WEBVTT

00:00:00.000 --> 00:00:02.148 Funding for Yale Cancer Answers is

NOTE Confidence: 0.790650304545454

00:00:02.148 --> 00:00:04.180 provided by Smilow Cancer Hospital.

NOTE Confidence: 0.702765917272727

00:00:06.220 --> 00:00:08.500 Welcome to Yale Cancer Answers with

NOTE Confidence: 0.702765917272727

00:00:08.500 --> 00:00:10.620 your host Doctor Anees Chagpar.

NOTE Confidence: 0.702765917272727

00:00:10.620 --> 00:00:12.430 Yale Cancer Answers features the

NOTE Confidence: 0.702765917272727

00:00:12.430 --> 00:00:14.651 latest information on cancer care by

NOTE Confidence: 0.702765917272727

00:00:14.651 --> 00:00:16.075 welcoming oncologists and specialists

NOTE Confidence: 0.702765917272727

00:00:16.075 --> 00:00:18.463 who are on the forefront of the

NOTE Confidence: 0.702765917272727

00:00:18.463 --> 00:00:20.208 battle to fight cancer. This week,

NOTE Confidence: 0.702765917272727

00:00:20.208 --> 00:00:22.152 it's a conversation about the role

NOTE Confidence: 0.702765917272727

00:00:22.152 --> 00:00:24.016 of surgical pathology in certain

NOTE Confidence: 0.702765917272727

00:00:24.016 --> 00:00:25.936 cancers with Doctor Marie Robert.

NOTE Confidence: 0.702765917272727

00:00:25.940 --> 00:00:27.540 Doctor Robert is a professor

NOTE Confidence: 0.702765917272727

00:00:27.540 --> 00:00:29.488 of pathology and of medicine at

NOTE Confidence: 0.702765917272727

00:00:29.488 --> 00:00:30.938 the Yale School of Medicine,

NOTE Confidence: 0.702765917272727

00:00:30.940 --> 00:00:32.845 where Doctor Chagpar is a

NOTE Confidence: 0.702765917272727

00:00:32.845 --> 00:00:34.369 professor of surgical oncology.

NOTE Confidence: 0.89855977

00:00:35.950 --> 00:00:37.623 Marie, maybe we can start off by

NOTE Confidence: 0.89855977

00:00:37.623 --> 00:00:39.353 you telling us a little bit about

NOTE Confidence: 0.89855977

00:00:39.353 --> 00:00:41.199 yourself and what it is that you do.

NOTE Confidence: 0.7868901884

00:00:41.550 --> 00:00:44.602 Sure, so I am a surgical pathologist

NOTE Confidence: 0.7868901884

00:00:44.602 --> 00:00:48.046 and this is somebody who goes to

NOTE Confidence: 0.7868901884

00:00:48.046 --> 00:00:51.100 medical school and does a residency

NOTE Confidence: 0.7868901884

00:00:51.199 --> 00:00:53.929 in the specialty of pathology.

NOTE Confidence: 0.7868901884

00:00:53.930 --> 00:00:57.545 And that specialty involves looking

NOTE Confidence: 0.7868901884

00:00:57.545 --> 00:01:01.685 at diseases in the tissues in

NOTE Confidence: 0.7868901884

00:01:01.685 --> 00:01:05.100 biopsy samples and and surgical

NOTE Confidence: 0.7868901884

00:01:05.227 --> 00:01:08.999 resection samples from patients.

NOTE Confidence: 0.7868901884

00:01:09.000 --> 00:01:11.212 And we look at that very

NOTE Confidence: 0.7868901884

00:01:11.212 --> 00:01:13.388 deeply under both with our naked

NOTE Confidence: 0.7868901884

00:01:13.388 --> 00:01:15.318 eye and under the microscope,

NOTE Confidence: 0.7868901884

00:01:15.320 --> 00:01:19.870 and then inform the surgeon or the

NOTE Confidence: 0.7868901884

00:01:19.870 --> 00:01:21.690 clinician oncologist

NOTE Confidence: 0.7868901884

00:01:21.690 --> 00:01:23.340 who's taking care of the patient

NOTE Confidence: 0.7868901884

00:01:23.340 --> 00:01:25.055 about what we're seeing and what

NOTE Confidence: 0.7868901884

00:01:25.055 --> 00:01:26.460 their disease process might be?

NOTE Confidence: 0.8257017255

00:01:27.170 --> 00:01:29.802 Yeah, you know I I often tell patients

NOTE Confidence: 0.8257017255

00:01:29.802 --> 00:01:31.843 that there's only two people who

NOTE Confidence: 0.8257017255

00:01:31.843 --> 00:01:33.817 can tell you anything for sure.

NOTE Confidence: 0.8257017255

00:01:33.820 --> 00:01:36.460 God and the pathologist because we

NOTE Confidence: 0.8257017255

00:01:36.460 --> 00:01:39.505 rely so heavily on the diagnosis

NOTE Confidence: 0.8257017255

00:01:39.505 --> 00:01:41.958 that's rendered by pathologists.

NOTE Confidence: 0.8257017255

00:01:41.958 --> 00:01:45.305 So you know, tell us a little bit

NOTE Confidence: 0.8257017255

00:01:45.305 --> 00:01:47.613 more about what got you interested in

NOTE Confidence: 0.8257017255

00:01:47.613 --> 00:01:49.905 pathology and what got you interested

NOTE Confidence: 0.8257017255

00:01:49.905 --> 00:01:53.019 in GI and liver pathology in particular.

NOTE Confidence: 0.927203200909091

00:01:53.590 --> 00:01:55.372 So that is an easy question

NOTE Confidence: 0.927203200909091

00:01:55.372 --> 00:01:57.100 to answer and no secret.

NOTE Confidence: 0.927203200909091

00:01:57.100 --> 00:01:58.696 If you know my family at all,

NOTE Confidence: 0.927203200909091

00:01:58.700 --> 00:02:05.234 so I am the daughter of a French Canadian.

NOTE Confidence: 0.927203200909091

00:02:05.240 --> 00:02:07.924 Nurse and physician scientist.

NOTE Confidence: 0.927203200909091

00:02:07.924 --> 00:02:10.608 My father Andre Robert,

NOTE Confidence: 0.927203200909091

00:02:10.610 --> 00:02:13.472 who was a basic scientist studying

NOTE Confidence: 0.927203200909091

00:02:13.472 --> 00:02:14.903 gastrointestinal diseases so

NOTE Confidence: 0.927203200909091

00:02:14.903 --> 00:02:17.550 he had both the clinical side

NOTE Confidence: 0.927203200909091

00:02:17.550 --> 00:02:19.645 MD and the scientific training.

NOTE Confidence: 0.927203200909091

00:02:19.650 --> 00:02:22.650 And so I grew up visiting his lab

NOTE Confidence: 0.927203200909091

00:02:22.650 --> 00:02:25.176 and seeing and actually, you know,

NOTE Confidence: 0.927203200909091

00:02:25.176 --> 00:02:28.317 he would let me do a little help in the

NOTE Confidence: 0.927203200909091

00:02:28.317 --> 00:02:30.984 lab in in participating in his experiments.

NOTE Confidence: 0.927203200909091

00:02:30.990 --> 00:02:35.290 And so this is when I went to college and.

NOTE Confidence: 0.927203200909091

00:02:35.290 --> 00:02:38.566 Medical school, I thought that medicine

NOTE Confidence: 0.927203200909091

00:02:38.566 --> 00:02:41.880 was this the study of disease.

NOTE Confidence: 0.927203200909091

00:02:41.880 --> 00:02:43.620 And so when I it was,

NOTE Confidence: 0.927203200909091

00:02:43.620 --> 00:02:46.900 you know, not a far.

NOTE Confidence: 0.927203200909091

00:02:46.900 --> 00:02:48.766 Challenge for me to decide that

NOTE Confidence: 0.927203200909091

00:02:48.766 --> 00:02:51.048 pathology was where my heart really lay.

NOTE Confidence: 0.927203200909091

00:02:51.050 --> 00:02:51.863 And of course,

NOTE Confidence: 0.927203200909091

00:02:51.863 --> 00:02:54.107 the apple doesn't fall far from the tree

NOTE Confidence: 0.927203200909091

00:02:54.107 --> 00:02:55.859 and I was immediately drawn towards

NOTE Confidence: 0.927203200909091

00:02:55.859 --> 00:02:58.260 all things of the gastrointestinal tract,

NOTE Confidence: 0.927203200909091

00:02:58.260 --> 00:02:59.169 liver, and pancreas.

NOTE Confidence: 0.812220162923077

00:03:00.300 --> 00:03:03.674 So tell us a little bit more

NOTE Confidence: 0.812220162923077

00:03:03.674 --> 00:03:06.618 about kind of what you do.

NOTE Confidence: 0.812220162923077

00:03:06.620 --> 00:03:08.822 day-to-day. I mean, because one of

NOTE Confidence: 0.812220162923077

00:03:08.822 --> 00:03:11.200 the things that is frustrating.

NOTE Confidence: 0.812220162923077

00:03:11.200 --> 00:03:15.799 Anxiety provoking for patients is the wait.

NOTE Confidence: 0.812220162923077

00:03:15.800 --> 00:03:17.834 They have the biopsy done and

NOTE Confidence: 0.812220162923077

00:03:17.834 --> 00:03:20.788 then we say we need to wait and

NOTE Confidence: 0.812220162923077

00:03:20.788 --> 00:03:23.056 I always tell patients you know,

NOTE Confidence: 0.812220162923077

00:03:23.060 --> 00:03:26.270 never rush the pathologist because.

NOTE Confidence: 0.812220162923077

00:03:26.270 --> 00:03:29.606 You you don't necessarily want a fast answer.

NOTE Confidence: 0.812220162923077

00:03:29.610 --> 00:03:30.990 You want the right answer,

NOTE Confidence: 0.812220162923077

00:03:30.990 --> 00:03:32.890 because everything that we

NOTE Confidence: 0.812220162923077

00:03:32.890 --> 00:03:35.740 do rests on what you say.

NOTE Confidence: 0.812220162923077

00:03:35.740 --> 00:03:39.205 So can you give us a little bit more

NOTE Confidence: 0.812220162923077

00:03:39.205 --> 00:03:41.935 granularity in terms of what happens in

NOTE Confidence: 0.812220162923077

00:03:41.935 --> 00:03:44.969 terms of that black box while we wait?

