is a body that provides all these

NOTE Confidence: 0.836609918461538

00:08:00.792 --> 00:08:03.406 guidelines how the cancers are treated and

NOTE Confidence: 0.836609918461538

00:08:03.406 --> 00:08:06.346 slowly the radionuclide therapies are

NOTE Confidence: 0.836609918461538

00:08:06.346 --> 00:08:09.245 getting incorporated in those guidelines

NOTE Confidence: 0.836609918461538

00:08:09.245 --> 00:08:12.389 and are used when appropriate

NOTE Confidence: 0.836609918461538

00:08:12.390 --> 00:08:15.720 to treat advanced or metastatic cancer.

NOTE Confidence: 0.865546727

00:08:15.970 --> 00:08:17.662 Help me to understand

NOTE Confidence: 0.865546727

00:08:17.662 --> 00:08:18.790 that a bit better.

NOTE Confidence: 0.865546727

00:08:18.790 --> 00:08:20.862 I mean because on the one hand it

NOTE Confidence: 0.865546727

00:08:20.862 --> 00:08:23.246 sounds like this is so exciting, right?

NOTE Confidence: 0.865546727

00:08:23.246 --> 00:08:25.870 That these theranostics,

NOTE Confidence: 0.865546727

00:08:25.870 --> 00:08:29.255 if they can truly target

NOTE Confidence: 0.865546727

00:08:29.255 --> 00:08:32.120 these cancers and kill them,

NOTE Confidence: 0.865546727

00:08:32.120 --> 00:08:34.610 and they're specific enough in the

NOTE Confidence: 0.865546727

00:08:34.610 --> 00:08:37.255 sense that you know this is how

NOTE Confidence: 0.865546727

00:08:37.255 --> 00:08:39.900 we look for cancers on imaging,

NOTE Confidence: 0.865546727

00:08:39.900 --> 00:08:42.540 and so we know that

NOTE Confidence: 0.865546727

00:08:42.540 --> 00:08:44.920 they're very specific and don't have all

NOTE Confidence: 0.865546727

00:08:44.920 --> 00:08:47.578 of the side effects of chemotherapy.

NOTE Confidence: 0.865546727

00:08:47.580 --> 00:08:51.094 Why haven't they been widely adopted yet?

NOTE Confidence: 0.865546727

00:08:51.100 --> 00:08:52.210 What's the downside?

NOTE Confidence: 0.73312753

00:08:52.620 --> 00:08:56.267 Well, each cancer and each

NOTE Confidence: 0.73312753

00:08:56.267 --> 00:09:00.401 cancer stage is kind of different, so

NOTE Confidence: 0.73312753

00:09:00.401 --> 00:09:03.356 for example, in thyroid cancer it is

NOTE Confidence: 0.73312753

00:09:03.360 --> 00:09:07.578 generally given after a thyroidectomy,

NOTE Confidence: 0.73312753

00:09:07.580 --> 00:09:08.681 which is removal of the thyroid

00:09:10.150 --> 00:09:12.042 and after radioactive iodine

NOTE Confidence: 0.73312753

00:09:12.042 --> 00:09:14.880 is given most patients get cured,

NOTE Confidence: 0.73312753

00:09:14.880 --> 00:09:17.055 so thyroid cancer is a relatively

NOTE Confidence: 0.73312753

00:09:17.055 --> 00:09:18.360 well behaving cancer.

NOTE Confidence: 0.73312753

00:09:18.360 --> 00:09:21.816 So in this particular cancer we can actually

NOTE Confidence: 0.73312753

00:09:21.816 --> 00:09:24.332 achieve cure. In some other cancers,

NOTE Confidence: 0.73312753

00:09:24.332 --> 00:09:26.397 for example metastatic prostate cancer,

NOTE Confidence: 0.73312753

00:09:26.400 --> 00:09:29.564 when we are going to use

NOTE Confidence: 0.73312753

00:09:29.570 --> 00:09:32.200 radioactive isotopes we will have actually

NOTE Confidence: 0.73312753

00:09:32.200 --> 00:09:35.650 to prove that they have advantages

NOTE Confidence: 0.73312753

00:09:35.650 --> 00:09:38.590 versus other chemotherapy options,

NOTE Confidence: 0.73312753

00:09:38.590 --> 00:09:39.950 which requires large trials and

NOTE Confidence: 0.73312753

00:09:41.650 --> 00:09:44.002 I don't know if our patients have

NOTE Confidence: 0.73312753

00:09:44.002 --> 00:09:46.467 heard of different lines of chemotherapy,

NOTE Confidence: 0.73312753

00:09:46.470 --> 00:09:48.108 usually there is a first line and

NOTE Confidence: 0.73312753

00:09:48.108 --> 00:09:49.592 then if there is a progression

NOTE Confidence: 0.73312753

00:09:49.592 --> 00:09:51.300 second and third line and so on.

NOTE Confidence: 0.73312753

00:09:51.300 --> 00:09:53.526 So you not only have to prove

NOTE Confidence: 0.73312753

00:09:53.526 --> 00:09:54.870 that they generally work,

NOTE Confidence: 0.73312753

00:09:54.870 --> 00:09:57.187 but you have to find appropriate lines

NOTE Confidence: 0.73312753

00:09:57.187 --> 00:09:59.370 of the therapy for those tracers.

NOTE Confidence: 0.73312753

00:09:59.370 --> 00:10:00.522 So this is now in the

NOTE Confidence: 0.73312753

00:10:00.522 --> 00:10:02.826 process of active research.

NOTE Confidence: 0.73312753

00:10:02.830 --> 00:10:06.358 So basically they have in a way

NOTE Confidence: 0.73312753

00:10:06.358 --> 00:10:09.369 similar limitations as a chemotherapy,

NOTE Confidence: 0.73312753

00:10:09.370 --> 00:10:12.350 despite much lower side effects.

NOTE Confidence: 0.73312753

00:10:12.350 --> 00:10:14.688 If that cancer is very bad,

NOTE Confidence: 0.73312753

00:10:14.690 --> 00:10:17.110 like advanced castrate

NOTE Confidence: 0.73312753

00:10:17.110 --> 00:10:18.925 resistant prostate cancer,

NOTE Confidence: 0.73312753

00:10:18.930 --> 00:10:20.856 they will have less impact because

NOTE Confidence: 0.73312753

00:10:20.856 --> 00:10:22.999 the cancer is already so aggressive.

NOTE Confidence: 0.73312753

00:10:23.000 --> 00:10:24.360 But if thyroid cancer,

NOTE Confidence: 0.73312753

00:10:24.360 --> 00:10:25.844 for example,

NOTE Confidence: 0.73312753

00:10:25.844 --> 00:10:27.452 that cancer is relatively

NOTE Confidence: 0.73312753

00:10:27.452 --> 00:10:28.658 well behaving,

NOTE Confidence: 0.73312753

00:10:28.660 --> 00:10:30.718 then we actually can achieve cure.

NOTE Confidence: 0.73312753

00:10:30.720 --> 00:10:31.518 So basically,

NOTE Confidence: 0.73312753

00:10:31.518 --> 00:10:33.912 in the first situation we will

NOTE Confidence: 0.73312753

00:10:33.912 --> 00:10:36.518 buy time for the patients to

NOTE Confidence: 0.73312753

00:10:36.518 --> 00:10:38.250 give them longer survival.

