

WEBVTT

NOTE duration:"01:29:37.0240000"

NOTE language:en-us

NOTE Confidence: 0.86150956

00:00:00.000 --> 00:00:03.160 Latest in screening and

NOTE Confidence: 0.86150956

00:00:03.160 --> 00:00:06.320 treatment for lung cancer.

NOTE Confidence: 0.86150956

00:00:06.320 --> 00:00:10.450 So I'm going to start with some

NOTE Confidence: 0.86150956

00:00:10.450 --> 00:00:13.570 introductory remarks and then I'll

NOTE Confidence: 0.86150956

00:00:13.570 --> 00:00:16.660 introduce the speakers in turn.

NOTE Confidence: 0.86150956

00:00:16.660 --> 00:00:20.896 Tonight we have Doctor Glassberg Chang.

NOTE Confidence: 0.86150956

00:00:20.900 --> 00:00:22.430 Mace and Mckeeman so Renee.

NOTE Confidence: 0.86150956

00:00:22.430 --> 00:00:24.560 If I may have the slides, please.

NOTE Confidence: 0.84531015

00:00:51.790 --> 00:00:53.670 So, so welcome, I'm glad to

NOTE Confidence: 0.84531015

00:00:53.670 --> 00:00:55.830 see so many people on tonight.

NOTE Confidence: 0.84531015

00:00:55.830 --> 00:00:58.006 I wish we could be in a lovely

NOTE Confidence: 0.84531015

00:00:58.006 --> 00:00:59.879 venue in Greenwich tonight.

NOTE Confidence: 0.84531015

00:00:59.880 --> 00:01:01.560 I think we all do,

NOTE Confidence: 0.84531015

00:01:01.560 --> 00:01:03.588 but that will happen again soon.

NOTE Confidence: 0.84531015

00:01:03.590 --> 00:01:05.704 From what I hear the from our

NOTE Confidence: 0.84531015

00:01:05.704 --> 00:01:07.290 experts at Yale Medicine.

NOTE Confidence: 0.84531015

00:01:07.290 --> 00:01:08.334 Just this morning,

NOTE Confidence: 0.84531015

00:01:08.334 --> 00:01:10.422 people are quite optimistic about the

NOTE Confidence: 0.84531015

00:01:10.422 --> 00:01:12.435 vaccines and hopefully we'll have plenty

NOTE Confidence: 0.84531015

00:01:12.435 --> 00:01:14.370 of them to Connecticut quite soon.

NOTE Confidence: 0.84531015

00:01:14.370 --> 00:01:16.050 In the meantime, of course,

NOTE Confidence: 0.84531015

00:01:16.050 --> 00:01:18.078 we have to be very careful,

NOTE Confidence: 0.84531015

00:01:18.080 --> 00:01:20.696 you know, over the next months.

NOTE Confidence: 0.84531015

00:01:20.700 --> 00:01:22.108 Well, I want to talk a little bit

NOTE Confidence: 0.84531015

00:01:22.108 --> 00:01:23.467 about lung Cancer Research at Yale.

NOTE Confidence: 0.84531015

00:01:23.470 --> 00:01:24.460 Just give a little introduction.

NOTE Confidence: 0.84531015

00:01:24.460 --> 00:01:25.450 So on the next slide.

NOTE Confidence: 0.87116367

00:01:34.630 --> 00:01:38.608 These are my disclosures. Next slide.

NOTE Confidence: 0.87116367

00:01:38.610 --> 00:01:40.714 When your lung cancer is A is a

NOTE Confidence: 0.87116367

00:01:40.714 --> 00:01:42.618 major disease worldwide and it's the  
NOTE Confidence: 0.87116367

00:01:42.618 --> 00:01:44.586 reason we're here tonight to talk  
NOTE Confidence: 0.87116367

00:01:44.647 --> 00:01:46.639 about some of the latest advances,  
NOTE Confidence: 0.87116367

00:01:46.640 --> 00:01:48.872 is the leading cause of cancer  
NOTE Confidence: 0.87116367

00:01:48.872 --> 00:01:50.360 death in most countries.  
NOTE Confidence: 0.87116367

00:01:50.360 --> 00:01:55.320 With over 2 million new cases worldwide and  
NOTE Confidence: 0.87116367

00:01:55.320 --> 00:02:00.917 18% of cancer deaths are from lung cancer.  
NOTE Confidence: 0.87116367

00:02:00.920 --> 00:02:03.680 In the US for lung cancer we have  
NOTE Confidence: 0.87116367

00:02:03.680 --> 00:02:06.162 about 228 thousand new cases a  
NOTE Confidence: 0.87116367

00:02:06.162 --> 00:02:08.718 year with 100 and 35,000 deaths,  
NOTE Confidence: 0.87116367

00:02:08.720 --> 00:02:11.060 most of lung cancer is non  
NOTE Confidence: 0.87116367

00:02:11.060 --> 00:02:12.620 small cell lung cancer.  
NOTE Confidence: 0.87116367

00:02:12.620 --> 00:02:14.960 About about 84% of it is  
NOTE Confidence: 0.87116367

00:02:14.960 --> 00:02:17.081 the other 15% is small cell.  
NOTE Confidence: 0.87116367

00:02:17.081 --> 00:02:20.044 If you look at the pie chart on the  
NOTE Confidence: 0.87116367

00:02:20.044 --> 00:02:22.700 left you can see lung cancer is pretty

NOTE Confidence: 0.87116367

00:02:22.778 --> 00:02:25.284 much the biggest piece of the pie.

NOTE Confidence: 0.87116367

00:02:25.290 --> 00:02:26.458 This is new cases,

NOTE Confidence: 0.87116367

00:02:26.458 --> 00:02:27.334 now breast cancer.

NOTE Confidence: 0.87116367

00:02:27.340 --> 00:02:28.810 We screened for breast cancer.

NOTE Confidence: 0.87116367

00:02:28.810 --> 00:02:30.568 We screened for lung cancer too.

NOTE Confidence: 0.87116367

00:02:30.570 --> 00:02:31.682 As you learn tonight.

NOTE Confidence: 0.87116367

00:02:31.682 --> 00:02:33.790 But we screen more for breast cancer.

NOTE Confidence: 0.87116367

00:02:33.790 --> 00:02:34.440 Colorectal cancer.

NOTE Confidence: 0.87116367

00:02:34.440 --> 00:02:36.390 Of course we screen for as

NOTE Confidence: 0.87116367

00:02:36.390 --> 00:02:38.400 well and you can see those are

NOTE Confidence: 0.87116367

00:02:38.400 --> 00:02:40.240 big pieces of the pie as well.

NOTE Confidence: 0.87116367

00:02:40.240 --> 00:02:41.884 But lung cancer certainly is a

NOTE Confidence: 0.87116367

00:02:41.884 --> 00:02:43.654 major enemy and will talk tonight

NOTE Confidence: 0.87116367

00:02:43.654 --> 00:02:45.508 about some new treatments next 5.

NOTE Confidence: 0.8615906

00:02:47.880 --> 00:02:50.076 Well, the good news is we

NOTE Confidence: 0.8615906

00:02:50.076 --> 00:02:51.920 are making progress and I'm,  
NOTE Confidence: 0.8615906

00:02:51.920 --> 00:02:54.110 uh, I'm old enough to tell  
NOTE Confidence: 0.8615906

00:02:54.110 --> 00:02:55.950 you that we definitely are.  
NOTE Confidence: 0.8615906

00:02:55.950 --> 00:02:58.122 'cause I've seen this over 25  
NOTE Confidence: 0.8615906

00:02:58.122 --> 00:03:00.359 plus years working in the field.  
NOTE Confidence: 0.8615906

00:03:00.360 --> 00:03:02.803 If you look back men on the  
NOTE Confidence: 0.8615906

00:03:02.803 --> 00:03:05.128 top and women on the bottom,  
NOTE Confidence: 0.8615906

00:03:05.130 --> 00:03:07.384 the red line is lung cancer and  
NOTE Confidence: 0.8615906

00:03:07.384 --> 00:03:10.060 you can see the number of people  
NOTE Confidence: 0.8615906

00:03:10.060 --> 00:03:12.100 who succumb to this disease.  
NOTE Confidence: 0.8615906

00:03:12.100 --> 00:03:15.036 Look how it peaked around 1990 for men.  
NOTE Confidence: 0.8615906

00:03:15.040 --> 00:03:16.572 Why? Because that's about  
NOTE Confidence: 0.8615906

00:03:16.572 --> 00:03:18.870 20 years or 25 years after.  
NOTE Confidence: 0.8615906

00:03:18.870 --> 00:03:20.781 All the ads and an efforts to  
NOTE Confidence: 0.8615906

00:03:20.781 --> 00:03:22.868 get people to smoke and you know,  
NOTE Confidence: 0.8615906

00:03:22.870 --> 00:03:24.290 that's probably why you know

NOTE Confidence: 0.8615906

00:03:24.290 --> 00:03:26.020 lung cancer really hit its peak,

NOTE Confidence: 0.8615906

00:03:26.020 --> 00:03:27.124 but it's coming down.

NOTE Confidence: 0.8615906

00:03:27.124 --> 00:03:29.113 And then if you look at women

NOTE Confidence: 0.8615906

00:03:29.113 --> 00:03:30.961 you see the peak for women occur

NOTE Confidence: 0.8615906

00:03:30.961 --> 00:03:32.599 in a little bit later.

NOTE Confidence: 0.8615906

00:03:32.600 --> 00:03:33.023 Why?

NOTE Confidence: 0.8615906

00:03:33.023 --> 00:03:35.984 Because women started to smoke after men.

NOTE Confidence: 0.8615906

00:03:35.990 --> 00:03:38.382 But still you can see that peaks coming

NOTE Confidence: 0.8615906

00:03:38.382 --> 00:03:40.717 down as well and the mortality rate

NOTE Confidence: 0.8615906

00:03:40.717 --> 00:03:43.802 has declined by 51% since 1990 for men.

NOTE Confidence: 0.8615906

00:03:43.802 --> 00:03:45.472 26% since 2002, in women,

NOTE Confidence: 0.8615906

00:03:45.472 --> 00:03:47.012 due to reductions in smoking,

NOTE Confidence: 0.8615906

00:03:47.020 --> 00:03:48.256 and we're continuing by

NOTE Confidence: 0.8615906

00:03:48.256 --> 00:03:50.110 the way to work on that.

NOTE Confidence: 0.8615906

00:03:50.110 --> 00:03:51.660 Certainly in the Connecticut area,

NOTE Confidence: 0.8615906

00:03:51.660 --> 00:03:53.816 especially in the New Haven area proper,  
NOTE Confidence: 0.8615906

00:03:53.820 --> 00:03:55.717 many people 18% or so still smoke  
NOTE Confidence: 0.8615906

00:03:55.717 --> 00:03:57.529 higher than the national average.  
NOTE Confidence: 0.8615906

00:03:57.530 --> 00:04:00.620 But if you look at the chart on the right,  
NOTE Confidence: 0.8615906

00:04:00.620 --> 00:04:02.468 the table on the right man,  
NOTE Confidence: 0.8615906

00:04:02.470 --> 00:04:03.592 males and females,  
NOTE Confidence: 0.8615906

00:04:03.592 --> 00:04:06.630 you can see the incidence is coming down.  
NOTE Confidence: 0.8615906

00:04:06.630 --> 00:04:07.276 Minus 2.6,  
NOTE Confidence: 0.8615906

00:04:07.276 --> 00:04:09.860 but the mortality is coming down even more,  
NOTE Confidence: 0.8615906

00:04:09.860 --> 00:04:11.084 minus four point 3%.  
NOTE Confidence: 0.8615906

00:04:11.084 --> 00:04:13.410 And then if you look at women,  
NOTE Confidence: 0.8615906

00:04:13.410 --> 00:04:15.664 the incidence is coming down minus 1.2,  
NOTE Confidence: 0.8615906

00:04:15.670 --> 00:04:18.254 but the mortality is coming down even more,  
NOTE Confidence: 0.8615906

00:04:18.260 --> 00:04:20.514 minus 3.1. So what does this means?  
NOTE Confidence: 0.8615906

00:04:20.520 --> 00:04:22.746 I think it means some of our  
NOTE Confidence: 0.8615906

00:04:22.746 --> 00:04:24.400 treatments are having an effect.

NOTE Confidence: 0.8615906

00:04:24.400 --> 00:04:26.326 Our immuno therapies are targeted therapies.

NOTE Confidence: 0.8615906

00:04:26.330 --> 00:04:28.268 Let me show you some examples.

NOTE Confidence: 0.8615906

00:04:28.270 --> 00:04:28.920 Next slide.

NOTE Confidence: 0.87211808

00:04:32.040 --> 00:04:35.560 Now back. 20 years ago,

NOTE Confidence: 0.87211808

00:04:35.560 --> 00:04:36.840 maybe a little longer.

NOTE Confidence: 0.87211808

00:04:36.840 --> 00:04:38.760 This is what it looked like.

NOTE Confidence: 0.87211808

00:04:38.760 --> 00:04:40.360 If you had lung cancer,

NOTE Confidence: 0.87211808

00:04:40.360 --> 00:04:42.920 the median and this is for advanced disease.

NOTE Confidence: 0.87211808

00:04:42.920 --> 00:04:44.520 When your cancer had already

NOTE Confidence: 0.87211808

00:04:44.520 --> 00:04:45.800 spread from your lungs,

NOTE Confidence: 0.87211808

00:04:45.800 --> 00:04:48.040 you can see that you only survived.

NOTE Confidence: 0.87211808

00:04:48.040 --> 00:04:50.479 You know at one year only 1/3 of the

NOTE Confidence: 0.87211808

00:04:50.479 --> 00:04:52.520 people would survive this disease.

NOTE Confidence: 0.87211808

00:04:52.520 --> 00:04:53.800 It's much better now.

NOTE Confidence: 0.87211808

00:04:53.800 --> 00:04:55.080 The median was 7.9.

NOTE Confidence: 0.87211808



00:04:55.080 --> 00:04:57.957 It was clear if you click again  
NOTE Confidence: 0.87211808

00:04:57.957 --> 00:05:00.458 Renee that something new was needed.  
NOTE Confidence: 0.87211808

00:05:00.460 --> 00:05:01.660 So on the next slide.  
NOTE Confidence: 0.84045607

00:05:03.930 --> 00:05:06.354 You can see that we developed new treatments  
NOTE Confidence: 0.84045607

00:05:06.354 --> 00:05:08.319 and these are miracle treatments.  
NOTE Confidence: 0.84045607

00:05:08.320 --> 00:05:10.624 This is Jeff it. If this is a drug  
NOTE Confidence: 0.84045607

00:05:10.624 --> 00:05:13.057 that targets epidermal growth factor,  
NOTE Confidence: 0.84045607

00:05:13.060 --> 00:05:15.587 which actually is a mutation that occurs  
NOTE Confidence: 0.84045607

00:05:15.587 --> 00:05:18.057 in patients who have never smoked or  
NOTE Confidence: 0.84045607

00:05:18.057 --> 00:05:20.410 smoked very little and you can see  
NOTE Confidence: 0.84045607

00:05:20.410 --> 00:05:22.890 this is actually work that I did with  
NOTE Confidence: 0.84045607

00:05:22.890 --> 00:05:25.294 Doctor Larusso who leads our Phase one  
NOTE Confidence: 0.84045607

00:05:25.294 --> 00:05:27.588 group at Yale published this in 2002.  
NOTE Confidence: 0.84045607

00:05:27.590 --> 00:05:31.446 You can see the picture on the left.  
NOTE Confidence: 0.84045607

00:05:31.450 --> 00:05:33.711 Did both the same patient within one  
NOTE Confidence: 0.84045607

00:05:33.711 --> 00:05:36.387 week of taking this oral drug can fit in.

NOTE Confidence: 0.84045607

00:05:36.390 --> 00:05:38.250 You can see the amazing response.

NOTE Confidence: 0.84045607

00:05:38.250 --> 00:05:40.714 You can see the lung has cleared

NOTE Confidence: 0.84045607

00:05:40.714 --> 00:05:42.779 up on the next slide.

NOTE Confidence: 0.84045607

00:05:42.780 --> 00:05:44.670 That led to a whole new era

NOTE Confidence: 0.84045607

00:05:44.670 --> 00:05:46.060 of lung cancer therapy,

NOTE Confidence: 0.84045607

00:05:46.060 --> 00:05:47.550 but we call targeted therapy.

NOTE Confidence: 0.84045607

00:05:47.550 --> 00:05:50.112 The fact that we could target the

NOTE Confidence: 0.84045607

00:05:50.112 --> 00:05:51.987 epidermal growth factor receptor showed

NOTE Confidence: 0.84045607

00:05:51.987 --> 00:05:54.458 on the left with drugs in patients

NOTE Confidence: 0.84045607

00:05:54.458 --> 00:05:57.067 with lung cancer as shown on the right.

NOTE Confidence: 0.84045607

00:05:57.070 --> 00:05:58.918 Cecily the woman in that picture

NOTE Confidence: 0.84045607

00:05:58.918 --> 00:06:01.189 was spent nine years on June 15

NOTE Confidence: 0.84045607

00:06:01.189 --> 00:06:02.485 amp with metastatic disease.

NOTE Confidence: 0.84045607

00:06:02.490 --> 00:06:04.464 Remember the same disease I mentioned

NOTE Confidence: 0.84045607

00:06:04.464 --> 00:06:07.260 would only have about a 1/3 chance of even

NOTE Confidence: 0.84045607

00:06:07.260 --> 00:06:09.190 lasting one year with standard therapy.

NOTE Confidence: 0.84045607

00:06:09.190 --> 00:06:11.750 And this was written about in the Wall

NOTE Confidence: 0.84045607

00:06:11.750 --> 00:06:13.660 Street Journal by Tara Parker Pope.

NOTE Confidence: 0.84045607

00:06:13.660 --> 00:06:16.580 I think she now writes for the New

NOTE Confidence: 0.84045607

00:06:16.580 --> 00:06:19.458 York Times that you could live with

NOTE Confidence: 0.84045607

00:06:19.458 --> 00:06:22.001 lung cancer with these new drugs

NOTE Confidence: 0.84045607

00:06:22.001 --> 00:06:23.557 on the next slide.

NOTE Confidence: 0.84045607

00:06:23.560 --> 00:06:25.856 And then we developed our newer drugs.

NOTE Confidence: 0.84045607

00:06:25.860 --> 00:06:26.546 You know,

NOTE Confidence: 0.84045607

00:06:26.546 --> 00:06:27.918 'cause people become resistant

NOTE Confidence: 0.84045607

00:06:27.918 --> 00:06:30.265 to these drugs and this is just

NOTE Confidence: 0.84045607

00:06:30.265 --> 00:06:32.089 showing a drug called OS American.

NOTE Confidence: 0.84045607

00:06:32.090 --> 00:06:33.908 If the next generation oral agent

NOTE Confidence: 0.84045607

00:06:33.908 --> 00:06:36.115 for this type of lung cancer and

NOTE Confidence: 0.84045607

00:06:36.115 --> 00:06:38.278 what you see with those lines below

NOTE Confidence: 0.84045607

00:06:38.346 --> 00:06:40.286 the negative twenty negative 40,

NOTE Confidence: 0.84045607

00:06:40.290 --> 00:06:42.732 those are all patients whose tumors

NOTE Confidence: 0.84045607

00:06:42.732 --> 00:06:45.438 shrank when they took this new drug.

NOTE Confidence: 0.84045607

00:06:45.440 --> 00:06:46.500 So the next slide.

NOTE Confidence: 0.82098556

00:06:49.030 --> 00:06:50.976 Next slide and these are data just

NOTE Confidence: 0.82098556

00:06:50.976 --> 00:06:52.978 from the New England Journal of

NOTE Confidence: 0.82098556

00:06:52.978 --> 00:06:54.823 Medicine about three weeks ago.

NOTE Confidence: 0.82098556

00:06:54.830 --> 00:06:57.557 Let out of yell you can see these are

NOTE Confidence: 0.82098556

00:06:57.557 --> 00:07:00.300 patients who had lung cancer and had surgery,

NOTE Confidence: 0.82098556

00:07:00.300 --> 00:07:02.868 but they had this vacation in this in

NOTE Confidence: 0.82098556

00:07:02.868 --> 00:07:04.829 this epidermal growth factor receptor gene

NOTE Confidence: 0.82098556

00:07:04.829 --> 00:07:07.708 and on the left you can see two curves.

NOTE Confidence: 0.82098556

00:07:07.710 --> 00:07:09.761 The blue curve on the right are

NOTE Confidence: 0.82098556

00:07:09.761 --> 00:07:11.691 patients who got this drug after

NOTE Confidence: 0.82098556

00:07:11.691 --> 00:07:13.994 their surgery and the orange or yellow

NOTE Confidence: 0.82098556

00:07:14.064 --> 00:07:16.080 curve below are those who didn't,

NOTE Confidence: 0.82098556

00:07:16.080 --> 00:07:18.327 and you can see the big difference.  
NOTE Confidence: 0.82098556

00:07:18.330 --> 00:07:20.088 Actually a 70.  
NOTE Confidence: 0.82098556

00:07:20.088 --> 00:07:24.860 2% actually excluding an 82% improvement.  
NOTE Confidence: 0.82098556

00:07:24.860 --> 00:07:27.420 And then if you look at the right,  
NOTE Confidence: 0.82098556

00:07:27.420 --> 00:07:29.852 you can see that in the brain the  
NOTE Confidence: 0.82098556

00:07:29.852 --> 00:07:31.436 solid blueliner patients who got  
NOTE Confidence: 0.82098556

00:07:31.436 --> 00:07:33.564 the Aston Martin in the new drug  
NOTE Confidence: 0.82098556

00:07:33.629 --> 00:07:35.735 versus those in yellow who didn't.  
NOTE Confidence: 0.82098556

00:07:35.740 --> 00:07:37.980 You can see again a big improvement  
NOTE Confidence: 0.82098556

00:07:37.980 --> 00:07:38.620 in outcome,  
NOTE Confidence: 0.82098556

00:07:38.620 --> 00:07:40.860 actually 82% so new therapies are coming.  
NOTE Confidence: 0.82098556

00:07:40.860 --> 00:07:43.740 There's really a lot of hope in this disease,  
NOTE Confidence: 0.82098556

00:07:43.740 --> 00:07:45.340 one or two more slides.  
NOTE Confidence: 0.82098556

00:07:45.340 --> 00:07:47.389 Next slide, Renee.  
NOTE Confidence: 0.82098556

00:07:47.390 --> 00:07:49.974 So we have it yell much research going  
NOTE Confidence: 0.82098556

00:07:49.974 --> 00:07:52.692 on most if not all the investigators

NOTE Confidence: 0.82098556

00:07:52.692 --> 00:07:55.330 talking to that are involved in this.

NOTE Confidence: 0.82098556

00:07:55.330 --> 00:07:57.857 We work with our surgeons or pulmonologists,

NOTE Confidence: 0.82098556

00:07:57.860 --> 00:07:58.672 radiation oncologists,

NOTE Confidence: 0.82098556

00:07:58.672 --> 00:08:00.702 medical oncologists and we're trying

NOTE Confidence: 0.82098556

00:08:00.702 --> 00:08:03.573 to target lung cancer with a big grain

NOTE Confidence: 0.82098556

00:08:03.573 --> 00:08:05.163 from the National Cancer Institute

NOTE Confidence: 0.82098556

00:08:05.227 --> 00:08:06.957 called a specialized program of

NOTE Confidence: 0.82098556

00:08:06.957 --> 00:08:08.986 research excellence and you can see

NOTE Confidence: 0.82098556

00:08:08.986 --> 00:08:11.058 some of the ways we're targeting lung

NOTE Confidence: 0.82098556

00:08:11.058 --> 00:08:13.013 cancer by targeting immunotherapy on

NOTE Confidence: 0.82098556

00:08:13.013 --> 00:08:15.188 the left epidermal growth factor,

NOTE Confidence: 0.82098556

00:08:15.190 --> 00:08:16.802 resistance on the right.

NOTE Confidence: 0.82098556

00:08:16.802 --> 00:08:19.800 A smoking cessation on the very bottom.

NOTE Confidence: 0.82098556

00:08:19.800 --> 00:08:20.776 Next slide.

NOTE Confidence: 0.82098556

00:08:20.776 --> 00:08:22.728 We have a team.

NOTE Confidence: 0.82098556

00:08:22.730 --> 00:08:25.138 Here is the current team and some  
NOTE Confidence: 0.82098556

00:08:25.138 --> 00:08:26.170 of our leaders.  
NOTE Confidence: 0.82098556

00:08:26.170 --> 00:08:29.610 I won't go through this for the sake of time,  
NOTE Confidence: 0.82098556

00:08:29.610 --> 00:08:31.692 but yell Cancer Center smile Cancer  
NOTE Confidence: 0.82098556

00:08:31.692 --> 00:08:33.825 Hospital is committed and all of  
NOTE Confidence: 0.82098556

00:08:33.825 --> 00:08:35.871 its sites to providing the most  
NOTE Confidence: 0.82098556

00:08:35.871 --> 00:08:37.273 up-to-date treatments and these  
NOTE Confidence: 0.82098556

00:08:37.273 --> 00:08:39.235 treatments are developed in the lab,  
NOTE Confidence: 0.82098556

00:08:39.240 --> 00:08:41.298 bringing them close to the clinic.  
NOTE Confidence: 0.82098556

00:08:41.300 --> 00:08:42.342 Targeting immunotherapy,  
NOTE Confidence: 0.82098556

00:08:42.342 --> 00:08:44.426 targeting growth factor abnormalities  
NOTE Confidence: 0.82098556

00:08:44.426 --> 00:08:47.858 like I just showed you and trying to  
NOTE Confidence: 0.82098556

00:08:47.858 --> 00:08:50.138 treat cancer in the most updated way  
NOTE Confidence: 0.82098556

00:08:50.138 --> 00:08:52.714 on the next slide. This is the team.  
NOTE Confidence: 0.82098556

00:08:52.714 --> 00:08:54.880 This is the Phase one team.  
NOTE Confidence: 0.82098556

00:08:54.880 --> 00:08:56.690 It's led by Pat Larusso.

NOTE Confidence: 0.82098556

00:08:56.690 --> 00:08:58.490 She's in the blue shirt.

NOTE Confidence: 0.82098556

00:08:58.490 --> 00:09:00.590 Tried the right of the picture

NOTE Confidence: 0.82098556

00:09:00.590 --> 00:09:02.682 about third from the from the

NOTE Confidence: 0.82098556

00:09:02.682 --> 00:09:04.845 from the right and these are some

NOTE Confidence: 0.82098556

00:09:04.845 --> 00:09:07.150 of our investigators and staff.

NOTE Confidence: 0.82098556

00:09:07.150 --> 00:09:10.321 It really takes us a team of

NOTE Confidence: 0.82098556

00:09:10.321 --> 00:09:12.500 investigators of conditions of nurse.

NOTE Confidence: 0.82098556

00:09:12.500 --> 00:09:13.884 Should workers of coordinators

NOTE Confidence: 0.82098556

00:09:13.884 --> 00:09:15.960 to make these trials happen and

NOTE Confidence: 0.82098556

00:09:16.016 --> 00:09:17.296 then on the next slide?

NOTE Confidence: 0.82098556

00:09:17.300 --> 00:09:19.540 I think this is about the end.

NOTE Confidence: 0.82098556

00:09:19.540 --> 00:09:21.920 Now I get to have the fun part of the

NOTE Confidence: 0.82098556

00:09:21.993 --> 00:09:24.273 evening and introduce the panel so

NOTE Confidence: 0.82098556

00:09:24.273 --> 00:09:26.899 there's so much progress in this disease.

NOTE Confidence: 0.82098556

00:09:26.900 --> 00:09:29.987 What we've tried to do is put

NOTE Confidence: 0.82098556



00:09:29.987 --> 00:09:31.700 together a group of.  
NOTE Confidence: 0.82098556

00:09:31.700 --> 00:09:32.414 Physicians tonight,  
NOTE Confidence: 0.82098556

00:09:32.414 --> 00:09:34.556 who will tell you about some  
NOTE Confidence: 0.82098556

00:09:34.556 --> 00:09:36.380 of the latest advances,  
NOTE Confidence: 0.82098556

00:09:36.380 --> 00:09:39.110 mostly dealing with early stage lung cancer,  
NOTE Confidence: 0.82098556

00:09:39.110 --> 00:09:41.192 and we have four doctors tonight  
NOTE Confidence: 0.82098556

00:09:41.192 --> 00:09:43.789 and the first is Justin Blasberg.  
NOTE Confidence: 0.82098556

00:09:43.790 --> 00:09:46.020 Doctor Blasberg is the associate  
NOTE Confidence: 0.82098556

00:09:46.020 --> 00:09:48.250 professor of surgery and director  
NOTE Confidence: 0.82098556

00:09:48.326 --> 00:09:50.321 of robotic thoracic surgery at  
NOTE Confidence: 0.82098556

00:09:50.321 --> 00:09:52.316 the Yale School of Medicine.  
NOTE Confidence: 0.87328655

00:09:52.320 --> 00:09:54.574 Here in his medical degree from the  
NOTE Confidence: 0.87328655

00:09:54.574 --> 00:09:56.808 Albert Einstein College of Medicine and  
NOTE Confidence: 0.87328655

00:09:56.808 --> 00:09:58.424 completed his cardiothoracic training  
NOTE Confidence: 0.87328655

00:09:58.424 --> 00:10:00.620 at the Massachusetts General Hospital.  
NOTE Confidence: 0.87328655

00:10:00.620 --> 00:10:02.304 Doctor Blasberg's practice includes

NOTE Confidence: 0.87328655

00:10:02.304 --> 00:10:04.409 minimally invasive and open management

NOTE Confidence: 0.87328655

00:10:04.409 --> 00:10:06.298 for diseases of the esophagus,

NOTE Confidence: 0.87328655

00:10:06.300 --> 00:10:08.068 lung, mediastinal, chest wall,

NOTE Confidence: 0.87328655

00:10:08.068 --> 00:10:10.278 thoracic thoracic outlet and diaphragm

NOTE Confidence: 0.87328655

00:10:10.278 --> 00:10:12.995 is a particular interest in benign and

NOTE Confidence: 0.87328655

00:10:12.995 --> 00:10:15.318 malignant disease of the trachea and

NOTE Confidence: 0.87328655

00:10:15.318 --> 00:10:17.664 performs the majority of his surgeries,

NOTE Confidence: 0.87328655

00:10:17.670 --> 00:10:18.480 when possible,

NOTE Confidence: 0.87328655

00:10:18.480 --> 00:10:20.505 in a minimally invasive fashion.