NOTE Confidence: 0.916878896153846

00:03:46.400 --> 00:03:48.692 So delighted to talk about this

NOTE Confidence: 0.916878896153846

00:03:48.692 --> 00:03:51.000 because we are believe it or not,

NOTE Confidence: 0.916878896153846

00:03:51.000 --> 00:03:53.340 even though we are not meeting

NOTE Confidence: 0.916878896153846

00:03:53.340 --> 00:03:54.900 your patient first hand,

NOTE Confidence: 0.916878896153846

00:03:54.900 --> 00:03:57.441 we are constantly mindful of the fact

NOTE Confidence: 0.916878896153846

00:03:57.441 --> 00:04:00.309 that there is a wonderful human being on

NOTE Confidence: 0.916878896153846

00:04:00.309 --> 00:04:03.055 the other end of this specimen and we

NOTE Confidence: 0.916878896153846

00:04:03.055 --> 00:04:06.074 are working as fast as we can to provide.

NOTE Confidence: 0.916878896153846

00:04:06.074 --> 00:04:08.396 As you say the right answer.

NOTE Confidence: 0.916878896153846

00:04:08.400 --> 00:04:09.920 So what does this entail?

NOTE Confidence: 0.916878896153846

00:04:09.920 --> 00:04:12.092 So take a biopsy.

NOTE Confidence: 0.916878896153846

00:04:12.092 --> 00:04:16.500 It is put in a fluid called.

NOTE Confidence: 0.916878896153846

00:04:16.500 --> 00:04:19.020 Formalin, usually that is allowed that

NOTE Confidence: 0.916878896153846

00:04:19.020 --> 00:04:22.486 sort of hardens the tissues so that we can

NOTE Confidence: 0.916878896153846

00:04:22.486 --> 00:04:25.570 then put them through an overnight process.

NOTE Confidence: 0.916878896153846

00:04:25.570 --> 00:04:26.554 And we actually.

NOTE Confidence: 0.916878896153846

00:04:26.554 --> 00:04:27.866 This may sound crazy.

NOTE Confidence: 0.916878896153846

00:04:27.870 --> 00:04:32.166 We actually take the small samples or large

NOTE Confidence: 0.916878896153846

00:04:32.166 --> 00:04:35.866 samples and put them into paraffin wax.

NOTE Confidence: 0.916878896153846

00:04:35.870 --> 00:04:38.215 Melted paraffin wax that then

NOTE Confidence: 0.916878896153846

00:04:38.215 --> 00:04:40.990 hardens in a small little box.

NOTE Confidence: 0.916878896153846

00:04:40.990 --> 00:04:43.735 If you will, we call it a tissue cassette.

NOTE Confidence: 0.916878896153846

00:04:43.740 --> 00:04:45.250 And believe it or not,

NOTE Confidence: 0.916878896153846

00:04:45.250 --> 00:04:47.578 old fashioned thing like paraffin wax

NOTE Confidence: 0.916878896153846

00:04:47.578 --> 00:04:50.340 is what holds the tissue in place.

NOTE Confidence: 0.916878896153846

00:04:50.340 --> 00:04:54.100 While we then apply a very sharp knife,

NOTE Confidence: 0.916878896153846

00:04:54.100 --> 00:04:56.788 it's called a microtome to the

NOTE Confidence: 0.916878896153846

00:04:56.788 --> 00:04:59.312 sample and we're actually taking

NOTE Confidence: 0.916878896153846

00:04:59.312 --> 00:05:01.902 small slices of the sample.

NOTE Confidence: 0.916878896153846

00:05:01.910 --> 00:05:05.609 We take that put it on a microscope slide.

NOTE Confidence: 0.916878896153846

00:05:05.610 --> 00:05:07.278 Remember from science class.

NOTE Confidence: 0.916878896153846

00:05:07.278 --> 00:05:09.780 And that microscope slide is then

NOTE Confidence: 0.916878896153846

00:05:09.849 --> 00:05:12.201 with the tissue section on it is

NOTE Confidence: 0.916878896153846

00:05:12.201 --> 00:05:14.559 stained with some very pretty colors.

NOTE Confidence: 0.916878896153846

00:05:14.560 --> 00:05:16.436 Purples and pinks really.

NOTE Confidence: 0.916878896153846

00:05:16.436 --> 00:05:19.250 Pathology is like looking at beautiful

NOTE Confidence: 0.916878896153846

00:05:19.327 --> 00:05:22.260 art under the microscope and these dyes.

NOTE Confidence: 0.916878896153846

00:05:22.260 --> 00:05:25.250 If you will are stains adhere to the

NOTE Confidence: 0.916878896153846

00:05:25.250 --> 00:05:27.590 cells and we during our residency

NOTE Confidence: 0.916878896153846

00:05:27.590 --> 00:05:30.164 have learned how to recognize cells

NOTE Confidence: 0.916878896153846

00:05:30.164 --> 00:05:33.100 with these dyes under the microscope

NOTE Confidence: 0.916878896153846

00:05:33.100 --> 00:05:35.194 so that whole process of just

NOTE Confidence: 0.916878896153846

00:05:35.194 --> 00:05:37.696 getting to the glass slide takes.

NOTE Confidence: 0.916878896153846

00:05:37.700 --> 00:05:41.410 At least one day so you know one day gone.

NOTE Confidence: 0.916878896153846

00:05:41.410 --> 00:05:45.802 Now depending on the type of sample it is,

NOTE Confidence: 0.916878896153846

00:05:45.810 --> 00:05:47.730 we can then grab it quickly,

NOTE Confidence: 0.916878896153846

00:05:47.730 --> 00:05:49.455 begin our process of looking

NOTE Confidence: 0.916878896153846

00:05:49.455 --> 00:05:50.490 under the microscope,

NOTE Confidence: 0.916878896153846

00:05:50.490 --> 00:05:52.152 and in some situations we are

NOTE Confidence: 0.916878896153846

00:05:52.152 --> 00:05:54.097 able to give an immediate answer

NOTE Confidence: 0.916878896153846

00:05:54.097 --> 00:05:56.407 doing nothing else to the sample.

NOTE Confidence: 0.916878896153846

00:05:56.410 --> 00:05:58.636 Just looking at the microscope for

NOTE Confidence: 0.916878896153846

00:05:58.636 --> 00:06:00.871 three or four minutes and we're

NOTE Confidence: 0.916878896153846

00:06:00.871 --> 00:06:02.899 able to assess everything and give

NOTE Confidence: 0.916878896153846

00:06:02.899 --> 00:06:05.290 a give the the surgeon, oncologist,

NOTE Confidence: 0.916878896153846

00:06:05.290 --> 00:06:06.450 whomever gastroenterologist,

NOTE Confidence: 0.916878896153846

00:06:06.450 --> 00:06:08.190 and then the.

NOTE Confidence: 0.916878896153846

00:06:08.190 --> 00:06:10.290 Patient the answer they need,

NOTE Confidence: 0.916878896153846

00:06:10.290 --> 00:06:13.176 but in especially in cancer there

NOTE Confidence: 0.916878896153846

00:06:13.176 --> 00:06:16.422 are often other steps we need to

NOTE Confidence: 0.916878896153846

00:06:16.422 --> 00:06:19.299 take to get the best possible answer

NOTE Confidence: 0.916878896153846

00:06:19.388 --> 00:06:22.448 with the greatest amount of detail.

NOTE Confidence: 0.916878896153846

00:06:22.450 --> 00:06:25.880 And nuance that will really help the

NOTE Confidence: 0.916878896153846

00:06:25.880 --> 00:06:28.858 person just treating the patient next

NOTE Confidence: 0.916878896153846

00:06:28.858 --> 00:06:32.169 to know exactly what therapy to apply.

NOTE Confidence: 0.916878896153846

00:06:32.170 --> 00:06:34.473 So these extra steps include things like

NOTE Confidence: 0.916878896153846

00:06:34.473 --> 00:06:37.770 we we use these terms called special stains,

NOTE Confidence: 0.916878896153846

00:06:37.770 --> 00:06:39.429 so if you think of a stain,

NOTE Confidence: 0.916878896153846

00:06:39.430 --> 00:06:42.251 think of like paint or or these

NOTE Confidence: 0.916878896153846

00:06:42.251 --> 00:06:45.261 colors I mentioned and there are a

NOTE Confidence: 0.916878896153846

00:06:45.261 --> 00:06:47.829 variety of very technical and highly,

NOTE Confidence: 0.916878896153846

00:06:47.830 --> 00:06:48.714 you know,

NOTE Confidence: 0.916878896153846

00:06:48.714 --> 00:06:50.924 honed technologies that we can

NOTE Confidence: 0.916878896153846

00:06:50.924 --> 00:06:52.920 apply to the tissue.

NOTE Confidence: 0.916878896153846

00:06:52.920 --> 00:06:54.505 This is getting more and

NOTE Confidence: 0.916878896153846

00:06:54.505 --> 00:06:55.773 more finessed every day.

NOTE Confidence: 0.916878896153846

00:06:55.780 --> 00:06:59.245 We can now even do molecular and

NOTE Confidence: 0.916878896153846

00:06:59.245 --> 00:07:02.887 genetic analysis and and put what we

NOTE Confidence: 0.916878896153846

00:07:02.887 --> 00:07:05.457 call biomarker stains and approaches

NOTE Confidence: 0.916878896153846

00:07:05.457 --> 00:07:08.764 so we can really get much further

NOTE Confidence: 0.916878896153846

00:07:08.764 --> 00:07:11.931 now to helping to guide the even

NOTE Confidence: 0.916878896153846

00:07:11.931 --> 00:07:14.673 the exact medication one might use.

NOTE Confidence: 0.9053452

00:07:14.680 --> 00:07:16.600 But this does take time,

NOTE Confidence: 0.9053452

00:07:16.600 --> 00:07:18.838 so sometimes there's a first answer.

NOTE Confidence: 0.9053452

00:07:18.840 --> 00:07:20.772 And then there's another more detailed

NOTE Confidence: 0.9053452

00:07:20.772 --> 00:07:23.229 answer that comes a day or a week later.

NOTE Confidence: 0.9053452

00:07:23.230 --> 00:07:25.342 Sometimes we have to hold up the whole

NOTE Confidence: 0.9053452

00:07:25.342 --> 00:07:27.445 thing for four or five days just to

NOTE Confidence: 0.9053452

00:07:27.445 --> 00:07:29.339 get the right answer from the start,

NOTE Confidence: 0.9053452

00:07:29.340 --> 00:07:30.788 so that's sort of a long answer to

NOTE Confidence: 0.9053452

00:07:30.788 --> 00:07:32.658 your question, but it is complete.