NOTE Confidence: 0.73312753

00:10:38.250 --> 00:10:40.494 While in this version of thyroid

NOTE Confidence: 0.73312753

00:10:40.494 --> 00:10:42.549 cancer will actually achieve the cure.

NOTE Confidence: 0.8953431512

00:10:43.300 --> 00:10:45.939 It sounds like there's

NOTE Confidence: 0.8953431512

00:10:45.939 --> 00:10:47.548 still clinical trials ongoing

NOTE Confidence: 0.8953431512

00:10:47.548 --> 00:10:49.978 to kind of evaluate the optimal

NOTE Confidence: 0.8953431512

00:10:49.978 --> 00:10:52.215 situation in which these theranostics

NOTE Confidence: 0.8953431512

00:10:52.215 --> 00:10:54.228 should be used. Is that right?

NOTE Confidence: 0.7347281055

00:10:54.540 --> 00:10:56.104 Yeah, that's absolutely correct.

NOTE Confidence: 0.7347281055

00:10:56.104 --> 00:10:58.450 So for the neuroendocrine tumors

NOTE Confidence: 0.7347281055

00:10:58.513 --> 00:11:00.348 and prostate we'll actually be

NOTE Confidence: 0.7347281055

00:11:00.348 --> 00:11:02.183 evaluating what are the optimal

NOTE Confidence: 0.7347281055

00:11:02.190 --> 00:11:04.344 situations to be used. In the other cancer there

00:11:05.780 --> 00:11:08.860 are still not agents that

NOTE Confidence: 0.7347281055

00:11:08.860 --> 00:11:10.802 are either approved clinically

NOTE Confidence: 0.7347281055

00:11:10.802 --> 00:11:13.497 or approved for trials.

NOTE Confidence: 0.7347281055

00:11:13.500 --> 00:11:15.270 There will be a so-called early

NOTE Confidence: 0.7347281055

00:11:15.270 --> 00:11:17.083 phase one and phase two studies

NOTE Confidence: 0.7347281055

00:11:17.083 --> 00:11:19.064 to see whether they work at all.

NOTE Confidence: 0.7347281055

00:11:19.070 --> 00:11:21.866 So at the moment again, thyroid,

NOTE Confidence: 0.7347281055

00:11:21.866 --> 00:11:23.730 prostate and NETs are where

00:11:25.294 --> 00:11:26.076 Radionuclide therapies

NOTE Confidence: 0.7347281055

00:11:26.076 --> 00:11:27.640 have advanced the most.

NOTE Confidence: 0.862584378

00:11:28.190 --> 00:11:29.800 Are there other cancers

NOTE Confidence: 0.862584378

00:11:29.800 --> 00:11:31.410 that are on the horizon?

NOTE Confidence: 0.862584378

00:11:31.410 --> 00:11:34.092 Are there other advances that you're

NOTE Confidence: 0.862584378

00:11:34.092 --> 00:11:35.720 particularly excited about?

NOTE Confidence: 0.873958065172414

00:11:35.730 --> 00:11:38.054 I just laughed a little bit about

NOTE Confidence: 0.873958065172414

00:11:38.054 --> 00:11:40.427 this because we're getting so many

NOTE Confidence: 0.873958065172414

00:11:40.427 --> 00:11:42.167 contacts from the pharmaceutical

NOTE Confidence: 0.873958065172414

00:11:42.167 --> 00:11:44.290 companies there are almost tracers

NOTE Confidence: 0.873958065172414

00:11:44.290 --> 00:11:46.922 for every cancer that you can imagine,

NOTE Confidence: 0.873958065172414

00:11:46.930 --> 00:11:49.212 but they will have to pass through

NOTE Confidence: 0.873958065172414

00:11:49.212 --> 00:11:52.027 phase one and phase two trials to see

NOTE Confidence: 0.873958065172414

00:11:52.027 --> 00:11:54.231 which of these tracers would make

NOTE Confidence: 0.873958065172414

00:11:54.231 --> 00:11:56.786 sense to develop as clinical agents.

NOTE Confidence: 0.873539280555556

00:11:57.720 --> 00:12:00.231 And tell us a little bit more about the

NOTE Confidence: 0.873539280555556

00:12:00.231 --> 00:12:02.604 side effects of these theranostics because

NOTE Confidence: 0.873539280555556

00:12:02.604 --> 00:12:05.960 it sounds like with them being so targeted,

NOTE Confidence: 0.873539280555556

00:12:05.960 --> 00:12:08.174 granted you know it makes a

NOTE Confidence: 0.873539280555556

00:12:08.174 --> 00:12:09.987 difference how aggressive the cancer

NOTE Confidence: 0.873539280555556

00:12:09.987 --> 00:12:11.856 is and how far gone it is,

NOTE Confidence: 0.873539280555556

00:12:11.860 --> 00:12:14.074 but do they have a lot of side effects?

NOTE Confidence: 0.873539280555556

00:12:14.080 --> 00:12:16.879 Because it seems to me that when

NOTE Confidence: 0.873539280555556

00:12:16.879 --> 00:12:19.807 we talk on the show about chemotherapy,

NOTE Confidence: 0.873539280555556

00:12:19.810 --> 00:12:22.980 chemotherapy really targets many cells.

NOTE Confidence: 0.873539280555556

00:12:22.980 --> 00:12:24.952 Any rapidly dividing cell,

NOTE Confidence: 0.873539280555556

00:12:24.952 --> 00:12:27.910 which is why they cause

NOTE Confidence: 0.873539280555556

00:12:27.910 --> 00:12:30.234 things like hair loss and bone

NOTE Confidence: 0.873539280555556

00:12:30.234 --> 00:12:31.640 marrow suppression and so on,

NOTE Confidence: 0.873539280555556

00:12:31.640 --> 00:12:34.448 because these are rapidly dividing cells.

NOTE Confidence: 0.873539280555556

00:12:34.450 --> 00:12:37.920 But in the situation where

NOTE Confidence: 0.873539280555556

00:12:37.920 --> 00:12:41.184 a protein that is very specific to a

NOTE Confidence: 0.873539280555556

00:12:41.184 --> 00:12:44.297 cancer can be targeted and almost like

NOTE Confidence: 0.873539280555556

00:12:44.297 --> 00:12:47.730 a laser killed by these theranostics.

NOTE Confidence: 0.873539280555556

00:12:47.730 --> 00:12:50.454 One would imagine that the side

NOTE Confidence: 0.873539280555556

00:12:50.454 --> 00:12:51.816 effects are different,

NOTE Confidence: 0.873539280555556

00:12:51.820 --> 00:12:52.909 perhaps more local.

NOTE Confidence: 0.873539280555556

00:12:52.909 --> 00:12:55.450 Tell us about the side effects that

NOTE Confidence: 0.873539280555556

00:12:55.521 --> 00:12:57.731 patients who are undergoing therapies

NOTE Confidence: 0.873539280555556

00:12:57.731 --> 00:12:59.941 with these agents might face?

NOTE Confidence: 0.746763251666667

00:13:00.180 --> 00:13:02.778 That's a little bit surprising,

NOTE Confidence: 0.746763251666667

00:13:02.780 --> 00:13:05.798 but you have to remember before

NOTE Confidence: 0.746763251666667

00:13:05.798 --> 00:13:07.810 the tracer gets localized

NOTE Confidence: 0.746763251666667

00:13:07.810 --> 00:13:09.690 to the tissue of interest,

NOTE Confidence: 0.746763251666667

00:13:09.690 --> 00:13:12.561 it still stays for awhile in the blood and

NOTE Confidence: 0.746763251666667

00:13:12.561 --> 00:13:15.515 to some extent goes to the bone marrow.

