WEBVTT

NOTE duration: ”01:03:31.285”

NOTE Confidence: 0.95354664

00:00:04.000 --> 00:00:05.519 Hello, and thank you for

NOTE Confidence: 0.95354664

00:00:05.519 --> 00:00:07.839 joining us for the for

NOTE Confidence: 0.95354664

00:00:07.839 --> 00:00:09.619 the smile shares for colorectal

NOTE Confidence: 0.95354664

00:00:09.679 --> 00:00:11.539 cancer in twenty twenty six.

NOTE Confidence: 0.95354664

00:00:11.759 --> 00:00:13.460 This is colorectal cancer awareness

NOTE Confidence: 0.95354664

00:00:13.519 --> 00:00:15.014 month, and here at the

NOTE Confidence: 0.95354664

00:00:15.014 --> 00:00:16.614 Yale Smilow Cancer Hospital and

NOTE Confidence: 0.95354664

00:00:16.614 --> 00:00:17.735 the Yale Center for GI

NOTE Confidence: 0.95354664

00:00:17.735 --> 00:00:18.235 Cancers,

NOTE Confidence: 0.9912483

00:00:18.695 --> 00:00:19.835 we're gonna have a presentation,

NOTE Confidence: 0.99934953

00:00:20.935 --> 00:00:21.435 for

NOTE Confidence: 0.9609192

00:00:21.814 --> 00:00:23.114 GI medical oncology,

NOTE Confidence: 0.9971834

00:00:23.814 --> 00:00:24.314 surgical

NOTE Confidence: 0.97845054

00:00:24.614 --> 00:00:25.755 colorectal surgery,

NOTE Confidence: 0.9395773

00:00:26.215 --> 00:00:27.974 radiation oncology, and how we

NOTE Confidence: 0.9395773

00:00:27.974 --> 00:00:28.474 comprehensively

NOTE Confidence: 0.999772

00:00:28.775 --> 00:00:30.660 care for patients with colorectal

NOTE Confidence: 0.999772

00:00:30.720 --> 00:00:31.220 cancer.

NOTE Confidence: 0.9791918

00:00:32.000 --> 00:00:33.060 I'll start by,

NOTE Confidence: 0.99097484

00:00:33.680 --> 00:00:35.060 introducing each speaker,

NOTE Confidence: 0.94324666

00:00:36.960 --> 00:00:37.860 in each presentation,

NOTE Confidence: 0.44549137

00:00:38.239 --> 00:00:38.739 moderating

NOTE Confidence: 0.9466928

00:00:39.600 --> 00:00:40.739 a q and a session.

NOTE Confidence: 0.9466928

00:00:40.960 --> 00:00:41.920 So, again, my name is

NOTE Confidence: 0.9466928

00:00:41.920 --> 00:00:43.040 Michael Cecchini. I'm one of

NOTE Confidence: 0.9466928

00:00:43.040 --> 00:00:44.604 the GI medical oncologists and

NOTE Confidence: 0.9466928

00:00:44.604 --> 00:00:46.125 codirector of the colorectal cancer

NOTE Confidence: 0.9466928

00:00:46.125 --> 00:00:47.485 program and director of GI

NOTE Confidence: 0.9466928

00:00:47.485 --> 00:00:48.385 clinical research.

NOTE Confidence: 0.96893734

00:00:49.085 --> 00:00:50.125 I'd like to introduce my

NOTE Confidence: 0.96893734

00:00:50.125 --> 00:00:51.965 colleague, doctor Kim Joheng, one

NOTE Confidence: 0.96893734

00:00:51.965 --> 00:00:53.565 of the radiation oncologists. I'll

NOTE Confidence: 0.96893734

00:00:53.565 --> 00:00:54.785 let you introduce yourself.

NOTE Confidence: 0.8754146

00:00:57.360 --> 00:00:58.340 Thanks, Michael.

NOTE Confidence: 0.8459256

00:00:58.880 --> 00:00:59.700 Kim Joheng.

NOTE Confidence: 0.9823244

00:01:00.239 --> 00:01:02.160 I treat mostly GI cancers

NOTE Confidence: 0.9823244

00:01:02.160 --> 00:01:02.980 with radiation,

NOTE Confidence: 0.9985987

00:01:03.520 --> 00:01:04.319 and we'll be talking a

NOTE Confidence: 0.9985987

00:01:04.319 --> 00:01:05.620 little bit more about that,

NOTE Confidence: 0.99784684

00:01:06.240 --> 00:01:07.620 after Michael's talk.

NOTE Confidence: 0.8947335

00:01:09.055 --> 00:01:11.155 Doctor Anne Monju from Colorectal

NOTE Confidence: 0.8947335

00:01:11.215 --> 00:01:12.415 Surgery, who's also one of

NOTE Confidence: 0.8947335

00:01:12.415 --> 00:01:13.715 the codirectors of the colorectal

NOTE Confidence: 0.8947335

00:01:13.775 --> 00:01:14.595 cancer program.

NOTE Confidence: 0.9905927

00:01:15.694 --> 00:01:17.135 Hi. Anne Monju. I'm a

NOTE Confidence: 0.9905927

00:01:17.135 --> 00:01:19.055 colorectal surgeon here at Yale,

NOTE Confidence: 0.9905927

00:01:19.055 --> 00:01:20.415 and, my part of the

NOTE Confidence: 0.9905927

00:01:20.415 --> 00:01:21.455 team is to help with

NOTE Confidence: 0.9905927

00:01:21.455 --> 00:01:22.895 surgery to remove the cancer

NOTE Confidence: 0.9905927

00:01:22.895 --> 00:01:24.115 when the time is right.

NOTE Confidence: 0.83701545

00:01:25.990 --> 00:01:27.690 And so just some housekeeping,

NOTE Confidence: 0.89325684

00:01:28.470 --> 00:01:28.970 ish,

NOTE Confidence: 0.97450006

00:01:29.350 --> 00:01:30.630 topics. If you can put

NOTE Confidence: 0.97450006

00:01:30.630 --> 00:01:32.470 your questions in into the

NOTE Confidence: 0.97450006

00:01:32.470 --> 00:01:33.430 chat through the q and

NOTE Confidence: 0.97450006

00:01:33.430 --> 00:01:34.630 a, I will then repeat

NOTE Confidence: 0.97450006

00:01:34.630 --> 00:01:35.370 your questions,

NOTE Confidence: 0.95746267

00:01:35.990 --> 00:01:37.370 to the appropriate speaker.

NOTE Confidence: 0.9893461

00:01:38.095 --> 00:01:39.175 And I will be,

NOTE Confidence: 0.98296845

00:01:39.615 --> 00:01:41.615 starting off today talking about

NOTE Confidence: 0.98296845

00:01:41.615 --> 00:01:43.075 some of the medical oncology,

NOTE Confidence: 0.9989807

00:01:43.854 --> 00:01:46.015 aspects of colorectal cancer surgery.

NOTE Confidence: 0.9989807

00:01:46.015 --> 00:01:46.895 So I am going to

NOTE Confidence: 0.9989807

00:01:46.895 --> 00:01:48.275 share my screen here.

NOTE Confidence: 0.86644405

00:01:55.460 --> 00:01:55.960 Excellent.

NOTE Confidence: 0.9936123

00:01:56.260 --> 00:01:56.760 So,

NOTE Confidence: 0.95370704

00:01:57.780 --> 00:01:58.659 I've been going to talk

NOTE Confidence: 0.95370704

00:01:58.659 --> 00:01:59.159 about

NOTE Confidence: 0.8717768

00:01:59.540 --> 00:02:01.700 medical oncology management and personalized

NOTE Confidence: 0.8717768

00:02:01.700 --> 00:02:03.320 treatments for colorectal cancer,

NOTE Confidence: 0.99966204

00:02:03.780 --> 00:02:05.320 and here are my disclosures.

NOTE Confidence: 0.95010644

00:02:07.685 --> 00:02:08.405 I'm gonna talk a bit

NOTE Confidence: 0.95010644

00:02:08.405 --> 00:02:09.925 about staging, and then I'm

NOTE Confidence: 0.95010644

00:02:09.925 --> 00:02:10.965 gonna talk about how as

NOTE Confidence: 0.95010644

00:02:10.965 --> 00:02:11.865 medical oncologists,

NOTE Confidence: 0.9854928

00:02:12.645 --> 00:02:13.605 we think about some of

NOTE Confidence: 0.9854928

00:02:13.605 --> 00:02:15.305 the personalized treatments and chemotherapies,

NOTE Confidence: 0.9953194

00:02:15.605 --> 00:02:17.365 targeted therapies, systemic therapies, and

NOTE Confidence: 0.9953194

00:02:17.365 --> 00:02:18.965 even immunotherapies we use for

NOTE Confidence: 0.9953194

00:02:18.965 --> 00:02:19.625 these diseases.

NOTE Confidence: 0.9987731

00:02:21.230 --> 00:02:22.690 So how do we stage

NOTE Confidence: 0.9987731

00:02:22.830 --> 00:02:23.889 colorectal cancer?

NOTE Confidence: 0.98754865

00:02:24.990 --> 00:02:26.690 It's often made the diagnosis

NOTE Confidence: 0.98754865

00:02:26.830 --> 00:02:28.850 is often made, by colonoscopy,

NOTE Confidence: 0.9922619

00:02:29.790 --> 00:02:31.550 and then we have, the

NOTE Confidence: 0.9922619

00:02:31.550 --> 00:02:32.669 question of whether or not

NOTE Confidence: 0.9922619

00:02:32.669 --> 00:02:33.950 this is localized disease or

NOTE Confidence: 0.9922619

00:02:33.950 --> 00:02:35.010 metastatic disease.

NOTE Confidence: 0.9700017

00:02:35.325 --> 00:02:37.084 This will the this workup

NOTE Confidence: 0.9700017

00:02:37.084 --> 00:02:38.364 will often include some blood

NOTE Confidence: 0.9700017

00:02:38.364 --> 00:02:40.224 tests at first to assess

NOTE Confidence: 0.9700017

00:02:40.444 --> 00:02:41.264 some very

NOTE Confidence: 0.99768305

00:02:41.565 --> 00:02:42.065 straightforward

NOTE Confidence: 0.9262253

00:02:43.084 --> 00:02:44.605 measurements, such as liver function

NOTE Confidence: 0.9262253

00:02:44.605 --> 00:02:46.625 tests, blood counts like hemoglobin,

NOTE Confidence: 0.9623093

00:02:47.004 --> 00:02:48.650 white blood cell count, and

NOTE Confidence: 0.9623093

00:02:48.650 --> 00:02:49.610 as as well as a

NOTE Confidence: 0.9623093

00:02:49.610 --> 00:02:50.970 CEA, which is a blood

NOTE Confidence: 0.9623093

00:02:50.970 --> 00:02:52.090 marker that kind of gives

NOTE Confidence: 0.9623093

00:02:52.090 --> 00:02:52.910 us an indication

NOTE Confidence: 0.9883306

00:02:53.530 --> 00:02:54.510 of the presence,

NOTE Confidence: 0.9743647

00:02:55.610 --> 00:02:57.850 and and of colorectal cancer

NOTE Confidence: 0.9743647

00:02:57.850 --> 00:02:58.889 and sometimes whether or not

NOTE Confidence: 0.9743647

00:02:58.889 --> 00:03:00.490 that colorectal cancer is is

NOTE Confidence: 0.9743647

00:03:00.490 --> 00:03:02.090 worsening or or improving to

NOTE Confidence: 0.9743647

00:03:02.090 --> 00:03:02.750 our therapies.

NOTE Confidence: 0.9499847

00:03:03.785 --> 00:03:05.065 We also use a test,

NOTE Confidence: 0.9499847

00:03:05.065 --> 00:03:06.665 a sophisticated test at times

NOTE Confidence: 0.9499847

00:03:06.665 --> 00:03:08.905 called circulating tumor DNA. We

NOTE Confidence: 0.9499847

00:03:08.905 --> 00:03:10.585 typically use this test after

NOTE Confidence: 0.9499847

00:03:10.585 --> 00:03:12.745 surgery to to help determine

NOTE Confidence: 0.9499847

00:03:12.745 --> 00:03:13.625 whether or not there's any

NOTE Confidence: 0.9499847

00:03:13.625 --> 00:03:15.245 residual cancer left behind.

NOTE Confidence: 0.9863885

00:03:15.705 --> 00:03:16.825 There are many this is

NOTE Confidence: 0.9863885

00:03:16.825 --> 00:03:18.764 a very, detailed test,

NOTE Confidence: 0.98004925

00:03:19.260 --> 00:03:20.400 and is a lecture,

NOTE Confidence: 0.97941256

00:03:21.020 --> 00:03:22.940 to itself. But it's essentially

NOTE Confidence: 0.97941256

00:03:22.940 --> 00:03:23.740 a test that we can

NOTE Confidence: 0.97941256

00:03:23.740 --> 00:03:24.800 do after a surgery

NOTE Confidence: 0.882773

00:03:25.419 --> 00:03:26.380 where we kind of find

NOTE Confidence: 0.882773

00:03:26.380 --> 00:03:27.280 if there's any,

NOTE Confidence: 0.9768874

00:03:27.740 --> 00:03:29.580 evidence of DNA fragments of

NOTE Confidence: 0.9768874

00:03:29.580 --> 00:03:31.100 residual cancer floating around in

NOTE Confidence: 0.9768874

00:03:31.100 --> 00:03:32.220 the bloodstream. And we can

NOTE Confidence: 0.9768874

00:03:32.220 --> 00:03:33.760 tell that those DNA fragments,

NOTE Confidence: 0.9820504

00:03:34.745 --> 00:03:36.185 apart from normal DNA in

NOTE Confidence: 0.9820504

00:03:36.185 --> 00:03:36.924 our blood.

NOTE Confidence: 0.97908497

00:03:37.545 --> 00:03:38.745 And if they're present, it

NOTE Confidence: 0.97908497

00:03:38.745 --> 00:03:39.784 really suggests that there is

NOTE Confidence: 0.97908497

00:03:39.784 --> 00:03:40.844 residual cancer.

NOTE Confidence: 0.96663296

00:03:41.704 --> 00:03:43.224 And then also, we will

NOTE Confidence: 0.96663296

00:03:43.224 --> 00:03:44.984 always do a CT scan

NOTE Confidence: 0.96663296

00:03:44.984 --> 00:03:46.424 to to identify whether or

NOTE Confidence: 0.96663296

00:03:46.424 --> 00:03:47.940 not there's any spread

NOTE Confidence: 0.919442

00:03:48.240 --> 00:03:49.060 of a cancer,

NOTE Confidence: 0.9122538

00:03:49.360 --> 00:03:49.860 micrometastases,

NOTE Confidence: 0.8969248

00:03:51.360 --> 00:03:52.819 or small areas of metastases.

NOTE Confidence: 0.969839

00:03:53.200 --> 00:03:54.800 We're looking for any evidence

NOTE Confidence: 0.969839

00:03:54.800 --> 00:03:55.840 the cancer may have spread

NOTE Confidence: 0.969839

00:03:55.840 --> 00:03:56.660 to the liver,

NOTE Confidence: 0.95670104

00:03:57.600 --> 00:03:59.600 the abdominal cavity, or the

NOTE Confidence: 0.95670104

00:03:59.600 --> 00:04:00.720 lungs would be the three

NOTE Confidence: 0.95670104

00:04:00.720 --> 00:04:01.540 most common,

NOTE Confidence: 0.9986173

00:04:02.000 --> 00:04:02.500 sites.

NOTE Confidence: 0.9499706

00:04:05.145 --> 00:04:06.825 So we are also sometimes

NOTE Confidence: 0.9499706

00:04:06.825 --> 00:04:08.345 doing surgery even when this

NOTE Confidence: 0.9499706

00:04:08.345 --> 00:04:09.625 cancer has spread. And so

NOTE Confidence: 0.9499706

00:04:09.625 --> 00:04:11.245 we call it we call,

NOTE Confidence: 0.9766455

00:04:12.025 --> 00:04:13.805 limited spread of the disease

NOTE Confidence: 0.9766455

00:04:13.865 --> 00:04:14.365 oligometastatic

NOTE Confidence: 0.75694585

00:04:14.985 --> 00:04:15.485 disease,

NOTE Confidence: 0.9372978

00:04:16.089 --> 00:04:17.289 typically meaning it's gone to

NOTE Confidence: 0.9372978

00:04:17.289 --> 00:04:19.289 one organ, sometimes even multiple

NOTE Confidence: 0.9372978

00:04:19.289 --> 00:04:20.830 sites in in the organ.

NOTE Confidence: 0.989003

00:04:21.449 --> 00:04:22.729 The definition for this is

NOTE Confidence: 0.989003

00:04:22.729 --> 00:04:23.210 varied,

NOTE Confidence: 0.9843985

00:04:23.610 --> 00:04:25.610 depending on, depending on what,

NOTE Confidence: 0.94208694

00:04:26.330 --> 00:04:28.245 what guideline you follow. But

NOTE Confidence: 0.94208694

00:04:28.404 --> 00:04:29.845 the the the overall term

NOTE Confidence: 0.94208694

00:04:29.845 --> 00:04:30.345 oligometastatic

NOTE Confidence: 0.99358064

00:04:30.725 --> 00:04:33.125 disease means limited metastatic disease.

NOTE Confidence: 0.99358064

00:04:33.125 --> 00:04:34.565 So despite the cancer having

NOTE Confidence: 0.99358064

00:04:34.565 --> 00:04:35.865 spread, it hasn't spread,

NOTE Confidence: 0.9718343

00:04:37.125 --> 00:04:37.625 as,

NOTE Confidence: 0.9710679

00:04:38.085 --> 00:04:38.904 as much as,

NOTE Confidence: 0.8625483

00:04:40.574 --> 00:04:41.074 other

NOTE Confidence: 0.96569294

00:04:41.539 --> 00:04:42.979 other other instances. And and

NOTE Confidence: 0.96569294

00:04:42.979 --> 00:04:44.900 usually with oligometastatic disease, our

NOTE Confidence: 0.96569294

00:04:44.900 --> 00:04:46.500 goal is to address the

NOTE Confidence: 0.96569294

00:04:46.500 --> 00:04:47.699 disease with more than just

NOTE Confidence: 0.96569294

00:04:47.699 --> 00:04:48.660 surgery. So if we think

NOTE Confidence: 0.96569294

00:04:48.660 --> 00:04:50.180 about a colon tumor, the

NOTE Confidence: 0.96569294

00:04:50.180 --> 00:04:51.479 most con colorectal

NOTE Confidence: 0.97303724

00:04:51.860 --> 00:04:53.220 tumor, the most common site

NOTE Confidence: 0.97303724

00:04:53.220 --> 00:04:54.599 that that may spread to

NOTE Confidence: 0.97303724

00:04:54.660 --> 00:04:55.779 would be the liver. And

NOTE Confidence: 0.97303724

00:04:55.779 --> 00:04:56.900 once it's spread to the

NOTE Confidence: 0.97303724

00:04:56.900 --> 00:04:58.235 liver or the lung or

NOTE Confidence: 0.97303724

00:04:58.235 --> 00:04:59.214 the abdominal cavity,

NOTE Confidence: 0.9806925

00:04:59.595 --> 00:05:00.955 by definition, it is stage

NOTE Confidence: 0.9806925

00:05:00.955 --> 00:05:02.475 four disease. It is it

NOTE Confidence: 0.9806925

00:05:02.475 --> 00:05:03.595 is broken out of the

NOTE Confidence: 0.9806925

00:05:03.595 --> 00:05:04.714 colon and the lymph nodes

NOTE Confidence: 0.9806925

00:05:04.714 --> 00:05:06.154 in that area and and

NOTE Confidence: 0.9806925

00:05:06.154 --> 00:05:07.615 spread to other organs.

NOTE Confidence: 0.9595191

00:05:08.875 --> 00:05:10.630 Whereas a cancer that's that's

NOTE Confidence: 0.9595191

00:05:10.630 --> 00:05:11.510 only spread to a lymph

NOTE Confidence: 0.9595191

00:05:11.510 --> 00:05:12.710 node but not distantly would

NOTE Confidence: 0.9595191

00:05:12.710 --> 00:05:13.930 be a stage three disease,

NOTE Confidence: 0.9595191

00:05:14.070 --> 00:05:15.510 and cancers that have more

NOTE Confidence: 0.9595191

00:05:15.510 --> 00:05:16.950 minorly invaded into the wall

NOTE Confidence: 0.9595191

00:05:16.950 --> 00:05:17.910 of the colon but not

NOTE Confidence: 0.9595191

00:05:17.910 --> 00:05:18.950 spread to any lymph nodes

NOTE Confidence: 0.9595191

00:05:18.950 --> 00:05:19.610 or distantly

NOTE Confidence: 0.8634512

00:05:20.070 --> 00:05:21.510 would be a stage two

NOTE Confidence: 0.8634512

00:05:21.510 --> 00:05:22.810 disease, and and minimal

NOTE Confidence: 0.98364204

00:05:23.110 --> 00:05:24.550 invasion into the colon wall

NOTE Confidence: 0.98364204

00:05:24.550 --> 00:05:25.430 might be a stage one

NOTE Confidence: 0.98364204

00:05:25.430 --> 00:05:25.875 tumor.

NOTE Confidence: 0.97537994

00:05:27.075 --> 00:05:28.435 And so one of the

NOTE Confidence: 0.97537994

00:05:28.435 --> 00:05:30.275 first questions we have, as

NOTE Confidence: 0.97537994

00:05:30.275 --> 00:05:31.654 a group in our multidisciplinary

NOTE Confidence: 0.9441517

00:05:32.035 --> 00:05:33.635 tumor boards when we see

NOTE Confidence: 0.9441517

00:05:33.635 --> 00:05:35.495 somebody diagnosed with ole comatostatic

NOTE Confidence: 0.9441517

00:05:35.714 --> 00:05:37.315 diseases, does this patient still

NOTE Confidence: 0.9441517

00:05:37.315 --> 00:05:38.695 have a pathway to cure?

NOTE Confidence: 0.9441517

00:05:38.755 --> 00:05:39.975 And we work together

NOTE Confidence: 0.99327505

00:05:40.460 --> 00:05:42.000 to usually use some combination

NOTE Confidence: 0.99327505

00:05:42.060 --> 00:05:42.800 of chemotherapy,

NOTE Confidence: 0.994868

00:05:43.420 --> 00:05:43.920 radiation,

NOTE Confidence: 0.97743076

00:05:44.460 --> 00:05:46.160 and surgery to maybe,

NOTE Confidence: 0.9772108

00:05:47.020 --> 00:05:48.700 completely remove and eliminate all

NOTE Confidence: 0.9772108

00:05:48.700 --> 00:05:50.220 the cancer. And, here's an

NOTE Confidence: 0.9772108

00:05:50.220 --> 00:05:50.720 example.

NOTE Confidence: 0.97698057

00:05:51.180 --> 00:05:52.220 So this is a CAT

NOTE Confidence: 0.97698057

00:05:52.220 --> 00:05:53.660 scan. And in this CAT

NOTE Confidence: 0.97698057

00:05:53.660 --> 00:05:54.160 scan,

NOTE Confidence: 0.99703544

00:05:54.654 --> 00:05:55.854 we're looking up from this

NOTE Confidence: 0.99703544

00:05:55.854 --> 00:05:57.154 patient's feet. So,

NOTE Confidence: 0.9894974

00:05:57.615 --> 00:05:59.535 if we if, if that's

NOTE Confidence: 0.9894974

00:05:59.535 --> 00:06:00.415 the case, this would be

NOTE Confidence: 0.9894974

00:06:00.415 --> 00:06:01.135 the right side of the

NOTE Confidence: 0.9894974

00:06:01.135 --> 00:06:01.635 patient,

NOTE Confidence: 0.95452505

00:06:02.415 --> 00:06:03.615 with my cursor. So left

NOTE Confidence: 0.95452505

00:06:03.615 --> 00:06:04.495 side of the screen, right

NOTE Confidence: 0.95452505

00:06:04.495 --> 00:06:06.115 side of the patient. Left,

NOTE Confidence: 0.95656526

00:06:07.170 --> 00:06:08.850 the the this would be

NOTE Confidence: 0.95656526

00:06:08.850 --> 00:06:09.650 the left side of the

NOTE Confidence: 0.95656526

00:06:09.650 --> 00:06:11.250 patient. This is the back.

NOTE Confidence: 0.95656526

00:06:11.250 --> 00:06:12.050 So you can see the

NOTE Confidence: 0.95656526

00:06:12.050 --> 00:06:13.490 spinal bone, one of these

NOTE Confidence: 0.95656526

00:06:13.490 --> 00:06:15.250 vertebral bones right there, and

NOTE Confidence: 0.95656526

00:06:15.250 --> 00:06:15.910 the chest,

NOTE Confidence: 0.9732339

00:06:16.370 --> 00:06:17.170 at the top of the

NOTE Confidence: 0.9732339

00:06:17.170 --> 00:06:19.250 screen. And this patient's laying

NOTE Confidence: 0.9732339

00:06:19.250 --> 00:06:20.370 on their back. We're looking

NOTE Confidence: 0.9732339

00:06:20.370 --> 00:06:21.845 up up from their feet,

NOTE Confidence: 0.9732339

00:06:21.845 --> 00:06:22.645 and they're sliced like a

NOTE Confidence: 0.9732339

00:06:22.645 --> 00:06:23.525 loaf of bread, and this

NOTE Confidence: 0.9732339

00:06:23.525 --> 00:06:24.665 is one of those slices.

NOTE Confidence: 0.9732339

00:06:24.885 --> 00:06:26.645 So this big gray area

NOTE Confidence: 0.9732339

00:06:26.645 --> 00:06:28.005 would be the liver, and

NOTE Confidence: 0.9732339

00:06:28.005 --> 00:06:28.885 in it is a a

NOTE Confidence: 0.9732339

00:06:28.885 --> 00:06:30.005 tumor there that you can

NOTE Confidence: 0.9732339

00:06:30.005 --> 00:06:31.925 see that I'm, running the

NOTE Confidence: 0.9732339

00:06:31.925 --> 00:06:33.525 cursor around right there. So

NOTE Confidence: 0.9732339

00:06:33.525 --> 00:06:34.585 this is an isolated,

NOTE Confidence: 0.9708423

00:06:36.250 --> 00:06:37.450 isolated frame of the CAT

NOTE Confidence: 0.9708423

00:06:37.450 --> 00:06:38.330 scan, but this was an

NOTE Confidence: 0.9708423

00:06:38.330 --> 00:06:38.830 isolated,

NOTE Confidence: 0.88422173

00:06:39.450 --> 00:06:39.950 disease,

NOTE Confidence: 0.9997649

00:06:40.730 --> 00:06:41.390 that was

NOTE Confidence: 0.93919486

00:06:42.490 --> 00:06:43.610 able to be removed by

NOTE Confidence: 0.93919486

00:06:43.610 --> 00:06:44.110 surgery.

NOTE Confidence: 0.96309346

00:06:44.650 --> 00:06:45.770 On the other hand, here's

NOTE Confidence: 0.96309346

00:06:45.770 --> 00:06:47.550 another example. Same orientation,

NOTE Confidence: 0.99730873

00:06:47.930 --> 00:06:48.670 right side,

NOTE Confidence: 0.99957454

00:06:49.255 --> 00:06:50.075 left side,

NOTE Confidence: 0.9434355

00:06:50.535 --> 00:06:52.055 chest, back. But we can

NOTE Confidence: 0.9434355

00:06:52.055 --> 00:06:53.255 see here this this patient's

NOTE Confidence: 0.9434355

00:06:53.255 --> 00:06:55.435 liver, unfortunately, has numerous cancers,

NOTE Confidence: 0.9224334

00:06:55.735 --> 00:06:56.535 and it's not so much

NOTE Confidence: 0.9224334

00:06:56.535 --> 00:06:57.195 a oligometastatic

NOTE Confidence: 0.9809883

00:06:57.654 --> 00:06:58.714 disease that we,

NOTE Confidence: 0.9788253

00:06:59.095 --> 00:07:00.775 are optimistic upfront that we

NOTE Confidence: 0.9788253

00:07:00.775 --> 00:07:01.835 can get that patient,

NOTE Confidence: 0.99075127

00:07:02.360 --> 00:07:03.180 get all that,

NOTE Confidence: 0.9230887

00:07:03.880 --> 00:07:05.160 all all those tumors removed.

NOTE Confidence: 0.9230887

00:07:05.160 --> 00:07:06.600 But perhaps with the combination

NOTE Confidence: 0.9230887

00:07:06.600 --> 00:07:07.339 of chemotherapy

NOTE Confidence: 0.9901577

00:07:07.800 --> 00:07:09.240 and potentially other treatments, we

NOTE Confidence: 0.9901577

00:07:09.240 --> 00:07:10.360 can shrink down those tumors

NOTE Confidence: 0.9901577

00:07:10.360 --> 00:07:11.880 enough to change the the

NOTE Confidence: 0.9901577

00:07:11.880 --> 00:07:13.320 scenario there and get that

NOTE Confidence: 0.9901577

00:07:13.320 --> 00:07:14.380 patient to surgery.

NOTE Confidence: 0.98701984

00:07:16.205 --> 00:07:17.485 One of the other things

NOTE Confidence: 0.98701984

00:07:17.485 --> 00:07:19.324 that we we know and

NOTE Confidence: 0.98701984

00:07:19.324 --> 00:07:20.444 and try and subtype the

NOTE Confidence: 0.98701984

00:07:20.444 --> 00:07:21.805 cancer a bit differently is

NOTE Confidence: 0.98701984

00:07:21.805 --> 00:07:23.085 that there's a difference between

NOTE Confidence: 0.98701984

00:07:23.085 --> 00:07:24.444 tumors that arise on the

NOTE Confidence: 0.98701984

00:07:24.444 --> 00:07:25.585 left side of the colon,

NOTE Confidence: 0.98701984

00:07:25.884 --> 00:07:27.630 which is, again, your right,

NOTE Confidence: 0.97446615

00:07:28.670 --> 00:07:29.550 or the right side of

NOTE Confidence: 0.97446615

00:07:29.550 --> 00:07:30.350 the colon, which would be

NOTE Confidence: 0.97446615

00:07:30.350 --> 00:07:31.550 your left because this is

NOTE Confidence: 0.97446615

00:07:31.550 --> 00:07:32.910 a a diagram of looking

NOTE Confidence: 0.97446615

00:07:32.910 --> 00:07:34.270 straight at somebody's colon. So

NOTE Confidence: 0.97446615

00:07:34.270 --> 00:07:35.630 this would be the start

NOTE Confidence: 0.97446615

00:07:35.630 --> 00:07:36.370 of the colon,

NOTE Confidence: 0.9070339

00:07:36.750 --> 00:07:38.590 as stool moves, follows this

NOTE Confidence: 0.9070339

00:07:38.590 --> 00:07:39.790 path and ultimately ends up

NOTE Confidence: 0.9070339

00:07:39.790 --> 00:07:41.035 in the rectum and then

NOTE Confidence: 0.9070339

00:07:41.035 --> 00:07:42.575 is x-rayed through the anus.