NOTE Confidence: 0.87328655

00:10:20.510 --> 00:10:22.946 If we could put up Justin,

NOTE Confidence: 0.87328655

00:10:22.950 --> 00:10:25.380 Slide will see this head of

NOTE Confidence: 0.87328655

00:10:25.380 --> 00:10:27.476 his talk welcome Justin,

NOTE Confidence: 0.87328655

00:10:27.476 --> 00:10:29.600 Thank you. I

NOTE Confidence: 0.83125716

00:10:29.600 --> 00:10:32.950 wish my mom was listening now it's so nice.

NOTE Confidence: 0.83125716

00:10:32.950 --> 00:10:34.824 Yeah, you could say don't

NOTE Confidence: 0.83125716

00:10:34.824 --> 00:10:37.092 stop I'm gonna share my screen  
NOTE Confidence: 0.83125716

00:10:37.092 --> 00:10:40.520 because my slides have videos OK?  
NOTE Confidence: 0.83125716

00:10:40.520 --> 00:10:42.080 Just make sure this works.  
NOTE Confidence: 0.7746868

00:10:45.370 --> 00:10:47.978 OK, after grant access.  
NOTE Confidence: 0.8911535

00:10:53.040 --> 00:10:55.083 OK, I actually have to log right back on.  
NOTE Confidence: 0.8911535

00:10:55.090 --> 00:10:56.914 I'm sorry I'll be right back one second.  
NOTE Confidence: 0.80789536

00:11:03.540 --> 00:11:05.080 In the meantime, Anne,  
NOTE Confidence: 0.80789536

00:11:05.080 --> 00:11:07.390 why don't you introduce yourself and  
NOTE Confidence: 0.80789536

00:11:07.461 --> 00:11:09.757 tell us a little bit about the 15  
NOTE Confidence: 0.80789536

00:11:09.757 --> 00:11:11.674 plus sites around Connecticut where  
NOTE Confidence: 0.80789536

00:11:11.674 --> 00:11:14.170 we have smilow cancer care? Sure,  
NOTE Confidence: 0.81387144

00:11:14.170 --> 00:11:16.040 my name is Ann Chang.  
NOTE Confidence: 0.81387144

00:11:16.040 --> 00:11:18.580 I'm a medical oncologist treat lung cancer,  
NOTE Confidence: 0.81387144

00:11:18.580 --> 00:11:20.620 and I also have an administrative  
NOTE Confidence: 0.81387144

00:11:20.620 --> 00:11:22.750 role as Chief Network Officer,  
NOTE Confidence: 0.81387144

00:11:22.750 --> 00:11:24.988 so we have Milo care centers

NOTE Confidence: 0.81387144

00:11:24.988 --> 00:11:25.734 throughout Connecticut.

NOTE Confidence: 0.81387144

00:11:25.740 --> 00:11:27.228 15 different centers smile.

NOTE Confidence: 0.81387144

00:11:27.228 --> 00:11:29.088 Greenwich is one of ours,

NOTE Confidence: 0.81387144

00:11:29.090 --> 00:11:30.582 and it's very exciting.

NOTE Confidence: 0.81387144

00:11:30.582 --> 00:11:32.447 I see on the panelists.

NOTE Confidence: 0.81387144

00:11:32.450 --> 00:11:33.942 Sorry in the attendees,

NOTE Confidence: 0.81387144

00:11:33.942 --> 00:11:36.180 I see several of my patience.

NOTE Confidence: 0.81387144

00:11:36.180 --> 00:11:38.567 So hello, but we have a great

NOTE Confidence: 0.81387144

00:11:38.567 --> 00:11:40.280 program for you tonight.

NOTE Confidence: 0.8520595

00:11:42.250 --> 00:11:44.609 So now we're going to hear from

NOTE Confidence: 0.8520595

00:11:44.609 --> 00:11:46.514 Justin about robotic surgery options

NOTE Confidence: 0.8520595

00:11:46.514 --> 00:11:48.858 for lung cancer. Can you guys

NOTE Confidence: 0.8520595

00:11:48.860 --> 00:11:49.958 see my slides?

NOTE Confidence: 0.8512448

00:11:52.110 --> 00:11:54.420 You can see my slides yes very well great.

NOTE Confidence: 0.8512448

00:11:54.420 --> 00:11:56.733 I feel a little bit like Frank right now.

NOTE Confidence: 0.8512448

00:11:56.740 --> 00:11:58.630 Sorry, trying to trying to make this  
NOTE Confidence: 0.8512448

00:11:58.630 --> 00:12:00.848 work and I'll get a chuckle out of any.  
NOTE Confidence: 0.8512448

00:12:00.850 --> 00:12:02.386 So tonight I wanted to talk  
NOTE Confidence: 0.8512448

00:12:02.386 --> 00:12:03.154 about robotic surgery,  
NOTE Confidence: 0.8512448

00:12:03.160 --> 00:12:05.296 which has become a big part of my  
NOTE Confidence: 0.8512448

00:12:05.296 --> 00:12:06.891 clinical practice and I think it  
NOTE Confidence: 0.8512448

00:12:06.891 --> 00:12:08.146 represents a huge step forward  
NOTE Confidence: 0.8512448

00:12:08.146 --> 00:12:09.903 in terms of how we manage lung  
NOTE Confidence: 0.8512448

00:12:09.903 --> 00:12:11.127 cancer in terms of disclosures.  
NOTE Confidence: 0.8512448

00:12:11.127 --> 00:12:12.926 I am a Proctor for Intuitive Surgical,  
NOTE Confidence: 0.8512448

00:12:12.930 --> 00:12:14.680 which is the company that makes the  
NOTE Confidence: 0.8512448

00:12:14.680 --> 00:12:16.780 robots that we use in the operating room.  
NOTE Confidence: 0.8533961

00:12:19.380 --> 00:12:20.930 We're talking a lot about  
NOTE Confidence: 0.8533961

00:12:20.930 --> 00:12:21.860 lung cancer tonight.  
NOTE Confidence: 0.8533961

00:12:21.860 --> 00:12:23.672 When we think about the optimal  
NOTE Confidence: 0.8533961

00:12:23.672 --> 00:12:25.580 management of early stage lung cancer,

NOTE Confidence: 0.8533961

00:12:25.580 --> 00:12:26.510 which includes smaller

NOTE Confidence: 0.8533961

00:12:26.510 --> 00:12:27.750 tumors and localized disease.

NOTE Confidence: 0.8533961

00:12:27.750 --> 00:12:29.664 We know from outcomes data that

NOTE Confidence: 0.8533961

00:12:29.664 --> 00:12:31.569 surgery is associated with the best

NOTE Confidence: 0.8533961

00:12:31.569 --> 00:12:33.571 chance of five year survival and the

NOTE Confidence: 0.8533961

00:12:33.571 --> 00:12:35.478 lowest risk of disease coming back

NOTE Confidence: 0.8533961

00:12:35.478 --> 00:12:37.316 over the five years following surgery.

NOTE Confidence: 0.8533961

00:12:37.316 --> 00:12:39.178 We also have other tools in our

NOTE Confidence: 0.8533961

00:12:39.178 --> 00:12:40.837 toolbox for these early stage

NOTE Confidence: 0.8533961

00:12:40.837 --> 00:12:42.627 patients that cannot tolerate surgery,

NOTE Confidence: 0.8533961

00:12:42.630 --> 00:12:44.180 like radiation therapy or ablation.

NOTE Confidence: 0.8533961

00:12:44.180 --> 00:12:46.350 And we'll hear a little bit more

NOTE Confidence: 0.8533961

00:12:46.350 --> 00:12:47.280 about that later,

NOTE Confidence: 0.8533961

00:12:47.280 --> 00:12:48.865 and these are really great

NOTE Confidence: 0.8533961

00:12:48.865 --> 00:12:50.133 treatment options for patients.

NOTE Confidence: 0.8533961

00:12:50.140 --> 00:12:52.604 That we use all the time and  
NOTE Confidence: 0.8533961

00:12:52.604 --> 00:12:54.320 are associated with success.  
NOTE Confidence: 0.8533961

00:12:54.320 --> 00:12:56.496 I'm going to talk a little bit about  
NOTE Confidence: 0.8533961

00:12:56.496 --> 00:12:58.357 the evolution of our surgical field  
NOTE Confidence: 0.8533961

00:12:58.357 --> 00:12:59.932 because I think it's interesting  
NOTE Confidence: 0.8533961

00:12:59.932 --> 00:13:02.290 for people to know how we do these  
NOTE Confidence: 0.8533961

00:13:02.290 --> 00:13:03.728 procedures safely and effectively for  
NOTE Confidence: 0.8533961

00:13:03.728 --> 00:13:05.198 early stage lung cancer resection.  
NOTE Confidence: 0.8533961

00:13:05.200 --> 00:13:06.898 Our traditional approach back in the  
NOTE Confidence: 0.8533961

00:13:06.898 --> 00:13:08.983 day was to make a fairly sizable  
NOTE Confidence: 0.8533961

00:13:08.983 --> 00:13:10.777 incision to divide some muscles in  
NOTE Confidence: 0.8533961

00:13:10.777 --> 00:13:12.862 the chest wall to spread the ribs  
NOTE Confidence: 0.8533961

00:13:12.862 --> 00:13:14.610 with retractors so that we could  
NOTE Confidence: 0.8533961

00:13:14.610 --> 00:13:16.675 access the lungs with our hands and  
NOTE Confidence: 0.8533961

00:13:16.675 --> 00:13:18.039 actually perform these receptions  
NOTE Confidence: 0.8533961

00:13:18.039 --> 00:13:20.384 under direct vision to the right on

NOTE Confidence: 0.8533961

00:13:20.440 --> 00:13:22.600 my screen is a scene for one of my

NOTE Confidence: 0.8533961

00:13:22.600 --> 00:13:24.530 favorite shows on Netflix, the Crown.

NOTE Confidence: 0.8533961

00:13:24.530 --> 00:13:26.870 And were King George the six

NOTE Confidence: 0.8533961

00:13:26.870 --> 00:13:28.950 actually underwent this kind of

NOTE Confidence: 0.8533961

00:13:28.950 --> 00:13:30.730 surgery and pneumonectomy inside

NOTE Confidence: 0.8533961

00:13:30.730 --> 00:13:32.955 of Buckingham Palace in 1951.

NOTE Confidence: 0.8533961

00:13:32.960 --> 00:13:34.886 So these incisions can be uncomfortable,

NOTE Confidence: 0.8533961

00:13:34.890 --> 00:13:36.612 but that discomfort can be managed

NOTE Confidence: 0.8533961

00:13:36.612 --> 00:13:38.430 pretty well with pain medications.

NOTE Confidence: 0.8533961

00:13:38.430 --> 00:13:40.410 Patients need to stay in the

NOTE Confidence: 0.8533961

00:13:40.410 --> 00:13:42.299 hospital for some period of time,

NOTE Confidence: 0.8533961

00:13:42.300 --> 00:13:43.588 usually a few days,

NOTE Confidence: 0.8533961

00:13:43.588 --> 00:13:45.198 sometimes upwards of a week.

NOTE Confidence: 0.8533961

00:13:45.200 --> 00:13:47.125 And it does take time for patients

NOTE Confidence: 0.8533961

00:13:47.125 --> 00:13:49.179 to return to their normal activities

NOTE Confidence: 0.8533961



00:13:49.179 --> 00:13:50.349 of daily living,  
NOTE Confidence: 0.8533961

00:13:50.350 --> 00:13:53.199 some sometimes around four to six weeks.  
NOTE Confidence: 0.8533961

00:13:53.200 --> 00:13:55.685 Starting around 25 years or so ago,  
NOTE Confidence: 0.8533961

00:13:55.690 --> 00:13:57.986 we took a big step forward in a  
NOTE Confidence: 0.8533961

00:13:57.986 --> 00:13:59.456 minimally invasive lung surgery  
NOTE Confidence: 0.8533961

00:13:59.456 --> 00:14:01.551 with the development of miniaturized  
NOTE Confidence: 0.8533961

00:14:01.551 --> 00:14:03.567 cameras and instruments that work  
NOTE Confidence: 0.8533961

00:14:03.567 --> 00:14:05.317 through keyhole incisions which led  
NOTE Confidence: 0.8533961

00:14:05.317 --> 00:14:07.438 to the adoption of video assisted  
NOTE Confidence: 0.8533961

00:14:07.438 --> 00:14:08.506 thoracic Copic surgery,  
NOTE Confidence: 0.8533961

00:14:08.510 --> 00:14:10.995 or that surgery as it is known,  
NOTE Confidence: 0.8533961

00:14:11.000 --> 00:14:13.485 has magnified optics. The vision is 2D.  
NOTE Confidence: 0.8533961

00:14:13.490 --> 00:14:15.175 The surgical instruments can perform  
NOTE Confidence: 0.8533961

00:14:15.175 --> 00:14:17.410 some complex functions and lung resection.  
NOTE Confidence: 0.8533961

00:14:17.410 --> 00:14:19.335 Surgery can be performed through  
NOTE Confidence: 0.8533961

00:14:19.335 --> 00:14:21.260 these small incisions to remove

NOTE Confidence: 0.8533961

00:14:21.323 --> 00:14:23.429 and add an abnormality of interest.

NOTE Confidence: 0.8533961

00:14:23.430 --> 00:14:25.446 A year we have expert that surgeons

NOTE Confidence: 0.8533961

00:14:25.446 --> 00:14:26.988 who perform these procedures almost

NOTE Confidence: 0.8533961

00:14:26.988 --> 00:14:29.158 every single day of the week across

NOTE Confidence: 0.8533961

00:14:29.158 --> 00:14:29.960 our network.

NOTE Confidence: 0.8533961

00:14:29.960 --> 00:14:31.120 This operation is safe,

NOTE Confidence: 0.8533961

00:14:31.120 --> 00:14:32.860 it's reliable and we train our

NOTE Confidence: 0.8533961

00:14:32.922 --> 00:14:34.896 residents how to do these cases

NOTE Confidence: 0.8533961

00:14:34.896 --> 00:14:35.554 with proficiency.

NOTE Confidence: 0.8533961

00:14:35.560 --> 00:14:37.324 We've also been very successful with

NOTE Confidence: 0.8533961

00:14:37.324 --> 00:14:39.598 our bats lung and Asafa Geo programs,

NOTE Confidence: 0.8533961

00:14:39.600 --> 00:14:41.478 and this has been our standard

NOTE Confidence: 0.8533961

00:14:41.478 --> 00:14:43.020 approach for many years now,

NOTE Confidence: 0.8533961

00:14:43.020 --> 00:14:44.276 allowing US patients together,

NOTE Confidence: 0.8533961

00:14:44.276 --> 00:14:46.160 allowing us to get patients out

NOTE Confidence: 0.8533961

00:14:46.214 --> 00:14:47.378 of the hospital faster,  
NOTE Confidence: 0.8533961

00:14:47.380 --> 00:14:49.240 usually around three to four days.  
NOTE Confidence: 0.8533961

00:14:49.240 --> 00:14:50.895 These patients require less pain  
NOTE Confidence: 0.8533961

00:14:50.895 --> 00:14:52.550 medication then open incisions and  
NOTE Confidence: 0.8533961

00:14:52.602 --> 00:14:55.045 their return to their baseline is much, much.  
NOTE Confidence: 0.8533961

00:14:55.045 --> 00:14:57.620 Shorter compared to open surgery.  
NOTE Confidence: 0.8533961

00:14:57.620 --> 00:14:59.839 So that brings us to robotic surgery,  
NOTE Confidence: 0.8533961

00:14:59.840 --> 00:15:01.742 which is one of the things  
NOTE Confidence: 0.8533961

00:15:01.742 --> 00:15:03.010 I'm most interested in,  
NOTE Confidence: 0.8703269

00:15:03.010 --> 00:15:04.906 and at least in lung cancer,  
NOTE Confidence: 0.8703269

00:15:04.910 --> 00:15:06.370 it represents an opportunity to  
NOTE Confidence: 0.8703269

00:15:06.370 --> 00:15:08.542 bridge the gap between open and video  
NOTE Confidence: 0.8703269

00:15:08.542 --> 00:15:10.197 assisted surgery by combining the  
NOTE Confidence: 0.8703269

00:15:10.197 --> 00:15:11.890 technical advantages of open surgery,  
NOTE Confidence: 0.8703269

00:15:11.890 --> 00:15:14.396 but with the patient specific benefits of  
NOTE Confidence: 0.8703269

00:15:14.396 --> 00:15:16.449 minimally invasive video assisted surgery.

NOTE Confidence: 0.8703269

00:15:16.450 --> 00:15:18.580 So in this type of technique,

NOTE Confidence: 0.8703269

00:15:18.580 --> 00:15:20.710 a surgeon sits at the console.

NOTE Confidence: 0.8703269

00:15:20.710 --> 00:15:22.735 They control robotic instruments inserted

NOTE Confidence: 0.8703269

00:15:22.735 --> 00:15:25.099 through similar keyhole incisions or ports

NOTE Confidence: 0.8703269

00:15:25.099 --> 00:15:27.094 that we use in video assisted surgery.

NOTE Confidence: 0.8703269

00:15:27.100 --> 00:15:28.520 But these instruments actually

NOTE Confidence: 0.8703269

00:15:28.520 --> 00:15:30.295 attached to robotic controller arms.

NOTE Confidence: 0.8703269

00:15:30.300 --> 00:15:32.430 The instrument tips can move with

NOTE Confidence: 0.8703269

00:15:32.430 --> 00:15:33.850 multiple degrees of freedom.

NOTE Confidence: 0.8703269

00:15:33.850 --> 00:15:35.620 They can perform complex functions,

NOTE Confidence: 0.8703269

00:15:35.620 --> 00:15:37.485 and essentially they perform the

NOTE Confidence: 0.8703269

00:15:37.485 --> 00:15:39.731 same technical functions as if my

NOTE Confidence: 0.8703269

00:15:39.731 --> 00:15:41.657 own hands were doing the operation.

NOTE Confidence: 0.8703269

00:15:41.660 --> 00:15:43.435 I move these instruments around

NOTE Confidence: 0.8703269

00:15:43.435 --> 00:15:44.500 using hand controls.

NOTE Confidence: 0.8703269

00:15:44.500 --> 00:15:47.118 As you can see here that allow.  
NOTE Confidence: 0.8703269

00:15:47.120 --> 00:15:49.479 Motion the exact that allow for the  
NOTE Confidence: 0.8703269

00:15:49.479 --> 00:15:52.076 exact motion of my hand and they let  
NOTE Confidence: 0.8703269

00:15:52.076 --> 00:15:54.077 us do things like dissect important  
NOTE Confidence: 0.8703269

00:15:54.077 --> 00:15:56.567 structures in and around the lung.  
NOTE Confidence: 0.8703269

00:15:56.570 --> 00:15:58.085 These motions are basically the  
NOTE Confidence: 0.8703269

00:15:58.085 --> 00:16:00.483 same as if I were performing this  
NOTE Confidence: 0.8703269

00:16:00.483 --> 00:16:02.518 procedure at the bedside open,  
NOTE Confidence: 0.8703269

00:16:02.520 --> 00:16:05.579 except that I'm viewing structures at 10  
NOTE Confidence: 0.8703269

00:16:05.579 --> 00:16:08.219 times magnification in three dimensional.  
NOTE Confidence: 0.8703269

00:16:08.220 --> 00:16:10.314 3 dimensional camera and this allows  
NOTE Confidence: 0.8703269

00:16:10.314 --> 00:16:12.883 me to divide blood vessels the airway  
NOTE Confidence: 0.8703269

00:16:12.883 --> 00:16:15.459 or remove the lymph nodes using robotic  
NOTE Confidence: 0.8703269

00:16:15.528 --> 00:16:18.068 energy devices with increased precision.  
NOTE Confidence: 0.8703269

00:16:18.070 --> 00:16:20.702 The value of robotics is that it  
NOTE Confidence: 0.8703269

00:16:20.702 --> 00:16:22.725 simulates open surgery but with

NOTE Confidence: 0.8703269

00:16:22.725 --> 00:16:24.365 a huge technical advantage,

NOTE Confidence: 0.8703269

00:16:24.370 --> 00:16:26.734 not just the 3D visualization or

NOTE Confidence: 0.8703269

00:16:26.734 --> 00:16:27.916 those articulating instruments,

NOTE Confidence: 0.8703269

00:16:27.920 --> 00:16:30.284 but the size of the incisions

NOTE Confidence: 0.8703269

00:16:30.284 --> 00:16:31.466 in the incision.

NOTE Confidence: 0.8703269

00:16:31.470 --> 00:16:34.221 Placement can be performed in areas where

NOTE Confidence: 0.8703269

00:16:34.221 --> 00:16:36.190 there's less discomfort for patient.

NOTE Confidence: 0.8703269

00:16:36.190 --> 00:16:38.650 For patients that is a simulating.

NOTE Confidence: 0.8703269

00:16:38.650 --> 00:16:39.514 Open surgery,

NOTE Confidence: 0.8703269

00:16:39.514 --> 00:16:41.674 these instruments allow us to

NOTE Confidence: 0.8703269

00:16:41.674 --> 00:16:43.804 be extremely thorough with our

NOTE Confidence: 0.8703269

00:16:43.804 --> 00:16:46.096 dissection and to keep patients safe,

NOTE Confidence: 0.8703269

00:16:46.100 --> 00:16:47.756 especially during the most

NOTE Confidence: 0.8703269

00:16:47.756 --> 00:16:49.826 complex components of the case.

NOTE Confidence: 0.8703269

00:16:49.830 --> 00:16:52.314 There are other patient specific benefits

NOTE Confidence: 0.8703269

00:16:52.314 --> 00:16:53.970 like reduced incisional discomfort,  
NOTE Confidence: 0.8703269

00:16:53.970 --> 00:16:55.626 shorter length of stay,  
NOTE Confidence: 0.8703269

00:16:55.626 --> 00:16:56.868 reduced blood loss,  
NOTE Confidence: 0.8703269

00:16:56.870 --> 00:16:59.396 and with a significant amount of  
NOTE Confidence: 0.8703269

00:16:59.396 --> 00:17:01.609 experience we've been able to  
NOTE Confidence: 0.8703269

00:17:01.609 --> 00:17:03.433 successfully integrate this out  
NOTE Confidence: 0.8703269

00:17:03.433 --> 00:17:06.141 this platform into our system level  
NOTE Confidence: 0.8703269

00:17:06.141 --> 00:17:08.584 to reduce our length of stay to  
NOTE Confidence: 0.8703269

00:17:08.584 --> 00:17:10.152 improve our short-term outcomes.  
NOTE Confidence: 0.8703269

00:17:10.152 --> 00:17:12.738 Most importantly to get patients back  
NOTE Confidence: 0.8703269

00:17:12.738 --> 00:17:15.264 to their standard quality of life  
NOTE Confidence: 0.8703269

00:17:15.264 --> 00:17:17.658 and their activities of daily living.  
NOTE Confidence: 0.8703269

00:17:17.660 --> 00:17:18.924 As this technology improves,  
NOTE Confidence: 0.8703269

00:17:18.924 --> 00:17:20.188 actually these the platform  
NOTE Confidence: 0.8703269

00:17:20.188 --> 00:17:21.250 is getting smaller.  
NOTE Confidence: 0.8703269

00:17:21.250 --> 00:17:24.112 This is a video of a single port robot

NOTE Confidence: 0.8703269

00:17:24.112 --> 00:17:26.758 that we now use it Yale and were one

NOTE Confidence: 0.8703269

00:17:26.758 --> 00:17:29.215 of the first sites in the country

NOTE Confidence: 0.8703269

00:17:29.215 --> 00:17:31.356 to have access to this technology.

NOTE Confidence: 0.8703269

00:17:31.356 --> 00:17:32.986 Instead of four separate keyhole

NOTE Confidence: 0.8703269

00:17:32.986 --> 00:17:34.290 incisions for four instruments,

NOTE Confidence: 0.8703269

00:17:34.290 --> 00:17:36.246 the platform allows for one port

NOTE Confidence: 0.8703269

00:17:36.246 --> 00:17:37.550 that contains all instruments.

NOTE Confidence: 0.8703269

00:17:37.550 --> 00:17:39.296 So for abdominal surgeons they can

NOTE Confidence: 0.8703269

00:17:39.296 --> 00:17:41.835 hide this portal at your in your belly

NOTE Confidence: 0.8703269

00:17:41.835 --> 00:17:43.480 button and remove your Gallbladder

NOTE Confidence: 0.8703269

00:17:43.480 --> 00:17:45.700 without compromising on safety or quality.

NOTE Confidence: 0.8703269

00:17:45.700 --> 00:17:47.670 And we're really excited about.

NOTE Confidence: 0.8703269

00:17:47.670 --> 00:17:48.958 These kinds of opportunities,

NOTE Confidence: 0.8703269

00:17:48.958 --> 00:17:50.890 mostly because we think it'll help

NOTE Confidence: 0.8703269

00:17:50.946 --> 00:17:52.756 patients recover faster and clearly.

NOTE Confidence: 0.8703269



00:17:52.760 --> 00:17:54.450 This is the direction where  
NOTE Confidence: 0.8703269

00:17:54.450 --> 00:17:55.802 small incision is going.  
NOTE Confidence: 0.8703269

00:17:55.810 --> 00:17:57.430 Small incision surgeries going  
NOTE Confidence: 0.8703269

00:17:57.430 --> 00:17:59.455 especially for our lung patients.  
NOTE Confidence: 0.8703269

00:17:59.460 --> 00:18:01.686 We're also excited about some of the  
NOTE Confidence: 0.8703269

00:18:01.686 --> 00:18:03.521 about the opportunity to use robotics  
NOTE Confidence: 0.8703269

00:18:03.521 --> 00:18:05.794 to help biopsy or mark tumors that we  
NOTE Confidence: 0.8703269

00:18:05.794 --> 00:18:07.859 can easily remove in the operating room.  
NOTE Confidence: 0.81927985

00:18:07.860 --> 00:18:09.603 Here's an example of a robotic system  
NOTE Confidence: 0.81927985

00:18:09.603 --> 00:18:11.475 that uses a flexible catheter to  
NOTE Confidence: 0.81927985

00:18:11.475 --> 00:18:13.255 navigate through a patients airway.  
NOTE Confidence: 0.81927985

00:18:13.260 --> 00:18:15.268 We now have the ability to perform these  
NOTE Confidence: 0.81927985

00:18:15.268 --> 00:18:17.457 kinds of procedures or computer software,  
NOTE Confidence: 0.81927985

00:18:17.460 --> 00:18:19.504 identifies a nodule within the long as  
NOTE Confidence: 0.81927985

00:18:19.504 --> 00:18:21.660 an the pathway to access that nodule,  
NOTE Confidence: 0.81927985

00:18:21.660 --> 00:18:23.460 and then using a control unit,

NOTE Confidence: 0.81927985

00:18:23.460 --> 00:18:25.242 an operator can drive out of

NOTE Confidence: 0.81927985

00:18:25.242 --> 00:18:26.760 robotic catheter into the lung,

NOTE Confidence: 0.81927985

00:18:26.760 --> 00:18:29.808 allowing us to biopsy a nodule or even

NOTE Confidence: 0.81927985

00:18:29.808 --> 00:18:32.700 inject it with a specific kind of dye

NOTE Confidence: 0.81927985

00:18:32.700 --> 00:18:35.899 that we can see in the operating room.

NOTE Confidence: 0.81927985

00:18:35.900 --> 00:18:37.928 As a result, we're really proud

NOTE Confidence: 0.81927985

00:18:37.928 --> 00:18:39.280 of our surgical results,

NOTE Confidence: 0.81927985

00:18:39.280 --> 00:18:41.458 were able to perform minimally invasive

NOTE Confidence: 0.81927985

00:18:41.458 --> 00:18:44.014 lung resection in 90 to 95% of our

NOTE Confidence: 0.81927985

00:18:44.014 --> 00:18:45.699 early stage lung cancer patients.

