WEBVTT

00:00:00.000 --> 00:00:02.635 Funding for Yale Cancer Answers

NOTE Confidence: 0.85078735

00:00:02.635 --> 00:00:05.270 is provided by Smilow Cancer

NOTE Confidence: 0.85078735

00:00:05.364 --> 00:00:07.648 Hospital and AstraZeneca.

NOTE Confidence: 0.85078735

00:00:07.650 --> 00:00:09.625 Welcome to Yale Cancer Answers

NOTE Confidence: 0.85078735

00:00:09.625 --> 00:00:12.190 with host Dr Anees Chagpar.

NOTE Confidence: 0.85078735

00:00:12.190 --> 00:00:14.060 Yale Cancer Answers features the

NOTE Confidence: 0.85078735

00:00:14.060 --> 00:00:16.364 latest information on cancer care by

NOTE Confidence: 0.85078735

00:00:16.364 --> 00:00:17.840 welcoming oncologists and specialists

NOTE Confidence: 0.85078735

00:00:17.840 --> 00:00:20.291 who are on the forefront of the

NOTE Confidence: 0.85078735

00:00:20.291 --> 00:00:22.222 battle to fight cancer. This week,

NOTE Confidence: 0.85078735

00:00:22.222 --> 00:00:24.718 it's a conversation about Melanoma and

NOTE Confidence: 0.85078735

00:00:24.718 --> 00:00:27.009 brain metastases with Doctor Thuy Tran.

NOTE Confidence: 0.85078735

00:00:27.010 --> 00:00:29.008 Dr Tran is an instructor of

NOTE Confidence: 0.85078735

00:00:29.008 --> 00:00:30.711 medicine in medical oncology at

NOTE Confidence: 0.85078735

00:00:30.711 --> 00:00:32.246 the Yale School of Medicine,

NOTE Confidence: 0.85078735

00:00:32.250 --> 00:00:34.308 where Dr Chagpar is a

NOTE Confidence: 0.85078735

00:00:34.308 --> 00:00:35.680 professor of surgical oncology.

NOTE Confidence: 0.899037593

00:00:36.730 --> 00:00:38.613 Doctor Tran, maybe we can start off

NOTE Confidence: 0.899037593

00:00:38.613 --> 00:00:40.483 by you telling us a little bit

NOTE Confidence: 0.899037593

00:00:40.483 --> 00:00:41.995 about yourself and what you do.

NOTE Confidence: 0.834544087272727

00:00:42.390 --> 00:00:45.102 Absolutely, I am a translational

NOTE Confidence: 0.834544087272727

00:00:45.102 --> 00:00:47.520 researcher at Yale Cancer Center.

NOTE Confidence: 0.834544087272727

00:00:47.520 --> 00:00:49.860 I did my residency and fellowship

NOTE Confidence: 0.834544087272727

00:00:49.860 --> 00:00:52.622 in heme/onc here and I'm happy to

NOTE Confidence: 0.834544087272727

00:00:52.622 --> 00:00:54.878 be involved in the Melanoma team

NOTE Confidence: 0.834544087272727

00:00:54.880 --> 00:00:56.692 treating patients with advanced

NOTE Confidence: 0.834544087272727

00:00:56.692 --> 00:00:58.504 malignancies and skin cancers.

NOTE Confidence: 0.834544087272727

00:00:58.510 --> 00:01:00.869 I do a lot of translational research,

NOTE Confidence: 0.834544087272727

00:01:00.870 --> 00:01:03.078 which means that I am working at the

NOTE Confidence: 0.834544087272727

00:01:03.078 --> 00:01:05.422 bench but also take what we find out

NOTE Confidence: 0.834544087272727

00:01:05.422 --> 00:01:07.299 at the bench straight to the clinic

NOTE Confidence: 0.834544087272727

00:01:07.300 --> 00:01:08.889 so that we can effect real change

NOTE Confidence: 0.834544087272727

00:01:08.889 --> 00:01:10.628 in how we treat this disease.

NOTE Confidence: 0.939168593

00:01:11.150 --> 00:01:12.764 So tell us a little bit

NOTE Confidence: 0.939168593

00:01:12.764 --> 00:01:13.840 more about your research.

NOTE Confidence: 0.939168593

00:01:13.840 --> 00:01:17.854 I mean you work in the Melanoma team,

NOTE Confidence: 0.939168593

00:01:17.860 --> 00:01:19.900 how exactly does the translational

NOTE Confidence: 0.939168593

00:01:19.900 --> 00:01:22.437 research part fit in and what

NOTE Confidence: 0.939168593

00:01:22.437 --> 00:01:24.567 specifically are you looking at?

NOTE Confidence: 0.891536149333333

00:01:24.960 --> 00:01:27.048 I've been spending the past couple

NOTE Confidence: 0.891536149333333

00:01:27.048 --> 00:01:28.807 years really looking at innate

NOTE Confidence: 0.891536149333333

00:01:28.807 --> 00:01:30.907 immunity in the brain and how we

NOTE Confidence: 0.891536149333333

00:01:30.907 --> 00:01:32.743 can really capitalize on stimulating

NOTE Confidence: 0.891536149333333

00:01:32.743 --> 00:01:35.083 those cells and in conjunction with

NOTE Confidence: 0.891536149333333

00:01:35.083 --> 00:01:36.896 our currently available

NOTE Confidence: 0.891536149333333

00:01:36.896 --> 00:01:39.256 therapies to try to improve

NOTE Confidence: 0.891536149333333

00:01:39.256 --> 00:01:41.340 disease outcomes for our patients.

NOTE Confidence: 0.891536149333333

00:01:41.340 --> 00:01:42.985 So just to give you an example.

NOTE Confidence: 0.891536149333333

00:01:42.990 --> 00:01:45.307 One of the projects that I'm

NOTE Confidence: 0.891536149333333

00:01:45.307 --> 00:01:47.425 highly involved with is trying to

NOTE Confidence: 0.891536149333333

00:01:47.425 --> 00:01:49.180 target the blood brain barrier.

NOTE Confidence: 0.891536149333333

00:01:49.180 --> 00:01:51.142 The blood brain barrier

NOTE Confidence: 0.891536149333333

00:01:51.142 --> 00:01:53.508 has been a really understudied but

NOTE Confidence: 0.891536149333333

00:01:53.508 --> 00:01:55.993 very clinically relevant and highly

NOTE Confidence: 0.891536149333333

00:01:55.993 --> 00:01:58.260 impactful way for cancers to really

NOTE Confidence: 0.891536149333333

00:01:58.260 --> 00:02:00.525 gain an advantage and to metastasize

NOTE Confidence: 0.891536149333333

00:02:00.525 --> 00:02:03.493 and grow in the brain and so really

NOTE Confidence: 0.891536149333333

00:02:03.493 --> 00:02:05.460 trying to focus on the blood brain

NOTE Confidence: 0.891536149333333

00:02:05.520 --> 00:02:07.564 barrier and try to get these drugs

NOTE Confidence: 0.891536149333333

00:02:07.570 --> 00:02:10.030 into the brain has been an

NOTE Confidence: 0.891536149333333

00:02:10.030 --> 00:02:11.670 area of ongoing interest.

NOTE Confidence: 0.891536149333333

00:02:11.670 --> 00:02:13.128 Just to give you an example.

NOTE Confidence: 0.891536149333333

00:02:13.130 --> 00:02:15.770 So one of our currently active

NOTE Confidence: 0.891536149333333

00:02:15.770 --> 00:02:18.949 projects is looking at targeting Veg F,

NOTE Confidence: 0.891536149333333

00:02:18.950 --> 00:02:20.674 which stands for vascular

NOTE Confidence: 0.891536149333333

00:02:20.674 --> 00:02:21.967 endothelial growth factor.

NOTE Confidence: 0.891536149333333

00:02:21.970 --> 00:02:24.202 It's a subtle kind that really

NOTE Confidence: 0.891536149333333

00:02:24.202 --> 00:02:25.690 stimulates blood vessel development,

NOTE Confidence: 0.891536149333333

00:02:25.690 --> 00:02:28.282 and sometimes these tumors and the

NOTE Confidence: 0.891536149333333

00:02:28.282 --> 00:02:30.496 immune cells surrounding them will

NOTE Confidence: 0.891536149333333

00:02:30.496 --> 00:02:32.968 secrete this cytokine to help stimulate

NOTE Confidence: 0.891536149333333

00:02:32.968 --> 00:02:35.463 tumor growth and so how can we

NOTE Confidence: 0.891536149333333

00:02:35.463 --> 00:02:37.701 target this protein as well as maybe

NOTE Confidence: 0.891536149333333

00:02:37.701 --> 00:02:40.407 target the endothelial cells themselves to

NOTE Confidence: 0.891536149333333

00:02:40.407 --> 00:02:43.139 help decrease tumor growth in the brain.

NOTE Confidence: 0.891536149333333

00:02:43.140 --> 00:02:44.890 And so we have a couple of

NOTE Confidence: 0.891536149333333

00:02:44.890 --> 00:02:45.390 interesting targets,

NOTE Confidence: 0.891536149333333

00:02:45.390 --> 00:02:47.798 one of which is currently an active

00:02:47.798 --> 00:02:50.039 clinical trial within our Melanoma group

00:02:50.040 --> 00:02:52.494 looking at Melanoma and lung cancer

00:02:52.494 --> 00:02:54.970 patients who have brain metastases.

00:02:54.970 --> 00:02:56.926 And so this clinical trial is

00:02:56.930 --> 00:02:58.974 a phase two study looking at

00:02:58.974 --> 00:03:00.590 the combination of bevacizumab,

00:03:00.590 --> 00:03:02.410 which is our anti veg F drug

00:03:02.410 --> 00:03:04.740 to help minimize blood vessel

00:03:04.740 --> 00:03:06.604 development in combination with

00:03:06.604 --> 00:03:08.969 an immune stimulating agent,

00:03:08.970 --> 00:03:10.918 the checkpoint inhibitor pembrolizumab,

00:03:10.918 --> 00:03:12.866 which targets another pathway

00:03:12.866 --> 00:03:15.420 to help stimulate our own bodies

00:03:15.420 --> 00:03:17.694 immune system to help fight cancer.