NOTE Confidence: 0.9761397

00:07:43.355 --> 00:07:44.875 So we've, we've,

NOTE Confidence: 0.98409766

00:07:45.275 --> 00:07:46.715 identified as a field that

NOTE Confidence: 0.98409766

00:07:46.715 --> 00:07:47.755 when we find a tumor

NOTE Confidence: 0.98409766

00:07:47.755 --> 00:07:48.555 in the right side of

NOTE Confidence: 0.98409766

00:07:48.555 --> 00:07:49.135 the colon

NOTE Confidence: 0.96649057

00:07:49.595 --> 00:07:51.035 and versus the left side

NOTE Confidence: 0.96649057

00:07:51.035 --> 00:07:51.995 of the colon and we

NOTE Confidence: 0.96649057

00:07:51.995 --> 00:07:53.595 sequence that that cancer to

NOTE Confidence: 0.96649057

00:07:53.595 --> 00:07:54.875 find out what mutations are

NOTE Confidence: 0.96649057

00:07:54.875 --> 00:07:56.630 present in the cancer or

NOTE Confidence: 0.96649057

00:07:56.630 --> 00:07:58.470 look at different methylation profiles,

NOTE Confidence: 0.96649057

00:07:58.470 --> 00:07:59.990 which are other DNA changes

NOTE Confidence: 0.96649057

00:07:59.990 --> 00:08:00.730 in the tumor,

NOTE Confidence: 0.9969959

00:08:01.430 --> 00:08:02.470 we find that they're very

NOTE Confidence: 0.9969959

00:08:02.470 --> 00:08:03.830 different cancers. And the reason

NOTE Confidence: 0.9969959

00:08:03.830 --> 00:08:04.330 is,

NOTE Confidence: 0.9477918

00:08:05.030 --> 00:08:07.290 they the the tissue that

NOTE Confidence: 0.9477918

00:08:07.430 --> 00:08:09.370 the, the normal colon

NOTE Confidence: 0.95725524

00:08:10.664 --> 00:08:12.764 comes from different embryological origin

NOTE Confidence: 0.95725524

00:08:12.824 --> 00:08:14.425 cells as our bodies are

NOTE Confidence: 0.95725524

00:08:14.425 --> 00:08:15.784 forming. And this leads to

NOTE Confidence: 0.95725524

00:08:15.784 --> 00:08:17.625 just different behaviors of, of

NOTE Confidence: 0.95725524

00:08:17.625 --> 00:08:18.824 these normal cells that can

NOTE Confidence: 0.95725524

00:08:18.824 --> 00:08:19.324 ultimately

NOTE Confidence: 0.9765129

00:08:19.784 --> 00:08:21.544 develop into cancer. And this

NOTE Confidence: 0.9765129

00:08:21.544 --> 00:08:22.985 helps me as a medical

NOTE Confidence: 0.9765129

00:08:22.985 --> 00:08:23.485 oncologist

NOTE Confidence: 0.89147985

00:08:23.944 --> 00:08:24.810 realize that,

NOTE Confidence: 0.9927547

00:08:25.290 --> 00:08:26.889 there are different treatments to

NOTE Confidence: 0.9927547

00:08:26.889 --> 00:08:27.389 use,

NOTE Confidence: 0.9982739

00:08:27.930 --> 00:08:29.610 or certain tests to do

NOTE Confidence: 0.9982739

00:08:29.610 --> 00:08:30.430 to identify

NOTE Confidence: 0.96795833

00:08:30.730 --> 00:08:31.389 the nuances,

NOTE Confidence: 0.9742154

00:08:32.010 --> 00:08:33.290 that may be present for

NOTE Confidence: 0.9742154

00:08:33.290 --> 00:08:34.410 the to to establish the

NOTE Confidence: 0.9742154

00:08:34.410 --> 00:08:36.090 differences of those tumors. There

NOTE Confidence: 0.9742154

00:08:36.090 --> 00:08:37.529 is also some differences in

NOTE Confidence: 0.9742154

00:08:37.529 --> 00:08:38.890 how these cancers may even

NOTE Confidence: 0.9742154

00:08:38.890 --> 00:08:40.350 spread. So we find that

NOTE Confidence: 0.9742154

00:08:40.524 --> 00:08:41.645 these cancers on the right

NOTE Confidence: 0.9742154

00:08:41.645 --> 00:08:42.684 side tend to more be

NOTE Confidence: 0.9742154

00:08:42.684 --> 00:08:43.565 more likely to have a

NOTE Confidence: 0.9742154

00:08:43.565 --> 00:08:44.925 BRAF mutation, which is a

NOTE Confidence: 0.9742154

00:08:44.925 --> 00:08:46.065 targetable mutation,

NOTE Confidence: 0.92735523

00:08:46.445 --> 00:08:47.404 to be more likely to

NOTE Confidence: 0.92735523

00:08:47.404 --> 00:08:48.925 be MSI high, which means

NOTE Confidence: 0.92735523

00:08:48.925 --> 00:08:50.625 immunotherapy may be indicated,

NOTE Confidence: 0.9639627

00:08:51.485 --> 00:08:52.684 when the when the cancer

NOTE Confidence: 0.9639627

00:08:52.684 --> 00:08:53.345 has spread.

NOTE Confidence: 0.9197283

00:08:54.500 --> 00:08:55.500 And whereas the cancers on

NOTE Confidence: 0.9197283

00:08:55.500 --> 00:08:56.300 the left side are less

NOTE Confidence: 0.9197283

00:08:56.300 --> 00:08:57.580 likely to have those mutations,

NOTE Confidence: 0.9197283

00:08:57.580 --> 00:08:58.620 and we can use other

NOTE Confidence: 0.9197283

00:08:58.620 --> 00:09:00.380 targeted therapies for those tumors

NOTE Confidence: 0.9197283

00:09:00.380 --> 00:09:01.900 such as panatumumab, of course,

NOTE Confidence: 0.9197283

00:09:01.900 --> 00:09:02.720 it talks about.

NOTE Confidence: 0.99782735

00:09:03.980 --> 00:09:06.240 So from a biological perspective,

NOTE Confidence: 0.99788314

00:09:06.605 --> 00:09:07.505 we think of,

NOTE Confidence: 0.98198414

00:09:08.205 --> 00:09:09.825 colon cancer as arising

NOTE Confidence: 0.98009413

00:09:10.205 --> 00:09:12.045 through a process called the,

NOTE Confidence: 0.92448664

00:09:12.365 --> 00:09:14.225 adenoma to carcinoma sequence,

NOTE Confidence: 0.9976371

00:09:14.605 --> 00:09:16.765 where we we start with

NOTE Confidence: 0.9976371

00:09:16.765 --> 00:09:17.505 a normal,

NOTE Confidence: 0.9666624

00:09:18.365 --> 00:09:19.965 a normal intestinal, what we

NOTE Confidence: 0.9666624

00:09:19.965 --> 00:09:20.785 call epithelium,

NOTE Confidence: 0.96803784

00:09:21.309 --> 00:09:23.390 normal intestinal lining. And what

NOTE Confidence: 0.96803784

00:09:23.390 --> 00:09:25.070 can happen over time is

NOTE Confidence: 0.96803784

00:09:25.070 --> 00:09:26.750 polyps form through the disruption

NOTE Confidence: 0.96803784

00:09:26.750 --> 00:09:28.190 of this normal lining, a

NOTE Confidence: 0.96803784

00:09:28.190 --> 00:09:29.010 normal epithelium.

NOTE Confidence: 0.9594971

00:09:29.390 --> 00:09:30.190 And so then you get

NOTE Confidence: 0.9594971

00:09:30.190 --> 00:09:31.550 a small polyp and then

NOTE Confidence: 0.9594971

00:09:31.550 --> 00:09:32.830 a large polyp. And along

NOTE Confidence: 0.9594971

00:09:32.830 --> 00:09:34.670 those way along the way,

NOTE Confidence: 0.9594971

00:09:34.670 --> 00:09:35.934 these cells can start to

NOTE Confidence: 0.9594971

00:09:35.934 --> 00:09:36.995 have some abnormalities

NOTE Confidence: 0.8253149

00:09:37.375 --> 00:09:38.434 and accumulate

NOTE Confidence: 0.88656354

00:09:38.975 --> 00:09:39.475 mutations,

NOTE Confidence: 0.9825448

00:09:39.855 --> 00:09:41.454 which lead these tumor cells

NOTE Confidence: 0.9825448

00:09:41.454 --> 00:09:42.514 to become dysregulated,

NOTE Confidence: 0.964219

00:09:43.295 --> 00:09:43.795 invasive,

NOTE Confidence: 0.9309737

00:09:44.415 --> 00:09:45.394 and and ultimately,

NOTE Confidence: 0.9610036

00:09:46.175 --> 00:09:48.095 if they're invasive, become cancerous

NOTE Confidence: 0.9610036

00:09:48.095 --> 00:09:50.140 cells. And that's that's essentially

NOTE Confidence: 0.9610036

00:09:50.140 --> 00:09:52.000 how this whole process, proceeds

NOTE Confidence: 0.9610036

00:09:52.060 --> 00:09:53.260 in in most tumors are

NOTE Confidence: 0.9610036

00:09:53.260 --> 00:09:53.760 formed.

NOTE Confidence: 0.96544474

00:09:54.540 --> 00:09:56.220 And that the, the the

NOTE Confidence: 0.96544474

00:09:56.220 --> 00:09:57.820 typical time frame this takes

NOTE Confidence: 0.96544474

00:09:57.820 --> 00:09:58.620 is on the order of

NOTE Confidence: 0.96544474

00:09:58.620 --> 00:09:59.500 years, which is why we

NOTE Confidence: 0.96544474

00:09:59.500 --> 00:10:00.160 do colonoscopies,

NOTE Confidence: 0.67910206

00:10:01.500 --> 00:10:02.000 in,

NOTE Confidence: 0.9177543

00:10:03.095 --> 00:10:04.295 every ten years for patients

NOTE Confidence: 0.9177543

00:10:04.295 --> 00:10:05.835 that are are standard risk.

NOTE Confidence: 0.98096806

00:10:07.175 --> 00:10:09.095 Now for medical oncologists, we

NOTE Confidence: 0.98096806

00:10:09.095 --> 00:10:09.495 do,

NOTE Confidence: 0.98688537

00:10:10.455 --> 00:10:12.295 we do quite extensive tumor

NOTE Confidence: 0.98688537

00:10:12.295 --> 00:10:13.895 profiling to determine what are

NOTE Confidence: 0.98688537

00:10:13.895 --> 00:10:15.350 the best therapies we should

NOTE Confidence: 0.98688537

00:10:15.350 --> 00:10:17.029 be offering our patients. So

NOTE Confidence: 0.98688537

00:10:17.029 --> 00:10:18.230 we do some testing, which

NOTE Confidence: 0.98688537

00:10:18.230 --> 00:10:19.130 is called immunohistochemistry,

NOTE Confidence: 0.99238473

00:10:19.750 --> 00:10:20.950 which means we stain the

NOTE Confidence: 0.99238473

00:10:20.950 --> 00:10:21.769 tumor tissue.

NOTE Confidence: 0.9131638

00:10:22.630 --> 00:10:23.830 I should say, we order

NOTE Confidence: 0.9131638

00:10:23.830 --> 00:10:25.190 this testing. Our our our

NOTE Confidence: 0.9131638

00:10:25.190 --> 00:10:26.570 pathologists do this.

NOTE Confidence: 0.9982104

00:10:26.950 --> 00:10:28.170 But we order immunohistochemistry

NOTE Confidence: 0.9934646

00:10:28.709 --> 00:10:29.209 testing,

NOTE Confidence: 0.9614035

00:10:29.525 --> 00:10:30.645 which means the tissue is

NOTE Confidence: 0.9614035

00:10:30.645 --> 00:10:32.005 stained and it's looked at

NOTE Confidence: 0.9614035

00:10:32.005 --> 00:10:33.125 under a microscope by the

NOTE Confidence: 0.9614035

00:10:33.125 --> 00:10:34.405 pathologist to see the presence

NOTE Confidence: 0.9614035

00:10:34.405 --> 00:10:35.065 or absence

NOTE Confidence: 0.9379484

00:10:35.445 --> 00:10:36.965 of of certain proteins. And

NOTE Confidence: 0.9379484

00:10:36.965 --> 00:10:38.325 some examples would be looking

NOTE Confidence: 0.9379484

00:10:38.325 --> 00:10:40.005 for mismatch repair proteins. That's

NOTE Confidence: 0.9379484

00:10:40.005 --> 00:10:41.125 trying to identify whether or

NOTE Confidence: 0.9379484

00:10:41.125 --> 00:10:42.345 not a tumor is MSI

NOTE Confidence: 0.9379484

00:10:42.405 --> 00:10:43.925 high and therefore sensitive to

NOTE Confidence: 0.9379484

00:10:43.925 --> 00:10:44.425 immunotherapy.

NOTE Confidence: 0.97989094

00:10:45.030 --> 00:10:46.470 Or maybe looking at HER2,

NOTE Confidence: 0.97989094

00:10:46.470 --> 00:10:47.510 which is a different protein,

NOTE Confidence: 0.97989094

00:10:47.510 --> 00:10:48.710 and there are targeted therapies

NOTE Confidence: 0.97989094

00:10:48.710 --> 00:10:50.070 for that. And and we

NOTE Confidence: 0.97989094

00:10:50.150 --> 00:10:51.510 then we also sequence the

NOTE Confidence: 0.97989094

00:10:51.510 --> 00:10:53.030 DNA of of virtually all

NOTE Confidence: 0.97989094

00:10:53.030 --> 00:10:53.850 tumors now,

NOTE Confidence: 0.97590613

00:10:54.390 --> 00:10:55.830 and try and identify whether

NOTE Confidence: 0.97590613

00:10:55.830 --> 00:10:57.690 mutations in KRAS, BRAF,

NOTE Confidence: 0.88191223

00:10:58.514 --> 00:10:59.654 or or other,

NOTE Confidence: 0.9581615

00:11:00.115 --> 00:11:01.475 alterations are present because we

NOTE Confidence: 0.9581615

00:11:01.475 --> 00:11:03.175 have targeted therapies for these

NOTE Confidence: 0.9581615

00:11:03.394 --> 00:11:04.695 these these scenarios.

NOTE Confidence: 0.9710589

00:11:05.635 --> 00:11:07.075 And so a biopsy may

NOTE Confidence: 0.9710589

00:11:07.075 --> 00:11:08.054 be used again,

NOTE Confidence: 0.93188804

00:11:08.434 --> 00:11:09.875 from a a lung biopsy

NOTE Confidence: 0.93188804

00:11:09.875 --> 00:11:11.075 if this cancer is spread

NOTE Confidence: 0.93188804

00:11:11.075 --> 00:11:12.535 to the lung and then

NOTE Confidence: 0.96498805

00:11:13.100 --> 00:11:14.059 stained for some of these

NOTE Confidence: 0.96498805

00:11:14.059 --> 00:11:14.559 immunohistochemistry

NOTE Confidence: 0.965969

00:11:15.100 --> 00:11:16.380 tests. We can even do

NOTE Confidence: 0.965969

00:11:16.380 --> 00:11:17.660 liquid biopsies now. So we

NOTE Confidence: 0.965969

00:11:17.660 --> 00:11:18.620 don't even need to always

NOTE Confidence: 0.965969

00:11:18.620 --> 00:11:19.980 biopsy the tumor and sequence

NOTE Confidence: 0.965969

00:11:19.980 --> 00:11:21.100 the tumor. Sometimes we can

NOTE Confidence: 0.965969

00:11:21.100 --> 00:11:22.620 just get those little DNA

NOTE Confidence: 0.965969

00:11:22.620 --> 00:11:24.139 fragments from the blood and

NOTE Confidence: 0.965969

00:11:24.139 --> 00:11:25.660 sequence those and be confident

NOTE Confidence: 0.965969

00:11:25.660 --> 00:11:27.115 that there's a KRAS mutation

NOTE Confidence: 0.965969

00:11:27.115 --> 00:11:28.154 or the or a KRAS

NOTE Confidence: 0.965969

00:11:28.154 --> 00:11:29.915 mutation is absent. So it's

NOTE Confidence: 0.965969

00:11:29.915 --> 00:11:31.295 absolutely standard of care,

NOTE Confidence: 0.92756504

00:11:31.755 --> 00:11:33.434 everywhere and certainly at Yale.

NOTE Confidence: 0.92756504

00:11:33.434 --> 00:11:34.714 We'd be doing all of

NOTE Confidence: 0.92756504

00:11:34.714 --> 00:11:35.675 the testing that's here on

NOTE Confidence: 0.92756504

00:11:35.675 --> 00:11:37.214 this page, testing the DNA,

NOTE Confidence: 0.92756504

00:11:37.275 --> 00:11:38.910 testing the tissue to personalize

NOTE Confidence: 0.92756504

00:11:38.910 --> 00:11:39.870 the treatment and make sure

NOTE Confidence: 0.92756504

00:11:39.870 --> 00:11:40.990 we're offering our patients the

NOTE Confidence: 0.92756504

00:11:40.990 --> 00:11:42.210 most effective therapy.

NOTE Confidence: 0.98230904

00:11:42.990 --> 00:11:44.270 So these are the the

NOTE Confidence: 0.98230904

00:11:44.270 --> 00:11:46.370 tests that I advocate that,

NOTE Confidence: 0.9840595

00:11:47.230 --> 00:11:49.309 that, all of my patients

NOTE Confidence: 0.9840595

00:11:49.309 --> 00:11:50.715 should know the results from,

NOTE Confidence: 0.97003365

00:11:51.275 --> 00:11:52.155 to make sure that they're

NOTE Confidence: 0.97003365

00:11:52.155 --> 00:11:52.655 getting,

NOTE Confidence: 0.9740556

00:11:53.755 --> 00:11:54.815 the most effective,

NOTE Confidence: 0.98796666

00:11:55.355 --> 00:11:56.715 therapies. And and we need

NOTE Confidence: 0.98796666

00:11:56.715 --> 00:11:57.915 every last detail here to

NOTE Confidence: 0.98796666

00:11:57.915 --> 00:11:59.115 be confident that we're actually

NOTE Confidence: 0.98796666

00:11:59.115 --> 00:12:00.075 giving the right drug to

NOTE Confidence: 0.98796666

00:12:00.075 --> 00:12:00.875 the right patient at the

NOTE Confidence: 0.98796666

00:12:00.875 --> 00:12:01.995 right time. So we need

NOTE Confidence: 0.98796666

00:12:01.995 --> 00:12:02.895 to know the microsatellite

NOTE Confidence: 0.42090482

00:12:03.275 --> 00:12:03.775 state

NOTE Confidence: 0.95521384

00:12:04.235 --> 00:12:06.495 status. And for patients that

NOTE Confidence: 0.9977684

00:12:07.170 --> 00:12:07.670 are

NOTE Confidence: 0.8675132

00:12:08.370 --> 00:12:09.830 metastatic when the tumors

NOTE Confidence: 0.9155703

00:12:10.690 --> 00:12:11.190 metastasized,

NOTE Confidence: 0.9770384

00:12:11.809 --> 00:12:13.010 most of those tumors are

NOTE Confidence: 0.9770384

00:12:13.010 --> 00:12:14.230 going to be met microsatellite

NOTE Confidence: 0.9770384

00:12:14.370 --> 00:12:15.809 stable. So ninety six percent

NOTE Confidence: 0.9770384

00:12:15.809 --> 00:12:17.330 of the time, we find

NOTE Confidence: 0.9770384

00:12:17.330 --> 00:12:19.010 that tumors are microsatellite stable,

NOTE Confidence: 0.9770384

00:12:19.010 --> 00:12:20.450 which means at present, there's

NOTE Confidence: 0.9770384

00:12:20.450 --> 00:12:21.410 not a large role for

NOTE Confidence: 0.9770384

00:12:21.410 --> 00:12:21.910 immunotherapy.

NOTE Confidence: 0.8403012

00:12:22.804 --> 00:12:23.684 But for these,

NOTE Confidence: 0.97968423

00:12:24.085 --> 00:12:24.964 two to four percent of

NOTE Confidence: 0.97968423

00:12:24.964 --> 00:12:26.005 patients that are diagnosed with

NOTE Confidence: 0.97968423

00:12:26.005 --> 00:12:28.325 microsatellite instability high tumors or

NOTE Confidence: 0.97968423

00:12:28.325 --> 00:12:30.745 MSI high tumors, immunotherapy

NOTE Confidence: 0.8882414

00:12:31.365 --> 00:12:32.425 is is,

NOTE Confidence: 0.99069715

00:12:33.605 --> 00:12:35.045 the main treatment we're using

NOTE Confidence: 0.99069715

00:12:35.045 --> 00:12:36.165 for these patients, and it's

NOTE Confidence: 0.99069715

00:12:36.165 --> 00:12:37.525 highly effective. So this is

NOTE Confidence: 0.99069715

00:12:37.525 --> 00:12:39.100 a can't miss kind of

NOTE Confidence: 0.99069715

00:12:39.100 --> 00:12:40.059 marker that we need to

NOTE Confidence: 0.99069715

00:12:40.059 --> 00:12:41.179 test all of our patients

NOTE Confidence: 0.99069715

00:12:41.179 --> 00:12:42.540 for. And then we also

NOTE Confidence: 0.99069715

00:12:42.540 --> 00:12:43.420 now need to know about

NOTE Confidence: 0.99069715

00:12:43.420 --> 00:12:44.320 KRAS mutations.

NOTE Confidence: 0.9869119

00:12:44.860 --> 00:12:45.820 Is it present or is

NOTE Confidence: 0.9869119

00:12:45.820 --> 00:12:46.620 it not? What is the

NOTE Confidence: 0.9869119

00:12:46.620 --> 00:12:48.480 KRAS mutation? If it's present,

NOTE Confidence: 0.9869119

00:12:48.540 --> 00:12:49.500 we may have drugs that

NOTE Confidence: 0.9869119

00:12:49.500 --> 00:12:51.100 target that KRAS mutation. If

NOTE Confidence: 0.9869119

00:12:51.100 --> 00:12:52.459 it's absent, that gives me

NOTE Confidence: 0.9869119

00:12:52.459 --> 00:12:52.959 insights

NOTE Confidence: 0.990165

00:12:53.605 --> 00:12:55.225 about using specific therapies.

NOTE Confidence: 0.94991434

00:12:55.605 --> 00:12:56.725 And then the BRAF v

NOTE Confidence: 0.94991434

00:12:56.725 --> 00:12:58.005 six hundred e mutation, which

NOTE Confidence: 0.94991434

00:12:58.005 --> 00:12:59.285 historically has been a very

NOTE Confidence: 0.94991434

00:12:59.285 --> 00:13:01.304 aggressive mutation, but we have

NOTE Confidence: 0.94991434

00:13:01.525 --> 00:13:03.125 targeted therapies for this in

NOTE Confidence: 0.94991434

00:13:03.125 --> 00:13:04.905 there. It's important they're instituted

NOTE Confidence: 0.94991434

00:13:05.045 --> 00:13:06.485 early, and we we know

NOTE Confidence: 0.94991434

00:13:06.485 --> 00:13:07.765 that there's great data that

NOTE Confidence: 0.94991434

00:13:07.765 --> 00:13:08.490 backs that up,

NOTE Confidence: 0.96170604

00:13:09.209 --> 00:13:10.410 as well as HER2 status

NOTE Confidence: 0.96170604

00:13:10.410 --> 00:13:11.309 that gives us,

NOTE Confidence: 0.9247663

00:13:13.450 --> 00:13:15.209 insights about using HER2 targeted

NOTE Confidence: 0.9247663

00:13:15.209 --> 00:13:17.050 therapies. And lastly, again, the

NOTE Confidence: 0.9247663

00:13:17.050 --> 00:13:18.890 sightedness. I need all five

NOTE Confidence: 0.9247663

00:13:18.890 --> 00:13:19.290 of these,

NOTE Confidence: 0.97313154

00:13:20.754 --> 00:13:22.434 these details for every patient

NOTE Confidence: 0.97313154

00:13:22.434 --> 00:13:23.554 I see, every new patient

NOTE Confidence: 0.97313154

00:13:23.554 --> 00:13:24.915 I see, every established patient

NOTE Confidence: 0.97313154

00:13:24.915 --> 00:13:26.274 I see, and make sure

NOTE Confidence: 0.97313154

00:13:26.274 --> 00:13:27.634 they're getting the right treatment,

NOTE Confidence: 0.97313154

00:13:27.634 --> 00:13:28.434 the right drug for the

NOTE Confidence: 0.97313154

00:13:28.434 --> 00:13:29.235 right patient at the right

NOTE Confidence: 0.97313154

00:13:29.235 --> 00:13:31.154 time. So I encourage my

NOTE Confidence: 0.97313154

00:13:31.154 --> 00:13:32.915 patients to be empowered that

NOTE Confidence: 0.97313154

00:13:32.915 --> 00:13:34.035 that this is this is

NOTE Confidence: 0.97313154

00:13:34.035 --> 00:13:34.535 information,

NOTE Confidence: 0.9910344

00:13:35.350 --> 00:13:36.470 that they they should be

NOTE Confidence: 0.9910344

00:13:36.470 --> 00:13:37.990 requesting if if it's not

NOTE Confidence: 0.9910344

00:13:37.990 --> 00:13:39.050 done for some reason.

NOTE Confidence: 0.9765669

00:13:39.830 --> 00:13:41.350 So we initially, we're typically

NOTE Confidence: 0.9765669

00:13:41.350 --> 00:13:43.050 using chemotherapy, FOLFOX,

NOTE Confidence: 0.87779313

00:13:43.510 --> 00:13:44.809 FOLFIRI, FOLFOXURI

NOTE Confidence: 0.9796346

00:13:45.190 --> 00:13:46.490 sometimes. These are chemotherapies.

NOTE Confidence: 0.9642048

00:13:46.790 --> 00:13:48.309 They're not targeted. We use

NOTE Confidence: 0.9642048

00:13:48.309 --> 00:13:49.050 five fluorouracil,

NOTE Confidence: 0.78184366

00:13:49.429 --> 00:13:50.545 which is a a drug

NOTE Confidence: 0.78184366

00:13:50.545 --> 00:13:51.745 we deliver through a five

NOTE Confidence: 0.78184366

00:13:51.745 --> 00:13:52.325 of fusion

NOTE Confidence: 0.957299

00:13:52.785 --> 00:13:54.225 pump over forty six hours.

NOTE Confidence: 0.957299

00:13:54.225 --> 00:13:55.205 We use oxaliplatin

NOTE Confidence: 0.9549283

00:13:55.585 --> 00:13:57.205 given along with that,

NOTE Confidence: 0.7778168

00:13:58.145 --> 00:13:59.765 and or or folfury,

NOTE Confidence: 0.7509082

00:14:00.705 --> 00:14:02.145 five of fluoroeracil with our

NOTE Confidence: 0.7509082

00:14:02.145 --> 00:14:02.645 Inatecan.

NOTE Confidence: 0.99426883

00:14:03.570 --> 00:14:04.950 These are the initial chemotherapies

NOTE Confidence: 0.99426883

00:14:05.170 --> 00:14:06.130 we'll start with for most

NOTE Confidence: 0.99426883

00:14:06.130 --> 00:14:06.630 patients.

NOTE Confidence: 0.99297225

00:14:06.930 --> 00:14:07.970 We'll often add on a

NOTE Confidence: 0.99297225

00:14:07.970 --> 00:14:09.330 drug on top of them,

NOTE Confidence: 0.9680292

00:14:09.809 --> 00:14:10.950 called either bevacizumab

NOTE Confidence: 0.9599963

00:14:11.410 --> 00:14:13.330 or panetumab and cetuximab. And

NOTE Confidence: 0.9599963

00:14:13.330 --> 00:14:15.170 these and and which what

NOTE Confidence: 0.9599963

00:14:15.170 --> 00:14:16.130 what we add in the

NOTE Confidence: 0.9599963

00:14:16.130 --> 00:14:17.830 red here depends on

NOTE Confidence: 0.9908954

00:14:18.324 --> 00:14:19.065 what mutations are present.

NOTE Confidence: 0.97855693

00:14:19.845 --> 00:14:21.285 And, also, again, we'll add

NOTE Confidence: 0.97855693

00:14:21.285 --> 00:14:23.204 on, a BRAF inhibitor if

NOTE Confidence: 0.97855693

00:14:23.204 --> 00:14:24.404 a BRAF b six hundred

NOTE Confidence: 0.97855693

00:14:24.404 --> 00:14:25.764 e mutation is present. Again,

NOTE Confidence: 0.97855693

00:14:25.764 --> 00:14:27.045 why we need to know

NOTE Confidence: 0.97855693

00:14:27.045 --> 00:14:28.404 all these little details is

NOTE Confidence: 0.97855693

00:14:28.404 --> 00:14:30.345 because we personalize each treatment

NOTE Confidence: 0.97855693

00:14:30.644 --> 00:14:31.925 to each patient to make

NOTE Confidence: 0.97855693

00:14:31.925 --> 00:14:33.204 sure we're being as effective

NOTE Confidence: 0.97855693

00:14:33.204 --> 00:14:33.630 as

NOTE Confidence: 0.9854604

00:14:34.030 --> 00:14:34.530 possible,

NOTE Confidence: 0.97953063

00:14:34.910 --> 00:14:36.830 towards the patient. And so

NOTE Confidence: 0.97953063

00:14:36.830 --> 00:14:37.790 I'm gonna just show a

NOTE Confidence: 0.97953063

00:14:37.790 --> 00:14:39.630 couple slides about how these

NOTE Confidence: 0.97953063

00:14:39.630 --> 00:14:41.310 drugs work, how targeted drugs

NOTE Confidence: 0.97953063

00:14:41.310 --> 00:14:42.830 work. So if we think

NOTE Confidence: 0.97953063

00:14:42.830 --> 00:14:43.650 about a cancers,

NOTE Confidence: 0.97947586

00:14:44.190 --> 00:14:45.730 cancer cell, this would be,

NOTE Confidence: 0.96811974

00:14:46.135 --> 00:14:47.894 the membrane or the outside

NOTE Confidence: 0.96811974

00:14:47.894 --> 00:14:49.015 of a cancer cell, and

NOTE Confidence: 0.96811974

00:14:49.015 --> 00:14:50.055 and below here would be,

NOTE Confidence: 0.96811974

00:14:50.055 --> 00:14:51.095 like, the inside, and the

NOTE Confidence: 0.96811974

00:14:51.095 --> 00:14:52.055 nucleus would be, like, the

NOTE Confidence: 0.96811974

00:14:52.055 --> 00:14:53.355 brain of the cancer cell.

NOTE Confidence: 0.936341

00:14:54.055 --> 00:14:55.274 Cancer cells, unfortunately,

NOTE Confidence: 0.9637867

00:14:55.735 --> 00:14:57.015 often have a lot of

NOTE Confidence: 0.9637867

00:14:57.015 --> 00:14:58.695 active signaling, and that stimulates

NOTE Confidence: 0.9637867

00:14:58.695 --> 00:15:00.670 growth. So whereas the all

NOTE Confidence: 0.9637867

00:15:00.670 --> 00:15:01.709 these arrows is just kind

NOTE Confidence: 0.9637867

00:15:01.709 --> 00:15:02.830 of a, like a light

NOTE Confidence: 0.9637867

00:15:02.830 --> 00:15:04.190 switch on or a waterfall

NOTE Confidence: 0.9637867

00:15:04.190 --> 00:15:05.230 on into the brain of

NOTE Confidence: 0.9637867

00:15:05.230 --> 00:15:06.110 the cell telling it to

NOTE Confidence: 0.9637867

00:15:06.110 --> 00:15:07.310 grow. And when we can

NOTE Confidence: 0.9637867

00:15:07.310 --> 00:15:09.070 shut that process down, we

NOTE Confidence: 0.9637867

00:15:09.070 --> 00:15:10.830 can, kill cancer cells. We

NOTE Confidence: 0.9637867

00:15:10.830 --> 00:15:12.430 can certainly slow growth quite

NOTE Confidence: 0.9637867

00:15:12.430 --> 00:15:13.595 effectively. And

NOTE Confidence: 0.97571707

00:15:14.055 --> 00:15:15.334 the idea is to target

NOTE Confidence: 0.97571707

00:15:15.334 --> 00:15:16.375 the cancer cells that have

NOTE Confidence: 0.97571707

00:15:16.375 --> 00:15:17.654 this all activated and spare

NOTE Confidence: 0.97571707

00:15:17.654 --> 00:15:19.514 the normal cells, whereas chemotherapy

NOTE Confidence: 0.97571707

00:15:19.654 --> 00:15:21.654 is more poison oriented and

NOTE Confidence: 0.97571707

00:15:21.654 --> 00:15:22.855 and is not so focused

NOTE Confidence: 0.97571707

00:15:22.855 --> 00:15:23.355 on,

NOTE Confidence: 0.9630128

00:15:23.975 --> 00:15:25.814 specific pathways. So we know

NOTE Confidence: 0.9630128

00:15:25.814 --> 00:15:27.435 when when a KRAS mutation

NOTE Confidence: 0.98885214

00:15:27.800 --> 00:15:29.180 is present, if we can,

NOTE Confidence: 0.97912073

00:15:30.439 --> 00:15:31.180 if we can,

NOTE Confidence: 0.99081093

00:15:32.279 --> 00:15:33.480 target it, we can shut

NOTE Confidence: 0.99081093

00:15:33.480 --> 00:15:34.920 down this pathway. And we

NOTE Confidence: 0.99081093

00:15:34.920 --> 00:15:36.040 know that when there's no

NOTE Confidence: 0.99081093

00:15:36.040 --> 00:15:38.360 KRAS mutation present, we can

NOTE Confidence: 0.99081093

00:15:38.360 --> 00:15:39.000 we can,

NOTE Confidence: 0.9674063

00:15:39.399 --> 00:15:41.339 target these receptors with eGFR

NOTE Confidence: 0.9674063

00:15:41.480 --> 00:15:41.980 inhibitors,

NOTE Confidence: 0.78025347

00:15:42.355 --> 00:15:42.855 lcetuximab

NOTE Confidence: 0.8602409

00:15:43.235 --> 00:15:43.895 or pantetumumab,

NOTE Confidence: 0.87150323

00:15:45.395 --> 00:15:45.895 and,

NOTE Confidence: 0.96090466

00:15:46.915 --> 00:15:48.115 and that that adds to,

NOTE Confidence: 0.96090466

00:15:48.355 --> 00:15:49.555 how well patients do, how

NOTE Confidence: 0.96090466

00:15:49.555 --> 00:15:50.995 often the cancer shrinks down,

NOTE Confidence: 0.96090466

00:15:50.995 --> 00:15:51.895 how long patients,

NOTE Confidence: 0.9245446

00:15:52.355 --> 00:15:54.435 they're disease controlled. Whereas if

NOTE Confidence: 0.9245446

00:15:54.435 --> 00:15:54.835 there's,

NOTE Confidence: 0.95786315

00:15:55.540 --> 00:15:57.220 a mutation present at KRAS

NOTE Confidence: 0.95786315

00:15:57.220 --> 00:15:58.980 BRAF, we know that targeting

NOTE Confidence: 0.95786315

00:15:58.980 --> 00:16:00.360 these receptors up here,

NOTE Confidence: 0.97715217

00:16:00.660 --> 00:16:02.180 are less is less impactful

NOTE Confidence: 0.97715217

00:16:02.180 --> 00:16:02.980 when we use a drug

NOTE Confidence: 0.97715217

00:16:02.980 --> 00:16:03.640 like bevacizumab,

NOTE Confidence: 0.97149473

00:16:04.020 --> 00:16:04.820 which is why I need

NOTE Confidence: 0.97149473

00:16:04.820 --> 00:16:06.260 to know, again, whether or

NOTE Confidence: 0.97149473

00:16:06.260 --> 00:16:07.540 not a KRAS mutation or

NOTE Confidence: 0.97149473

00:16:07.540 --> 00:16:09.060 a BRAF mutation is present

NOTE Confidence: 0.97149473

00:16:09.060 --> 00:16:09.800 right away.