NOTE Confidence: 0.746763251666667

00:13:15.520 --> 00:13:18.886 So unfortunately, even through the radio tracers,

NOTE Confidence: 0.746763251666667

00:13:18.890 --> 00:13:20.910 although we have less

NOTE Confidence: 0.746763251666667

00:13:20.910 --> 00:13:23.450 toxicity to the bone marrow,

NOTE Confidence: 0.746763251666667

00:13:23.450 --> 00:13:26.089 patient still can get bone marrow toxicity,

NOTE Confidence: 0.746763251666667

00:13:26.090 --> 00:13:28.058 which can drop their blood counts,

NOTE Confidence: 0.746763251666667

00:13:28.060 --> 00:13:29.892 although this is very,

NOTE Confidence: 0.746763251666667

00:13:29.892 --> 00:13:31.724 very less pronounced with

NOTE Confidence: 0.746763251666667

00:13:31.724 --> 00:13:34.270 radionuclide tracers than with the

NOTE Confidence: 0.746763251666667

00:13:34.270 --> 00:13:36.070 conventional chemotherapy and then

NOTE Confidence: 0.746763251666667

00:13:36.070 --> 00:13:38.350 other side effects are

NOTE Confidence: 0.746763251666667

00:13:38.350 --> 00:13:40.996 more dependent on how they

NOTE Confidence: 0.746763251666667

00:13:40.996 --> 00:13:43.250 are eliminated from the body.

NOTE Confidence: 0.746763251666667

00:13:43.250 --> 00:13:44.420 So for example,

NOTE Confidence: 0.746763251666667

00:13:44.420 --> 00:13:47.168 for NETs we worry about

NOTE Confidence: 0.746763251666667

00:13:47.168 --> 00:13:49.148 kidneys because that's where they

NOTE Confidence: 0.746763251666667

00:13:49.150 --> 00:13:52.518 accumulate a lot when we get they get

NOTE Confidence: 0.746763251666667

00:13:52.518 --> 00:13:55.929 eliminated or in let's say

NOTE Confidence: 0.746763251666667

00:13:55.929 --> 00:13:58.908 prostate cancer, we worry about

NOTE Confidence: 0.746763251666667

00:13:58.910 --> 00:14:00.875 GI tract because patients sometimes

NOTE Confidence: 0.746763251666667

00:14:00.875 --> 00:14:03.490 get GI side effects.

NOTE Confidence: 0.746763251666667

00:14:03.490 --> 00:14:06.409 So again, it's a degree of toxicity,

NOTE Confidence: 0.746763251666667

00:14:06.410 --> 00:14:08.510 but unfortunately pretty much

NOTE Confidence: 0.746763251666667

00:14:08.510 --> 00:14:10.610 every systemic treatment would,

NOTE Confidence: 0.746763251666667

00:14:10.610 --> 00:14:12.374 to some extent have a bone

NOTE Confidence: 0.746763251666667

00:14:12.374 --> 00:14:13.256 marrow side effect.

NOTE Confidence: 0.834525042307692

00:14:13.480 --> 00:14:15.650 Well we're going to take

NOTE Confidence: 0.834525042307692

00:14:15.650 --> 00:14:17.828 a short break for medical minute,

NOTE Confidence: 0.834525042307692

00:14:17.830 --> 00:14:19.862 and when we come back we'll talk a

NOTE Confidence: 0.834525042307692

00:14:19.862 --> 00:14:22.069 little bit more about some of your work

NOTE Confidence: 0.834525042307692

00:14:22.070 --> 00:14:24.614 looking at COVID-19 vaccine and its

NOTE Confidence: 0.834525042307692

00:14:24.614 --> 00:14:26.916 effect on PET scans. Please stay

NOTE Confidence: 0.834525042307692

00:14:26.916 --> 00:14:29.037 tuned to learn more with my guest

NOTE Confidence: 0.834525042307692

00:14:29.040 --> 00:14:30.688 Doctor Darko Pucar.

NOTE Confidence: 0.91604231952381

00:14:31.270 --> 00:14:33.245 Funding for Yale Cancer Answers

NOTE Confidence: 0.91604231952381

00:14:33.245 --> 00:14:35.220 comes from AstraZeneca, dedicated

NOTE Confidence: 0.91604231952381

00:14:35.288 --> 00:14:37.173 to advancing options and providing

NOTE Confidence: 0.91604231952381

00:14:37.173 --> 00:14:39.550 hope for people living with cancer.

NOTE Confidence: 0.91604231952381

00:14:39.550 --> 00:14:43.470 More information at AstraZeneca Dash us.com.

NOTE Confidence: 0.974114608571429

00:14:45.520 --> 00:14:48.412 The American Cancer Society estimates that

NOTE Confidence: 0.974114608571429

00:14:48.412 --> 00:14:50.886 over 200,000 cases of Melanoma will be

NOTE Confidence: 0.974114608571429

00:14:50.886 --> 00:14:53.259 diagnosed in the United States this year,

NOTE Confidence: 0.974114608571429

00:14:53.260 --> 00:14:56.396 with over 1000 patients in Connecticut alone.

NOTE Confidence: 0.974114608571429

00:14:56.400 --> 00:14:58.725 While Melanoma accounts for only

NOTE Confidence: 0.974114608571429

00:14:58.725 --> 00:15:01.244 about 1% of skin cancer cases,

NOTE Confidence: 0.974114608571429

00:15:01.244 --> 00:15:04.240 it causes the most skin cancer deaths,

NOTE Confidence: 0.974114608571429

00:15:04.240 --> 00:15:05.668 but when detected early,

NOTE Confidence: 0.974114608571429

00:15:05.668 --> 00:15:08.390 it is easily treated and highly curable.

NOTE Confidence: 0.974114608571429

00:15:08.390 --> 00:15:10.830 Clinical trials are currently underway

NOTE Confidence: 0.974114608571429

00:15:10.830 --> 00:15:12.782 at federally designated Comprehensive

NOTE Confidence: 0.974114608571429

00:15:12.782 --> 00:15:14.944 cancer centers such as Yale Cancer

NOTE Confidence: 0.974114608571429

00:15:14.944 --> 00:15:17.150 Center and at Smilow Cancer Hospital

NOTE Confidence: 0.974114608571429

00:15:17.150 --> 00:15:19.360 to test innovative new treatments

NOTE Confidence: 0.974114608571429

00:15:19.360 --> 00:15:20.244 for Melanoma.

NOTE Confidence: 0.974114608571429

00:15:20.250 --> 00:15:22.482 The goal of the specialized programs

NOTE Confidence: 0.974114608571429

00:15:22.482 --> 00:15:24.363 of research excellence and Skin

NOTE Confidence: 0.974114608571429

00:15:24.363 --> 00:15:26.349 Cancer Grant is to better understand

NOTE Confidence: 0.974114608571429

00:15:26.349 --> 00:15:28.109 the biology of skin cancer

NOTE Confidence: 0.974114608571429

00:15:28.110 --> 00:15:29.765 with a focus on discovering

NOTE Confidence: 0.974114608571429

00:15:29.765 --> 00:15:32.002 targets that will lead to improved

NOTE Confidence: 0.974114608571429

00:15:32.002 --> 00:15:33.547 diagnosis and treatment.