00:03:18.130 --> 00:03:21.140 We're also going to be developing a

00:03:21.140 --> 00:03:23.553 second clinical trial of pembrolizumab

NOTE Confidence: 0.891536149333333

00:03:23.553 --> 00:03:26.018 or immune stimulating agent in

NOTE Confidence: 0.891536149333333

00:03:26.018 --> 00:03:27.860 combination with Lenvatinib,

NOTE Confidence: 0.891536149333333

00:03:27.860 --> 00:03:29.380 which instead of targeting the

NOTE Confidence: 0.891536149333333

00:03:29.380 --> 00:03:29.988 cytokine itself,

NOTE Confidence: 0.891536149333333

00:03:29.990 --> 00:03:33.210 targets the veg F receptors on the

NOTE Confidence: 0.891536149333333

00:03:33.210 --> 00:03:34.985 endothelial cells and hopefully we

NOTE Confidence: 0.891536149333333

00:03:34.985 --> 00:03:38.216 can get even a more dramatic immune response.

NOTE Confidence: 0.88767673

00:03:38.980 --> 00:03:41.068 So today I want to take a step back

NOTE Confidence: 0.88767673

00:03:41.068 --> 00:03:43.415 here and just kind of talk a little bit

NOTE Confidence: 0.88767673

00:03:43.415 --> 00:03:45.560 about the blood brain barrier itself.

NOTE Confidence: 0.88767673

00:03:45.560 --> 00:03:49.901 What exactly is it and how

NOTE Confidence: 0.88767673

00:03:49.901 --> 00:03:51.506 does it affect cancer cells?

NOTE Confidence: 0.851120457142857

00:03:51.920 --> 00:03:53.649 As we're always learning more

NOTE Confidence: 0.851120457142857

00:03:53.649 --> 00:03:55.540 and more about the blood brain barrier,

NOTE Confidence: 0.851120457142857

00:03:55.540 --> 00:03:57.972 it's not as simple as we first thought

00:03:57.972 --> 00:04:00.055 where it's just comprised of the

00:04:00.055 --> 00:04:02.173 blood vessel and death elial cells,

00:04:02.180 --> 00:04:03.745 the blood brain barrier is

00:04:03.745 --> 00:04:04.997 actually much more complicated.

00:04:05.000 --> 00:04:06.525 It's composed of not only

00:04:06.525 --> 00:04:07.440 the endothelial cells,

00:04:07.440 --> 00:04:09.690 but all these supportive cells

00:04:09.690 --> 00:04:10.938 adjacent to them,

00:04:10.938 --> 00:04:13.018 and so this includes parasites

00:04:13.018 --> 00:04:14.366 which control vasoconstriction

00:04:14.366 --> 00:04:17.060 or the ability of these blood

00:04:17.060 --> 00:04:18.950 vessels to contract and dilate.

00:04:18.950 --> 00:04:21.764 It also includes all the supportive

00:04:21.764 --> 00:04:23.640 astrocytes which have their

00:04:23.723 --> 00:04:25.958 little processes in and feet

00:04:25.958 --> 00:04:27.746 on the endothelial cells.

NOTE Confidence: 0.851120457142857

00:04:27.750 --> 00:04:29.640 It includes interneurons,

NOTE Confidence: 0.851120457142857

00:04:29.640 --> 00:04:31.530 it includes microglia,

NOTE Confidence: 0.851120457142857

00:04:31.530 --> 00:04:32.592 microglia are considered,

NOTE Confidence: 0.851120457142857

00:04:32.592 --> 00:04:34.716 sort of the innate immune cells

NOTE Confidence: 0.851120457142857

00:04:34.716 --> 00:04:36.497 that reside within the brain.

NOTE Confidence: 0.935522906428571

00:04:37.270 --> 00:04:39.230 How come the cancer cells can get

NOTE Confidence: 0.935522906428571

00:04:39.230 --> 00:04:41.300 into the brain but the drugs can't?

NOTE Confidence: 0.889051806

00:04:41.570 --> 00:04:44.456 You know the blood brain barrier

NOTE Confidence: 0.889051806

00:04:44.456 --> 00:04:47.042 in normal states without any

NOTE Confidence: 0.889051806

00:04:47.042 --> 00:04:49.855 pressure related to metastasis is

NOTE Confidence: 0.889051806

00:04:49.855 --> 00:04:52.430 a very intact endothelial layer,

NOTE Confidence: 0.889051806

00:04:52.430 --> 00:04:55.016 meaning that there are these specific

NOTE Confidence: 0.889051806

00:04:55.016 --> 00:04:56.740 interconnections within or

NOTE Confidence: 0.889051806

00:04:56.804 --> 00:04:58.552 between the endothelial cells

NOTE Confidence: 0.889051806

00:04:58.552 --> 00:05:00.737 that prevent any other molecules,

NOTE Confidence: 0.889051806

00:05:00.740 --> 00:05:04.732 such as drugs such as immune cells from

NOTE Confidence: 0.889051806

00:05:04.732 --> 00:05:07.639 infiltrating or getting beyond them.

NOTE Confidence: 0.889051806

00:05:07.640 --> 00:05:09.290 They typically are described

NOTE Confidence: 0.889051806

00:05:09.290 --> 00:05:10.940 as the soldiers.

NOTE Confidence: 0.889051806

00:05:10.940 --> 00:05:12.745 Remember the Roman soldiers

NOTE Confidence: 0.889051806

00:05:12.745 --> 00:05:15.308 if you ever watch one of those

NOTE Confidence: 0.889051806

00:05:15.308 --> 00:05:17.645 movies with all their Shields up

NOTE Confidence: 0.889051806

00:05:17.645 --> 00:05:20.107 so they form an impenetrable

NOTE Confidence: 0.889051806

00:05:20.107 --> 00:05:22.453 barrier to help prevent things

NOTE Confidence: 0.889051806

00:05:22.453 --> 00:05:24.889 from getting past that layer.

NOTE Confidence: 0.889051806

00:05:24.890 --> 00:05:26.198 And that's what's really

NOTE Confidence: 0.889051806

00:05:26.198 --> 00:05:27.833 caused a lot of issues.

NOTE Confidence: 0.889051806

00:05:27.840 --> 00:05:28.774 For example,

NOTE Confidence: 0.889051806

00:05:28.774 --> 00:05:31.109 in breast cancer therapy where

NOTE Confidence: 0.889051806

00:05:31.109 --> 00:05:32.510 chemotherapies that traditionally

NOTE Confidence: 0.889051806

00:05:32.578 --> 00:05:34.423 work in breast cancers can't

NOTE Confidence: 0.889051806

00:05:34.423 --> 00:05:35.899 penetrate into the brain,

NOTE Confidence: 0.889051806

00:05:35.900 --> 00:05:38.672 and so we're seeing a lot more of late

NOTE Confidence: 0.889051806

00:05:38.672 --> 00:05:41.041 relapses in the brain because these

NOTE Confidence: 0.889051806

00:05:41.041 --> 00:05:43.036 cancer effective therapies are not

NOTE Confidence: 0.889051806

00:05:43.109 --> 00:05:45.599 able to penetrate and circulate there.

NOTE Confidence: 0.906969299166667

00:05:45.790 --> 00:05:48.044 So why can the cancer cells get

NOTE Confidence: 0.906969299166667

00:05:48.044 --> 00:05:49.959 through those those Roman Shields?

NOTE Confidence: 0.906969299166667

00:05:49.960 --> 00:05:52.534 I mean, it sounds like that should really be,

NOTE Confidence: 0.906969299166667

00:05:52.540 --> 00:05:55.276 as you say, an impenetrable barrier.

NOTE Confidence: 0.906969299166667

00:05:55.280 --> 00:05:57.191 And yet, cancer cells can seem to

NOTE Confidence: 0.906969299166667

00:05:57.191 --> 00:05:58.970 sneak their way through.

NOTE Confidence: 0.883025606666667

00:05:58.980 --> 00:06:03.816 Cancer cells when they metastasize,

NOTE Confidence: 0.883025606666667

00:06:03.820 --> 00:06:07.719 they go through a very complex process,

NOTE Confidence: 0.883025606666667

00:06:07.720 --> 00:06:10.324 basically giving them the ability to

NOTE Confidence: 0.883025606666667

00:06:10.324 --> 00:06:12.860 invade through normal tissue and during

NOTE Confidence: 0.883025606666667

00:06:12.860 --> 00:06:15.660 that process they adopt a different shape,

NOTE Confidence: 0.883025606666667

00:06:15.660 --> 00:06:17.379 a different morphology.

NOTE Confidence: 0.883025606666667

00:06:17.379 --> 00:06:19.098 They become migratory.

NOTE Confidence: 0.883025606666667

00:06:19.100 --> 00:06:20.950 They get enter the bloodstream,

NOTE Confidence: 0.883025606666667

00:06:20.950 --> 00:06:22.702 and when they circulate,

NOTE Confidence: 0.883025606666667

00:06:22.702 --> 00:06:25.330 they essentially get into the brain.

NOTE Confidence: 0.883025606666667

00:06:25.330 --> 00:06:27.868 And either lodge at Branch points

NOTE Confidence: 0.883025606666667

00:06:27.868 --> 00:06:30.297 within those blood vessels in the

NOTE Confidence: 0.883025606666667

00:06:30.297 --> 00:06:32.283 brain and cancer cells have all

NOTE Confidence: 0.883025606666667

00:06:32.283 --> 00:06:34.355 sorts of different proteins and

NOTE Confidence: 0.883025606666667

00:06:34.355 --> 00:06:37.019 things that they up regulate or

NOTE Confidence: 0.883025606666667

00:06:37.019 --> 00:06:40.060 express to help them survive and

NOTE Confidence: 0.883025606666667

00:06:40.060 --> 00:06:42.132 proliferate during this process,

NOTE Confidence: 0.883025606666667

00:06:42.140 --> 00:06:45.110 and a few of those proteins include

NOTE Confidence: 0.883025606666667

00:06:45.110 --> 00:06:47.010 things like matrix metalloproteases

NOTE Confidence: 0.883025606666667

00:06:47.010 --> 00:06:50.004 where they can break apart different

NOTE Confidence: 0.883025606666667

00:06:50.004 --> 00:06:52.046 elements of the tumor stroma,

NOTE Confidence: 0.883025606666667

00:06:52.046 --> 00:06:54.430 or the tumor microenvironment,

NOTE Confidence: 0.883025606666667

00:06:54.430 --> 00:06:55.970 and this allows them

NOTE Confidence: 0.883025606666667

00:06:55.970 --> 00:06:58.280 essentially to break apart those tight

NOTE Confidence: 0.883025606666667

00:06:58.350 --> 00:07:00.920 junctions within this endothelial cells.