NOTE Confidence: 0.830884926

00:07:32.950 --> 00:07:35.110 Yeah, yeah, so I mean,

NOTE Confidence: 0.830884926

00:07:35.110 --> 00:07:37.518 so This is why I think it's good

NOTE Confidence: 0.830884926

00:07:37.518 --> 00:07:39.643 information for people who are listening

NOTE Confidence: 0.830884926

00:07:39.643 --> 00:07:41.827 and potential patients to kind of

NOTE Confidence: 0.830884926

00:07:41.892 --> 00:07:44.090 understand why it can take so long,

NOTE Confidence: 0.830884926

00:07:44.090 --> 00:07:46.430 because sometimes we expect these days

NOTE Confidence: 0.830884926

00:07:46.430 --> 00:07:49.830 to to get an answer instantaneously.

NOTE Confidence: 0.830884926

00:07:49.830 --> 00:07:52.220 And and that's just not

NOTE Confidence: 0.830884926

00:07:52.220 --> 00:07:54.132 practical or or feasible.

NOTE Confidence: 0.830884926

00:07:54.140 --> 00:07:56.463 So I want to dig a little bit more into some

NOTE Confidence: 0.830884926

00:07:56.463 --> 00:07:58.514 of the things that you mentioned, Marie.

NOTE Confidence: 0.830884926

00:07:58.514 --> 00:08:01.202 So one is that you know in

NOTE Confidence: 0.830884926

00:08:01.202 --> 00:08:03.419 medical school and in residency,

NOTE Confidence: 0.830884926

00:08:03.420 --> 00:08:07.452 you, as a pathologist got very

NOTE Confidence: 0.830884926

00:08:07.452 --> 00:08:10.140 good at recognizing patterns,

NOTE Confidence: 0.830884926

00:08:10.140 --> 00:08:12.364 understanding what looks benign

NOTE Confidence: 0.830884926

00:08:12.364 --> 00:08:15.700 under a microscope and what looks

NOTE Confidence: 0.830884926

00:08:15.795 --> 00:08:18.279 malignant under a microscope.

NOTE Confidence: 0.830884926

00:08:18.280 --> 00:08:20.940 But can you tell us a little bit more about

NOTE Confidence: 0.830884926

00:08:21.006 --> 00:08:23.358 the secrets that go into that pattern?

NOTE Confidence: 0.830884926

00:08:23.360 --> 00:08:23.929 Recognition?

NOTE Confidence: 0.830884926

00:08:23.929 --> 00:08:26.774 Because that's another piece that

NOTE Confidence: 0.830884926

00:08:26.774 --> 00:08:29.050 people don't really understand.

NOTE Confidence: 0.830884926

00:08:29.050 --> 00:08:29.862 I mean,

NOTE Confidence: 0.830884926

00:08:29.862 --> 00:08:32.704 how can you tell the difference between.

NOTE Confidence: 0.830884926

00:08:32.710 --> 00:08:35.590 You know a benign polyp,

NOTE Confidence: 0.830884926

00:08:35.590 --> 00:08:38.830 something that then is perhaps a

NOTE Confidence: 0.830884926

00:08:38.830 --> 00:08:43.130 carcinoma in situ, a precancer.

NOTE Confidence: 0.830884926

00:08:43.130 --> 00:08:46.496 And then something that is truly

NOTE Confidence: 0.830884926

00:08:46.496 --> 00:08:49.064 cancerous that for many people is a

NOTE Confidence: 0.830884926

00:08:49.064 --> 00:08:51.779 nuance that we don't really understand.

NOTE Confidence: 0.830884926

00:08:51.780 --> 00:08:52.130 How.

NOTE Confidence: 0.830884926

00:08:52.130 --> 00:08:54.230 How do you make that distinction?

NOTE Confidence: 0.86973528

00:08:55.970 --> 00:08:59.648 So thank you for these wonderful

NOTE Confidence: 0.86973528

00:08:59.648 --> 00:09:01.487 pathology type questions.

NOTE Confidence: 0.86973528

00:09:01.490 --> 00:09:04.528 The the answer is it all starts

NOTE Confidence: 0.86973528

00:09:04.528 --> 00:09:06.809 with knowing what is normal,

NOTE Confidence: 0.86973528

00:09:06.810 --> 00:09:10.330 what is normal tissue appearance?

NOTE Confidence: 0.86973528

00:09:10.330 --> 00:09:12.330 We use the term Histology,

NOTE Confidence: 0.86973528

00:09:12.330 --> 00:09:13.260 it doesn't matter,

NOTE Confidence: 0.86973528

00:09:13.260 --> 00:09:15.890 but it's just what are you expecting to see.

NOTE Confidence: 0.86973528

00:09:15.890 --> 00:09:16.832 That is normal.

NOTE Confidence: 0.86973528

00:09:16.832 --> 00:09:19.406 So in anything that you look at and

NOTE Confidence: 0.86973528

00:09:19.406 --> 00:09:21.246 in looking at, you know anything

NOTE Confidence: 0.86973528

00:09:21.246 --> 00:09:23.430 around your house or in your workplace.

NOTE Confidence: 0.86973528

00:09:23.430 --> 00:09:25.467 Your desk is something out of place.

NOTE Confidence: 0.86973528

00:09:25.470 --> 00:09:28.571 Were first to understand what is normal

NOTE Confidence: 0.86973528

00:09:28.571 --> 00:09:30.136 tissue, so you want to talk about,

NOTE Confidence: 0.86973528

00:09:30.140 --> 00:09:31.760 say, a colon polyp.

NOTE Confidence: 0.86973528

00:09:31.760 --> 00:09:33.785 We first have to learn,

NOTE Confidence: 0.86973528

00:09:33.790 --> 00:09:35.110 and this is actually, you know,

NOTE Confidence: 0.86973528

00:09:35.110 --> 00:09:37.348 at least a four year training

NOTE Confidence: 0.86973528

00:09:37.348 --> 00:09:38.467 process and residency,

NOTE Confidence: 0.86973528

00:09:38.470 --> 00:09:41.494 and then often today one or two years

NOTE Confidence: 0.86973528

00:09:41.494 --> 00:09:43.849 of specialty fellowship training,

NOTE Confidence: 0.86973528

00:09:43.850 --> 00:09:45.722 we learn very quickly what is normal in

NOTE Confidence: 0.86973528

00:09:45.722 --> 00:09:47.627 our first couple of years of residency,

NOTE Confidence: 0.86973528

00:09:47.630 --> 00:09:49.394 training and normal means,

NOTE Confidence: 0.86973528

00:09:49.394 --> 00:09:52.040 how in health are the this

NOTE Confidence: 0.86973528

00:09:52.126 --> 00:09:54.290 wonderful machine that is?

NOTE Confidence: 0.86973528

00:09:54.290 --> 00:09:56.978 Our body is organized at the cellular

NOTE Confidence: 0.86973528

00:09:56.978 --> 00:09:59.792 level so that you know you look at

NOTE Confidence: 0.86973528

00:09:59.792 --> 00:10:02.210 your skin and you see your skin.

NOTE Confidence: 0.86973528

00:10:02.210 --> 00:10:03.128 You might.

NOTE Confidence: 0.86973528

00:10:03.128 --> 00:10:05.882 The freckles or some blood vessels

NOTE Confidence: 0.86973528

00:10:05.882 --> 00:10:07.679 underneath under the microscope

NOTE Confidence: 0.86973528

00:10:07.679 --> 00:10:10.079 we learn what all those layers

NOTE Confidence: 0.86973528

00:10:10.079 --> 00:10:12.881 from the outside of the skin to

NOTE Confidence: 0.86973528

00:10:12.881 --> 00:10:15.300 underneath the skin down into even

NOTE Confidence: 0.86973528

00:10:15.300 --> 00:10:18.736 the muscles and the bone look like.

NOTE Confidence: 0.86973528

00:10:18.736 --> 00:10:21.694 So once we have that template,

NOTE Confidence: 0.86973528

00:10:21.700 --> 00:10:24.157 sort of that pattern if you will

NOTE Confidence: 0.86973528

00:10:24.157 --> 00:10:25.849 pattern recognition in our mind.

NOTE Confidence: 0.86973528

00:10:25.850 --> 00:10:28.636 Then we begin very slowly to build

NOTE Confidence: 0.86973528

00:10:28.636 --> 00:10:31.293 to learn abnormal and the one of

NOTE Confidence: 0.86973528

00:10:31.293 --> 00:10:33.670 the first things we start with is.

NOTE Confidence: 0.86973528

00:10:33.670 --> 00:10:34.004 Inflammation,

NOTE Confidence: 0.86973528

00:10:34.004 --> 00:10:36.676 you know you get a cut and you

NOTE Confidence: 0.86973528

00:10:36.676 --> 00:10:39.196 notice that there are bee sting and

NOTE Confidence: 0.86973528

00:10:39.196 --> 00:10:41.010 you notice swelling right away.

NOTE Confidence: 0.86973528

00:10:41.010 --> 00:10:41.331 Redness.

NOTE Confidence: 0.86973528

00:10:41.331 --> 00:10:41.652 Well,

NOTE Confidence: 0.86973528

00:10:41.652 --> 00:10:43.578 we learn what that looks like

NOTE Confidence: 0.86973528

00:10:43.578 --> 00:10:45.229 under the microscope with,

NOTE Confidence: 0.86973528

00:10:45.230 --> 00:10:45.874 you know,

NOTE Confidence: 0.86973528

00:10:45.874 --> 00:10:47.806 too much fluid and and inflammatory

NOTE Confidence: 0.86973528

00:10:47.806 --> 00:10:49.463 cells from the immune system

NOTE Confidence: 0.86973528

00:10:49.463 --> 00:10:51.043 being called to that area.

NOTE Confidence: 0.86973528

00:10:51.050 --> 00:10:53.210 The same is true when we

NOTE Confidence: 0.86973528

00:10:53.210 --> 00:10:54.650 start talking about cancer.

NOTE Confidence: 0.86973528

00:10:54.650 --> 00:10:57.902 There's often a process starting from

NOTE Confidence: 0.86973528

00:10:57.902 --> 00:11:00.610 an early, let's say, neoplastic,

NOTE Confidence: 0.86973528

00:11:00.610 --> 00:11:03.850 meaning that the cell is stopped.