NOTE Confidence: 0.974114608571429

00:15:33.550 --> 00:15:36.610 More information is available at

NOTE Confidence: 0.974114608571429

00:15:36.610 --> 00:15:38.722 yalecancercenter.org. You're listening

NOTE Confidence: 0.974114608571429

00:15:38.722 --> 00:15:41.538 to Connecticut Public Radio.

NOTE Confidence: 0.974114608571429

00:15:41.540 --> 00:15:41.990 Welcome

NOTE Confidence: 0.856721252

00:15:42.000 --> 00:15:44.130 back to Yale Cancer Answers.

NOTE Confidence: 0.856721252

00:15:44.130 --> 00:15:45.330 This is doctor Anees Chagpar

NOTE Confidence: 0.856721252

00:15:45.330 --> 00:15:46.830 and I'm joined

NOTE Confidence: 0.856721252

00:15:46.830 --> 00:15:48.210 tonight by my guest Doctor

NOTE Confidence: 0.856721252

00:15:48.210 --> 00:15:50.550 Darko Pucar and we're talking

NOTE Confidence: 0.856721252

00:15:50.550 --> 00:15:52.890 about nuclear medicine and before

NOTE Confidence: 0.856721252

00:15:52.970 --> 00:15:55.208 the break we spent some time

NOTE Confidence: 0.856721252

00:15:55.208 --> 00:15:57.599 talking about the role that nuclear

NOTE Confidence: 0.856721252

00:15:57.599 --> 00:15:59.649 medicine plays both in diagnosis

NOTE Confidence: 0.856721252

00:15:59.649 --> 00:16:02.251 as well as potentially in the

NOTE Confidence: 0.856721252

00:16:02.251 --> 00:16:04.079 therapeutic management of cancer.

NOTE Confidence: 0.856721252

00:16:04.080 --> 00:16:06.540 But Doctor Pucar has

NOTE Confidence: 0.856721252

00:16:06.540 --> 00:16:08.508 done some interesting work

NOTE Confidence: 0.856721252

00:16:08.510 --> 00:16:12.140 looking at the impact of COVID-19

NOTE Confidence: 0.856721252

00:16:12.140 --> 00:16:13.556 Vaccine on PET scans.

NOTE Confidence: 0.856721252

00:16:13.556 --> 00:16:16.131 Darko, tell us a little bit

NOTE Confidence: 0.856721252

00:16:16.131 --> 00:16:17.238 more about that.

00:16:17.700 --> 00:16:18.880 Thank you for this question.

NOTE Confidence: 0.953411472

00:16:18.880 --> 00:16:20.930 This is actually something very

NOTE Confidence: 0.953411472

00:16:20.930 --> 00:16:24.180 exciting to myself and my team members

NOTE Confidence: 0.953411472

00:16:24.180 --> 00:16:27.039 because we kind of anticipated once

NOTE Confidence: 0.953411472

00:16:27.039 --> 00:16:29.465 the vaccine started rolling out that

NOTE Confidence: 0.953411472

00:16:29.465 --> 00:16:32.530 we're going to see some active lymph

NOTE Confidence: 0.953411472

00:16:32.530 --> 00:16:35.659 nodes at the site of vaccine injection.

NOTE Confidence: 0.953411472

00:16:35.660 --> 00:16:38.607 So if, let's say you would get

NOTE Confidence: 0.953411472

00:16:38.607 --> 00:16:41.088 injection in the left deltoid muscle,

NOTE Confidence: 0.953411472

00:16:41.088 --> 00:16:43.008 you are expected to get

NOTE Confidence: 0.953411472

00:16:43.010 --> 00:16:44.830 activity in the left armpit.

NOTE Confidence: 0.953411472

00:16:44.830 --> 00:16:47.070 We kinda knew that was going to

NOTE Confidence: 0.953411472

00:16:47.070 --> 00:16:48.957 happen because that was happening

NOTE Confidence: 0.953411472

00:16:48.957 --> 00:16:52.630 with influenza and since last fall

NOTE Confidence: 0.953411472

00:16:52.630 --> 00:16:55.440 influenza was given relatively rapidly

NOTE Confidence: 0.953411472

00:16:55.440 --> 00:16:58.158 because we are actually seeing

NOTE Confidence: 0.953411472

00:16:58.158 --> 00:17:01.552 for like a week or several weeks

NOTE Confidence: 0.953411472

00:17:01.552 --> 00:17:04.807 actually influenza active lymph nodes.

NOTE Confidence: 0.953411472

00:17:04.810 --> 00:17:09.186 So we were already prepared as soon as

NOTE Confidence: 0.953411472

00:17:09.186 --> 00:17:11.888 COVID vaccine rollout is expected to

NOTE Confidence: 0.953411472

00:17:11.888 --> 00:17:13.898 start collecting the data immediately.

NOTE Confidence: 0.953411472

00:17:13.900 --> 00:17:15.825 So we were collecting actually

NOTE Confidence: 0.953411472

00:17:15.825 --> 00:17:18.539 the data for all the patients that

NOTE Confidence: 0.953411472

00:17:18.539 --> 00:17:21.379 had a pet scan at Yale will first

NOTE Confidence: 0.953411472

00:17:21.380 --> 00:17:23.402 try to determine whether they had

NOTE Confidence: 0.953411472

00:17:23.402 --> 00:17:24.750 COVID vaccine or not,

NOTE Confidence: 0.953411472

00:17:24.750 --> 00:17:26.690 and then we'll assess whether

NOTE Confidence: 0.953411472

00:17:26.690 --> 00:17:28.990 they have active nodes or not.

NOTE Confidence: 0.953411472

00:17:28.990 --> 00:17:31.272 And in the beginning the collection

NOTE Confidence: 0.953411472

00:17:31.272 --> 00:17:33.017 was relatively easy because all

NOTE Confidence: 0.953411472

00:17:33.017 --> 00:17:34.777 the vaccines were administered at

NOTE Confidence: 0.953411472

00:17:34.777 --> 00:17:37.412 Yale so we could get a very precise

NOTE Confidence: 0.953411472

00:17:37.412 --> 00:17:38.960 understanding who had vaccine,

NOTE Confidence: 0.953411472

00:17:38.960 --> 00:17:40.632 who didn't and

NOTE Confidence: 0.953411472

00:17:40.632 --> 00:17:42.722 which type of the vaccine.

00:17:43.906 --> 00:17:46.650 So we have collected those data as

NOTE Confidence: 0.953411472

00:17:46.740 --> 00:17:49.926 quickly as possible and we published

NOTE Confidence: 0.953411472

00:17:49.926 --> 00:17:52.814 the JAMA article on 68

NOTE Confidence: 0.953411472

00:17:52.814 --> 00:17:55.284 patients that actually had vaccine,

NOTE Confidence: 0.953411472

00:17:55.284 --> 00:17:57.886 listing the frequency of positivity in

NOTE Confidence: 0.953411472

00:17:57.886 --> 00:18:00.606 Pfizer and Moderna vaccines,

NOTE Confidence: 0.953411472

00:18:00.610 --> 00:18:03.046 which is kind of useful to the

NOTE Confidence: 0.953411472

00:18:03.046 --> 00:18:04.700 practitioner as we'll discuss.

NOTE Confidence: 0.841721158461539

00:18:04.770 --> 00:18:06.730 So tell me more. What did

NOTE Confidence: 0.841721158461539

00:18:06.730 --> 00:18:08.870 you find and what happened?