00:07:01.386 --> 00:07:04.648 Wedge themselves in between these

NOTE Confidence: 0.883025606666667

00:07:04.648 --> 00:07:07.797 cells and eventually be able to set up

NOTE Confidence: 0.883025606666667

00:07:07.800 --> 00:07:08.968 shop and grow there.

NOTE Confidence: 0.83850036

00:07:09.170 --> 00:07:11.445 So I guess just to

NOTE Confidence: 0.83850036

00:07:11.445 --> 00:07:13.560 press the point further,

NOTE Confidence: 0.83850036

00:07:13.560 --> 00:07:16.512 my question is if the tumor cells can kind

NOTE Confidence: 0.83850036

00:07:16.512 --> 00:07:19.765 of finagle their way through this barrier,

NOTE Confidence: 0.83850036

00:07:19.770 --> 00:07:23.277 either they make holes in the barrier,

NOTE Confidence: 0.83850036

00:07:23.280 --> 00:07:26.400 they kind of distort and try to get through,

NOTE Confidence: 0.83850036

00:07:26.400 --> 00:07:29.178 then are those changes to

NOTE Confidence: 0.83850036

00:07:29.178 --> 00:07:32.022 the blood brain barrier that allow

NOTE Confidence: 0.83850036

00:07:32.022 --> 00:07:34.734 the cancer cells to get through,

NOTE Confidence: 0.83850036

00:07:34.740 --> 00:07:36.742 those don't seem to be permanent enough

NOTE Confidence: 0.83850036

00:07:36.742 --> 00:07:38.818 to allow our drugs to get through.

NOTE Confidence: 0.83850036

00:07:38.820 --> 00:07:41.396 Or is there another thing at play?

NOTE Confidence: 0.83850036

00:07:41.400 --> 00:07:43.320 Are the drugs too large?

00:07:44.142 --> 00:07:46.490 Is it that they can't squish

NOTE Confidence: 0.83850036

00:07:46.490 --> 00:07:48.080 through the little spaces?

NOTE Confidence: 0.83850036

00:07:48.080 --> 00:07:50.240 Or is this more than simply

NOTE Confidence: 0.83850036

00:07:50.240 --> 00:07:51.550 a mechanical problem?

00:07:51.820 --> 00:07:54.540 I think the answer is actually a little

NOTE Confidence: 0.886144704666667

00:07:54.540 --> 00:07:56.755 complicated to address and we don't

NOTE Confidence: 0.886144704666667

00:07:56.755 --> 00:07:58.951 really at this point fully understand

NOTE Confidence: 0.886144704666667

00:07:59.015 --> 00:08:01.095 how our current effective therapies

NOTE Confidence: 0.886144704666667

00:08:01.095 --> 00:08:03.556 really penetrate to get into the brain.

NOTE Confidence: 0.886144704666667

00:08:03.556 --> 00:08:04.684 So one hypothesis

NOTE Confidence: 0.886144704666667

00:08:04.684 --> 00:08:07.472 is that actually when we give immune

NOTE Confidence: 0.886144704666667

00:08:07.472 --> 00:08:09.304 therapy these immune stimulating

NOTE Confidence: 0.886144704666667

00:08:09.304 --> 00:08:12.040 drugs that help educate our own

NOTE Confidence: 0.886144704666667

00:08:12.040 --> 00:08:14.266 immune system to fight the cancer,

NOTE Confidence: 0.886144704666667

00:08:14.270 --> 00:08:16.745 we're doing that below the

NOTE Confidence: 0.886144704666667

00:08:16.745 --> 00:08:18.230 neck so peripherally,

NOTE Confidence: 0.886144704666667

00:08:18.230 --> 00:08:21.284 so these educated immune cells can

NOTE Confidence: 0.886144704666667

00:08:21.284 --> 00:08:23.901 then subsequently migrate through

NOTE Confidence: 0.886144704666667

00:08:23.901 --> 00:08:26.406 the circulation into the brain.

00:08:26.848 --> 00:08:29.476 They have a much easier ability

NOTE Confidence: 0.886144704666667

00:08:29.476 --> 00:08:31.250 to transmigrate through the

NOTE Confidence: 0.886144704666667

00:08:31.250 --> 00:08:33.155 endothelial layer and get into

NOTE Confidence: 0.886144704666667

00:08:33.155 --> 00:08:35.758 the tumor to where they can have

NOTE Confidence: 0.886144704666667

00:08:35.760 --> 00:08:37.029 antitumor effect,

NOTE Confidence: 0.886144704666667

00:08:37.029 --> 00:08:39.990 the other component of this is maybe

NOTE Confidence: 0.886144704666667

00:08:40.071 --> 00:08:42.619 the defects that lead to

NOTE Confidence: 0.886144704666667

00:08:42.619 --> 00:08:45.331 forming a tumor in the brain caused

NOTE Confidence: 0.886144704666667

00:08:45.331 --> 00:08:47.452 vessel leakiness and vessel damage,

NOTE Confidence: 0.886144704666667

00:08:47.452 --> 00:08:50.749 and such that you have this

NOTE Confidence: 0.886144704666667

00:08:50.749 --> 00:08:53.931 chronic adima or loss of vessel

NOTE Confidence: 0.886144704666667

00:08:53.931 --> 00:08:56.027 integrity and that therefore

NOTE Confidence: 0.886144704666667

00:08:56.027 --> 00:08:58.845 allows these large monoclonal

NOTE Confidence: 0.886144704666667

00:08:58.845 --> 00:09:01.020 antibodies which are essentially

NOTE Confidence: 0.886144704666667

00:09:01.020 --> 00:09:02.940 our immune checkpoint drugs,

NOTE Confidence: 0.886144704666667

00:09:02.940 --> 00:09:06.006 to actually access

NOTE Confidence: 0.886144704666667

00:09:06.010 --> 00:09:06.985 into the tumor

NOTE Confidence: 0.886144704666667

00:09:06.985 --> 00:09:09.260 ecause these vessels are already so leaky.

NOTE Confidence: 0.92593448

00:09:09.270 --> 00:09:11.450 That's really great

NOTE Confidence: 0.92593448

00:09:11.450 --> 00:09:13.630 news on the immunotherapy front,

NOTE Confidence: 0.92593448

00:09:13.630 --> 00:09:15.502 knowing that these therapies

NOTE Confidence: 0.92593448

00:09:15.502 --> 00:09:17.842 can get into the brain,

NOTE Confidence: 0.92593448

00:09:17.850 --> 00:09:20.351 I guess the next question is, well,

NOTE Confidence: 0.92593448

00:09:20.351 --> 00:09:22.948 how come chemotherapy drugs can't do that?

NOTE Confidence: 0.92593448

00:09:22.950 --> 00:09:25.295 I mean, we give them

NOTE Confidence: 0.92593448

00:09:25.295 --> 00:09:27.689 peripherally into a vein below the neck,

NOTE Confidence: 0.92593448

00:09:27.690 --> 00:09:29.146 right into a hand,

NOTE Confidence: 0.92593448

00:09:29.146 --> 00:09:31.330 they get into a blood vessel.

NOTE Confidence: 0.92593448

00:09:31.330 --> 00:09:34.074 How come they can't follow the same

NOTE Confidence: 0.92593448

00:09:34.074 --> 00:09:36.800 kinds of path?

NOTE Confidence: 0.764262913333333

00:09:37.510 --> 00:09:40.360 Yeah, so our blood brain barrier

NOTE Confidence: 0.764262913333333

00:09:40.360 --> 00:09:41.785 through our development

NOTE Confidence: 0.764262913333333

00:09:41.790 --> 00:09:44.904 has upregulated a lot

NOTE Confidence: 0.764262913333333

00:09:44.904 --> 00:09:48.260 of drug efflux pumps and so these

NOTE Confidence: 0.764262913333333

00:09:48.260 --> 00:09:50.440 endothelial cells that constitute

NOTE Confidence: 0.764262913333333

00:09:50.440 --> 00:09:53.480 the blood brain barrier they have

NOTE Confidence: 0.764262913333333

00:09:53.480 --> 00:09:55.630 these specialized pumps that whenever

NOTE Confidence: 0.764262913333333

00:09:55.630 --> 00:09:57.950 drug does penetrate into the cells,

NOTE Confidence: 0.764262913333333

00:09:57.950 --> 00:09:59.990 they pump them right back out

17

00:09:59.990 --> 00:10:01.010 into the circulation.

00:10:01.010 --> 00:10:05.056 And so that's what limits the effectiveness

00:10:05.056 --> 00:10:07.210 of standard chemotherapy and

00:10:07.210 --> 00:10:10.150 it's really not a very good treatment

00:10:10.150 --> 00:10:13.538 option for patients with brain metastases.

00:10:14.090 --> 00:10:16.286 OK, I get all of that.

00:10:16.290 --> 00:10:18.222 So now let's talk a little

00:10:18.222 --> 00:10:19.510 bit more about this.

00:10:19.510 --> 00:10:21.150 Veg F that you were

00:10:21.150 --> 00:10:22.790 mentioning just a moment ago,

00:10:22.790 --> 00:10:24.137 this vascular endothelial

00:10:24.137 --> 00:10:26.382 growth factor is that something

00:10:26.382 --> 00:10:28.666 that is present on particular

00:10:28.666 --> 00:10:30.410 cancer cells that these

00:10:30.410 --> 00:10:32.480 therapies now are attacking?

00:10:32.960 --> 00:10:35.736 Veg F is upregulated in a lot

NOTE Confidence: 0.757373075833333

00:10:35.736 --> 00:10:37.615 of different cell types, and

NOTE Confidence: 0.757373075833333

00:10:37.615 --> 00:10:39.400 one of those being Melanoma,

NOTE Confidence: 0.757373075833333

00:10:39.400 --> 00:10:41.842 where we have found that circulating

NOTE Confidence: 0.757373075833333

00:10:41.842 --> 00:10:44.944 veg F is actually a poor prognostic

NOTE Confidence: 0.757373075833333

00:10:44.944 --> 00:10:47.222 marker in patients, so they

NOTE Confidence: 0.757373075833333

00:10:47.222 --> 00:10:48.692 say essentially they have worse

NOTE Confidence: 0.757373075833333

00:10:48.692 --> 00:10:50.358 outcomes when they have elevated

NOTE Confidence: 0.757373075833333

00:10:50.358 --> 00:10:52.068 circulating levels of this protein.