NOTE Confidence: 0.86973528

00:11:03.850 --> 00:11:05.980 Just minding its own business and

NOTE Confidence: 0.86973528

00:11:05.980 --> 00:11:08.154 staying put where it should be

NOTE Confidence: 0.86973528

00:11:08.154 --> 00:11:10.548 to maintain the normal but is now

NOTE Confidence: 0.86973528

00:11:10.548 --> 00:11:12.734 dividing and growing and and we can

NOTE Confidence: 0.86973528

00:11:12.734 --> 00:11:15.106 see that under the microscope by

NOTE Confidence: 0.86973528

00:11:15.106 --> 00:11:19.257 changes and actually how the cell looks.

NOTE Confidence: 0.86973528

00:11:19.260 --> 00:11:23.128 Over overtime that growth.

NOTE Confidence: 0.86973528

00:11:23.130 --> 00:11:25.070 Can then.

NOTE Confidence: 0.86973528

00:11:25.070 --> 00:11:27.560 Disrupt the normal to the point

NOTE Confidence: 0.86973528

00:11:27.560 --> 00:11:30.013 that there is disruption of the

NOTE Confidence: 0.86973528

00:11:30.013 --> 00:11:32.505 the little little boxes of the the

NOTE Confidence: 0.86973528

00:11:32.505 --> 00:11:34.717 little alleys and lanes that that

NOTE Confidence: 0.86973528

00:11:34.717 --> 00:11:37.913 cells need to stay in and they invade.

NOTE Confidence: 0.86973528

00:11:37.913 --> 00:11:40.268 We talk about invasive cancer.

NOTE Confidence: 0.86973528

00:11:40.270 --> 00:11:42.075 It's because those cells actually

NOTE Confidence: 0.86973528

00:11:42.075 --> 00:11:44.629 go into a compartment that they have

NOTE Confidence: 0.86973528

00:11:44.629 --> 00:11:46.687 no business being like an epithelial

NOTE Confidence: 0.86973528

00:11:46.687 --> 00:11:48.940 cell which should be on the surface.

NOTE Confidence: 0.86973528

00:11:48.940 --> 00:11:50.228 So if you look at your skin,

NOTE Confidence: 0.86973528

00:11:50.230 --> 00:11:52.350 it's lined by a certain kind of cell.

NOTE Confidence: 0.86973528

00:11:52.350 --> 00:11:54.246 We call it an epithelial cell,

NOTE Confidence: 0.86973528

00:11:54.250 --> 00:11:55.441 just the lining.

NOTE Confidence: 0.86973528

00:11:55.441 --> 00:11:57.823 Now if it becomes a tumor,

NOTE Confidence: 0.86973528

00:11:57.830 --> 00:12:01.367 it can then go down into the soft tissues,

NOTE Confidence: 0.86973528

00:12:01.370 --> 00:12:03.010 even the muscle and bone,

NOTE Confidence: 0.86973528

00:12:03.010 --> 00:12:03.638 et cetera.

NOTE Confidence: 0.86973528

00:12:03.638 --> 00:12:07.010 And we can see this all under the microscope.

NOTE Confidence: 0.86973528

00:12:07.010 --> 00:12:09.520 So recognizing cancer or recognizing

NOTE Confidence: 0.86973528

00:12:09.520 --> 00:12:12.030 an abnormal process is recognizing

NOTE Confidence: 0.92519693125

00:12:12.104 --> 00:12:14.576 that the normal has been disrupted.

NOTE Confidence: 0.63633639

00:12:15.940 --> 00:12:19.360 And so so you know, one of the

NOTE Confidence: 0.63633639

00:12:19.360 --> 00:12:21.760 questions that people often ask is.

NOTE Confidence: 0.63633639

00:12:21.760 --> 00:12:23.638 You know how important is it?

NOTE Confidence: 0.63633639

00:12:23.640 --> 00:12:26.584 Or is it important to get a second

NOTE Confidence: 0.63633639

00:12:26.584 --> 00:12:29.438 opinion with regards to your pathology?

NOTE Confidence: 0.63633639

00:12:29.440 --> 00:12:32.142 So very often you may have your

NOTE Confidence: 0.63633639

00:12:32.142 --> 00:12:35.191 biopsy done at one place if you go

NOTE Confidence: 0.63633639

00:12:35.191 --> 00:12:37.920 to another place to get treatment,

NOTE Confidence: 0.63633639

00:12:37.920 --> 00:12:40.146 they'll say, well, we need our

NOTE Confidence: 0.63633639

00:12:40.146 --> 00:12:42.470 pathologist to look at the slides.

NOTE Confidence: 0.63633639

00:12:42.470 --> 00:12:44.850 So is it that you know a

NOTE Confidence: 0.63633639

00:12:44.850 --> 00:12:46.960 pathologist is a pathologist,

NOTE Confidence: 0.63633639

00:12:46.960 --> 00:12:48.688 is a pathologist and this is a black

NOTE Confidence: 0.63633639

00:12:48.688 --> 00:12:50.392 and white answer and everybody is going

NOTE Confidence: 0.63633639

00:12:50.392 --> 00:12:53.183 to say the same thing, in which case.

NOTE Confidence: 0.63633639

00:12:53.183 --> 00:12:54.746 Why repeat it?

NOTE Confidence: 0.63633639

00:12:54.750 --> 00:12:57.361 Or is there some nuance there and

NOTE Confidence: 0.63633639

00:12:57.361 --> 00:12:59.562 and how important or not important

NOTE Confidence: 0.63633639

00:12:59.562 --> 00:13:01.914 is it to get a second opinion

NOTE Confidence: 0.63633639

00:13:01.991 --> 00:13:03.819 on your pathology slides?

NOTE Confidence: 0.885045323636364

00:13:05.410 --> 00:13:06.694 So another great question.

NOTE Confidence: 0.885045323636364

00:13:06.694 --> 00:13:09.557 I am a big fan of second opinions

NOTE Confidence: 0.885045323636364

00:13:09.557 --> 00:13:12.137 and I recommend that when folks

NOTE Confidence: 0.885045323636364

00:13:12.137 --> 00:13:14.539 are getting impactful diagnosis.

NOTE Confidence: 0.885045323636364

00:13:14.540 --> 00:13:16.420 Like a cancer diagnosis,

NOTE Confidence: 0.885045323636364

00:13:16.420 --> 00:13:19.766 that's going to change their life and

NOTE Confidence: 0.885045323636364

00:13:19.766 --> 00:13:22.881 start a train in motion of serious

NOTE Confidence: 0.885045323636364

00:13:22.881 --> 00:13:25.452 therapeutics and operations that a

NOTE Confidence: 0.885045323636364

00:13:25.452 --> 00:13:28.638 second opinion should always be obtained.

NOTE Confidence: 0.885045323636364

00:13:28.640 --> 00:13:31.314 And I'm not offended if someone would

NOTE Confidence: 0.885045323636364

00:13:31.314 --> 00:13:34.617 like to get a second opinion on a

NOTE Confidence: 0.885045323636364

00:13:34.617 --> 00:13:37.462 pathology diagnosis that I have made it.

NOTE Confidence: 0.885045323636364

00:13:37.462 --> 00:13:40.900 You know it many times as you sort of

NOTE Confidence: 0.885045323636364

00:13:41.000 --> 00:13:44.480 allude to probably 90% or more of the time.

NOTE Confidence: 0.885045323636364

00:13:44.480 --> 00:13:46.930 There will be no disagreement

NOTE Confidence: 0.885045323636364

00:13:46.930 --> 00:13:48.890 in an original diagnosis.

NOTE Confidence: 0.885045323636364

00:13:48.890 --> 00:13:50.936 But sometimes there is either a

NOTE Confidence: 0.885045323636364

00:13:50.936 --> 00:13:52.300 really a complete disagreement,

NOTE Confidence: 0.885045323636364

00:13:52.300 --> 00:13:53.374 very, very rarely,

NOTE Confidence: 0.885045323636364

00:13:53.374 --> 00:13:55.164 a complete disagreement between hey,

NOTE Confidence: 0.885045323636364

00:13:55.170 --> 00:13:55.938 you know, I actually,

NOTE Confidence: 0.885045323636364

00:13:55.938 --> 00:13:57.090 I'm not sure this is cancer.

NOTE Confidence: 0.885045323636364

00:13:57.090 --> 00:13:58.248 I know that.

NOTE Confidence: 0.885045323636364

00:13:58.248 --> 00:14:00.564 This was thought to be cancer,

NOTE Confidence: 0.885045323636364

00:14:00.570 --> 00:14:02.264 but actually I'm doing a little more

NOTE Confidence: 0.885045323636364

00:14:02.264 --> 00:14:04.161 extra work on it and I'm finding that

NOTE Confidence: 0.885045323636364

00:14:04.161 --> 00:14:05.909 maybe it might be just a precancer,

NOTE Confidence: 0.885045323636364

00:14:05.910 --> 00:14:08.647 or it may some nuance about that.

NOTE Confidence: 0.885045323636364

00:14:08.650 --> 00:14:10.970 In addition,

NOTE Confidence: 0.885045323636364

00:14:10.970 --> 00:14:14.280 in tertiary care centers tend

NOTE Confidence: 0.885045323636364

00:14:14.280 --> 00:14:16.928 to have specialized pathologists

NOTE Confidence: 0.885045323636364

00:14:16.928 --> 00:14:20.167 that are only doing one thing.

NOTE Confidence: 0.885045323636364

00:14:20.170 --> 00:14:24.538 So in my case I'm only doing

NOTE Confidence: 0.885045323636364

00:14:24.538 --> 00:14:25.786 gastrointestinal pathology,

NOTE Confidence: 0.885045323636364

00:14:25.790 --> 00:14:27.650 whereas in other centers there's

NOTE Confidence: 0.885045323636364

00:14:27.650 --> 00:14:29.510 a group of wonderful general.

NOTE Confidence: 0.885045323636364

00:14:29.510 --> 00:14:33.526 Pathologists who are looking at all all

NOTE Confidence: 0.885045323636364

00:14:33.526 --> 00:14:36.134 all specimens from all parts of the body,

NOTE Confidence: 0.885045323636364

00:14:36.140 --> 00:14:38.312 and they are all all outstanding

NOTE Confidence: 0.885045323636364

00:14:38.312 --> 00:14:40.898 and and this is a good system.