NOTE Confidence: 0.81927985

00:18:45.700 --> 00:18:47.740 That's both bats and robotic surgery

NOTE Confidence: 0.81927985

00:18:47.740 --> 00:18:49.699 are average or average length of

NOTE Confidence: 0.81927985

00:18:49.699 --> 00:18:51.589 stay is well ahead of our national

NOTE Confidence: 0.81927985

00:18:51.589 --> 00:18:53.911 of the national averages and our

NOTE Confidence: 0.81927985

00:18:53.911 --> 00:18:55.499 academic peers are complication.

NOTE Confidence: 0.81927985

00:18:55.500 --> 00:18:58.316 Risk after surgery is very low in our  
NOTE Confidence: 0.81927985

00:18:58.316 --> 00:19:00.574 surgical mortality is also very, very low.  
NOTE Confidence: 0.81927985

00:19:00.574 --> 00:19:02.596 As important in the lion share,  
NOTE Confidence: 0.81927985

00:19:02.600 --> 00:19:04.360 where patients are discharged home  
NOTE Confidence: 0.81927985

00:19:04.360 --> 00:19:06.120 rather than needing a transitional  
NOTE Confidence: 0.81927985

00:19:06.178 --> 00:19:07.738 period and either rehab center.  
NOTE Confidence: 0.81927985

00:19:07.740 --> 00:19:09.876 Center or sub acute nursing facility.  
NOTE Confidence: 0.81927985

00:19:09.880 --> 00:19:12.491 Now that we're bringing all of these  
NOTE Confidence: 0.81927985

00:19:12.491 --> 00:19:13.988 minimally invasive technologies to  
NOTE Confidence: 0.81927985

00:19:13.988 --> 00:19:15.588 the hospitals across our system,  
NOTE Confidence: 0.81927985

00:19:15.590 --> 00:19:17.010 including Greenwich and Bridgeport,  
NOTE Confidence: 0.81927985

00:19:17.010 --> 00:19:18.785 there's a great opportunity to  
NOTE Confidence: 0.81927985

00:19:18.785 --> 00:19:19.880 offer more patients.  
NOTE Confidence: 0.81927985

00:19:19.880 --> 00:19:22.946 These options for early stage lung  
NOTE Confidence: 0.81927985

00:19:22.946 --> 00:19:25.760 cancer and other thoracic cancers.  
NOTE Confidence: 0.81927985

00:19:25.760 --> 00:19:26.426 And with that,

NOTE Confidence: 0.81927985

00:19:26.426 --> 00:19:27.980 I'd be happy to take any questions.

NOTE Confidence: 0.8279872

00:19:30.270 --> 00:19:34.620 Thank you Justin, that's phenomenal.

NOTE Confidence: 0.8279872

00:19:34.620 --> 00:19:37.796 Are we going to get some questions 1?

NOTE Confidence: 0.8279872

00:19:37.800 --> 00:19:40.959 One person on the line has asked can you

NOTE Confidence: 0.8279872

00:19:40.959 --> 00:19:44.165 do a paradigus using the robotic rats

NOTE Confidence: 0.77450174

00:19:44.170 --> 00:19:46.558 procedure so upper decices a sticky

NOTE Confidence: 0.77450174

00:19:46.558 --> 00:19:48.915 procedure where we usually either scratch

NOTE Confidence: 0.77450174

00:19:48.915 --> 00:19:51.835 up the surface of the chest wall or

NOTE Confidence: 0.77450174

00:19:51.835 --> 00:19:54.919 put in medications like a baby powder,

NOTE Confidence: 0.77450174

00:19:54.920 --> 00:19:56.910 chalk powder or an antibiotic.

NOTE Confidence: 0.77450174

00:19:56.910 --> 00:20:00.174 Doxie cycling to cause the lungs to stick.

NOTE Confidence: 0.77450174

00:20:00.180 --> 00:20:03.676 The chest wall to prevent it from collapsing.

NOTE Confidence: 0.77450174

00:20:03.680 --> 00:20:06.095 Procedure that similar to that is actually

NOTE Confidence: 0.77450174

00:20:06.095 --> 00:20:08.362 referred to as a horror ectomy where

NOTE Confidence: 0.77450174

00:20:08.362 --> 00:20:10.801 we strip the lining of the chest wall

NOTE Confidence: 0.77450174

00:20:10.801 --> 00:20:13.013 and that allows for the same effect.

NOTE Confidence: 0.77450174

00:20:13.020 --> 00:20:15.164 Actually and even better if it and so

NOTE Confidence: 0.77450174

00:20:15.164 --> 00:20:17.265 a robotic pleurectomy is a commonly

NOTE Confidence: 0.77450174

00:20:17.265 --> 00:20:19.140 performed procedure by our group,

NOTE Confidence: 0.77450174

00:20:19.140 --> 00:20:21.108 is very effective and it's great

NOTE Confidence: 0.77450174

00:20:21.108 --> 00:20:23.087 with the robot because there's a

NOTE Confidence: 0.77450174

00:20:23.087 --> 00:20:25.215 little bit less bleeding and I think

NOTE Confidence: 0.77450174

00:20:25.215 --> 00:20:27.190 it's a little bit more thorough.

NOTE Confidence: 0.8688997

00:20:29.220 --> 00:20:30.585 Great thanks so please put

NOTE Confidence: 0.8688997

00:20:30.585 --> 00:20:31.950 your questions in the chat.

NOTE Confidence: 0.8688997

00:20:31.950 --> 00:20:33.588 I have a few others here.

NOTE Confidence: 0.8688997

00:20:33.590 --> 00:20:34.686 Someone's asking just if

NOTE Confidence: 0.8688997

00:20:34.686 --> 00:20:36.330 and when you go to video

NOTE Confidence: 0.8688997

00:20:36.391 --> 00:20:37.957 games when you were a child.

NOTE Confidence: 0.8553283

00:20:38.940 --> 00:20:40.750 So I did play a lot of video games as

NOTE Confidence: 0.8553283

00:20:40.806 --> 00:20:42.750 a child and I think that does help with

NOTE Confidence: 0.8553283

00:20:42.750 --> 00:20:44.519 hand eye coordination, but my parents

NOTE Confidence: 0.8553283

00:20:44.519 --> 00:20:46.080 also forced me to play the cello,

NOTE Confidence: 0.8553283

00:20:46.080 --> 00:20:47.739 so I think that was probably that

NOTE Confidence: 0.8553283

00:20:47.739 --> 00:20:49.420 probably helped so we can have our kids

NOTE Confidence: 0.8553283

00:20:49.420 --> 00:20:50.540 both through the music lessons.

NOTE Confidence: 0.8553283

00:20:50.540 --> 00:20:52.094 Then they can play a little bit.

NOTE Confidence: 0.8553283

00:20:52.100 --> 00:20:54.830 You know, at the arcade.

NOTE Confidence: 0.8553283

00:20:54.830 --> 00:20:56.696 No, but seriously, when you went,

NOTE Confidence: 0.8553283

00:20:56.700 --> 00:20:58.602 have you always trained in robotic

NOTE Confidence: 0.8553283

00:20:58.602 --> 00:21:01.059 surgery or did you have to make a

NOTE Confidence: 0.8553283

00:21:01.059 --> 00:21:03.230 transition at some point in your career?

NOTE Confidence: 0.8553283

00:21:03.230 --> 00:21:04.785 And what about surgeons more

NOTE Confidence: 0.8553283

00:21:04.785 --> 00:21:06.340 advanced in their career? Was

NOTE Confidence: 0.83550227

00:21:06.340 --> 00:21:08.828 it hard for them to learn these techniques?

NOTE Confidence: 0.83550227

00:21:08.830 --> 00:21:10.380 So this is the interesting

NOTE Confidence: 0.83550227

00:21:10.380 --> 00:21:11.310 part about robotics.  
NOTE Confidence: 0.83550227

00:21:11.310 --> 00:21:13.224 I actually trained at MGS where  
NOTE Confidence: 0.83550227

00:21:13.224 --> 00:21:15.287 there was no robotic surgery and  
NOTE Confidence: 0.83550227

00:21:15.287 --> 00:21:17.459 no back surgery is essentially all  
NOTE Confidence: 0.83550227

00:21:17.459 --> 00:21:19.441 open surgery even in 2011 to 13  
NOTE Confidence: 0.83550227

00:21:19.441 --> 00:21:23.220 when I was there not too long ago.  
NOTE Confidence: 0.83550227

00:21:23.220 --> 00:21:25.804 I learned that surgery in my at my  
NOTE Confidence: 0.83550227

00:21:25.804 --> 00:21:28.737 first job and I learned robotic surgery.  
NOTE Confidence: 0.83550227

00:21:28.740 --> 00:21:30.212 Actually here at Yale.  
NOTE Confidence: 0.83550227

00:21:30.212 --> 00:21:32.420 When I started with Tony Kemp,  
NOTE Confidence: 0.83550227

00:21:32.420 --> 00:21:34.508 the value of robotics is that  
NOTE Confidence: 0.83550227

00:21:34.508 --> 00:21:36.470 because it simulates open surgery,  
NOTE Confidence: 0.83550227

00:21:36.470 --> 00:21:38.636 it's actually much easier for a  
NOTE Confidence: 0.83550227

00:21:38.636 --> 00:21:40.513 traditional open surgeon to learn  
NOTE Confidence: 0.83550227

00:21:40.513 --> 00:21:42.715 rather than bats the learning curve.  
NOTE Confidence: 0.83550227

00:21:42.720 --> 00:21:44.928 That's as much higher, much deeper.

NOTE Confidence: 0.83550227  
00:21:44.930 --> 00:21:47.924 So it is an interesting phenomenon  
NOTE Confidence: 0.83550227  
00:21:47.924 --> 00:21:49.920 that minimally invasive surgery  
NOTE Confidence: 0.83550227  
00:21:49.998 --> 00:21:52.038 is better for patients and.  
NOTE Confidence: 0.83550227  
00:21:52.040 --> 00:21:54.278 Add more open surgeons to transition  
NOTE Confidence: 0.83550227  
00:21:54.278 --> 00:21:55.770 to minimally invasive surgery,  
NOTE Confidence: 0.83550227  
00:21:55.770 --> 00:21:57.258 increasing the overall performance  
NOTE Confidence: 0.83550227  
00:21:57.258 --> 00:21:58.746 of minimally invasive surgery.  
NOTE Confidence: 0.83550227  
00:21:58.750 --> 00:22:01.486 Combining Vatsan robotics and so it is a  
NOTE Confidence: 0.83550227  
00:22:01.486 --> 00:22:03.977 more natural platform for open surgeons,  
NOTE Confidence: 0.83550227  
00:22:03.980 --> 00:22:07.710 and that's that was the case for me as well.  
NOTE Confidence: 0.8155124  
00:22:08.360 --> 00:22:09.840 Right, we have another question.  
NOTE Confidence: 0.8155124  
00:22:09.840 --> 00:22:11.024 You know there are  
NOTE Confidence: 0.8155124  
00:22:11.024 --> 00:22:12.208 disparities in health care.  
NOTE Confidence: 0.8155124  
00:22:12.210 --> 00:22:13.902 A lot of places don't have  
NOTE Confidence: 0.8155124  
00:22:13.902 --> 00:22:15.460 surgeons like you inviting others.  
NOTE Confidence: 0.8155124



00:22:15.460 --> 00:22:16.940 Can this be done remotely?  
NOTE Confidence: 0.8155124

00:22:16.940 --> 00:22:18.518 So could could you control an  
NOTE Confidence: 0.8155124

00:22:18.518 --> 00:22:19.911 operation from Cedar St someone  
NOTE Confidence: 0.8155124

00:22:19.911 --> 00:22:21.639 someplace else in the country where  
NOTE Confidence: 0.8155124

00:22:21.639 --> 00:22:23.248 there might be fewer physicians  
NOTE Confidence: 0.8155124

00:22:23.248 --> 00:22:24.636 that have that expertise?  
NOTE Confidence: 0.87145215

00:22:25.640 --> 00:22:28.010 So the answer is technically yes,  
NOTE Confidence: 0.87145215

00:22:28.010 --> 00:22:29.590 although I don't believe  
NOTE Confidence: 0.87145215

00:22:29.590 --> 00:22:31.170 anyone actually does that,  
NOTE Confidence: 0.87145215

00:22:31.170 --> 00:22:33.336 I think there was a landmark  
NOTE Confidence: 0.87145215

00:22:33.336 --> 00:22:35.726 case years ago where they they  
NOTE Confidence: 0.87145215

00:22:35.726 --> 00:22:37.886 remotely operated on a patient,  
NOTE Confidence: 0.87145215

00:22:37.890 --> 00:22:40.648 a cross in the ocean between countries,  
NOTE Confidence: 0.87145215

00:22:40.650 --> 00:22:42.834 but I don't believe that there is  
NOTE Confidence: 0.87145215

00:22:42.834 --> 00:22:44.934 any site that's actually physically  
NOTE Confidence: 0.87145215

00:22:44.934 --> 00:22:46.578 doing surgery remotely.

NOTE Confidence: 0.87145215

00:22:46.580 --> 00:22:48.160 Maybe in the military,

NOTE Confidence: 0.87145215

00:22:48.160 --> 00:22:50.530 and Vinny could speak to that,

NOTE Confidence: 0.87145215

00:22:50.530 --> 00:22:53.690 but I don't believe in any other capacity.

NOTE Confidence: 0.87145215

00:22:53.690 --> 00:22:56.060 It's not what we typically do,

NOTE Confidence: 0.87145215

00:22:56.060 --> 00:22:58.420 but there are so many.

NOTE Confidence: 0.87145215

00:22:58.420 --> 00:23:00.105 Robotic surgeons across the country

NOTE Confidence: 0.87145215

00:23:00.105 --> 00:23:02.722 now that it doesn't take much to find

NOTE Confidence: 0.87145215

00:23:02.722 --> 00:23:04.474 somebody within your region who can

NOTE Confidence: 0.87145215

00:23:04.474 --> 00:23:06.618 who can provide something like this.

NOTE Confidence: 0.82765484

00:23:07.540 --> 00:23:08.604 Well that was fantastic.

NOTE Confidence: 0.82765484

00:23:08.604 --> 00:23:09.674 You know? Maybe not.

NOTE Confidence: 0.82765484

00:23:09.674 --> 00:23:11.276 Now with the Covid virus racing,

NOTE Confidence: 0.82765484

00:23:11.280 --> 00:23:13.764 but someday I'd like to join you in the

NOTE Confidence: 0.82765484

00:23:13.764 --> 00:23:15.814 operating room and see how that that works.

NOTE Confidence: 0.82765484

00:23:15.814 --> 00:23:18.486 And I'm not sure I could even tie in that.

NOTE Confidence: 0.82765484

00:23:18.490 --> 00:23:19.818 But maybe the robot could  
NOTE Confidence: 0.82765484

00:23:19.818 --> 00:23:21.424 help me do it for you.  
NOTE Confidence: 0.82765484

00:23:21.424 --> 00:23:23.028 Yeah, OK, well thank you Justin.  
NOTE Confidence: 0.82765484

00:23:23.028 --> 00:23:23.829 That was fantastic.  
NOTE Confidence: 0.82765484

00:23:23.830 --> 00:23:25.629 OK moving on and I see some  
NOTE Confidence: 0.82765484

00:23:25.629 --> 00:23:26.760 questions in the chat,  
NOTE Confidence: 0.82765484

00:23:26.760 --> 00:23:28.816 but I'm going to wait till they are  
NOTE Confidence: 0.82765484

00:23:28.816 --> 00:23:30.809 relevant to the topic of the talk and  
NOTE Confidence: 0.82765484

00:23:30.809 --> 00:23:32.991 some of them will be relevant now for  
NOTE Confidence: 0.82765484

00:23:32.991 --> 00:23:34.767 an Chang Doctor Chang is associate  
NOTE Confidence: 0.82765484

00:23:34.770 --> 00:23:36.125 professor of medicine in medical  
NOTE Confidence: 0.82765484

00:23:36.125 --> 00:23:37.480 Oncology and Chief Network Officer  
NOTE Confidence: 0.82765484

00:23:37.524 --> 00:23:38.859 and Deputy Chief Medical Officer.  
NOTE Confidence: 0.82765484

00:23:38.860 --> 00:23:40.970 For the Smile Cancer Network,  
NOTE Confidence: 0.82765484

00:23:40.970 --> 00:23:43.135 she specializes in thoracic oncology  
NOTE Confidence: 0.82765484

00:23:43.135 --> 00:23:45.300 with the background and translational

NOTE Confidence: 0.82765484

00:23:45.361 --> 00:23:47.677 research in metastases as well as

NOTE Confidence: 0.82765484

00:23:47.677 --> 00:23:49.810 extensive experience in clinical practice,

NOTE Confidence: 0.82765484

00:23:49.810 --> 00:23:52.650 both academic and community settings.

NOTE Confidence: 0.82765484

00:23:52.650 --> 00:23:54.545 Text Chang's research interests focus

NOTE Confidence: 0.82765484

00:23:54.545 --> 00:23:56.865 on development of clinical trials and

NOTE Confidence: 0.82765484

00:23:56.865 --> 00:23:58.680 translational studies to test novel

NOTE Confidence: 0.82765484

00:23:58.680 --> 00:24:00.524 agents and combinations with immune

NOTE Confidence: 0.82765484

00:24:00.524 --> 00:24:02.179 checkpoint inhibitors for both small

NOTE Confidence: 0.82765484

00:24:02.179 --> 00:24:04.551 cell and non small cell lung cancers

NOTE Confidence: 0.82765484

00:24:04.551 --> 00:24:06.286 to received medical degree from

NOTE Confidence: 0.82765484

00:24:06.286 --> 00:24:07.849 Cornell University Medical College.

NOTE Confidence: 0.82765484

00:24:07.850 --> 00:24:10.125 My alma matter actually and her PhD

NOTE Confidence: 0.82765484

00:24:10.125 --> 00:24:11.867 from Harvard and it's wonderful

NOTE Confidence: 0.82765484

00:24:11.867 --> 00:24:13.967 having here talking about some of

NOTE Confidence: 0.82765484

00:24:13.967 --> 00:24:15.953 the new medical oncology treatments

NOTE Confidence: 0.82765484

00:24:15.953 --> 00:24:17.983 for for lung cancer Ann.  
NOTE Confidence: 0.65624624

00:24:19.700 --> 00:24:24.756 Q. My pleasure and I'm gonna share my slides.  
NOTE Confidence: 0.65624624

00:24:24.760 --> 00:24:26.936 I wanted to talk about the advances in  
NOTE Confidence: 0.65624624

00:24:26.936 --> 00:24:28.880 treatment of lung cancer from targeted  
NOTE Confidence: 0.65624624

00:24:28.880 --> 00:24:30.896 therapy to immunotherapy and and Roy.  
NOTE Confidence: 0.65624624

00:24:30.900 --> 00:24:33.348 You did mention a little bit of this,  
NOTE Confidence: 0.65624624

00:24:33.350 --> 00:24:38.098 so thank you very much. I'm let's see.  
NOTE Confidence: 0.84965897

00:24:40.190 --> 00:24:41.611 These are my disclosures.  
NOTE Confidence: 0.84965897

00:24:41.611 --> 00:24:43.970 I'm going to talk about non small  
NOTE Confidence: 0.84965897

00:24:44.040 --> 00:24:46.268 cell targeted targetable mutations.  
NOTE Confidence: 0.84965897

00:24:46.270 --> 00:24:48.244 I'm going to talk about non small  
NOTE Confidence: 0.84965897

00:24:48.244 --> 00:24:49.703 cell patients that incorporate  
NOTE Confidence: 0.84965897

00:24:49.703 --> 00:24:51.903 advances that incorporate combination  
NOTE Confidence: 0.84965897

00:24:51.903 --> 00:24:53.553 immunotherapy and chemotherapy.  
NOTE Confidence: 0.84965897

00:24:53.560 --> 00:24:55.905 I'm going to talk a little bit  
NOTE Confidence: 0.84965897

00:24:55.905 --> 00:24:57.927 about side effects associated with

NOTE Confidence: 0.84965897

00:24:57.927 --> 00:25:00.287 immunotherapy and then end with

NOTE Confidence: 0.84965897

00:25:00.287 --> 00:25:02.870 treatment of patients with small cell.

NOTE Confidence: 0.84965897

00:25:02.870 --> 00:25:07.097 So there's a lot to cover an I will do my

NOTE Confidence: 0.84965897

00:25:07.097 --> 00:25:10.898 best to go through this relatively quickly.

NOTE Confidence: 0.84965897

00:25:10.900 --> 00:25:13.539 We'll see how we do at time.

NOTE Confidence: 0.84965897

00:25:13.540 --> 00:25:16.004 I'm I'm supposed to finish in 15

NOTE Confidence: 0.84965897

00:25:16.004 --> 00:25:18.440 minutes so as Doctor Herb said,

NOTE Confidence: 0.84965897

00:25:18.440 --> 00:25:21.079 lung cancer comes primarily in two forms,

NOTE Confidence: 0.84965897

00:25:21.080 --> 00:25:24.152 non small cell and then small cell which

NOTE Confidence: 0.84965897

00:25:24.152 --> 00:25:27.486 is around 15% and of the non small cell.

NOTE Confidence: 0.84965897

00:25:27.490 --> 00:25:30.498 Most of it is adenocarcinoma 35 to 40%

NOTE Confidence: 0.84965897

00:25:30.500 --> 00:25:32.606 squamous cell carcinoma and then large

NOTE Confidence: 0.84965897

00:25:32.606 --> 00:25:34.882 cell and those are histologies and

NOTE Confidence: 0.84965897

00:25:34.882 --> 00:25:37.288 that's actually shown in this slide.

NOTE Confidence: 0.84965897

00:25:37.290 --> 00:25:38.854 So underneath the microscope

NOTE Confidence: 0.84965897

00:25:38.854 --> 00:25:40.418 small cell looks like.  
NOTE Confidence: 0.84965897

00:25:40.420 --> 00:25:43.804 Little blue small cells as named add no  
NOTE Confidence: 0.84965897

00:25:43.804 --> 00:25:46.806 carcinoma adeno means Greek gland in Greek,  
NOTE Confidence: 0.84965897

00:25:46.810 --> 00:25:49.366 and so it describes the formation  
NOTE Confidence: 0.84965897

00:25:49.366 --> 00:25:51.070 of these little glands.  
NOTE Confidence: 0.84965897

00:25:51.070 --> 00:25:54.073 Squamous cell often has what's called keratin  
NOTE Confidence: 0.84965897

00:25:54.073 --> 00:25:57.028 pearls hoops and then that's large cell,  
NOTE Confidence: 0.84965897

00:25:57.030 --> 00:26:02.198 which is sort of the the other category.  
NOTE Confidence: 0.84965897

00:26:02.200 --> 00:26:04.210 Doctor Hoopes mentioned the mortality  
NOTE Confidence: 0.84965897

00:26:04.210 --> 00:26:06.803 and incidence of lung cancer is coming  
NOTE Confidence: 0.84965897

00:26:06.803 --> 00:26:09.295 down and this is a paper from the New  
NOTE Confidence: 0.84965897

00:26:09.295 --> 00:26:11.640 England Journal of Medicine that came out  
NOTE Confidence: 0.84965897

00:26:11.640 --> 00:26:14.000 this year that shows this very exciting.  
NOTE Confidence: 0.84965897

00:26:14.000 --> 00:26:16.740 For on the on the left men and on the  
NOTE Confidence: 0.84965897

00:26:16.823 --> 00:26:19.714 right women both in blue the incidents.  
NOTE Confidence: 0.84965897

00:26:19.720 --> 00:26:21.736 So how often it occurs and

NOTE Confidence: 0.84965897

00:26:21.736 --> 00:26:23.430 then the mortality in red.

NOTE Confidence: 0.84965897

00:26:23.430 --> 00:26:25.936 So that's both going down for men

NOTE Confidence: 0.84965897

00:26:25.936 --> 00:26:28.520 and women for small for non small

NOTE Confidence: 0.84965897

00:26:28.520 --> 00:26:31.089 cell and for small cell and in

NOTE Confidence: 0.84965897

00:26:31.089 --> 00:26:33.490 part due to many of the advances.

NOTE Confidence: 0.84965897

00:26:33.490 --> 00:26:36.178 That I'm going to talk about tonight.

NOTE Confidence: 0.84965897

00:26:36.180 --> 00:26:39.532 So let's first talk about this concept of

NOTE Confidence: 0.84965897

00:26:39.532 --> 00:26:41.969 personalized medicine in lung adenocarcinoma.

NOTE Confidence: 0.84965897

00:26:41.970 --> 00:26:43.746 So back in 2004,

NOTE Confidence: 0.84965897

00:26:43.746 --> 00:26:45.966 we really talked about that.

NOTE Confidence: 0.84965897

00:26:45.970 --> 00:26:49.514 We would we would do profiling or look

NOTE Confidence: 0.84965897

00:26:49.514 --> 00:26:53.049 for mutations in the tumor tissue and we

NOTE Confidence: 0.84965897

00:26:53.049 --> 00:26:56.210 were really looking for only two things.

NOTE Confidence: 0.84965897

00:26:56.210 --> 00:27:00.413 EGFR in K rests that were described at the

NOTE Confidence: 0.84965897

00:27:00.413 --> 00:27:04.654 time and now in 2014 and and even more so.

NOTE Confidence: 0.84965897



00:27:04.660 --> 00:27:07.510 Now we're looking for a dozen  
NOTE Confidence: 0.84965897  
00:27:07.510 --> 00:27:09.410 targets that actually have.  
NOTE Confidence: 0.84965897  
00:27:09.410 --> 00:27:13.010 Drugs that that can be used against them.  
NOTE Confidence: 0.84965897  
00:27:13.010 --> 00:27:15.626 So I'm going to start with,  
NOTE Confidence: 0.84965897  
00:27:15.630 --> 00:27:17.097 specifically EGFR therapy.  
NOTE Confidence: 0.84965897  
00:27:17.097 --> 00:27:19.053 That's epidermal growth factor  
NOTE Confidence: 0.84965897  
00:27:19.053 --> 00:27:21.761 receptor and there are mutations in  
NOTE Confidence: 0.84965897  
00:27:21.761 --> 00:27:23.721 this particular gene that basically  
NOTE Confidence: 0.84965897  
00:27:23.721 --> 00:27:26.119 are most common in never smokers,  
NOTE Confidence: 0.84965897  
00:27:26.120 --> 00:27:28.196 females, Asians, and adenocarcinomas,  
NOTE Confidence: 0.84965897  
00:27:28.196 --> 00:27:31.800 and if you have these mutations then  
NOTE Confidence: 0.84965897  
00:27:31.800 --> 00:27:34.642 you can take an oral EGFR inhibitor  
NOTE Confidence: 0.84965897  
00:27:34.642 --> 00:27:37.383 medication or a pill and you can  
NOTE Confidence: 0.84965897  
00:27:37.383 --> 00:27:39.228 have very good response rates.  
NOTE Confidence: 0.84965897  
00:27:39.230 --> 00:27:43.487 And here's an example of a patient who had.  
NOTE Confidence: 0.84965897  
00:27:43.490 --> 00:27:46.857 A long lesion in that's here in

NOTE Confidence: 0.84965897

00:27:46.857 --> 00:27:50.513 2016 and you can see some shrinkage

NOTE Confidence: 0.84965897

00:27:50.513 --> 00:27:54.430 in in the next panel over there.

NOTE Confidence: 0.84965897

00:27:54.430 --> 00:27:57.118 And this is another example of a patient.

NOTE Confidence: 0.84965897

00:27:57.120 --> 00:27:59.760 This is a CAT scan and at day zero before

NOTE Confidence: 0.84965897

00:27:59.834 --> 00:28:02.159 they started taking that medication,

NOTE Confidence: 0.84965897

00:28:02.160 --> 00:28:04.170 they had a lot of cancer.

NOTE Confidence: 0.84965897

00:28:04.170 --> 00:28:05.109 These are these.

NOTE Confidence: 0.84965897

00:28:05.109 --> 00:28:07.300 These lesions here and you can see

NOTE Confidence: 0.88819695

00:28:07.368 --> 00:28:09.888 that really cleared up four months later,

NOTE Confidence: 0.88819695

00:28:09.890 --> 00:28:12.235 but then overtime you had some regrowth.