NOTE Confidence: 0.910708485714286

00:10:52.580 --> 00:10:55.030 So the protein is in the circulation.

NOTE Confidence: 0.910708485714286

00:10:55.030 --> 00:10:56.535 It's not necessarily on the

NOTE Confidence: 0.910708485714286

00:10:56.535 --> 00:10:58.270 tumor cells, or is it on both?

NOTE Confidence: 0.758002511428571

00:10:58.470 --> 00:11:02.096 It's very ubiquitously expressed.

NOTE Confidence: 0.758002511428571

00:11:02.100 --> 00:11:05.356 It can be expressed by the tumor cells

NOTE Confidence: 0.758002511428571

00:11:05.356 --> 00:11:08.409 themselves and have a local effect in that

NOTE Confidence: 0.758002511428571

00:11:08.410 --> 00:11:10.990 increased regulation or increased

19

NOTE Confidence: 0.758002511428571

00:11:10.990 --> 00:11:14.215 expression of VEGF can also

NOTE Confidence: 0.758002511428571

00:11:14.215 --> 00:11:17.237 appear as circulating levels.

NOTE Confidence: 0.758002511428571

00:11:17.240 --> 00:11:20.985 Tumor cells, in addition to immune cells,

NOTE Confidence: 0.758002511428571

00:11:20.990 --> 00:11:23.188 can also increase veg F levels too.

NOTE Confidence: 0.758002511428571

00:11:23.190 --> 00:11:24.450 So, for example,

NOTE Confidence: 0.758002511428571

00:11:24.450 --> 00:11:26.970 a specific type of immune cell

NOTE Confidence: 0.758002511428571

00:11:26.970 --> 00:11:29.730 which essentially gobble up a lot

NOTE Confidence: 0.758002511428571

00:11:29.730 --> 00:11:32.750 of tumor cells or cell debris.

NOTE Confidence: 0.758002511428571

00:11:32.750 --> 00:11:34.850 One of those is macrophages.

NOTE Confidence: 0.758002511428571

00:11:34.850 --> 00:11:37.208 So macrophages are able to secrete

NOTE Confidence: 0.758002511428571

00:11:37.208 --> 00:11:39.599 high levels of veg F as well.

NOTE Confidence: 0.818271315555555

00:11:40.220 --> 00:11:42.845 And so that makes me think that

NOTE Confidence: 0.818271315555555

00:11:42.845 --> 00:11:45.612 these anti VEGF therapies that you're

NOTE Confidence: 0.818271315555555

00:11:45.612 --> 00:11:48.207 looking at in clinical trials,

NOTE Confidence: 0.818271315555555

00:11:48.210 --> 00:11:49.840 they might be

NOTE Confidence: 0.818271315555555

00:11:49.840 --> 00:11:52.570 something not specific

NOTE Confidence: 0.818271315555555

00:11:52.570 --> 00:11:55.211 for particular patients that they might

NOTE Confidence: 0.818271315555555

00:11:55.211 --> 00:11:57.461 be more ubiquitously used rather than

NOTE Confidence: 0.818271315555555

00:11:57.461 --> 00:12:00.018 some of the therapies that come out

NOTE Confidence: 0.818271315555555

00:12:00.018 --> 00:12:02.396 where you really need to check the

NOTE Confidence: 0.818271315555555

00:12:02.396 --> 00:12:04.622 tumor cells to make sure that

NOTE Confidence: 0.818271315555555

00:12:04.622 --> 00:12:06.317 particular protein or that particular

NOTE Confidence: 0.818271315555555

00:12:06.317 --> 00:12:08.291 receptor is on the tumor cell.

NOTE Confidence: 0.818271315555555

00:12:08.300 --> 00:12:10.668 It sounds like this is something that

NOTE Confidence: 0.818271315555555

00:12:10.670 --> 00:12:12.788 could be used for most patients.

NOTE Confidence: 0.818271315555555

00:12:12.790 --> 00:12:13.318 Is that right?

NOTE Confidence: 0.831348547333333

00:12:14.010 --> 00:12:15.674 That's correct. So actually,

NOTE Confidence: 0.831348547333333

00:12:15.674 --> 00:12:18.170 even recently within the past couple

NOTE Confidence: 0.831348547333333

00:12:18.243 --> 00:12:20.511 weeks we've had another FDA approval

NOTE Confidence: 0.831348547333333

00:12:20.511 --> 00:12:22.462 for the combination of pembrolizumab

NOTE Confidence: 0.831348547333333

00:12:22.462 --> 00:12:24.694 and lenvatinib,

NOTE Confidence: 0.831348547333333

00:12:24.694 --> 00:12:27.454 being one of our veg F receptor

NOTE Confidence: 0.831348547333333

00:12:27.454 --> 00:12:29.920 targeting drugs in addition to other

NOTE Confidence: 0.831348547333333

00:12:30.001 --> 00:12:32.766 receptors that it does block as well.

NOTE Confidence: 0.831348547333333

00:12:32.770 --> 00:12:35.698 So that was actually just in

NOTE Confidence: 0.831348547333333

00:12:35.698 --> 00:12:37.650 advanced renal cell carcinoma.

NOTE Confidence: 0.831348547333333

00:12:37.650 --> 00:12:39.678 The combination is already

NOTE Confidence: 0.831348547333333

00:12:39.678 --> 00:12:41.199 been also approved in

NOTE Confidence: 0.831348547333333

00:12:41.200 --> 00:12:43.348 advanced endometrial cancer,

NOTE Confidence: 0.831348547333333

00:12:43.348 --> 00:12:46.033 and then actually Merck,

NOTE Confidence: 0.831348547333333

00:12:46.040 --> 00:12:50.568 the company that produces pembrolizumab

NOTE Confidence: 0.831348547333333

00:12:50.568 --> 00:12:53.220 is currently investigating this combination

00:12:55.310 --> 00:12:57.746 in the first line and second line

NOTE Confidence: 0.831348547333333

00:12:57.746 --> 00:12:59.949 setting for Melanoma patients as well.

NOTE Confidence: 0.895033809047619

00:13:00.510 --> 00:13:02.170 Wow, all really interesting

NOTE Confidence: 0.895033809047619

00:13:02.170 --> 00:13:04.245 developments which we will need

NOTE Confidence: 0.895033809047619

00:13:04.245 --> 00:13:06.570 to investigate more when we take

22

NOTE Confidence: 0.895033809047619

00:13:06.570 --> 00:13:08.950 a brief break for medical minute.

NOTE Confidence: 0.895033809047619

00:13:08.950 --> 00:13:10.430 Please stay tuned to learn

NOTE Confidence: 0.895033809047619

00:13:10.430 --> 00:13:11.318 more about Melanoma

NOTE Confidence: 0.895033809047619

00:13:11.320 --> 00:13:12.844 and brain metastases with

NOTE Confidence: 0.895033809047619

00:13:12.844 --> 00:13:14.749 my guest doctor Thuy Tran.

NOTE Confidence: 0.913637088571429

00:13:15.460 --> 00:13:17.435 Funding for Yale Cancer Answers

NOTE Confidence: 0.913637088571429

00:13:17.435 --> 00:13:19.410 comes from AstraZeneca, dedicated

NOTE Confidence: 0.913637088571429

00:13:19.473 --> 00:13:21.358 to advancing options and providing

NOTE Confidence: 0.913637088571429

00:13:21.358 --> 00:13:23.730 hope for people living with cancer.

NOTE Confidence: 0.913637088571429

00:13:23.730 --> 00:13:27.610 More information at AstraZeneca Dash us.com.

NOTE Confidence: 0.97843397

00:13:29.680 --> 00:13:31.528 The American Cancer Society

NOTE Confidence: 0.97843397

00:13:31.528 --> 00:13:33.753 estimates that more than 65,000

NOTE Confidence: 0.97843397

00:13:33.753 --> 00:13:35.618 Americans will be diagnosed with

NOTE Confidence: 0.97843397

00:13:35.618 --> 00:13:37.799 head and neck cancer this year,

NOTE Confidence: 0.97843397

00:13:37.800 --> 00:13:40.936 making up about 4% of all cancers

NOTE Confidence: 0.97843397

23

00:13:40.936 --> 00:13:42.840 diagnosed. When detected early,

NOTE Confidence: 0.97843397

00:13:42.840 --> 00:13:45.150 however, head and neck cancers are

NOTE Confidence: 0.97843397

00:13:45.150 --> 00:13:47.270 easily treated and highly curable.

NOTE Confidence: 0.97843397

00:13:47.270 --> 00:13:49.262 Clinical trials are currently

NOTE Confidence: 0.97843397

00:13:49.262 --> 00:13:51.254 underway at federally designated

NOTE Confidence: 0.97843397

00:13:51.254 --> 00:13:52.974 Comprehensive cancer centers such

NOTE Confidence: 0.97843397

00:13:52.974 --> 00:13:55.284 as Yale Cancer Center and at Smilow

NOTE Confidence: 0.97843397

00:13:55.284 --> 00:13:57.477 Cancer Hospital to test innovative new

NOTE Confidence: 0.97843397

00:13:57.477 --> 00:13:59.727 treatments for head and neck cancers.

NOTE Confidence: 0.97843397

00:13:59.727 --> 00:14:02.409 Yale Cancer Center was recently awarded

NOTE Confidence: 0.97843397

00:14:02.409 --> 00:14:04.588 grants from the National Institutes

NOTE Confidence: 0.97843397

00:14:04.588 --> 00:14:07.276 of Health to fund the Yale Head

NOTE Confidence: 0.97843397

00:14:07.276 --> 00:14:09.571 and neck Cancer Specialized program

NOTE Confidence: 0.97843397

00:14:09.571 --> 00:14:12.331 of Research Excellence or SPORE to

NOTE Confidence: 0.97843397

00:14:12.340 --> 00:14:14.410 address critical barriers to treatment

NOTE Confidence: 0.97843397

00:14:14.410 --> 00:14:16.933 of head and neck squamous cell

NOTE Confidence: 0.97843397

00:14:16.933 --> 00:14:19.225 carcinoma due to resistance to immune

NOTE Confidence: 0.97843397

00:14:19.225 --> 00:14:21.539 DNA damaging and targeted therapy.