NOTE Confidence: 0.885045323636364

00:14:40.900 --> 00:14:44.015 But if it's a really impactful diagnosis,

NOTE Confidence: 0.885045323636364

00:14:44.020 --> 00:14:45.924 it's not a bad idea to have a

NOTE Confidence: 0.885045323636364

00:14:45.924 --> 00:14:47.158 very impactful diagnosis reviewed

NOTE Confidence: 0.885045323636364

00:14:47.158 --> 00:14:49.240 by someone who is a recognized

NOTE Confidence: 0.885045323636364

00:14:49.240 --> 00:14:51.033 specialist and they exist all over

NOTE Confidence: 0.885045323636364

00:14:51.033 --> 00:14:53.170 the country and all over the world,

NOTE Confidence: 0.852449733

00:14:53.620 --> 00:14:55.355 perfect, well, we're going to

NOTE Confidence: 0.852449733

00:14:55.355 --> 00:14:57.506 pick up the story learning more

NOTE Confidence: 0.852449733

00:14:57.506 --> 00:14:58.918 about surgical pathology right

NOTE Confidence: 0.852449733

00:14:58.918 --> 00:15:01.120 after we take a short break.

NOTE Confidence: 0.852449733

00:15:01.120 --> 00:15:02.160 For a medical minute,

NOTE Confidence: 0.852449733

00:15:02.160 --> 00:15:03.720 please stay tuned to learn more

NOTE Confidence: 0.852449733

00:15:03.771 --> 00:15:05.439 with my guest Doctor Marie Robert.

NOTE Confidence: 0.774454011

00:15:06.190 --> 00:15:08.180 Funding for Yale Cancer answers

NOTE Confidence: 0.774454011

00:15:08.180 --> 00:15:10.170 comes from Smilow Cancer Hospital,

NOTE Confidence: 0.774454011

00:15:10.170 --> 00:15:12.466 where you can view videos from their

NOTE Confidence: 0.774454011

00:15:12.466 --> 00:15:14.744 survivorship team by searching for the

NOTE Confidence: 0.774454011

00:15:14.744 --> 00:15:16.794 smilo survivorship playlist on YouTube.

NOTE Confidence: 0.91691423875

00:15:18.960 --> 00:15:20.788 The American Cancer Society

NOTE Confidence: 0.91691423875

00:15:20.788 --> 00:15:22.993 estimates that more than 65,000

NOTE Confidence: 0.91691423875

00:15:22.993 --> 00:15:24.858 Americans will be diagnosed with

NOTE Confidence: 0.91691423875

00:15:24.858 --> 00:15:27.039 head and neck cancer this year,

NOTE Confidence: 0.91691423875

00:15:27.040 --> 00:15:30.218 making up about 4% of all cancers

NOTE Confidence: 0.91691423875

00:15:30.218 --> 00:15:32.140 diagnosed when detected early.

NOTE Confidence: 0.91691423875

00:15:32.140 --> 00:15:34.420 However, head and neck cancers are

NOTE Confidence: 0.91691423875

00:15:34.420 --> 00:15:36.520 easily treated and highly curable.

NOTE Confidence: 0.91691423875

00:15:36.520 --> 00:15:38.528 Clinical trials are currently

NOTE Confidence: 0.91691423875

00:15:38.528 --> 00:15:40.536 underway at federally designated

NOTE Confidence: 0.91691423875

00:15:40.536 --> 00:15:42.254 Comprehensive cancer centers such

NOTE Confidence: 0.91691423875

00:15:42.254 --> 00:15:44.536 as Yale Cancer Center and Smilow

NOTE Confidence: 0.91691423875

00:15:44.536 --> 00:15:46.745 Cancer Hospital to test innovative new

NOTE Confidence: 0.91691423875

00:15:46.745 --> 00:15:49.006 treatments for head and neck cancers.

NOTE Confidence: 0.91691423875

00:15:49.006 --> 00:15:51.682 Yale Cancer Center was recently awarded

NOTE Confidence: 0.91691423875

00:15:51.682 --> 00:15:53.862 grants from the National Institutes

NOTE Confidence: 0.91691423875

00:15:53.862 --> 00:15:56.926 of Health to fund the Yale Head and

NOTE Confidence: 0.91691423875

00:15:57.004 --> 00:15:59.304 neck Cancer Specialized program of

NOTE Confidence: 0.91691423875

00:15:59.304 --> 00:16:01.604 Research Excellence or SPORE to

NOTE Confidence: 0.91691423875

00:16:01.610 --> 00:16:03.680 address critical barriers to treatment

NOTE Confidence: 0.91691423875

00:16:03.680 --> 00:16:06.198 of head and neck squamous cell

NOTE Confidence: 0.91691423875

00:16:06.198 --> 00:16:08.484 carcinoma due to resistance to immune

NOTE Confidence: 0.91691423875

00:16:08.484 --> 00:16:10.800 DNA damaging and targeted therapy.

NOTE Confidence: 0.91691423875

00:16:10.800 --> 00:16:13.810 More information is available at

NOTE Confidence: 0.91691423875

00:16:13.810 --> 00:16:15.160 yalecancercenter.org you're listening

NOTE Confidence: 0.91691423875

00:16:15.160 --> 00:16:16.960 to Connecticut Public Radio.

NOTE Confidence: 0.815970688333333

00:16:18.070 --> 00:16:20.188 Welcome back to Yale Cancer Answers.

NOTE Confidence: 0.815970688333333

00:16:20.190 --> 00:16:22.662 This is doctor Anees Chagpar and I'm joined

NOTE Confidence: 0.815970688333333

00:16:22.662 --> 00:16:25.040 tonight by my guest Doctor Marie Robert.

NOTE Confidence: 0.815970688333333

00:16:25.040 --> 00:16:27.248 We're talking about the important role

NOTE Confidence: 0.815970688333333

00:16:27.248 --> 00:16:29.443 that pathology plays in cancer and

NOTE Confidence: 0.815970688333333

00:16:29.443 --> 00:16:31.732 right before the break we were talking

NOTE Confidence: 0.815970688333333

00:16:31.732 --> 00:16:33.991 about the role that pathology plays

NOTE Confidence: 0.815970688333333

00:16:33.991 --> 00:16:35.861 in actually making the diagnosis.

NOTE Confidence: 0.815970688333333

00:16:35.870 --> 00:16:38.798 Like you go for a biopsy and is

NOTE Confidence: 0.815970688333333

00:16:38.798 --> 00:16:41.487 this cancer or is this not cancer?

NOTE Confidence: 0.815970688333333

00:16:41.490 --> 00:16:44.454 That distinction is actually made by

NOTE Confidence: 0.815970688333333

00:16:44.454 --> 00:16:47.768 a pathologist whom you may never meet,

NOTE Confidence: 0.815970688333333

00:16:47.770 --> 00:16:50.479 but that your team really relies on.

NOTE Confidence: 0.815970688333333

00:16:50.480 --> 00:16:54.290 Now Marie, the other thing that

NOTE Confidence: 0.815970688333333

00:16:54.290 --> 00:16:56.830 pathologists often really provide

NOTE Confidence: 0.815970688333333

00:16:56.936 --> 00:17:00.356 is some of the genomic information.

NOTE Confidence: 0.815970688333333

00:17:00.360 --> 00:17:02.340 Whether that comes in the form

NOTE Confidence: 0.815970688333333

00:17:02.340 --> 00:17:04.398 of special stains like you were

NOTE Confidence: 0.815970688333333

00:17:04.398 --> 00:17:06.408 telling us about before the break,

NOTE Confidence: 0.815970688333333

00:17:06.410 --> 00:17:07.980 or whether it comes in.

NOTE Confidence: 0.815970688333333

00:17:07.980 --> 00:17:10.602 Actually you know doing things like

NOTE Confidence: 0.815970688333333

00:17:10.602 --> 00:17:12.936 sequencing and telling us about

NOTE Confidence: 0.815970688333333

00:17:12.936 --> 00:17:14.996 genetic and genomic mutations,

NOTE Confidence: 0.815970688333333

00:17:15.000 --> 00:17:16.876 can you talk a little bit more

NOTE Confidence: 0.815970688333333

00:17:16.876 --> 00:17:18.996 about how that's done and and the

NOTE Confidence: 0.815970688333333

00:17:18.996 --> 00:17:20.880 importance that that plays in various?

NOTE Confidence: 0.815970688333333

00:17:20.880 --> 00:17:21.530 Answers

NOTE Confidence: 0.74820375

00:17:22.470 --> 00:17:25.340 yes, delighted so I would say so.

NOTE Confidence: 0.74820375

00:17:25.340 --> 00:17:27.068 I've been practicing for,

NOTE Confidence: 0.74820375

00:17:27.068 --> 00:17:30.060 you know about 3 decades now and.

NOTE Confidence: 0.74820375

00:17:30.060 --> 00:17:32.502 Over the course of my career

NOTE Confidence: 0.74820375

00:17:32.502 --> 00:17:35.188 there has been really in the past.

NOTE Confidence: 0.74820375

00:17:35.190 --> 00:17:39.136 10 to 15 and I would say even in the past

NOTE Confidence: 0.74820375

00:17:39.136 --> 00:17:42.532 five an explosion of new technologies

NOTE Confidence: 0.74820375

00:17:42.532 --> 00:17:45.230 and new information that help,

NOTE Confidence: 0.74820375

00:17:45.230 --> 00:17:47.390 especially in cancer, help,

NOTE Confidence: 0.74820375

00:17:47.390 --> 00:17:50.135 oncologists and surgeons fine tune

NOTE Confidence: 0.74820375

00:17:50.135 --> 00:17:53.603 and find a very specific therapies

NOTE Confidence: 0.74820375

00:17:53.603 --> 00:17:56.708 for a specific patients tumor.

NOTE Confidence: 0.74820375

00:17:56.710 --> 00:17:58.614 How is this done?

NOTE Confidence: 0.74820375

00:17:58.614 --> 00:18:01.470 And it comes under the general

NOTE Confidence: 0.74820375

00:18:01.470 --> 00:18:05.710 heading of molecular pathology and.

NOTE Confidence: 0.74820375

00:18:05.710 --> 00:18:07.156 This means that so we talked

NOTE Confidence: 0.74820375

00:18:07.156 --> 00:18:08.710 about looking at the microscope,

NOTE Confidence: 0.74820375

00:18:08.710 --> 00:18:10.170 the light microscope and we

NOTE Confidence: 0.74820375

00:18:10.170 --> 00:18:12.030 can determine a lot from there.