NOTE Confidence: 0.796292339285714

00:18:09.260 --> 00:18:12.214 So basically the reason why we

NOTE Confidence: 0.796292339285714

00:18:12.214 --> 00:18:15.298 really wanted to know this is because

NOTE Confidence: 0.796292339285714

00:18:15.300 --> 00:18:17.080 these lymph nodes theoretically

NOTE Confidence: 0.796292339285714

00:18:17.080 --> 00:18:19.230 can mimic cancer, which would be

NOTE Confidence: 0.796292339285714

00:18:19.230 --> 00:18:20.580 like a false positive finding.

NOTE Confidence: 0.796292339285714

00:18:20.580 --> 00:18:22.200 Or they can mask cancer.

NOTE Confidence: 0.796292339285714

00:18:22.200 --> 00:18:24.622 If we think that these nodes from

NOTE Confidence: 0.796292339285714

00:18:24.622 --> 00:18:27.178 the vaccine but actually turn out

NOTE Confidence: 0.796292339285714

00:18:27.178 --> 00:18:30.080 to be nodes from the cancer.

NOTE Confidence: 0.796292339285714

00:18:30.080 --> 00:18:33.314 So in order to avoid the errors,

NOTE Confidence: 0.796292339285714

00:18:33.320 --> 00:18:35.959 we kind of need everyone to participate.

NOTE Confidence: 0.796292339285714

00:18:35.960 --> 00:18:38.930 Both the patients, the providers

NOTE Confidence: 0.796292339285714

00:18:38.930 --> 00:18:41.306 that are administering the vaccines,

NOTE Confidence: 0.796292339285714

00:18:41.310 --> 00:18:43.425 the oncologists and us in

NOTE Confidence: 0.796292339285714

00:18:43.425 --> 00:18:45.326 the nuclear medicine. So it

NOTE Confidence: 0.796292339285714

00:18:45.326 --> 00:18:47.830 is very important to know the date,

NOTE Confidence: 0.796292339285714

00:18:47.830 --> 00:18:50.343 the type and the dose and the

NOTE Confidence: 0.796292339285714

00:18:50.343 --> 00:18:52.700 site of vaccine administration.

NOTE Confidence: 0.796292339285714

00:18:52.700 --> 00:18:56.210 Also, it is very important to

NOTE Confidence: 0.796292339285714

00:18:56.210 --> 00:18:58.550 avoid administering the vaccine

NOTE Confidence: 0.796292339285714

00:18:58.648 --> 00:19:01.910 on the side where cancer might be.

NOTE Confidence: 0.796292339285714

00:19:01.910 --> 00:19:02.957 So, for example,

NOTE Confidence: 0.796292339285714

00:19:02.957 --> 00:19:05.400 if you have a right breast cancer,

NOTE Confidence: 0.796292339285714

00:19:05.400 --> 00:19:06.920 you shouldn't be getting vaccine

NOTE Confidence: 0.796292339285714

00:19:06.920 --> 00:19:08.136 in the right arm.

NOTE Confidence: 0.796292339285714

00:19:08.140 --> 00:19:09.616 You should be getting the vaccine

NOTE Confidence: 0.796292339285714

00:19:09.616 --> 00:19:10.600 in the left arm.

NOTE Confidence: 0.796292339285714

00:19:10.600 --> 00:19:12.740 Similarly for other cancers that

NOTE Confidence: 0.796292339285714

00:19:12.740 --> 00:19:16.080 will go to the axilla like Melanoma,

NOTE Confidence: 0.796292339285714

00:19:16.080 --> 00:19:17.810 for other cancers like lymphoma,

NOTE Confidence: 0.796292339285714

00:19:17.810 --> 00:19:20.375 it gets more complicated because

NOTE Confidence: 0.796292339285714

00:19:20.375 --> 00:19:23.570 they can go to different nodes,

NOTE Confidence: 0.796292339285714

00:19:23.570 --> 00:19:25.448 but it's important to see whether,

NOTE Confidence: 0.796292339285714

00:19:25.450 --> 00:19:27.960 for example, they had nodes

NOTE Confidence: 0.796292339285714

00:19:27.960 --> 00:19:30.396 in one versus the other armpit,

NOTE Confidence: 0.796292339285714

00:19:30.400 --> 00:19:32.260 to determine which arm,

NOTE Confidence: 0.796292339285714

00:19:32.260 --> 00:19:34.690 which side would be more safe

NOTE Confidence: 0.796292339285714

00:19:34.690 --> 00:19:36.856 to inject and for patients

NOTE Confidence: 0.796292339285714

00:19:36.856 --> 00:19:39.568 it is extremely important to tell

NOTE Confidence: 0.796292339285714

00:19:39.568 --> 00:19:42.754 their oncologist that they will be

NOTE Confidence: 0.796292339285714

00:19:42.754 --> 00:19:45.392 getting the vaccine if they have some

NOTE Confidence: 0.796292339285714

00:19:45.392 --> 00:19:47.360 of those cancers that I mentioned

NOTE Confidence: 0.796292339285714

00:19:47.429 --> 00:19:49.543 to tell the person who is giving

NOTE Confidence: 0.796292339285714

00:19:49.543 --> 00:19:51.677 the vaccine to avoid the side,

NOTE Confidence: 0.796292339285714

00:19:51.680 --> 00:19:54.207 which can be confusing.

NOTE Confidence: 0.796292339285714

00:19:54.210 --> 00:19:57.157 And when they get their PET questionnaire,

NOTE Confidence: 0.796292339285714

00:19:57.160 --> 00:19:59.008 which is like a survey that we

NOTE Confidence: 0.796292339285714

00:19:59.010 --> 00:20:01.200 administer prior to PET scan,

NOTE Confidence: 0.796292339285714

00:20:01.200 --> 00:20:02.632 and that's a good idea

00:20:02.990 --> 00:20:05.188 even if they didn't get the vaccine,

00:20:08.062 --> 00:20:10.037 they should ask to see the chart or in epic,

NOTE Confidence: 0.796292339285714

00:20:10.040 --> 00:20:12.410 but they should actually list if

NOTE Confidence: 0.796292339285714

00:20:12.410 --> 00:20:14.750 they have any acute symptoms.

00:20:15.214 --> 00:20:16.606 Especially something that

NOTE Confidence: 0.796292339285714

00:20:16.606 --> 00:20:17.998 looks like inflammation,

NOTE Confidence: 0.796292339285714

00:20:18.000 --> 00:20:20.988 and they also should provide information as to

NOTE Confidence: 0.796292339285714

00:20:20.990 --> 00:20:22.700 when did they get vaccine?

NOTE Confidence: 0.796292339285714

00:20:22.700 --> 00:20:24.372 What kind of vaccine,

NOTE Confidence: 0.796292339285714

00:20:24.372 --> 00:20:26.880 and in which side of the arm

NOTE Confidence: 0.796292339285714

00:20:26.880 --> 00:20:29.030 in left or the right?

NOTE Confidence: 0.796292339285714

00:20:30.870 --> 00:20:33.330 For example, our data have demonstrated that

NOTE Confidence: 0.796292339285714

00:20:33.330 --> 00:20:36.327 those reactive nodes that can either

NOTE Confidence: 0.796292339285714

00:20:36.327 --> 00:20:39.491 mimic or mask cancer and more commonly

NOTE Confidence: 0.796292339285714

00:20:39.491 --> 00:20:42.088 after second dose of the vaccine,

NOTE Confidence: 0.796292339285714

00:20:42.090 --> 00:20:44.281 then after the first dose of vaccine

NOTE Confidence: 0.796292339285714

00:20:44.281 --> 00:20:46.773 which you would kind of expect based

NOTE Confidence: 0.796292339285714

00:20:46.773 --> 00:20:48.638 on immunologic phenomenons

NOTE Confidence: 0.796292339285714

00:20:48.638 --> 00:20:50.459 that come with the vaccines.