NOTE Confidence: 0.97843397

00:14:21.540 --> 00:14:24.560 More information is available at

NOTE Confidence: 0.97843397

00:14:24.560 --> 00:14:25.901 yalecancercenter.org you're listening

NOTE Confidence: 0.97843397

00:14:25.901 --> 00:14:27.689 to Connecticut Public Radio.

NOTE Confidence: 0.867658746666667

00:14:29.440 --> 00:14:31.948 Welcome back to Yale Cancer Answers.

NOTE Confidence: 0.867658746666667

00:14:31.950 --> 00:14:34.452 This is doctor Anees Chagpar and I'm

NOTE Confidence: 0.867658746666667

00:14:34.452 --> 00:14:37.038 joined tonight by my guest Doctor Thuy Tran.

NOTE Confidence: 0.867658746666667

00:14:37.040 --> 00:14:39.497 We're talking about the care of patients

NOTE Confidence: 0.867658746666667

00:14:39.497 --> 00:14:41.639 with Melanoma and brain metastases,

NOTE Confidence: 0.867658746666667

00:14:41.640 --> 00:14:45.213 and right before the break we were

NOTE Confidence: 0.867658746666667

00:14:45.213 --> 00:14:47.840 talking about some of the techniques,

NOTE Confidence: 0.867658746666667

00:14:47.840 --> 00:14:50.960 some of the new trials that are ongoing,

NOTE Confidence: 0.867658746666667

00:14:50.960 --> 00:14:53.696 especially looking at use of anti

NOTE Confidence: 0.867658746666667

00:14:53.696 --> 00:14:56.316 veg F therapies and immunotherapy

NOTE Confidence: 0.867658746666667

00:14:56.316 --> 00:14:59.140 for patients with Melanoma,

NOTE Confidence: 0.867658746666667

00:14:59.140 --> 00:15:00.556 who had brain metastases.

NOTE Confidence: 0.867658746666667

00:15:00.556 --> 00:15:04.341 So I thought we'd take a step back and talk a

NOTE Confidence: 0.867658746666667

00:15:04.341 --> 00:15:06.792 little bit more about patients with Melanoma

NOTE Confidence: 0.867658746666667

00:15:06.792 --> 00:15:08.440 who have brain metastases.

NOTE Confidence: 0.867658746666667

00:15:08.440 --> 00:15:11.176 So I think all of us know that Melanoma

NOTE Confidence: 0.867658746666667

00:15:11.176 --> 00:15:14.016 is one of the deadliest skin cancers.

NOTE Confidence: 0.867658746666667

00:15:14.020 --> 00:15:17.020 But how common is Melanoma?

00:15:19.230 --> 00:15:21.118 Many patients get Melanoma.

NOTE Confidence: 0.867658746666667

00:15:21.118 --> 00:15:23.478 What proportion of them will

NOTE Confidence: 0.867658746666667

00:15:23.478 --> 00:15:25.987 actually develop brain metastases?

NOTE Confidence: 0.845976613333333

00:15:26.000 --> 00:15:29.360 Melanoma over the past couple decades

NOTE Confidence: 0.845976613333333

00:15:29.360 --> 00:15:31.704 it's actually the incidence

NOTE Confidence: 0.845976613333333

00:15:31.704 --> 00:15:35.074 that's increasing more recently about 75,000

NOTE Confidence: 0.845976613333333

00:15:35.074 --> 00:15:38.112 new cases are diagnosed each year and

NOTE Confidence: 0.845976613333333

00:15:38.112 --> 00:15:41.720 it's a malignancy that is driven by both

NOTE Confidence: 0.845976613333333

00:15:41.720 --> 00:15:45.370 genetic as well as environmental causes,

NOTE Confidence: 0.845976613333333

00:15:45.370 --> 00:15:48.660 some of which are related to non

NOTE Confidence: 0.845976613333333

00:15:48.660 --> 00:15:52.482 UV exposure and so really a lot of

NOTE Confidence: 0.845976613333333

00:15:52.482 --> 00:15:56.015 Melanoma develops as we grow older in

NOTE Confidence: 0.845976613333333

00:15:56.015 --> 00:15:59.399 our fifth generation or fifth decade.

NOTE Confidence: 0.845976613333333

00:15:59.400 --> 00:16:01.899 And so it does have a higher

NOTE Confidence: 0.845976613333333

00:16:01.899 --> 00:16:03.350 dominance in men,

NOTE Confidence: 0.845976613333333

00:16:03.350 --> 00:16:06.210 and there are certain mutations

NOTE Confidence: 0.845976613333333

00:16:06.210 --> 00:16:07.926 associated with it.

NOTE Confidence: 0.845976613333333

00:16:07.930 --> 00:16:10.653 50% of melanomas will contain

NOTE Confidence: 0.845976613333333

00:16:10.653 --> 00:16:13.735 a BRAF mutation that we can actually

NOTE Confidence: 0.845976613333333

00:16:13.735 --> 00:16:16.035 target with effective BRAF inhibiting

NOTE Confidence: 0.845976613333333

00:16:16.035 --> 00:16:18.776 drugs as well as MEC inhibiting drugs

NOTE Confidence: 0.845976613333333

00:16:18.776 --> 00:16:21.130 that also help boost that response.

NOTE Confidence: 0.872743683333333

00:16:21.580 --> 00:16:23.948 So just to pick up on

NOTE Confidence: 0.872743683333333

00:16:23.948 --> 00:16:25.941 the genetic element for a second

NOTE Confidence: 0.872743683333333

00:16:25.941 --> 00:16:28.360 one of the things that you said,

NOTE Confidence: 0.872743683333333

00:16:28.360 --> 00:16:29.840 which I found really interesting

NOTE Confidence: 0.872743683333333

00:16:29.840 --> 00:16:32.640 and I think our listeners will be

NOTE Confidence: 0.872743683333333

00:16:32.640 --> 00:16:35.190 interested to learn about as well is

NOTE Confidence: 0.872743683333333

00:16:35.190 --> 00:16:37.950 that there are a lot of melanomas

NOTE Confidence: 0.872743683333333

00:16:37.950 --> 00:16:40.459 that are not related to UV exposure.

NOTE Confidence: 0.872743683333333

00:16:40.460 --> 00:16:41.684 That may be genetic,

NOTE Confidence: 0.872743683333333

00:16:41.684 --> 00:16:44.734 so by that do you mean that we should

NOTE Confidence: 0.872743683333333

00:16:44.734 --> 00:16:47.380 know about our family history in terms

NOTE Confidence: 0.872743683333333

00:16:47.453 --> 00:16:49.949 of our risk of developing Melanoma?

NOTE Confidence: 0.872743683333333

00:16:49.950 --> 00:16:53.065 And when you talk about BRAF mutations,

NOTE Confidence: 0.872743683333333

00:16:53.070 --> 00:16:55.195 are you talking about germline

NOTE Confidence: 0.872743683333333

00:16:55.195 --> 00:16:57.320 mutations or are these more

NOTE Confidence: 0.872743683333333

00:16:57.401 --> 00:16:59.966 somatic mutations that you'll find in a tumor?

00:17:00.950 --> 00:17:05.094 The BRAF mutations are new mutations.

NOTE Confidence: 0.623892965

00:17:05.100 --> 00:17:07.040 Sometimes we actually see

NOTE Confidence: 0.623892965

00:17:07.040 --> 00:17:09.465 these mutations present but not

NOTE Confidence: 0.623892965

00:17:09.465 --> 00:17:11.459 associated with any malignancy.

NOTE Confidence: 0.623892965

00:17:11.460 --> 00:17:14.598 But when they do appear associated

NOTE Confidence: 0.623892965

00:17:14.598 --> 00:17:16.167 with advanced Melanoma,

NOTE Confidence: 0.623892965

00:17:16.170 --> 00:17:18.674 it is something that we can actually target.

NOTE Confidence: 0.623892965

00:17:18.680 --> 00:17:20.045 Now these BRAF mutations

NOTE Confidence: 0.623892965

00:17:20.045 --> 00:17:21.410 are not unique to Melanoma.

NOTE Confidence: 0.623892965

00:17:21.410 --> 00:17:23.674 They're actually present in

NOTE Confidence: 0.623892965

00:17:23.674 --> 00:17:26.504 certain types of colon cancers.

NOTE Confidence: 0.623892965

00:17:26.510 --> 00:17:28.388 And as well as lung cancers.

NOTE Confidence: 0.623892965

00:17:28.390 --> 00:17:30.742 And so the same drugs apply they're

NOTE Confidence: 0.623892965

00:17:30.742 --> 00:17:32.911 as effective in those other types

NOTE Confidence: 0.623892965

00:17:32.911 --> 00:17:35.452 of cancers as they are in Melanoma.

NOTE Confidence: 0.916142556896552

00:17:36.360 --> 00:17:38.808 And so some people, even if they wear

NOTE Confidence: 0.916142556896552

00:17:38.808 --> 00:17:40.687 sunscreen and they make sure

NOTE Confidence: 0.916142556896552

00:17:40.687 --> 00:17:42.808 that they're not getting a lot of

NOTE Confidence: 0.916142556896552

00:17:42.808 --> 00:17:44.832 UV exposure and so on and so forth.

NOTE Confidence: 0.916142556896552

00:17:44.840 --> 00:17:47.157 They can still get Melanoma because of

NOTE Confidence: 0.916142556896552

00:17:47.157 --> 00:17:48.660 these genetic mutations. Is that right?

NOTE Confidence: 0.846421220909091

00:17:49.020 --> 00:17:52.388 Yes, in terms of the non sun

NOTE Confidence: 0.846421220909091

00:17:52.388 --> 00:17:54.816 exposed related melanomas, we typically

NOTE Confidence: 0.846421220909091

00:17:54.816 --> 00:17:57.182 think of those as a acreal melanomas.