NOTE Confidence: 0.9968136

00:16:11.445 --> 00:16:12.665 Now we have

NOTE Confidence: 0.9880766

00:16:13.045 --> 00:16:14.505 we have drugs that inhibit

NOTE Confidence: 0.9880766

00:16:14.565 --> 00:16:16.085 specific KRAS mutations. So if

NOTE Confidence: 0.9880766

00:16:16.085 --> 00:16:17.045 you have a KRAS g

NOTE Confidence: 0.9880766

00:16:17.045 --> 00:16:18.805 twelve c, there's FDA approved

NOTE Confidence: 0.9880766

00:16:18.805 --> 00:16:19.305 drugs,

NOTE Confidence: 0.97873175

00:16:20.405 --> 00:16:20.905 that,

NOTE Confidence: 0.79259384

00:16:22.485 --> 00:16:22.965 that,

NOTE Confidence: 0.9411686

00:16:23.685 --> 00:16:25.300 that target that. If there's

NOTE Confidence: 0.9411686

00:16:25.300 --> 00:16:26.500 a KRAS g twelve d

NOTE Confidence: 0.9411686

00:16:26.500 --> 00:16:28.340 mutation, there's numerous clinical trials

NOTE Confidence: 0.9411686

00:16:28.340 --> 00:16:29.540 looking at g twelve b

NOTE Confidence: 0.9411686

00:16:29.540 --> 00:16:30.500 and so on. So these

NOTE Confidence: 0.9411686

00:16:30.500 --> 00:16:32.260 are targetable mutations with approved

NOTE Confidence: 0.9411686

00:16:32.260 --> 00:16:34.020 drugs and many clinical trials

NOTE Confidence: 0.9411686

00:16:34.020 --> 00:16:35.060 that may be relevant for

NOTE Confidence: 0.9411686

00:16:35.060 --> 00:16:36.120 to know this information.

NOTE Confidence: 0.96757245

00:16:36.740 --> 00:16:38.180 Whereas, if there's a BRAF

NOTE Confidence: 0.96757245

00:16:38.180 --> 00:16:40.084 mutation present, we have,

NOTE Confidence: 0.9524808

00:16:40.945 --> 00:16:42.725 a BRAF inhibitor called encorafenib

NOTE Confidence: 0.9524808

00:16:42.865 --> 00:16:44.225 and cetuximab. So we wanna

NOTE Confidence: 0.9524808

00:16:44.225 --> 00:16:45.584 shut the we wanna shut

NOTE Confidence: 0.9524808

00:16:45.584 --> 00:16:47.024 that growth pattern down right

NOTE Confidence: 0.9524808

00:16:47.024 --> 00:16:47.904 at its source, right at

NOTE Confidence: 0.9524808

00:16:47.904 --> 00:16:49.345 the BRAF mutation. And we

NOTE Confidence: 0.9524808

00:16:49.345 --> 00:16:50.464 know you the the recent

NOTE Confidence: 0.9524808

00:16:50.464 --> 00:16:51.824 approval of these drugs within

NOTE Confidence: 0.9524808

00:16:51.824 --> 00:16:53.425 the the last year literally

NOTE Confidence: 0.9524808

00:16:53.425 --> 00:16:54.485 doubled the survival

NOTE Confidence: 0.98825157

00:16:54.870 --> 00:16:57.110 for for for, patients with

NOTE Confidence: 0.98825157

00:16:57.110 --> 00:16:58.250 BRAF mutations.

NOTE Confidence: 0.9424298

00:16:59.750 --> 00:17:01.750 There's similar targeted treatments if

NOTE Confidence: 0.9424298

00:17:01.750 --> 00:17:03.670 there's abnormalities in HER2 on

NOTE Confidence: 0.9424298

00:17:03.670 --> 00:17:04.950 the cell surface, something called

NOTE Confidence: 0.9424298

00:17:04.950 --> 00:17:05.450 tucatinibetrizumab.

NOTE Confidence: 0.9977492

00:17:06.550 --> 00:17:07.670 Again, why we need to

NOTE Confidence: 0.9977492

00:17:07.670 --> 00:17:09.210 know the details of personalizing

NOTE Confidence: 0.9457111

00:17:09.855 --> 00:17:11.054 these treatments as well as

NOTE Confidence: 0.9457111

00:17:11.054 --> 00:17:12.734 in HER2 for HER2 positive

NOTE Confidence: 0.9457111

00:17:12.734 --> 00:17:13.875 colorectal cancer.

NOTE Confidence: 0.9940152

00:17:14.415 --> 00:17:15.315 And and then

NOTE Confidence: 0.9840178

00:17:15.775 --> 00:17:17.775 to conclude talking about some

NOTE Confidence: 0.9840178

00:17:17.775 --> 00:17:19.215 of these more targeted based

NOTE Confidence: 0.9840178

00:17:19.215 --> 00:17:20.674 treatments is immunotherapy.

NOTE Confidence: 0.9878556

00:17:21.294 --> 00:17:22.335 So for that two to

NOTE Confidence: 0.9878556

00:17:22.335 --> 00:17:23.455 four percent of patients that

NOTE Confidence: 0.9878556

00:17:23.455 --> 00:17:24.195 have metastatic

NOTE Confidence: 0.957933

00:17:25.020 --> 00:17:26.700 disease but have MSI high

NOTE Confidence: 0.957933

00:17:26.700 --> 00:17:28.080 tumors, we know that,

NOTE Confidence: 0.9972251

00:17:28.460 --> 00:17:29.680 they're highly sensitive

NOTE Confidence: 0.9513125

00:17:30.300 --> 00:17:32.220 to immunotherapy because the tumors

NOTE Confidence: 0.9513125

00:17:32.220 --> 00:17:33.840 have many mutations.

NOTE Confidence: 0.9402323

00:17:34.220 --> 00:17:34.960 And therefore,

NOTE Confidence: 0.95171946

00:17:35.340 --> 00:17:37.180 the immune system, given enough

NOTE Confidence: 0.95171946

00:17:37.180 --> 00:17:38.720 push by our immune therapies,

NOTE Confidence: 0.95171946

00:17:38.940 --> 00:17:40.320 has an easier time

NOTE Confidence: 0.9860289

00:17:40.885 --> 00:17:42.825 recognizing the cancer as foreign

NOTE Confidence: 0.9860289

00:17:43.045 --> 00:17:43.545 and,

NOTE Confidence: 0.9715118

00:17:45.285 --> 00:17:45.785 and,

NOTE Confidence: 0.9960413

00:17:46.804 --> 00:17:48.505 can eliminate it. So

NOTE Confidence: 0.97137034

00:17:48.965 --> 00:17:49.684 this is,

NOTE Confidence: 0.9974054

00:17:50.165 --> 00:17:51.605 this is some results on

NOTE Confidence: 0.9974054

00:17:51.605 --> 00:17:52.885 the left here from our

NOTE Confidence: 0.9974054

00:17:52.885 --> 00:17:53.385 initial

NOTE Confidence: 0.913178

00:17:53.690 --> 00:17:55.530 trial with immunotherapy comparing it

NOTE Confidence: 0.913178

00:17:55.530 --> 00:17:56.670 to chemo chemotherapy

NOTE Confidence: 0.96322393

00:17:57.210 --> 00:17:58.190 for these patients

NOTE Confidence: 0.9301641

00:17:58.490 --> 00:18:00.410 with MSI high colorectal cancer.

NOTE Confidence: 0.9301641

00:18:00.410 --> 00:18:02.090 And we saw that, again,

NOTE Confidence: 0.9301641

00:18:02.090 --> 00:18:02.330 on

NOTE Confidence: 0.9587448

00:18:02.970 --> 00:18:04.109 as time progressed,

NOTE Confidence: 0.9915516

00:18:04.490 --> 00:18:06.030 more patients on pembrolizumab,

NOTE Confidence: 0.91531086

00:18:06.490 --> 00:18:08.030 an anti PD one inhibitor

NOTE Confidence: 0.91531086

00:18:08.090 --> 00:18:08.750 in immunotherapy,

NOTE Confidence: 0.9491696

00:18:09.315 --> 00:18:10.514 had not had their cancer

NOTE Confidence: 0.9491696

00:18:10.514 --> 00:18:12.595 grow and and and were

NOTE Confidence: 0.9491696

00:18:12.595 --> 00:18:13.875 alive compared to those that

NOTE Confidence: 0.9491696

00:18:13.875 --> 00:18:15.634 got chemotherapy. The majority of

NOTE Confidence: 0.9491696

00:18:15.634 --> 00:18:17.075 those patients at some point,

NOTE Confidence: 0.9491696

00:18:17.075 --> 00:18:18.195 for example, here at two

NOTE Confidence: 0.9491696

00:18:18.195 --> 00:18:19.475 years, had had their had

NOTE Confidence: 0.9491696

00:18:19.475 --> 00:18:21.154 their cancer progressing and and

NOTE Confidence: 0.9491696

00:18:21.154 --> 00:18:23.660 grow. Whereas on on pembrolizumab,

NOTE Confidence: 0.9371948

00:18:24.360 --> 00:18:25.740 roughly half of those patients

NOTE Confidence: 0.9371948

00:18:25.800 --> 00:18:26.860 were still stable.

NOTE Confidence: 0.8877404

00:18:27.400 --> 00:18:28.220 Now with,

NOTE Confidence: 0.93541574

00:18:29.160 --> 00:18:30.600 two immune drugs, we're we're

NOTE Confidence: 0.93541574

00:18:30.600 --> 00:18:32.040 seeing at the two year

NOTE Confidence: 0.93541574

00:18:32.040 --> 00:18:32.860 mark here,

NOTE Confidence: 0.94068944

00:18:33.800 --> 00:18:34.280 that,

NOTE Confidence: 0.9385871

00:18:34.600 --> 00:18:36.220 roughly at two years,

NOTE Confidence: 0.95224035

00:18:37.015 --> 00:18:38.615 seventy ish percent of patients

NOTE Confidence: 0.95224035

00:18:38.615 --> 00:18:39.734 have not had their cancer

NOTE Confidence: 0.95224035

00:18:39.734 --> 00:18:41.835 progressed. So we are, literally

NOTE Confidence: 0.95224035

00:18:42.054 --> 00:18:43.115 probably curing,

NOTE Confidence: 0.99964553

00:18:44.695 --> 00:18:45.575 more than half of the

NOTE Confidence: 0.99964553

00:18:45.575 --> 00:18:46.955 patients by giving them

NOTE Confidence: 0.9044745

00:18:47.975 --> 00:18:49.975 ipi and nivo, ipilimumab and

NOTE Confidence: 0.9044745

00:18:49.975 --> 00:18:52.519 nivolumab with MSI hypoalleric cancer.

NOTE Confidence: 0.9044745

00:18:52.519 --> 00:18:53.720 A rare subtype, but this

NOTE Confidence: 0.9044745

00:18:53.720 --> 00:18:54.760 is something we can't miss

NOTE Confidence: 0.9044745

00:18:54.760 --> 00:18:56.039 because the results can be

NOTE Confidence: 0.9044745

00:18:56.039 --> 00:18:56.700 so impact.

NOTE Confidence: 0.990581

00:18:57.320 --> 00:18:58.760 So in conclusion, we need

NOTE Confidence: 0.990581

00:18:58.760 --> 00:18:59.260 multidisciplinary

NOTE Confidence: 0.97249043

00:18:59.799 --> 00:19:01.240 care for all patients to

NOTE Confidence: 0.97249043

00:19:01.240 --> 00:19:02.440 determine the optimal care plan

NOTE Confidence: 0.97249043

00:19:02.440 --> 00:19:03.240 whether or not we can

NOTE Confidence: 0.97249043

00:19:03.240 --> 00:19:03.899 do surgery.

NOTE Confidence: 0.9927686

00:19:04.200 --> 00:19:06.145 We still use our traditional

NOTE Confidence: 0.9927686

00:19:06.145 --> 00:19:07.905 chemotherapies for the majority of

NOTE Confidence: 0.9927686

00:19:07.905 --> 00:19:09.825 patients, but all tumors need

NOTE Confidence: 0.9927686

00:19:09.825 --> 00:19:10.885 testing for microsatellite

NOTE Confidence: 0.90761495

00:19:11.185 --> 00:19:13.425 status, ARAF status, BRAF status,

NOTE Confidence: 0.90761495

00:19:13.425 --> 00:19:14.625 HER2 status, as well as

NOTE Confidence: 0.90761495

00:19:14.625 --> 00:19:15.125 sidedness,

NOTE Confidence: 0.9744282

00:19:15.744 --> 00:19:16.705 to make sure we're giving

NOTE Confidence: 0.9744282

00:19:16.705 --> 00:19:17.744 the optimal results. And I

NOTE Confidence: 0.9744282

00:19:17.744 --> 00:19:19.205 think patients should be empowered

NOTE Confidence: 0.8528736

00:19:19.505 --> 00:19:20.790 to, to to know the

NOTE Confidence: 0.8528736

00:19:20.790 --> 00:19:21.330 status piece.

NOTE Confidence: 0.99368864

00:19:21.710 --> 00:19:22.770 And, immunotherapy

NOTE Confidence: 0.98560095

00:19:23.470 --> 00:19:24.990 is is, you know, making

NOTE Confidence: 0.98560095

00:19:24.990 --> 00:19:25.490 some,

NOTE Confidence: 0.96963227

00:19:26.910 --> 00:19:28.270 big impacts for patients with

NOTE Confidence: 0.96963227

00:19:28.270 --> 00:19:29.330 MSI high disease.

NOTE Confidence: 0.9381913

00:19:29.950 --> 00:19:31.810 So I'll stop there,

NOTE Confidence: 0.9203026

00:19:32.430 --> 00:19:32.930 and,

NOTE Confidence: 0.9978635

00:19:34.455 --> 00:19:35.994 if there are questions,

NOTE Confidence: 0.98066163

00:19:36.295 --> 00:19:36.934 I will,

NOTE Confidence: 0.9887612

00:19:38.135 --> 00:19:39.335 answer them throughout the,

NOTE Confidence: 0.9199258

00:19:39.895 --> 00:19:41.575 the presentations, but I'm gonna

NOTE Confidence: 0.9199258

00:19:41.575 --> 00:19:43.415 pivot now to doctor Jo

NOTE Confidence: 0.9199258

00:19:43.415 --> 00:19:45.434 Hong to discuss radiation oncology.

NOTE Confidence: 0.9305653

00:19:53.190 --> 00:19:54.950 We're muted. Sorry. I'm here

NOTE Confidence: 0.9305653

00:19:54.950 --> 00:19:56.570 now. Thanks, doctor Cicchini.

NOTE Confidence: 0.9707871

00:19:57.350 --> 00:19:58.630 So I'm gonna be talking

NOTE Confidence: 0.9707871

00:19:58.630 --> 00:19:59.670 about this is a very

NOTE Confidence: 0.9707871

00:19:59.670 --> 00:20:01.385 similar title to doctor Cicchini's

NOTE Confidence: 0.9707871

00:20:01.445 --> 00:20:03.125 title, A Personalized Approach to

NOTE Confidence: 0.9707871

00:20:03.125 --> 00:20:04.185 Radiation Therapy,

NOTE Confidence: 0.9370475

00:20:04.725 --> 00:20:05.865 for Rectal Cancer.

NOTE Confidence: 0.99260587

00:20:06.645 --> 00:20:08.165 So as shown here, there's

NOTE Confidence: 0.99260587

00:20:08.165 --> 00:20:09.925 three main modalities for treatment

NOTE Confidence: 0.99260587

00:20:09.925 --> 00:20:10.984 of rectal cancer,

NOTE Confidence: 0.9670293

00:20:11.845 --> 00:20:13.285 represented today actually on our

NOTE Confidence: 0.9670293

00:20:13.285 --> 00:20:14.484 webinar. So this is what

NOTE Confidence: 0.9670293

00:20:14.484 --> 00:20:16.020 doctor Cicchini does. He delivers

NOTE Confidence: 0.9670293

00:20:16.020 --> 00:20:18.119 the systemic therapies, either chemotherapy,

NOTE Confidence: 0.9647176

00:20:18.660 --> 00:20:19.780 or some of the targeted

NOTE Confidence: 0.9647176

00:20:19.780 --> 00:20:21.460 agents or immunotherapy that you

NOTE Confidence: 0.9647176

00:20:21.460 --> 00:20:22.200 heard about.

NOTE Confidence: 0.93959314

00:20:22.660 --> 00:20:24.180 This is doctor Maggio's area

NOTE Confidence: 0.93959314

00:20:24.180 --> 00:20:26.260 of expertise removing your actual

NOTE Confidence: 0.93959314

00:20:26.260 --> 00:20:27.619 tumor. So she's the hero

NOTE Confidence: 0.93959314

00:20:27.619 --> 00:20:28.119 there.

NOTE Confidence: 0.9882819

00:20:28.455 --> 00:20:29.335 And this is what I

NOTE Confidence: 0.9882819

00:20:29.335 --> 00:20:30.855 do, radiation therapy, which is

NOTE Confidence: 0.9882819

00:20:30.855 --> 00:20:31.895 a little more foreign to

NOTE Confidence: 0.9882819

00:20:31.895 --> 00:20:32.934 people. So I thought I

NOTE Confidence: 0.9882819

00:20:32.934 --> 00:20:34.695 would start talking first a

NOTE Confidence: 0.9882819

00:20:34.695 --> 00:20:35.994 little bit about the radiation

NOTE Confidence: 0.9882819

00:20:36.054 --> 00:20:37.575 care path. How does radiation

NOTE Confidence: 0.9882819

00:20:37.575 --> 00:20:38.075 work?

NOTE Confidence: 0.99243766

00:20:38.615 --> 00:20:39.895 And then we'll talk about

NOTE Confidence: 0.99243766

00:20:39.895 --> 00:20:41.015 two different ways we can

NOTE Confidence: 0.99243766

00:20:41.015 --> 00:20:41.994 deliver radiation,

NOTE Confidence: 0.9983376

00:20:42.559 --> 00:20:43.440 when you might be able

NOTE Confidence: 0.9983376

00:20:43.440 --> 00:20:44.740 to avoid radiation,

NOTE Confidence: 0.96067506

00:20:45.200 --> 00:20:46.980 specific scenarios for that,

NOTE Confidence: 0.9877182

00:20:47.520 --> 00:20:49.119 certain scenarios where you might

NOTE Confidence: 0.9877182

00:20:49.119 --> 00:20:50.640 have an excellent response to

NOTE Confidence: 0.9877182

00:20:50.640 --> 00:20:52.020 the chemo and the radiation,

NOTE Confidence: 0.9877182

00:20:52.080 --> 00:20:53.119 and you might not need

NOTE Confidence: 0.9877182

00:20:53.119 --> 00:20:53.780 the surgery.

NOTE Confidence: 0.9600001

00:20:54.720 --> 00:20:56.080 And then I'll touch upon

NOTE Confidence: 0.9600001

00:20:56.080 --> 00:20:57.674 what doctor Chiquini was mentioning

NOTE Confidence: 0.9600001

00:20:57.674 --> 00:20:58.654 was the oligometastatic

NOTE Confidence: 0.9840609

00:20:59.195 --> 00:21:00.654 state or when your cancer

NOTE Confidence: 0.97819275

00:21:01.034 --> 00:21:02.234 really has spread but only

NOTE Confidence: 0.97819275

00:21:02.234 --> 00:21:04.395 to limited sites and where

NOTE Confidence: 0.97819275

00:21:04.395 --> 00:21:05.835 radiation might come into play

NOTE Confidence: 0.97819275

00:21:05.835 --> 00:21:06.734 in that scenario.

NOTE Confidence: 0.95574695

00:21:07.515 --> 00:21:08.475 So a little bit of

NOTE Confidence: 0.95574695

00:21:08.475 --> 00:21:08.730 a,

NOTE Confidence: 0.97798663

00:21:09.770 --> 00:21:11.770 short radio biology lecture, which

NOTE Confidence: 0.97798663

00:21:11.770 --> 00:21:13.309 is basically how does radiation

NOTE Confidence: 0.97798663

00:21:13.369 --> 00:21:14.910 work to kill cancer cells.

NOTE Confidence: 0.97798663

00:21:15.210 --> 00:21:17.130 So radiation therapy really is

NOTE Confidence: 0.97798663

00:21:17.130 --> 00:21:18.330 relying on the use of

NOTE Confidence: 0.97798663

00:21:18.330 --> 00:21:19.470 ionizing radiation

NOTE Confidence: 0.96219045

00:21:19.770 --> 00:21:21.690 directed at cancer cells. It's

NOTE Confidence: 0.96219045

00:21:21.690 --> 00:21:23.150 delivered by these big machines

NOTE Confidence: 0.96219045

00:21:23.210 --> 00:21:24.030 called LINACS,

NOTE Confidence: 0.9393451

00:21:24.855 --> 00:21:26.695 really directing radiation with high

NOTE Confidence: 0.9393451

00:21:26.695 --> 00:21:27.195 precision,

NOTE Confidence: 0.9975181

00:21:27.895 --> 00:21:28.795 at your tumor.

NOTE Confidence: 0.9854368

00:21:29.335 --> 00:21:30.855 And what the radiation is

NOTE Confidence: 0.9854368

00:21:30.855 --> 00:21:32.695 doing is causing damage in

NOTE Confidence: 0.9854368

00:21:32.695 --> 00:21:33.975 the DNA of your cancer

NOTE Confidence: 0.9854368

00:21:33.975 --> 00:21:34.855 cells. I like to think

NOTE Confidence: 0.9854368

00:21:34.855 --> 00:21:35.655 of these as kinda like

NOTE Confidence: 0.9854368

00:21:35.655 --> 00:21:36.855 the building blocks of your

NOTE Confidence: 0.9854368

00:21:36.855 --> 00:21:38.250 cancer cells. And so if

NOTE Confidence: 0.9854368

00:21:38.250 --> 00:21:39.930 we use radiation to damage

NOTE Confidence: 0.9854368

00:21:39.930 --> 00:21:41.450 the DNA when the cells

NOTE Confidence: 0.9854368

00:21:41.450 --> 00:21:43.070 try to divide and multiply,

NOTE Confidence: 0.9835212

00:21:43.530 --> 00:21:44.890 they realize they're damaged and

NOTE Confidence: 0.9835212

00:21:44.890 --> 00:21:46.170 they die off instead. But

NOTE Confidence: 0.9835212

00:21:46.170 --> 00:21:47.050 we think of this as

NOTE Confidence: 0.9835212

00:21:47.050 --> 00:21:48.490 a local therapy because I'm

NOTE Confidence: 0.9835212

00:21:48.490 --> 00:21:49.869 really targeting the tumors,

NOTE Confidence: 0.99207026

00:21:50.410 --> 00:21:51.450 that I can see on

NOTE Confidence: 0.99207026

00:21:51.450 --> 00:21:52.725 your on your scans, whether

NOTE Confidence: 0.99207026

00:21:52.725 --> 00:21:54.265 it's CAT scan or MRI.

NOTE Confidence: 0.9980971

00:21:55.365 --> 00:21:56.405 This is an example of

NOTE Confidence: 0.9980971

00:21:56.405 --> 00:21:58.005 the treatment delivery machine and

NOTE Confidence: 0.9980971

00:21:58.005 --> 00:21:59.545 the treatment delivery room.

NOTE Confidence: 0.9818444

00:21:59.925 --> 00:22:01.125 So the radiation is coming

NOTE Confidence: 0.9818444

00:22:01.125 --> 00:22:01.925 from the head of the

NOTE Confidence: 0.9818444

00:22:01.925 --> 00:22:04.005 Linac here. We have panels

NOTE Confidence: 0.9818444

00:22:04.005 --> 00:22:05.045 on either side that are

NOTE Confidence: 0.9818444

00:22:05.045 --> 00:22:06.619 really imaging panels that help

NOTE Confidence: 0.9818444

00:22:06.619 --> 00:22:07.740 make sure that your body

NOTE Confidence: 0.9818444

00:22:07.740 --> 00:22:09.580 is in, the exact right

NOTE Confidence: 0.9818444

00:22:09.580 --> 00:22:11.020 position for treatment. So we

NOTE Confidence: 0.9818444

00:22:11.020 --> 00:22:12.560 can either do CAT scans,

NOTE Confidence: 0.9587087

00:22:13.260 --> 00:22:15.020 or X-ray imaging really to

NOTE Confidence: 0.9587087

00:22:15.020 --> 00:22:16.060 make sure that you you

NOTE Confidence: 0.9587087

00:22:16.060 --> 00:22:18.060 are accurately positioned for treatment

NOTE Confidence: 0.9587087

00:22:18.060 --> 00:22:18.860 on a day to day

NOTE Confidence: 0.9587087

00:22:18.860 --> 00:22:19.360 basis.

NOTE Confidence: 0.9977579

00:22:20.505 --> 00:22:22.105 And in order to spare

NOTE Confidence: 0.9977579

00:22:22.105 --> 00:22:23.405 the healthy tissue,

NOTE Confidence: 0.9931104

00:22:24.345 --> 00:22:26.025 the radiation is actually delivered

NOTE Confidence: 0.9931104

00:22:26.025 --> 00:22:27.305 from all angles. So this

NOTE Confidence: 0.9931104

00:22:27.305 --> 00:22:28.925 machine will spin around you.

NOTE Confidence: 0.9990672

00:22:29.305 --> 00:22:30.345 And so if beams are

NOTE Confidence: 0.9990672

00:22:30.345 --> 00:22:31.805 coming from different angles,

NOTE Confidence: 0.9911017

00:22:32.425 --> 00:22:34.105 it's really the intersection point

NOTE Confidence: 0.9911017

00:22:34.105 --> 00:22:35.140 that gets the full dose

NOTE Confidence: 0.9911017

00:22:35.140 --> 00:22:37.140 of radiation, and the tissues

NOTE Confidence: 0.9911017

00:22:37.140 --> 00:22:38.260 that the beams are passing

NOTE Confidence: 0.9911017

00:22:38.260 --> 00:22:39.540 through will get a much

NOTE Confidence: 0.9911017

00:22:39.540 --> 00:22:40.760 lower dose of radiation.

NOTE Confidence: 0.99597937

00:22:41.859 --> 00:22:43.380 And we use this this

NOTE Confidence: 0.99597937

00:22:43.380 --> 00:22:44.180 is kind of what it

NOTE Confidence: 0.99597937

00:22:44.180 --> 00:22:45.060 looks like if you were

NOTE Confidence: 0.99597937

00:22:45.060 --> 00:22:45.700 to look up in the

NOTE Confidence: 0.99597937

00:22:45.700 --> 00:22:46.740 head of the machine. So

NOTE Confidence: 0.99597937

00:22:46.740 --> 00:22:48.914 there's these tungsten leaves. They

NOTE Confidence: 0.99597937

00:22:48.914 --> 00:22:49.875 look really big in this

NOTE Confidence: 0.99597937

00:22:49.875 --> 00:22:51.155 picture, but they're actually just

NOTE Confidence: 0.99597937

00:22:51.155 --> 00:22:52.855 a couple of millimeters thick.

NOTE Confidence: 0.99822795

00:22:53.315 --> 00:22:54.115 And what they do is

NOTE Confidence: 0.99822795

00:22:54.115 --> 00:22:55.734 they're gonna be moving around

NOTE Confidence: 0.99822795

00:22:55.794 --> 00:22:57.575 during treatment with the shape

NOTE Confidence: 0.99490005

00:22:57.955 --> 00:22:59.015 of that field,

NOTE Confidence: 0.9862302

00:22:59.554 --> 00:23:00.914 matching kind of the shape

NOTE Confidence: 0.9862302

00:23:00.914 --> 00:23:02.275 of your tumor target from

NOTE Confidence: 0.9862302

00:23:02.275 --> 00:23:03.980 that angle. What they also

NOTE Confidence: 0.9862302

00:23:03.980 --> 00:23:04.940 do is they will move

NOTE Confidence: 0.9862302

00:23:04.940 --> 00:23:05.900 in and out of the

NOTE Confidence: 0.9862302

00:23:05.900 --> 00:23:07.660 field during treatment, and that

NOTE Confidence: 0.9862302

00:23:07.660 --> 00:23:08.160 can,

NOTE Confidence: 0.9866454

00:23:09.260 --> 00:23:10.860 modulate the intensity of the

NOTE Confidence: 0.9866454

00:23:10.860 --> 00:23:11.920 radiation beam.

NOTE Confidence: 0.9958237

00:23:12.460 --> 00:23:13.900 And that allows us to

NOTE Confidence: 0.9958237

00:23:13.900 --> 00:23:15.520 deposit this dose of radiation

NOTE Confidence: 0.9958237

00:23:15.660 --> 00:23:16.940 in your body that fits

NOTE Confidence: 0.9958237

00:23:16.940 --> 00:23:17.920 kind of a three-dimensional

NOTE Confidence: 0.999609

00:23:18.300 --> 00:23:20.315 shape that matches the three-dimensional

NOTE Confidence: 0.99595064

00:23:20.695 --> 00:23:22.054 shape of your tumor. So

NOTE Confidence: 0.99595064

00:23:22.054 --> 00:23:23.015 these are just a little

NOTE Confidence: 0.99595064

00:23:23.015 --> 00:23:24.375 bit of the technical aspects

NOTE Confidence: 0.99595064

00:23:24.375 --> 00:23:25.335 of how we are able

NOTE Confidence: 0.99595064

00:23:25.335 --> 00:23:26.875 to safely deliver tumor,

NOTE Confidence: 0.9764282

00:23:27.494 --> 00:23:29.015 radiation to your tumor and

NOTE Confidence: 0.9764282

00:23:29.015 --> 00:23:29.515 avoid,

NOTE Confidence: 0.9980102

00:23:30.054 --> 00:23:31.575 radiation dose elsewhere in the

NOTE Confidence: 0.9980102

00:23:31.575 --> 00:23:32.075 tissues.

NOTE Confidence: 0.9924998

00:23:33.490 --> 00:23:34.529 A little bit about what

NOTE Confidence: 0.9924998

00:23:34.529 --> 00:23:35.730 it involves to get a

NOTE Confidence: 0.9924998

00:23:35.730 --> 00:23:37.570 course of radiation completed. So,

NOTE Confidence: 0.9924998

00:23:37.570 --> 00:23:39.510 obviously, there's a consultation process

NOTE Confidence: 0.9924998

00:23:39.730 --> 00:23:40.690 where we meet you and

NOTE Confidence: 0.9924998

00:23:40.690 --> 00:23:41.650 talk to you about the

NOTE Confidence: 0.9924998

00:23:41.650 --> 00:23:43.330 indications for radiation and what

NOTE Confidence: 0.9924998

00:23:43.330 --> 00:23:44.150 you can expect.

NOTE Confidence: 0.96251315

00:23:44.609 --> 00:23:45.409 And then we have all

NOTE Confidence: 0.96251315

00:23:45.409 --> 00:23:46.529 these weird terms, and so

NOTE Confidence: 0.96251315

00:23:46.529 --> 00:23:47.330 I go through them if

NOTE Confidence: 0.96251315

00:23:47.330 --> 00:23:48.289 you were to embark on

NOTE Confidence: 0.96251315

00:23:48.289 --> 00:23:49.475 a course of radiation,

NOTE Confidence: 0.95836085

00:23:49.855 --> 00:23:50.655 we start with what we

NOTE Confidence: 0.95836085

00:23:50.655 --> 00:23:51.955 call is is a simulation,

NOTE Confidence: 0.95836085

00:23:52.095 --> 00:23:52.975 and I would think of

NOTE Confidence: 0.95836085

00:23:52.975 --> 00:23:54.335 that as a planning process.

NOTE Confidence: 0.95836085

00:23:54.335 --> 00:23:55.455 So we're gonna get your

NOTE Confidence: 0.95836085

00:23:55.455 --> 00:23:56.595 body in position

NOTE Confidence: 0.9790475

00:23:57.054 --> 00:23:58.174 for treatment, and then we

NOTE Confidence: 0.9790475

00:23:58.174 --> 00:23:59.554 need to scan your,

NOTE Confidence: 0.9994062

00:23:59.855 --> 00:24:00.755 tumor region

NOTE Confidence: 0.99103993

00:24:01.150 --> 00:24:02.510 in that position so that

NOTE Confidence: 0.99103993

00:24:02.510 --> 00:24:03.550 we can see where the

NOTE Confidence: 0.99103993

00:24:03.550 --> 00:24:04.990 tumor targets lie when your

NOTE Confidence: 0.99103993

00:24:04.990 --> 00:24:06.690 body's in position for radiation.