NOTE Confidence: 0.796292339285714

00:20:50.460 --> 00:20:52.280 And we also found that they are a

NOTE Confidence: 0.796292339285714

00:20:52.280 --> 00:20:53.835 little bit more common with

NOTE Confidence: 0.796292339285714

00:20:53.835 --> 00:20:55.615 Moderna than with Pfizer vaccine.

NOTE Confidence: 0.700769026

00:20:56.160 --> 00:20:59.620 So how long does the

NOTE Confidence: 0.700769026

00:20:59.620 --> 00:21:02.378 effect last on the PET scan?

NOTE Confidence: 0.700769026

00:21:02.380 --> 00:21:03.970 So for example,

NOTE Confidence: 0.700769026

00:21:03.970 --> 00:21:07.680 let's say you got the vaccine today.

NOTE Confidence: 0.700769026

00:21:07.680 --> 00:21:10.206 How long after that would you

NOTE Confidence: 0.700769026

00:21:10.206 --> 00:21:12.333 anticipate that you would still

NOTE Confidence: 0.700769026

00:21:12.333 --> 00:21:14.853 be able to see those enlarged

NOTE Confidence: 0.700769026

00:21:14.853 --> 00:21:17.109 lymph nodes by pet after today?

NOTE Confidence: 0.861555266666667

00:21:17.540 --> 00:21:20.276 That's a great question. And actually,

NOTE Confidence: 0.861555266666667

00:21:20.280 --> 00:21:22.158 when we did our original article,

NOTE Confidence: 0.861555266666667

00:21:22.160 --> 00:21:24.240 we couldn't answer that question

NOTE Confidence: 0.861555266666667

00:21:24.240 --> 00:21:27.000 because we had relatively few patients.

NOTE Confidence: 0.861555266666667

00:21:27.000 --> 00:21:28.750 I cannot discuss

NOTE Confidence: 0.861555266666667

00:21:28.750 --> 00:21:30.379 too much because we have to finish

NOTE Confidence: 0.861555266666667

00:21:30.380 --> 00:21:33.944 the analysis, so I don't want to be giving

NOTE Confidence: 0.861555266666667

00:21:33.944 --> 00:21:36.367 statements ahead of the statistician,

NOTE Confidence: 0.861555266666667

00:21:36.370 --> 00:21:38.902 but based on our preliminary data

NOTE Confidence: 0.861555266666667

00:21:38.902 --> 00:21:41.350 now of several hundred patients,

NOTE Confidence: 0.861555266666667

00:21:41.350 --> 00:21:45.123 it seems that probably it would take

NOTE Confidence: 0.861555266666667

00:21:45.123 --> 00:21:49.270 at least several weeks

NOTE Confidence: 0.861555266666667

00:21:49.270 --> 00:21:52.588 for the vaccine effect to disappear,

NOTE Confidence: 0.861555266666667

00:21:52.590 --> 00:21:53.850 and it seems again,

NOTE Confidence: 0.861555266666667

00:21:53.850 --> 00:21:55.425 this is probably too early,

00:21:57.115 --> 00:21:59.514 the final word is that it lasts

NOTE Confidence: 0.861555266666667

00:21:59.514 --> 00:22:01.446 a little bit longer with Moderna than

NOTE Confidence: 0.861555266666667

00:22:01.450 --> 00:22:01.980 Pfizer.

00:22:03.560 --> 00:22:06.007 I think that some of the things that

NOTE Confidence: 0.922738737058823

00:22:06.007 --> 00:22:08.534 you're saying make intuitive sense, right?

NOTE Confidence: 0.922738737058823

00:22:08.534 --> 00:22:12.886 If you have a known right breast cancer

NOTE Confidence: 0.922738737058823

00:22:12.886 --> 00:22:16.597 or known right arm Melanoma there,

NOTE Confidence: 0.922738737058823

00:22:16.597 --> 00:22:18.919 getting an injection on that right

NOTE Confidence: 0.922738737058823

00:22:18.919 --> 00:22:20.957 side can certainly be confusing

NOTE Confidence: 0.922738737058823

00:22:20.957 --> 00:22:23.393 to a radiologist who's trying to

NOTE Confidence: 0.922738737058823

00:22:23.393 --> 00:22:25.306 interpret whether the lymph nodes

NOTE Confidence: 0.922738737058823

00:22:25.306 --> 00:22:27.370 look ugly because of the cancer

NOTE Confidence: 0.922738737058823

00:22:27.370 --> 00:22:30.107 or look ugly because of the vaccine.

NOTE Confidence: 0.922738737058823

00:22:30.110 --> 00:22:31.193 But the

NOTE Confidence: 0.922738737058823

00:22:31.193 --> 00:22:32.637 other point though,

NOTE Confidence: 0.922738737058823

00:22:32.640 --> 00:22:35.587 is that you may have gotten the

NOTE Confidence: 0.922738737058823

00:22:35.587 --> 00:22:38.105 shot without knowing that you also

NOTE Confidence: 0.922738737058823

00:22:38.105 --> 00:22:40.439 were going to develop a cancer

NOTE Confidence: 0.922738737058823

00:22:40.439 --> 00:22:43.096 and then find the cancer later,

NOTE Confidence: 0.922738737058823

00:22:43.100 --> 00:22:46.551 and so that's where things get a

NOTE Confidence: 0.922738737058823

00:22:46.551 --> 00:22:49.746 little bit tricky when one didn't

NOTE Confidence: 0.922738737058823

00:22:49.746 --> 00:22:52.606 know about the other diagnosis.

NOTE Confidence: 0.79474881

00:22:53.230 --> 00:22:56.398 That's absolutely right.

NOTE Confidence: 0.79474881

00:22:56.398 --> 00:22:59.265 However, most of the time when

NOTE Confidence: 0.79474881

00:22:59.265 --> 00:23:02.480 we do PET scans prior to actual

NOTE Confidence: 0.79474881

00:23:02.480 --> 00:23:06.127 diagnosis of cancer is for lung

NOTE Confidence: 0.79474881

00:23:06.127 --> 00:23:09.447 nodules and fortunately lung cancer

NOTE Confidence: 0.79474881

00:23:09.450 --> 00:23:12.390 very, very rarely goes to the armpit,

NOTE Confidence: 0.79474881

00:23:12.390 --> 00:23:15.958 so in that situation we'll know based on

NOTE Confidence: 0.79474881

00:23:15.958 --> 00:23:18.854 the expected distribution.

NOTE Confidence: 0.79474881

00:23:18.854 --> 00:23:21.236 It will be obviously more difficult

NOTE Confidence: 0.79474881

00:23:21.236 --> 00:23:23.903 if a patient eventually gets

NOTE Confidence: 0.79474881

00:23:23.903 --> 00:23:25.697 diagnosed with lymphoma.