NOTE Confidence: 0.846421220909091

00:17:57.190 --> 00:17:59.140 Meaning they form between the hands,

NOTE Confidence: 0.846421220909091

00:17:59.140 --> 00:18:01.162 the webs of the hands and

NOTE Confidence: 0.846421220909091

00:18:01.162 --> 00:18:03.580 the feet on her extremities,

NOTE Confidence: 0.846421220909091

00:18:03.580 --> 00:18:05.026 and so these are typically places

NOTE Confidence: 0.846421220909091

00:18:05.026 --> 00:18:06.400 that you know aren't basking

NOTE Confidence: 0.846421220909091

00:18:06.400 --> 00:18:09.992 in the Sun and other places

NOTE Confidence: 0.846421220909091

00:18:09.992 --> 00:18:12.474 that melanomas can evolve from,

NOTE Confidence: 0.846421220909091

00:18:12.474 --> 00:18:15.534 is the mucosal lining of

NOTE Confidence: 0.846421220909091

00:18:15.534 --> 00:18:18.320 our upper oral pharanx

NOTE Confidence: 0.846421220909091

00:18:18.320 --> 00:18:20.854 as well as the anal rectal region.

NOTE Confidence: 0.846421220909091

00:18:20.860 --> 00:18:24.796 Vulvar melanomas from the reproductive tract,

NOTE Confidence: 0.846421220909091

00:18:24.800 --> 00:18:27.416 as well as uveal melanoma's also

NOTE Confidence: 0.846421220909091

00:18:27.420 --> 00:18:29.149 from the pigmented layers of the eyes.

NOTE Confidence: 0.846421220909091

00:18:29.150 --> 00:18:30.502 So Melanoma, in essence,

NOTE Confidence: 0.846421220909091

00:18:30.502 --> 00:18:33.840 is a cancer of the melanocytes.

NOTE Confidence: 0.846421220909091

00:18:33.840 --> 00:18:36.480 These pigmented cells and so anywhere

NOTE Confidence: 0.846421220909091

00:18:36.480 --> 00:18:39.554 where we have pigment there are

NOTE Confidence: 0.846421220909091

00:18:39.554 --> 00:18:41.306 melanocytes associated with them.

NOTE Confidence: 0.882972677

00:18:42.180 --> 00:18:44.352 When you think

NOTE Confidence: 0.882972677

00:18:44.352 --> 00:18:45.800 about these genetic mutations,

NOTE Confidence: 0.882972677

00:18:45.800 --> 00:18:48.410 now that we know more and more about them,

NOTE Confidence: 0.882972677

00:18:48.410 --> 00:18:53.178 certainly you know people who have a

NOTE Confidence: 0.882972677

00:18:53.178 --> 00:18:56.260 genetic mutation who are at increased risk,

NOTE Confidence: 0.882972677

00:18:56.260 --> 00:18:58.724 they may want to take additional precautions.

NOTE Confidence: 0.882972677

00:18:58.730 --> 00:19:00.145 You know making sure that

NOTE Confidence: 0.882972677

00:19:00.145 --> 00:19:02.010 they're really getting

NOTE Confidence: 0.882972677

00:19:02.010 --> 00:19:04.030 a good dermatologic exam,

NOTE Confidence: 0.882972677

00:19:04.030 --> 00:19:05.416 and staying out of the sun,

NOTE Confidence: 0.882972677

00:19:05.420 --> 00:19:07.190 and so on and so forth.

NOTE Confidence: 0.882972677

00:19:07.190 --> 00:19:08.954 But one of the questions that I

NOTE Confidence: 0.882972677

00:19:08.954 --> 00:19:11.070 have is for some genetic mutation,

NOTE Confidence: 0.882972677

00:19:11.070 --> 00:19:15.190 for example for the RET proto oncogene,

NOTE Confidence: 0.882972677

00:19:15.190 --> 00:19:18.320 which predisposes to thyroid cancers,

NOTE Confidence: 0.882972677

00:19:18.320 --> 00:19:20.660 these are things that newborn

NOTE Confidence: 0.882972677

00:19:20.660 --> 00:19:22.064 babies have tested,

NOTE Confidence: 0.882972677

00:19:22.070 --> 00:19:23.986 whereas other mutations like

NOTE Confidence: 0.882972677

00:19:23.986 --> 00:19:26.381 BRCA for example is something

NOTE Confidence: 0.882972677

00:19:26.381 --> 00:19:28.767 that we don't generally test

NOTE Confidence: 0.882972677

00:19:28.770 --> 00:19:30.130 until you know somebody comes

NOTE Confidence: 0.882972677

00:19:30.130 --> 00:19:31.490 up to us and says,

NOTE Confidence: 0.882972677

00:19:31.490 --> 00:19:33.810 you know I have a family history of

NOTE Confidence: 0.882972677

00:19:33.810 --> 00:19:36.047 breast cancer and so should I get tested.

NOTE Confidence: 0.882972677

00:19:36.050 --> 00:19:38.210 Where does BRAF kind of

NOTE Confidence: 0.882972677

00:19:38.210 --> 00:19:40.597 fit into the grand scheme of things?

NOTE Confidence: 0.852749557142857

00:19:40.930 --> 00:19:44.182 It's less clear whether having

NOTE Confidence: 0.852749557142857

00:19:44.182 --> 00:19:46.350 a pre-existing BRAF mutation

NOTE Confidence: 0.852749557142857

00:19:46.443 --> 00:19:49.107 ultimately will induce cancer.

NOTE Confidence: 0.852749557142857

00:19:49.110 --> 00:19:51.364 A lot of the times it doesn't,

NOTE Confidence: 0.852749557142857

00:19:51.370 --> 00:19:54.250 and it's just something that we

NOTE Confidence: 0.852749557142857

00:19:54.250 --> 00:19:57.645 pick up that's not prognostic or

NOTE Confidence: 0.852749557142857

00:19:57.645 --> 00:20:01.075 indicative of any future malignancy.

NOTE Confidence: 0.852749557142857

00:20:01.080 --> 00:20:02.565 It's really something that we

NOTE Confidence: 0.852749557142857

00:20:02.565 --> 00:20:04.745 find later on once the cancer is

NOTE Confidence: 0.852749557142857

00:20:04.745 --> 00:20:06.340 developed that we can potentially

NOTE Confidence: 0.852749557142857

00:20:06.340 --> 00:20:08.390 target as an effective therapy.

NOTE Confidence: 0.852749557142857

00:20:08.390 --> 00:20:10.590 And you mentioned, BRCA mutations

NOTE Confidence: 0.852749557142857

00:20:10.590 --> 00:20:13.201 in a very small

NOTE Confidence: 0.852749557142857

00:20:13.201 --> 00:20:15.590 subset of patients can

NOTE Confidence: 0.852749557142857

00:20:15.590 --> 00:20:17.990 contribute to increased risk of

NOTE Confidence: 0.852749557142857

00:20:17.990 --> 00:20:20.427 Melanoma as well as pancreatic cancer.

NOTE Confidence: 0.852749557142857

00:20:20.430 --> 00:20:22.752 So really it depends on family

NOTE Confidence: 0.852749557142857

00:20:22.752 --> 00:20:24.560 history and it really depends

NOTE Confidence: 0.852749557142857

00:20:24.560 --> 00:20:26.335 on your personal history too.

NOTE Confidence: 0.852749557142857

00:20:26.340 --> 00:20:29.189 If you have a patient with multiple

NOTE Confidence: 0.852749557142857

00:20:29.189 --> 00:20:31.660 melanomas with a strong family

NOTE Confidence: 0.852749557142857

00:20:31.660 --> 00:20:33.720 history of multiple immediate

NOTE Confidence: 0.852749557142857

00:20:33.720 --> 00:20:36.330 kin with Melanoma cancers,

NOTE Confidence: 0.852749557142857

00:20:36.330 --> 00:20:38.496 that's when we typically

NOTE Confidence: 0.852749557142857

00:20:38.500 --> 00:20:40.858 flag and refer

NOTE Confidence: 0.852749557142857

00:20:40.858 --> 00:20:42.574 these patients to genetic counseling

NOTE Confidence: 0.852749557142857

00:20:42.574 --> 00:20:45.220 to see if there are indeed these

NOTE Confidence: 0.852749557142857

00:20:45.220 --> 00:20:47.196 generalized mutations that predispose

NOTE Confidence: 0.852749557142857

00:20:47.196 --> 00:20:49.666 these patients to developing Melanoma

NOTE Confidence: 0.852749557142857

00:20:49.670 --> 00:20:51.560 as well as other malignancies.

NOTE Confidence: 0.852749557142857

00:20:51.560 --> 00:20:53.552 And so it really has an

NOTE Confidence: 0.852749557142857

00:20:53.552 --> 00:20:54.880 impact on family members,

NOTE Confidence: 0.852749557142857

00:20:54.880 --> 00:20:55.692 particularly children.

NOTE Confidence: 0.852749557142857

00:20:55.692 --> 00:20:59.490 When we see patients in the clinic,

NOTE Confidence: 0.852749557142857

00:20:59.490 --> 00:21:02.346 we always counseled them about preventive

NOTE Confidence: 0.852749557142857

00:21:02.346 --> 00:21:05.554 measures that they can do to limit

NOTE Confidence: 0.852749557142857

00:21:05.554 --> 00:21:08.417 additional UV damage and sun exposure risk,

NOTE Confidence: 0.852749557142857

00:21:08.420 --> 00:21:09.884 but also,

00:21:12.080 --> 00:21:13.664 seeing the dermatologist regularly,

NOTE Confidence: 0.852749557142857

00:21:13.664 --> 00:21:16.040 making sure that they have full

NOTE Confidence: 0.852749557142857

00:21:16.101 --> 00:21:17.979 body skin exams and making sure

NOTE Confidence: 0.852749557142857

00:21:17.979 --> 00:21:19.884 that their family and their next

NOTE Confidence: 0.852749557142857

00:21:19.884 --> 00:21:21.654 of kin are also screened with

NOTE Confidence: 0.852749557142857

00:21:21.654 --> 00:21:24.250 full body skin exams as well.

00:21:25.040 --> 00:21:28.240 Sadly there isn't anything that we can

NOTE Confidence: 0.95269331

00:21:28.240 --> 00:21:31.900 do that will kind of reverse that,

NOTE Confidence: 0.95269331

00:21:31.900 --> 00:21:33.670 but certainly taking additional precautions

NOTE Confidence: 0.95269331

00:21:33.670 --> 00:21:36.765 like all of us should be in terms of

NOTE Confidence: 0.95269331

00:21:36.765 --> 00:21:38.345 avoiding sun exposure and wearing

NOTE Confidence: 0.95269331

00:21:38.345 --> 00:21:40.326 sunscreen and avoiding tanning salons and

NOTE Confidence: 0.95269331

00:21:40.326 --> 00:21:42.590 things like that are really good ideas.