NOTE Confidence: 0.97970974

00:24:07.070 --> 00:24:08.429 Most often, we place rectal

NOTE Confidence: 0.97970974

00:24:08.429 --> 00:24:09.250 cancer patients,

NOTE Confidence: 0.96708614

00:24:09.710 --> 00:24:11.170 prone, so on your belly,

NOTE Confidence: 0.9842278

00:24:11.710 --> 00:24:12.910 for treatment. And what this

NOTE Confidence: 0.9842278

00:24:12.910 --> 00:24:14.290 does is that it allows,

NOTE Confidence: 0.9886133

00:24:15.155 --> 00:24:16.515 the healthy bowel to kind

NOTE Confidence: 0.9886133

00:24:16.515 --> 00:24:18.215 of fall forward and away,

NOTE Confidence: 0.97221583

00:24:18.755 --> 00:24:19.955 from the treatment area so

NOTE Confidence: 0.97221583

00:24:19.955 --> 00:24:21.554 we deliver less radiation to

NOTE Confidence: 0.97221583

00:24:21.554 --> 00:24:22.835 the healthy bowel. I like

NOTE Confidence: 0.97221583

00:24:22.835 --> 00:24:23.554 to think of this as

NOTE Confidence: 0.97221583

00:24:23.554 --> 00:24:25.174 a nice massage table,

NOTE Confidence: 0.9556251

00:24:25.554 --> 00:24:26.595 pillow where you have the

NOTE Confidence: 0.9556251

00:24:26.595 --> 00:24:28.034 hole for your face here

NOTE Confidence: 0.9556251

00:24:28.034 --> 00:24:29.575 and you're comfortably positioned.

NOTE Confidence: 0.9927905

00:24:30.649 --> 00:24:32.429 After the CT scan process,

NOTE Confidence: 0.9927905

00:24:32.570 --> 00:24:33.690 we work with,

NOTE Confidence: 0.9447502

00:24:34.570 --> 00:24:36.190 physicists who are called dosimetrists.

NOTE Confidence: 0.97124034

00:24:36.490 --> 00:24:37.690 What they're doing is they're

NOTE Confidence: 0.97124034

00:24:37.690 --> 00:24:39.690 helping us, you know, angle

NOTE Confidence: 0.97124034

00:24:39.690 --> 00:24:40.970 the beams and devise a

NOTE Confidence: 0.97124034

00:24:40.970 --> 00:24:41.929 computer pace,

NOTE Confidence: 0.9835407

00:24:42.250 --> 00:24:44.429 based plan to deliver radiation

NOTE Confidence: 0.9835407

00:24:44.490 --> 00:24:46.075 that sort of really tightly

NOTE Confidence: 0.9835407

00:24:46.075 --> 00:24:47.835 fits the tumor targets. There's

NOTE Confidence: 0.9835407

00:24:47.835 --> 00:24:49.115 kind of a physics QA

NOTE Confidence: 0.9835407

00:24:49.115 --> 00:24:50.315 process, and then you embark

NOTE Confidence: 0.9835407

00:24:50.315 --> 00:24:50.975 on treatment,

NOTE Confidence: 0.98002595

00:24:51.674 --> 00:24:53.355 which tends to be daily

NOTE Confidence: 0.98002595

00:24:53.355 --> 00:24:54.475 treatments, and we'll talk about

NOTE Confidence: 0.98002595

00:24:54.475 --> 00:24:55.855 the reason for that shortly.

NOTE Confidence: 0.9953419

00:24:56.315 --> 00:24:57.434 This is just an example

NOTE Confidence: 0.9953419

00:24:57.434 --> 00:24:58.794 of what treatment planning looks

NOTE Confidence: 0.9953419

00:24:58.794 --> 00:25:00.720 like. So we've identified on

NOTE Confidence: 0.9953419

00:25:00.720 --> 00:25:02.020 a slice of a scan

NOTE Confidence: 0.97833264

00:25:02.320 --> 00:25:03.680 kind of the nodal lymph

NOTE Confidence: 0.97833264

00:25:03.680 --> 00:25:04.800 node regions that are at

NOTE Confidence: 0.97833264

00:25:04.800 --> 00:25:05.840 risk, and this is what

NOTE Confidence: 0.97833264

00:25:05.840 --> 00:25:06.960 a plan would look like

NOTE Confidence: 0.97833264

00:25:06.960 --> 00:25:08.720 showing the distribution of the

NOTE Confidence: 0.97833264

00:25:08.720 --> 00:25:10.320 radiation dose to those lymph

NOTE Confidence: 0.97833264

00:25:10.320 --> 00:25:10.980 node regions,

NOTE Confidence: 0.99459434

00:25:11.280 --> 00:25:12.480 but kind of carving the

NOTE Confidence: 0.99459434

00:25:12.480 --> 00:25:14.000 dose away from what I'm

NOTE Confidence: 0.99459434

00:25:14.000 --> 00:25:14.880 showing up here with the

NOTE Confidence: 0.99459434

00:25:14.880 --> 00:25:16.744 cursor is healthy bowel in

NOTE Confidence: 0.99459434

00:25:16.744 --> 00:25:17.784 the middle of those lymph

NOTE Confidence: 0.99459434

00:25:17.784 --> 00:25:18.445 node regions.

NOTE Confidence: 0.97912914

00:25:20.424 --> 00:25:21.784 I mentioned that radiation is

NOTE Confidence: 0.97912914

00:25:21.784 --> 00:25:23.225 typically delivered on a daily

NOTE Confidence: 0.97912914

00:25:23.225 --> 00:25:24.765 basis, Monday through Fridays.

NOTE Confidence: 0.99201953

00:25:25.385 --> 00:25:26.825 The reason for breaking the

NOTE Confidence: 0.99201953

00:25:26.825 --> 00:25:28.424 radiation dose into these,

NOTE Confidence: 0.95688576

00:25:29.225 --> 00:25:30.525 daily smaller doses,

NOTE Confidence: 0.99798644

00:25:31.309 --> 00:25:32.830 is that cancer cells have

NOTE Confidence: 0.99798644

00:25:32.830 --> 00:25:34.929 a decreased ability to repair,

NOTE Confidence: 0.9869922

00:25:35.790 --> 00:25:37.710 the damage, to their DNA

NOTE Confidence: 0.9869922

00:25:37.710 --> 00:25:39.630 from radiation, whereas healthy tissues

NOTE Confidence: 0.9869922

00:25:39.630 --> 00:25:41.090 are more able to repair,

NOTE Confidence: 0.9728322

00:25:41.630 --> 00:25:43.010 the damage from the radiation.

NOTE Confidence: 0.9728322

00:25:43.150 --> 00:25:44.190 So we break out the

NOTE Confidence: 0.9728322

00:25:44.190 --> 00:25:45.975 dose into little doses. The

NOTE Confidence: 0.9728322

00:25:45.975 --> 00:25:47.655 healthy tissues are repairing, whereas

NOTE Confidence: 0.9728322

00:25:47.655 --> 00:25:48.855 the cancer cells are less

NOTE Confidence: 0.9728322

00:25:48.855 --> 00:25:49.994 likely to repair.

NOTE Confidence: 0.95785993

00:25:50.295 --> 00:25:51.015 And then that's how we

NOTE Confidence: 0.95785993

00:25:51.015 --> 00:25:52.775 get cancer kill over time

NOTE Confidence: 0.95785993

00:25:52.775 --> 00:25:54.135 without wreaking too much havoc

NOTE Confidence: 0.95785993

00:25:54.135 --> 00:25:55.195 on the healthy tissues.

NOTE Confidence: 0.98473144

00:25:56.455 --> 00:25:58.054 So when would radiation be

NOTE Confidence: 0.98473144

00:25:58.054 --> 00:25:59.174 part of your treatment plan

NOTE Confidence: 0.98473144

00:25:59.174 --> 00:26:00.990 for rectal cancer treatment? So,

NOTE Confidence: 0.98473144

00:26:01.230 --> 00:26:02.670 doctor Cicchini mentioned a little

NOTE Confidence: 0.98473144

00:26:02.670 --> 00:26:04.109 bit about the staging of

NOTE Confidence: 0.98473144

00:26:04.109 --> 00:26:06.270 rectal cancer. And, like all

NOTE Confidence: 0.98473144

00:26:06.270 --> 00:26:08.030 things for cancer treatment, the,

NOTE Confidence: 0.98473144

00:26:08.350 --> 00:26:10.030 determination of when to employ

NOTE Confidence: 0.98473144

00:26:10.030 --> 00:26:11.630 radiation depends on the stage

NOTE Confidence: 0.98473144

00:26:11.630 --> 00:26:12.369 of your tumor.

NOTE Confidence: 0.98751926

00:26:12.990 --> 00:26:13.869 Part of that is how

NOTE Confidence: 0.98751926

00:26:13.869 --> 00:26:15.390 deep the tumor extends into

NOTE Confidence: 0.98751926

00:26:15.390 --> 00:26:16.609 the wall of the rectum.

NOTE Confidence: 0.98751926

00:26:16.830 --> 00:26:18.325 So we usually get involved

NOTE Confidence: 0.98751926

00:26:18.325 --> 00:26:19.605 for the deeper tumors, the

NOTE Confidence: 0.98751926

00:26:19.605 --> 00:26:20.965 t three category or the

NOTE Confidence: 0.98751926

00:26:20.965 --> 00:26:22.025 t four category,

NOTE Confidence: 0.98232496

00:26:22.885 --> 00:26:23.845 and then whether or not

NOTE Confidence: 0.98232496

00:26:23.845 --> 00:26:24.885 your tumor has spread to

NOTE Confidence: 0.98232496

00:26:24.885 --> 00:26:26.105 nearby lymph nodes,

NOTE Confidence: 0.9896507

00:26:26.804 --> 00:26:28.484 and we are typically involved

NOTE Confidence: 0.9896507

00:26:28.484 --> 00:26:29.619 if there's evidence,

NOTE Confidence: 0.99531627

00:26:30.100 --> 00:26:31.859 of cancer involving the lymph

NOTE Confidence: 0.99531627

00:26:31.859 --> 00:26:32.260 nodes,

NOTE Confidence: 0.99510664

00:26:32.820 --> 00:26:34.359 around the rectal area.

NOTE Confidence: 0.9989001

00:26:36.260 --> 00:26:37.559 This is just

NOTE Confidence: 0.9919502

00:26:38.260 --> 00:26:39.299 a a couple of graphs

NOTE Confidence: 0.9919502

00:26:39.299 --> 00:26:40.580 to show you, what is

NOTE Confidence: 0.9919502

00:26:40.580 --> 00:26:42.100 the benefit of using radiation

NOTE Confidence: 0.9919502

00:26:42.100 --> 00:26:43.705 for rectal cancer. So an

NOTE Confidence: 0.9919502

00:26:43.705 --> 00:26:45.065 example from kind of two

NOTE Confidence: 0.9919502

00:26:45.065 --> 00:26:47.145 classic trials showing you that

NOTE Confidence: 0.9919502

00:26:47.145 --> 00:26:48.825 when we add radiation to

NOTE Confidence: 0.9919502

00:26:48.825 --> 00:26:50.825 surgery, the benefit is what

NOTE Confidence: 0.9919502

00:26:50.825 --> 00:26:52.505 we call local control or

NOTE Confidence: 0.9919502

00:26:52.505 --> 00:26:54.105 preventing the cancer from being

NOTE Confidence: 0.9919502

00:26:54.105 --> 00:26:55.225 able to grow back. So

NOTE Confidence: 0.9919502

00:26:55.225 --> 00:26:56.665 the cancers are gonna recur

NOTE Confidence: 0.9919502

00:26:56.665 --> 00:26:57.965 locally in the pelvis,

NOTE Confidence: 0.98218393

00:26:59.130 --> 00:27:01.450 more often if you, have

NOTE Confidence: 0.98218393

00:27:01.450 --> 00:27:02.890 surgery alone. But when you

NOTE Confidence: 0.98218393

00:27:02.890 --> 00:27:04.330 add in radiation, we can

NOTE Confidence: 0.98218393

00:27:04.330 --> 00:27:06.030 reduce that likelihood of recurrence.

NOTE Confidence: 0.9989155

00:27:06.650 --> 00:27:07.609 And this is just showing

NOTE Confidence: 0.9989155

00:27:07.609 --> 00:27:08.650 you that if you apply

NOTE Confidence: 0.9989155

00:27:08.650 --> 00:27:09.230 the radiation

NOTE Confidence: 0.96359324

00:27:09.770 --> 00:27:11.630 before or after surgery,

NOTE Confidence: 0.9737598

00:27:12.250 --> 00:27:13.550 it's actually more effective

NOTE Confidence: 0.9866568

00:27:14.025 --> 00:27:15.385 before surgery. And in part,

NOTE Confidence: 0.9866568

00:27:15.385 --> 00:27:16.105 some of that is that

NOTE Confidence: 0.9866568

00:27:16.105 --> 00:27:17.145 we have a target that

NOTE Confidence: 0.9866568

00:27:17.145 --> 00:27:18.345 we can clearly see, and

NOTE Confidence: 0.9866568

00:27:18.345 --> 00:27:19.385 we're not kind of treating

NOTE Confidence: 0.9866568

00:27:19.385 --> 00:27:20.585 the space where the tumor

NOTE Confidence: 0.9866568

00:27:20.585 --> 00:27:21.405 used to be.

NOTE Confidence: 0.999302

00:27:22.265 --> 00:27:23.945 In those two trials that

NOTE Confidence: 0.999302

00:27:23.945 --> 00:27:25.225 I mentioned in the previous

NOTE Confidence: 0.999302

00:27:25.225 --> 00:27:26.665 slide, the radiation was delivered

NOTE Confidence: 0.999302

00:27:26.665 --> 00:27:27.885 in very different ways.

NOTE Confidence: 0.99783826

00:27:28.490 --> 00:27:29.770 So the first trial was

NOTE Confidence: 0.99783826

00:27:29.770 --> 00:27:31.530 delivering radiation in these five

NOTE Confidence: 0.99783826

00:27:31.530 --> 00:27:32.430 larger treatments

NOTE Confidence: 0.8770535

00:27:33.050 --> 00:27:34.030 without chemotherapy.

NOTE Confidence: 0.98923075

00:27:34.970 --> 00:27:36.250 And the second version was

NOTE Confidence: 0.98923075

00:27:36.250 --> 00:27:38.270 delivering radiation in daily doses,

NOTE Confidence: 0.9897418

00:27:38.570 --> 00:27:40.010 Mondays through Fridays over the

NOTE Confidence: 0.9897418

00:27:40.010 --> 00:27:40.890 course of five and a

NOTE Confidence: 0.9897418

00:27:40.890 --> 00:27:41.550 half weeks.

NOTE Confidence: 0.9933413

00:27:42.105 --> 00:27:43.545 And that's given with a

NOTE Confidence: 0.9933413

00:27:43.545 --> 00:27:45.225 light dose of chemotherapy that

NOTE Confidence: 0.9933413

00:27:45.225 --> 00:27:47.165 kinda synergizes with the radiation.

NOTE Confidence: 0.99701446

00:27:49.065 --> 00:27:50.185 So these are two, you

NOTE Confidence: 0.99701446

00:27:50.185 --> 00:27:51.545 know, quite distinct ways of

NOTE Confidence: 0.99701446

00:27:51.545 --> 00:27:53.065 giving radiation. So how do

NOTE Confidence: 0.99701446

00:27:53.065 --> 00:27:54.265 we choose between one or

NOTE Confidence: 0.99701446

00:27:54.265 --> 00:27:54.925 the other?

NOTE Confidence: 0.99407053

00:27:55.359 --> 00:27:56.740 I'll start by saying that,

NOTE Confidence: 0.994442

00:27:57.200 --> 00:27:58.880 in the US, the long

NOTE Confidence: 0.994442

00:27:58.880 --> 00:28:00.640 course of radiation over five

NOTE Confidence: 0.994442

00:28:00.640 --> 00:28:01.520 and a half weeks is

NOTE Confidence: 0.994442

00:28:01.520 --> 00:28:02.960 more commonly used just by

NOTE Confidence: 0.994442

00:28:02.960 --> 00:28:03.859 practice patterns.

NOTE Confidence: 0.9987603

00:28:04.559 --> 00:28:06.100 The shorter course of radiation

NOTE Confidence: 0.9987603

00:28:06.159 --> 00:28:07.440 is more commonly used in

NOTE Confidence: 0.9987603

00:28:07.440 --> 00:28:07.940 Europe.

NOTE Confidence: 0.9458429

00:28:08.445 --> 00:28:09.404 But if we look at

NOTE Confidence: 0.9458429

00:28:09.404 --> 00:28:11.025 data comparing the two approaches,

NOTE Confidence: 0.9754695

00:28:11.725 --> 00:28:12.945 so the different colors,

NOTE Confidence: 0.9609133

00:28:13.404 --> 00:28:14.865 on these graphs are just

NOTE Confidence: 0.9609133

00:28:14.924 --> 00:28:16.205 patients who either receive the

NOTE Confidence: 0.9609133

00:28:16.205 --> 00:28:17.645 short course of radiation or

NOTE Confidence: 0.9609133

00:28:17.645 --> 00:28:19.005 the longer course and what

NOTE Confidence: 0.9609133

00:28:19.005 --> 00:28:19.744 is their,

NOTE Confidence: 0.9840643

00:28:20.125 --> 00:28:22.625 overall survival after cancer treatment.

NOTE Confidence: 0.9728867

00:28:23.450 --> 00:28:24.570 The bottom line is that

NOTE Confidence: 0.9728867

00:28:24.570 --> 00:28:25.390 in general,

NOTE Confidence: 0.9684447

00:28:26.010 --> 00:28:27.690 survival and rates of local

NOTE Confidence: 0.9684447

00:28:27.690 --> 00:28:28.970 recurrence are the same if

NOTE Confidence: 0.9684447

00:28:28.970 --> 00:28:30.410 you deliver radiation in these

NOTE Confidence: 0.9684447

00:28:30.410 --> 00:28:31.850 two ways. So as a

NOTE Confidence: 0.9684447

00:28:31.850 --> 00:28:32.650 patient, I would say, well,

NOTE Confidence: 0.9684447

00:28:32.650 --> 00:28:33.530 I want the faster way,

NOTE Confidence: 0.9684447

00:28:33.530 --> 00:28:34.250 and I don't want a

NOTE Confidence: 0.9684447

00:28:34.250 --> 00:28:35.210 chemo pill. So why don't

NOTE Confidence: 0.9684447

00:28:35.210 --> 00:28:36.090 we just do the five

NOTE Confidence: 0.9684447

00:28:36.090 --> 00:28:37.450 treatments and and be done

NOTE Confidence: 0.9684447

00:28:37.450 --> 00:28:38.635 with it? So we get

NOTE Confidence: 0.9684447

00:28:38.635 --> 00:28:39.995 a little more nuanced with

NOTE Confidence: 0.9684447

00:28:39.995 --> 00:28:41.755 it. One of the analyses

NOTE Confidence: 0.9684447

00:28:41.755 --> 00:28:42.715 shows that if you have

NOTE Confidence: 0.9684447

00:28:42.715 --> 00:28:44.075 a cancer that is lower

NOTE Confidence: 0.9684447

00:28:44.075 --> 00:28:45.674 down in the rectum, so

NOTE Confidence: 0.9684447

00:28:45.674 --> 00:28:47.135 quite close to the anus

NOTE Confidence: 0.9684447

00:28:47.434 --> 00:28:48.795 and, you know, a benchmark

NOTE Confidence: 0.9684447

00:28:48.795 --> 00:28:49.915 that over a threshold we

NOTE Confidence: 0.9684447

00:28:49.915 --> 00:28:51.355 use is about five centimeters

NOTE Confidence: 0.9684447

00:28:51.355 --> 00:28:52.174 from the anus,

NOTE Confidence: 0.95947963

00:28:52.669 --> 00:28:54.429 in that particular population of

NOTE Confidence: 0.95947963

00:28:54.429 --> 00:28:56.210 patients. And maybe doctor Manjo

NOTE Confidence: 0.95947963

00:28:56.270 --> 00:28:57.730 can touch upon this. Oftentimes,

NOTE Confidence: 0.95947963

00:28:57.870 --> 00:28:59.230 the surgery can be more

NOTE Confidence: 0.95947963

00:28:59.230 --> 00:29:00.910 complex. And so in that

NOTE Confidence: 0.95947963

00:29:00.910 --> 00:29:01.410 situation,

NOTE Confidence: 0.9728847

00:29:01.950 --> 00:29:03.630 you know, shrinking the tumor,

NOTE Confidence: 0.9728847

00:29:03.630 --> 00:29:04.770 if you will, with radiation

NOTE Confidence: 0.9728847

00:29:04.910 --> 00:29:05.410 first,

NOTE Confidence: 0.99126375

00:29:06.115 --> 00:29:07.735 can can lead to,

NOTE Confidence: 0.988476

00:29:08.195 --> 00:29:09.955 more successful surgery and less

NOTE Confidence: 0.988476

00:29:09.955 --> 00:29:11.794 likelihood that there's residual tumor

NOTE Confidence: 0.988476

00:29:11.794 --> 00:29:12.995 that may grow back after

NOTE Confidence: 0.988476

00:29:12.995 --> 00:29:14.434 surgery. So I think that

NOTE Confidence: 0.988476

00:29:14.434 --> 00:29:15.154 would be one of the

NOTE Confidence: 0.988476

00:29:15.154 --> 00:29:16.674 instances for sure where we're

NOTE Confidence: 0.988476

00:29:16.674 --> 00:29:17.174 considering,

NOTE Confidence: 0.9963044

00:29:17.715 --> 00:29:19.174 a longer course of radiation

NOTE Confidence: 0.9963044

00:29:19.235 --> 00:29:20.615 rather than the short course.

NOTE Confidence: 0.99071753

00:29:20.970 --> 00:29:21.770 And then this is a

NOTE Confidence: 0.99071753

00:29:21.770 --> 00:29:23.370 really complicated slide just to

NOTE Confidence: 0.99071753

00:29:23.370 --> 00:29:24.890 show you, that in a

NOTE Confidence: 0.99071753

00:29:24.890 --> 00:29:26.890 trial that, the difference between

NOTE Confidence: 0.99071753

00:29:26.890 --> 00:29:27.789 the two treatment,

NOTE Confidence: 0.9241377

00:29:28.730 --> 00:29:29.230 pathways,

NOTE Confidence: 0.98578304

00:29:29.850 --> 00:29:30.970 one of the differences was

NOTE Confidence: 0.98578304

00:29:30.970 --> 00:29:31.929 that some of the patients

NOTE Confidence: 0.98578304

00:29:31.929 --> 00:29:33.210 had the short course radiation

NOTE Confidence: 0.98578304

00:29:33.210 --> 00:29:34.169 and some had the long

NOTE Confidence: 0.98578304

00:29:34.169 --> 00:29:34.990 course radiation.

NOTE Confidence: 0.98042715

00:29:35.345 --> 00:29:36.625 This trial was also looking

NOTE Confidence: 0.98042715

00:29:36.625 --> 00:29:37.985 at other things, like having

NOTE Confidence: 0.98042715

00:29:37.985 --> 00:29:40.225 chemo before surgery versus chemo

NOTE Confidence: 0.98042715

00:29:40.225 --> 00:29:41.125 after surgery.

NOTE Confidence: 0.9855004

00:29:42.065 --> 00:29:43.745 We now use the chemo

NOTE Confidence: 0.9855004

00:29:43.745 --> 00:29:45.425 before surgery in most cases

NOTE Confidence: 0.9855004

00:29:45.425 --> 00:29:46.865 because of some studies showing,

NOTE Confidence: 0.9855004

00:29:46.865 --> 00:29:48.465 you know, survival benefits to

NOTE Confidence: 0.9855004

00:29:48.465 --> 00:29:49.830 that. But what I want

NOTE Confidence: 0.9855004

00:29:49.830 --> 00:29:50.870 to point out from this

NOTE Confidence: 0.9855004

00:29:50.870 --> 00:29:52.070 trial is that if it

NOTE Confidence: 0.9855004

00:29:52.070 --> 00:29:53.030 is a way to compare

NOTE Confidence: 0.9855004

00:29:53.030 --> 00:29:54.390 the shorter course and the

NOTE Confidence: 0.9855004

00:29:54.390 --> 00:29:55.290 longer course.

NOTE Confidence: 0.99742967

00:29:55.830 --> 00:29:57.750 And this particular trial involved

NOTE Confidence: 0.99742967

00:29:57.750 --> 00:29:59.110 patients with really much more

NOTE Confidence: 0.99742967

00:29:59.110 --> 00:30:00.090 advanced tumors,

NOTE Confidence: 0.930024

00:30:00.550 --> 00:30:02.230 meaning the t fours deeper

NOTE Confidence: 0.930024

00:30:02.230 --> 00:30:03.050 in the rectum,

NOTE Confidence: 0.9732119

00:30:03.415 --> 00:30:04.775 those with n two disease,

NOTE Confidence: 0.9732119

00:30:04.775 --> 00:30:05.815 so a lot more lymph

NOTE Confidence: 0.9732119

00:30:05.815 --> 00:30:07.255 node involvement, and then these

NOTE Confidence: 0.9732119

00:30:07.255 --> 00:30:08.775 other more technical kind of

NOTE Confidence: 0.9732119

00:30:08.775 --> 00:30:10.055 risk factors that we look

NOTE Confidence: 0.9732119

00:30:10.055 --> 00:30:11.355 at as a team.

NOTE Confidence: 0.98976815

00:30:11.815 --> 00:30:13.095 And in these kind of

NOTE Confidence: 0.98976815

00:30:13.095 --> 00:30:14.235 higher risk patients,

NOTE Confidence: 0.96779346

00:30:14.935 --> 00:30:16.295 when we compare the two

NOTE Confidence: 0.96779346

00:30:16.295 --> 00:30:17.975 arms, the patients that received

NOTE Confidence: 0.96779346

00:30:17.975 --> 00:30:19.380 the shorter course radiation

NOTE Confidence: 0.9815396

00:30:20.080 --> 00:30:21.760 actually had a higher risk

NOTE Confidence: 0.9815396

00:30:21.760 --> 00:30:23.040 of local recurrence in the

NOTE Confidence: 0.9815396

00:30:23.040 --> 00:30:24.820 pelvis at about ten percent,

NOTE Confidence: 0.98811334

00:30:25.520 --> 00:30:27.120 versus more like, you know,

NOTE Confidence: 0.98811334

00:30:27.120 --> 00:30:28.480 six percent with the longer

NOTE Confidence: 0.98811334

00:30:28.480 --> 00:30:28.980 course.

NOTE Confidence: 0.9823006

00:30:29.280 --> 00:30:30.160 So, again, I think if

NOTE Confidence: 0.9823006

00:30:30.160 --> 00:30:31.380 you have a more advanced

NOTE Confidence: 0.9823006

00:30:31.440 --> 00:30:32.800 tumor, we certainly want to

NOTE Confidence: 0.9823006

00:30:32.800 --> 00:30:33.860 be proceeding

NOTE Confidence: 0.9290684

00:30:34.185 --> 00:30:35.385 with the longer course of

NOTE Confidence: 0.9290684

00:30:35.385 --> 00:30:35.885 radiation,

NOTE Confidence: 0.9943496

00:30:37.625 --> 00:30:38.925 for for this reason,

NOTE Confidence: 0.9669571

00:30:39.225 --> 00:30:40.925 and this trial supporting that.

NOTE Confidence: 0.9965809

00:30:41.225 --> 00:30:42.105 So just kind of a

NOTE Confidence: 0.9965809

00:30:42.105 --> 00:30:43.725 summary of that is that,

NOTE Confidence: 0.9610005

00:30:44.185 --> 00:30:45.785 we definitely prefer the longer

NOTE Confidence: 0.9610005

00:30:45.785 --> 00:30:47.465 course radiation for tumors that

NOTE Confidence: 0.9610005

00:30:47.465 --> 00:30:48.665 are low close to the

NOTE Confidence: 0.9610005

00:30:48.665 --> 00:30:49.165 anus,

NOTE Confidence: 0.9665502

00:30:49.549 --> 00:30:50.830 for tumors with these higher

NOTE Confidence: 0.9665502

00:30:50.830 --> 00:30:52.750 risk factors like the t

NOTE Confidence: 0.9665502

00:30:52.750 --> 00:30:54.270 four tumors or a lot

NOTE Confidence: 0.9665502

00:30:54.270 --> 00:30:56.049 of lymph node involve involvement.

NOTE Confidence: 0.9938947

00:30:56.909 --> 00:30:58.110 Another scenario would be if

NOTE Confidence: 0.9938947

00:30:58.110 --> 00:30:59.710 we wanna really maximize local

NOTE Confidence: 0.9938947

00:30:59.710 --> 00:31:01.309 control because we're thinking about

NOTE Confidence: 0.9938947

00:31:01.309 --> 00:31:02.590 maybe trying to avoid surgery,

NOTE Confidence: 0.9938947

00:31:02.590 --> 00:31:03.549 and I'll talk about that

NOTE Confidence: 0.9938947

00:31:03.549 --> 00:31:04.850 in the next few slides.

NOTE Confidence: 0.9709074

00:31:05.445 --> 00:31:06.745 But that the short course,

NOTE Confidence: 0.9709074

00:31:06.804 --> 00:31:08.245 we can consider for patients

NOTE Confidence: 0.9709074

00:31:08.245 --> 00:31:08.904 who have,

NOTE Confidence: 0.9796147

00:31:09.445 --> 00:31:11.125 less advanced tumors that are

NOTE Confidence: 0.9796147

00:31:11.125 --> 00:31:12.325 not getting close to kind

NOTE Confidence: 0.9796147

00:31:12.325 --> 00:31:13.205 of the edge of where

NOTE Confidence: 0.9796147

00:31:13.205 --> 00:31:14.725 doctor Maggio would be cutting

NOTE Confidence: 0.9796147

00:31:14.725 --> 00:31:15.465 for surgery,

NOTE Confidence: 0.9921698

00:31:16.325 --> 00:31:17.605 and tumors that are not

NOTE Confidence: 0.9921698

00:31:17.605 --> 00:31:18.965 really low in the rectum.

NOTE Confidence: 0.9921698

00:31:18.965 --> 00:31:20.245 And so we use this

NOTE Confidence: 0.9921698

00:31:20.245 --> 00:31:21.820 for select patients, but I

NOTE Confidence: 0.9921698

00:31:21.820 --> 00:31:23.179 think really default more to

NOTE Confidence: 0.9921698

00:31:23.179 --> 00:31:24.700 the longer course radiation with

NOTE Confidence: 0.9921698

00:31:24.700 --> 00:31:25.759 the chemo pill.

NOTE Confidence: 0.9840439

00:31:26.460 --> 00:31:27.840 How else can we individualize

NOTE Confidence: 0.9840439

00:31:28.139 --> 00:31:29.500 treatment, and the use of

NOTE Confidence: 0.9840439

00:31:29.500 --> 00:31:31.259 radiation? So we know that

NOTE Confidence: 0.9840439

00:31:31.259 --> 00:31:32.940 rectal surgery obviously is gonna

NOTE Confidence: 0.9840439

00:31:32.940 --> 00:31:34.159 affect your bowel function,

NOTE Confidence: 0.9931218

00:31:34.995 --> 00:31:36.375 and also that the combination

NOTE Confidence: 0.9931218

00:31:36.515 --> 00:31:38.195 of radiation and rectal surgery

NOTE Confidence: 0.9931218

00:31:38.195 --> 00:31:39.555 can also affect your bowels,

NOTE Confidence: 0.9931218

00:31:39.555 --> 00:31:41.395 also your bladder, also sexual

NOTE Confidence: 0.9931218

00:31:41.395 --> 00:31:41.895 function.

NOTE Confidence: 0.9788356

00:31:42.355 --> 00:31:44.035 So are there instances where

NOTE Confidence: 0.9788356

00:31:44.035 --> 00:31:45.075 we can avoid some of

NOTE Confidence: 0.9788356

00:31:45.075 --> 00:31:46.435 these treatments and try to

NOTE Confidence: 0.9788356

00:31:46.435 --> 00:31:48.135 reduce toxicity but not,

NOTE Confidence: 0.9966647

00:31:48.649 --> 00:31:49.950 you know, have a negative

NOTE Confidence: 0.9966647

00:31:50.010 --> 00:31:51.470 impact on cancer outcomes.

NOTE Confidence: 0.98098224

00:31:52.330 --> 00:31:53.850 So I'll talk first about

NOTE Confidence: 0.98098224

00:31:53.850 --> 00:31:54.669 organ preservation,

NOTE Confidence: 0.9016771

00:31:55.289 --> 00:31:56.649 which is what the term

NOTE Confidence: 0.9016771

00:31:56.649 --> 00:31:57.549 we use for,

NOTE Confidence: 0.9871421

00:31:58.649 --> 00:31:59.950 trying to maybe,

NOTE Confidence: 0.913545

00:32:00.490 --> 00:32:01.470 defer surgery,

NOTE Confidence: 0.79422855

00:32:02.185 --> 00:32:03.245 unless needed.

NOTE Confidence: 0.98508835

00:32:03.945 --> 00:32:05.305 So this is an example.