NOTE Confidence: 0.74820375

00:18:12.030 --> 00:18:15.048 Now we're getting inside the cell

NOTE Confidence: 0.74820375

00:18:15.048 --> 00:18:17.830 and specifically the cell nucleus.

NOTE Confidence: 0.74820375

00:18:17.830 --> 00:18:19.342 For the most part.

NOTE Confidence: 0.74820375

00:18:19.342 --> 00:18:22.562 And so every cell I should say has

NOTE Confidence: 0.74820375

00:18:22.562 --> 00:18:25.148 a central brain called a nucleus,

NOTE Confidence: 0.74820375

00:18:25.150 --> 00:18:27.256 and then something called the cytoplasm,

NOTE Confidence: 0.74820375

00:18:27.260 --> 00:18:29.054 which is where all the working

NOTE Confidence: 0.74820375

00:18:29.054 --> 00:18:31.314 parts of the cell that do what

NOTE Confidence: 0.74820375

00:18:31.314 --> 00:18:32.984 they're supposed to do reside.

NOTE Confidence: 0.74820375

00:18:32.990 --> 00:18:35.918 But the nucleus is where the chromosomes are.

NOTE Confidence: 0.74820375

00:18:35.920 --> 00:18:39.610 The genetic material that are the,

NOTE Confidence: 0.74820375

00:18:39.610 --> 00:18:40.348 you know,

NOTE Confidence: 0.74820375

00:18:40.348 --> 00:18:42.562 the blueprint for what that cell

NOTE Confidence: 0.74820375

00:18:42.562 --> 00:18:44.648 should do all over the body.

NOTE Confidence: 0.74820375

00:18:44.650 --> 00:18:47.266 Tumors tend to occur when those

NOTE Confidence: 0.74820375

00:18:47.266 --> 00:18:50.039 genes or chromas or the chroma,

NOTE Confidence: 0.74820375

00:18:50.040 --> 00:18:52.630 the genes on the chromosomes.

NOTE Confidence: 0.74820375

00:18:52.630 --> 00:18:54.740 The chromosome is divided up

NOTE Confidence: 0.74820375

00:18:54.740 --> 00:18:56.428 into a gazillion genes,

NOTE Confidence: 0.74820375

00:18:56.430 --> 00:18:59.820 each one doing something and tumors

NOTE Confidence: 0.74820375

00:18:59.820 --> 00:19:04.350 happen when what we call mutations occur.

NOTE Confidence: 0.74820375

00:19:04.350 --> 00:19:07.250 Or deletions or other types

NOTE Confidence: 0.74820375

00:19:07.250 --> 00:19:10.150 of fusions and other damage.

NOTE Confidence: 0.74820375

00:19:10.150 --> 00:19:13.678 Overall damage to the genes and the

NOTE Confidence: 0.74820375

00:19:13.678 --> 00:19:16.720 genetic structure on the chromosomes.

NOTE Confidence: 0.74820375

00:19:16.720 --> 00:19:18.223 When this happens,

NOTE Confidence: 0.74820375

00:19:18.223 --> 00:19:21.730 when there's an alteration for the bad.

NOTE Confidence: 0.74820375

00:19:21.730 --> 00:19:23.046 Several things can happen.

NOTE Confidence: 0.74820375

00:19:23.046 --> 00:19:26.150 One is that a cell just recognizes that.

NOTE Confidence: 0.74820375

00:19:26.150 --> 00:19:26.427 Oh,

NOTE Confidence: 0.74820375

00:19:26.427 --> 00:19:28.089 you are no longer functioning normally

NOTE Confidence: 0.74820375

00:19:28.089 --> 00:19:29.925 and the body's going to sort of

NOTE Confidence: 0.74820375

00:19:29.925 --> 00:19:31.353 take you right out of Commission

NOTE Confidence: 0.74820375

00:19:31.407 --> 00:19:33.099 and you're you're off the assembly

NOTE Confidence: 0.74820375

00:19:33.099 --> 00:19:35.096 line and actually kills the cell.

NOTE Confidence: 0.74820375

00:19:35.096 --> 00:19:36.828 That's a good thing.

NOTE Confidence: 0.74820375

00:19:36.830 --> 00:19:40.040 Unfortunately, other times the cell,

NOTE Confidence: 0.74820375

00:19:40.040 --> 00:19:42.404 the mutations or genetic

NOTE Confidence: 0.74820375

00:19:42.404 --> 00:19:45.359 alterations give the cell power.

NOTE Confidence: 0.74820375

00:19:45.360 --> 00:19:46.310 To divide,

NOTE Confidence: 0.74820375

00:19:46.310 --> 00:19:49.635 make more cells with those same problems

NOTE Confidence: 0.74820375

00:19:49.635 --> 00:19:53.054 and that is the beginning of a tumor.

NOTE Confidence: 0.74820375

00:19:53.060 --> 00:19:56.000 We can now detect very smart

NOTE Confidence: 0.74820375

00:19:56.000 --> 00:19:57.960 scientists have created technologies

NOTE Confidence: 0.74820375

00:19:58.039 --> 00:20:00.517 that allow us to look even from

NOTE Confidence: 0.74820375

00:20:00.517 --> 00:20:02.985 the biopsy that you gave us the

NOTE Confidence: 0.74820375

00:20:02.985 --> 00:20:05.414 same piece of tissue that we made.

NOTE Confidence: 0.74820375

00:20:05.414 --> 00:20:08.018 The diagnosis of a tumor on.

NOTE Confidence: 0.74820375

00:20:08.020 --> 00:20:10.668 We can take the rest of that sample

NOTE Confidence: 0.74820375

00:20:10.668 --> 00:20:13.107 and apply something called next

NOTE Confidence: 0.74820375

00:20:13.107 --> 00:20:15.375 generation sequencing and other.

NOTE Confidence: 0.74820375

00:20:15.380 --> 00:20:18.210 Techniques. Why is this important?

NOTE Confidence: 0.74820375

00:20:18.210 --> 00:20:20.796 This is important because these days

NOTE Confidence: 0.74820375

00:20:20.796 --> 00:20:24.480 there are more and more specific therapies.

NOTE Confidence: 0.895905054117647

00:20:24.570 --> 00:20:27.027 How do you know when you say this doesn't

NOTE Confidence: 0.895905054117647

00:20:27.027 --> 00:20:29.445 apply to every patient and to every tumor?

NOTE Confidence: 0.895905054117647

00:20:29.450 --> 00:20:32.490 How do you know whether your tumor should

NOTE Confidence: 0.895905054117647

00:20:32.490 --> 00:20:35.906 have all of those fancy shmancy tests done,

NOTE Confidence: 0.895905054117647

00:20:35.910 --> 00:20:38.520 or whether simply looking at

NOTE Confidence: 0.895905054117647

00:20:38.520 --> 00:20:41.610 that pink and purple dyes under

NOTE Confidence: 0.895905054117647

00:20:41.610 --> 00:20:43.610 the microscope is sufficient?

NOTE Confidence: 0.895905054117647

00:20:43.610 --> 00:20:46.977 So maybe you had your biopsy done.

NOTE Confidence: 0.895905054117647

00:20:46.980 --> 00:20:50.084 At a given institution and you were told

NOTE Confidence: 0.895905054117647

00:20:50.084 --> 00:20:53.415 that this was a particular kind of cancer.

NOTE Confidence: 0.895905054117647

00:20:53.420 --> 00:20:57.908 Should patients know which particular types

NOTE Confidence: 0.895905054117647

00:20:57.908 --> 00:21:02.454 of cancer should get advanced kind of

NOTE Confidence: 0.895905054117647

00:21:02.454 --> 00:21:06.080 diagnostics done that might help their care.

NOTE Confidence: 0.895905054117647

00:21:06.080 --> 00:21:08.000 How do people figure that out?

NOTE Confidence: 0.895905054117647

00:21:08.000 --> 00:21:10.534 How do you know which cancers and

NOTE Confidence: 0.895905054117647

00:21:10.534 --> 00:21:12.765 which patients need to have more

NOTE Confidence: 0.895905054117647

00:21:12.765 --> 00:21:14.907 studies done and which ones don't?

NOTE Confidence: 0.778277945

00:21:14.980 --> 00:21:17.836 So that is a terrific question.

NOTE Confidence: 0.778277945

00:21:17.840 --> 00:21:21.089 I think that every patient and I hope every

NOTE Confidence: 0.778277945

00:21:21.089 --> 00:21:23.854 patient listening who has a some sort of.

NOTE Confidence: 0.778277945

00:21:23.860 --> 00:21:26.848 Tumor or cancer diagnosis and is

NOTE Confidence: 0.778277945

00:21:26.848 --> 00:21:30.005 beginning down that path of getting

NOTE Confidence: 0.778277945

00:21:30.005 --> 00:21:32.690 treated should ask the question.

NOTE Confidence: 0.778277945

00:21:32.690 --> 00:21:35.738 Does my sample? Will my sample?

NOTE Confidence: 0.778277945

00:21:35.740 --> 00:21:39.226 Will this tumor benefit from genetic testing,

NOTE Confidence: 0.778277945

00:21:39.230 --> 00:21:40.766 molecular testing or whatever

NOTE Confidence: 0.778277945

00:21:40.766 --> 00:21:42.686 phrase you want to use?

NOTE Confidence: 0.778277945

00:21:42.690 --> 00:21:45.898 And it is the oncologist who knows best,

NOTE Confidence: 0.778277945

00:21:45.900 --> 00:21:48.428 so if you're not talking to an oncologist,

NOTE Confidence: 0.778277945

00:21:48.430 --> 00:21:50.286 talk to an oncologist.

NOTE Confidence: 0.778277945

00:21:50.286 --> 00:21:53.070 The oncologist will know best that,

NOTE Confidence: 0.778277945

00:21:53.070 --> 00:21:54.678 Oh yes, this tumor,

NOTE Confidence: 0.778277945

00:21:54.678 --> 00:21:56.688 if it has this mutation,

NOTE Confidence: 0.778277945

00:21:56.690 --> 00:21:58.436 we have these three drugs that

NOTE Confidence: 0.778277945

00:21:58.436 --> 00:22:00.732 we might want to try, and this is

NOTE Confidence: 0.778277945

00:22:00.732 --> 00:22:02.650 certainly true in many tumors of the.