NOTE Confidence: 0.79474881

00:23:25.700 --> 00:23:28.836 And then it could in some time

NOTE Confidence: 0.79474881

00:23:28.840 --> 00:23:31.000 there are unfortunately few cases

NOTE Confidence: 0.79474881

00:23:31.000 --> 00:23:33.160 that we couldn't really tell,

NOTE Confidence: 0.79474881

00:23:33.160 --> 00:23:37.816 but although it looks really ominous,

NOTE Confidence: 0.79474881

00:23:37.820 --> 00:23:40.648 it is a relatively small number of cases

NOTE Confidence: 0.79474881

00:23:40.648 --> 00:23:43.195 that after careful analysis that we

NOTE Confidence: 0.79474881

00:23:43.195 --> 00:23:45.709 cannot determine what's going on and

NOTE Confidence: 0.79474881

00:23:45.709 --> 00:23:48.395 those we'll have to closely follow up,

NOTE Confidence: 0.79474881

00:23:48.400 --> 00:23:49.010 obviously.

NOTE Confidence: 0.857279316923077

00:23:49.300 --> 00:23:52.063 So you know getting to the point of

NOTE Confidence: 0.857279316923077

00:23:52.063 --> 00:23:54.624 the people with lymphoma, for example,

NOTE Confidence: 0.857279316923077

00:23:54.624 --> 00:23:56.878 where you know it would be expected

NOTE Confidence: 0.857279316923077

00:23:56.878 --> 00:23:59.348 that you would have many enlarged lymph

NOTE Confidence: 0.857279316923077

00:23:59.348 --> 00:24:03.230 nodes trying to distinguish that versus

NOTE Confidence: 0.857279316923077

00:24:03.230 --> 00:24:04.976 response to a COVID

NOTE Confidence: 0.857279316923077

00:24:04.976 --> 00:24:06.760 vaccine must be pretty difficult.

NOTE Confidence: 0.857279316923077

00:24:06.760 --> 00:24:08.594 What kind of tools do you

NOTE Confidence: 0.857279316923077

00:24:08.594 --> 00:24:10.726 use as a nuclear medicine physician

NOTE Confidence: 0.857279316923077

00:24:10.726 --> 00:24:13.282 who interprets these scans to tell

NOTE Confidence: 0.857279316923077

00:24:13.282 --> 00:24:15.609 the difference one to the other?

NOTE Confidence: 0.857279316923077

00:24:15.610 --> 00:24:18.436 Or is this something that relies on a biopsy?

NOTE Confidence: 0.79486263625

00:24:19.900 --> 00:24:22.889 I'm hoping that in most cases we

NOTE Confidence: 0.79486263625

00:24:22.889 --> 00:24:24.982 really do not need the biopsy and

NOTE Confidence: 0.79486263625

00:24:24.982 --> 00:24:26.619 we actually didn't comment on the result to

NOTE Confidence: 0.79486263625

00:24:26.620 --> 00:24:29.110 biopsy

NOTE Confidence: 0.79486263625

00:24:29.110 --> 00:24:31.468 because, for example,

NOTE Confidence: 0.79486263625

00:24:31.468 --> 00:24:34.792 the activity after vaccine

NOTE Confidence: 0.79486263625

00:24:34.792 --> 00:24:37.766 is usually not very, very high.

NOTE Confidence: 0.79486263625

00:24:37.766 --> 00:24:40.805 So if patients have a disease like

NOTE Confidence: 0.79486263625

00:24:40.805 --> 00:24:43.175 a diffuse large B cell lymphoma,

NOTE Confidence: 0.79486263625

00:24:43.180 --> 00:24:45.235 those have very higher activity

NOTE Confidence: 0.79486263625

00:24:45.235 --> 00:24:48.104 than it would be with the vaccine.

00:24:51.910 --> 00:24:53.660 The other thing is patients,

NOTE Confidence: 0.79486263625

00:24:53.660 --> 00:24:54.672 for example,

NOTE Confidence: 0.79486263625

00:24:54.672 --> 00:24:56.190 has disseminated disease.

NOTE Confidence: 0.862002324666667

00:24:58.340 --> 00:25:00.892 At that point, it may not be necessary

NOTE Confidence: 0.862002324666667

00:25:00.892 --> 00:25:03.620 to make a distinction for the axilla,

NOTE Confidence: 0.862002324666667

00:25:03.620 --> 00:25:05.468 because if they are in all

NOTE Confidence: 0.862002324666667

00:25:05.468 --> 00:25:07.080 other locations on the body,

NOTE Confidence: 0.862002324666667

00:25:07.080 --> 00:25:09.250 it won't change the management

NOTE Confidence: 0.862002324666667

00:25:09.250 --> 00:25:11.674 where I kind of see this could be

NOTE Confidence: 0.862002324666667

00:25:11.674 --> 00:25:14.488 really a problem if a patient has a

NOTE Confidence: 0.862002324666667

00:25:14.488 --> 00:25:16.618 so-called low grade lymphoma which

NOTE Confidence: 0.862002324666667

00:25:16.695 --> 00:25:19.019 do not have very high activity and

NOTE Confidence: 0.862002324666667

00:25:19.019 --> 00:25:23.504 we find isolated nodes in

NOTE Confidence: 0.862002324666667

00:25:23.504 --> 00:25:26.988 let's say bilateral axilla.

NOTE Confidence: 0.862002324666667

00:25:26.990 --> 00:25:29.566 So then it would be great,

NOTE Confidence: 0.862002324666667

00:25:29.570 --> 00:25:30.910 then we'll presume, I guess,

NOTE Confidence: 0.862002324666667

00:25:30.910 --> 00:25:33.346 in one axilla that is probably

NOTE Confidence: 0.862002324666667

00:25:33.346 --> 00:25:34.564 due to lymphoma,

NOTE Confidence: 0.862002324666667

00:25:34.570 --> 00:25:35.968 the one which is not injected.

NOTE Confidence: 0.862002324666667

00:25:35.970 --> 00:25:38.262 But the injected axilla

NOTE Confidence: 0.862002324666667

00:25:38.262 --> 00:25:40.112 probably won't know unless we

NOTE Confidence: 0.862002324666667

00:25:40.112 --> 00:25:41.897 as you said we do the biopsy

NOTE Confidence: 0.865975915333333

00:25:42.770 --> 00:25:45.698 and presumably you can tell

NOTE Confidence: 0.865975915333333

00:25:45.698 --> 00:25:47.650 the difference between enlarged

NOTE Confidence: 0.865975915333333

00:25:47.730 --> 00:25:50.873 lymph nodes that are due to benign

NOTE Confidence: 0.865975915333333

00:25:50.873 --> 00:25:53.123 conditions like sarcoid or other

NOTE Confidence: 0.865975915333333

00:25:53.123 --> 00:25:55.583 things versus the COVID vaccine on

NOTE Confidence: 0.865975915333333

00:25:55.583 --> 00:25:57.418 these PET scans. Is that right?

NOTE Confidence: 0.75913134

00:25:59.440 --> 00:26:01.180 In principle yes,

NOTE Confidence: 0.75913134

00:26:01.180 --> 00:26:05.847 because sarcoid would tend to be in the

NOTE Confidence: 0.75913134

00:26:05.847 --> 00:26:08.760 nodes around the heart industry.

NOTE Confidence: 0.75913134

00:26:08.760 --> 00:26:11.240 In the area that we call media Steinem.

NOTE Confidence: 0.75913134

00:26:11.240 --> 00:26:12.660 While the vaccine nodes

NOTE Confidence: 0.75913134

00:26:12.660 --> 00:26:14.790 would tend to be in armpit,

NOTE Confidence: 0.75913134

00:26:14.790 --> 00:26:16.470 although this differentiation

NOTE Confidence: 0.75913134

00:26:16.470 --> 00:26:18.710 again is not absolute.