NOTE Confidence: 0.98508835

00:32:05.305 --> 00:32:06.585 We have studies that showed

NOTE Confidence: 0.98508835

00:32:06.585 --> 00:32:07.865 us that in patients who

NOTE Confidence: 0.98508835

00:32:07.865 --> 00:32:08.365 have,

NOTE Confidence: 0.9753315

00:32:08.905 --> 00:32:10.425 a complete response, so you

NOTE Confidence: 0.9753315

00:32:10.425 --> 00:32:12.345 can achieve a complete response

NOTE Confidence: 0.9753315

00:32:12.345 --> 00:32:13.085 to chemotherapy

NOTE Confidence: 0.97845274

00:32:13.785 --> 00:32:15.065 followed by that long course

NOTE Confidence: 0.97845274

00:32:15.065 --> 00:32:16.505 of radiation that I that

NOTE Confidence: 0.97845274

00:32:16.505 --> 00:32:17.165 I described,

NOTE Confidence: 0.9894945

00:32:18.050 --> 00:32:19.330 complete response to the best

NOTE Confidence: 0.9894945

00:32:19.330 --> 00:32:20.850 of our abilities to detect

NOTE Confidence: 0.9894945

00:32:20.850 --> 00:32:22.309 that. So based on MRI,

NOTE Confidence: 0.9894945

00:32:22.530 --> 00:32:23.650 based on a good rectal

NOTE Confidence: 0.9894945

00:32:23.650 --> 00:32:25.570 exam, based on a scope

NOTE Confidence: 0.9894945

00:32:25.570 --> 00:32:26.770 going up and looking inside

NOTE Confidence: 0.9894945

00:32:26.770 --> 00:32:27.429 the rectum.

NOTE Confidence: 0.99795026

00:32:28.370 --> 00:32:29.970 And so if we take

NOTE Confidence: 0.99795026

00:32:29.970 --> 00:32:31.010 those patients who had a

NOTE Confidence: 0.99795026

00:32:31.010 --> 00:32:31.990 complete response

NOTE Confidence: 0.91580904

00:32:32.370 --> 00:32:32.690 and,

NOTE Confidence: 0.9373255

00:32:33.625 --> 00:32:34.605 watch them closely,

NOTE Confidence: 0.9875393

00:32:35.385 --> 00:32:36.445 what are the outcomes,

NOTE Confidence: 0.9546666

00:32:37.465 --> 00:32:38.684 in deferring surgery?

NOTE Confidence: 0.99146605

00:32:39.385 --> 00:32:41.145 This particular study was actually

NOTE Confidence: 0.99146605

00:32:41.145 --> 00:32:42.424 asking that question by just

NOTE Confidence: 0.99146605

00:32:42.424 --> 00:32:44.445 looking at two different sequences

NOTE Confidence: 0.99146605

00:32:44.505 --> 00:32:45.705 of therapy. So we have

NOTE Confidence: 0.99146605

00:32:45.705 --> 00:32:46.904 patients with stage two or

NOTE Confidence: 0.99146605

00:32:46.904 --> 00:32:47.965 three rectal cancer.

NOTE Confidence: 0.9740981

00:32:48.430 --> 00:32:49.710 Either they had their radiation

NOTE Confidence: 0.9740981

00:32:49.710 --> 00:32:51.070 first, and then they went

NOTE Confidence: 0.9740981

00:32:51.070 --> 00:32:52.350 to see doctor Cicchini and

NOTE Confidence: 0.9740981

00:32:52.350 --> 00:32:53.390 had their four months of

NOTE Confidence: 0.9740981

00:32:53.390 --> 00:32:55.070 chemo, or they started with

NOTE Confidence: 0.9740981

00:32:55.070 --> 00:32:56.430 doctor Cicchini and then came

NOTE Confidence: 0.9740981

00:32:56.430 --> 00:32:57.010 to me.

NOTE Confidence: 0.97836924

00:32:57.390 --> 00:32:58.590 For this stage of patients,

NOTE Confidence: 0.97836924

00:32:58.590 --> 00:32:59.870 and they were probably highly

NOTE Confidence: 0.97836924

00:32:59.870 --> 00:33:01.310 selected as all patients are

NOTE Confidence: 0.97836924

00:33:01.310 --> 00:33:02.450 on a clinical trial,

NOTE Confidence: 0.9956179

00:33:03.215 --> 00:33:04.495 if you looked at them

NOTE Confidence: 0.9956179

00:33:04.495 --> 00:33:05.775 about eight to twelve weeks

NOTE Confidence: 0.9956179

00:33:05.775 --> 00:33:06.835 after their therapy,

NOTE Confidence: 0.98771626

00:33:07.455 --> 00:33:08.835 in both of those approaches,

NOTE Confidence: 0.98771626

00:33:08.975 --> 00:33:10.575 about three quarters of them

NOTE Confidence: 0.98771626

00:33:10.575 --> 00:33:12.015 had a complete response so

NOTE Confidence: 0.98771626

00:33:12.015 --> 00:33:13.075 they could be offered,

NOTE Confidence: 0.99221206

00:33:13.695 --> 00:33:15.235 what we call active surveillance.

NOTE Confidence: 0.99221206

00:33:15.510 --> 00:33:16.630 So what is this active

NOTE Confidence: 0.99221206

00:33:16.630 --> 00:33:17.830 surveillance? So,

NOTE Confidence: 0.99579716

00:33:18.150 --> 00:33:19.110 it's a lot of poking

NOTE Confidence: 0.99579716

00:33:19.110 --> 00:33:19.770 and prodding,

NOTE Confidence: 0.9858479

00:33:20.230 --> 00:33:21.750 rectal exam and a scope

NOTE Confidence: 0.9858479

00:33:21.750 --> 00:33:22.790 every four months for the

NOTE Confidence: 0.9858479

00:33:22.790 --> 00:33:23.910 first two years and then

NOTE Confidence: 0.9858479

00:33:23.910 --> 00:33:24.890 every six months,

NOTE Confidence: 0.98416835

00:33:25.590 --> 00:33:27.190 MRI at least twice a

NOTE Confidence: 0.98416835

00:33:27.190 --> 00:33:28.150 year for two years and

NOTE Confidence: 0.98416835

00:33:28.150 --> 00:33:28.890 then annually.

NOTE Confidence: 0.9837017

00:33:29.895 --> 00:33:31.175 What we found was that,

NOTE Confidence: 0.9802808

00:33:31.575 --> 00:33:32.855 or what this study found

NOTE Confidence: 0.9802808

00:33:32.855 --> 00:33:33.975 was that in about half

NOTE Confidence: 0.9802808

00:33:33.975 --> 00:33:34.715 of the patients,

NOTE Confidence: 0.9831431

00:33:35.895 --> 00:33:36.855 it turned out that their

NOTE Confidence: 0.9831431

00:33:36.855 --> 00:33:39.015 tumor didn't recur, that complete

NOTE Confidence: 0.9831431

00:33:39.015 --> 00:33:40.315 response was sustained,

NOTE Confidence: 0.98514843

00:33:40.935 --> 00:33:41.895 and they did not need

NOTE Confidence: 0.98514843

00:33:41.895 --> 00:33:43.270 to have a surgery. And

NOTE Confidence: 0.98514843

00:33:43.270 --> 00:33:44.230 then if you look at

NOTE Confidence: 0.98514843

00:33:44.230 --> 00:33:45.350 how they did and their

NOTE Confidence: 0.98514843

00:33:45.350 --> 00:33:47.190 survival overall compared to what

NOTE Confidence: 0.98514843

00:33:47.190 --> 00:33:48.870 we call historical controls or

NOTE Confidence: 0.98514843

00:33:48.870 --> 00:33:50.230 just what we know can

NOTE Confidence: 0.98514843

00:33:50.230 --> 00:33:51.670 be expected of patients who

NOTE Confidence: 0.98514843

00:33:51.670 --> 00:33:53.210 received kind of the whole

NOTE Confidence: 0.98514843

00:33:53.350 --> 00:33:54.809 standard treatment paradigm,

NOTE Confidence: 0.9958705

00:33:55.110 --> 00:33:56.730 the survival seemed comparable.

NOTE Confidence: 0.9977931

00:33:58.375 --> 00:33:59.915 And so, you know, from

NOTE Confidence: 0.9977931

00:33:59.975 --> 00:34:01.195 these kinds of studies,

NOTE Confidence: 0.9600607

00:34:01.495 --> 00:34:02.375 what we learned is that

NOTE Confidence: 0.9600607

00:34:02.375 --> 00:34:03.255 we have to be very

NOTE Confidence: 0.9600607

00:34:03.255 --> 00:34:03.755 selective.

NOTE Confidence: 0.9649667

00:34:04.615 --> 00:34:06.535 This requires certain stage of

NOTE Confidence: 0.9649667

00:34:06.535 --> 00:34:07.735 tumor where we expect a

NOTE Confidence: 0.9649667

00:34:07.735 --> 00:34:08.715 complete response.

NOTE Confidence: 0.9913024

00:34:09.335 --> 00:34:10.295 If we do see that

NOTE Confidence: 0.9913024

00:34:10.295 --> 00:34:11.195 complete response,

NOTE Confidence: 0.99829537

00:34:11.930 --> 00:34:13.050 in a patient who is

NOTE Confidence: 0.99829537

00:34:13.050 --> 00:34:14.430 willing to be really actively

NOTE Confidence: 0.99829537

00:34:14.570 --> 00:34:15.550 followed closely,

NOTE Confidence: 0.9958166

00:34:17.290 --> 00:34:19.530 thinking about deferring surgery is

NOTE Confidence: 0.9958166

00:34:19.530 --> 00:34:20.190 an option,

NOTE Confidence: 0.9861535

00:34:20.570 --> 00:34:22.010 that we would make as

NOTE Confidence: 0.9861535

00:34:22.010 --> 00:34:22.670 a multidisciplinary

NOTE Confidence: 0.97725433

00:34:23.530 --> 00:34:24.030 team,

NOTE Confidence: 0.95076305

00:34:24.730 --> 00:34:26.090 and really can be applied

NOTE Confidence: 0.95076305

00:34:26.090 --> 00:34:27.875 in select cases, but with

NOTE Confidence: 0.95076305

00:34:27.875 --> 00:34:28.855 obvious benefits.

NOTE Confidence: 0.9514964

00:34:30.275 --> 00:34:31.555 Then I'm gonna talk a

NOTE Confidence: 0.9514964

00:34:31.555 --> 00:34:32.935 little bit about what about,

NOTE Confidence: 0.98993623

00:34:33.395 --> 00:34:34.535 options where you could,

NOTE Confidence: 0.99098927

00:34:35.315 --> 00:34:36.755 maybe not need to use

NOTE Confidence: 0.99098927

00:34:36.755 --> 00:34:37.255 radiation.

NOTE Confidence: 0.9963031

00:34:38.275 --> 00:34:39.510 And so this comes into

NOTE Confidence: 0.9963031

00:34:39.510 --> 00:34:40.710 play for patients that are

NOTE Confidence: 0.9963031

00:34:40.710 --> 00:34:42.410 kinda just meeting the criteria

NOTE Confidence: 0.9963031

00:34:42.550 --> 00:34:44.170 where you would consider radiation.

NOTE Confidence: 0.9705931

00:34:44.710 --> 00:34:45.830 So maybe you have some

NOTE Confidence: 0.9705931

00:34:45.830 --> 00:34:47.030 lymph nodes but not that

NOTE Confidence: 0.9705931

00:34:47.030 --> 00:34:48.950 many, or maybe there's depth

NOTE Confidence: 0.9705931

00:34:48.950 --> 00:34:49.830 that takes you to the

NOTE Confidence: 0.9705931

00:34:49.830 --> 00:34:51.110 t three stage but not

NOTE Confidence: 0.9705931

00:34:51.110 --> 00:34:52.410 the t four stage.

NOTE Confidence: 0.9338238

00:34:53.590 --> 00:34:53.750 So,

NOTE Confidence: 0.98946154

00:34:55.085 --> 00:34:56.285 in this study, they were

NOTE Confidence: 0.98946154

00:34:56.285 --> 00:34:57.404 letting those patients have the

NOTE Confidence: 0.98946154

00:34:57.404 --> 00:34:58.844 standard radiation going on to

NOTE Confidence: 0.98946154

00:34:58.844 --> 00:35:00.384 surgery and then chemo afterwards,

NOTE Confidence: 0.9381747

00:35:01.164 --> 00:35:02.364 or saying, okay. If we

NOTE Confidence: 0.9381747

00:35:02.364 --> 00:35:03.565 give them the chemo first

NOTE Confidence: 0.9381747

00:35:03.565 --> 00:35:04.765 and they look like they're

NOTE Confidence: 0.9381747

00:35:04.765 --> 00:35:06.525 responding, at least a response

NOTE Confidence: 0.9381747

00:35:06.525 --> 00:35:08.065 of twenty percent by MRI,

NOTE Confidence: 0.96197814

00:35:08.570 --> 00:35:09.610 What happens if we just

NOTE Confidence: 0.96197814

00:35:09.610 --> 00:35:11.369 don't radiate them, go straight

NOTE Confidence: 0.96197814

00:35:11.369 --> 00:35:12.030 to surgery?

NOTE Confidence: 0.9653537

00:35:12.410 --> 00:35:13.770 And in the patients where

NOTE Confidence: 0.9653537

00:35:13.770 --> 00:35:14.969 they didn't seem to respond

NOTE Confidence: 0.9653537

00:35:14.969 --> 00:35:16.330 to chemo, we'll give them

NOTE Confidence: 0.9653537

00:35:16.330 --> 00:35:17.690 the standard radiation. And it

NOTE Confidence: 0.9653537

00:35:17.690 --> 00:35:19.530 turns out most patients, majority,

NOTE Confidence: 0.9653537

00:35:19.530 --> 00:35:21.050 really, like ninety percent of

NOTE Confidence: 0.9653537

00:35:21.050 --> 00:35:23.565 patients were responding and had

NOTE Confidence: 0.9653537

00:35:23.565 --> 00:35:24.945 their radiation emitted,

NOTE Confidence: 0.99515384

00:35:25.565 --> 00:35:27.165 and a smaller fraction needed

NOTE Confidence: 0.99515384

00:35:27.165 --> 00:35:28.145 to have the radiation.

NOTE Confidence: 0.92318046

00:35:29.005 --> 00:35:30.125 So really, this is saying,

NOTE Confidence: 0.92318046

00:35:30.125 --> 00:35:31.985 can we use chemo first,

NOTE Confidence: 0.7826131

00:35:32.844 --> 00:35:33.870 and then selectively use

NOTE Confidence: 0.89291996

00:35:36.350 --> 00:35:36.930 radiation only for that small

NOTE Confidence: 0.89291996

00:35:37.070 --> 00:35:38.610 fraction that aren't responding to

NOTE Confidence: 0.89291996

00:35:38.750 --> 00:35:40.190 chemo? How does that affect

NOTE Confidence: 0.89291996

00:35:40.190 --> 00:35:41.490 the overall outcome?

NOTE Confidence: 0.9441976

00:35:41.950 --> 00:35:42.910 And the bottom line is

NOTE Confidence: 0.9441976

00:35:42.910 --> 00:35:44.110 there was no difference in

NOTE Confidence: 0.9441976

00:35:44.110 --> 00:35:45.650 local control of the tumor,

NOTE Confidence: 0.883146

00:35:46.350 --> 00:35:48.450 survival disease free or overall

NOTE Confidence: 0.883146

00:35:48.510 --> 00:35:49.010 survival.

NOTE Confidence: 0.97572196

00:35:49.445 --> 00:35:50.885 Again, a really select group

NOTE Confidence: 0.97572196

00:35:50.885 --> 00:35:52.085 of patients, so this is

NOTE Confidence: 0.97572196

00:35:52.085 --> 00:35:53.205 not for all comers with

NOTE Confidence: 0.97572196

00:35:53.205 --> 00:35:54.745 locally advanced rectal cancer.

NOTE Confidence: 0.9519947

00:35:55.205 --> 00:35:56.245 These are for the lower

NOTE Confidence: 0.9519947

00:35:56.245 --> 00:35:58.085 risk category where your tumors

NOTE Confidence: 0.9519947

00:35:58.085 --> 00:35:58.825 up higher,

NOTE Confidence: 0.98889107

00:35:59.445 --> 00:36:00.645 maybe a t two or

NOTE Confidence: 0.98889107

00:36:00.645 --> 00:36:02.105 a t three with limited

NOTE Confidence: 0.98889107

00:36:02.165 --> 00:36:03.705 or no lymph node involvement.

NOTE Confidence: 0.9741299

00:36:04.730 --> 00:36:06.010 Absolutely. If we're not gonna

NOTE Confidence: 0.9741299

00:36:06.010 --> 00:36:07.530 use pelvic radiation, you're gonna

NOTE Confidence: 0.9741299

00:36:07.530 --> 00:36:08.969 need doctor Mangio to remove

NOTE Confidence: 0.9741299

00:36:08.969 --> 00:36:10.109 the tumor with surgery.

NOTE Confidence: 0.8272694

00:36:10.809 --> 00:36:12.270 So just another,

NOTE Confidence: 0.9929376

00:36:12.730 --> 00:36:13.849 scenario where we can kind

NOTE Confidence: 0.9929376

00:36:13.849 --> 00:36:16.185 of tweak the, standard treatment

NOTE Confidence: 0.9929376

00:36:16.185 --> 00:36:16.685 course,

NOTE Confidence: 0.9929487

00:36:17.385 --> 00:36:18.765 for specific criteria,

NOTE Confidence: 0.99576503

00:36:19.465 --> 00:36:21.485 of your particular tumor presentation.

NOTE Confidence: 0.98655236

00:36:23.465 --> 00:36:24.825 And then, obviously, there are

NOTE Confidence: 0.98655236

00:36:24.825 --> 00:36:26.265 some benefits to not having

NOTE Confidence: 0.98655236

00:36:26.265 --> 00:36:27.385 radiation as part of your

NOTE Confidence: 0.98655236

00:36:27.385 --> 00:36:28.830 treatment course, and I think

NOTE Confidence: 0.98655236

00:36:28.910 --> 00:36:30.270 I'll focus on the long

NOTE Confidence: 0.98655236

00:36:30.270 --> 00:36:31.790 term benefits, which are really

NOTE Confidence: 0.98655236

00:36:31.790 --> 00:36:32.290 that,

NOTE Confidence: 0.98914015

00:36:32.670 --> 00:36:33.950 a year after surgery, if

NOTE Confidence: 0.98914015

00:36:33.950 --> 00:36:35.230 you looked at these patients

NOTE Confidence: 0.98914015

00:36:35.230 --> 00:36:36.690 who did not need radiation,

NOTE Confidence: 0.9599309

00:36:37.390 --> 00:36:38.430 they had lower rates of

NOTE Confidence: 0.9599309

00:36:38.430 --> 00:36:39.489 fatigue and neuropathy,

NOTE Confidence: 0.942113

00:36:40.270 --> 00:36:41.950 but really better sexual function

NOTE Confidence: 0.942113

00:36:41.950 --> 00:36:43.105 and also something that is

NOTE Confidence: 0.942113

00:36:43.105 --> 00:36:45.185 important, especially with younger population

NOTE Confidence: 0.942113

00:36:45.185 --> 00:36:45.844 of patients,

NOTE Confidence: 0.9879044

00:36:46.385 --> 00:36:48.245 being diagnosed with rectal cancer,

NOTE Confidence: 0.9995291

00:36:49.265 --> 00:36:50.885 better preservation of fertility

NOTE Confidence: 0.9940631

00:36:51.344 --> 00:36:52.945 and ovarian function. So one

NOTE Confidence: 0.9940631

00:36:52.945 --> 00:36:53.985 thing that can happen with

NOTE Confidence: 0.9940631

00:36:53.985 --> 00:36:56.085 pelvic radiation involving the ovaries

NOTE Confidence: 0.9940631

00:36:56.145 --> 00:36:57.285 is that we can induce

NOTE Confidence: 0.9940631

00:36:57.500 --> 00:36:58.940 early menopause in those patients

NOTE Confidence: 0.9940631

00:36:58.940 --> 00:36:59.760 that are premenopausal.

NOTE Confidence: 0.98912394

00:37:00.140 --> 00:37:01.980 So some advantages for sure

NOTE Confidence: 0.98912394

00:37:01.980 --> 00:37:03.260 for being able to avoid

NOTE Confidence: 0.98912394

00:37:03.260 --> 00:37:04.960 pelvic radiation when feasible.

NOTE Confidence: 0.99451077

00:37:06.140 --> 00:37:07.420 And then lastly, I wanna

NOTE Confidence: 0.99451077

00:37:07.420 --> 00:37:08.380 talk about how we can

NOTE Confidence: 0.99451077

00:37:08.380 --> 00:37:09.819 be helpful in the scenario

NOTE Confidence: 0.99451077

00:37:09.819 --> 00:37:10.480 of oligometastatic

NOTE Confidence: 0.99764866

00:37:11.099 --> 00:37:11.599 disease.

NOTE Confidence: 0.976868

00:37:12.375 --> 00:37:13.735 So this is what doctor

NOTE Confidence: 0.976868

00:37:13.735 --> 00:37:16.295 Cicchini described as rectal cancer

NOTE Confidence: 0.976868

00:37:16.295 --> 00:37:18.235 or colorectal cancer, really,

NOTE Confidence: 0.93932045

00:37:18.695 --> 00:37:20.375 that has metastasized but in

NOTE Confidence: 0.93932045

00:37:20.375 --> 00:37:21.515 a limited fashion.

NOTE Confidence: 0.9676257

00:37:22.055 --> 00:37:23.655 So we have learned that

NOTE Confidence: 0.9676257

00:37:23.655 --> 00:37:24.155 metastasis

NOTE Confidence: 0.86122346

00:37:24.455 --> 00:37:24.955 to,

NOTE Confidence: 0.9969101

00:37:25.290 --> 00:37:26.730 up to five sites really

NOTE Confidence: 0.9969101

00:37:26.730 --> 00:37:27.930 behaves differently and can be

NOTE Confidence: 0.9969101

00:37:27.930 --> 00:37:29.070 treated more aggressively

NOTE Confidence: 0.99799484

00:37:29.610 --> 00:37:31.370 than rectal colorectal cancer that

NOTE Confidence: 0.99799484

00:37:31.370 --> 00:37:33.370 has spread more diffusely within

NOTE Confidence: 0.99799484

00:37:33.370 --> 00:37:33.950 the body.

NOTE Confidence: 0.9737898

00:37:34.570 --> 00:37:36.410 Oftentimes, we remove those limited

NOTE Confidence: 0.9737898

00:37:36.410 --> 00:37:37.930 sites of metastatic disease with

NOTE Confidence: 0.9737898

00:37:37.930 --> 00:37:38.430 surgery.

NOTE Confidence: 0.9352364

00:37:38.895 --> 00:37:40.175 But when surgery is not

NOTE Confidence: 0.9352364

00:37:40.175 --> 00:37:40.675 feasible,

NOTE Confidence: 0.99098825

00:37:41.215 --> 00:37:42.895 we can use radiation, and

NOTE Confidence: 0.99098825

00:37:42.895 --> 00:37:44.175 the type of radiation is

NOTE Confidence: 0.99098825

00:37:44.175 --> 00:37:45.614 slightly different. It's something we

NOTE Confidence: 0.99098825

00:37:45.614 --> 00:37:46.515 call stereotactic,

NOTE Confidence: 0.99231356

00:37:47.614 --> 00:37:49.395 body radiation or stereotactic

NOTE Confidence: 0.9960535

00:37:49.855 --> 00:37:51.295 ablative radiation. I always say

NOTE Confidence: 0.9960535

00:37:51.295 --> 00:37:52.255 to my patients, we're just

NOTE Confidence: 0.9960535

00:37:52.255 --> 00:37:53.375 trying to sound cool with

NOTE Confidence: 0.9960535

00:37:53.375 --> 00:37:54.570 all these fancy names.

NOTE Confidence: 0.9654075

00:37:55.530 --> 00:37:56.730 Some people even shorten the

NOTE Confidence: 0.9654075

00:37:56.730 --> 00:37:58.670 stereotactic ablative to saber.

NOTE Confidence: 0.9579479

00:37:59.210 --> 00:38:00.170 What this means is we're

NOTE Confidence: 0.9579479

00:38:00.170 --> 00:38:01.370 giving a high dose that

NOTE Confidence: 0.9579479

00:38:01.370 --> 00:38:02.410 we can get away with

NOTE Confidence: 0.9579479

00:38:02.410 --> 00:38:03.950 because the tumor is small,

NOTE Confidence: 0.9579479

00:38:04.170 --> 00:38:05.850 and we're rapidly dropping that

NOTE Confidence: 0.9579479

00:38:05.850 --> 00:38:07.290 dose off right with a

NOTE Confidence: 0.9579479

00:38:07.450 --> 00:38:08.989 right outside of your tumor

NOTE Confidence: 0.9579479

00:38:09.265 --> 00:38:11.105 and taking in advantage of

NOTE Confidence: 0.9579479

00:38:11.105 --> 00:38:11.605 technological,

NOTE Confidence: 0.9850283

00:38:13.105 --> 00:38:14.385 advances such that we can

NOTE Confidence: 0.9850283

00:38:14.385 --> 00:38:15.665 account for how your tumor

NOTE Confidence: 0.9850283

00:38:15.665 --> 00:38:17.525 is moving. We can precisely

NOTE Confidence: 0.987024

00:38:17.905 --> 00:38:19.825 localize your tumor for treatment

NOTE Confidence: 0.987024

00:38:19.825 --> 00:38:21.765 with imaging during treatment,

NOTE Confidence: 0.99771047

00:38:22.480 --> 00:38:23.280 to make sure that we

NOTE Confidence: 0.99771047

00:38:23.280 --> 00:38:24.880 can safely deposit a really

NOTE Confidence: 0.99771047

00:38:24.880 --> 00:38:26.239 high dose of radiation to

NOTE Confidence: 0.99771047

00:38:26.239 --> 00:38:27.920 these small tumors that can

NOTE Confidence: 0.99771047

00:38:27.920 --> 00:38:29.060 have kind of a definitive

NOTE Confidence: 0.99771047

00:38:29.200 --> 00:38:30.820 ablative effect on the tumor.

NOTE Confidence: 0.98797077

00:38:32.160 --> 00:38:33.440 This is one study and

NOTE Confidence: 0.98797077

00:38:33.440 --> 00:38:34.880 an example of how that's

NOTE Confidence: 0.98797077

00:38:34.880 --> 00:38:35.380 beneficial.

NOTE Confidence: 0.9543589

00:38:35.895 --> 00:38:36.775 So this is looking at

NOTE Confidence: 0.9543589

00:38:36.775 --> 00:38:38.135 patients with kind of mixed

NOTE Confidence: 0.9543589

00:38:38.135 --> 00:38:39.114 tumor types.

NOTE Confidence: 0.95560074

00:38:39.415 --> 00:38:40.955 Colorectal was one of them

NOTE Confidence: 0.95560074

00:38:41.175 --> 00:38:42.155 in that oligometastatic

NOTE Confidence: 0.99041843

00:38:42.695 --> 00:38:43.895 state with up to five

NOTE Confidence: 0.99041843

00:38:43.895 --> 00:38:44.395 metastases.

NOTE Confidence: 0.98918897

00:38:45.255 --> 00:38:46.614 And the study asked, well,

NOTE Confidence: 0.98918897

00:38:46.614 --> 00:38:47.495 if we just give them

NOTE Confidence: 0.98918897

00:38:47.495 --> 00:38:49.290 their standard of care chemotherapy

NOTE Confidence: 0.98918897

00:38:49.589 --> 00:38:51.130 or we add in SBRT

NOTE Confidence: 0.99820685

00:38:51.430 --> 00:38:53.030 to all of the limited

NOTE Confidence: 0.99820685

00:38:53.030 --> 00:38:54.790 metastatic sites, is there a

NOTE Confidence: 0.99820685

00:38:54.790 --> 00:38:55.290 benefit?

NOTE Confidence: 0.9939085

00:38:55.670 --> 00:38:56.869 And the bottom line is

NOTE Confidence: 0.9939085

00:38:56.869 --> 00:38:58.549 the addition of SBRT to

NOTE Confidence: 0.9939085

00:38:58.549 --> 00:38:59.690 the limited oligometastatic

NOTE Confidence: 0.99430054

00:39:00.150 --> 00:39:02.785 sites actually improved progression free

NOTE Confidence: 0.99430054

00:39:02.785 --> 00:39:03.285 survival,

NOTE Confidence: 0.9908889

00:39:03.905 --> 00:39:05.205 and overall survival.

NOTE Confidence: 0.9811881

00:39:05.905 --> 00:39:06.405 So

NOTE Confidence: 0.95677227

00:39:06.785 --> 00:39:08.945 I think, the stereotactic radiation

NOTE Confidence: 0.95677227

00:39:08.945 --> 00:39:10.065 as well as the surgical

NOTE Confidence: 0.95677227

00:39:10.065 --> 00:39:11.685 approach and other local therapies

NOTE Confidence: 0.95677227

00:39:11.745 --> 00:39:12.245 are,

NOTE Confidence: 0.96995366

00:39:12.864 --> 00:39:15.105 increasingly being employed in patients

NOTE Confidence: 0.96995366

00:39:15.105 --> 00:39:16.005 who have limited,

NOTE Confidence: 0.99385303

00:39:16.650 --> 00:39:18.270 sites of metastatic disease.

NOTE Confidence: 0.99080694

00:39:19.130 --> 00:39:20.170 And I'll end just with

NOTE Confidence: 0.99080694

00:39:20.170 --> 00:39:21.049 saying that we do have

NOTE Confidence: 0.99080694

00:39:21.049 --> 00:39:22.410 a new program here at

NOTE Confidence: 0.99080694

00:39:22.410 --> 00:39:24.250 Smilow Cancer Hospital, which is

NOTE Confidence: 0.99080694

00:39:24.250 --> 00:39:25.790 one way of treating oligometastatic

NOTE Confidence: 0.9970449

00:39:26.170 --> 00:39:26.670 disease.

NOTE Confidence: 0.9878451

00:39:27.369 --> 00:39:28.589 So this is new technology

NOTE Confidence: 0.9878451

00:39:28.695 --> 00:39:29.675 called the reflection,

NOTE Confidence: 0.98367846

00:39:30.455 --> 00:39:31.755 which is a pet directed

NOTE Confidence: 0.98367846

00:39:31.815 --> 00:39:33.275 radiation therapy machine.

NOTE Confidence: 0.9985527

00:39:33.815 --> 00:39:35.195 And it can be advantageous

NOTE Confidence: 0.9985527

00:39:35.335 --> 00:39:36.395 in certain cases,

NOTE Confidence: 0.99964166

00:39:37.255 --> 00:39:37.755 particularly

NOTE Confidence: 0.9898381

00:39:38.055 --> 00:39:39.335 if you have disease that's

NOTE Confidence: 0.9898381

00:39:39.335 --> 00:39:40.155 in the lung.

NOTE Confidence: 0.9943906

00:39:40.535 --> 00:39:41.655 And so I'll explain why

NOTE Confidence: 0.9943906

00:39:41.655 --> 00:39:42.789 that is. So a lung

NOTE Confidence: 0.9943906

00:39:42.789 --> 00:39:44.069 tumor is gonna move as

NOTE Confidence: 0.9943906

00:39:44.069 --> 00:39:44.809 you breathe.

NOTE Confidence: 0.9974607

00:39:45.190 --> 00:39:46.650 And for typical stereotactic

NOTE Confidence: 0.9993851

00:39:47.029 --> 00:39:47.529 radiation,

NOTE Confidence: 0.9430786

00:39:48.069 --> 00:39:49.049 we see your tumor.

NOTE Confidence: 0.99029756

00:39:49.349 --> 00:39:51.029 We watch a video. We

NOTE Confidence: 0.99029756

00:39:51.029 --> 00:39:52.069 can get a video CAT

NOTE Confidence: 0.99029756

00:39:52.069 --> 00:39:53.190 scan that shows us how

NOTE Confidence: 0.99029756

00:39:53.190 --> 00:39:54.630 your tumor moves as you

NOTE Confidence: 0.99029756

00:39:54.630 --> 00:39:56.225 breathe, and then we expand

NOTE Confidence: 0.9968749

00:39:56.685 --> 00:39:58.465 the treatment volume to encompass

NOTE Confidence: 0.9968749

00:39:58.525 --> 00:39:59.565 kind of the path your

NOTE Confidence: 0.9968749

00:39:59.565 --> 00:40:01.105 tumor takes as you breathe.