NOTE Confidence: 0.95269331

00:21:42.590 --> 00:21:46.058 I wanted to take us back to the

NOTE Confidence: 0.95269331

00:21:46.058 --> 00:21:48.422 whole concept of brain metastases so

NOTE Confidence: 0.95269331

00:21:48.422 --> 00:21:51.571 we know that Melanoma, as you said,

NOTE Confidence: 0.95269331

00:21:51.571 --> 00:21:53.159 the incidence is increasing.

NOTE Confidence: 0.95269331

00:21:53.160 --> 00:21:55.029 People are getting this as they get older.

NOTE Confidence: 0.95269331

00:21:55.030 --> 00:21:58.150 But what proportion of patients with

NOTE Confidence: 0.95269331

00:21:58.150 --> 00:22:01.660 Melanoma actually will get brain metastases?

NOTE Confidence: 0.877643618

00:22:01.770 --> 00:22:04.338 So about 40% of patients with

NOTE Confidence: 0.877643618

00:22:04.338 --> 00:22:06.050 advanced Melanoma at some

NOTE Confidence: 0.877643618

00:22:06.131 --> 00:22:08.386 point get a brain metastasis.

NOTE Confidence: 0.877643618

00:22:08.390 --> 00:22:11.358 Now, as we're using a lot of

NOTE Confidence: 0.877643618

00:22:11.358 --> 00:22:12.630 better imaging modalities,

NOTE Confidence: 0.877643618

00:22:12.630 --> 00:22:14.960 mainly MRI of the brain,

NOTE Confidence: 0.877643618

00:22:14.960 --> 00:22:17.390 we're catching a lot of

NOTE Confidence: 0.877643618

00:22:17.390 --> 00:22:18.848 asymptomatic brain metastases,

NOTE Confidence: 0.877643618

00:22:18.850 --> 00:22:19.940 so these are very small

NOTE Confidence: 0.877643618

00:22:19.940 --> 00:22:22.275 metastases that are not associated with

NOTE Confidence: 0.877643618

00:22:22.275 --> 00:22:24.143 significant edema around them,

NOTE Confidence: 0.877643618

00:22:24.150 --> 00:22:25.698 and so we're able to treat

NOTE Confidence: 0.877643618

00:22:25.700 --> 00:22:29.162 these smaller metastases earlier so that

NOTE Confidence: 0.877643618

00:22:29.162 --> 00:22:32.919 they don't later become a larger issue.

NOTE Confidence: 0.877643618

00:22:32.920 --> 00:22:35.797 There's a lot of toxicity

NOTE Confidence: 0.877643618

00:22:35.797 --> 00:22:38.038 related to symptomatic brain metastases

NOTE Confidence: 0.877643618

00:22:38.038 --> 00:22:40.358 because the brain itself is,

NOTE Confidence: 0.877643618

00:22:40.360 --> 00:22:43.965 you know, encased in a very thick

NOTE Confidence: 0.877643618

00:22:43.970 --> 00:22:45.600 structural support system,

NOTE Confidence: 0.877643618

00:22:45.600 --> 00:22:46.932 which is the skull,

NOTE Confidence: 0.877643618

00:22:46.932 --> 00:22:49.381 and so there's not a lot of

NOTE Confidence: 0.877643618

00:22:49.381 --> 00:22:51.607 room for any lesions to expand

NOTE Confidence: 0.877643618

00:22:51.607 --> 00:22:53.480 or any swelling to occur,

NOTE Confidence: 0.877643618

00:22:53.480 --> 00:22:56.420 and so you have a very finite

NOTE Confidence: 0.877643618

00:22:56.420 --> 00:22:57.788 window to address growing

NOTE Confidence: 0.877643618

00:22:57.788 --> 00:23:00.750 lesions in the brain and so that's why

NOTE Confidence: 0.877643618

00:23:00.750 --> 00:23:03.264 we've come up with alternative and

NOTE Confidence: 0.877643618

00:23:03.264 --> 00:23:05.222 adjunctive therapies to help achieve

NOTE Confidence: 0.877643618

00:23:05.222 --> 00:23:07.334 local control in the brain better.

NOTE Confidence: 0.877643618

00:23:07.340 --> 00:23:09.165 And that includes not in

NOTE Confidence: 0.877643618

00:23:09.165 --> 00:23:10.625 addition to immune therapy,

NOTE Confidence: 0.877643618

00:23:10.630 --> 00:23:13.087 but also adding radiation to that

NOTE Confidence: 0.877643618

00:23:13.087 --> 00:23:16.067 plan to help boost that immune response.

NOTE Confidence: 0.928736929523809

00:23:16.750 --> 00:23:19.174 I want to get to the

NOTE Confidence: 0.928736929523809

00:23:19.174 --> 00:23:21.477 treatments and what we can do

NOTE Confidence: 0.928736929523809

00:23:21.477 --> 00:23:23.670 about brain metastases in a minute.

NOTE Confidence: 0.928736929523809

00:23:23.670 --> 00:23:26.023 But that 40% number,

NOTE Confidence: 0.928736929523809

00:23:26.023 --> 00:23:27.688 that seemed high to me.

NOTE Confidence: 0.928736929523809

00:23:27.690 --> 00:23:30.858 So is that 40% of people who present

NOTE Confidence: 0.928736929523809

00:23:30.858 --> 00:23:33.710 with advanced Melanoma or any Melanoma?
NOTE Confidence: 0.928736929523809

00:23:33.710 --> 00:23:34.823 For example,

NOTE Confidence: 0.928736929523809

00:23:34.823 --> 00:23:36.678 let's suppose you were going

NOTE Confidence: 0.928736929523809

00:23:36.678 --> 00:23:38.628 to your dermatologist and you

NOTE Confidence: 0.928736929523809

00:23:38.628 --> 00:23:41.274 know they happen to find a small

NOTE Confidence: 0.928736929523809

00:23:41.348 --> 00:23:43.728 Melanoma on the back of your hand.

NOTE Confidence: 0.928736929523809

00:23:43.730 --> 00:23:46.754 Would you automatically get a brain MRI and

NOTE Confidence: 0.928736929523809

00:23:46.760 --> 00:23:49.526 is your risk still 40% of

NOTE Confidence: 0.928736929523809

00:23:49.526 --> 00:23:50.990 getting a brain metastases?

NOTE Confidence: 0.860632489411765

00:23:51.900 --> 00:23:54.574 No, just to correct that

NOTE Confidence: 0.860632489411765

00:23:54.574 --> 00:23:57.272 number really only applies to

NOTE Confidence: 0.860632489411765

00:23:57.272 --> 00:23:59.236 those with advanced Melanoma,

NOTE Confidence: 0.860632489411765

00:23:59.240 --> 00:24:01.850 so Melanoma that has metastasized

NOTE Confidence: 0.860632489411765

00:24:01.850 --> 00:24:05.030 to other areas of the body,

NOTE Confidence: 0.860632489411765

00:24:05.030 --> 00:24:06.870 typically, for staging for Melanoma

NOTE Confidence: 0.860632489411765

00:24:06.870 --> 00:24:09.662 we really rely on tumor thickness and

NOTE Confidence: 0.860632489411765

00:24:09.662 --> 00:24:12.238 whether or not it's gone to lymph nodes.

NOTE Confidence: 0.860632489411765

00:24:12.240 --> 00:24:14.144 When it's gone to the lymph nodes,

NOTE Confidence: 0.860632489411765

00:24:14.150 --> 00:24:16.817 that makes you a stage three Melanoma

NOTE Confidence: 0.860632489411765

00:24:16.820 --> 00:24:18.899 and at the initial visit we usually

NOTE Confidence: 0.860632489411765

00:24:18.899 --> 00:24:20.849 scan the brain to just make

NOTE Confidence: 0.860632489411765

00:24:20.849 --> 00:24:22.786 sure that it isn't a stage four

NOTE Confidence: 0.860632489411765

00:24:22.786 --> 00:24:24.666 Melanoma that we aren't catching,

NOTE Confidence: 0.860632489411765

00:24:24.670 --> 00:24:27.730 and under diagnosing what would

NOTE Confidence: 0.860632489411765

00:24:27.730 --> 00:24:30.178 have been metastatic disease.

NOTE Confidence: 0.860632489411765

00:24:30.180 --> 00:24:33.281 So that 40% really reflects those with

NOTE Confidence: 0.860632489411765

00:24:33.281 --> 00:24:35.555 advanced disease that spread beyond

NOTE Confidence: 0.860632489411765

00:24:35.555 --> 00:24:38.600 the lymph nodes to other distant sites.

00:24:38.980 --> 00:24:42.094 Got it and so if you do have a brain

NOTE Confidence: 0.878283657142857

00:24:42.094 --> 00:24:44.937 met it could be asymptomatic.

NOTE Confidence: 0.878283657142857

00:24:44.940 --> 00:24:47.680 It could be picked up on an MRI or it

NOTE Confidence: 0.878283657142857

00:24:47.757 --> 00:24:50.326 could be symptomatic at presentation.

NOTE Confidence: 0.878283657142857

00:24:50.326 --> 00:24:55.322 Tell us a little bit more about how exactly

NOTE Confidence: 0.878283657142857

00:24:55.322 --> 00:24:59.617 you treat these patients?

NOTE Confidence: 0.878283657142857

00:24:59.617 --> 00:25:03.460 So if you presented with symptoms are

NOTE Confidence: 0.878283657142857

00:25:03.571 --> 00:25:06.214 you likely to resolve those symptoms?

NOTE Confidence: 0.878283657142857

00:25:06.214 --> 00:25:08.878 How good are our treatments?

NOTE Confidence: 0.878283657142857

00:25:09.920 --> 00:25:12.716 The treatments themselves over the past

NOTE Confidence: 0.842325794166667

00:25:12.716 --> 00:25:16.169 five years have just magically improved.