NOTE Confidence: 0.88819695

00:28:12.240 --> 00:28:14.250 And this is this concept of,

NOTE Confidence: 0.88819695

00:28:14.250 --> 00:28:15.930 you know, the medication works,

NOTE Confidence: 0.88819695

00:28:15.930 --> 00:28:18.490 but it doesn't work forever and there are

NOTE Confidence: 0.88819695

00:28:18.490 --> 00:28:20.476 some cells that can develop resistance

NOTE Confidence: 0.88819695

00:28:20.476 --> 00:28:23.710 and one of the ways that we've been able

NOTE Confidence: 0.88819695

00:28:23.710 --> 00:28:25.790 to characterize this many researchers.  
NOTE Confidence: 0.88819695

00:28:25.790 --> 00:28:29.046 To then look at these cells that develop  
NOTE Confidence: 0.88819695

00:28:29.046 --> 00:28:32.072 and look for mutations there and and  
NOTE Confidence: 0.88819695

00:28:32.072 --> 00:28:35.030 so through that kind of analysis,  
NOTE Confidence: 0.88819695

00:28:35.030 --> 00:28:38.390 folks were that researchers were able to  
NOTE Confidence: 0.88819695

00:28:38.390 --> 00:28:42.190 find that sometimes it was a a secondary  
NOTE Confidence: 0.88819695

00:28:42.190 --> 00:28:44.470 mutation that then caused difficulty  
NOTE Confidence: 0.88819695

00:28:44.550 --> 00:28:47.350 for the drug to bind to its target.  
NOTE Confidence: 0.88819695

00:28:47.350 --> 00:28:49.990 Or sometimes it was another path.  
NOTE Confidence: 0.88819695

00:28:49.990 --> 00:28:52.190 Another pathway that was activated,  
NOTE Confidence: 0.88819695

00:28:52.190 --> 00:28:55.814 or rarely maybe 5% of the time that.  
NOTE Confidence: 0.88819695

00:28:55.820 --> 00:28:58.735 The cancer had actually changed  
NOTE Confidence: 0.88819695

00:28:58.735 --> 00:29:01.650 and transformed into small cell.  
NOTE Confidence: 0.88819695

00:29:01.650 --> 00:29:04.590 So this idea of you know precision  
NOTE Confidence: 0.88819695

00:29:04.590 --> 00:29:06.257 or personalized medicine is  
NOTE Confidence: 0.88819695

00:29:06.257 --> 00:29:07.917 shown in this graph here.

NOTE Confidence: 0.88819695

00:29:07.920 --> 00:29:08.608 And basically,

NOTE Confidence: 0.88819695

00:29:08.608 --> 00:29:11.360 you know before we used to think that

NOTE Confidence: 0.88819695

00:29:11.429 --> 00:29:13.649 lung cancer was one diagnosis and

NOTE Confidence: 0.88819695

00:29:13.649 --> 00:29:15.707 everybody got the same prescription

NOTE Confidence: 0.88819695

00:29:15.707 --> 00:29:17.719 with two as chemotherapy.

NOTE Confidence: 0.88819695

00:29:17.720 --> 00:29:20.464 And so with the advent of looking

NOTE Confidence: 0.88819695

00:29:20.464 --> 00:29:21.640 at particular mutations,

NOTE Confidence: 0.88819695

00:29:21.640 --> 00:29:24.979 then we could say OK if you were these

NOTE Confidence: 0.88819695

00:29:24.979 --> 00:29:28.309 folks in Green who had an EGFR mutation,

NOTE Confidence: 0.88819695

00:29:28.310 --> 00:29:32.094 you can be treated with in EGFR drug.

NOTE Confidence: 0.88819695

00:29:32.100 --> 00:29:34.130 If you have the reputation,

NOTE Confidence: 0.88819695

00:29:34.130 --> 00:29:37.370 you can be treated with a targeted drug,

NOTE Confidence: 0.88819695

00:29:37.370 --> 00:29:40.002 and if you had a different mutation

NOTE Confidence: 0.88819695

00:29:40.002 --> 00:29:42.714 you could be treated with Sameet

NOTE Confidence: 0.88819695

00:29:42.714 --> 00:29:45.219 inhibitor and everybody else would

NOTE Confidence: 0.88819695

00:29:45.219 --> 00:29:48.028 would get a different treatment.  
NOTE Confidence: 0.88819695

00:29:48.030 --> 00:29:50.900 The treatment being that in that category,  
NOTE Confidence: 0.88819695

00:29:50.900 --> 00:29:53.360 so this slide actually is that.  
NOTE Confidence: 0.89597815

00:29:55.550 --> 00:29:57.914 Summary of all of these agents  
NOTE Confidence: 0.89597815

00:29:57.914 --> 00:30:00.250 that really have been approved.  
NOTE Confidence: 0.89597815

00:30:00.250 --> 00:30:02.875 Developed and approved and available  
NOTE Confidence: 0.89597815

00:30:02.875 --> 00:30:06.555 for patients in the past decade and  
NOTE Confidence: 0.89597815

00:30:06.555 --> 00:30:09.929 this is really tremendous work by many  
NOTE Confidence: 0.89597815

00:30:09.929 --> 00:30:12.740 people and represents really the.  
NOTE Confidence: 0.89597815

00:30:12.740 --> 00:30:14.715 The realization of that that  
NOTE Confidence: 0.89597815

00:30:14.715 --> 00:30:16.295 idea of personalized medicine.  
NOTE Confidence: 0.89597815

00:30:16.300 --> 00:30:19.468 So depending on the mutation that you have,  
NOTE Confidence: 0.89597815

00:30:19.470 --> 00:30:21.450 there are multiple drugs available.  
NOTE Confidence: 0.89597815

00:30:21.450 --> 00:30:25.014 The ones in bold are the ones that are  
NOTE Confidence: 0.89597815

00:30:25.014 --> 00:30:27.636 recommended, but all of them are are  
NOTE Confidence: 0.89597815

00:30:27.636 --> 00:30:30.165 developed even for the wrasse. Mutation,

NOTE Confidence: 0.89597815

00:30:30.165 --> 00:30:33.325 which has been one that has been very,

NOTE Confidence: 0.89597815

00:30:33.330 --> 00:30:36.172 very difficult to target and very often

NOTE Confidence: 0.89597815

00:30:36.172 --> 00:30:37.390 characterized characterized smokers

NOTE Confidence: 0.89597815

00:30:37.448 --> 00:30:39.668 folks who have extensive smoking history.

NOTE Confidence: 0.89597815

00:30:39.670 --> 00:30:40.476 Their mutation.

NOTE Confidence: 0.89597815

00:30:40.476 --> 00:30:42.894 We do have clinical trials now.

NOTE Confidence: 0.89597815

00:30:42.900 --> 00:30:44.680 That are very, very promising.

NOTE Confidence: 0.89597815

00:30:44.680 --> 00:30:48.264 Being able to target those rasme tations.

NOTE Confidence: 0.89597815

00:30:48.270 --> 00:30:50.615 So in conclusion, for the targeted therapy,

NOTE Confidence: 0.89597815

00:30:50.620 --> 00:30:52.630 you need to know the target,

NOTE Confidence: 0.89597815

00:30:52.630 --> 00:30:54.634 the mutation status in order to

NOTE Confidence: 0.89597815

00:30:54.634 --> 00:30:55.636 use the therapy.

NOTE Confidence: 0.89597815

00:30:55.640 --> 00:30:58.320 If you have disease, that and I saw,

NOTE Confidence: 0.89597815

00:30:58.320 --> 00:31:00.330 there was a question on this.

NOTE Confidence: 0.89597815

00:31:00.330 --> 00:31:02.675 If it's late stage or meta static.

NOTE Confidence: 0.89597815

00:31:02.680 --> 00:31:05.018 In other words, spread to different organs.  
NOTE Confidence: 0.89597815

00:31:05.020 --> 00:31:06.700 You can use these agents,  
NOTE Confidence: 0.89597815

00:31:06.700 --> 00:31:09.092 but it's not cure it if it can  
NOTE Confidence: 0.89597815

00:31:09.092 --> 00:31:10.854 prevent the disease from growing  
NOTE Confidence: 0.89597815

00:31:10.854 --> 00:31:13.395 and shrink it for a long time,  
NOTE Confidence: 0.89597815

00:31:13.400 --> 00:31:16.080 but you have to be able to target,  
NOTE Confidence: 0.89597815

00:31:16.080 --> 00:31:18.516 use biopsies and figure out what.  
NOTE Confidence: 0.89597815

00:31:18.520 --> 00:31:20.545 Mechanisms of required resistance are  
NOTE Confidence: 0.89597815

00:31:20.545 --> 00:31:23.469 occurring in order to continue to treat that,  
NOTE Confidence: 0.89597815

00:31:23.470 --> 00:31:25.375 and certainly standard chemo alone  
NOTE Confidence: 0.89597815

00:31:25.375 --> 00:31:27.280 and in combination with immunotherapy,  
NOTE Confidence: 0.89597815

00:31:27.280 --> 00:31:30.088 is still an effective tool for  
NOTE Confidence: 0.89597815

00:31:30.088 --> 00:31:31.960 these patients as well.  
NOTE Confidence: 0.89597815

00:31:31.960 --> 00:31:34.408 So now I'm going to shift.  
NOTE Confidence: 0.89597815

00:31:34.410 --> 00:31:34.837 Well,  
NOTE Confidence: 0.89597815

00:31:34.837 --> 00:31:37.826 actually here you can see the advances

NOTE Confidence: 0.89597815

00:31:37.826 --> 00:31:41.364 that have a curd poops in the past decades.

NOTE Confidence: 0.89597815

00:31:41.370 --> 00:31:43.866 An all of these yellow and

NOTE Confidence: 0.89597815

00:31:43.866 --> 00:31:46.280 orange and light purple or what?

NOTE Confidence: 0.89597815

00:31:46.280 --> 00:31:48.300 I just highlighted those changes

NOTE Confidence: 0.89597815

00:31:48.300 --> 00:31:50.320 that those discoveries in the

NOTE Confidence: 0.89597815

00:31:50.394 --> 00:31:52.830 area of mutations and drugs that

NOTE Confidence: 0.89597815

00:31:52.830 --> 00:31:54.048 target those mutations.

NOTE Confidence: 0.89597815

00:31:54.050 --> 00:31:58.136 The light blue over here and this is Doctor

NOTE Confidence: 0.89597815

00:31:58.136 --> 00:32:01.926 Herbs paper in nature you could see that.

NOTE Confidence: 0.89597815

00:32:01.930 --> 00:32:03.750 Point to advances in immunotherapy.

NOTE Confidence: 0.89597815

00:32:03.750 --> 00:32:08.295 And that's what I'm going to talk about now.

NOTE Confidence: 0.89597815

00:32:08.300 --> 00:32:11.052 So just to go back to how immunotherapy

NOTE Confidence: 0.89597815

00:32:11.052 --> 00:32:13.068 works, think of cancer cells.

NOTE Confidence: 0.89597815

00:32:13.068 --> 00:32:15.570 They develop many mutations that make

NOTE Confidence: 0.89597815

00:32:15.646 --> 00:32:18.495 them appear foreign to the immune system.

NOTE Confidence: 0.89597815



00:32:18.500 --> 00:32:21.388 The T cells that's part of your immune  
NOTE Confidence: 0.89597815

00:32:21.388 --> 00:32:24.185 system can actually recognize, attack,  
NOTE Confidence: 0.89597815

00:32:24.185 --> 00:32:27.755 and kill these foreign cancer cells.  
NOTE Confidence: 0.89597815

00:32:27.760 --> 00:32:28.160 However,  
NOTE Confidence: 0.89597815

00:32:28.160 --> 00:32:30.140 cancer cells are really tricky  
NOTE Confidence: 0.89597815

00:32:30.140 --> 00:32:32.120 and they express PDL one,  
NOTE Confidence: 0.89597815

00:32:32.120 --> 00:32:35.208 which is a protein and that helps them  
NOTE Confidence: 0.89597815

00:32:35.208 --> 00:32:38.063 become evade the immune attack and so  
NOTE Confidence: 0.89597815

00:32:38.063 --> 00:32:40.830 that the immune system can't see them,  
NOTE Confidence: 0.89597815

00:32:40.830 --> 00:32:44.598 and So what happens is that PDL 1.  
NOTE Confidence: 0.89597815

00:32:44.600 --> 00:32:45.182 Basically,  
NOTE Confidence: 0.89597815

00:32:45.182 --> 00:32:48.092 dampens or decreases that the  
NOTE Confidence: 0.89597815

00:32:48.092 --> 00:32:49.838 anti tumor response.  
NOTE Confidence: 0.89597815

00:32:49.840 --> 00:32:52.455 So that's why these therapies  
NOTE Confidence: 0.89597815

00:32:52.455 --> 00:32:55.070 immunotherapy's that target PD one  
NOTE Confidence: 0.89597815

00:32:55.155 --> 00:32:58.425 which is on the T cell and PDL one which

NOTE Confidence: 0.89597815

00:32:58.508 --> 00:33:01.364 is on the tumor cell are effective.

NOTE Confidence: 0.89597815

00:33:01.370 --> 00:33:04.238 So basically these.

NOTE Confidence: 0.89597815

00:33:04.240 --> 00:33:05.652 The drugs or antibodies.

NOTE Confidence: 0.89597815

00:33:05.652 --> 00:33:08.634 Here anti PD one anti PDL one will

NOTE Confidence: 0.89597815

00:33:08.634 --> 00:33:10.214 prevent the interactions between

NOTE Confidence: 0.89597815

00:33:10.214 --> 00:33:13.508 the T cell and the tumor cell to

NOTE Confidence: 0.89597815

00:33:13.508 --> 00:33:15.553 basically allow the immune system

NOTE Confidence: 0.89597815

00:33:15.553 --> 00:33:18.406 immune system to wake up and recognize

NOTE Confidence: 0.89597815

00:33:18.406 --> 00:33:20.838 those cancer cells is being formed

NOTE Confidence: 0.89597815

00:33:20.838 --> 00:33:23.400 and trying to get rid of them.

NOTE Confidence: 0.863077

00:33:23.400 --> 00:33:25.782 And the advantage of immunotherapy over

NOTE Confidence: 0.863077

00:33:25.782 --> 00:33:28.578 chemo is that it's very specific for

NOTE Confidence: 0.863077

00:33:28.578 --> 00:33:31.217 that cancer cell as opposed to chemo.

NOTE Confidence: 0.863077

00:33:31.220 --> 00:33:33.758 That sort of attacks all cells

NOTE Confidence: 0.863077

00:33:33.758 --> 00:33:35.450 that are dividing quickly.

NOTE Confidence: 0.863077

00:33:35.450 --> 00:33:37.280 There is a memory component,  
NOTE Confidence: 0.863077

00:33:37.280 --> 00:33:40.688 so a durable response.  
NOTE Confidence: 0.863077

00:33:40.690 --> 00:33:42.820 Because the immune system can remember,  
NOTE Confidence: 0.863077

00:33:42.820 --> 00:33:44.296 and then there's adaptability,  
NOTE Confidence: 0.863077

00:33:44.296 --> 00:33:46.915 so I'm going to just talk about  
NOTE Confidence: 0.863077

00:33:46.915 --> 00:33:49.555 a patient of mine just to sort of  
NOTE Confidence: 0.863077

00:33:49.555 --> 00:33:51.337 illustrate some of these points.  
NOTE Confidence: 0.863077

00:33:51.340 --> 00:33:53.820 So this is a patient that I saw  
NOTE Confidence: 0.863077

00:33:53.820 --> 00:33:56.224 for the first time in 2014 and  
NOTE Confidence: 0.863077

00:33:56.224 --> 00:33:58.413 had lots of pain and shortness  
NOTE Confidence: 0.863077

00:33:58.413 --> 00:34:01.192 of breath and had neck masses as  
NOTE Confidence: 0.863077

00:34:01.192 --> 00:34:05.340 well as a PET scan that showed.  
NOTE Confidence: 0.863077

00:34:05.340 --> 00:34:07.764 Disease in the left,  
NOTE Confidence: 0.863077

00:34:07.764 --> 00:34:10.794 lower lung and lymph nodes.  
NOTE Confidence: 0.863077

00:34:10.800 --> 00:34:13.736 I suggest the left lower lung and that's  
NOTE Confidence: 0.863077

00:34:13.736 --> 00:34:16.669 lymph nodes on the PET scan and the brain.

NOTE Confidence: 0.863077  
00:34:16.670 --> 00:34:18.482 MRI had three tiny lesions and  
NOTE Confidence: 0.863077  
00:34:18.482 --> 00:34:20.551 so the biopsy of the cervical  
NOTE Confidence: 0.863077  
00:34:20.551 --> 00:34:22.526 lymph node showed lung cancer.  
NOTE Confidence: 0.863077  
00:34:22.530 --> 00:34:23.565 No mutations detected,  
NOTE Confidence: 0.863077  
00:34:23.565 --> 00:34:25.980 so we couldn't use that targeted therapy.  
NOTE Confidence: 0.863077  
00:34:25.980 --> 00:34:28.833 And that patient went on a clinical trial for  
NOTE Confidence: 0.863077  
00:34:28.833 --> 00:34:31.496 drug called Pember Lizum app or KEYTRUDA.  
NOTE Confidence: 0.863077  
00:34:31.500 --> 00:34:34.068 You might have seen that the  
NOTE Confidence: 0.863077  
00:34:34.068 --> 00:34:35.780 commercials for that and.  
NOTE Confidence: 0.863077  
00:34:35.780 --> 00:34:38.560 And started.  
NOTE Confidence: 0.863077  
00:34:38.560 --> 00:34:41.254 2014 and in February had scans  
NOTE Confidence: 0.863077  
00:34:41.254 --> 00:34:43.641 that showed a really terrific  
NOTE Confidence: 0.863077  
00:34:43.641 --> 00:34:46.659 response in the brain and body.  
NOTE Confidence: 0.863077  
00:34:46.660 --> 00:34:49.684 And this is just to show that in 2016.  
NOTE Confidence: 0.863077  
00:34:49.690 --> 00:34:52.723 So this is the advantage of a clinical trial,  
NOTE Confidence: 0.863077

00:34:52.730 --> 00:34:54.893 as you can really have some of  
NOTE Confidence: 0.863077

00:34:54.893 --> 00:34:56.612 those cutting edge therapies before  
NOTE Confidence: 0.863077

00:34:56.612 --> 00:34:58.790 they get approved by the FDA.  
NOTE Confidence: 0.863077

00:34:58.790 --> 00:35:01.606 And in this case it was really two  
NOTE Confidence: 0.863077

00:35:01.606 --> 00:35:03.653 years later after patients started  
NOTE Confidence: 0.863077

00:35:03.653 --> 00:35:06.600 that the FDA was able to approve  
NOTE Confidence: 0.863077

00:35:06.679 --> 00:35:09.127 the this drug KEYTRUDA for four.  
NOTE Confidence: 0.863077

00:35:09.130 --> 00:35:11.458 Short non small cell.  
NOTE Confidence: 0.863077

00:35:11.460 --> 00:35:13.650 So he did actually quite well  
NOTE Confidence: 0.863077

00:35:13.650 --> 00:35:15.110 until March of 2015,  
NOTE Confidence: 0.863077

00:35:15.110 --> 00:35:16.940 then had very bad diarrhea,  
NOTE Confidence: 0.863077

00:35:16.940 --> 00:35:19.124 was treated for steroids and this  
NOTE Confidence: 0.863077

00:35:19.124 --> 00:35:20.216 was a toxicity,  
NOTE Confidence: 0.863077

00:35:20.220 --> 00:35:22.410 so this was a side effect.  
NOTE Confidence: 0.863077

00:35:22.410 --> 00:35:24.720 He was on steroids for awhile and  
NOTE Confidence: 0.863077

00:35:24.720 --> 00:35:26.855 tapered off and then had symptoms

NOTE Confidence: 0.863077

00:35:26.855 --> 00:35:28.640 and then was finally treated

NOTE Confidence: 0.863077

00:35:28.640 --> 00:35:30.440 with a different drug.

NOTE Confidence: 0.863077

00:35:30.440 --> 00:35:31.900 That really resolved the

NOTE Confidence: 0.863077

00:35:31.900 --> 00:35:33.360 diarrhea and most exciting.

NOTE Confidence: 0.863077

00:35:33.360 --> 00:35:35.550 I just saw him last month,

NOTE Confidence: 0.863077

00:35:35.550 --> 00:35:37.716 six years after his original diagnosis

NOTE Confidence: 0.863077

00:35:37.716 --> 00:35:40.318 and he has no evidence of active

NOTE Confidence: 0.863077

00:35:40.318 --> 00:35:42.845 disease in his brain or his body.

NOTE Confidence: 0.863077

00:35:42.850 --> 00:35:44.330 So this is really.

NOTE Confidence: 0.863077

00:35:44.330 --> 00:35:47.198 I think a happy ending that highlights

NOTE Confidence: 0.863077

00:35:47.198 --> 00:35:50.576 the importance of clinical trials and

NOTE Confidence: 0.863077

00:35:50.576 --> 00:35:53.480 the excitement around immunotherapy.

NOTE Confidence: 0.863077

00:35:53.480 --> 00:35:56.378 This is an article that that

NOTE Confidence: 0.863077

00:35:56.378 --> 00:35:59.020 Doctor Herbst and I wrote.

NOTE Confidence: 0.863077

00:35:59.020 --> 00:36:01.235 To basically show the different

NOTE Confidence: 0.863077

00:36:01.235 --> 00:36:03.007 options now available for  
NOTE Confidence: 0.863077

00:36:03.007 --> 00:36:05.100 patients with squamous cell and  
NOTE Confidence: 0.863077

00:36:05.100 --> 00:36:07.075 non squamous cell lung cancer.  
NOTE Confidence: 0.863077

00:36:07.080 --> 00:36:09.523 And in addition to those this we  
NOTE Confidence: 0.863077

00:36:09.523 --> 00:36:12.136 wrote in about a year ago in the  
NOTE Confidence: 0.863077

00:36:12.136 --> 00:36:14.920 past year we've had an additional 3  
NOTE Confidence: 0.863077

00:36:14.920 --> 00:36:17.360 approvals for combination immunotherapy  
NOTE Confidence: 0.863077

00:36:17.360 --> 00:36:21.424 immunotherapy with two cycles of chemo.  
NOTE Confidence: 0.863077

00:36:21.424 --> 00:36:23.048 And then.  
NOTE Confidence: 0.863077

00:36:23.050 --> 00:36:26.144 Another age Amy no therapy for for  
NOTE Confidence: 0.863077

00:36:26.144 --> 00:36:29.260 high PDL one expressing tumors.  
NOTE Confidence: 0.863077

00:36:29.260 --> 00:36:32.676 So really a rapidly and very exciting field.  
NOTE Confidence: 0.8804409

00:36:34.770 --> 00:36:37.381 This slide is just to show some  
NOTE Confidence: 0.8804409

00:36:37.381 --> 00:36:39.898 of those trials which were phase  
NOTE Confidence: 0.8804409

00:36:39.898 --> 00:36:42.520 three trials and what I highlighted  
NOTE Confidence: 0.8804409

00:36:42.520 --> 00:36:44.869 is the impact on survival.

NOTE Confidence: 0.8804409

00:36:44.870 --> 00:36:48.659 So not that you have to know these numbers,

NOTE Confidence: 0.8804409

00:36:48.660 --> 00:36:51.320 but this for example this trial which

NOTE Confidence: 0.8804409

00:36:51.320 --> 00:36:54.560 shows the the the results of combination,

NOTE Confidence: 0.8804409

00:36:54.560 --> 00:36:55.934 chemo and immunotherapy,

NOTE Confidence: 0.8804409

00:36:55.934 --> 00:36:59.140 which has become our standard of care

NOTE Confidence: 0.8804409

00:36:59.217 --> 00:37:02.556 shows a 50% reduction in the risk of death.

NOTE Confidence: 0.8804409

00:37:02.560 --> 00:37:04.450 So really significant.

NOTE Confidence: 0.8804409

00:37:04.450 --> 00:37:06.970 Advances for lung cancer.

NOTE Confidence: 0.8804409

00:37:06.970 --> 00:37:09.682 One of the questions we have is is

NOTE Confidence: 0.8804409

00:37:09.682 --> 00:37:11.610 chemotherapy even necessary anymore?

NOTE Confidence: 0.8804409

00:37:11.610 --> 00:37:14.277 And I think that this is important

NOTE Confidence: 0.8804409

00:37:14.277 --> 00:37:16.260 question that a big trial.

NOTE Confidence: 0.8804409

00:37:16.260 --> 00:37:19.444 This is a national trial that I chair

NOTE Confidence: 0.8804409

00:37:19.444 --> 00:37:22.835 with has poor guy in and we have this.

NOTE Confidence: 0.8804409

00:37:22.840 --> 00:37:25.114 This trial will have 880 patients

NOTE Confidence: 0.8804409



00:37:25.114 --> 00:37:27.757 and we have about we're a little  
NOTE Confidence: 0.8804409

00:37:27.757 --> 00:37:30.200 over 1/4 of the way through crew  
NOTE Confidence: 0.8804409

00:37:30.282 --> 00:37:33.194 patients to this trial and what we're  
NOTE Confidence: 0.8804409

00:37:33.194 --> 00:37:36.202 testing is whether or not you could  
NOTE Confidence: 0.8804409

00:37:36.202 --> 00:37:37.954 start with immunotherapy alone.  
NOTE Confidence: 0.8804409

00:37:37.960 --> 00:37:40.640 And then go to chemo if you happen  
NOTE Confidence: 0.8804409

00:37:40.640 --> 00:37:42.839 to progress or if you can add  
NOTE Confidence: 0.8804409

00:37:42.839 --> 00:37:44.766 chemo if you happen to progress  
NOTE Confidence: 0.8804409

00:37:44.766 --> 00:37:47.136 and then this is our control.  
NOTE Confidence: 0.8804409

00:37:47.140 --> 00:37:48.675 So very exciting clinical trial  
NOTE Confidence: 0.8804409

00:37:48.675 --> 00:37:50.880 and this is open in Greenwich.  
NOTE Confidence: 0.8804409

00:37:50.880 --> 00:37:52.089 Doctor Lee is.  
NOTE Confidence: 0.8804409

00:37:52.089 --> 00:37:54.507 Other medical oncologist there can can  
NOTE Confidence: 0.8804409

00:37:54.507 --> 00:37:57.647 can put patients on this trial as well  
NOTE Confidence: 0.8804409

00:37:57.647 --> 00:37:59.999 can participate you can participate.  
NOTE Confidence: 0.8654532

00:38:02.360 --> 00:38:05.416 This is just to show that the spectrum

NOTE Confidence: 0.8654532

00:38:05.416 --> 00:38:07.438 of toxicities is that you can,

NOTE Confidence: 0.8654532

00:38:07.440 --> 00:38:09.540 when you're ramping up the immune

NOTE Confidence: 0.8654532

00:38:09.540 --> 00:38:11.440 system to recognize the cancer,

NOTE Confidence: 0.8654532

00:38:11.440 --> 00:38:14.428 you can sometimes recognize.

NOTE Confidence: 0.8654532

00:38:14.430 --> 00:38:16.340 Your normal tissue as well,

NOTE Confidence: 0.8654532

00:38:16.340 --> 00:38:18.769 and the way that this is treated

NOTE Confidence: 0.8654532

00:38:18.769 --> 00:38:20.540 is usually with steroids,

NOTE Confidence: 0.8654532

00:38:20.540 --> 00:38:23.228 and I'm not going to go through this

NOTE Confidence: 0.8654532

00:38:23.228 --> 00:38:26.036 fly but but you can be quite effective

NOTE Confidence: 0.8654532

00:38:26.036 --> 00:38:28.842 in that way so that the conclusions

NOTE Confidence: 0.8654532

00:38:28.842 --> 00:38:31.542 here for immunotherapy is that we

NOTE Confidence: 0.8654532

00:38:31.542 --> 00:38:34.576 have these new PD one and PDL one

NOTE Confidence: 0.8654532

00:38:34.576 --> 00:38:36.590 inhibitors that that are active,

NOTE Confidence: 0.8654532

00:38:36.590 --> 00:38:38.798 very excited about the durability of

NOTE Confidence: 0.8654532

00:38:38.798 --> 00:38:41.169 response and the toxicity is manageable.

NOTE Confidence: 0.8654532

00:38:41.170 --> 00:38:43.456 It happens, but it is manageable.  
NOTE Confidence: 0.8654532

00:38:43.460 --> 00:38:45.084 Requires very early intervention.  
NOTE Confidence: 0.8654532

00:38:45.084 --> 00:38:47.520 And we're trying to study this  
NOTE Confidence: 0.8654532

00:38:47.590 --> 00:38:49.495 area biomarkers to understand who  
NOTE Confidence: 0.8654532

00:38:49.495 --> 00:38:51.777 can respond and that there are  
NOTE Confidence: 0.8654532

00:38:51.777 --> 00:38:53.643 lots of drugs that are approved  
NOTE Confidence: 0.8654532

00:38:53.643 --> 00:38:57.049 for non small cell lung cancer.  
NOTE Confidence: 0.8654532

00:38:57.050 --> 00:38:57.804 And finally,  
NOTE Confidence: 0.8654532

00:38:57.804 --> 00:39:00.820 I just a few slides on small cell,  
NOTE Confidence: 0.8654532

00:39:00.820 --> 00:39:03.459 which is also a passion of mine.  
NOTE Confidence: 0.8654532

00:39:03.460 --> 00:39:04.549 This is a.  
NOTE Confidence: 0.8654532

00:39:04.549 --> 00:39:06.727 This is a little bit different  
NOTE Confidence: 0.8654532

00:39:06.727 --> 00:39:08.360 than non small cell.  
NOTE Confidence: 0.8654532

00:39:08.360 --> 00:39:10.285 These cancers unfortunately grow very  
NOTE Confidence: 0.8654532

00:39:10.285 --> 00:39:12.880 quickly and they can metastasize and spread,  
NOTE Confidence: 0.8654532

00:39:12.880 --> 00:39:14.765 but they're also exquisitely sensitive

NOTE Confidence: 0.8654532

00:39:14.765 --> 00:39:16.650 to both chemotherapy and radiation.

NOTE Confidence: 0.8665615

00:39:18.850 --> 00:39:22.410 This is the past decade decade of advances,

NOTE Confidence: 0.8665615

00:39:22.410 --> 00:39:24.635 and it's been pretty sparse

NOTE Confidence: 0.8665615

00:39:24.635 --> 00:39:26.860 over the past 30 years.