NOTE Confidence: 0.75913134

00:26:18.710 --> 00:26:24.128 But since we still rarely image circulated,

NOTE Confidence: 0.75913134

00:26:24.130 --> 00:26:27.598 let's say independently from the cancer,

NOTE Confidence: 0.75913134

00:26:27.600 --> 00:26:30.516 that's way less common situation.

NOTE Confidence: 0.75913134

00:26:30.520 --> 00:26:32.705 That would happen really

NOTE Confidence: 0.75913134

00:26:32.705 --> 00:26:34.890 to be a diagnostic dilemma,

NOTE Confidence: 0.866679904782609

00:26:35.340 --> 00:26:38.480 and so now that we're kind of in the

NOTE Confidence: 0.866679904782609

00:26:38.560 --> 00:26:41.437 the scenario where you know people

NOTE Confidence: 0.866679904782609

00:26:41.437 --> 00:26:44.250 are now thinking about booster shots,

NOTE Confidence: 0.866679904782609

00:26:44.250 --> 00:26:46.350 do you think that that's going to

NOTE Confidence: 0.866679904782609

00:26:46.350 --> 00:26:48.240 cause even more of a conundrum?

NOTE Confidence: 0.866679904782609

00:26:48.240 --> 00:26:51.376 You saw that the lymph

NOTE Confidence: 0.866679904782609

00:26:51.376 --> 00:26:54.331 nodes were more reactive on pet after

NOTE Confidence: 0.866679904782609

00:26:54.331 --> 00:26:57.699 the second dose of the COVID vaccine.

NOTE Confidence: 0.866679904782609

00:26:57.700 --> 00:26:59.303 Do you think that's going to be

NOTE Confidence: 0.866679904782609

00:26:59.303 --> 00:27:00.789 the case after the third dose?

NOTE Confidence: 0.853031644117647

00:27:01.790 --> 00:27:03.974 Well, that's a very interesting question

NOTE Confidence: 0.853031644117647

00:27:03.974 --> 00:27:06.927 so far I have seen only two cases

NOTE Confidence: 0.853031644117647

00:27:06.927 --> 00:27:09.624 after the booster and one was active.

NOTE Confidence: 0.853031644117647

00:27:09.624 --> 00:27:11.248 The other was not active,

NOTE Confidence: 0.853031644117647

00:27:11.250 --> 00:27:13.490 but I didn't have dilemma because based on

NOTE Confidence: 0.853031644117647

00:27:13.490 --> 00:27:15.996 the other characteristics or cancers

NOTE Confidence: 0.853031644117647

00:27:16.000 --> 00:27:17.626 and knowing where the vaccine was,

NOTE Confidence: 0.853031644117647

00:27:17.630 --> 00:27:20.227 I was able to confidently say.

NOTE Confidence: 0.853031644117647

00:27:20.230 --> 00:27:22.652 But I would also want to bring

NOTE Confidence: 0.853031644117647

00:27:22.652 --> 00:27:24.492 another interesting point which we

NOTE Confidence: 0.853031644117647

00:27:24.492 --> 00:27:26.357 are actually going to investigate.

NOTE Confidence: 0.8527792

00:27:28.480 --> 00:27:31.036 We can view those nodes after

NOTE Confidence: 0.8527792

00:27:31.036 --> 00:27:33.743 vaccine as negative because it can

NOTE Confidence: 0.8527792

00:27:33.743 --> 00:27:35.587 create a diagnostic confusion,

NOTE Confidence: 0.8527792

00:27:35.590 --> 00:27:38.572 but we are also hoping to investigate

NOTE Confidence: 0.8527792

00:27:38.572 --> 00:27:41.314 whether activity of these nodes actually

NOTE Confidence: 0.8527792

00:27:41.314 --> 00:27:44.555 can predict the efficacy of the vaccines.

NOTE Confidence: 0.8527792

00:27:44.560 --> 00:27:48.620 And this is for example,

NOTE Confidence: 0.8527792

00:27:48.620 --> 00:27:51.585 there is an Israeli study

NOTE Confidence: 0.8527792

00:27:51.585 --> 00:27:53.957 and they showed that

NOTE Confidence: 0.8527792

00:27:53.960 --> 00:27:56.492 the activity in the nodes

NOTE Confidence: 0.8527792

00:27:56.492 --> 00:27:58.988 correlate with the level of anti

NOTE Confidence: 0.8527792

00:27:58.988 --> 00:28:01.522 spike which is that protein that is

NOTE Confidence: 0.8527792

00:28:01.522 --> 00:28:04.229 very important in COVID antibodies.

NOTE Confidence: 0.8527792

00:28:04.230 --> 00:28:07.320 So basically there was a correlation

NOTE Confidence: 0.8527792

00:28:07.320 --> 00:28:09.979 between activity in these nodes

NOTE Confidence: 0.8527792

00:28:09.979 --> 00:28:13.222 and antibody levels which in a way

NOTE Confidence: 0.8527792

00:28:13.222 --> 00:28:15.586 would reflect the potential level of

NOTE Confidence: 0.8527792

00:28:15.586 --> 00:28:17.679 protection that people would have.

NOTE Confidence: 0.8527792

00:28:17.680 --> 00:28:20.720 So maybe in the future we can not

NOTE Confidence: 0.8527792

00:28:20.720 --> 00:28:24.260 only be threatened by this phenomena,

NOTE Confidence: 0.8527792

00:28:24.260 --> 00:28:25.464 but maybe we can

NOTE Confidence: 0.8527792

00:28:25.464 --> 00:28:27.766 even use iy to predict what level of

NOTE Confidence: 0.8527792

00:28:27.766 --> 00:28:29.916 immunity cancer patients would achieve.

NOTE Confidence: 0.834438324736842

00:28:30.570 --> 00:28:33.181 Doctor Darko Pucar is an associate

NOTE Confidence: 0.834438324736842

00:28:33.181 --> 00:28:35.083 professor of radiology and biomedical

NOTE Confidence: 0.834438324736842

00:28:35.083 --> 00:28:37.610 imaging at the Yale School of Medicine.

NOTE Confidence: 0.834438324736842

00:28:37.610 --> 00:28:39.238 If you have questions,

NOTE Confidence: 0.834438324736842

00:28:39.238 --> 00:28:41.273 the addresses cancer answers at

NOTE Confidence: 0.834438324736842

00:28:41.280 --> 00:28:43.548 yale.edu and past editions of the

NOTE Confidence: 0.834438324736842

00:28:43.548 --> 00:28:45.841 program are available in audio and

NOTE Confidence: 0.834438324736842

00:28:45.841 --> 00:28:48.326 written form at Yale Cancer Center Org.

NOTE Confidence: 0.834438324736842

00:28:48.330 --> 00:28:50.290 We hope you'll join us next week to

NOTE Confidence: 0.834438324736842

00:28:50.290 --> 00:28:52.181 learn more about the fight against

NOTE Confidence: 0.834438324736842

00:28:52.181 --> 00:28:53.861 cancer here on Connecticut Public

NOTE Confidence: 0.834438324736842

00:28:53.861 --> 00:28:55.530 radio funding for Yale Cancer

NOTE Confidence: 0.834438324736842

00:28:55.530 --> 00:28:57.130 Answers is provided by Smilow

NOTE Confidence: 0.834438324736842

00:28:57.130 --> 00:28:59.998 Cancer Hospital and AstraZeneca.