NOTE Confidence: 0.842325794166667

00:25:16.170 --> 00:25:18.850 Not only do we have better systemic therapies

00:25:18.850 --> 00:25:21.620 that we know are effective in the brain,

00:25:21.620 --> 00:25:25.013 but we also are better at timing in terms

00:25:25.013 --> 00:25:28.842 of when to go in and resect symptomatic

00:25:28.842 --> 00:25:32.174 brain metastases or radiate them in

00:25:32.174 --> 00:25:35.174 conjunction with her systemic therapies.

00:25:35.180 --> 00:25:36.389 So, for example,

00:25:36.389 --> 00:25:39.660 if a patient presents to the emergency room

00:25:39.660 --> 00:25:41.199 with nausea, vomiting,

00:25:41.199 --> 00:25:43.764 some dizziness and balance issues,

00:25:43.770 --> 00:25:46.587 they get a brain scan in the emergency room

00:25:46.587 --> 00:25:49.570 are found to have new lesions in the brain,

00:25:49.570 --> 00:25:52.726 if those lesions are large and associated

00:25:52.726 --> 00:25:55.279 with significant edema, and that is

00:25:55.279 --> 00:25:56.894 what's contributing to the symptoms,

00:25:56.900 --> 00:25:59.750 oftentimes we have to get our

00:25:59.750 --> 00:26:01.650 neurosurgery colleagues involved to

NOTE Confidence: 0.842325794166667

00:26:01.728 --> 00:26:03.703 rapidly address that lesion and

NOTE Confidence: 0.842325794166667

00:26:03.703 --> 00:26:06.630 the most rapid way is via surgery.

NOTE Confidence: 0.842325794166667

00:26:06.630 --> 00:26:08.268 You know, it's a morbid procedure,

NOTE Confidence: 0.842325794166667

00:26:08.270 --> 00:26:09.760 but the outcomes are typically

NOTE Confidence: 0.842325794166667

00:26:09.760 --> 00:26:11.735 very good and people have

NOTE Confidence: 0.842325794166667

00:26:11.735 --> 00:26:13.315 a very fast recovery.

NOTE Confidence: 0.842325794166667

00:26:13.320 --> 00:26:15.120 If, for example,

NOTE Confidence: 0.842325794166667

00:26:15.120 --> 00:26:19.388 the lesion is amenable to what we

NOTE Confidence: 0.842325794166667

00:26:19.388 --> 00:26:21.356 call stereotactic radiosurgery,

NOTE Confidence: 0.842325794166667

00:26:21.360 --> 00:26:23.700 which is very high radiation but

NOTE Confidence: 0.842325794166667

00:26:23.700 --> 00:26:26.160 very focused radiation to try to

NOTE Confidence: 0.842325794166667

00:26:26.160 --> 00:26:28.240 spare the normal surrounding brain

NOTE Confidence: 0.842325794166667

00:26:28.240 --> 00:26:30.663 tissue and therefore limit the side

NOTE Confidence: 0.842325794166667

00:26:30.663 --> 00:26:32.859 effects of radiation in the brain,

NOTE Confidence: 0.842325794166667

00:26:32.860 --> 00:26:36.116 that itself is also a very effective therapy.

NOTE Confidence: 0.842325794166667

00:26:36.120 --> 00:26:38.008 It's considered definitive, however,

NOTE Confidence: 0.842325794166667

00:26:38.008 --> 00:26:40.840 it can only really be treated

NOTE Confidence: 0.842325794166667

00:26:40.840 --> 00:26:44.064 for lesions that are less than 3 centimeters,

NOTE Confidence: 0.842325794166667

00:26:44.070 --> 00:26:45.528 if you have a lesion greater

NOTE Confidence: 0.842325794166667

00:26:45.528 --> 00:26:46.257 than 3 centimeters,

NOTE Confidence: 0.842325794166667

00:26:46.260 --> 00:26:48.500 surgery is the best option.

NOTE Confidence: 0.842325794166667

00:26:48.500 --> 00:26:50.670 If you have multiple lesions,

NOTE Confidence: 0.842325794166667

00:26:50.670 --> 00:26:52.854 basically multiple small lesions,

NOTE Confidence: 0.842325794166667

00:26:52.854 --> 00:26:56.130 too many to be individually treated

NOTE Confidence: 0.842325794166667

00:26:56.216 --> 00:26:58.811 with what we call stereotactic

NOTE Confidence: 0.842325794166667

00:26:58.811 --> 00:27:00.887 radiosurgery or gamma knife,

NOTE Confidence: 0.842325794166667

00:27:00.890 --> 00:27:03.752 then the next option is whole

NOTE Confidence: 0.842325794166667

00:27:03.752 --> 00:27:06.706 brain radiation which used to be very

NOTE Confidence: 0.842325794166667

00:27:06.706 --> 00:27:09.700 neurotoxic long term because these patients

NOTE Confidence: 0.842325794166667

00:27:09.787 --> 00:27:13.195 would develop cognitive decline later on.

NOTE Confidence: 0.842325794166667

00:27:13.200 --> 00:27:16.536 Memory issues very similar to dementia.

NOTE Confidence: 0.842325794166667

00:27:16.540 --> 00:27:18.505 Nowadays we have additional options

NOTE Confidence: 0.842325794166667

00:27:18.505 --> 00:27:21.360 where we can spare the hippocampus.

NOTE Confidence: 0.842325794166667

00:27:21.360 --> 00:27:23.090 This learning and memory center

NOTE Confidence: 0.842325794166667

00:27:23.090 --> 00:27:26.044 in our brain and so we can try to

NOTE Confidence: 0.842325794166667

00:27:26.044 --> 00:27:28.549 avoid some of these late chronic

NOTE Confidence: 0.842325794166667

00:27:28.549 --> 00:27:30.837 sequella of radiation therapy.

NOTE Confidence: 0.842325794166667

00:27:30.840 --> 00:27:32.912 Other options are to actually use some

NOTE Confidence: 0.842325794166667

00:27:32.912 --> 00:27:35.950 of the drugs that have been known to be

NOTE Confidence: 0.842325794166667

00:27:35.950 --> 00:27:37.930 effective in treating Alzheimer's patients

NOTE Confidence: 0.842325794166667

00:27:37.930 --> 00:27:40.762 while they get whole brain radiation to try

NOTE Confidence: 0.842325794166667

00:27:40.762 --> 00:27:43.906 to have a neuroprotective effect to spare

NOTE Confidence: 0.842325794166667

00:27:43.910 --> 00:27:45.980 the normal brain from receiving

NOTE Confidence: 0.842325794166667

00:27:45.980 --> 00:27:48.550 some of the detrimental long

NOTE Confidence: 0.842325794166667

00:27:48.550 --> 00:27:50.655 term side effects of radiation.

00:27:51.380 --> 00:27:53.336 I mean it sounds like there's

NOTE Confidence: 0.928777896666667

45

00:27:53.336 --> 00:27:55.193 a lot of potential for

NOTE Confidence: 0.928777896666667

00:27:55.193 --> 00:27:57.097 therapies for brain metastases,

NOTE Confidence: 0.928777896666667

00:27:57.100 --> 00:28:00.439 but just in our last 30 seconds.

NOTE Confidence: 0.928777896666667

00:28:00.440 --> 00:28:02.240 So if you have a brain

NOTE Confidence: 0.928777896666667

00:28:02.240 --> 00:28:04.020 metastasis and it's been treated,

NOTE Confidence: 0.928777896666667

00:28:04.020 --> 00:28:06.108 what's your overall prognosis?

NOTE Confidence: 0.898444949090909

00:28:06.460 --> 00:28:08.998 So we're finding with the combination

NOTE Confidence: 0.898444949090909

00:28:08.998 --> 00:28:11.460 of radiation and immune therapies,

NOTE Confidence: 0.898444949090909

00:28:11.460 --> 00:28:13.632 prognosis can be actually very good.

NOTE Confidence: 0.898444949090909

00:28:13.632 --> 00:28:16.313 Before it was three to six months

NOTE Confidence: 0.898444949090909

00:28:16.313 --> 00:28:18.248 for anyone with brain metastases.

NOTE Confidence: 0.898444949090909

00:28:18.250 --> 00:28:20.900 Now we're talking years out.

NOTE Confidence: 0.898444949090909

00:28:20.900 --> 00:28:22.514 If you have a tumor that

NOTE Confidence: 0.898444949090909

00:28:22.514 --> 00:28:23.590 responds to these treatments,

NOTE Confidence: 0.898444949090909

00:28:23.590 --> 00:28:26.400 and so the overall survival,

NOTE Confidence: 0.898444949090909

00:28:26.400 --> 00:28:28.284 the prognosis is much more bright

NOTE Confidence: 0.898444949090909

00:28:28.284 --> 00:28:30.488 than what it was ten years ago.

NOTE Confidence: 0.895809765294118

00:28:31.000 --> 00:28:33.076 Doctor Thuy Tran is an instructor

NOTE Confidence: 0.895809765294118

00:28:33.076 --> 00:28:34.879 of medicine in medical oncology

NOTE Confidence: 0.895809765294118

00:28:34.879 --> 00:28:36.997 at the Yale School of Medicine.

NOTE Confidence: 0.895809765294118

00:28:37.000 --> 00:28:38.464 If you have questions,

NOTE Confidence: 0.895809765294118

00:28:38.464 --> 00:28:40.660 the address is cancer answers at

NOTE Confidence: 0.895809765294118

00:28:40.660 --> 00:28:43.240 yale.edu and past editions of the

NOTE Confidence: 0.895809765294118

00:28:43.240 --> 00:28:45.785 program are available in audio and

NOTE Confidence: 0.895809765294118

00:28:45.785 --> 00:28:47.228 written form at yalecancercenter.org.

NOTE Confidence: 0.895809765294118

00:28:47.228 --> 00:28:49.852 We hope you'll join us next week to

NOTE Confidence: 0.895809765294118

00:28:49.852 --> 00:28:51.853 learn more about the fight against

NOTE Confidence: 0.895809765294118

00:28:51.853 --> 00:28:53.468 cancer here on Connecticut Public

NOTE Confidence: 0.895809765294118

00:28:53.523 --> 00:28:55.058 radio funding for Yale Cancer

NOTE Confidence: 0.895809765294118

00:28:55.058 --> 00:28:56.593 Answers is provided by Smilow

NOTE Confidence: 0.895809765294118

00:28:56.600 --> 00:29:00.000 Cancer Hospital and AstraZeneca.