NOTE Confidence: 0.8665615

00:39:26.860 --> 00:39:29.100 However, again, that landscape is

NOTE Confidence: 0.8665615

00:39:29.100 --> 00:39:31.844 really changing now and there have

NOTE Confidence: 0.8665615

00:39:31.844 --> 00:39:33.979 been some very recent advances,

NOTE Confidence: 0.8665615

00:39:33.980 --> 00:39:36.210 both in immunotherapy and understanding.

NOTE Confidence: 0.8665615

00:39:36.210 --> 00:39:37.545 Small cell biology.

NOTE Confidence: 0.8665615

00:39:37.545 --> 00:39:41.456 This is just to show that again, small cell.

NOTE Confidence: 0.8665615

00:39:41.456 --> 00:39:44.242 We're starting to tease out what are

NOTE Confidence: 0.8665615

00:39:44.242 --> 00:39:46.742 the molecular drivers and understanding

NOTE Confidence: 0.8665615

00:39:46.742 --> 00:39:49.772 that it's not just one flavor.

NOTE Confidence: 0.8665615

00:39:49.780 --> 00:39:52.138 That there are different types that

NOTE Confidence: 0.8665615

00:39:52.138 --> 00:39:54.580 we can perhaps approach differently,

NOTE Confidence: 0.8665615

00:39:54.580 --> 00:39:56.760 and the key points here.  
NOTE Confidence: 0.8665615

00:39:56.760 --> 00:40:00.320 The key updates 2 new FDA approvals for.  
NOTE Confidence: 0.8665615

00:40:00.320 --> 00:40:02.756 Immunotherapy plus chemo in the frontline.  
NOTE Confidence: 0.8665615

00:40:02.760 --> 00:40:05.190 That means when you're just diagnosed,  
NOTE Confidence: 0.8665615

00:40:05.190 --> 00:40:07.640 one knew second line FDA approval for  
NOTE Confidence: 0.8665615

00:40:07.640 --> 00:40:10.088 a drug called Bourbon Ected and which  
NOTE Confidence: 0.8665615

00:40:10.088 --> 00:40:12.663 is a chemo and then just highlighting  
NOTE Confidence: 0.8665615

00:40:12.663 --> 00:40:15.278 the need for understanding biomarkers  
NOTE Confidence: 0.8665615

00:40:15.278 --> 00:40:18.180 and another other options for patients  
NOTE Confidence: 0.8665615

00:40:18.180 --> 00:40:20.205 who might progress and immunotherapy.  
NOTE Confidence: 0.8665615

00:40:20.210 --> 00:40:23.450 And I think my last slide is again one  
NOTE Confidence: 0.8665615

00:40:23.450 --> 00:40:27.036 of these is a clinical trial that fellow  
NOTE Confidence: 0.8665615

00:40:27.036 --> 00:40:30.489 had helped me to write and rear have.  
NOTE Confidence: 0.8665615

00:40:30.490 --> 00:40:31.232 Open now,  
NOTE Confidence: 0.8665615

00:40:31.232 --> 00:40:33.458 this is a clinical trial open.  
NOTE Confidence: 0.8665615

00:40:33.460 --> 00:40:35.295 Also available in Greenwich where

NOTE Confidence: 0.8665615

00:40:35.295 --> 00:40:37.130 we're doing a biopsy pretreatment

NOTE Confidence: 0.8665615

00:40:37.190 --> 00:40:39.451 and then at week four for patients

NOTE Confidence: 0.8665615

00:40:39.451 --> 00:40:41.250 treated with combination immunotherapy.

NOTE Confidence: 0.8665615

00:40:41.250 --> 00:40:43.105 And we're really trying to

NOTE Confidence: 0.8665615

00:40:43.105 --> 00:40:44.589 understand with these biopsies,

NOTE Confidence: 0.8665615

00:40:44.590 --> 00:40:47.659 how can we see what changes in the tumor

NOTE Confidence: 0.8665615

00:40:47.659 --> 00:40:50.516 micro environment are going to tell us?

NOTE Confidence: 0.8665615

00:40:50.520 --> 00:40:52.746 Who's going to respond or not,

NOTE Confidence: 0.8665615

00:40:52.750 --> 00:40:56.915 and that way we can really understand?

NOTE Confidence: 0.8665615

00:40:56.920 --> 00:41:00.304 How did disease works and how to attack it?

NOTE Confidence: 0.8665615

00:41:00.310 --> 00:41:03.054 And this is just a moment of peace

NOTE Confidence: 0.8665615

00:41:03.054 --> 00:41:05.710 in this time of kovid and again

NOTE Confidence: 0.8665615

00:41:05.710 --> 00:41:08.475 hoping that all of you were are

NOTE Confidence: 0.8665615

00:41:08.475 --> 00:41:10.869 safe and wishing you the best.

NOTE Confidence: 0.8665615

00:41:10.870 --> 00:41:12.378 So that's it right?

NOTE Confidence: 0.8665615

00:41:12.380 --> 00:41:12.750 Thanks  
NOTE Confidence: 0.87707853  
00:41:12.750 --> 00:41:14.538 and that was wonderful.  
NOTE Confidence: 0.87707853  
00:41:14.538 --> 00:41:17.760 We have a lot of questions here.  
NOTE Confidence: 0.87707853  
00:41:17.760 --> 00:41:19.600 So someone's asking about EGFR,  
NOTE Confidence: 0.87707853  
00:41:19.600 --> 00:41:21.430 and I mean, in therapy.  
NOTE Confidence: 0.87707853  
00:41:21.430 --> 00:41:23.626 Why not use them both together?  
NOTE Confidence: 0.87707853  
00:41:23.630 --> 00:41:26.199 The EGFR drugs in the immunotherapy drugs?  
NOTE Confidence: 0.87707853  
00:41:26.200 --> 00:41:27.668 Wow, that's a great  
NOTE Confidence: 0.8401847  
00:41:27.670 --> 00:41:29.980 question, and there are clinical trials  
NOTE Confidence: 0.8401847  
00:41:29.980 --> 00:41:32.440 that are looking at both of them.  
NOTE Confidence: 0.8401847  
00:41:32.440 --> 00:41:34.280 You have to be tricky,  
NOTE Confidence: 0.8401847  
00:41:34.280 --> 00:41:35.378 though, because again,  
NOTE Confidence: 0.8401847  
00:41:35.378 --> 00:41:37.208 when you're combining two drugs,  
NOTE Confidence: 0.8401847  
00:41:37.210 --> 00:41:39.532 you have to be careful that  
NOTE Confidence: 0.8401847  
00:41:39.532 --> 00:41:41.080 there aren't specific toxicities  
NOTE Confidence: 0.8401847  
00:41:41.145 --> 00:41:43.077 that go hand in hand together.

NOTE Confidence: 0.8401847

00:41:43.080 --> 00:41:46.016 So that is a that is right now.

NOTE Confidence: 0.8401847

00:41:46.020 --> 00:41:48.618 It's not our standard therapy because

NOTE Confidence: 0.8401847

00:41:48.618 --> 00:41:50.940 those trials haven't resulted out yet.

NOTE Confidence: 0.8401847

00:41:50.940 --> 00:41:53.756 But we're learning more and more right now.

NOTE Confidence: 0.8401847

00:41:53.760 --> 00:41:55.520 We are using them as.

NOTE Confidence: 0.86296904

00:41:57.580 --> 00:41:59.770 It's working there for the marathon,

NOTE Confidence: 0.86296904

00:41:59.770 --> 00:42:02.402 so we're trying to develop as many tools

NOTE Confidence: 0.86296904

00:42:02.402 --> 00:42:05.906 in our kits to use and so we use the target

NOTE Confidence: 0.86296904

00:42:05.906 --> 00:42:08.527 therapy separate from the immunotherapy.

NOTE Confidence: 0.86296904

00:42:08.530 --> 00:42:11.162 But we're testing them together to see if

NOTE Confidence: 0.86296904

00:42:11.162 --> 00:42:14.369 we can get better and more effective tools.

NOTE Confidence: 0.81046295

00:42:15.170 --> 00:42:17.480 Great thanks and so was asking about

NOTE Confidence: 0.81046295

00:42:17.480 --> 00:42:20.142 whether you use liquid biopsy AKA blood

NOTE Confidence: 0.81046295

00:42:20.142 --> 00:42:22.542 in your practice for molecular testing.

NOTE Confidence: 0.8627714

00:42:23.110 --> 00:42:24.785 Absolutely, I think that's one

NOTE Confidence: 0.8627714



00:42:24.785 --> 00:42:26.460 of the most exciting things.

NOTE Confidence: 0.8627714

00:42:26.460 --> 00:42:28.721 And Roy there is a New York

NOTE Confidence: 0.8627714

00:42:28.721 --> 00:42:30.150 lung cancer conference reset.

NOTE Confidence: 0.8627714

00:42:30.150 --> 00:42:31.845 Recently, when several cases were

NOTE Confidence: 0.8627714

00:42:31.845 --> 00:42:33.830 shown an basically now you can.

NOTE Confidence: 0.8627714

00:42:33.830 --> 00:42:36.166 You can use the liquid biopsy of front

NOTE Confidence: 0.8627714

00:42:36.166 --> 00:42:39.130 and then you can use it along the line

NOTE Confidence: 0.8627714

00:42:39.130 --> 00:42:40.870 when you're developping resistance,

NOTE Confidence: 0.8627714

00:42:40.870 --> 00:42:43.813 and I think this is a really great tool

NOTE Confidence: 0.8627714

00:42:43.813 --> 00:42:46.900 that we're going to see more and more of.

NOTE Confidence: 0.8085088

00:42:48.330 --> 00:42:50.018 OK, uh, specific question.

NOTE Confidence: 0.8085088

00:42:50.018 --> 00:42:52.128 Someone says that the quality

NOTE Confidence: 0.8085088

00:42:52.128 --> 00:42:53.920 of drugs is improved.

NOTE Confidence: 0.8085088

00:42:53.920 --> 00:42:56.594 I was on Afatinib for four years

NOTE Confidence: 0.8085088

00:42:56.594 --> 00:42:58.805 and documented 14 different side

NOTE Confidence: 0.8085088

00:42:58.805 --> 00:43:01.745 effects with its use and knowledge

NOTE Confidence: 0.8085088

00:43:01.745 --> 00:43:04.331 are aggressive and have one mild

NOTE Confidence: 0.8085088

00:43:04.331 --> 00:43:06.390 side effect, so an thought.

NOTE Confidence: 0.802765

00:43:07.490 --> 00:43:10.058 You know Afatinib is a really hard drug

NOTE Confidence: 0.802765

00:43:10.058 --> 00:43:14.066 to take, so you know kudos to you.

NOTE Confidence: 0.802765

00:43:14.070 --> 00:43:15.108 Oh, Summerton app,

NOTE Confidence: 0.802765

00:43:15.108 --> 00:43:17.184 which is a third generation drug.

NOTE Confidence: 0.802765

00:43:17.190 --> 00:43:19.966 Much, much, much more effective in the brain.

NOTE Confidence: 0.802765

00:43:19.970 --> 00:43:21.986 It has really good CNS penetration

NOTE Confidence: 0.802765

00:43:21.986 --> 00:43:24.130 and it's much easier to tolerate.

NOTE Confidence: 0.802765

00:43:24.130 --> 00:43:25.518 So good for you,

NOTE Confidence: 0.802765

00:43:25.518 --> 00:43:26.906 that's wonderful news either

NOTE Confidence: 0.82902116

00:43:26.910 --> 00:43:28.294 some specific situations where

NOTE Confidence: 0.82902116

00:43:28.294 --> 00:43:30.024 we still might use afatinib.

NOTE Confidence: 0.8827722

00:43:31.100 --> 00:43:33.424 There are and, so this is what,

NOTE Confidence: 0.8827722

00:43:33.430 --> 00:43:36.427 how again, we can use the idea of tools.

NOTE Confidence: 0.8827722

00:43:36.430 --> 00:43:38.428 We can sometimes recycle these tools,  
NOTE Confidence: 0.8827722

00:43:38.430 --> 00:43:41.750 and if you think about.  
NOTE Confidence: 0.8827722

00:43:41.750 --> 00:43:44.154 If you that idea of acquiring resistance,  
NOTE Confidence: 0.8827722

00:43:44.154 --> 00:43:46.182 you may develop and you by  
NOTE Confidence: 0.8827722

00:43:46.182 --> 00:43:48.009 acted different point in time,  
NOTE Confidence: 0.8827722

00:43:48.010 --> 00:43:50.374 you might have been really effective  
NOTE Confidence: 0.8827722

00:43:50.374 --> 00:43:51.950 in controlling one particular  
NOTE Confidence: 0.8827722

00:43:52.016 --> 00:43:53.927 form of or clone of the disease,  
NOTE Confidence: 0.8827722

00:43:53.930 --> 00:43:55.670 but it may have changed.  
NOTE Confidence: 0.8827722

00:43:55.670 --> 00:43:57.920 And actually you might be able  
NOTE Confidence: 0.8827722

00:43:57.920 --> 00:44:00.539 to go back to a fat in it,  
NOTE Confidence: 0.8827722

00:44:00.540 --> 00:44:02.780 which is what I did with one of  
NOTE Confidence: 0.8827722

00:44:02.780 --> 00:44:04.720 my patients relatively recently.  
NOTE Confidence: 0.87037295

00:44:06.790 --> 00:44:08.855 Great and the last question I have  
NOTE Confidence: 0.87037295

00:44:08.855 --> 00:44:10.920 here is about anti angiogenesis.  
NOTE Confidence: 0.87037295

00:44:10.920 --> 00:44:12.640 The importance of those drugs.

NOTE Confidence: 0.87037295

00:44:12.640 --> 00:44:16.380 Then they still used a great deal. Anti

NOTE Confidence: 0.80014175

00:44:16.380 --> 00:44:18.930 angiogenesis is our that whole class

NOTE Confidence: 0.80014175

00:44:18.930 --> 00:44:21.999 of drugs is really important and I

NOTE Confidence: 0.80014175

00:44:21.999 --> 00:44:24.573 describe it usually to my patient.

NOTE Confidence: 0.80014175

00:44:24.580 --> 00:44:26.360 A tumor, or initially grows.

NOTE Confidence: 0.80014175

00:44:26.360 --> 00:44:29.208 It uses the blood vessels that are there,

NOTE Confidence: 0.80014175

00:44:29.210 --> 00:44:31.700 but as it really is, you know,

NOTE Confidence: 0.80014175

00:44:31.700 --> 00:44:34.185 developing it builds its own blood vessels,

NOTE Confidence: 0.80014175

00:44:34.190 --> 00:44:36.647 and so these drugs help to choke

NOTE Confidence: 0.80014175

00:44:36.647 --> 00:44:38.819 off the growth of knew tumor,

NOTE Confidence: 0.80014175

00:44:38.820 --> 00:44:39.861 associated blood vessels,

NOTE Confidence: 0.80014175

00:44:39.861 --> 00:44:42.290 and we're finding that you can combine

NOTE Confidence: 0.80014175

00:44:42.349 --> 00:44:44.515 those with chemo and with immunotherapy.

NOTE Confidence: 0.80014175

00:44:44.520 --> 00:44:45.772 Together in one case.

NOTE Confidence: 0.80014175

00:44:45.772 --> 00:44:47.650 And then there are also some

NOTE Confidence: 0.80014175

00:44:47.721 --> 00:44:49.666 clinical trials testing those drugs  
NOTE Confidence: 0.80014175

00:44:49.666 --> 00:44:51.990 with the targeted drugs as well.  
NOTE Confidence: 0.89863155

00:44:53.440 --> 00:44:56.208 Excellent, any more questions.  
NOTE Confidence: 0.89863155

00:44:56.208 --> 00:44:59.728 I don't see any. Thanks Ann,  
NOTE Confidence: 0.89863155

00:44:59.728 --> 00:45:01.598 really appreciate that talk and  
NOTE Confidence: 0.89863155

00:45:01.598 --> 00:45:03.934 all you do for the clinical  
NOTE Confidence: 0.89863155

00:45:03.934 --> 00:45:05.839 trials and for our network.  
NOTE Confidence: 0.81136274

00:45:07.900 --> 00:45:10.394 So now I'm really excited also about the  
NOTE Confidence: 0.81136274

00:45:10.394 --> 00:45:12.320 next talk because screening for lung  
NOTE Confidence: 0.81136274

00:45:12.320 --> 00:45:14.790 cancer is so important and I'll tell you,  
NOTE Confidence: 0.81136274

00:45:14.790 --> 00:45:16.074 I think it's underutilized.  
NOTE Confidence: 0.81136274

00:45:16.074 --> 00:45:19.102 So we have to figure out how to get  
NOTE Confidence: 0.81136274

00:45:19.102 --> 00:45:21.178 more people screen because finding these  
NOTE Confidence: 0.81136274

00:45:21.178 --> 00:45:23.398 cats as early as you're about to see  
NOTE Confidence: 0.81136274

00:45:23.398 --> 00:45:25.740 can make a big difference. So for that,  
NOTE Confidence: 0.81136274

00:45:25.740 --> 00:45:27.924 we're very fortunate to have mini maze.

NOTE Confidence: 0.81136274

00:45:27.930 --> 00:45:29.808 He's amazing assistant professor of surgery,

NOTE Confidence: 0.81136274

00:45:29.810 --> 00:45:31.718 thoracic and he cares for patient

NOTE Confidence: 0.81136274

00:45:31.718 --> 00:45:34.006 and smiles main campus and at the

NOTE Confidence: 0.81136274

00:45:34.006 --> 00:45:35.914 Smile Cancer Hospital Care Center in

NOTE Confidence: 0.81136274

00:45:35.914 --> 00:45:37.782 Trumbull received his medical degree

NOTE Confidence: 0.81136274

00:45:37.782 --> 00:45:39.642 from the University of Vermont.

NOTE Confidence: 0.81136274

00:45:39.650 --> 00:45:41.774 And completed his fellowship and thoracic

NOTE Confidence: 0.81136274

00:45:41.774 --> 00:45:44.189 surgery at Brigham and Women's Hospital.

NOTE Confidence: 0.81136274

00:45:44.190 --> 00:45:46.829 Another one of my alma mater's doctor.

NOTE Confidence: 0.81136274

00:45:46.830 --> 00:45:49.086 Mays used the latest technologies for

NOTE Confidence: 0.81136274

00:45:49.086 --> 00:45:51.369 the surgical treatment of lung cancer,

NOTE Confidence: 0.81136274

00:45:51.370 --> 00:45:52.504 chest wall deformities,

NOTE Confidence: 0.81136274

00:45:52.504 --> 00:45:55.150 and other problems that affect the chest,

NOTE Confidence: 0.81136274

00:45:55.150 --> 00:45:57.750 including the diaphragm and esophagus.

NOTE Confidence: 0.81136274

00:45:57.750 --> 00:45:59.598 He is skilled in performing minimally

NOTE Confidence: 0.81136274

00:45:59.598 --> 00:46:01.455 invasive thoracic surgery and as an  
NOTE Confidence: 0.81136274

00:46:01.455 --> 00:46:02.900 interest in quality outcomes research.  
NOTE Confidence: 0.81136274

00:46:02.900 --> 00:46:05.159 So this is like I love to see tons  
NOTE Confidence: 0.81136274

00:46:05.159 --> 00:46:06.840 of questions from this.  
NOTE Confidence: 0.81136274

00:46:06.840 --> 00:46:08.360 'cause who do we screen?  
NOTE Confidence: 0.81136274

00:46:08.360 --> 00:46:09.568 When do we screen?  
NOTE Confidence: 0.81136274

00:46:09.568 --> 00:46:10.776 Why do we screen?  
NOTE Confidence: 0.81136274

00:46:10.780 --> 00:46:12.290 So if any of the  
NOTE Confidence: 0.83920586

00:46:12.290 --> 00:46:13.510 floor is yours, great  
NOTE Confidence: 0.83920586

00:46:13.510 --> 00:46:16.940 thank you. Can everyone see my slides?  
NOTE Confidence: 0.83920586

00:46:16.940 --> 00:46:20.140 Yes. Great, I think I just for  
NOTE Confidence: 0.83920586

00:46:20.140 --> 00:46:21.880 the the people that are on.  
NOTE Confidence: 0.83920586

00:46:21.880 --> 00:46:24.790 We started with about 55 and now we have 57.  
NOTE Confidence: 0.83920586

00:46:24.790 --> 00:46:26.736 So for those of you that have  
NOTE Confidence: 0.83920586

00:46:26.736 --> 00:46:28.488 are here tonight with the Smilow  
NOTE Confidence: 0.83920586

00:46:28.488 --> 00:46:30.476 family I just want to thank you

NOTE Confidence: 0.83920586

00:46:30.543 --> 00:46:32.355 for you know sticking with us.

NOTE Confidence: 0.83920586

00:46:32.360 --> 00:46:33.472 It's a great crowd.

NOTE Confidence: 0.83920586

00:46:33.472 --> 00:46:35.554 I actually see some of my patients

NOTE Confidence: 0.83920586

00:46:35.554 --> 00:46:37.630 and actually some of the family

NOTE Confidence: 0.83920586

00:46:37.630 --> 00:46:39.677 members of some of my patients in

NOTE Confidence: 0.83920586

00:46:39.677 --> 00:46:42.017 the in the in the in the room there.

NOTE Confidence: 0.83920586

00:46:42.017 --> 00:46:44.514 So thank you very much for joining us

NOTE Confidence: 0.83920586

00:46:44.514 --> 00:46:46.908 tonight and I just want to let you know.

NOTE Confidence: 0.83920586

00:46:46.910 --> 00:46:48.716 I mean after this you know.

NOTE Confidence: 0.83920586

00:46:48.720 --> 00:46:51.256 After this session, you're all in a way,

NOTE Confidence: 0.83920586

00:46:51.260 --> 00:46:53.060 a subject matter expert when it

NOTE Confidence: 0.83920586

00:46:53.060 --> 00:46:54.988 comes to the advances in lung

NOTE Confidence: 0.83920586

00:46:54.988 --> 00:46:56.648 cancer and lung cancer screening,

NOTE Confidence: 0.83920586

00:46:56.650 --> 00:46:57.511 so you know,

NOTE Confidence: 0.83920586

00:46:57.511 --> 00:46:59.520 go out and educate your family and

NOTE Confidence: 0.83920586



00:46:59.582 --> 00:47:01.718 friends about what you learn today.  
NOTE Confidence: 0.83920586

00:47:01.720 --> 00:47:03.616 Certainly encourage you to do that.  
NOTE Confidence: 0.83920586

00:47:03.620 --> 00:47:03.892 Basically,  
NOTE Confidence: 0.83920586

00:47:03.892 --> 00:47:05.524 what we're going to talk about  
NOTE Confidence: 0.83920586

00:47:05.524 --> 00:47:07.511 today is just some local health  
NOTE Confidence: 0.83920586

00:47:07.511 --> 00:47:09.007 statistics specific to Connecticut,  
NOTE Confidence: 0.83920586

00:47:09.010 --> 00:47:11.068 the efficacy of lung cancer screening  
NOTE Confidence: 0.83920586

00:47:11.068 --> 00:47:13.482 and really kind of what I thought  
NOTE Confidence: 0.83920586

00:47:13.482 --> 00:47:15.757 would be important to you or questions  
NOTE Confidence: 0.83920586

00:47:15.820 --> 00:47:17.710 you may have that you know come  
NOTE Confidence: 0.83920586

00:47:17.710 --> 00:47:19.724 down to some nuts and bolts like.  
NOTE Confidence: 0.83920586

00:47:19.724 --> 00:47:20.326 What what?  
NOTE Confidence: 0.83920586

00:47:20.330 --> 00:47:21.890 What is a chest X Ray and how  
NOTE Confidence: 0.83920586

00:47:21.890 --> 00:47:22.979 do I look at it?  
NOTE Confidence: 0.83920586

00:47:22.980 --> 00:47:24.400 Or what's the difference  
NOTE Confidence: 0.83920586

00:47:24.400 --> 00:47:26.530 between that and a chest CT?

NOTE Confidence: 0.83920586

00:47:26.530 --> 00:47:27.440 Then basically,

NOTE Confidence: 0.83920586

00:47:27.440 --> 00:47:30.625 Doctor Herps talked a little bit about

NOTE Confidence: 0.83920586

00:47:30.625 --> 00:47:33.594 his pie chart early on in his talk.

NOTE Confidence: 0.83920586

00:47:33.600 --> 00:47:36.589 That was for the the significance of

NOTE Confidence: 0.83920586

00:47:36.589 --> 00:47:39.428 lung cancer for the for the globe.

NOTE Confidence: 0.83920586

00:47:39.430 --> 00:47:41.940 This is the Connecticut cancer

NOTE Confidence: 0.83920586

00:47:41.940 --> 00:47:44.985 statistics for 2010 and what you

NOTE Confidence: 0.83920586

00:47:44.985 --> 00:47:48.135 can see is that long and Broncos

NOTE Confidence: 0.83920586

00:47:48.135 --> 00:47:49.979 cancers accounts the third.

NOTE Confidence: 0.83920586

00:47:49.980 --> 00:47:51.604 Leading newly diagnosed cancer.

NOTE Confidence: 0.83920586

00:47:51.604 --> 00:47:54.442 But it's the most when you look

NOTE Confidence: 0.83920586

00:47:54.442 --> 00:47:56.766 over at cancer desk back in 2010,

NOTE Confidence: 0.83920586

00:47:56.770 --> 00:47:59.026 it's the most lethal accounting for

NOTE Confidence: 0.83920586

00:47:59.026 --> 00:48:01.440 almost a 25% of death from cancer

NOTE Confidence: 0.83920586

00:48:01.440 --> 00:48:04.310 in 2010 in the state of Connecticut,

NOTE Confidence: 0.83920586

00:48:04.310 --> 00:48:05.040 you know.  
NOTE Confidence: 0.83920586

00:48:05.040 --> 00:48:06.865 And there's some reasons for  
NOTE Confidence: 0.83920586

00:48:06.865 --> 00:48:08.829 that that we know about.  
NOTE Confidence: 0.83920586

00:48:08.830 --> 00:48:10.378 It's a silent disease.  
NOTE Confidence: 0.83920586

00:48:10.378 --> 00:48:12.700 It's certainly found in more advanced  
NOTE Confidence: 0.83920586

00:48:12.772 --> 00:48:14.944 stages and up until recently we  
NOTE Confidence: 0.83920586

00:48:14.944 --> 00:48:16.824 haven't had an effective screening  
NOTE Confidence: 0.83920586

00:48:16.824 --> 00:48:19.400 tool like there is for breast cancer  
NOTE Confidence: 0.83920586

00:48:19.400 --> 00:48:21.708 like there is for prostate cancer.  
NOTE Confidence: 0.83920586

00:48:21.708 --> 00:48:23.668 That helps to identify patients  
NOTE Confidence: 0.83920586

00:48:23.668 --> 00:48:25.078 at a younger age,  
NOTE Confidence: 0.83920586

00:48:25.080 --> 00:48:26.496 and certainly Doctor Chang  
NOTE Confidence: 0.83920586

00:48:26.496 --> 00:48:28.620 highlighted some of the many novel  
NOTE Confidence: 0.83920586

00:48:28.687 --> 00:48:30.402 therapies that help to combat  
NOTE Confidence: 0.83920586

00:48:30.402 --> 00:48:32.117 the lethality of lung cancer.  
NOTE Confidence: 0.83920586

00:48:32.120 --> 00:48:34.166 But certainly what we're trying to

NOTE Confidence: 0.83920586

00:48:34.166 --> 00:48:36.663 do now going forward is trying to

NOTE Confidence: 0.83920586

00:48:36.663 --> 00:48:38.443 identify in those earlier stages.

NOTE Confidence: 0.86902434

00:48:40.470 --> 00:48:42.998 And now we have the data not going

NOTE Confidence: 0.86902434

00:48:42.998 --> 00:48:46.133 to go into the weeds with regards

NOTE Confidence: 0.86902434

00:48:46.133 --> 00:48:48.548 to the randomized control trials.

NOTE Confidence: 0.86902434

00:48:48.550 --> 00:48:50.902 This pie chart is just to

NOTE Confidence: 0.86902434

00:48:50.902 --> 00:48:52.990 impress upon you the size,

NOTE Confidence: 0.86902434

00:48:52.990 --> 00:48:55.420 particularly of one of the studies,

NOTE Confidence: 0.86902434

00:48:55.420 --> 00:48:57.440 the national lung cancer trial.

NOTE Confidence: 0.86902434

00:48:57.440 --> 00:48:59.600 Over 53,000 patients were enrolled

NOTE Confidence: 0.86902434

00:48:59.600 --> 00:49:02.612 in that trial to show that there

NOTE Confidence: 0.86902434

00:49:02.612 --> 00:49:05.314 was a benefit with regards to using

NOTE Confidence: 0.86902434

00:49:05.314 --> 00:49:08.423 low dose chest CT to to detect lung

NOTE Confidence: 0.86902434

00:49:08.423 --> 00:49:10.769 cancer in earlier stage and there

NOTE Confidence: 0.86902434

00:49:10.769 --> 00:49:12.756 was a 20% mortality reduction.