NOTE Confidence: 0.9724692

00:40:02.365 --> 00:40:04.065 With the pet directed therapy,

NOTE Confidence: 0.9724692

00:40:04.285 --> 00:40:06.705 the treatment machine, you receive,

NOTE Confidence: 0.9823761

00:40:07.085 --> 00:40:08.365 an injection of the pet

NOTE Confidence: 0.9823761

00:40:08.365 --> 00:40:09.745 tracer before treatment,

NOTE Confidence: 0.9698944

00:40:10.100 --> 00:40:11.540 and the treatment machine can

NOTE Confidence: 0.9698944

00:40:11.540 --> 00:40:12.980 detect the pet tracer from

NOTE Confidence: 0.9698944

00:40:12.980 --> 00:40:14.660 your tumor. So actually the

NOTE Confidence: 0.9698944

00:40:14.660 --> 00:40:16.980 radiation field will move with

NOTE Confidence: 0.9698944

00:40:16.980 --> 00:40:18.500 your tumor as your tumor

NOTE Confidence: 0.9698944

00:40:18.500 --> 00:40:20.420 moves during treatment. So rather

NOTE Confidence: 0.9698944

00:40:20.420 --> 00:40:22.260 than expanding the radiation field

NOTE Confidence: 0.9698944

00:40:22.260 --> 00:40:23.700 and treating a bigger area

NOTE Confidence: 0.9698944

00:40:23.700 --> 00:40:25.114 to encompass kinda where the

NOTE Confidence: 0.9698944

00:40:25.114 --> 00:40:26.655 tumor moves as you breathe,

NOTE Confidence: 0.9698944

00:40:26.795 --> 00:40:28.335 we're kinda moving the radiation

NOTE Confidence: 0.9698944

00:40:28.474 --> 00:40:29.835 field with your tumor as

NOTE Confidence: 0.9698944

00:40:29.835 --> 00:40:31.355 it moves with the benefit

NOTE Confidence: 0.9698944

00:40:31.355 --> 00:40:32.155 being that we don't have

NOTE Confidence: 0.9698944

00:40:32.155 --> 00:40:33.594 to expand and kind of

NOTE Confidence: 0.9698944

00:40:33.594 --> 00:40:35.194 radiate all this healthy tissue

NOTE Confidence: 0.9698944

00:40:35.194 --> 00:40:35.694 around.

NOTE Confidence: 0.9729044

00:40:36.714 --> 00:40:38.075 So like all things, right,

NOTE Confidence: 0.9729044

00:40:38.075 --> 00:40:40.350 there's specific criteria that your

NOTE Confidence: 0.9729044

00:40:40.350 --> 00:40:41.470 tumor would need to meet

NOTE Confidence: 0.9729044

00:40:41.470 --> 00:40:42.590 in order to be eligible

NOTE Confidence: 0.9729044

00:40:42.590 --> 00:40:43.630 for this type of treatment,

NOTE Confidence: 0.9729044

00:40:43.630 --> 00:40:44.990 but I think really an

NOTE Confidence: 0.9729044

00:40:44.990 --> 00:40:46.510 exciting innovation that we have

NOTE Confidence: 0.9729044

00:40:46.510 --> 00:40:48.030 here at Smilow as one

NOTE Confidence: 0.9729044

00:40:48.030 --> 00:40:48.530 modality

NOTE Confidence: 0.9886734

00:40:48.830 --> 00:40:50.670 to try to aggressively treat,

NOTE Confidence: 0.9886734

00:40:50.990 --> 00:40:51.490 oligometastatic

NOTE Confidence: 0.9986516

00:40:51.950 --> 00:40:52.450 disease.

NOTE Confidence: 0.9827533

00:40:53.675 --> 00:40:55.055 So I'm gonna end there.

NOTE Confidence: 0.78197324

00:40:55.835 --> 00:40:56.575 Little summary,

NOTE Confidence: 0.97606194

00:40:57.114 --> 00:40:58.815 just we know pelvic radiation,

NOTE Confidence: 0.9965184

00:40:59.755 --> 00:41:00.795 plays a key role in

NOTE Confidence: 0.9965184

00:41:00.795 --> 00:41:02.555 curative therapy for locally advanced

NOTE Confidence: 0.9965184

00:41:02.555 --> 00:41:03.755 rectal cancer, but we can

NOTE Confidence: 0.9965184

00:41:03.755 --> 00:41:04.815 tweak the radiation

NOTE Confidence: 0.9891869

00:41:05.200 --> 00:41:06.660 based on your tumor characteristics

NOTE Confidence: 0.9891869

00:41:06.800 --> 00:41:07.840 and what your goals of

NOTE Confidence: 0.9891869

00:41:07.840 --> 00:41:09.860 care are. We, in general,

NOTE Confidence: 0.9891869

00:41:10.000 --> 00:41:11.520 prefer the long course daily

NOTE Confidence: 0.9891869

00:41:11.520 --> 00:41:13.540 radiation for five weeks, especially

NOTE Confidence: 0.9891869

00:41:13.600 --> 00:41:14.900 for the high risk tumors

NOTE Confidence: 0.9891869

00:41:15.120 --> 00:41:16.239 that are lower down or

NOTE Confidence: 0.9891869

00:41:16.239 --> 00:41:17.440 have deeper involvement of the

NOTE Confidence: 0.9891869

00:41:17.440 --> 00:41:18.980 rectum or lymph node involvement,

NOTE Confidence: 0.9983244

00:41:19.594 --> 00:41:21.055 or if you're thinking about

NOTE Confidence: 0.9983244

00:41:21.194 --> 00:41:22.635 preserving the rectum and not

NOTE Confidence: 0.9983244

00:41:22.635 --> 00:41:23.535 needing surgery.

NOTE Confidence: 0.98470443

00:41:24.315 --> 00:41:26.315 Organ preservation with this active

NOTE Confidence: 0.98470443

00:41:26.315 --> 00:41:28.234 surveillance of MRI and scope

NOTE Confidence: 0.98470443

00:41:28.234 --> 00:41:29.434 can be considered in very

NOTE Confidence: 0.98470443

00:41:29.434 --> 00:41:30.414 select cases

NOTE Confidence: 0.9789106

00:41:30.714 --> 00:41:31.674 if you do achieve a

NOTE Confidence: 0.9789106

00:41:31.674 --> 00:41:33.355 complete response to chemo and

NOTE Confidence: 0.9789106

00:41:33.355 --> 00:41:33.855 radiation.

NOTE Confidence: 0.9820855

00:41:34.680 --> 00:41:35.960 We can think about omitting

NOTE Confidence: 0.9820855

00:41:35.960 --> 00:41:38.200 radiation for certain favorable risk,

NOTE Confidence: 0.9802477

00:41:38.839 --> 00:41:40.520 rectal cancer patients that don't

NOTE Confidence: 0.9802477

00:41:40.520 --> 00:41:41.560 have a lot of involvement

NOTE Confidence: 0.9802477

00:41:41.560 --> 00:41:42.520 of lymph nodes or not

NOTE Confidence: 0.9802477

00:41:42.520 --> 00:41:43.739 as deep in the rectum.

NOTE Confidence: 0.9802477

00:41:43.880 --> 00:41:45.000 And finally, we can think

NOTE Confidence: 0.9802477

00:41:45.000 --> 00:41:46.839 about the stereotactic radiation as

NOTE Confidence: 0.9802477

00:41:46.839 --> 00:41:47.880 well as surgery and other

NOTE Confidence: 0.9802477

00:41:47.880 --> 00:41:48.780 local therapies

NOTE Confidence: 0.9931223

00:41:49.155 --> 00:41:51.015 if you have, limited metastatic

NOTE Confidence: 0.9931223

00:41:51.155 --> 00:41:51.655 disease.

NOTE Confidence: 0.9660405

00:41:52.355 --> 00:41:53.235 Hopefully, I didn't take up

NOTE Confidence: 0.9660405

00:41:53.235 --> 00:41:54.195 too much time. I'm gonna

NOTE Confidence: 0.9660405

00:41:54.195 --> 00:41:55.315 pass the baton to doctor

NOTE Confidence: 0.9660405

00:41:55.315 --> 00:41:55.815 Mangio.

NOTE Confidence: 0.9264137

00:41:56.755 --> 00:41:58.195 Thank you, doctor Johan. Just

NOTE Confidence: 0.9264137

00:41:58.195 --> 00:41:58.594 to,

NOTE Confidence: 0.9395755

00:41:59.555 --> 00:42:01.235 ask one question about radiation

NOTE Confidence: 0.9395755

00:42:01.235 --> 00:42:02.275 is can you expand a

NOTE Confidence: 0.9395755

00:42:02.275 --> 00:42:03.155 little bit on the side

NOTE Confidence: 0.9395755

00:42:03.155 --> 00:42:04.135 effects of radiation?

NOTE Confidence: 0.9709503

00:42:05.030 --> 00:42:06.150 So side effects when we're

NOTE Confidence: 0.9709503

00:42:06.150 --> 00:42:07.430 treating the pelvis really are

NOTE Confidence: 0.9709503

00:42:07.430 --> 00:42:08.469 related to the organs that

NOTE Confidence: 0.9709503

00:42:08.469 --> 00:42:09.589 are in the pelvis. And

NOTE Confidence: 0.9709503

00:42:09.589 --> 00:42:10.630 so what we're talking about

NOTE Confidence: 0.9709503

00:42:10.630 --> 00:42:11.450 is bowel,

NOTE Confidence: 0.9744298

00:42:11.910 --> 00:42:13.849 and bladder primarily. So,

NOTE Confidence: 0.995978

00:42:14.390 --> 00:42:15.430 when you're in the midst

NOTE Confidence: 0.995978

00:42:15.430 --> 00:42:16.550 of a course of radiation,

NOTE Confidence: 0.995978

00:42:16.550 --> 00:42:18.310 you can experience looser stools,

NOTE Confidence: 0.995978

00:42:18.310 --> 00:42:20.285 frequent stools, diarrhea as a

NOTE Confidence: 0.995978

00:42:20.285 --> 00:42:21.265 result of radiation.

NOTE Confidence: 0.9944085

00:42:22.205 --> 00:42:23.425 That can be typically,

NOTE Confidence: 0.9399979

00:42:24.045 --> 00:42:26.285 controlled with Imodium or other

NOTE Confidence: 0.9399979

00:42:26.285 --> 00:42:27.665 anti diarrheal medications.

NOTE Confidence: 0.97001874

00:42:28.125 --> 00:42:29.965 You can experience frequency of

NOTE Confidence: 0.97001874

00:42:29.965 --> 00:42:31.645 urination from inflammation to the

NOTE Confidence: 0.97001874

00:42:31.645 --> 00:42:33.085 bladder or maybe a little

NOTE Confidence: 0.97001874

00:42:33.085 --> 00:42:34.205 bit of slight burning with

NOTE Confidence: 0.97001874

00:42:34.205 --> 00:42:34.705 urination,

NOTE Confidence: 0.9914788

00:42:35.239 --> 00:42:36.119 a little bit like a

NOTE Confidence: 0.9914788

00:42:36.119 --> 00:42:37.739 mild urinary tract infection.

NOTE Confidence: 0.99464965

00:42:38.119 --> 00:42:39.319 Most patients tell me that's

NOTE Confidence: 0.99464965

00:42:39.319 --> 00:42:40.619 annoying, but it's tolerable.

NOTE Confidence: 0.9992825

00:42:41.000 --> 00:42:41.880 There's a lot of talk

NOTE Confidence: 0.9992825

00:42:41.880 --> 00:42:43.819 about skin reaction with radiation.

NOTE Confidence: 0.9911376

00:42:44.280 --> 00:42:45.319 If we're treating a higher

NOTE Confidence: 0.9911376

00:42:45.319 --> 00:42:46.680 rectal tumor that's really, you

NOTE Confidence: 0.9911376

00:42:46.680 --> 00:42:47.719 know, kind of within the

NOTE Confidence: 0.9911376

00:42:47.719 --> 00:42:48.839 pelvis, the dose to the

NOTE Confidence: 0.9911376

00:42:48.839 --> 00:42:50.415 skin should be minimal. There

NOTE Confidence: 0.9911376

00:42:50.415 --> 00:42:51.215 may be a little bit

NOTE Confidence: 0.9911376

00:42:51.215 --> 00:42:52.094 of a redness of the

NOTE Confidence: 0.9911376

00:42:52.094 --> 00:42:53.395 skin, but it should be,

NOTE Confidence: 0.91887707

00:42:53.775 --> 00:42:55.135 something that is, you know,

NOTE Confidence: 0.91887707

00:42:55.135 --> 00:42:55.875 not barely

NOTE Confidence: 0.99987745

00:42:56.335 --> 00:42:56.835 noticeable.

NOTE Confidence: 0.99584544

00:42:57.215 --> 00:42:58.575 We really worry more about,

NOTE Confidence: 0.99584544

00:42:58.895 --> 00:43:00.255 skin reaction when we're dealing

NOTE Confidence: 0.99584544

00:43:00.255 --> 00:43:01.535 with those really low tumors

NOTE Confidence: 0.99584544

00:43:01.535 --> 00:43:02.495 that are coming to the

NOTE Confidence: 0.99584544

00:43:02.495 --> 00:43:02.995 anus.

NOTE Confidence: 0.9699651

00:43:03.480 --> 00:43:04.680 There, we're driving the dose

NOTE Confidence: 0.9699651

00:43:04.680 --> 00:43:06.040 of radiation right to the

NOTE Confidence: 0.9699651

00:43:06.040 --> 00:43:07.800 perianal skin, and that's where

NOTE Confidence: 0.9699651

00:43:07.800 --> 00:43:09.660 redness and skin breakdown there,

NOTE Confidence: 0.9699651

00:43:09.719 --> 00:43:11.560 particularly when you're having diarrhea,

NOTE Confidence: 0.9699651

00:43:11.560 --> 00:43:12.360 can be a little bit

NOTE Confidence: 0.9699651

00:43:12.360 --> 00:43:13.820 more challenging to manage,

NOTE Confidence: 0.9467556

00:43:14.360 --> 00:43:16.520 but temporary and typically heals

NOTE Confidence: 0.9467556

00:43:16.520 --> 00:43:17.640 within two to three weeks

NOTE Confidence: 0.9467556

00:43:17.640 --> 00:43:18.380 after treatment.

NOTE Confidence: 0.94672203

00:43:18.975 --> 00:43:20.095 Long term side effects, I

NOTE Confidence: 0.94672203

00:43:20.095 --> 00:43:21.695 touched upon the, you know,

NOTE Confidence: 0.94672203

00:43:21.695 --> 00:43:23.295 for an a younger woman,

NOTE Confidence: 0.94672203

00:43:23.295 --> 00:43:24.114 early menopause,

NOTE Confidence: 0.98757154

00:43:25.135 --> 00:43:27.055 fertility issues. There can be

NOTE Confidence: 0.98757154

00:43:27.055 --> 00:43:28.595 low risk of more severe

NOTE Confidence: 0.9775946

00:43:28.975 --> 00:43:30.575 kind of bowel side effects

NOTE Confidence: 0.9775946

00:43:30.575 --> 00:43:32.335 from inflammation and scar tissue

NOTE Confidence: 0.9775946

00:43:32.335 --> 00:43:33.579 that can develop, so, like,

NOTE Confidence: 0.9775946

00:43:33.579 --> 00:43:35.180 obstruction of bowel and things

NOTE Confidence: 0.9775946

00:43:35.180 --> 00:43:36.800 things like that. But, thankfully,

NOTE Confidence: 0.9775946

00:43:36.940 --> 00:43:38.640 those risks are much lower,

NOTE Confidence: 0.9995445

00:43:39.099 --> 00:43:40.059 and things that we don't

NOTE Confidence: 0.9995445

00:43:40.059 --> 00:43:41.040 expect to see.

NOTE Confidence: 0.9648045

00:43:42.780 --> 00:43:44.219 Yeah. There's another question about

NOTE Confidence: 0.9648045

00:43:44.219 --> 00:43:45.420 radiation to the lung, but

NOTE Confidence: 0.9648045

00:43:45.420 --> 00:43:46.965 you answered it during during

NOTE Confidence: 0.9648045

00:43:46.965 --> 00:43:48.325 your discussion there. And I'll

NOTE Confidence: 0.9648045

00:43:48.325 --> 00:43:49.285 just answer the one question

NOTE Confidence: 0.9648045

00:43:49.285 --> 00:43:50.405 about KRAS g twelve d.

NOTE Confidence: 0.9648045

00:43:50.405 --> 00:43:51.445 Yes. Yale has a number

NOTE Confidence: 0.9648045

00:43:51.445 --> 00:43:53.525 of clinical trials focused on

NOTE Confidence: 0.9648045

00:43:53.525 --> 00:43:54.885 tumors with KRAS g twelve

NOTE Confidence: 0.9648045

00:43:54.885 --> 00:43:56.485 d, including a trial for

NOTE Confidence: 0.9648045

00:43:56.485 --> 00:43:58.245 patients that have, are receiving

NOTE Confidence: 0.9648045

00:43:58.245 --> 00:43:59.705 their initial treatment for metastatic

NOTE Confidence: 0.9648045

00:43:59.765 --> 00:44:01.125 colorectal cancer as well as

NOTE Confidence: 0.9648045

00:44:01.125 --> 00:44:02.619 a number of trials patients

NOTE Confidence: 0.9648045

00:44:02.619 --> 00:44:03.920 that have received prior chemotherapies.

NOTE Confidence: 0.9335142

00:44:04.380 --> 00:44:05.180 And now I'd like to

NOTE Confidence: 0.9335142

00:44:05.180 --> 00:44:06.700 introduce doctor Anne Manju from

NOTE Confidence: 0.9335142

00:44:06.700 --> 00:44:07.760 colorectal surgery.

NOTE Confidence: 0.98538077

00:44:09.340 --> 00:44:11.180 Hi. Thanks, everyone. Let me

NOTE Confidence: 0.98538077

00:44:11.180 --> 00:44:12.560 share my screen.

NOTE Confidence: 0.8566822

00:44:17.525 --> 00:44:18.005 Alright.

NOTE Confidence: 0.98209566

00:44:20.565 --> 00:44:22.185 So I'm gonna talk about

NOTE Confidence: 0.98209566

00:44:22.245 --> 00:44:23.045 a little bit of the

NOTE Confidence: 0.98209566

00:44:23.045 --> 00:44:24.325 plumbing work, and so that's

NOTE Confidence: 0.98209566

00:44:24.325 --> 00:44:26.165 surgical therapy for colon and

NOTE Confidence: 0.98209566

00:44:26.165 --> 00:44:26.985 rectal cancers.

NOTE Confidence: 0.97036743

00:44:28.805 --> 00:44:29.844 So where do I fit

NOTE Confidence: 0.97036743

00:44:29.844 --> 00:44:30.719 in? And we kind of

NOTE Confidence: 0.97036743

00:44:30.800 --> 00:44:32.480 heard everything. Someone you get

NOTE Confidence: 0.97036743

00:44:32.480 --> 00:44:33.440 a bit taken out, you

NOTE Confidence: 0.97036743

00:44:33.440 --> 00:44:34.800 get a biopsy, so you

NOTE Confidence: 0.97036743

00:44:34.800 --> 00:44:36.080 name it. You stage it

NOTE Confidence: 0.97036743

00:44:36.080 --> 00:44:37.280 with all the imaging, and

NOTE Confidence: 0.97036743

00:44:37.280 --> 00:44:38.560 then we treat it. And

NOTE Confidence: 0.97036743

00:44:38.560 --> 00:44:39.700 finally, you come,

NOTE Confidence: 0.9915092

00:44:40.320 --> 00:44:42.080 for rectal cancer, you'll often

NOTE Confidence: 0.9915092

00:44:42.080 --> 00:44:42.960 come to me at the

NOTE Confidence: 0.9915092

00:44:42.960 --> 00:44:44.855 end. For colon cancer, you

NOTE Confidence: 0.9915092

00:44:44.855 --> 00:44:45.815 may come to me at

NOTE Confidence: 0.9915092

00:44:45.815 --> 00:44:47.355 the beginning depending on

NOTE Confidence: 0.9992705

00:44:47.655 --> 00:44:48.695 what the stage of your

NOTE Confidence: 0.9992705

00:44:48.695 --> 00:44:49.515 cancer is.

NOTE Confidence: 0.9005364

00:44:50.535 --> 00:44:51.815 So sort of brings us

NOTE Confidence: 0.9005364

00:44:51.815 --> 00:44:53.435 to what's a colectomy?

NOTE Confidence: 0.99681896

00:44:54.055 --> 00:44:55.755 So a colectomy is our

NOTE Confidence: 0.99681896

00:44:55.815 --> 00:44:58.230 surgical term for removing a

NOTE Confidence: 0.99681896

00:44:58.230 --> 00:44:59.210 part of the colon.

NOTE Confidence: 0.9678074

00:44:59.830 --> 00:45:01.270 And so when we think

NOTE Confidence: 0.9678074

00:45:01.270 --> 00:45:02.550 about the colon, I just

NOTE Confidence: 0.9678074

00:45:02.550 --> 00:45:03.510 like to break it down

NOTE Confidence: 0.9678074

00:45:03.510 --> 00:45:05.030 into sort of five parts.

NOTE Confidence: 0.9678074

00:45:05.030 --> 00:45:06.790 So it looks backwards here.

NOTE Confidence: 0.9678074

00:45:06.790 --> 00:45:07.510 The r and the l

NOTE Confidence: 0.9678074

00:45:07.510 --> 00:45:08.310 are for right and left

NOTE Confidence: 0.9678074

00:45:08.310 --> 00:45:09.350 because this is how we

NOTE Confidence: 0.9678074

00:45:09.350 --> 00:45:10.710 are always thinking about things

NOTE Confidence: 0.9678074

00:45:10.710 --> 00:45:12.795 looking at imaging studies. So

NOTE Confidence: 0.9678074

00:45:13.035 --> 00:45:14.234 the colon starts here on

NOTE Confidence: 0.9678074

00:45:14.234 --> 00:45:15.194 the right side. This is

NOTE Confidence: 0.9678074

00:45:15.194 --> 00:45:16.474 the right colon. It goes

NOTE Confidence: 0.9678074

00:45:16.474 --> 00:45:17.835 across the middle. That's the

NOTE Confidence: 0.9678074

00:45:17.835 --> 00:45:19.915 transverse colon. It comes down

NOTE Confidence: 0.9678074

00:45:19.915 --> 00:45:20.954 left side. We call that

NOTE Confidence: 0.9678074

00:45:20.954 --> 00:45:22.234 the left colon or the

NOTE Confidence: 0.9678074

00:45:22.234 --> 00:45:24.155 descending colon. It makes this

NOTE Confidence: 0.9678074

00:45:24.155 --> 00:45:26.219 little s shaped swoop here.

NOTE Confidence: 0.9678074

00:45:26.219 --> 00:45:27.760 This is the sigmoid colon.

NOTE Confidence: 0.9678074

00:45:27.900 --> 00:45:29.180 And finally, down here, you've

NOTE Confidence: 0.9678074

00:45:29.180 --> 00:45:30.140 got the last part which

NOTE Confidence: 0.9678074

00:45:30.140 --> 00:45:31.340 is the rectum. And we'll

NOTE Confidence: 0.9678074

00:45:31.340 --> 00:45:32.219 we'll talk a little bit

NOTE Confidence: 0.9678074

00:45:32.219 --> 00:45:33.180 more about the rectum a

NOTE Confidence: 0.9678074

00:45:33.180 --> 00:45:34.080 little bit later.

NOTE Confidence: 0.9885217

00:45:34.620 --> 00:45:35.820 So when we talk about

NOTE Confidence: 0.9885217

00:45:35.820 --> 00:45:37.580 removing the colon when you've

NOTE Confidence: 0.9885217

00:45:37.580 --> 00:45:39.555 got cancer, well, wherever your

NOTE Confidence: 0.9885217

00:45:39.555 --> 00:45:41.175 cancer is, we're gonna remove

NOTE Confidence: 0.95683247

00:45:41.635 --> 00:45:42.915 that part of the colon.

NOTE Confidence: 0.95683247

00:45:42.915 --> 00:45:43.714 So if it's in the

NOTE Confidence: 0.95683247

00:45:43.714 --> 00:45:45.315 right colon, we're gonna remove

NOTE Confidence: 0.95683247

00:45:45.315 --> 00:45:46.594 the right colon and we

NOTE Confidence: 0.95683247

00:45:46.594 --> 00:45:48.275 do it not only just

NOTE Confidence: 0.95683247

00:45:48.275 --> 00:45:49.395 taking the wall of the

NOTE Confidence: 0.95683247

00:45:49.395 --> 00:45:51.155 colon itself, but then we're

NOTE Confidence: 0.95683247

00:45:51.155 --> 00:45:52.455 gonna take the blood

NOTE Confidence: 0.8463539

00:45:54.869 --> 00:45:56.410 vessels supply that area.

NOTE Confidence: 0.9744472

00:45:57.030 --> 00:45:58.150 And we want to get

NOTE Confidence: 0.9744472

00:45:58.150 --> 00:45:59.590 everything that is feeding that

NOTE Confidence: 0.9744472

00:45:59.590 --> 00:46:01.190 area because we know that

NOTE Confidence: 0.9744472

00:46:01.190 --> 00:46:02.810 around all those blood vessels

NOTE Confidence: 0.9744472

00:46:03.109 --> 00:46:04.469 are your lymph nodes. And

NOTE Confidence: 0.9744472

00:46:04.469 --> 00:46:06.070 the lymph nodes are sort

NOTE Confidence: 0.9744472

00:46:06.070 --> 00:46:07.349 of the first sign of

NOTE Confidence: 0.9744472

00:46:07.349 --> 00:46:08.984 escape. So if you've come

NOTE Confidence: 0.9744472

00:46:08.984 --> 00:46:10.025 to see me and you

NOTE Confidence: 0.9744472

00:46:10.025 --> 00:46:11.964 have an early colon cancer

NOTE Confidence: 0.96150434

00:46:12.344 --> 00:46:13.785 and they've done your CT

NOTE Confidence: 0.96150434

00:46:13.785 --> 00:46:14.984 scan of your chest and

NOTE Confidence: 0.96150434

00:46:14.984 --> 00:46:16.444 your belly and your pelvis,

NOTE Confidence: 0.9718584

00:46:16.984 --> 00:46:18.265 and they didn't see any

NOTE Confidence: 0.9718584

00:46:18.265 --> 00:46:19.625 spread anywhere else, the lungs

NOTE Confidence: 0.9718584

00:46:19.625 --> 00:46:20.424 and the liver and all

NOTE Confidence: 0.9718584

00:46:20.424 --> 00:46:21.704 the other solid organs are

NOTE Confidence: 0.9718584

00:46:21.704 --> 00:46:22.664 clear, we're gonna go to

NOTE Confidence: 0.9718584

00:46:22.664 --> 00:46:24.480 the operating room. But what

NOTE Confidence: 0.9718584

00:46:24.480 --> 00:46:25.680 we're gonna want to know

NOTE Confidence: 0.9718584

00:46:25.680 --> 00:46:26.960 and what doctor Ciacchini is

NOTE Confidence: 0.9718584

00:46:26.960 --> 00:46:28.320 gonna want to know after

NOTE Confidence: 0.9718584

00:46:28.320 --> 00:46:29.920 surgery is, well, were any

NOTE Confidence: 0.9718584

00:46:29.920 --> 00:46:31.280 of the lymph nodes positive?

NOTE Confidence: 0.9718584

00:46:31.280 --> 00:46:32.320 So when we go and

NOTE Confidence: 0.9718584

00:46:32.320 --> 00:46:34.160 take each of these major

NOTE Confidence: 0.9718584

00:46:34.160 --> 00:46:35.280 blood vessels, so for the

NOTE Confidence: 0.9718584

00:46:35.280 --> 00:46:36.400 right colon, we're gonna take

NOTE Confidence: 0.9718584

00:46:36.400 --> 00:46:37.520 this part of the artery

NOTE Confidence: 0.9718584

00:46:37.520 --> 00:46:38.815 right here, and we're gonna

NOTE Confidence: 0.9718584

00:46:38.815 --> 00:46:39.695 take in any of the

NOTE Confidence: 0.9718584

00:46:39.695 --> 00:46:40.975 blood supply that feeds this

NOTE Confidence: 0.9718584

00:46:40.975 --> 00:46:42.175 whole area. And we wanna

NOTE Confidence: 0.9718584

00:46:42.175 --> 00:46:43.635 get good healthy tissue

NOTE Confidence: 0.9766816

00:46:44.094 --> 00:46:45.535 around wherever your tumor is.

NOTE Confidence: 0.9766816

00:46:45.535 --> 00:46:46.415 If your tumor is here,

NOTE Confidence: 0.9766816

00:46:46.415 --> 00:46:47.375 we may take a small

NOTE Confidence: 0.9766816

00:46:47.375 --> 00:46:48.515 part of the small intestine

NOTE Confidence: 0.9766816

00:46:48.655 --> 00:46:50.015 and and the colon, but

NOTE Confidence: 0.9766816

00:46:50.015 --> 00:46:51.055 we don't wanna see it

NOTE Confidence: 0.9766816

00:46:51.055 --> 00:46:52.094 when we're taking it out

NOTE Confidence: 0.9766816

00:46:52.094 --> 00:46:53.635 because we want the tumor

NOTE Confidence: 0.9766816

00:46:53.700 --> 00:46:54.820 to be safely on the

NOTE Confidence: 0.9766816

00:46:54.820 --> 00:46:56.420 inside with good clean margins

NOTE Confidence: 0.9766816

00:46:56.420 --> 00:46:57.940 on either side. We wanna

NOTE Confidence: 0.9766816

00:46:57.940 --> 00:46:59.460 take the blood vessel nice

NOTE Confidence: 0.9766816

00:46:59.460 --> 00:47:00.579 and low or nice and

NOTE Confidence: 0.9766816

00:47:00.579 --> 00:47:02.579 high, basically very close to

NOTE Confidence: 0.9766816

00:47:02.579 --> 00:47:03.380 this big guy in the

NOTE Confidence: 0.9766816

00:47:03.380 --> 00:47:04.660 back and that's your aorta.

NOTE Confidence: 0.9766816

00:47:04.660 --> 00:47:05.619 And with it, we're gonna

NOTE Confidence: 0.9766816

00:47:05.619 --> 00:47:07.505 take all of the fat

NOTE Confidence: 0.9766816

00:47:07.724 --> 00:47:09.085 that's surrounding all those blood

NOTE Confidence: 0.9766816

00:47:09.085 --> 00:47:10.364 vessels in that whole part

NOTE Confidence: 0.9766816

00:47:10.364 --> 00:47:11.885 of the colon. And when

NOTE Confidence: 0.9766816

00:47:11.885 --> 00:47:13.405 we do that, we get

NOTE Confidence: 0.9766816

00:47:13.405 --> 00:47:14.525 all the lymph nodes that

NOTE Confidence: 0.9766816

00:47:14.525 --> 00:47:15.885 are hiding in there. That

NOTE Confidence: 0.9766816

00:47:15.885 --> 00:47:17.325 goes to the pathologist who

NOTE Confidence: 0.9766816

00:47:17.325 --> 00:47:18.780 then actually pick them out

NOTE Confidence: 0.9766816

00:47:19.020 --> 00:47:20.540 one by one, look at

NOTE Confidence: 0.9766816

00:47:20.540 --> 00:47:22.060 each and every one, look

NOTE Confidence: 0.9766816

00:47:22.060 --> 00:47:23.580 to see if there's cancer

NOTE Confidence: 0.9766816

00:47:23.580 --> 00:47:25.100 in those lymph nodes, and

NOTE Confidence: 0.9766816

00:47:25.100 --> 00:47:26.380 then put together a final

NOTE Confidence: 0.9766816

00:47:26.380 --> 00:47:27.820 report that comes about seven

NOTE Confidence: 0.9766816

00:47:27.820 --> 00:47:29.280 to ten days after surgery.

NOTE Confidence: 0.9913428

00:47:30.860 --> 00:47:32.685 Okay. There are lots of

NOTE Confidence: 0.9913428

00:47:32.685 --> 00:47:33.585 types of colectomies

NOTE Confidence: 0.98255503

00:47:33.885 --> 00:47:35.325 you can do. And when

NOTE Confidence: 0.98255503

00:47:35.325 --> 00:47:37.085 we're talking about cancer, we

NOTE Confidence: 0.98255503

00:47:37.085 --> 00:47:38.125 tailor it to the blood

NOTE Confidence: 0.98255503

00:47:38.125 --> 00:47:38.625 supply

NOTE Confidence: 0.9987996

00:47:39.325 --> 00:47:40.785 that serves each

NOTE Confidence: 0.98180264

00:47:41.245 --> 00:47:42.445 part of the colon. So

NOTE Confidence: 0.98180264

00:47:42.445 --> 00:47:44.145 I put little asterisks here

NOTE Confidence: 0.98180264

00:47:44.205 --> 00:47:45.245 to give you an idea.

NOTE Confidence: 0.98180264

00:47:45.245 --> 00:47:46.864 These are all different places

NOTE Confidence: 0.9749154

00:47:47.190 --> 00:47:48.390 that you could have a

NOTE Confidence: 0.9749154

00:47:48.390 --> 00:47:49.530 tumor in your colon,

NOTE Confidence: 0.97910756

00:47:50.070 --> 00:47:51.430 and we would look at

NOTE Confidence: 0.97910756

00:47:51.430 --> 00:47:53.270 the appropriate blood supply and

NOTE Confidence: 0.97910756

00:47:53.270 --> 00:47:54.230 then take that part of

NOTE Confidence: 0.97910756

00:47:54.230 --> 00:47:55.750 the colon always trying to

NOTE Confidence: 0.97910756

00:47:55.750 --> 00:47:57.190 center it. Now there's a

NOTE Confidence: 0.97910756

00:47:57.190 --> 00:47:58.070 couple down here where you

NOTE Confidence: 0.97910756

00:47:58.070 --> 00:47:59.030 see we're taking out a

NOTE Confidence: 0.97910756

00:47:59.030 --> 00:48:00.145 lot of the colon, and

NOTE Confidence: 0.97910756

00:48:00.145 --> 00:48:01.925 these are some special circumstances.