NOTE Confidence: 0.778277945

00:22:02.650 --> 00:22:04.722 Of the gastrointestinal tract,

NOTE Confidence: 0.778277945

00:22:04.722 --> 00:22:06.276 liver and pancreas.

NOTE Confidence: 0.778277945

00:22:06.280 --> 00:22:09.856 And the oncologist will also know well today.

NOTE Confidence: 0.778277945

00:22:09.860 --> 00:22:11.051 As things stand,

NOTE Confidence: 0.778277945

00:22:11.051 --> 00:22:13.433 we don't have anything that we're

NOTE Confidence: 0.778277945

00:22:13.433 --> 00:22:15.718 giving based on genetic analysis,

NOTE Confidence: 0.778277945

00:22:15.720 --> 00:22:17.967 and so they may say at this

NOTE Confidence: 0.778277945

00:22:17.967 --> 00:22:20.457 moment in time we know what to do.

NOTE Confidence: 0.778277945

00:22:20.460 --> 00:22:20.862 This is.

NOTE Confidence: 0.778277945

00:22:20.862 --> 00:22:22.269 This is exactly what we should do,

NOTE Confidence: 0.778277945

00:22:22.270 --> 00:22:24.718 and we don't need further information.

NOTE Confidence: 0.778277945

00:22:24.720 --> 00:22:27.590 I will also share that at many

NOTE Confidence: 0.778277945

00:22:27.590 --> 00:22:30.141 academic centers there is a philosophy

NOTE Confidence: 0.778277945

00:22:30.141 --> 00:22:32.619 that really we want to sequence.

NOTE Confidence: 0.778277945

00:22:32.620 --> 00:22:35.105 Every tumor and we want to start

NOTE Confidence: 0.778277945

00:22:35.105 --> 00:22:37.774 moving towards a world where every

NOTE Confidence: 0.778277945

00:22:37.774 --> 00:22:39.946 diagnosis of malignancy, cancer,

NOTE Confidence: 0.778277945

00:22:39.946 --> 00:22:43.176 type of tumor will automatically

NOTE Confidence: 0.778277945

00:22:43.176 --> 00:22:46.460 have a gene you know.

NOTE Confidence: 0.778277945

00:22:46.460 --> 00:22:49.848 Sequencing of the genetics of that tumor,

NOTE Confidence: 0.778277945

00:22:49.850 --> 00:22:51.386 and this is for two reasons.

NOTE Confidence: 0.778277945

00:22:51.390 --> 00:22:52.623 One is that.

NOTE Confidence: 0.778277945

00:22:52.623 --> 00:22:55.089 We want to continue learning about

NOTE Confidence: 0.778277945

00:22:55.089 --> 00:22:58.224 tumors because we we we are continuing

NOTE Confidence: 0.778277945

00:22:58.224 --> 00:23:00.849 to develop medicines based on the

NOTE Confidence: 0.778277945

00:23:00.849 --> 00:23:03.447 information we're finding and the second

NOTE Confidence: 0.778277945

00:23:03.447 --> 00:23:06.558 reason is that sometimes a tumor of 1 type.

NOTE Confidence: 0.778277945

00:23:06.560 --> 00:23:08.900 May have a mutation that we

NOTE Confidence: 0.778277945

00:23:08.900 --> 00:23:10.460 weren't expecting and hey,

NOTE Confidence: 0.778277945

00:23:10.460 --> 00:23:11.825 you know there's a drug out here.

NOTE Confidence: 0.778277945

00:23:11.830 --> 00:23:13.948 We usually use this drug to

NOTE Confidence: 0.778277945

00:23:13.948 --> 00:23:15.860 treat to treat another tumor.

NOTE Confidence: 0.778277945

00:23:15.860 --> 00:23:17.020 Usually not this tumor,

NOTE Confidence: 0.778277945

00:23:17.020 --> 00:23:19.668 but now that you tell us this tumor

NOTE Confidence: 0.778277945

00:23:19.668 --> 00:23:21.360 surprisingly has this mutation.

NOTE Confidence: 0.778277945

00:23:21.360 --> 00:23:21.575 Well,

NOTE Confidence: 0.778277945

00:23:21.575 --> 00:23:22.005 you know,

NOTE Confidence: 0.778277945

00:23:22.005 --> 00:23:23.295 now we've got another thing to

NOTE Confidence: 0.778277945

00:23:23.295 --> 00:23:24.210 put in the toolkit.

NOTE Confidence: 0.880073084705882

00:23:25.780 --> 00:23:27.604 And so one of the questions

NOTE Confidence: 0.880073084705882

00:23:27.604 --> 00:23:29.662 that people may be asking as

NOTE Confidence: 0.880073084705882

00:23:29.662 --> 00:23:31.597 they're thinking about this is,

NOTE Confidence: 0.880073084705882

00:23:31.600 --> 00:23:33.229 you know. Oftentimes,

NOTE Confidence: 0.880073084705882

00:23:33.229 --> 00:23:35.944 when patients think about genetics,

NOTE Confidence: 0.880073084705882

00:23:35.950 --> 00:23:38.296 they think about their family history

NOTE Confidence: 0.880073084705882

00:23:38.296 --> 00:23:40.728 and whether they need to have a

NOTE Confidence: 0.880073084705882

00:23:40.728 --> 00:23:42.583 blood test or a saliva test to

NOTE Confidence: 0.880073084705882

00:23:42.654 --> 00:23:45.120 look for genetic mutations that may

NOTE Confidence: 0.880073084705882

00:23:45.120 --> 00:23:47.062 predispose them to certain cancers.

NOTE Confidence: 0.880073084705882

00:23:47.062 --> 00:23:49.106 So, for example, you know the one

NOTE Confidence: 0.880073084705882

00:23:49.106 --> 00:23:51.148 that is most often talked about,

NOTE Confidence: 0.880073084705882

00:23:51.150 --> 00:23:55.466 at least in my sphere is BRC A1 and two,

NOTE Confidence: 0.880073084705882

00:23:55.466 --> 00:23:57.161 which will increase your risk

NOTE Confidence: 0.880073084705882

00:23:57.161 --> 00:23:59.409 of breast and ovarian cancer.

NOTE Confidence: 0.880073084705882

00:23:59.410 --> 00:24:02.176 How is that different from the

NOTE Confidence: 0.880073084705882

00:24:02.176 --> 00:24:04.610 work that you're talking about?

NOTE Confidence: 0.880073084705882

00:24:04.610 --> 00:24:06.675 Where you're looking at the

NOTE Confidence: 0.880073084705882

00:24:06.675 --> 00:24:08.740 genetics of the cancer itself?

NOTE Confidence: 0.709648895

00:24:09.950 --> 00:24:13.924 Yeah, that is super and these things

NOTE Confidence: 0.709648895

00:24:13.924 --> 00:24:16.948 go actually hand in hand so the

NOTE Confidence: 0.709648895

00:24:16.948 --> 00:24:19.795 the the thing we just discussed

NOTE Confidence: 0.709648895

00:24:19.795 --> 00:24:22.845 was any particular tumor that one

NOTE Confidence: 0.709648895

00:24:22.845 --> 00:24:25.908 might have and that is something

NOTE Confidence: 0.709648895

00:24:25.908 --> 00:24:28.443 that an oncologist and discussion

NOTE Confidence: 0.709648895

00:24:28.443 --> 00:24:31.658 with their patient may may initiate.

NOTE Confidence: 0.709648895

00:24:31.660 --> 00:24:34.264 But in addition, the patient their

NOTE Confidence: 0.709648895

00:24:34.264 --> 00:24:36.000 physician oncologist and sometimes

NOTE Confidence: 0.709648895

00:24:36.071 --> 00:24:38.276 the pathologist will discover that

NOTE Confidence: 0.709648895

00:24:38.276 --> 00:24:40.481 there's something about the patient

NOTE Confidence: 0.709648895

00:24:40.546 --> 00:24:42.793 as they walk in the door with

NOTE Confidence: 0.709648895

00:24:42.793 --> 00:24:44.312 their first diagnosis of cancer.

NOTE Confidence: 0.709648895

00:24:44.312 --> 00:24:46.520 That, or even they don't have it yet.

NOTE Confidence: 0.709648895

00:24:46.520 --> 00:24:49.999 But there's a family history should be

NOTE Confidence: 0.709648895

00:24:49.999 --> 00:24:53.881 at something in them should be analyzed

NOTE Confidence: 0.709648895

00:24:53.881 --> 00:24:56.746 for a specific genetic disorder.

NOTE Confidence: 0.709648895

00:24:56.750 --> 00:24:59.118 Like bracca as you discuss or like in

NOTE Confidence: 0.709648895

00:24:59.118 --> 00:25:01.966 the GI tract, familial polyposis syndrome,

NOTE Confidence: 0.709648895

00:25:01.966 --> 00:25:04.926 or something called Lynch syndrome,

NOTE Confidence: 0.709648895

00:25:04.930 --> 00:25:08.008 which are colon cancer syndromes and

NOTE Confidence: 0.709648895

00:25:08.008 --> 00:25:10.930 endometrial and other cancer syndromes.

NOTE Confidence: 0.709648895

00:25:10.930 --> 00:25:12.630 So in these scenarios,

NOTE Confidence: 0.709648895

00:25:12.630 --> 00:25:16.280 there may or may not be a cancer

NOTE Confidence: 0.709648895

00:25:16.280 --> 00:25:18.790 diagnosis yet in the patient,

NOTE Confidence: 0.709648895

00:25:18.790 --> 00:25:20.680 but they may on their annual visit

NOTE Confidence: 0.709648895

00:25:20.680 --> 00:25:22.410 to their you know physician,

NOTE Confidence: 0.709648895

00:25:22.410 --> 00:25:24.100 discover that, Oh yeah, well,

NOTE Confidence: 0.709648895

00:25:24.100 --> 00:25:25.344 you know my mom,

NOTE Confidence: 0.709648895

00:25:25.344 --> 00:25:27.740 dad and three uncles had colon cancer.