NOTE Confidence: 0.86902434

00:49:12.756 --> 00:49:15.084 Using low dose chest CT across  
NOTE Confidence: 0.86902434

00:49:15.084 --> 00:49:17.551 over in Europe, there was another  
NOTE Confidence: 0.86902434

00:49:17.551 --> 00:49:19.873 trial that came out just recently.  
NOTE Confidence: 0.86902434

00:49:19.880 --> 00:49:21.795 Again, more than 15,000 patients  
NOTE Confidence: 0.86902434

00:49:21.795 --> 00:49:23.710 that were enrolled that demonstrated  
NOTE Confidence: 0.86902434

00:49:23.766 --> 00:49:25.318 a similar mortality benefit,  
NOTE Confidence: 0.86902434

00:49:25.320 --> 00:49:27.770 and it's certainly something that  
NOTE Confidence: 0.86902434

00:49:27.770 --> 00:49:31.253 we're at Smilow are working across the  
NOTE Confidence: 0.86902434

00:49:31.253 --> 00:49:34.564 network to have available an is available.  
NOTE Confidence: 0.86902434

00:49:34.570 --> 00:49:37.180 Um, and compared to other known  
NOTE Confidence: 0.86902434

00:49:37.180 --> 00:49:38.920 health screening thing screening  
NOTE Confidence: 0.86902434

00:49:38.990 --> 00:49:41.370 exams for cancer low dose chest CT.  
NOTE Confidence: 0.86902434

00:49:41.370 --> 00:49:43.734 The number needed to screen to  
NOTE Confidence: 0.86902434

00:49:43.734 --> 00:49:46.170 prevent one death is about 320.  
NOTE Confidence: 0.86902434

00:49:46.170 --> 00:49:48.170 When you look at mammography  
NOTE Confidence: 0.86902434

00:49:48.170 --> 00:49:49.370 for breast cancer,

NOTE Confidence: 0.86902434

00:49:49.370 --> 00:49:51.911 the number needed to screen to prevent

NOTE Confidence: 0.86902434

00:49:51.911 --> 00:49:54.568 one death is anywhere between 780.

NOTE Confidence: 0.86902434

00:49:54.570 --> 00:49:55.540 In 2000,

NOTE Confidence: 0.86902434

00:49:55.540 --> 00:49:59.420 when you look at the literature and Cole.

NOTE Confidence: 0.86902434

00:49:59.420 --> 00:50:00.976 Colon cancer Screening again,

NOTE Confidence: 0.86902434

00:50:00.976 --> 00:50:02.532 mammography and colonoscopy are

NOTE Confidence: 0.86902434

00:50:02.532 --> 00:50:04.458 certainly two screening test you're

NOTE Confidence: 0.86902434

00:50:04.460 --> 00:50:07.416 familiar with and may have even had the

NOTE Confidence: 0.86902434

00:50:07.416 --> 00:50:09.990 number needed to screen to prevent one.

NOTE Confidence: 0.86902434

00:50:09.990 --> 00:50:11.582 Death is about 12:50,

NOTE Confidence: 0.86902434

00:50:11.582 --> 00:50:14.463 so low dose chest CT certainly has

NOTE Confidence: 0.86902434

00:50:14.463 --> 00:50:17.354 been shown to be effective as a

NOTE Confidence: 0.86902434

00:50:17.354 --> 00:50:19.488 screening modality for lung cancer.

NOTE Confidence: 0.86902434

00:50:19.490 --> 00:50:21.632 Now you know what I've talked

NOTE Confidence: 0.86902434

00:50:21.632 --> 00:50:24.430 about just now is just a pie chart.

NOTE Confidence: 0.86902434

00:50:24.430 --> 00:50:26.205 Just some large randomized control  
NOTE Confidence: 0.86902434

00:50:26.205 --> 00:50:28.764 trials and you know term numbers needed  
NOTE Confidence: 0.86902434

00:50:28.764 --> 00:50:31.291 to scream what I really think that  
NOTE Confidence: 0.86902434

00:50:31.291 --> 00:50:33.364 sometimes what happens is that you  
NOTE Confidence: 0.86902434

00:50:33.364 --> 00:50:35.411 know the content delivered is important,  
NOTE Confidence: 0.86902434

00:50:35.411 --> 00:50:38.148 but how we deliver it as doctors  
NOTE Confidence: 0.86902434

00:50:38.148 --> 00:50:40.999 is also important so that you can  
NOTE Confidence: 0.86902434

00:50:40.999 --> 00:50:43.861 understand it and you know how it  
NOTE Confidence: 0.86902434

00:50:43.861 --> 00:50:46.219 applies to you and make decisions.  
NOTE Confidence: 0.86902434

00:50:46.220 --> 00:50:48.544 And I think the biggest thing with  
NOTE Confidence: 0.86902434

00:50:48.544 --> 00:50:50.363 regards to Lancaster Rest is that  
NOTE Confidence: 0.86902434

00:50:50.363 --> 00:50:52.548 I want to drive home today is that  
NOTE Confidence: 0.86902434

00:50:52.548 --> 00:50:54.618 there's two factors that impact it,  
NOTE Confidence: 0.86902434

00:50:54.620 --> 00:50:57.108 want its age and two it's smoking status.  
NOTE Confidence: 0.86902434

00:50:57.110 --> 00:50:59.590 If you just kind of take a look,  
NOTE Confidence: 0.86902434

00:50:59.590 --> 00:51:02.700 I don't know if you can see my arrow here,

NOTE Confidence: 0.86902434

00:51:02.700 --> 00:51:04.260 but as your pack here,

NOTE Confidence: 0.86902434

00:51:04.260 --> 00:51:06.573 if you look at your if you're a smoker

NOTE Confidence: 0.86902434

00:51:06.573 --> 00:51:08.852 as your pack number of pack years

NOTE Confidence: 0.86902434

00:51:08.852 --> 00:51:11.099 increases and as your age increases,

NOTE Confidence: 0.86902434

00:51:11.100 --> 00:51:12.655 your six year lung cancer

NOTE Confidence: 0.86902434

00:51:12.655 --> 00:51:13.588 risk dramatically increases.

NOTE Confidence: 0.86902434

00:51:13.590 --> 00:51:14.428 And really,

NOTE Confidence: 0.86902434

00:51:14.428 --> 00:51:16.942 it's the smoking status that we

NOTE Confidence: 0.86902434

00:51:16.942 --> 00:51:21.668 work to target. With our patients.

NOTE Confidence: 0.86902434

00:51:21.670 --> 00:51:21.932 Now,

NOTE Confidence: 0.86902434

00:51:21.932 --> 00:51:24.290 what's the chest X Ray versus a CAT scan?

NOTE Confidence: 0.86902434

00:51:24.290 --> 00:51:26.042 I know sometimes patients come in

NOTE Confidence: 0.86902434

00:51:26.042 --> 00:51:28.305 and you know they think they had a

NOTE Confidence: 0.86902434

00:51:28.305 --> 00:51:30.358 CAT scan and they might have had a

NOTE Confidence: 0.86902434

00:51:30.358 --> 00:51:32.142 chest X Ray or vice versa that up

NOTE Confidence: 0.86902434



00:51:32.150 --> 00:51:34.579 to the left is basically what it  
NOTE Confidence: 0.86902434

00:51:34.579 --> 00:51:37.320 what a chest xray looks like it's.  
NOTE Confidence: 0.86902434

00:51:37.320 --> 00:51:40.578 It's pointed at you. You get a ascentia Lee.  
NOTE Confidence: 0.86902434

00:51:40.580 --> 00:51:43.639 You used shadows to try and make  
NOTE Confidence: 0.86902434

00:51:43.639 --> 00:51:45.748 distinctions with regards to the  
NOTE Confidence: 0.86902434

00:51:45.748 --> 00:51:48.268 long or the structures in the chest.  
NOTE Confidence: 0.86902434

00:51:48.270 --> 00:51:50.326 On the right you can see the way  
NOTE Confidence: 0.86902434

00:51:50.326 --> 00:51:50.840 the CAT  
NOTE Confidence: 0.8530292

00:51:50.910 --> 00:51:53.064 scan is arrayed, as it's like you're  
NOTE Confidence: 0.8530292

00:51:53.064 --> 00:51:54.754 laying on your back, you're being  
NOTE Confidence: 0.8530292

00:51:54.754 --> 00:51:56.728 sliced essentially like a loaf of bread,  
NOTE Confidence: 0.8530292

00:51:56.730 --> 00:51:59.018 and we're looking at you from your feet  
NOTE Confidence: 0.8530292

00:51:59.018 --> 00:52:01.611 so that over here where you see my arrow  
NOTE Confidence: 0.8530292

00:52:01.611 --> 00:52:04.114 is your right long over here is your left  
NOTE Confidence: 0.8530292

00:52:04.114 --> 00:52:07.086 lung and the way the radiation beams are.  
NOTE Confidence: 0.8530292

00:52:07.086 --> 00:52:09.056 Essentially, from all different directions,

NOTE Confidence: 0.8530292

00:52:09.056 --> 00:52:12.439 so that you get as you can appreciate,

NOTE Confidence: 0.8530292

00:52:12.440 --> 00:52:15.496 you get a lot more detail with regards

NOTE Confidence: 0.8530292

00:52:15.496 --> 00:52:18.950 to chest anatomy and organs in the chest.

NOTE Confidence: 0.8658593

00:52:21.160 --> 00:52:22.598 Just some basics for how

NOTE Confidence: 0.8658593

00:52:22.598 --> 00:52:24.320 to read a chest X Ray.

NOTE Confidence: 0.8658593

00:52:24.320 --> 00:52:28.037 You can certainly see here that chest X Ray.

NOTE Confidence: 0.8658593

00:52:28.040 --> 00:52:29.978 Is this a lot of information?

NOTE Confidence: 0.8658593

00:52:29.980 --> 00:52:32.896 You can see that we can see your airway.

NOTE Confidence: 0.8658593

00:52:32.900 --> 00:52:34.520 We can see your heart,

NOTE Confidence: 0.8658593

00:52:34.520 --> 00:52:36.140 we can see the structures

NOTE Confidence: 0.8658593

00:52:36.140 --> 00:52:37.760 that come off the heart.

NOTE Confidence: 0.8658593

00:52:37.760 --> 00:52:39.926 We can also certainly assess the

NOTE Confidence: 0.8658593

00:52:39.926 --> 00:52:41.716 bone structures around your chest

NOTE Confidence: 0.8658593

00:52:41.716 --> 00:52:43.655 wall where we can see your spine

NOTE Confidence: 0.8658593

00:52:43.655 --> 00:52:45.537 as well as your upper airway.

NOTE Confidence: 0.8658593

00:52:45.540 --> 00:52:47.808 And we can even see a portion  
NOTE Confidence: 0.8658593

00:52:47.808 --> 00:52:48.780 of your abdomen,  
NOTE Confidence: 0.8658593

00:52:48.780 --> 00:52:50.718 so it certainly provides helpful information,  
NOTE Confidence: 0.8658593

00:52:50.720 --> 00:52:52.340 but but it's not sensitive,  
NOTE Confidence: 0.8658593

00:52:52.340 --> 00:52:54.608 and it certainly isn't a screening test.  
NOTE Confidence: 0.8658593

00:52:54.610 --> 00:52:56.230 In the past early on,  
NOTE Confidence: 0.8658593

00:52:56.230 --> 00:52:59.110 we want to talk about advances in lung  
NOTE Confidence: 0.8658593

00:52:59.110 --> 00:53:01.149 cancer screening in the 60s and 70s.  
NOTE Confidence: 0.8658593

00:53:01.150 --> 00:53:03.394 They looked it over 180,000 patients  
NOTE Confidence: 0.8658593

00:53:03.394 --> 00:53:06.008 an over 20 years of follow up for  
NOTE Confidence: 0.8658593

00:53:06.008 --> 00:53:08.918 chest X Ray as a way to detect nodules,  
NOTE Confidence: 0.8658593

00:53:08.920 --> 00:53:11.624 and it turned out not to be beneficial,  
NOTE Confidence: 0.8658593

00:53:11.630 --> 00:53:14.339 and I think the reason why that's  
NOTE Confidence: 0.8658593

00:53:14.339 --> 00:53:15.911 important hesitate Co messages  
NOTE Confidence: 0.8658593

00:53:15.911 --> 00:53:18.615 because if you went to the ER and  
NOTE Confidence: 0.8658593

00:53:18.615 --> 00:53:20.942 maybe got a chest X Ray 'cause you

NOTE Confidence: 0.8658593

00:53:20.942 --> 00:53:23.345 had a cold and you may be someone

NOTE Confidence: 0.8658593

00:53:23.345 --> 00:53:25.490 who's at risk for lung cancer,

NOTE Confidence: 0.8658593

00:53:25.490 --> 00:53:27.170 that certainly isn't sufficient in

NOTE Confidence: 0.8658593

00:53:27.170 --> 00:53:29.609 today's day and age as a screening

NOTE Confidence: 0.8658593

00:53:29.609 --> 00:53:31.339 modality for lung cancer and.

NOTE Confidence: 0.8658593

00:53:31.340 --> 00:53:33.314 You know this is an example of

NOTE Confidence: 0.8658593

00:53:33.314 --> 00:53:35.827 an X Ray where you do see here.

NOTE Confidence: 0.8658593

00:53:35.830 --> 00:53:37.916 There's a lesion that was picked up.

NOTE Confidence: 0.8658593

00:53:37.920 --> 00:53:39.172 Fortunately for this patient,

NOTE Confidence: 0.8658593

00:53:39.172 --> 00:53:41.603 but the take home message here is the

NOTE Confidence: 0.8658593

00:53:41.603 --> 00:53:44.620 chest xrays, not a screening test.

NOTE Confidence: 0.8658593

00:53:44.620 --> 00:53:46.153 And I just.

NOTE Confidence: 0.8658593

00:53:46.153 --> 00:53:49.730 You know how big is 2 centimeters?

NOTE Confidence: 0.8658593

00:53:49.730 --> 00:53:51.395 The metric system sometimes comes

NOTE Confidence: 0.8658593

00:53:51.395 --> 00:53:53.060 up every once in awhile,

NOTE Confidence: 0.8658593

00:53:53.060 --> 00:53:55.447 and you know 2 centimeter lesion turns

NOTE Confidence: 0.8658593

00:53:55.447 --> 00:53:58.390 out to be about the size of a penny.

NOTE Confidence: 0.8658593

00:53:58.390 --> 00:54:00.050 Penny is about 2 centimeters.

NOTE Confidence: 0.8658593

00:54:00.050 --> 00:54:01.720 Alittle Cheerios about a millimeter.

NOTE Confidence: 0.8658593

00:54:01.720 --> 00:54:03.670 The pencil erasers about 5 millimeters

NOTE Confidence: 0.8658593

00:54:03.670 --> 00:54:06.041 in a golf ball sized lesion turns

NOTE Confidence: 0.8658593

00:54:06.041 --> 00:54:08.045 out to be about 4 centimeters,

NOTE Confidence: 0.8658593

00:54:08.050 --> 00:54:11.004 just as a reference for some of

NOTE Confidence: 0.8658593

00:54:11.004 --> 00:54:14.243 you that can go on to my chart

NOTE Confidence: 0.8658593

00:54:14.243 --> 00:54:17.079 and read some of your image Ng.

NOTE Confidence: 0.8658593

00:54:17.080 --> 00:54:17.902 Now cieci T.

NOTE Confidence: 0.8658593

00:54:17.902 --> 00:54:20.970 As you can see is a lot more detailed.

NOTE Confidence: 0.8658593

00:54:20.970 --> 00:54:22.902 We can certainly see the vessels in

NOTE Confidence: 0.8658593

00:54:22.902 --> 00:54:25.179 a little bit more detailed structure.

NOTE Confidence: 0.8658593

00:54:25.180 --> 00:54:26.992 We can see the long certainly

NOTE Confidence: 0.8658593

00:54:26.992 --> 00:54:29.631 in a lot more detail as well as

NOTE Confidence: 0.8658593

00:54:29.631 --> 00:54:31.659 the muscles of the chest wall.

NOTE Confidence: 0.8658593

00:54:31.660 --> 00:54:33.585 This topic is a lot more detail

NOTE Confidence: 0.8658593

00:54:33.585 --> 00:54:35.824 to be able to detect and what

NOTE Confidence: 0.8658593

00:54:35.824 --> 00:54:37.834 the studies have shown to detect

NOTE Confidence: 0.8658593

00:54:37.899 --> 00:54:39.987 lung cancer in earlier stage and

NOTE Confidence: 0.8658593

00:54:39.987 --> 00:54:42.760 provide a benefit to you.

NOTE Confidence: 0.8658593

00:54:42.760 --> 00:54:42.972 Uh,

NOTE Confidence: 0.8658593

00:54:42.972 --> 00:54:44.668 this is just this is just to show

NOTE Confidence: 0.8658593

00:54:44.668 --> 00:54:46.107 that chest CT isn't effective

NOTE Confidence: 0.8658593

00:54:46.107 --> 00:54:47.572 screening test and there's a

NOTE Confidence: 0.8658593

00:54:47.572 --> 00:54:49.256 lung nodule here that ultimately

NOTE Confidence: 0.8658593

00:54:49.256 --> 00:54:50.400 wound up being respected.

NOTE Confidence: 0.82655454

00:54:52.590 --> 00:54:54.500 So who's eligible for lung

NOTE Confidence: 0.82655454

00:54:54.500 --> 00:54:56.028 cancer screening at smilow?

NOTE Confidence: 0.82655454

00:54:56.030 --> 00:54:58.697 The basically we target high risk patients.

NOTE Confidence: 0.82655454

00:54:58.700 --> 00:55:01.756 Those are the ones that benefit the most.

NOTE Confidence: 0.82655454

00:55:01.760 --> 00:55:03.695 It's adults if you're between

NOTE Confidence: 0.82655454

00:55:03.695 --> 00:55:05.960 the ages of 55 and 80.

NOTE Confidence: 0.82655454

00:55:05.960 --> 00:55:08.252 If you have a third pack

NOTE Confidence: 0.82655454

00:55:08.252 --> 00:55:09.398 your smoking history.

NOTE Confidence: 0.82655454

00:55:09.400 --> 00:55:11.310 Whether you're a current smoker,

NOTE Confidence: 0.82655454

00:55:11.310 --> 00:55:14.358 if you've quit within the last 15 years,

NOTE Confidence: 0.82655454

00:55:14.360 --> 00:55:16.448 individuals would typically are

NOTE Confidence: 0.82655454

00:55:16.448 --> 00:55:19.058 asymptomatic and certainly could handle

NOTE Confidence: 0.82655454

00:55:19.058 --> 00:55:21.198 treatment with regards to whether

NOTE Confidence: 0.82655454

00:55:21.198 --> 00:55:23.520 it's surgery or unk logic treatment.

NOTE Confidence: 0.82655454

00:55:23.520 --> 00:55:25.887 Now what are the risks and these are some

NOTE Confidence: 0.82655454

00:55:25.887 --> 00:55:28.427 of the things that sometimes come up is,

NOTE Confidence: 0.82655454

00:55:28.430 --> 00:55:30.750 you know when you get a screening studies,

NOTE Confidence: 0.82655454

00:55:30.750 --> 00:55:32.190 such as a CAT scan,

NOTE Confidence: 0.82655454

00:55:32.190 --> 00:55:34.206 it doesn't just look at your lungs.

NOTE Confidence: 0.82655454

00:55:34.210 --> 00:55:36.184 It looks at everything in your chest

NOTE Confidence: 0.82655454

00:55:36.184 --> 00:55:38.259 from your neck down to your abdomen,

NOTE Confidence: 0.82655454

00:55:38.260 --> 00:55:39.049 to your belly,

NOTE Confidence: 0.82655454

00:55:39.049 --> 00:55:40.890 and one of the things that comes

NOTE Confidence: 0.82655454

00:55:40.954 --> 00:55:42.956 up is we can sometimes have a

NOTE Confidence: 0.82655454

00:55:42.956 --> 00:55:44.184 false positive that's identifying

NOTE Confidence: 0.82655454

00:55:44.184 --> 00:55:46.056 a lesion that may be there.

NOTE Confidence: 0.82655454

00:55:46.060 --> 00:55:47.160 That's not a cancer.

NOTE Confidence: 0.82655454

00:55:47.160 --> 00:55:48.535 People often ask about what

NOTE Confidence: 0.82655454

00:55:48.535 --> 00:55:49.818 the radiation harm is,

NOTE Confidence: 0.82655454

00:55:49.820 --> 00:55:51.738 and I'm going to talk about that

NOTE Confidence: 0.82655454

00:55:51.738 --> 00:55:53.966 in the next slide. There's a small.

NOTE Confidence: 0.82655454

00:55:53.966 --> 00:55:55.654 Much smaller, less than 1%,

NOTE Confidence: 0.82655454

00:55:55.654 --> 00:55:57.742 risk of biopsy or surgery with

NOTE Confidence: 0.82655454

00:55:57.742 --> 00:56:00.028 regards to if you identify a lesion,

NOTE Confidence: 0.82655454



00:56:00.030 --> 00:56:03.398 it needs to be treated and then there  
NOTE Confidence: 0.82655454

00:56:03.398 --> 00:56:06.667 are incidental findings and what that means.  
NOTE Confidence: 0.82655454

00:56:06.670 --> 00:56:08.470 Your sensor scanning from the neck  
NOTE Confidence: 0.82655454

00:56:08.470 --> 00:56:10.040 down through the entire chest,  
NOTE Confidence: 0.82655454

00:56:10.040 --> 00:56:11.870 we look at your thyroid gland.  
NOTE Confidence: 0.82655454

00:56:11.870 --> 00:56:13.400 We look at your esophagus.  
NOTE Confidence: 0.82655454

00:56:13.400 --> 00:56:14.930 We look at your airway,  
NOTE Confidence: 0.82655454

00:56:14.930 --> 00:56:15.800 your chest wall,  
NOTE Confidence: 0.82655454

00:56:15.800 --> 00:56:17.540 and there are lesions that can  
NOTE Confidence: 0.82655454

00:56:17.540 --> 00:56:18.600 sometimes be identified,  
NOTE Confidence: 0.82655454

00:56:18.600 --> 00:56:20.130 such as the thyroid nodule.  
NOTE Confidence: 0.8114284

00:56:22.340 --> 00:56:25.000 What is the radiation risk of the  
NOTE Confidence: 0.8114284

00:56:25.000 --> 00:56:27.339 radiation exposure from a low dose chest?  
NOTE Confidence: 0.8114284

00:56:27.340 --> 00:56:29.839 See T is very low Amila receivers.  
NOTE Confidence: 0.8114284

00:56:29.840 --> 00:56:30.788 How it's measured,  
NOTE Confidence: 0.8114284

00:56:30.788 --> 00:56:33.760 it's less than one and just for comparison,

NOTE Confidence: 0.8114284

00:56:33.760 --> 00:56:34.771 the background radiation.

NOTE Confidence: 0.8114284

00:56:34.771 --> 00:56:37.952 If you live in New York City is about

NOTE Confidence: 0.8114284

00:56:37.952 --> 00:56:39.827 3 millisieverts and ascentia Lee.

NOTE Confidence: 0.8114284

00:56:39.830 --> 00:56:42.686 The radiation exposure from a low dose chest.

NOTE Confidence: 0.8114284

00:56:42.690 --> 00:56:46.082 See T is equivalent to flying on an

NOTE Confidence: 0.8114284

00:56:46.082 --> 00:56:49.448 airplane from here to California and back.

NOTE Confidence: 0.8114284

00:56:49.450 --> 00:56:52.260 Very low risk.

NOTE Confidence: 0.8114284

00:56:52.260 --> 00:56:54.000 Now let's talk about the

NOTE Confidence: 0.8114284

00:56:54.000 --> 00:56:55.392 benefits versus the risk,

NOTE Confidence: 0.8114284

00:56:55.400 --> 00:56:57.822 and that's one of the things that

NOTE Confidence: 0.8114284

00:56:57.822 --> 00:57:00.288 those studies cut at work to identify.

NOTE Confidence: 0.8114284

00:57:00.290 --> 00:57:02.677 That and I talked about earlier the

NOTE Confidence: 0.8114284

00:57:02.677 --> 00:57:04.819 number needed to screen to prevent

NOTE Confidence: 0.8114284

00:57:04.819 --> 00:57:06.919 a death from lung cancers 320,

NOTE Confidence: 0.8114284

00:57:06.920 --> 00:57:08.672 the number needed to harm or

NOTE Confidence: 0.8114284

00:57:08.672 --> 00:57:11.202 the risk to the patients to you  
NOTE Confidence: 0.8114284

00:57:11.202 --> 00:57:12.495 as dramatically higher.  
NOTE Confidence: 0.8114284

00:57:12.500 --> 00:57:14.678 It's close to 4000 patients that  
NOTE Confidence: 0.8114284

00:57:14.678 --> 00:57:17.373 need to be screened to have a side  
NOTE Confidence: 0.8114284

00:57:17.373 --> 00:57:19.131 effect or some sort of harm  
NOTE Confidence: 0.8114284

00:57:19.204 --> 00:57:20.880 from the screening test.  
NOTE Confidence: 0.8694083

00:57:23.030 --> 00:57:25.334 And just to drive home some of the  
NOTE Confidence: 0.8694083

00:57:25.334 --> 00:57:27.367 month main points that the eligibility  
NOTE Confidence: 0.8694083

00:57:27.367 --> 00:57:29.770 criteria and it may not be you.  
NOTE Confidence: 0.8694083

00:57:29.770 --> 00:57:31.696 It may be someone you know.  
NOTE Confidence: 0.8694083

00:57:31.700 --> 00:57:34.268 Adults 55 to 8030 pack year smoking history,  
NOTE Confidence: 0.8694083

00:57:34.270 --> 00:57:35.875 a current smoker or quit  
NOTE Confidence: 0.8694083

00:57:35.875 --> 00:57:37.480 in the past 15 years.  
NOTE Confidence: 0.8694083

00:57:37.480 --> 00:57:39.706 No signs or symptoms of lung cancer.  
NOTE Confidence: 0.8694083

00:57:39.706 --> 00:57:41.848 You can certainly expect if you can  
NOTE Confidence: 0.8694083

00:57:41.848 --> 00:57:43.729 talk to your primary care doctor

NOTE Confidence: 0.8694083

00:57:43.729 --> 00:57:46.140 about it to see if you're eligible.

NOTE Confidence: 0.8694083

00:57:46.140 --> 00:57:48.562 If you are, you can certainly expect

NOTE Confidence: 0.8694083

00:57:48.562 --> 00:57:50.572 to visit reviewing the risks and

NOTE Confidence: 0.8694083

00:57:50.572 --> 00:57:52.686 benefits to kind of review some of

NOTE Confidence: 0.8694083

00:57:52.752 --> 00:57:54.828 the things we talked about today.

NOTE Confidence: 0.8694083

00:57:54.830 --> 00:57:56.400 And really, the important thing

NOTE Confidence: 0.8694083

00:57:56.400 --> 00:57:57.970 is particular here at smile.

NOTE Confidence: 0.8694083

00:57:57.970 --> 00:57:59.788 One of the things we believe

NOTE Confidence: 0.8694083

00:57:59.788 --> 00:58:01.420 it's not just a scan,

NOTE Confidence: 0.8694083

00:58:01.420 --> 00:58:03.310 it's really a team of experts.

NOTE Confidence: 0.8694083

00:58:03.310 --> 00:58:06.718 Some on this panel who are involved in

NOTE Confidence: 0.8694083

00:58:06.718 --> 00:58:10.068 your care from the time you get that.

NOTE Confidence: 0.8694083

00:58:10.070 --> 00:58:11.410 Are there any questions?

NOTE Confidence: 0.88726205

00:58:13.430 --> 00:58:15.719 Thanks Vinny, that was that was wonderful.

NOTE Confidence: 0.88726205

00:58:15.720 --> 00:58:18.258 I'm sure there are some questions.

NOTE Confidence: 0.88726205

00:58:18.260 --> 00:58:20.180 I have one as we wait for them  
NOTE Confidence: 0.88726205

00:58:20.180 --> 00:58:22.272 to roll in and why wouldn't  
NOTE Confidence: 0.88726205

00:58:22.272 --> 00:58:23.820 everyone eligible get screen?  
NOTE Confidence: 0.88726205

00:58:23.820 --> 00:58:25.112 What's the barriers? Why?  
NOTE Confidence: 0.88726205

00:58:25.112 --> 00:58:26.404 What's keeping people from  
NOTE Confidence: 0.88726205

00:58:26.404 --> 00:58:28.147 coming in and doing this more?  
NOTE Confidence: 0.88726205

00:58:28.150 --> 00:58:29.406 Because the national numbers  
NOTE Confidence: 0.88726205

00:58:29.406 --> 00:58:31.858 that I read say 5 to 10% of  
NOTE Confidence: 0.88726205

00:58:31.858 --> 00:58:33.090 eligible people are screened,  
NOTE Confidence: 0.88726205

00:58:33.090 --> 00:58:35.470 maybe lower. Yeah,  
NOTE Confidence: 0.87551486

00:58:35.470 --> 00:58:37.390 I think there's a. It's a.  
NOTE Confidence: 0.87551486

00:58:37.390 --> 00:58:39.532 It's a great question and the US  
NOTE Confidence: 0.87551486

00:58:39.532 --> 00:58:40.806 Services Preventive Task Force  
NOTE Confidence: 0.87551486

00:58:40.806 --> 00:58:42.606 estimated that if everyone who was  
NOTE Confidence: 0.87551486

00:58:42.606 --> 00:58:44.750 supposed to get screened got screened.  
NOTE Confidence: 0.87551486

00:58:44.750 --> 00:58:46.436 I think in America it's about

NOTE Confidence: 0.87551486

00:58:46.436 --> 00:58:48.590 3 million or 4 million people.