NOTE Confidence: 0.9495218

00:48:02.225 --> 00:48:03.585 Patients who may have something

NOTE Confidence: 0.9495218

00:48:03.585 --> 00:48:05.745 like inflammatory bowel disease, such

NOTE Confidence: 0.9495218

00:48:05.745 --> 00:48:07.425 as ulcerative colitis or Crohn's

NOTE Confidence: 0.9495218

00:48:07.425 --> 00:48:08.785 disease, who may not only

NOTE Confidence: 0.9495218

00:48:08.785 --> 00:48:09.825 have had this disease for

NOTE Confidence: 0.9495218

00:48:09.825 --> 00:48:11.025 a long standing period, but

NOTE Confidence: 0.9495218

00:48:11.025 --> 00:48:12.145 now they have prevented with

NOTE Confidence: 0.9495218

00:48:12.145 --> 00:48:13.185 a with a cancer. And

NOTE Confidence: 0.9495218

00:48:13.185 --> 00:48:14.405 in those special circumstances,

NOTE Confidence: 0.99261725

00:48:14.705 --> 00:48:16.240 we we often will have

NOTE Confidence: 0.99261725

00:48:16.240 --> 00:48:17.120 to remove most of the

NOTE Confidence: 0.99261725

00:48:17.120 --> 00:48:18.320 colon at that time because

NOTE Confidence: 0.99261725

00:48:18.320 --> 00:48:19.760 the risk to remaining colon

NOTE Confidence: 0.99261725

00:48:19.760 --> 00:48:20.900 is quite high.

NOTE Confidence: 0.94489527

00:48:22.560 --> 00:48:24.560 Okay. So this now is

NOTE Confidence: 0.94489527

00:48:24.560 --> 00:48:25.840 sort of to come back

NOTE Confidence: 0.94489527

00:48:25.840 --> 00:48:27.040 to what doctor Joheng was

NOTE Confidence: 0.94489527

00:48:27.040 --> 00:48:27.860 talking about,

NOTE Confidence: 0.97825783

00:48:28.614 --> 00:48:30.535 rectal cancer is sort of

NOTE Confidence: 0.97825783

00:48:30.614 --> 00:48:31.575 we think about it a

NOTE Confidence: 0.97825783

00:48:31.575 --> 00:48:33.255 little bit differently than colon

NOTE Confidence: 0.97825783

00:48:33.255 --> 00:48:34.455 cancer. So when you have

NOTE Confidence: 0.97825783

00:48:34.455 --> 00:48:35.655 a colon cancer, I'll just

NOTE Confidence: 0.97825783

00:48:35.655 --> 00:48:36.455 go back here for a

NOTE Confidence: 0.97825783

00:48:36.455 --> 00:48:38.135 moment, and let's call colon

NOTE Confidence: 0.97825783

00:48:38.135 --> 00:48:40.614 cancer anything that is sort

NOTE Confidence: 0.97825783

00:48:40.614 --> 00:48:41.114 of

NOTE Confidence: 0.9665241

00:48:41.680 --> 00:48:43.840 above this area, anything that's

NOTE Confidence: 0.9665241

00:48:43.840 --> 00:48:44.739 really above

NOTE Confidence: 0.9831514

00:48:45.200 --> 00:48:46.500 this line right here,

NOTE Confidence: 0.99808383

00:48:46.880 --> 00:48:48.080 that's gonna be a colon

NOTE Confidence: 0.99808383

00:48:48.080 --> 00:48:50.000 cancer. When we drop into

NOTE Confidence: 0.99808383

00:48:50.000 --> 00:48:51.300 the last fifteen

NOTE Confidence: 0.9996517

00:48:51.600 --> 00:48:52.100 centimeters

NOTE Confidence: 0.9932294

00:48:52.960 --> 00:48:54.239 of the of the large

NOTE Confidence: 0.9932294

00:48:54.239 --> 00:48:55.680 bowel, that's the rectum. And

NOTE Confidence: 0.9932294

00:48:55.680 --> 00:48:57.705 the rectum lives about two

NOTE Confidence: 0.9932294

00:48:57.705 --> 00:48:59.245 thirds of the way underneath

NOTE Confidence: 0.98400855

00:48:59.545 --> 00:49:00.905 this sort of line here,

NOTE Confidence: 0.98400855

00:49:00.905 --> 00:49:02.125 which is called the peritoneal

NOTE Confidence: 0.98400855

00:49:02.265 --> 00:49:03.785 reflection, which separates it from

NOTE Confidence: 0.98400855

00:49:03.785 --> 00:49:04.825 the main part of the

NOTE Confidence: 0.98400855

00:49:04.825 --> 00:49:05.725 abdominal cavity.

NOTE Confidence: 0.9922302

00:49:06.345 --> 00:49:07.385 The top part of it

NOTE Confidence: 0.9922302

00:49:07.385 --> 00:49:08.585 right here, the top one

NOTE Confidence: 0.9922302

00:49:08.585 --> 00:49:10.025 third is in the regular

NOTE Confidence: 0.9922302

00:49:10.025 --> 00:49:11.305 part of the abdominal cavity

NOTE Confidence: 0.9922302

00:49:11.305 --> 00:49:12.105 with the rest of the

NOTE Confidence: 0.9922302

00:49:12.105 --> 00:49:12.605 colon.

NOTE Confidence: 0.97919613

00:49:12.930 --> 00:49:14.690 And depending on the stage,

NOTE Confidence: 0.97919613

00:49:14.690 --> 00:49:16.050 sometimes we will treat this

NOTE Confidence: 0.97919613

00:49:16.050 --> 00:49:18.210 upper rectal cancer as a

NOTE Confidence: 0.97919613

00:49:18.210 --> 00:49:19.650 colon cancer and operate it

NOTE Confidence: 0.97919613

00:49:19.650 --> 00:49:20.790 on it right away.

NOTE Confidence: 0.94694483

00:49:21.250 --> 00:49:22.530 But when it is below

NOTE Confidence: 0.94694483

00:49:22.530 --> 00:49:23.650 this line, so that's a

NOTE Confidence: 0.94694483

00:49:23.650 --> 00:49:24.770 cancer that would be up

NOTE Confidence: 0.94694483

00:49:24.770 --> 00:49:25.270 here.

NOTE Confidence: 0.98508894

00:49:25.695 --> 00:49:27.135 But once we're talking about

NOTE Confidence: 0.98508894

00:49:27.135 --> 00:49:28.735 a rectal cancer that's below

NOTE Confidence: 0.98508894

00:49:28.735 --> 00:49:30.335 here, that's when you would

NOTE Confidence: 0.98508894

00:49:30.335 --> 00:49:31.635 see both doctor Cicchini

NOTE Confidence: 0.89623237

00:49:32.415 --> 00:49:33.475 and doctor Johan

NOTE Confidence: 0.9160737

00:49:34.015 --> 00:49:35.535 well before May to get

NOTE Confidence: 0.9160737

00:49:35.535 --> 00:49:37.075 a full amount of treatment

NOTE Confidence: 0.9160737

00:49:37.135 --> 00:49:38.495 beforehand like they talked about

NOTE Confidence: 0.9160737

00:49:38.495 --> 00:49:40.355 with the total neoadjuvant therapy.

NOTE Confidence: 0.9989428

00:49:40.680 --> 00:49:41.800 And then we would come

NOTE Confidence: 0.9989428

00:49:41.800 --> 00:49:43.400 in afterwards and take out

NOTE Confidence: 0.9989428

00:49:43.400 --> 00:49:44.219 these tumors.

NOTE Confidence: 0.9984684

00:49:44.760 --> 00:49:45.500 And so

NOTE Confidence: 0.97066754

00:49:46.200 --> 00:49:47.640 important parts to note here,

NOTE Confidence: 0.97066754

00:49:47.640 --> 00:49:48.440 and this is something that

NOTE Confidence: 0.97066754

00:49:48.440 --> 00:49:49.560 we think about and go

NOTE Confidence: 0.97066754

00:49:49.560 --> 00:49:50.520 with what I'm gonna talk

NOTE Confidence: 0.97066754

00:49:50.520 --> 00:49:51.719 about next. But at the

NOTE Confidence: 0.97066754

00:49:51.719 --> 00:49:52.540 very bottom

NOTE Confidence: 0.9836017

00:49:53.255 --> 00:49:54.455 of the rectum, we have

NOTE Confidence: 0.9836017

00:49:54.455 --> 00:49:55.735 what's called the anal canal,

NOTE Confidence: 0.9836017

00:49:55.735 --> 00:49:56.614 and we have these two

NOTE Confidence: 0.9836017

00:49:56.614 --> 00:49:58.855 really important muscles here. And

NOTE Confidence: 0.9836017

00:49:58.855 --> 00:50:00.375 these are called your anal

NOTE Confidence: 0.9836017

00:50:00.375 --> 00:50:01.655 sphincter muscles or your anal

NOTE Confidence: 0.9836017

00:50:01.655 --> 00:50:03.335 sphincter complex. There's an inner

NOTE Confidence: 0.9836017

00:50:03.335 --> 00:50:03.835 muscle

NOTE Confidence: 0.9682442

00:50:04.295 --> 00:50:06.210 and an outer muscle. And

NOTE Confidence: 0.9682442

00:50:06.210 --> 00:50:07.650 we need those to to

NOTE Confidence: 0.9682442

00:50:07.650 --> 00:50:09.090 maintain continence or to hold

NOTE Confidence: 0.9682442

00:50:09.090 --> 00:50:10.290 poop on the inside when

NOTE Confidence: 0.9682442

00:50:10.290 --> 00:50:11.170 we don't want to come

NOTE Confidence: 0.9682442

00:50:11.170 --> 00:50:13.250 out. So as we get

NOTE Confidence: 0.9682442

00:50:13.250 --> 00:50:14.710 lower and lower,

NOTE Confidence: 0.9839609

00:50:15.090 --> 00:50:16.469 we have to think increasingly

NOTE Confidence: 0.9839609

00:50:16.690 --> 00:50:18.609 about, well, where is this

NOTE Confidence: 0.9839609

00:50:18.609 --> 00:50:19.109 tumor

NOTE Confidence: 0.99855614

00:50:19.890 --> 00:50:20.469 in relationship

NOTE Confidence: 0.99810886

00:50:20.955 --> 00:50:21.775 to these

NOTE Confidence: 0.9732588

00:50:22.315 --> 00:50:24.335 muscles? And are we able

NOTE Confidence: 0.9732588

00:50:24.395 --> 00:50:25.675 to get a clean or

NOTE Confidence: 0.9732588

00:50:25.675 --> 00:50:26.895 negative margin

NOTE Confidence: 0.9774244

00:50:27.435 --> 00:50:28.655 beneath this tumor?

NOTE Confidence: 0.98631734

00:50:28.955 --> 00:50:30.235 And so as we get

NOTE Confidence: 0.98631734

00:50:30.235 --> 00:50:31.515 down to right about the

NOTE Confidence: 0.98631734

00:50:31.515 --> 00:50:32.715 top of the muscles, that's

NOTE Confidence: 0.98631734

00:50:32.715 --> 00:50:33.835 about as far as we

NOTE Confidence: 0.98631734

00:50:33.835 --> 00:50:35.114 can go with surgery and

NOTE Confidence: 0.98631734

00:50:35.114 --> 00:50:36.075 we'll talk a little bit

NOTE Confidence: 0.98631734

00:50:36.075 --> 00:50:37.489 more about the types of

NOTE Confidence: 0.98631734

00:50:37.489 --> 00:50:38.790 surgery in a second.

NOTE Confidence: 0.9687638

00:50:39.410 --> 00:50:40.849 But once we get down

NOTE Confidence: 0.9687638

00:50:40.849 --> 00:50:42.210 here where you have a

NOTE Confidence: 0.9687638

00:50:42.210 --> 00:50:43.030 tumor that's,

NOTE Confidence: 0.98910177

00:50:43.489 --> 00:50:43.989 adenocarcinoma,

NOTE Confidence: 0.98311186

00:50:44.450 --> 00:50:45.489 which is a typical type

NOTE Confidence: 0.98311186

00:50:45.489 --> 00:50:46.849 of colon or rectal cancer,

NOTE Confidence: 0.98311186

00:50:46.849 --> 00:50:48.050 not a skin cancer that's

NOTE Confidence: 0.98311186

00:50:48.050 --> 00:50:49.670 crawled from the outside in.

NOTE Confidence: 0.9806151

00:50:50.105 --> 00:50:51.305 Once we get down here,

NOTE Confidence: 0.9806151

00:50:51.305 --> 00:50:52.984 this usually means that we're

NOTE Confidence: 0.9806151

00:50:52.984 --> 00:50:55.164 unable to save the anus,

NOTE Confidence: 0.9806151

00:50:55.305 --> 00:50:56.505 this bottom part, and the

NOTE Confidence: 0.9806151

00:50:56.505 --> 00:50:57.944 sphincters down there because in

NOTE Confidence: 0.9806151

00:50:57.944 --> 00:50:58.825 order to get rid of

NOTE Confidence: 0.9806151

00:50:58.825 --> 00:51:00.265 the cancer completely, we'll have

NOTE Confidence: 0.9806151

00:51:00.265 --> 00:51:01.404 to take that out.

NOTE Confidence: 0.9910903

00:51:02.040 --> 00:51:03.160 And so that brings me

NOTE Confidence: 0.9910903

00:51:03.160 --> 00:51:04.200 back to the question I

NOTE Confidence: 0.9910903

00:51:04.200 --> 00:51:05.800 get very often when I

NOTE Confidence: 0.9910903

00:51:05.800 --> 00:51:07.580 sit down with someone. Well,

NOTE Confidence: 0.9697552

00:51:08.200 --> 00:51:09.480 what is a stoma or

NOTE Confidence: 0.9697552

00:51:09.480 --> 00:51:10.920 an ostomy or a bag

NOTE Confidence: 0.9697552

00:51:10.920 --> 00:51:12.620 or a colostomy bag, and

NOTE Confidence: 0.9697552

00:51:12.840 --> 00:51:13.880 am I going to need

NOTE Confidence: 0.9697552

00:51:13.880 --> 00:51:14.380 one?

NOTE Confidence: 0.99820733

00:51:14.760 --> 00:51:15.580 And so

NOTE Confidence: 0.9913416

00:51:16.215 --> 00:51:17.895 ostomy or stoma comes from

NOTE Confidence: 0.9913416

00:51:17.895 --> 00:51:19.015 the Greek and Latin words

NOTE Confidence: 0.9913416

00:51:19.015 --> 00:51:20.375 for mouth, and they've actually

NOTE Confidence: 0.9913416

00:51:20.375 --> 00:51:21.415 been around for a very

NOTE Confidence: 0.9913416

00:51:21.415 --> 00:51:22.155 long time.

NOTE Confidence: 0.9981496

00:51:22.535 --> 00:51:24.695 And it's where we pull

NOTE Confidence: 0.9981496

00:51:24.695 --> 00:51:26.535 a small amount of the

NOTE Confidence: 0.9981496

00:51:26.535 --> 00:51:28.395 colon or the small bowel

NOTE Confidence: 0.9856451

00:51:28.695 --> 00:51:29.675 through the skin,

NOTE Confidence: 0.97835046

00:51:30.590 --> 00:51:31.630 fold it over like a

NOTE Confidence: 0.97835046

00:51:31.630 --> 00:51:32.989 turtleneck, sew it to the

NOTE Confidence: 0.97835046

00:51:32.989 --> 00:51:34.270 skin, and the stool no

NOTE Confidence: 0.97835046

00:51:34.270 --> 00:51:35.969 longer comes out your bottom,

NOTE Confidence: 0.9766551

00:51:36.350 --> 00:51:37.550 but it comes out through

NOTE Confidence: 0.9766551

00:51:37.550 --> 00:51:39.250 this opening and it empties

NOTE Confidence: 0.9766551

00:51:39.310 --> 00:51:40.530 into a little bag

NOTE Confidence: 0.9989872

00:51:40.830 --> 00:51:42.210 that collects the stool.

NOTE Confidence: 0.99880767

00:51:42.885 --> 00:51:43.945 So not everyone

NOTE Confidence: 0.9982789

00:51:44.245 --> 00:51:45.525 is going to need an

NOTE Confidence: 0.9982789

00:51:45.525 --> 00:51:47.605 ostomy bag. In fact, that's

NOTE Confidence: 0.9982789

00:51:47.605 --> 00:51:49.844 really permanent ostomy bags are

NOTE Confidence: 0.9982789

00:51:49.844 --> 00:51:51.945 something that we are really

NOTE Confidence: 0.9904777

00:51:52.245 --> 00:51:54.485 well able to avoid in

NOTE Confidence: 0.9904777

00:51:54.485 --> 00:51:55.625 what we do today.

NOTE Confidence: 0.8444872

00:51:56.950 --> 00:51:58.010 Going back here,

NOTE Confidence: 0.9944622

00:51:58.390 --> 00:51:59.850 looking at this lowest

NOTE Confidence: 0.98500514

00:52:00.390 --> 00:52:01.830 level of tumor, the kind

NOTE Confidence: 0.98500514

00:52:01.830 --> 00:52:03.030 of tumor that's growing within

NOTE Confidence: 0.98500514

00:52:03.030 --> 00:52:04.230 the anal canal that gets

NOTE Confidence: 0.98500514

00:52:04.230 --> 00:52:05.610 its upfront treatment

NOTE Confidence: 0.99405766

00:52:05.910 --> 00:52:07.290 with its total neoadjuvant

NOTE Confidence: 0.8276043

00:52:07.590 --> 00:52:08.090 therapy,

NOTE Confidence: 0.95156455

00:52:09.085 --> 00:52:10.765 If it responds completely like

NOTE Confidence: 0.95156455

00:52:10.765 --> 00:52:12.364 doctor Joheng was talking about

NOTE Confidence: 0.95156455

00:52:12.364 --> 00:52:13.965 and there's no tumor remaining

NOTE Confidence: 0.95156455

00:52:13.965 --> 00:52:15.005 and you're up for a

NOTE Confidence: 0.95156455

00:52:15.005 --> 00:52:16.465 lot of prodding and poking,

NOTE Confidence: 0.97740334

00:52:16.844 --> 00:52:17.965 we can often do what's

NOTE Confidence: 0.97740334

00:52:17.965 --> 00:52:19.325 called watch and wait, and

NOTE Confidence: 0.97740334

00:52:19.325 --> 00:52:20.685 you get to avoid me.

NOTE Confidence: 0.97740334

00:52:20.685 --> 00:52:21.725 And we watch it very

NOTE Confidence: 0.97740334

00:52:21.725 --> 00:52:23.165 closely in the clinic over

NOTE Confidence: 0.97740334

00:52:23.165 --> 00:52:24.710 time to make sure that

NOTE Confidence: 0.97740334

00:52:24.710 --> 00:52:25.910 it doesn't grow back, but

NOTE Confidence: 0.97740334

00:52:25.910 --> 00:52:27.530 that does allow some people

NOTE Confidence: 0.91527945

00:52:27.989 --> 00:52:29.530 to to preserve their sphincters

NOTE Confidence: 0.91527945

00:52:29.829 --> 00:52:31.270 when otherwise they would not

NOTE Confidence: 0.91527945

00:52:31.270 --> 00:52:32.089 be able to.

NOTE Confidence: 0.6980769

00:52:33.430 --> 00:52:34.410 You know, forward.

NOTE Confidence: 0.99530345

00:52:35.589 --> 00:52:36.089 Alright.

NOTE Confidence: 0.99754244

00:52:36.455 --> 00:52:38.055 Then there's this idea of

NOTE Confidence: 0.99754244

00:52:38.055 --> 00:52:40.855 temporary versus permanent stoma bag.

NOTE Confidence: 0.99754244

00:52:40.855 --> 00:52:42.075 So a lot of times,

NOTE Confidence: 0.9821797

00:52:42.535 --> 00:52:43.975 especially in cases of rectal

NOTE Confidence: 0.9821797

00:52:43.975 --> 00:52:45.655 cancer where you have received

NOTE Confidence: 0.9821797

00:52:45.655 --> 00:52:47.655 upfront treatment, and even though

NOTE Confidence: 0.9821797

00:52:47.655 --> 00:52:49.094 the tumor isn't so low

NOTE Confidence: 0.9821797

00:52:49.094 --> 00:52:50.055 that we can't get it

NOTE Confidence: 0.9821797

00:52:50.055 --> 00:52:51.094 out, we can still save

NOTE Confidence: 0.9821797

00:52:51.094 --> 00:52:52.110 the sphincter muscles

NOTE Confidence: 0.9992357

00:52:52.590 --> 00:52:53.730 because that tissue

NOTE Confidence: 0.99908817

00:52:54.350 --> 00:52:54.850 is

NOTE Confidence: 0.98761344

00:52:55.630 --> 00:52:56.830 a little bit, we'll say,

NOTE Confidence: 0.98761344

00:52:56.830 --> 00:52:58.190 jeopardized by the fact that

NOTE Confidence: 0.98761344

00:52:58.190 --> 00:52:59.550 it's had the radiation, the

NOTE Confidence: 0.98761344

00:52:59.550 --> 00:53:01.390 chemotherapy. It makes its healing

NOTE Confidence: 0.98761344

00:53:01.390 --> 00:53:02.930 potential in the moment

NOTE Confidence: 0.9961995

00:53:03.550 --> 00:53:04.875 a little bit lower. And

NOTE Confidence: 0.9961995

00:53:04.875 --> 00:53:05.835 what we know is when

NOTE Confidence: 0.9961995

00:53:05.835 --> 00:53:07.195 you're trying to bring two

NOTE Confidence: 0.9961995

00:53:07.195 --> 00:53:08.875 ends of the colon together

NOTE Confidence: 0.9961995

00:53:08.875 --> 00:53:09.915 after you've taken out the

NOTE Confidence: 0.9961995

00:53:09.915 --> 00:53:10.415 segment

NOTE Confidence: 0.99094564

00:53:10.715 --> 00:53:12.555 containing the tumor, it's very

NOTE Confidence: 0.99094564

00:53:12.555 --> 00:53:14.315 important that it heals absolutely

NOTE Confidence: 0.99094564

00:53:14.315 --> 00:53:15.594 perfectly so you don't get

NOTE Confidence: 0.99094564

00:53:15.594 --> 00:53:16.895 what's called a leak.

NOTE Confidence: 0.9793039

00:53:17.195 --> 00:53:18.235 We know that when you've

NOTE Confidence: 0.9793039

00:53:18.235 --> 00:53:18.975 been radiated,

NOTE Confidence: 0.95113736

00:53:19.550 --> 00:53:21.070 that oftentimes that risk of

NOTE Confidence: 0.95113736

00:53:21.070 --> 00:53:21.570 leakage

NOTE Confidence: 0.9743358

00:53:22.109 --> 00:53:23.950 goes up substantially. And so

NOTE Confidence: 0.9743358

00:53:23.950 --> 00:53:25.150 for many patients who have

NOTE Confidence: 0.9743358

00:53:25.150 --> 00:53:26.670 rectal cancer who get full

NOTE Confidence: 0.9743358

00:53:26.670 --> 00:53:28.430 treatment beforehand, we make what's

NOTE Confidence: 0.9743358

00:53:28.430 --> 00:53:30.190 called a temporary stoma. And

NOTE Confidence: 0.9743358

00:53:30.190 --> 00:53:31.550 temporary in our world is

NOTE Confidence: 0.9743358

00:53:31.550 --> 00:53:33.165 four to six weeks. We

NOTE Confidence: 0.9743358

00:53:33.165 --> 00:53:34.445 do a little leak test

NOTE Confidence: 0.9743358

00:53:34.445 --> 00:53:35.645 at the six week mark,

NOTE Confidence: 0.9743358

00:53:35.645 --> 00:53:36.605 and then we close the

NOTE Confidence: 0.9743358

00:53:36.605 --> 00:53:38.685 stoma right after that. And

NOTE Confidence: 0.9743358

00:53:38.685 --> 00:53:39.965 so really at this point

NOTE Confidence: 0.9743358

00:53:39.965 --> 00:53:41.085 in time, there are very

NOTE Confidence: 0.9743358

00:53:41.085 --> 00:53:42.844 few patients that we have,

NOTE Confidence: 0.9998361

00:53:43.565 --> 00:53:44.305 that require

NOTE Confidence: 0.9961201

00:53:44.859 --> 00:53:46.300 a permanent stoma. It's really

NOTE Confidence: 0.9961201

00:53:46.300 --> 00:53:47.339 those with a tumor that

NOTE Confidence: 0.9961201

00:53:47.339 --> 00:53:48.640 doesn't respond to treatment

NOTE Confidence: 0.99143773

00:53:49.020 --> 00:53:50.780 that's very low down and

NOTE Confidence: 0.99143773

00:53:50.780 --> 00:53:51.980 and well within the anal

NOTE Confidence: 0.99143773

00:53:51.980 --> 00:53:53.839 canal involving the anal sphincters.

NOTE Confidence: 0.9981714

00:53:56.060 --> 00:53:57.099 Alright. So how do we

NOTE Confidence: 0.9981714

00:53:57.099 --> 00:53:58.640 do colon surgery today?

NOTE Confidence: 0.96523523

00:53:59.795 --> 00:54:00.994 This is the photo that

NOTE Confidence: 0.96523523

00:54:00.994 --> 00:54:02.275 hung on the wall where

NOTE Confidence: 0.96523523

00:54:02.275 --> 00:54:03.714 I trained in Boston, and

NOTE Confidence: 0.96523523

00:54:03.714 --> 00:54:04.914 this is a a picture

NOTE Confidence: 0.96523523

00:54:04.914 --> 00:54:06.355 of the the first surgery

NOTE Confidence: 0.96523523

00:54:06.355 --> 00:54:07.634 that was ever done under

NOTE Confidence: 0.96523523

00:54:07.634 --> 00:54:09.154 anesthesia. And this was at,

NOTE Confidence: 0.8330779

00:54:09.555 --> 00:54:10.614 the math general.

NOTE Confidence: 0.9788111

00:54:11.154 --> 00:54:12.810 So people really literally sat

NOTE Confidence: 0.9788111

00:54:12.890 --> 00:54:14.170 around in the stadiums and

NOTE Confidence: 0.9788111

00:54:14.170 --> 00:54:15.370 and watched, and it was

NOTE Confidence: 0.9788111

00:54:15.370 --> 00:54:16.810 done open, and they didn't

NOTE Confidence: 0.9788111

00:54:16.810 --> 00:54:17.550 have scrubs.

NOTE Confidence: 0.9475124

00:54:18.010 --> 00:54:19.610 We continue to do open

NOTE Confidence: 0.9475124

00:54:19.610 --> 00:54:21.050 surgery for a really long

NOTE Confidence: 0.9475124

00:54:21.050 --> 00:54:21.550 time.

NOTE Confidence: 0.98747766

00:54:21.930 --> 00:54:22.890 But by the time we

NOTE Confidence: 0.98747766

00:54:22.890 --> 00:54:24.670 got to the nineteen eighties,

NOTE Confidence: 0.9998829

00:54:25.415 --> 00:54:25.915 laparoscopic

NOTE Confidence: 0.9986062

00:54:26.215 --> 00:54:28.695 surgery had really come into

NOTE Confidence: 0.9986062

00:54:28.695 --> 00:54:29.195 being.

NOTE Confidence: 0.95240086

00:54:29.575 --> 00:54:30.535 As you can see, you

NOTE Confidence: 0.95240086

00:54:30.535 --> 00:54:31.575 had sort of an old

NOTE Confidence: 0.95240086

00:54:31.575 --> 00:54:33.575 screen and people holding these

NOTE Confidence: 0.95240086

00:54:33.575 --> 00:54:35.575 long skinny instruments on sticks

NOTE Confidence: 0.95240086

00:54:35.575 --> 00:54:37.094 with a camera and tiny

NOTE Confidence: 0.95240086

00:54:37.094 --> 00:54:37.594 instruments,

NOTE Confidence: 0.99912435

00:54:37.895 --> 00:54:39.195 and this is called laparoscopic

NOTE Confidence: 0.99912435

00:54:39.494 --> 00:54:39.994 surgery.

NOTE Confidence: 0.9995871

00:54:40.710 --> 00:54:41.670 We still do a lot

NOTE Confidence: 0.9995871

00:54:41.670 --> 00:54:42.330 of laparoscopic

NOTE Confidence: 0.99868846

00:54:42.710 --> 00:54:43.690 surgery today.

NOTE Confidence: 0.98830104

00:54:44.310 --> 00:54:45.750 It usually involves at least

NOTE Confidence: 0.98830104

00:54:45.750 --> 00:54:47.510 two people because you you

NOTE Confidence: 0.98830104

00:54:47.510 --> 00:54:48.630 need an extra pair of

NOTE Confidence: 0.98830104

00:54:48.630 --> 00:54:49.930 hands because we currently

NOTE Confidence: 0.9435506

00:54:50.230 --> 00:54:51.910 only have two hands. And,

NOTE Confidence: 0.9435506

00:54:52.070 --> 00:54:52.950 someone's got a hold of

NOTE Confidence: 0.9435506

00:54:52.950 --> 00:54:53.910 a camera, and you need

NOTE Confidence: 0.9435506

00:54:53.910 --> 00:54:55.369 at least two working hands

NOTE Confidence: 0.9435506

00:54:55.645 --> 00:54:56.765 to do an operation to

NOTE Confidence: 0.9435506

00:54:56.765 --> 00:54:57.485 take out a part of

NOTE Confidence: 0.9435506

00:54:57.485 --> 00:54:58.145 the colon.

NOTE Confidence: 0.99074817

00:54:59.885 --> 00:55:00.705 More recently

NOTE Confidence: 0.9729512

00:55:01.005 --> 00:55:02.125 and stuff that you may

NOTE Confidence: 0.9729512

00:55:02.125 --> 00:55:03.085 have heard of or seen

NOTE Confidence: 0.9729512

00:55:03.085 --> 00:55:04.285 on TV, but within the

NOTE Confidence: 0.9729512

00:55:04.285 --> 00:55:06.205 last twenty years, we've gone

NOTE Confidence: 0.9729512

00:55:06.205 --> 00:55:07.500 on to robotic surgery.

NOTE Confidence: 0.96428376

00:55:08.780 --> 00:55:10.219 This is a picture of

NOTE Confidence: 0.96428376

00:55:10.219 --> 00:55:12.960 the intuitive DaVinci robotic system,

NOTE Confidence: 0.96428376

00:55:13.020 --> 00:55:14.460 and that's what we use

NOTE Confidence: 0.96428376

00:55:14.460 --> 00:55:15.980 at Yale. In fact, actually,

NOTE Confidence: 0.96428376

00:55:15.980 --> 00:55:17.260 this is the last version

NOTE Confidence: 0.96428376

00:55:17.260 --> 00:55:18.540 of it, and we have

NOTE Confidence: 0.96428376

00:55:18.540 --> 00:55:20.460 actually upgraded our entire system

NOTE Confidence: 0.96428376

00:55:20.460 --> 00:55:21.705 to the d b five

NOTE Confidence: 0.96428376

00:55:21.705 --> 00:55:22.985 intuitive system, which is the

NOTE Confidence: 0.96428376

00:55:22.985 --> 00:55:24.425 newest robot that's on the

NOTE Confidence: 0.96428376

00:55:24.425 --> 00:55:24.925 market.

NOTE Confidence: 0.99322987

00:55:25.945 --> 00:55:26.605 And so

NOTE Confidence: 0.9901154

00:55:26.985 --> 00:55:28.265 I would say we have

NOTE Confidence: 0.9901154

00:55:28.265 --> 00:55:30.045 probably one of the largest

NOTE Confidence: 0.9901154

00:55:30.105 --> 00:55:31.165 robotic programs

NOTE Confidence: 0.947813

00:55:31.465 --> 00:55:33.225 in the northeast just by

NOTE Confidence: 0.947813

00:55:33.225 --> 00:55:33.885 the sheer

NOTE Confidence: 0.9905079

00:55:34.610 --> 00:55:35.969 number of robots that we

NOTE Confidence: 0.9905079

00:55:35.969 --> 00:55:37.650 have here at Yale. And

NOTE Confidence: 0.9905079

00:55:37.650 --> 00:55:39.410 robotic surgery is kind of

NOTE Confidence: 0.9905079

00:55:39.410 --> 00:55:41.430 fun. It's also really interesting.

NOTE Confidence: 0.98534507

00:55:41.969 --> 00:55:43.570 So what you're looking at

NOTE Confidence: 0.98534507

00:55:43.570 --> 00:55:44.850 in this picture is the

NOTE Confidence: 0.98534507

00:55:44.850 --> 00:55:46.530 patient would be here laying

NOTE Confidence: 0.98534507

00:55:46.530 --> 00:55:48.285 on the table, and this

NOTE Confidence: 0.98534507

00:55:48.285 --> 00:55:50.285 is the intuitive surgical robot.

NOTE Confidence: 0.98534507

00:55:50.285 --> 00:55:52.204 It has four arms that

NOTE Confidence: 0.98534507

00:55:52.204 --> 00:55:53.645 can be controlled by one

NOTE Confidence: 0.98534507

00:55:53.645 --> 00:55:54.844 person. So you have a

NOTE Confidence: 0.98534507

00:55:54.844 --> 00:55:55.344 camera,

NOTE Confidence: 0.94568807

00:55:55.645 --> 00:55:56.605 which is right here, and

NOTE Confidence: 0.94568807

00:55:56.605 --> 00:55:58.545 you get three operating arms.