NOTE Confidence: 0.709648895

00:25:27.740 --> 00:25:29.300 Before the age of 50,

NOTE Confidence: 0.709648895

00:25:29.300 --> 00:25:31.498 that person that will be a series

NOTE Confidence: 0.709648895

00:25:31.498 --> 00:25:33.906 of things set in motion like early

NOTE Confidence: 0.709648895

00:25:33.906 --> 00:25:35.994 screening in the 1st place with

NOTE Confidence: 0.709648895

00:25:36.064 --> 00:25:37.869 a colonoscopy and possibly some

NOTE Confidence: 0.709648895

00:25:37.869 --> 00:25:40.300 blood tests in it with a genetic

NOTE Confidence: 0.709648895

00:25:40.300 --> 00:25:42.160 counselor that might go on where

NOTE Confidence: 0.709648895

00:25:42.160 --> 00:25:43.339 a pathologist might be.

NOTE Confidence: 0.709648895

00:25:43.340 --> 00:25:45.416 The first one to initiate something

NOTE Confidence: 0.709648895

00:25:45.416 --> 00:25:47.758 is that when we get a sample.

NOTE Confidence: 0.709648895

00:25:47.760 --> 00:25:50.280 From someone of of the right age group,

NOTE Confidence: 0.709648895

00:25:50.280 --> 00:25:51.390 or maybe a young person,

NOTE Confidence: 0.709648895

00:25:51.390 --> 00:25:55.094 or that they have for example on colonoscopy,

NOTE Confidence: 0.709648895

00:25:55.100 --> 00:25:58.132 have you know 10 or more types of

NOTE Confidence: 0.709648895

00:25:58.132 --> 00:26:01.339 polyps that are all precancerous polyps?

NOTE Confidence: 0.709648895

00:26:01.340 --> 00:26:03.174 We will raise our hands and say,

NOTE Confidence: 0.709648895

00:26:03.180 --> 00:26:04.404 hey, here's your diagnosis,

NOTE Confidence: 0.709648895

00:26:04.404 --> 00:26:05.878 and oh, by the way,

NOTE Confidence: 0.709648895

00:26:05.878 --> 00:26:07.594 please sign this patient up for

NOTE Confidence: 0.709648895

00:26:07.594 --> 00:26:09.260 some for genetic screening,

NOTE Confidence: 0.709648895

00:26:09.260 --> 00:26:10.988 because they they have too many

NOTE Confidence: 0.709648895

00:26:10.988 --> 00:26:13.014 polyps at age 50 that you know

NOTE Confidence: 0.709648895

00:26:13.014 --> 00:26:14.904 that's the we want to make sure

NOTE Confidence: 0.709648895

00:26:14.968 --> 00:26:16.828 it doesn't mean something more.

NOTE Confidence: 0.827261963909091

00:26:17.550 --> 00:26:20.399 Right and but, but there's a clear

NOTE Confidence: 0.827261963909091

00:26:20.399 --> 00:26:22.622 difference in terms of, you know,

NOTE Confidence: 0.827261963909091

00:26:22.622 --> 00:26:24.698 in the one instance when we're

NOTE Confidence: 0.827261963909091

00:26:24.698 --> 00:26:26.869 talking about molecular diagnostics,

NOTE Confidence: 0.827261963909091

00:26:26.870 --> 00:26:28.442 we're really talking about

NOTE Confidence: 0.827261963909091

00:26:28.442 --> 00:26:30.800 doing these tests to look for

NOTE Confidence: 0.827261963909091

00:26:30.873 --> 00:26:33.048 mutations in the cancer itself,

NOTE Confidence: 0.827261963909091

00:26:33.050 --> 00:26:36.180 whereas when we're looking at

NOTE Confidence: 0.827261963909091

00:26:36.180 --> 00:26:38.684 predispositions and genetic screening,

NOTE Confidence: 0.827261963909091

00:26:38.690 --> 00:26:41.726 for example, we're really talking about

NOTE Confidence: 0.827261963909091

00:26:41.726 --> 00:26:44.940 cells that are baseline that are in

NOTE Confidence: 0.827261963909091

00:26:44.940 --> 00:26:47.523 your blood or in your saliva that.

NOTE Confidence: 0.827261963909091

00:26:47.530 --> 00:26:49.770 All of your cells carry versus in.

NOTE Confidence: 0.827261963909091

00:26:49.770 --> 00:26:50.709 The tumor itself.

NOTE Confidence: 0.827261963909091

00:26:50.709 --> 00:26:51.648 Is that right?

NOTE Confidence: 0.827860165

00:26:51.920 --> 00:26:52.811 That's absolutely right,

NOTE Confidence: 0.827860165

00:26:52.811 --> 00:26:55.590 and it's such a good, nuanced point.

NOTE Confidence: 0.827860165

00:26:55.590 --> 00:26:58.815 And and so this again,

NOTE Confidence: 0.827860165

00:26:58.820 --> 00:27:03.634 it's all good tools that physicians at

NOTE Confidence: 0.827860165

00:27:03.634 --> 00:27:06.358 all levels of interacting with folks.

NOTE Confidence: 0.827860165

00:27:06.360 --> 00:27:10.132 So in the in the you know, annual physical

NOTE Confidence: 0.827860165

00:27:10.132 --> 00:27:13.954 exam at that level by family history,

NOTE Confidence: 0.827860165

00:27:13.960 --> 00:27:17.548 personal and family history, the physician.

NOTE Confidence: 0.827860165

00:27:17.550 --> 00:27:19.901 Can can begin the process and say, yeah,

NOTE Confidence: 0.827860165

00:27:19.901 --> 00:27:22.848 we probably want to check into this.

NOTE Confidence: 0.827860165

00:27:22.850 --> 00:27:25.370 And at the same time finding finding

NOTE Confidence: 0.827860165

00:27:25.370 --> 00:27:27.830 early lesions that the pathology level,

NOTE Confidence: 0.827860165

00:27:27.830 --> 00:27:31.120 in addition to finding a truly already

NOTE Confidence: 0.827860165

00:27:31.120 --> 00:27:34.430 invasive cancer as they walk in the door.

NOTE Confidence: 0.827860165

00:27:34.430 --> 00:27:36.224 Someone walks in the door at

NOTE Confidence: 0.827860165

00:27:36.224 --> 00:27:37.950 age 45 with colon cancer.

NOTE Confidence: 0.827860165

00:27:37.950 --> 00:27:38.714 They already have it.

NOTE Confidence: 0.827860165

00:27:38.714 --> 00:27:39.860 We're going to work on that.

NOTE Confidence: 0.827860165

00:27:39.860 --> 00:27:41.785 They're going to get testing of the

NOTE Confidence: 0.827860165

00:27:41.785 --> 00:27:43.749 tumor itself to see what might work,

NOTE Confidence: 0.827860165

00:27:43.750 --> 00:27:45.314 but because they're young,

NOTE Confidence: 0.827860165

00:27:45.314 --> 00:27:47.184 this will, with all the clinicians,

NOTE Confidence: 0.827860165

00:27:47.184 --> 00:27:48.176 will say, Oh yes.

NOTE Confidence: 0.827860165

00:27:48.176 --> 00:27:50.258 And by the way, we want to screen

NOTE Confidence: 0.827860165

00:27:50.258 --> 00:27:51.743 your family members now too.

NOTE Confidence: 0.827860165

00:27:51.750 --> 00:27:53.606 We want to just make sure this is.

NOTE Confidence: 0.827860165

00:27:53.610 --> 00:27:56.040 Not just an isolated thing.

NOTE Confidence: 0.827860165

00:27:56.040 --> 00:27:56.790 Right,

NOTE Confidence: 0.832204627

00:27:56.880 --> 00:28:00.080 so Marie, in our last kind of 30

NOTE Confidence: 0.832204627

00:28:00.080 --> 00:28:01.944 seconds here, where do you think

NOTE Confidence: 0.832204627

00:28:01.944 --> 00:28:03.540 the field of pathology is going?

NOTE Confidence: 0.832204627

00:28:03.540 --> 00:28:05.808 Should we be expecting more of these

NOTE Confidence: 0.832204627

00:28:05.808 --> 00:28:07.948 kinds of genetic and genomic tests?

NOTE Confidence: 0.764397466

00:28:08.800 --> 00:28:13.061 Yes, I think it's going to go further

NOTE Confidence: 0.764397466

00:28:13.061 --> 00:28:14.903 and further and deeper in this

NOTE Confidence: 0.764397466

00:28:14.903 --> 00:28:16.743 direction with hopefully much more

NOTE Confidence: 0.764397466

00:28:16.743 --> 00:28:18.578 useful information down the line.

NOTE Confidence: 0.764397466

00:28:18.580 --> 00:28:21.580 I believe we are also poised to enter

NOTE Confidence: 0.764397466

00:28:21.580 --> 00:28:24.352 the digital era and with artificial

NOTE Confidence: 0.764397466

00:28:24.352 --> 00:28:26.777 intelligence to apply to samples.

NOTE Confidence: 0.764397466

00:28:26.780 --> 00:28:29.224 To improve even further,

NOTE Confidence: 0.764397466

00:28:29.224 --> 00:28:32.890 our ability to glean treatable information.

NOTE Confidence: 0.911801025294117

00:28:33.650 --> 00:28:35.606 Doctor Marie Robert is a professor

NOTE Confidence: 0.911801025294117

00:28:35.606 --> 00:28:37.318 of pathology and of medicine

NOTE Confidence: 0.911801025294117

00:28:37.318 --> 00:28:39.388 at the Yale School of Medicine.

NOTE Confidence: 0.911801025294117

00:28:39.390 --> 00:28:41.378 If you have questions,

NOTE Confidence: 0.911801025294117

00:28:41.378 --> 00:28:43.312 the address is canceranswers@yale.edu

NOTE Confidence: 0.911801025294117

00:28:43.312 --> 00:28:45.964 and past editions of the program

NOTE Confidence: 0.911801025294117

00:28:45.964 --> 00:28:48.275 are available in audio and written

NOTE Confidence: 0.911801025294117

00:28:48.275 --> 00:28:49.202 form at yalecancercenter.org.

NOTE Confidence: 0.911801025294117

00:28:49.202 --> 00:28:51.698 We hope you'll join us next week to

NOTE Confidence: 0.911801025294117

00:28:51.698 --> 00:28:53.597 learn more about the fight against

NOTE Confidence: 0.911801025294117

00:28:53.597 --> 00:28:55.132 cancer here on Connecticut Public

NOTE Confidence: 0.911801025294117

00:28:55.185 --> 00:28:56.937 radio. Funding for Yale Cancer Answers

NOTE Confidence: 0.911801025294117

00:28:56.937 --> 00:29:00.000 is provided by Smilow Cancer Hospital.