NOTE Confidence: 0.87551486

00:58:48.590 --> 00:58:50.570 There would be about 128 thousand

NOTE Confidence: 0.87551486

00:58:50.570 --> 00:58:52.556 people that could be saved from

NOTE Confidence: 0.87551486

00:58:52.556 --> 00:58:54.344 lung cancer if they were to.

NOTE Confidence: 0.87551486

00:58:54.350 --> 00:58:56.569 If we were able to Institute this

NOTE Confidence: 0.87551486

00:58:56.569 --> 00:58:58.526 effectively and it's actually one of

NOTE Confidence: 0.87551486

00:58:58.526 --> 00:59:00.638 the reasons why, even as a surgeon,

NOTE Confidence: 0.87551486

00:59:00.638 --> 00:59:02.098 I've been interested in lung

NOTE Confidence: 0.87551486

00:59:02.098 --> 00:59:02.990 cancer screening,

NOTE Confidence: 0.87551486

00:59:02.990 --> 00:59:04.402 'cause it's about logistics.

NOTE Confidence: 0.87551486

00:59:04.402 --> 00:59:06.520 There's a fair amount of logistical

NOTE Confidence: 0.87551486

00:59:06.578 --> 00:59:08.498 issues that come in with regards

NOTE Confidence: 0.87551486

00:59:08.498 --> 00:59:09.778 to tracking the patients.

NOTE Confidence: 0.87551486

00:59:09.780 --> 00:59:12.170 Manageing some of the findings.

NOTE Confidence: 0.79719025

00:59:14.370 --> 00:59:16.435 Opponent, it's those are some

NOTE Confidence: 0.79719025

00:59:16.435 --> 00:59:18.910 barriers that have prevented us from,  
NOTE Confidence: 0.79719025

00:59:18.910 --> 00:59:21.040 you know, having as much compliance  
NOTE Confidence: 0.79719025

00:59:21.040 --> 00:59:23.843 as there is with regards to either  
NOTE Confidence: 0.79719025

00:59:23.843 --> 00:59:26.028 breast cancer or colon cancer  
NOTE Confidence: 0.79719025

00:59:26.028 --> 00:59:27.999 from mammography or colonoscopy.  
NOTE Confidence: 0.8877324

00:59:28.790 --> 00:59:30.238 Right? What is groundglass?  
NOTE Confidence: 0.8877324

00:59:30.238 --> 00:59:31.686 Someone asks you know,  
NOTE Confidence: 0.8877324

00:59:31.690 --> 00:59:34.238 what do you call it ground glass?  
NOTE Confidence: 0.8877324

00:59:34.240 --> 00:59:36.774 We call it. That's a great question  
NOTE Confidence: 0.8877324

00:59:36.774 --> 00:59:39.600 so I will share my screen again and  
NOTE Confidence: 0.8877324

00:59:39.600 --> 00:59:42.949 see if I can go back to the picture.  
NOTE Confidence: 0.8877324

00:59:42.950 --> 00:59:46.210 Can you guys see my screen again we can.  
NOTE Confidence: 0.82020354

00:59:48.760 --> 00:59:51.546 So please take a look at this lesion.  
NOTE Confidence: 0.82020354

00:59:51.550 --> 00:59:52.942 This lesion is solid,  
NOTE Confidence: 0.82020354

00:59:52.942 --> 00:59:55.040 which means it's filled with cells.  
NOTE Confidence: 0.82020354

00:59:55.040 --> 00:59:57.886 A ground glass lesion means that it

NOTE Confidence: 0.82020354

00:59:57.886 --> 01:00:00.458 would be essentially fuzzy it would be.

NOTE Confidence: 0.82020354

01:00:00.460 --> 01:00:02.948 You know it wouldn't be as filled with

NOTE Confidence: 0.82020354

01:00:02.948 --> 01:00:05.009 cells because it's kind of amorphous.

NOTE Confidence: 0.82020354

01:00:05.010 --> 01:00:06.635 It's partially filled with cells

NOTE Confidence: 0.82020354

01:00:06.635 --> 01:00:08.260 that hasn't filled in yet,

NOTE Confidence: 0.82020354

01:00:08.260 --> 01:00:09.890 so a ground glass lesion.

NOTE Confidence: 0.82020354

01:00:09.890 --> 01:00:11.642 What we have found is either

NOTE Confidence: 0.82020354

01:00:11.642 --> 01:00:13.244 create precursor or early form

NOTE Confidence: 0.82020354

01:00:13.244 --> 01:00:14.756 of lung cancer adenocarcinoma.

NOTE Confidence: 0.82020354

01:00:14.760 --> 01:00:17.035 That's what it ground glass lesion is.

NOTE Confidence: 0.82020354

01:00:17.040 --> 01:00:18.336 That's a great question.

NOTE Confidence: 0.82020354

01:00:18.336 --> 01:00:20.935 Yeah, we have so many more 30 pack

NOTE Confidence: 0.8373634

01:00:20.940 --> 01:00:23.208 years. You know what does that mean?

NOTE Confidence: 0.8373634

01:00:23.210 --> 01:00:25.160 I guess you know you're listening

NOTE Confidence: 0.8373634

01:00:25.160 --> 01:00:27.935 in the audience, you know. Can you

NOTE Confidence: 0.8373634



01:00:27.935 --> 01:00:31.020 define that a little bit better? Yeah,  
NOTE Confidence: 0.88065565

01:00:31.020 --> 01:00:32.520 so a pack of cigarettes,  
NOTE Confidence: 0.88065565

01:00:32.520 --> 01:00:34.105 from my understanding has 20  
NOTE Confidence: 0.88065565

01:00:34.105 --> 01:00:36.119 cigarettes and I haven't bought a pack,  
NOTE Confidence: 0.88065565

01:00:36.120 --> 01:00:37.620 but that's what I that's  
NOTE Confidence: 0.88065565

01:00:37.620 --> 01:00:38.820 what my understanding is.  
NOTE Confidence: 0.88065565

01:00:38.820 --> 01:00:40.920 It has about 20 cigarettes in it,  
NOTE Confidence: 0.88065565

01:00:40.920 --> 01:00:43.320 so if you smoke a pack a day,  
NOTE Confidence: 0.88065565

01:00:43.320 --> 01:00:45.138 that's you know an you've been  
NOTE Confidence: 0.88065565

01:00:45.138 --> 01:00:47.518 smoking a pack a day for 30 years.  
NOTE Confidence: 0.88065565

01:00:47.520 --> 01:00:49.920 That makes you a 30 pack year smoker.  
NOTE Confidence: 0.88065565

01:00:49.920 --> 01:00:51.420 There are some people who  
NOTE Confidence: 0.88065565

01:00:51.420 --> 01:00:52.620 smoke less than that.  
NOTE Confidence: 0.88065565

01:00:52.620 --> 01:00:55.077 They might smoke a half a pack a day  
NOTE Confidence: 0.88065565

01:00:55.077 --> 01:00:57.944 if you smoke a half a pack a day and  
NOTE Confidence: 0.88065565

01:00:57.944 --> 01:01:00.118 you've been smoking for 30 years,

NOTE Confidence: 0.88065565

01:01:00.120 --> 01:01:02.944 that means you're a 15 pack year smoker.

NOTE Confidence: 0.88065565

01:01:02.950 --> 01:01:05.278 So a pack here is basically the standard

NOTE Confidence: 0.88065565

01:01:05.278 --> 01:01:07.758 is a 30 pack year means you've been

NOTE Confidence: 0.88065565

01:01:07.758 --> 01:01:10.147 smoking a pack a day for 30 years.

NOTE Confidence: 0.8454806

01:01:10.790 --> 01:01:12.967 And how exact are you on this?

NOTE Confidence: 0.8454806

01:01:12.970 --> 01:01:14.752 So if someone is worried about

NOTE Confidence: 0.8454806

01:01:14.752 --> 01:01:16.699 lung cancer wants to be screened.

NOTE Confidence: 0.8454806

01:01:16.700 --> 01:01:18.860 I guess it's sort of hard to sort

NOTE Confidence: 0.8454806

01:01:18.860 --> 01:01:21.048 of know exactly what one smoked.

NOTE Confidence: 0.8454806

01:01:21.050 --> 01:01:23.227 You give them a little flexibility here.

NOTE Confidence: 0.8454806

01:01:23.230 --> 01:01:24.790 Well that's an interesting question.

NOTE Confidence: 0.8454806

01:01:24.790 --> 01:01:26.530 And that's actually one of the

NOTE Confidence: 0.8454806

01:01:26.530 --> 01:01:28.078 challenges for trying to Institute

NOTE Confidence: 0.8454806

01:01:28.078 --> 01:01:30.064 are one of the reasons nationally.

NOTE Confidence: 0.8454806

01:01:30.070 --> 01:01:31.565 Why there's a challenge with

NOTE Confidence: 0.8454806

01:01:31.565 --> 01:01:33.060 lung cancer screening to be  
NOTE Confidence: 0.8454806

01:01:33.122 --> 01:01:35.048 implemented is the accuracy of that.  
NOTE Confidence: 0.8454806

01:01:35.050 --> 01:01:38.160 What we have found is we try and you know,  
NOTE Confidence: 0.8454806

01:01:38.160 --> 01:01:40.302 with regards to that high risk  
NOTE Confidence: 0.8454806

01:01:40.302 --> 01:01:43.420 patient population. Put up here.  
NOTE Confidence: 0.8454806

01:01:43.420 --> 01:01:45.756 55 to 80 in that 30 pack year.  
NOTE Confidence: 0.8454806

01:01:45.760 --> 01:01:46.346 Smoking history.  
NOTE Confidence: 0.8454806

01:01:46.346 --> 01:01:48.397 What we have found across the country.  
NOTE Confidence: 0.8454806

01:01:48.400 --> 01:01:49.464 That is, if you.  
NOTE Confidence: 0.8454806

01:01:49.464 --> 01:01:51.484 If you're a little bit more liberal  
NOTE Confidence: 0.8454806

01:01:51.484 --> 01:01:53.680 with that, so let's say it's you,  
NOTE Confidence: 0.8454806

01:01:53.680 --> 01:01:54.788 know you say, well,  
NOTE Confidence: 0.8454806

01:01:54.788 --> 01:01:57.478 what about if I just smoke 10A10 pack year,  
NOTE Confidence: 0.8454806

01:01:57.480 --> 01:01:58.652 smoking history? Or what?  
NOTE Confidence: 0.8454806

01:01:58.652 --> 01:02:00.416 If I smoke like, you know,  
NOTE Confidence: 0.8454806

01:02:00.416 --> 01:02:02.760 a smoked a cigarette when I was eight,

NOTE Confidence: 0.8454806

01:02:02.760 --> 01:02:04.518 you know, should I get screened?

NOTE Confidence: 0.8454806

01:02:04.520 --> 01:02:07.148 What we have found is when you do that,

NOTE Confidence: 0.8454806

01:02:07.150 --> 01:02:09.198 when you cast a wider net when you

NOTE Confidence: 0.8454806

01:02:09.198 --> 01:02:11.260 talk about the risks versus benefits,

NOTE Confidence: 0.8454806

01:02:11.260 --> 01:02:12.995 the number needed to screen

NOTE Confidence: 0.8454806

01:02:12.995 --> 01:02:14.036 is dramatically higher.

NOTE Confidence: 0.8454806

01:02:14.040 --> 01:02:15.380 So to answer your question,

NOTE Confidence: 0.8454806

01:02:15.380 --> 01:02:17.116 why is we try not to at least

NOTE Confidence: 0.8454806

01:02:17.116 --> 01:02:18.579 for lung cancer screening,

NOTE Confidence: 0.8454806

01:02:18.580 --> 01:02:20.176 we try and stick with what

NOTE Confidence: 0.8454806

01:02:20.176 --> 01:02:20.974 the guidelines are.

NOTE Confidence: 0.8207723

01:02:21.780 --> 01:02:23.460 Yeah, I'm gonna hit you with

NOTE Confidence: 0.8207723

01:02:23.460 --> 01:02:24.580 the lightning round here.

NOTE Confidence: 0.8207723

01:02:24.580 --> 01:02:25.980 A couple of risk factors.

NOTE Confidence: 0.8207723

01:02:25.980 --> 01:02:27.380 Do we screen or not?

NOTE Confidence: 0.8207723

01:02:27.380 --> 01:02:29.620 Radon gas you got rated on the in  
NOTE Confidence: 0.8207723

01:02:29.620 --> 01:02:30.460 the basement screening.  
NOTE Confidence: 0.8207723

01:02:30.460 --> 01:02:32.140 No screening yet for radon gas.  
NOTE Confidence: 0.8207723

01:02:32.140 --> 01:02:33.820 There was another question early on.  
NOTE Confidence: 0.8207723

01:02:33.820 --> 01:02:36.060 If their studies with regards to radon gas,  
NOTE Confidence: 0.8207723

01:02:36.060 --> 01:02:37.908 an risk of lung cancer and actually  
NOTE Confidence: 0.8207723

01:02:37.908 --> 01:02:39.331 there have been some studies  
NOTE Confidence: 0.8207723

01:02:39.331 --> 01:02:41.041 and radon gas is a significant  
NOTE Confidence: 0.8207723

01:02:41.041 --> 01:02:42.500 risk factor for lung cancer,  
NOTE Confidence: 0.8207723

01:02:42.500 --> 01:02:44.376 but it doesn't come fall in the  
NOTE Confidence: 0.8207723

01:02:44.376 --> 01:02:46.420 category of some huge screen for it.  
NOTE Confidence: 0.8207723

01:02:46.420 --> 01:02:48.100 What about?  
NOTE Confidence: 0.7109991

01:02:48.100 --> 01:02:49.260 Smokers do we screen that?  
NOTE Confidence: 0.7109991

01:02:49.260 --> 01:02:51.090 Do we screen them? Not  
NOTE Confidence: 0.93102854

01:02:51.090 --> 01:02:53.040 today, not with regards to the  
NOTE Confidence: 0.93102854

01:02:53.040 --> 01:02:54.770 technology that we have today.

NOTE Confidence: 0.81927806

01:02:55.340 --> 01:02:57.447 Someone with family history of lung cancer.

NOTE Confidence: 0.81927806

01:02:57.450 --> 01:03:00.050 Should their kids get screened? Oh,

NOTE Confidence: 0.8408491

01:03:00.050 --> 01:03:01.014 that's a great question.

NOTE Confidence: 0.8408491

01:03:01.014 --> 01:03:02.808 It's it you wouldn't fall in the

NOTE Confidence: 0.8408491

01:03:02.808 --> 01:03:04.008 criteria 'cause you wouldn't.

NOTE Confidence: 0.8408491

01:03:04.010 --> 01:03:05.546 High risk patient, but that's not

NOTE Confidence: 0.8408491

01:03:05.546 --> 01:03:06.920 typically someone that we screen.

NOTE Confidence: 0.8527962

01:03:07.630 --> 01:03:09.172 Can we read a lot about

NOTE Confidence: 0.8527962

01:03:09.172 --> 01:03:11.060 a I now know the Teslas?

NOTE Confidence: 0.8527962

01:03:11.060 --> 01:03:12.490 You know, sending sending these

NOTE Confidence: 0.8527962

01:03:12.490 --> 01:03:13.920 rockets to the moon's automatically,

NOTE Confidence: 0.8527962

01:03:13.920 --> 01:03:16.184 or using AI right now to help with

NOTE Confidence: 0.8527962

01:03:16.184 --> 01:03:17.638 detecting what's what's a tumor?

NOTE Confidence: 0.8527962

01:03:17.640 --> 01:03:19.194 What's not so that you're going

NOTE Confidence: 0.8527962

01:03:19.194 --> 01:03:20.790 to be doing surgery sometimes?

NOTE Confidence: 0.8527962

01:03:20.790 --> 01:03:21.639 No, it's great.  
NOTE Confidence: 0.8527962

01:03:21.640 --> 01:03:23.649 You talked about going to the moon.  
NOTE Confidence: 0.8527962

01:03:23.650 --> 01:03:26.134 I just want to go back to Doctor Blasberg's  
NOTE Confidence: 0.8527962

01:03:26.134 --> 01:03:28.218 question about the military and the robot.  
NOTE Confidence: 0.8527962

01:03:28.220 --> 01:03:29.936 So the the militaries tried to,  
NOTE Confidence: 0.8527962

01:03:29.940 --> 01:03:31.650 you know, work to apply that.  
NOTE Confidence: 0.8527962

01:03:31.650 --> 01:03:33.582 But one of the challenges is you  
NOTE Confidence: 0.8527962

01:03:33.582 --> 01:03:35.370 gotta get the robot into the,  
NOTE Confidence: 0.8527962

01:03:35.370 --> 01:03:36.800 you know, into the area.  
NOTE Confidence: 0.8527962

01:03:36.800 --> 01:03:39.572 And it turns out that it's easier to send  
NOTE Confidence: 0.8527962

01:03:39.572 --> 01:03:41.790 somebody then send the robot right now.  
NOTE Confidence: 0.8527962

01:03:41.790 --> 01:03:43.776 But the robot actually was interesting.  
NOTE Confidence: 0.8527962

01:03:43.780 --> 01:03:45.688 'cause NASA's been trying to use  
NOTE Confidence: 0.8527962

01:03:45.688 --> 01:03:48.437 it because it be great to have that  
NOTE Confidence: 0.8527962

01:03:48.437 --> 01:03:50.922 capability when you have put people either  
NOTE Confidence: 0.8527962

01:03:50.922 --> 01:03:53.402 on the moon or at the space station.

NOTE Confidence: 0.8527962

01:03:53.410 --> 01:03:55.727 But to answer your question about AI,

NOTE Confidence: 0.8527962

01:03:55.730 --> 01:03:57.542 there is some literature that's looking

NOTE Confidence: 0.8527962

01:03:57.542 --> 01:04:00.050 into using AI to identify these lesions,

NOTE Confidence: 0.8527962

01:04:00.050 --> 01:04:01.710 but it hasn't worked itself

NOTE Confidence: 0.8527962

01:04:01.710 --> 01:04:03.038 into lung cancer screening.

NOTE Confidence: 0.8527962

01:04:03.040 --> 01:04:04.700 At yeah, I just ordered

NOTE Confidence: 0.83999276

01:04:04.700 --> 01:04:06.480 a medical oncologist robot

NOTE Confidence: 0.83999276

01:04:06.480 --> 01:04:09.150 so I can take tomorrow off.

NOTE Confidence: 0.83999276

01:04:09.150 --> 01:04:10.492 And they're working on it.

NOTE Confidence: 0.83999276

01:04:10.492 --> 01:04:11.298 What about, seriously,

NOTE Confidence: 0.83999276

01:04:11.298 --> 01:04:13.442 you know when you know the biggest issue?

NOTE Confidence: 0.83999276

01:04:13.450 --> 01:04:16.140 I guess here is you go in and it's benign.

NOTE Confidence: 0.83999276

01:04:16.140 --> 01:04:18.058 You know it's it's not like a

NOTE Confidence: 0.83999276

01:04:18.058 --> 01:04:19.848 breast cancer screening or a colon

NOTE Confidence: 0.83999276

01:04:19.848 --> 01:04:21.068 screening where the procedures

NOTE Confidence: 0.83999276



01:04:21.068 --> 01:04:22.905 were done usually at the same time  
NOTE Confidence: 0.83999276

01:04:22.905 --> 01:04:24.480 or very close to the same time.  
NOTE Confidence: 0.83999276

01:04:24.480 --> 01:04:26.096 A little bit easier. You think?  
NOTE Confidence: 0.83999276

01:04:26.096 --> 01:04:26.900 That's a different.  
NOTE Confidence: 0.83999276

01:04:26.900 --> 01:04:28.520 Why people don't come in and  
NOTE Confidence: 0.83999276

01:04:28.520 --> 01:04:29.590 be screened more. I  
NOTE Confidence: 0.8405898

01:04:29.590 --> 01:04:30.400 think it is.  
NOTE Confidence: 0.8405898

01:04:30.400 --> 01:04:32.020 I think it's I think there's.  
NOTE Confidence: 0.8405898

01:04:32.020 --> 01:04:33.628 I think there's a system deterrent.  
NOTE Confidence: 0.8405898

01:04:33.630 --> 01:04:35.238 I think there's a patient deterrent.  
NOTE Confidence: 0.8405898

01:04:35.240 --> 01:04:36.590 I think that is 1.  
NOTE Confidence: 0.8405898

01:04:36.590 --> 01:04:38.709 One of the one of the challenges, yeah?  
NOTE Confidence: 0.8405898

01:04:38.709 --> 01:04:40.621 One of the things that were as as  
NOTE Confidence: 0.8405898

01:04:40.621 --> 01:04:42.361 the network kinda works to figure  
NOTE Confidence: 0.8405898

01:04:42.361 --> 01:04:44.140 out how to continue to grow.  
NOTE Confidence: 0.8405898

01:04:44.140 --> 01:04:46.435 It's one of the things that we're trying to

NOTE Confidence: 0.83511245

01:04:46.440 --> 01:04:47.211 sort through. Yeah,

NOTE Confidence: 0.83511245

01:04:47.211 --> 01:04:48.239 there are huge disparities.

NOTE Confidence: 0.83511245

01:04:48.240 --> 01:04:50.025 Of course, it could get screened in,

NOTE Confidence: 0.83511245

01:04:50.030 --> 01:04:50.508 who doesn't?

NOTE Confidence: 0.83511245

01:04:50.508 --> 01:04:51.942 If you look among populations and

NOTE Confidence: 0.83511245

01:04:51.942 --> 01:04:53.359 the socioeconomic determinants of health,

NOTE Confidence: 0.83511245

01:04:53.360 --> 01:04:54.692 we're actually doing a lot of

NOTE Confidence: 0.83511245

01:04:54.692 --> 01:04:56.696 work right now to go out into the

NOTE Confidence: 0.83511245

01:04:56.696 --> 01:04:58.021 community with navigators to find

NOTE Confidence: 0.83511245

01:04:58.021 --> 01:04:59.418 people in populations where smoking

NOTE Confidence: 0.83511245

01:04:59.418 --> 01:05:01.295 might even be at the highest levels.

NOTE Confidence: 0.83511245

01:05:01.295 --> 01:05:03.335 What are your thoughts on that in Bridgeport?

NOTE Confidence: 0.83511245

01:05:03.340 --> 01:05:05.130 That must be a big issue. Yeah,

NOTE Confidence: 0.83511245

01:05:05.130 --> 01:05:06.894 I think it. Actually it is a

NOTE Confidence: 0.83511245

01:05:06.894 --> 01:05:08.795 big issue and when we dial down

NOTE Confidence: 0.83511245

01:05:08.795 --> 01:05:10.415 I showed you the pie chart.  
NOTE Confidence: 0.83511245

01:05:10.420 --> 01:05:12.020 For you know, Connecticut.  
NOTE Confidence: 0.83511245

01:05:12.020 --> 01:05:14.020 We've actually we've actually in  
NOTE Confidence: 0.83511245

01:05:14.020 --> 01:05:16.090 Bridgeport and Fairfield and Greenwich.  
NOTE Confidence: 0.83511245

01:05:16.090 --> 01:05:18.556 We've dialed down to know what  
NOTE Confidence: 0.83511245

01:05:18.556 --> 01:05:20.949 the smoking rate is by town.  
NOTE Confidence: 0.83511245

01:05:20.950 --> 01:05:23.644 And there are navigators that are  
NOTE Confidence: 0.83511245

01:05:23.644 --> 01:05:26.575 going around to local areas as an  
NOTE Confidence: 0.83511245

01:05:26.575 --> 01:05:29.032 outreach to try and work to get  
NOTE Confidence: 0.83511245

01:05:29.114 --> 01:05:31.886 people to be enrolled her at risk.  
NOTE Confidence: 0.83511245

01:05:31.890 --> 01:05:33.706 The smoking. Rae Ann.  
NOTE Confidence: 0.83511245

01:05:33.706 --> 01:05:36.308 Granites right now is 7% in  
NOTE Confidence: 0.83511245

01:05:36.308 --> 01:05:37.620 the state of Connecticut.  
NOTE Confidence: 0.83511245

01:05:37.620 --> 01:05:39.588 It's 11% in Bridgeport's actually 21%.  
NOTE Confidence: 0.83511245

01:05:39.590 --> 01:05:42.360 So, to answer your question, we are, we are.  
NOTE Confidence: 0.83511245

01:05:42.360 --> 01:05:44.507 We were down to that kind of

NOTE Confidence: 0.83511245

01:05:44.507 --> 01:05:46.497 detail with regards to outreach,

NOTE Confidence: 0.83511245

01:05:46.500 --> 01:05:46.830 incredible.

NOTE Confidence: 0.80931735

01:05:46.830 --> 01:05:49.140 Well, maybe that was an amazing talk.

NOTE Confidence: 0.80931735

01:05:49.140 --> 01:05:52.436 I learned a lot. Sometime thank you and

NOTE Confidence: 0.80931735

01:05:52.436 --> 01:05:55.065 will hopefully have you again at some

NOTE Confidence: 0.80931735

01:05:55.065 --> 01:05:57.780 point in the future on this series.

NOTE Confidence: 0.80931735

01:05:57.780 --> 01:05:59.999 OK well last but not least you

NOTE Confidence: 0.80931735

01:05:59.999 --> 01:06:01.443 know the radiation oncologists

NOTE Confidence: 0.80931735

01:06:01.443 --> 01:06:03.548 are always in the basement.

NOTE Confidence: 0.80931735

01:06:03.550 --> 01:06:05.716 But we're really fortunate they have,

NOTE Confidence: 0.80931735

01:06:05.720 --> 01:06:07.525 you know, talk about radiation

NOTE Confidence: 0.80931735

01:06:07.525 --> 01:06:08.969 oncology and lung cancer.

NOTE Confidence: 0.80931735

01:06:08.970 --> 01:06:09.692 Bruce mcgibbon.

NOTE Confidence: 0.80931735

01:06:09.692 --> 01:06:11.497 Doctor McGibbon is an assistant

NOTE Confidence: 0.80931735

01:06:11.497 --> 01:06:12.931 professor of clinical, therapeutic,

NOTE Confidence: 0.80931735

01:06:12.931 --> 01:06:14.686 radiology and medical director of  
NOTE Confidence: 0.80931735

01:06:14.686 --> 01:06:16.550 radiation Oncology at Greenwich Hospital.  
NOTE Confidence: 0.80931735

01:06:16.550 --> 01:06:18.355 He received his medical degree  
NOTE Confidence: 0.80931735

01:06:18.355 --> 01:06:20.160 from UCLA School of Medicine.  
NOTE Confidence: 0.80931735

01:06:20.160 --> 01:06:22.540 We also completed his residency.  
NOTE Confidence: 0.80931735

01:06:22.540 --> 01:06:24.997 Doctor McGibbon treats many forms of cancer,  
NOTE Confidence: 0.80931735

01:06:25.000 --> 01:06:26.050 including breast, prostate,  
NOTE Confidence: 0.80931735

01:06:26.050 --> 01:06:27.803 lung, rectal, head and neck,  
NOTE Confidence: 0.80931735

01:06:27.803 --> 01:06:29.558 and primary metastatic brain cancers.  
NOTE Confidence: 0.80931735

01:06:29.560 --> 01:06:30.964 His research interests include  
NOTE Confidence: 0.80931735

01:06:30.964 --> 01:06:33.070 a focus on quality of life,  
NOTE Confidence: 0.80931735

01:06:33.070 --> 01:06:34.658 improvements in short course,  
NOTE Confidence: 0.80931735

01:06:34.658 --> 01:06:36.246 radiation therapy using stereotactic  
NOTE Confidence: 0.80931735

01:06:36.246 --> 01:06:38.339 techniques which will explain to us brucea.  
NOTE Confidence: 0.80931735

01:06:38.340 --> 01:06:40.790 So glad to have you here tonight.  
NOTE Confidence: 0.80931735

01:06:40.790 --> 01:06:41.490 Thank you.