NOTE Confidence: 0.9892114

00:55:59.325 --> 00:56:00.605 There's always someone at the

NOTE Confidence: 0.9892114

00:56:00.605 --> 00:56:02.340 bedside because you have to

NOTE Confidence: 0.9892114

00:56:02.340 --> 00:56:04.420 exchange the instruments manually, and

NOTE Confidence: 0.9892114

00:56:04.420 --> 00:56:05.860 it uses the exact same

NOTE Confidence: 0.9892114

00:56:05.860 --> 00:56:07.140 kind of ports that you

NOTE Confidence: 0.9892114

00:56:07.140 --> 00:56:08.600 use when you're doing laparoscopic

NOTE Confidence: 0.75393844

00:56:09.140 --> 00:56:09.640 surgery.

NOTE Confidence: 0.99325085

00:56:09.940 --> 00:56:10.900 But instead, they have a

NOTE Confidence: 0.99325085

00:56:10.900 --> 00:56:12.180 little adapter on them that

NOTE Confidence: 0.99325085

00:56:12.180 --> 00:56:14.120 clips into the robotic arms.

NOTE Confidence: 0.98932576

00:56:14.605 --> 00:56:16.364 The instruments themselves from a

NOTE Confidence: 0.98932576

00:56:16.364 --> 00:56:18.285 distance appear very similar. We

NOTE Confidence: 0.98932576

00:56:18.285 --> 00:56:20.385 have scissors. We have graspers.

NOTE Confidence: 0.97593087

00:56:21.165 --> 00:56:22.785 We have really nice cameras.

NOTE Confidence: 0.99125326

00:56:23.245 --> 00:56:25.325 But what's really great about

NOTE Confidence: 0.99125326

00:56:25.325 --> 00:56:27.085 the robotic instruments is that

NOTE Confidence: 0.99125326

00:56:27.085 --> 00:56:28.785 they're what we call wristed.

NOTE Confidence: 0.9992281

00:56:29.120 --> 00:56:30.420 So a typical laparoscopic

NOTE Confidence: 0.97129667

00:56:30.719 --> 00:56:32.080 scissors, like a scissors, like

NOTE Confidence: 0.97129667

00:56:32.080 --> 00:56:33.440 you cut with, is straight.

NOTE Confidence: 0.97129667

00:56:33.440 --> 00:56:34.480 It it it can cut

NOTE Confidence: 0.97129667

00:56:34.480 --> 00:56:35.600 in one plane. It's on

NOTE Confidence: 0.97129667

00:56:35.600 --> 00:56:36.400 a stick so you can

NOTE Confidence: 0.97129667

00:56:36.400 --> 00:56:37.360 move it up and down,

NOTE Confidence: 0.97129667

00:56:37.360 --> 00:56:38.640 up and down, and that's

NOTE Confidence: 0.97129667

00:56:38.640 --> 00:56:39.600 how you can cut or

NOTE Confidence: 0.97129667

00:56:39.600 --> 00:56:40.800 divide the tissue that you

NOTE Confidence: 0.97129667

00:56:40.800 --> 00:56:41.760 need to divide to take

NOTE Confidence: 0.97129667

00:56:41.760 --> 00:56:42.480 out a part of the

NOTE Confidence: 0.97129667

00:56:42.480 --> 00:56:42.980 colon.

NOTE Confidence: 0.99742675

00:56:43.305 --> 00:56:44.425 When it comes to robotic

NOTE Confidence: 0.99742675

00:56:44.425 --> 00:56:44.925 surgery,

NOTE Confidence: 0.9685404

00:56:45.305 --> 00:56:46.665 it has an actual wrist

NOTE Confidence: 0.9685404

00:56:46.665 --> 00:56:47.864 and it has more degrees

NOTE Confidence: 0.9685404

00:56:47.864 --> 00:56:49.305 of freedom or more ability

NOTE Confidence: 0.9685404

00:56:49.305 --> 00:56:50.765 to rotate on an axis

NOTE Confidence: 0.9742975

00:56:51.305 --> 00:56:52.984 than the human wrist does.

NOTE Confidence: 0.9742975

00:56:52.984 --> 00:56:54.285 And all of the instruments,

NOTE Confidence: 0.97827

00:56:55.145 --> 00:56:56.585 that the robot uses are

NOTE Confidence: 0.97827

00:56:56.585 --> 00:56:57.545 the same way. And the

NOTE Confidence: 0.97827

00:56:57.545 --> 00:56:59.040 camera is actually not a

NOTE Confidence: 0.97827

00:56:59.120 --> 00:57:00.900 single camera. It's two

NOTE Confidence: 0.9969017

00:57:01.280 --> 00:57:03.360 high resolution cameras within one

NOTE Confidence: 0.9969017

00:57:03.360 --> 00:57:04.880 camera body, which means when

NOTE Confidence: 0.9969017

00:57:04.880 --> 00:57:06.239 you're looking through the console,

NOTE Confidence: 0.9969017

00:57:06.239 --> 00:57:07.440 which is about five feet

NOTE Confidence: 0.9969017

00:57:07.440 --> 00:57:08.960 away from the patient, you

NOTE Confidence: 0.9969017

00:57:08.960 --> 00:57:10.080 actually are in a three

NOTE Confidence: 0.9969017

00:57:10.080 --> 00:57:12.340 d viewer headset. So everything

NOTE Confidence: 0.9969017

00:57:12.400 --> 00:57:13.460 that you see

NOTE Confidence: 0.98222154

00:57:13.815 --> 00:57:15.255 is in three dimensions, and

NOTE Confidence: 0.98222154

00:57:15.255 --> 00:57:15.994 the magnification

NOTE Confidence: 0.986474

00:57:16.535 --> 00:57:18.055 is much higher than it

NOTE Confidence: 0.986474

00:57:18.055 --> 00:57:19.015 would be. And there's no

NOTE Confidence: 0.986474

00:57:19.015 --> 00:57:20.214 glare coming off of a

NOTE Confidence: 0.986474

00:57:20.214 --> 00:57:21.335 flat screen like you would

NOTE Confidence: 0.986474

00:57:21.335 --> 00:57:23.095 in laparoscopy, but you're actually

NOTE Confidence: 0.986474

00:57:23.095 --> 00:57:23.595 seeing

NOTE Confidence: 0.99927264

00:57:23.974 --> 00:57:24.875 in three dimensions.

NOTE Confidence: 0.98515147

00:57:25.575 --> 00:57:27.255 Another area when it comes

NOTE Confidence: 0.98515147

00:57:27.255 --> 00:57:28.730 to colon surgery that's of

NOTE Confidence: 0.98515147

00:57:28.730 --> 00:57:30.010 particular interest is the fact

NOTE Confidence: 0.98515147

00:57:30.010 --> 00:57:31.290 that the robot also has

NOTE Confidence: 0.98515147

00:57:31.290 --> 00:57:32.970 a near infrared light source

NOTE Confidence: 0.98515147

00:57:32.970 --> 00:57:35.069 or laser built into it,

NOTE Confidence: 0.98515147

00:57:35.130 --> 00:57:36.829 and that can excite certain

NOTE Confidence: 0.98515147

00:57:36.890 --> 00:57:38.970 injectable chemicals to allow us

NOTE Confidence: 0.98515147

00:57:38.970 --> 00:57:40.250 to see where there is

NOTE Confidence: 0.98515147

00:57:40.250 --> 00:57:40.990 blood supply.

NOTE Confidence: 0.9982533

00:57:41.755 --> 00:57:42.875 Like we talked about in

NOTE Confidence: 0.9982533

00:57:42.875 --> 00:57:43.855 the very beginning,

NOTE Confidence: 0.98792225

00:57:44.234 --> 00:57:45.355 the blood supply to each

NOTE Confidence: 0.98792225

00:57:45.355 --> 00:57:46.815 part of the colon determines

NOTE Confidence: 0.98792225

00:57:46.875 --> 00:57:47.755 where we're gonna take it

NOTE Confidence: 0.98792225

00:57:47.755 --> 00:57:48.795 out and how we decide

NOTE Confidence: 0.98792225

00:57:48.795 --> 00:57:49.835 how much of the colon

NOTE Confidence: 0.98792225

00:57:49.835 --> 00:57:51.195 around the tumor we're gonna

NOTE Confidence: 0.98792225

00:57:51.195 --> 00:57:52.795 take out. In this case,

NOTE Confidence: 0.98792225

00:57:52.795 --> 00:57:53.915 when we get ready to

NOTE Confidence: 0.98792225

00:57:53.915 --> 00:57:55.720 divide the tumor and we

NOTE Confidence: 0.98792225

00:57:55.720 --> 00:57:56.840 want the tumor to be

NOTE Confidence: 0.98792225

00:57:56.840 --> 00:57:57.800 in the area of the

NOTE Confidence: 0.98792225

00:57:57.800 --> 00:57:59.400 colon that's coming out, and

NOTE Confidence: 0.98792225

00:57:59.400 --> 00:58:00.520 we've taken away the blood

NOTE Confidence: 0.98792225

00:58:00.520 --> 00:58:01.720 supply there, but we wanna

NOTE Confidence: 0.98792225

00:58:01.720 --> 00:58:03.000 make sure that new connection

NOTE Confidence: 0.98792225

00:58:03.000 --> 00:58:03.960 that we make is gonna

NOTE Confidence: 0.98792225

00:58:03.960 --> 00:58:05.000 be healthy enough so that

NOTE Confidence: 0.98792225

00:58:05.000 --> 00:58:05.960 when we bring the ends

NOTE Confidence: 0.98792225

00:58:05.960 --> 00:58:07.180 together, they heal.

NOTE Confidence: 0.9556657

00:58:07.535 --> 00:58:09.215 We'll inject this green this

NOTE Confidence: 0.9556657

00:58:09.215 --> 00:58:10.835 this liquid. It's called endocyanine

NOTE Confidence: 0.8415781

00:58:11.215 --> 00:58:11.715 green,

NOTE Confidence: 0.97551304

00:58:12.015 --> 00:58:12.975 and we inject it in.

NOTE Confidence: 0.97551304

00:58:12.975 --> 00:58:13.935 It actually lights up all

NOTE Confidence: 0.97551304

00:58:13.935 --> 00:58:14.815 the blood vessels. So you

NOTE Confidence: 0.97551304

00:58:14.815 --> 00:58:16.015 can see this area here

NOTE Confidence: 0.97551304

00:58:16.015 --> 00:58:17.695 is really bright green, and

NOTE Confidence: 0.97551304

00:58:17.695 --> 00:58:18.895 that corresponds to the same

NOTE Confidence: 0.97551304

00:58:18.895 --> 00:58:20.335 part of the colon right

NOTE Confidence: 0.97551304

00:58:20.335 --> 00:58:20.835 here.

NOTE Confidence: 0.9726607

00:58:21.380 --> 00:58:22.420 It tells us it's got

NOTE Confidence: 0.9726607

00:58:22.420 --> 00:58:23.940 great perfusion. But the part

NOTE Confidence: 0.9726607

00:58:23.940 --> 00:58:24.900 where the tumor is, this

NOTE Confidence: 0.9726607

00:58:24.900 --> 00:58:26.020 is the back end of

NOTE Confidence: 0.9726607

00:58:26.020 --> 00:58:26.980 of the upper part of

NOTE Confidence: 0.9726607

00:58:26.980 --> 00:58:28.100 the tattoo here on this

NOTE Confidence: 0.9726607

00:58:28.100 --> 00:58:29.060 side. It all looks the

NOTE Confidence: 0.9726607

00:58:29.060 --> 00:58:30.180 same. It all looks pink.

NOTE Confidence: 0.9726607

00:58:30.180 --> 00:58:30.980 But when we look here,

NOTE Confidence: 0.9726607

00:58:30.980 --> 00:58:31.940 you see it's not very

NOTE Confidence: 0.9726607

00:58:31.940 --> 00:58:33.220 green, and that tells us

NOTE Confidence: 0.9726607

00:58:33.220 --> 00:58:34.340 that this area doesn't have

NOTE Confidence: 0.9726607

00:58:34.340 --> 00:58:35.735 good blood supply. So we

NOTE Confidence: 0.9726607

00:58:35.735 --> 00:58:36.615 know when we're gonna cut

NOTE Confidence: 0.9726607

00:58:36.615 --> 00:58:37.575 the tumor out, we're gonna

NOTE Confidence: 0.9726607

00:58:37.575 --> 00:58:38.775 cut right here into the

NOTE Confidence: 0.9726607

00:58:38.775 --> 00:58:40.375 healthy green area, and that's

NOTE Confidence: 0.9726607

00:58:40.375 --> 00:58:41.335 the area that has a

NOTE Confidence: 0.9726607

00:58:41.335 --> 00:58:42.375 good blood supply that we're

NOTE Confidence: 0.9726607

00:58:42.375 --> 00:58:43.655 gonna use to make that

NOTE Confidence: 0.9726607

00:58:43.655 --> 00:58:44.155 connection.

NOTE Confidence: 0.9629308

00:58:44.455 --> 00:58:45.675 So that's another benefit.

NOTE Confidence: 0.98125947

00:58:46.055 --> 00:58:47.015 This is just a little

NOTE Confidence: 0.98125947

00:58:47.015 --> 00:58:48.069 bit about what does the

NOTE Confidence: 0.98125947

00:58:48.069 --> 00:58:50.309 data actually show for robotic

NOTE Confidence: 0.98125947

00:58:50.309 --> 00:58:52.230 surgery compared to more old

NOTE Confidence: 0.98125947

00:58:52.230 --> 00:58:53.910 fashioned surgery, which is open

NOTE Confidence: 0.98125947

00:58:53.910 --> 00:58:54.410 surgery.

NOTE Confidence: 0.9544107

00:58:54.950 --> 00:58:56.869 A lot shorter hospital stays

NOTE Confidence: 0.9544107

00:58:56.869 --> 00:58:59.109 return to normal activity and

NOTE Confidence: 0.9544107

00:58:59.109 --> 00:59:01.015 wound complication rates. It has

NOTE Confidence: 0.9544107

00:59:01.015 --> 00:59:01.595 been pitted

NOTE Confidence: 0.9307449

00:59:01.975 --> 00:59:04.055 together, especially in colon and

NOTE Confidence: 0.9307449

00:59:04.055 --> 00:59:05.675 rectal surgery in particular,

NOTE Confidence: 0.9990428

00:59:06.215 --> 00:59:07.515 head to head with laparoscopic

NOTE Confidence: 0.9890068

00:59:07.895 --> 00:59:09.575 surgery along a number of

NOTE Confidence: 0.9890068

00:59:09.575 --> 00:59:11.815 different clinical trials. And robotic

NOTE Confidence: 0.9890068

00:59:11.815 --> 00:59:14.075 surgery has been equally efficacious

NOTE Confidence: 0.9830687

00:59:14.400 --> 00:59:15.920 with the same cancer outcomes,

NOTE Confidence: 0.9830687

00:59:15.920 --> 00:59:17.440 but other quality of life

NOTE Confidence: 0.9830687

00:59:17.440 --> 00:59:19.140 outcomes such as sexual function

NOTE Confidence: 0.9691561

00:59:19.440 --> 00:59:21.299 are actually better in robotic

NOTE Confidence: 0.9691561

00:59:21.359 --> 00:59:21.859 surgery.

NOTE Confidence: 0.99465543

00:59:22.400 --> 00:59:23.520 And that's thought to be

NOTE Confidence: 0.99465543

00:59:23.520 --> 00:59:25.140 due to the extreme stability

NOTE Confidence: 0.99465543

00:59:25.200 --> 00:59:26.799 and precision of the viewing

NOTE Confidence: 0.99465543

00:59:26.799 --> 00:59:28.000 platform with the three d

NOTE Confidence: 0.99465543

00:59:28.000 --> 00:59:29.205 viewing, which allows us to

NOTE Confidence: 0.99465543

00:59:29.285 --> 00:59:30.165 spare a lot of the

NOTE Confidence: 0.99465543

00:59:30.165 --> 00:59:31.525 nerves, which sometimes you just

NOTE Confidence: 0.99465543

00:59:31.525 --> 00:59:32.665 can't see with laparoscopic

NOTE Confidence: 0.9993535

00:59:32.965 --> 00:59:33.465 surgery.

NOTE Confidence: 0.9790855

00:59:35.045 --> 00:59:36.325 Alright. So that's a little

NOTE Confidence: 0.9790855

00:59:36.325 --> 00:59:37.685 bit about the nuts and

NOTE Confidence: 0.9790855

00:59:37.685 --> 00:59:39.685 bolts. And without cutting too

NOTE Confidence: 0.9790855

00:59:39.685 --> 00:59:41.045 much into what Mike talked

NOTE Confidence: 0.9790855

00:59:41.045 --> 00:59:41.845 about, I just want to

NOTE Confidence: 0.9790855

00:59:41.845 --> 00:59:43.080 mention one thing that's near

NOTE Confidence: 0.9790855

00:59:43.080 --> 00:59:43.960 and dear to my heart

NOTE Confidence: 0.9790855

00:59:43.960 --> 00:59:45.080 with just a couple slides

NOTE Confidence: 0.9790855

00:59:45.080 --> 00:59:46.760 as we wrap up. What's

NOTE Confidence: 0.9790855

00:59:46.760 --> 00:59:47.260 new?

NOTE Confidence: 0.9436562

00:59:47.800 --> 00:59:48.680 I I don't think you

NOTE Confidence: 0.9436562

00:59:48.680 --> 00:59:49.900 can avoid the news.

NOTE Confidence: 0.9326286

00:59:50.920 --> 00:59:52.040 Shame with the passing of,

NOTE Confidence: 0.9326286

00:59:52.360 --> 00:59:53.820 mister Vanderbeek, but

NOTE Confidence: 0.99938035

00:59:54.520 --> 00:59:56.280 colon cancer is rising in

NOTE Confidence: 0.99938035

00:59:56.280 --> 00:59:58.164 young people. It's now the

NOTE Confidence: 0.99938035

00:59:58.164 --> 00:59:59.845 number one cancer killer among

NOTE Confidence: 0.99938035

00:59:59.845 --> 01:00:00.984 adults under fifty.

NOTE Confidence: 0.96595514

01:00:01.365 --> 01:00:03.125 It's increased twofold in adults

NOTE Confidence: 0.96595514

01:00:03.125 --> 01:00:04.565 under fifty since the nineteen

NOTE Confidence: 0.96595514

01:00:04.565 --> 01:00:05.065 nineties.

NOTE Confidence: 0.99104726

01:00:06.085 --> 01:00:07.125 And now one in five

NOTE Confidence: 0.99104726

01:00:07.125 --> 01:00:08.325 new colon cancers will be

NOTE Confidence: 0.99104726

01:00:08.325 --> 01:00:09.525 under the age of fifty

NOTE Confidence: 0.99104726

01:00:09.525 --> 01:00:11.510 five. And oftentimes, we're seeing

NOTE Confidence: 0.99104726

01:00:11.510 --> 01:00:12.170 young people

NOTE Confidence: 0.97587115

01:00:12.470 --> 01:00:14.150 present with really advanced stage

NOTE Confidence: 0.97587115

01:00:14.150 --> 01:00:15.830 disease, and this is because

NOTE Confidence: 0.97587115

01:00:15.830 --> 01:00:17.270 we're even we've went from

NOTE Confidence: 0.97587115

01:00:17.270 --> 01:00:18.390 a screening age of fifty,

NOTE Confidence: 0.97587115

01:00:18.390 --> 01:00:19.430 and in twenty twenty one,

NOTE Confidence: 0.97587115

01:00:19.430 --> 01:00:20.390 we rolled it back to

NOTE Confidence: 0.97587115

01:00:20.390 --> 01:00:21.210 forty five.

NOTE Confidence: 0.97171736

01:00:21.510 --> 01:00:22.790 But even still, we're catching

NOTE Confidence: 0.97171736

01:00:22.790 --> 01:00:24.070 people younger than that because

NOTE Confidence: 0.97171736

01:00:24.070 --> 01:00:25.350 we're not screening people in

NOTE Confidence: 0.97171736

01:00:25.350 --> 01:00:25.965 their thirties.

NOTE Confidence: 0.9674482

01:00:28.045 --> 01:00:29.405 I get asked this a

NOTE Confidence: 0.9674482

01:00:29.405 --> 01:00:30.765 lot in my clinic and

NOTE Confidence: 0.9674482

01:00:30.765 --> 01:00:32.205 why are more young people

NOTE Confidence: 0.9674482

01:00:32.205 --> 01:00:33.725 getting colon cancer. And the

NOTE Confidence: 0.9674482

01:00:33.725 --> 01:00:35.085 real honest answer is we

NOTE Confidence: 0.9674482

01:00:35.085 --> 01:00:36.125 don't have a very good

NOTE Confidence: 0.9674482

01:00:36.125 --> 01:00:37.345 answer to that question.

NOTE Confidence: 0.98457795

01:00:37.725 --> 01:00:38.765 There are a lot of

NOTE Confidence: 0.98457795

01:00:38.765 --> 01:00:40.685 factors that are probably involved

NOTE Confidence: 0.98457795

01:00:40.685 --> 01:00:41.880 in this. That includes the

NOTE Confidence: 0.98457795

01:00:41.880 --> 01:00:43.339 diet and your food environment.

NOTE Confidence: 0.97671396

01:00:44.039 --> 01:00:44.920 We know that there's a

NOTE Confidence: 0.97671396

01:00:44.920 --> 01:00:46.520 rising rate of obesity, type

NOTE Confidence: 0.97671396

01:00:46.520 --> 01:00:48.839 two diabetes, and metabolic syndrome,

NOTE Confidence: 0.97671396

01:00:48.839 --> 01:00:49.720 and we know that there's

NOTE Confidence: 0.97671396

01:00:49.720 --> 01:00:51.559 actually very good data that

NOTE Confidence: 0.97671396

01:00:51.559 --> 01:00:53.559 sugary beverage consumption between the

NOTE Confidence: 0.97671396

01:00:53.559 --> 01:00:54.839 ages of thirteen and eighteen

NOTE Confidence: 0.97671396

01:00:54.839 --> 01:00:56.200 and obesity in that age

NOTE Confidence: 0.97671396

01:00:56.200 --> 01:00:56.700 range

NOTE Confidence: 0.98999035

01:00:57.015 --> 01:00:59.515 predicts later obesity driven cancers

NOTE Confidence: 0.98999035

01:00:59.575 --> 01:01:01.095 of which colon cancer is

NOTE Confidence: 0.98999035

01:01:01.095 --> 01:01:02.375 one of them. We know

NOTE Confidence: 0.98999035

01:01:02.375 --> 01:01:04.154 that our food environment changes

NOTE Confidence: 0.94827724

01:01:04.615 --> 01:01:06.454 the natural healthy bacteria that

NOTE Confidence: 0.94827724

01:01:06.454 --> 01:01:07.674 live in our gut,

NOTE Confidence: 0.94293934

01:01:07.974 --> 01:01:09.030 and we know that changes

NOTE Confidence: 0.94293934

01:01:09.030 --> 01:01:10.390 in those bacteria can lead

NOTE Confidence: 0.94293934

01:01:10.390 --> 01:01:11.990 to more inflammatory states, which

NOTE Confidence: 0.94293934

01:01:11.990 --> 01:01:13.130 can promote carcinogenesis.

NOTE Confidence: 0.9840232

01:01:13.990 --> 01:01:15.190 And again, we talked about

NOTE Confidence: 0.9840232

01:01:15.190 --> 01:01:16.730 genetics as well earlier.

NOTE Confidence: 0.9628592

01:01:17.430 --> 01:01:18.470 I wanted to talk about

NOTE Confidence: 0.9628592

01:01:18.470 --> 01:01:19.670 one last area that's sort

NOTE Confidence: 0.9628592

01:01:19.670 --> 01:01:20.470 of new to what we're

NOTE Confidence: 0.9628592

01:01:20.470 --> 01:01:21.750 doing at Yale and something

NOTE Confidence: 0.9628592

01:01:21.750 --> 01:01:23.165 that is part of our

NOTE Confidence: 0.9628592

01:01:23.165 --> 01:01:24.205 loving your guts and food

NOTE Confidence: 0.9628592

01:01:24.205 --> 01:01:26.065 is medicine campaign, which is

NOTE Confidence: 0.9893605

01:01:26.765 --> 01:01:28.605 understanding how your ZIP code

NOTE Confidence: 0.9893605

01:01:28.605 --> 01:01:30.205 affects your cancer risk, how

NOTE Confidence: 0.9893605

01:01:30.205 --> 01:01:31.985 food environment is involved

NOTE Confidence: 0.97932357

01:01:32.685 --> 01:01:33.905 in in carcinogenesis.

NOTE Confidence: 0.96110356

01:01:34.205 --> 01:01:35.005 And one of the things

NOTE Confidence: 0.96110356

01:01:35.005 --> 01:01:35.910 that we know is there

NOTE Confidence: 0.96110356

01:01:35.990 --> 01:01:37.109 areas that don't have good

NOTE Confidence: 0.96110356

01:01:37.109 --> 01:01:39.109 food supply, whether it's access

NOTE Confidence: 0.96110356

01:01:39.109 --> 01:01:40.470 to healthy food or being

NOTE Confidence: 0.96110356

01:01:40.470 --> 01:01:42.309 surrounded by a preponderance of

NOTE Confidence: 0.96110356

01:01:42.309 --> 01:01:43.589 unhealthy food, which is what

NOTE Confidence: 0.96110356

01:01:43.589 --> 01:01:44.890 a food swamp is.

NOTE Confidence: 0.98329204

01:01:45.430 --> 01:01:46.789 And we know that this

NOTE Confidence: 0.98329204

01:01:46.789 --> 01:01:48.569 can have an impact on

NOTE Confidence: 0.98329204

01:01:48.755 --> 01:01:50.755 can early onset colorectal cancer

NOTE Confidence: 0.98329204

01:01:50.755 --> 01:01:51.735 and its outcomes.

NOTE Confidence: 0.9891966

01:01:52.915 --> 01:01:53.795 We have been doing a

NOTE Confidence: 0.9891966

01:01:53.795 --> 01:01:54.835 lot of research on this

NOTE Confidence: 0.9891966

01:01:54.835 --> 01:01:56.115 by mapping out everything in

NOTE Confidence: 0.9891966

01:01:56.115 --> 01:01:57.575 the entire state of Connecticut.

NOTE Confidence: 0.9751178

01:01:58.035 --> 01:01:59.315 And what we have found

NOTE Confidence: 0.9751178

01:01:59.315 --> 01:02:00.755 in our original Yale data

NOTE Confidence: 0.9751178

01:02:00.755 --> 01:02:02.035 where we mapped everyone at

NOTE Confidence: 0.9751178

01:02:02.035 --> 01:02:03.240 Yale was that certainly we

NOTE Confidence: 0.9751178

01:02:03.240 --> 01:02:05.000 saw worse cancer outcomes in

NOTE Confidence: 0.9751178

01:02:05.000 --> 01:02:06.840 our early onset cancer patients

NOTE Confidence: 0.9751178

01:02:06.840 --> 01:02:08.520 who lived in unhealthier food

NOTE Confidence: 0.9751178

01:02:08.520 --> 01:02:09.020 environments.

NOTE Confidence: 0.98096985

01:02:09.480 --> 01:02:10.760 And more recently, as we

NOTE Confidence: 0.98096985

01:02:10.760 --> 01:02:12.040 expanded this to go to

NOTE Confidence: 0.98096985

01:02:12.040 --> 01:02:13.420 the entire state of Connecticut,

NOTE Confidence: 0.9449399

01:02:14.040 --> 01:02:15.320 with the with the assistance

NOTE Confidence: 0.9449399

01:02:15.320 --> 01:02:16.940 of the Connecticut tumor registry,

NOTE Confidence: 0.9898597

01:02:17.335 --> 01:02:18.055 What we're seeing in the

NOTE Confidence: 0.9898597

01:02:18.055 --> 01:02:19.255 state of Connecticut is actually

NOTE Confidence: 0.9898597

01:02:19.255 --> 01:02:21.175 a significant survival difference in

NOTE Confidence: 0.9898597

01:02:21.175 --> 01:02:22.935 in our youngest patients with

NOTE Confidence: 0.9898597

01:02:22.935 --> 01:02:24.295 cancer who live in unhealthy

NOTE Confidence: 0.9898597

01:02:24.295 --> 01:02:25.115 food environments.

NOTE Confidence: 0.9939914

01:02:25.575 --> 01:02:26.855 And so I say this

NOTE Confidence: 0.9939914

01:02:26.855 --> 01:02:28.135 as we keep talking about

NOTE Confidence: 0.9939914

01:02:28.135 --> 01:02:29.770 finding healthy foods to eat,

NOTE Confidence: 0.9939914

01:02:29.770 --> 01:02:30.570 but this is something that

NOTE Confidence: 0.9939914

01:02:30.570 --> 01:02:31.370 we really there are a

NOTE Confidence: 0.9939914

01:02:31.370 --> 01:02:33.130 lot of modifiable risk factors

NOTE Confidence: 0.9939914

01:02:33.130 --> 01:02:34.110 that people can

NOTE Confidence: 0.9760315

01:02:34.490 --> 01:02:35.850 can look forward to. And

NOTE Confidence: 0.9760315

01:02:35.850 --> 01:02:36.810 as part of our Yale

NOTE Confidence: 0.9760315

01:02:36.810 --> 01:02:38.010 teaching kitchen, we've been trying

NOTE Confidence: 0.9760315

01:02:38.010 --> 01:02:38.990 to work on having

NOTE Confidence: 0.99840593

01:02:39.370 --> 01:02:40.270 healthy eating

NOTE Confidence: 0.9732119

01:02:41.050 --> 01:02:43.050 teaching kitchen video webinars that

NOTE Confidence: 0.9732119

01:02:43.050 --> 01:02:44.010 can talk about how you

NOTE Confidence: 0.9732119

01:02:44.010 --> 01:02:45.435 can cook healthy high fiber

NOTE Confidence: 0.9732119

01:02:45.435 --> 01:02:46.955 meals for good colon health

NOTE Confidence: 0.9732119

01:02:46.955 --> 01:02:48.635 for under four to five

NOTE Confidence: 0.9732119

01:02:48.635 --> 01:02:50.155 dollars per serving. And so

NOTE Confidence: 0.9732119

01:02:50.155 --> 01:02:50.955 this is something that we've

NOTE Confidence: 0.9732119

01:02:50.955 --> 01:02:53.035 been really working on, over

NOTE Confidence: 0.9732119

01:02:53.035 --> 01:02:53.835 the last year and a

NOTE Confidence: 0.9732119

01:02:53.835 --> 01:02:54.335 half.

NOTE Confidence: 0.99767697

01:02:54.795 --> 01:02:55.675 I wanna say thank you

NOTE Confidence: 0.99767697

01:02:55.675 --> 01:02:57.115 to everyone for coming tonight.

NOTE Confidence: 0.99767697

01:02:57.115 --> 01:02:58.155 I'll stop my share, and

NOTE Confidence: 0.99767697

01:02:58.155 --> 01:02:59.195 I'm happy to take any

NOTE Confidence: 0.99767697

01:02:59.195 --> 01:02:59.695 questions.

NOTE Confidence: 0.9776498

01:03:02.670 --> 01:03:03.970 Thank you, doctor Manju.

NOTE Confidence: 0.9859883

01:03:05.470 --> 01:03:07.070 I think we're we're at

NOTE Confidence: 0.9859883

01:03:07.070 --> 01:03:07.570 time,

NOTE Confidence: 0.9902825

01:03:08.430 --> 01:03:09.790 and the questions have been

NOTE Confidence: 0.9902825

01:03:09.790 --> 01:03:10.750 answered in the chat as

NOTE Confidence: 0.9902825

01:03:10.750 --> 01:03:11.650 they came available.

NOTE Confidence: 0.9668107

01:03:12.830 --> 01:03:14.030 So thank you all for

NOTE Confidence: 0.9668107

01:03:14.030 --> 01:03:15.970 your attention this evening. As

NOTE Confidence: 0.9940664

01:03:16.805 --> 01:03:18.644 as noted previously and in

NOTE Confidence: 0.9940664

01:03:18.644 --> 01:03:19.845 the chat, this will be

NOTE Confidence: 0.9940664

01:03:19.845 --> 01:03:20.744 posted online,

NOTE Confidence: 0.9797896

01:03:21.125 --> 01:03:22.005 and a link will be

NOTE Confidence: 0.9797896

01:03:22.005 --> 01:03:23.285 sent out to anybody that

NOTE Confidence: 0.9797896

01:03:23.285 --> 01:03:24.585 registered for the event.

NOTE Confidence: 0.98910165

01:03:25.204 --> 01:03:26.644 Thank you again, and thank

NOTE Confidence: 0.98910165

01:03:26.644 --> 01:03:27.684 you to my my co

NOTE Confidence: 0.98910165

01:03:27.684 --> 01:03:29.444 panelists here. Have a great

NOTE Confidence: 0.98910165

01:03:29.444 --> 01:03:29.944 night.