NOTE Confidence: 0.80931735  
01:06:41.490 --> 01:06:42.200 Thanks for  
NOTE Confidence: 0.78264725  
01:06:42.200 --> 01:06:43.955 all the things we have  
NOTE Confidence: 0.78264725  
01:06:43.955 --> 01:06:45.710 to share my screen here.  
NOTE Confidence: 0.6105271  
01:06:50.340 --> 01:06:50.910 Maria.  
NOTE Confidence: 0.79907405  
01:06:54.700 --> 01:06:56.968 Alright, so I'm just going to touch  
NOTE Confidence: 0.79907405  
01:06:56.968 --> 01:06:59.079 tonight on some of the advances  
NOTE Confidence: 0.79907405  
01:06:59.079 --> 01:07:00.864 and reduce their long cancer,  
NOTE Confidence: 0.79907405  
01:07:00.870 --> 01:07:02.286 especially in early stage.  
NOTE Confidence: 0.79907405  
01:07:02.286 --> 01:07:04.410 I'll talk a little bit about  
NOTE Confidence: 0.79907405  
01:07:04.475 --> 01:07:06.020 all of amount of static,  
NOTE Confidence: 0.79907405  
01:07:06.020 --> 01:07:08.078 just a quick look. Just friends.  
NOTE Confidence: 0.79907405  
01:07:08.080 --> 01:07:10.334 We looked at the robot which is  
NOTE Confidence: 0.79907405  
01:07:10.334 --> 01:07:12.358 which is really exciting and I  
NOTE Confidence: 0.79907405  
01:07:12.358 --> 01:07:14.661 just want to show you an internal  
NOTE Confidence: 0.79907405  
01:07:14.730 --> 01:07:16.650 view of a radiation machine.  
NOTE Confidence: 0.79907405

01:07:16.650 --> 01:07:18.470 Since that schematic with tickle  
NOTE Confidence: 0.79907405

01:07:18.470 --> 01:07:21.109 machine on the upper left in the area,  
NOTE Confidence: 0.79907405

01:07:21.110 --> 01:07:24.438 you can see these Red Arrows show that.  
NOTE Confidence: 0.79907405

01:07:24.440 --> 01:07:26.486 Actually electron gun is in the  
NOTE Confidence: 0.79907405

01:07:26.486 --> 01:07:28.190 machine that shoots electrons down,  
NOTE Confidence: 0.79907405

01:07:28.190 --> 01:07:28.902 accelerates them,  
NOTE Confidence: 0.79907405

01:07:28.902 --> 01:07:31.038 which is why the machine linear  
NOTE Confidence: 0.79907405

01:07:31.038 --> 01:07:33.080 accelerator they get spun around and  
NOTE Confidence: 0.79907405

01:07:33.080 --> 01:07:34.670 smacked into the tungsten target.  
NOTE Confidence: 0.79907405

01:07:34.670 --> 01:07:36.716 What comes out are X Rays  
NOTE Confidence: 0.79907405

01:07:36.716 --> 01:07:38.080 and those Shinedown patient.  
NOTE Confidence: 0.79907405

01:07:38.080 --> 01:07:40.467 You look at the lower right here.  
NOTE Confidence: 0.79907405

01:07:40.470 --> 01:07:43.038 The variant is the name of the leading  
NOTE Confidence: 0.79907405

01:07:43.038 --> 01:07:44.808 manufacturer of these machines in  
NOTE Confidence: 0.79907405

01:07:44.808 --> 01:07:46.944 the world and at Greenwich Hospital.  
NOTE Confidence: 0.79907405

01:07:46.950 --> 01:07:47.630 For example,

NOTE Confidence: 0.79907405  
01:07:47.630 --> 01:07:48.990 we have true beam,  
NOTE Confidence: 0.79907405  
01:07:48.990 --> 01:07:51.718 which is another state of the art machine.  
NOTE Confidence: 0.79907405  
01:07:51.720 --> 01:07:53.970 CNC has that kind of similar  
NOTE Confidence: 0.79907405  
01:07:53.970 --> 01:07:55.095 summer design idea.  
NOTE Confidence: 0.79907405  
01:07:55.100 --> 01:07:56.684 And people often ask you about  
NOTE Confidence: 0.79907405  
01:07:56.684 --> 01:07:58.572 safety and are they going to wear  
NOTE Confidence: 0.79907405  
01:07:58.572 --> 01:08:00.126 a blanket or are they protected  
NOTE Confidence: 0.79907405  
01:08:00.126 --> 01:08:01.758 and we don't have led blankets  
NOTE Confidence: 0.79907405  
01:08:01.758 --> 01:08:03.604 and things like that in the room  
NOTE Confidence: 0.79907405  
01:08:03.604 --> 01:08:04.652 because they wouldn't really  
NOTE Confidence: 0.79907405  
01:08:04.652 --> 01:08:06.538 stop the X Rays that were using?  
NOTE Confidence: 0.79907405  
01:08:06.540 --> 01:08:07.870 Is there too high power?  
NOTE Confidence: 0.79907405  
01:08:07.870 --> 01:08:09.340 But what we have is something in  
NOTE Confidence: 0.79907405  
01:08:09.340 --> 01:08:11.069 the head of the machine called  
NOTE Confidence: 0.79907405  
01:08:11.069 --> 01:08:12.119 the Multileaf Collimator,  
NOTE Confidence: 0.79907405



01:08:12.120 --> 01:08:13.716 which is about 3 inches thick,  
NOTE Confidence: 0.79907405

01:08:13.720 --> 01:08:15.520 and so it's as if you have a 3  
NOTE Confidence: 0.79907405

01:08:15.520 --> 01:08:17.110 inch thick lead blanket protecting  
NOTE Confidence: 0.79907405

01:08:17.110 --> 01:08:18.765 you up in the machine.  
NOTE Confidence: 0.79907405

01:08:18.770 --> 01:08:20.252 And this is what allows us  
NOTE Confidence: 0.79907405

01:08:20.252 --> 01:08:21.700 to create all the shapes.  
NOTE Confidence: 0.79907405

01:08:21.700 --> 01:08:23.555 So if I go back to this,  
NOTE Confidence: 0.79907405

01:08:23.560 --> 01:08:25.348 imagine the patient lying on that.  
NOTE Confidence: 0.79907405

01:08:25.350 --> 01:08:26.442 Black tabletop there.  
NOTE Confidence: 0.79907405

01:08:26.442 --> 01:08:28.990 We can manipulate the angle of the  
NOTE Confidence: 0.79907405

01:08:29.065 --> 01:08:31.144 tabletop you can go up and down.  
NOTE Confidence: 0.79907405

01:08:31.150 --> 01:08:33.424 We can spend the machine around  
NOTE Confidence: 0.79907405

01:08:33.424 --> 01:08:35.286 different directions how we can  
NOTE Confidence: 0.79907405

01:08:35.286 --> 01:08:37.494 change the shape of the beam and so  
NOTE Confidence: 0.79907405

01:08:37.494 --> 01:08:39.959 all those things allow us to create  
NOTE Confidence: 0.79907405

01:08:39.959 --> 01:08:43.300 some fancy targeting of radiation.

NOTE Confidence: 0.79907405

01:08:43.300 --> 01:08:45.236 Another thing which is a big advance for

NOTE Confidence: 0.79907405

01:08:45.236 --> 01:08:47.428 us and spent around for some years now,

NOTE Confidence: 0.79907405

01:08:47.430 --> 01:08:48.654 but we keep refining how when

NOTE Confidence: 0.79907405

01:08:48.654 --> 01:08:50.539 you use it is it's called image

NOTE Confidence: 0.79907405

01:08:50.539 --> 01:08:51.559 guided radiation therapy.

NOTE Confidence: 0.79907405

01:08:51.560 --> 01:08:51.818 Ann.

NOTE Confidence: 0.79907405

01:08:51.818 --> 01:08:53.108 As we got more sophisticated

NOTE Confidence: 0.79907405

01:08:53.108 --> 01:08:54.650 with the shape of the beam,

NOTE Confidence: 0.79907405

01:08:54.650 --> 01:08:56.012 we've got to be more careful

NOTE Confidence: 0.79907405

01:08:56.012 --> 01:08:57.572 that we are actually on target

NOTE Confidence: 0.79907405

01:08:57.572 --> 01:08:58.776 oldstyle radiation treat big,

NOTE Confidence: 0.79907405

01:08:58.780 --> 01:09:00.754 Big feels a whole pelvis or whole

NOTE Confidence: 0.79907405

01:09:00.754 --> 01:09:02.343 breast or whatever it is and

NOTE Confidence: 0.79907405

01:09:02.343 --> 01:09:03.939 you don't have to be so refined.

NOTE Confidence: 0.79907405

01:09:03.940 --> 01:09:04.856 And now we do.

NOTE Confidence: 0.79907405

01:09:04.856 --> 01:09:06.890 And so if we look at the gun  
NOTE Confidence: 0.79907405

01:09:06.890 --> 01:09:08.070 in the lower right,  
NOTE Confidence: 0.79907405

01:09:08.070 --> 01:09:10.126 this is more of a face on view.  
NOTE Confidence: 0.79907405

01:09:10.130 --> 01:09:11.630 The machine said it from the  
NOTE Confidence: 0.79907405

01:09:11.630 --> 01:09:13.223 side and those little arms are  
NOTE Confidence: 0.79907405

01:09:13.223 --> 01:09:14.837 sticking off the side or actually.  
NOTE Confidence: 0.79907405

01:09:14.840 --> 01:09:17.552 Imaging arms and so we can spend the  
NOTE Confidence: 0.79907405

01:09:17.552 --> 01:09:19.437 machine around the patient before  
NOTE Confidence: 0.79907405

01:09:19.437 --> 01:09:21.711 treatment and get an image which  
NOTE Confidence: 0.79907405

01:09:21.711 --> 01:09:23.888 looks very much like a CAT scan.  
NOTE Confidence: 0.79907405

01:09:23.890 --> 01:09:27.013 So on the upper left is a split view,  
NOTE Confidence: 0.79907405

01:09:27.020 --> 01:09:28.670 here where the upper left  
NOTE Confidence: 0.79907405

01:09:28.670 --> 01:09:30.320 and lower right are from  
NOTE Confidence: 0.8578742

01:09:30.390 --> 01:09:33.022 a real CAT scan done for radiation  
NOTE Confidence: 0.8578742

01:09:33.022 --> 01:09:35.191 treatment planning and the lower left  
NOTE Confidence: 0.8578742

01:09:35.191 --> 01:09:37.452 upper right are from the cone beam

NOTE Confidence: 0.8578742

01:09:37.460 --> 01:09:39.932 CT and you can see that the image

NOTE Confidence: 0.8578742

01:09:39.932 --> 01:09:42.623 quality is just a little bit different

NOTE Confidence: 0.8578742

01:09:42.623 --> 01:09:44.980 but really quite excellent in red.

NOTE Confidence: 0.8578742

01:09:44.980 --> 01:09:47.332 Circle there, or actually it is showing the

NOTE Confidence: 0.8578742

01:09:47.332 --> 01:09:49.666 tumor that were fired on that on that day.

NOTE Confidence: 0.8578742

01:09:49.670 --> 01:09:52.073 So this way we can set people up have

NOTE Confidence: 0.8578742

01:09:52.073 --> 01:09:54.636 marks on the skin to get them quite close,

NOTE Confidence: 0.8578742

01:09:54.640 --> 01:09:56.566 but then we do the cone beam CT and

NOTE Confidence: 0.8578742

01:09:56.566 --> 01:09:58.795 then we really dial it into your time

NOTE Confidence: 0.8578742

01:09:58.795 --> 01:10:00.440 about millimeter or submillimeter.

NOTE Confidence: 0.83739007

01:10:03.200 --> 01:10:05.811 The other thing we've done with the

NOTE Confidence: 0.83739007

01:10:05.811 --> 01:10:08.509 shaping the beam and manipulating the.

NOTE Confidence: 0.83739007

01:10:08.510 --> 01:10:10.589 Position of the machine itself and the

NOTE Confidence: 0.83739007

01:10:10.589 --> 01:10:13.277 table itself is we've gone from using what's

NOTE Confidence: 0.83739007

01:10:13.277 --> 01:10:15.434 called 3D conformal radiation into joining

NOTE Confidence: 0.83739007

01:10:15.434 --> 01:10:17.612 the left with intensity modulated radiation  
NOTE Confidence: 0.83739007

01:10:17.612 --> 01:10:20.042 therapy on the right, and this call.  
NOTE Confidence: 0.83739007

01:10:20.042 --> 01:10:22.417 Color wash sounds like a Topa graphical  
NOTE Confidence: 0.83739007

01:10:22.417 --> 01:10:24.873 map and you can see on the right  
NOTE Confidence: 0.83739007

01:10:24.873 --> 01:10:27.208 that the doses is more constrained.  
NOTE Confidence: 0.83739007

01:10:27.210 --> 01:10:28.191 It's really tired,  
NOTE Confidence: 0.83739007

01:10:28.191 --> 01:10:30.950 much more in the center of the chest.  
NOTE Confidence: 0.83739007

01:10:30.950 --> 01:10:34.180 In this case is its own being treated for two  
NOTE Confidence: 0.83739007

01:10:34.252 --> 01:10:37.402 review safaga's like you can see in the see.  
NOTE Confidence: 0.83739007

01:10:37.410 --> 01:10:38.602 My cursor will bit.  
NOTE Confidence: 0.83739007

01:10:38.602 --> 01:10:40.850 This Gray zone here is the heart.  
NOTE Confidence: 0.83739007

01:10:40.850 --> 01:10:42.986 In treatment left is giving a lot more,  
NOTE Confidence: 0.83739007

01:10:42.990 --> 01:10:43.788 just the hard.  
NOTE Confidence: 0.83739007

01:10:43.788 --> 01:10:44.320 For example,  
NOTE Confidence: 0.83739007

01:10:44.320 --> 01:10:46.189 the treatment on the right and this  
NOTE Confidence: 0.83739007

01:10:46.189 --> 01:10:48.579 here is the verb rate is fine and this

NOTE Confidence: 0.83739007

01:10:48.579 --> 01:10:50.459 is the spinal cord in the center.

NOTE Confidence: 0.83739007

01:10:50.460 --> 01:10:52.660 You see again that the truth I left

NOTE Confidence: 0.83739007

01:10:52.660 --> 01:10:54.782 is getting a lot more goes to the

NOTE Confidence: 0.83739007

01:10:54.782 --> 01:10:56.868 spinal cord and the one on the right.

NOTE Confidence: 0.83739007

01:10:56.870 --> 01:10:58.466 So we're getting definitely a lot.

NOTE Confidence: 0.83739007

01:10:58.470 --> 01:11:00.570 Lot fans here a lot tighter and

NOTE Confidence: 0.83739007

01:11:00.570 --> 01:11:02.800 what we can do with radiation.

NOTE Confidence: 0.83739007

01:11:02.800 --> 01:11:04.798 One technique on talk more about

NOTE Confidence: 0.83739007

01:11:04.798 --> 01:11:06.889 tonight is called start empty body

NOTE Confidence: 0.83739007

01:11:06.889 --> 01:11:08.959 radiation therapy and this is a

NOTE Confidence: 0.83739007

01:11:08.959 --> 01:11:10.837 technique which is really been around

NOTE Confidence: 0.83739007

01:11:10.837 --> 01:11:13.492 for the better part of 10 or 15 years.

NOTE Confidence: 0.83739007

01:11:13.492 --> 01:11:15.760 But it's really coming into its own.

NOTE Confidence: 0.83739007

01:11:15.760 --> 01:11:18.028 The last maybe 5 to 8 years.

NOTE Confidence: 0.83739007

01:11:18.030 --> 01:11:19.982 A lot more data behind it and what

NOTE Confidence: 0.83739007

01:11:19.982 --> 01:11:22.588 it is it's it's created a much  
NOTE Confidence: 0.83739007

01:11:22.588 --> 01:11:24.393 better in mobilizations were keeping  
NOTE Confidence: 0.83739007

01:11:24.393 --> 01:11:26.625 the patient very still position and  
NOTE Confidence: 0.83739007

01:11:26.625 --> 01:11:28.686 we are accounting for movement of  
NOTE Confidence: 0.83739007

01:11:28.686 --> 01:11:30.870 the lungs or movement of liver or  
NOTE Confidence: 0.83739007

01:11:30.936 --> 01:11:33.228 whatever going after an we're using.  
NOTE Confidence: 0.83739007

01:11:33.230 --> 01:11:34.982 Imaging like stuff like the cone  
NOTE Confidence: 0.83739007

01:11:34.982 --> 01:11:37.227 beam CT Ocean before and getting down  
NOTE Confidence: 0.83739007

01:11:37.227 --> 01:11:38.917 to this very accurate treatment.  
NOTE Confidence: 0.83739007

01:11:38.920 --> 01:11:41.125 And So what we've done is taking.  
NOTE Confidence: 0.83739007

01:11:41.130 --> 01:11:42.894 Treatments are typically go on for  
NOTE Confidence: 0.83739007

01:11:42.894 --> 01:11:45.129 weeks at a time and condense them  
NOTE Confidence: 0.83739007

01:11:45.129 --> 01:11:47.127 into only one to five treatments,  
NOTE Confidence: 0.83739007

01:11:47.130 --> 01:11:49.026 and these are very high powered,  
NOTE Confidence: 0.83739007

01:11:49.030 --> 01:11:51.412 refocused and have allowed us to  
NOTE Confidence: 0.83739007

01:11:51.412 --> 01:11:53.748 go more aggressively after a lot

NOTE Confidence: 0.83739007

01:11:53.748 --> 01:11:55.770 of tumors that we couldn't before.

NOTE Confidence: 0.83739007

01:11:55.770 --> 01:11:57.618 So I'm gonna touch radiation therapy

NOTE Confidence: 0.83739007

01:11:57.618 --> 01:11:58.542 in the setting.

NOTE Confidence: 0.83739007

01:11:58.550 --> 01:12:00.706 Lung cancer is used for early stage.

NOTE Confidence: 0.83739007

01:12:00.710 --> 01:12:02.570 That's non small cell lung cancer.

NOTE Confidence: 0.83739007

01:12:02.570 --> 01:12:04.388 Locally advanced things like Stage 3

NOTE Confidence: 0.83739007

01:12:04.388 --> 01:12:06.279 where it's written to lymph nodes.

NOTE Confidence: 0.83739007

01:12:06.280 --> 01:12:08.464 It's also good for limited stage

NOTE Confidence: 0.83739007

01:12:08.464 --> 01:12:10.825 small cell lung cancer and extensive

NOTE Confidence: 0.83739007

01:12:10.825 --> 01:12:12.905 stage where it's written more.

NOTE Confidence: 0.83739007

01:12:12.910 --> 01:12:15.158 But we don't have time for all those,

NOTE Confidence: 0.83739007

01:12:15.160 --> 01:12:17.064 so I'm going to talk about the

NOTE Confidence: 0.83739007

01:12:17.064 --> 01:12:18.250 early stage on this.

NOTE Confidence: 0.83739007

01:12:18.250 --> 01:12:18.549 Also,

NOTE Confidence: 0.83739007

01:12:18.549 --> 01:12:20.044 an oligo metastatic oligo metastatic

NOTE Confidence: 0.83739007



01:12:20.044 --> 01:12:21.798 is when the cancer has spread  
NOTE Confidence: 0.83739007

01:12:21.798 --> 01:12:23.304 beyond the chest in this case,  
NOTE Confidence: 0.83739007

01:12:23.310 --> 01:12:24.778 but only two sites.  
NOTE Confidence: 0.83739007

01:12:24.778 --> 01:12:27.860 And this slide is a little busy side,  
NOTE Confidence: 0.83739007

01:12:27.860 --> 01:12:29.904 but give you the takeaway which is  
NOTE Confidence: 0.83739007

01:12:29.904 --> 01:12:32.138 that we have been using for early  
NOTE Confidence: 0.83739007

01:12:32.138 --> 01:12:34.076 stage to stage one lung cancer.  
NOTE Confidence: 0.83739007

01:12:34.080 --> 01:12:36.879 Non small cell got a tumor like this one.  
NOTE Confidence: 0.83739007

01:12:36.880 --> 01:12:38.132 See this picture here.  
NOTE Confidence: 0.83739007

01:12:38.132 --> 01:12:40.405 It's nice rounded tumor and if the  
NOTE Confidence: 0.83739007

01:12:40.405 --> 01:12:42.421 patient was not a surgical candidate  
NOTE Confidence: 0.83739007

01:12:42.421 --> 01:12:44.307 we were treating him with about  
NOTE Confidence: 0.83739007

01:12:44.307 --> 01:12:46.204 6 to 7 weeks of daily radiation  
NOTE Confidence: 0.85368514

01:12:46.210 --> 01:12:48.492 and the success rate in terms of  
NOTE Confidence: 0.85368514

01:12:48.492 --> 01:12:50.337 local control is only about 50  
NOTE Confidence: 0.85368514

01:12:50.337 --> 01:12:52.380 or 60% and that's all we really

NOTE Confidence: 0.85368514

01:12:52.380 --> 01:12:54.599 had to offer for years and years.

NOTE Confidence: 0.85368514

01:12:54.600 --> 01:12:56.220 And then we develop these.

NOTE Confidence: 0.85368514

01:12:56.220 --> 01:12:59.020 Through a tactic or his SP arty type

NOTE Confidence: 0.85368514

01:12:59.020 --> 01:13:01.021 of techniques others mentioning and

NOTE Confidence: 0.85368514

01:13:01.021 --> 01:13:03.870 they studied it in this famous Artio

NOTE Confidence: 0.85368514

01:13:03.941 --> 01:13:06.685 Geo 236 study and they saw that the

NOTE Confidence: 0.85368514

01:13:06.685 --> 01:13:09.240 local control rates shot way up and

NOTE Confidence: 0.85368514

01:13:09.240 --> 01:13:11.492 I talked about 97.6% three years

NOTE Confidence: 0.85368514

01:13:11.492 --> 01:13:13.778 and that percent control did drift

NOTE Confidence: 0.85368514

01:13:13.778 --> 01:13:15.938 down overtime but much much higher.

NOTE Confidence: 0.85368514

01:13:15.940 --> 01:13:18.166 So we know that we're really

NOTE Confidence: 0.85368514

01:13:18.166 --> 01:13:19.279 onto something there.

NOTE Confidence: 0.6359835

01:13:21.360 --> 01:13:25.753 At how aggressively we. Trial was done.

NOTE Confidence: 0.6359835

01:13:25.753 --> 01:13:28.039 Patients who either were medically unfit

NOTE Confidence: 0.6359835

01:13:28.039 --> 01:13:30.464 for surgery or had refused surgery and

NOTE Confidence: 0.6359835

01:13:30.464 --> 01:13:32.930 had two words are relatively small.  
NOTE Confidence: 0.6359835

01:13:32.930 --> 01:13:36.042 So is a really high powered good local  
NOTE Confidence: 0.6359835

01:13:36.042 --> 01:13:38.850 control and very acceptable toxicity.  
NOTE Confidence: 0.6359835

01:13:38.850 --> 01:13:39.903 They ultimately more  
NOTE Confidence: 0.6359835

01:13:39.903 --> 01:13:41.307 formally compared this SP.  
NOTE Confidence: 0.6359835

01:13:41.310 --> 01:13:42.562 Arty to conventional radiation  
NOTE Confidence: 0.6359835

01:13:42.562 --> 01:13:44.896 is where we got a new computer  
NOTE Confidence: 0.6359835

01:13:44.896 --> 01:13:47.266 historical data that this was better,  
NOTE Confidence: 0.6359835

01:13:47.270 --> 01:13:49.727 but they ran out to see an.  
NOTE Confidence: 0.6359835

01:13:49.730 --> 01:13:51.680 They show that yes indeed the  
NOTE Confidence: 0.6359835

01:13:51.680 --> 01:13:53.801 control rate was was much better  
NOTE Confidence: 0.6359835

01:13:53.801 --> 01:13:56.045 when I was studying more formally.  
NOTE Confidence: 0.6359835

01:13:56.050 --> 01:13:58.860 In this case it was 14% versus 31%,  
NOTE Confidence: 0.6359835

01:13:58.860 --> 01:14:00.610 but big picture was stereotactic.  
NOTE Confidence: 0.6359835

01:14:00.610 --> 01:14:04.120 When we can use it gives a much higher bill,  
NOTE Confidence: 0.6359835

01:14:04.120 --> 01:14:05.780 is much more concentrated.

NOTE Confidence: 0.6359835

01:14:05.780 --> 01:14:07.855 Oxville tried to do that.

NOTE Confidence: 0.8377316

01:14:10.250 --> 01:14:12.664 There have been some efforts, people wonder.

NOTE Confidence: 0.8377316

01:14:12.664 --> 01:14:14.299 Well you know what about

NOTE Confidence: 0.8377316

01:14:14.299 --> 01:14:15.870 surgery versus versus radiation?

NOTE Confidence: 0.8377316

01:14:15.870 --> 01:14:18.215 And the only way to really answer

NOTE Confidence: 0.8377316

01:14:18.215 --> 01:14:20.209 that properly is with randomized

NOTE Confidence: 0.8377316

01:14:20.209 --> 01:14:22.504 trials where people rolling you.

NOTE Confidence: 0.8377316

01:14:22.510 --> 01:14:24.616 Computer flips the coin effectively unused.

NOTE Confidence: 0.8377316

01:14:24.620 --> 01:14:26.244 Yesterday you get radiation,

NOTE Confidence: 0.8377316

01:14:26.244 --> 01:14:28.680 and those trials have been really

NOTE Confidence: 0.8377316

01:14:28.753 --> 01:14:30.588 hard to accrue patients too.

NOTE Confidence: 0.8377316

01:14:30.590 --> 01:14:31.374 And ultimately,

NOTE Confidence: 0.8377316

01:14:31.374 --> 01:14:34.118 they did take two trials that only

NOTE Confidence: 0.8377316

01:14:34.118 --> 01:14:36.408 partially accrued and put them together

NOTE Confidence: 0.8377316

01:14:36.408 --> 01:14:39.220 and publish the results an in that trial.

NOTE Confidence: 0.8377316

01:14:39.220 --> 01:14:41.090 Actually, it made radiation look  
NOTE Confidence: 0.8377316

01:14:41.090 --> 01:14:42.586 slightly better than surgery,  
NOTE Confidence: 0.8377316

01:14:42.590 --> 01:14:45.061 but it I don't think people fully  
NOTE Confidence: 0.8377316

01:14:45.061 --> 01:14:47.363 believe those results because the this  
NOTE Confidence: 0.8377316

01:14:47.363 --> 01:14:49.715 wasn't high enough numbers and really,  
NOTE Confidence: 0.8377316

01:14:49.720 --> 01:14:52.338 for patients who are still medically fit,  
NOTE Confidence: 0.8377316

01:14:52.340 --> 01:14:54.220 our top choices still surgery,  
NOTE Confidence: 0.8377316

01:14:54.220 --> 01:14:56.936 but the radiation is not far behind  
NOTE Confidence: 0.8377316

01:14:56.936 --> 01:14:58.868 and definitely formations too or  
NOTE Confidence: 0.8377316

01:14:58.868 --> 01:15:00.968 recent decline or or medically unfit.  
NOTE Confidence: 0.8377316

01:15:00.970 --> 01:15:02.407 Then we know.  
NOTE Confidence: 0.8377316

01:15:02.407 --> 01:15:05.760 The radiation is is a great option.  
NOTE Confidence: 0.8377316

01:15:05.760 --> 01:15:07.965 Let's look at all going to stack.  
NOTE Confidence: 0.8377316

01:15:07.970 --> 01:15:09.540 There were actually two really  
NOTE Confidence: 0.8377316

01:15:09.540 --> 01:15:10.796 exciting papers for us.  
NOTE Confidence: 0.8377316

01:15:10.800 --> 01:15:12.380 They were published in 2019.

NOTE Confidence: 0.8377316

01:15:12.380 --> 01:15:14.578 The first is verges the Sabre Comet.

NOTE Confidence: 0.8377316

01:15:14.580 --> 01:15:15.210 Now study.

NOTE Confidence: 0.8377316

01:15:15.210 --> 01:15:16.785 And what is it took?

NOTE Confidence: 0.8377316

01:15:16.790 --> 01:15:18.360 Patients were the primary tumor.

NOTE Confidence: 0.8377316

01:15:18.360 --> 01:15:20.848 The tumor in the lung had been controlled

NOTE Confidence: 0.8377316

01:15:20.848 --> 01:15:23.399 and they had anywhere from one to five.

NOTE Confidence: 0.8377316

01:15:23.400 --> 01:15:25.272 Metastatic sites could be

NOTE Confidence: 0.8377316

01:15:25.272 --> 01:15:27.612 in the bone or liver.

NOTE Confidence: 0.8377316

01:15:27.620 --> 01:15:30.000 In another part of the lung and

NOTE Confidence: 0.8377316

01:15:30.000 --> 01:15:32.146 they randomize either you got that

NOTE Confidence: 0.8377316

01:15:32.146 --> 01:15:33.911 stereotactic during this party for

NOTE Confidence: 0.8377316

01:15:33.911 --> 01:15:36.413 all the sites or just your standard

NOTE Confidence: 0.8377316

01:15:36.413 --> 01:15:38.549 of care kind of palliative treatment

NOTE Confidence: 0.8377316

01:15:38.549 --> 01:15:40.943 and huge difference was seeing the

NOTE Confidence: 0.8377316

01:15:40.943 --> 01:15:43.379 median survival went from 28 months to

NOTE Confidence: 0.8377316

01:15:43.379 --> 01:15:45.520 41 months just from from doing that.  
NOTE Confidence: 0.8377316

01:15:45.520 --> 01:15:48.049 So that was a big win for us and  
NOTE Confidence: 0.8377316

01:15:48.049 --> 01:15:50.003 understanding it going more aggressively  
NOTE Confidence: 0.8377316

01:15:50.003 --> 01:15:52.018 after this metastatic sites makes  
NOTE Confidence: 0.8377316

01:15:52.018 --> 01:15:53.948 sense versus before the ideas.  
NOTE Confidence: 0.8377316

01:15:53.950 --> 01:15:56.526 We would only do that if they  
NOTE Confidence: 0.8377316

01:15:56.526 --> 01:15:57.950 were causing pain or.  
NOTE Confidence: 0.8377316

01:15:57.950 --> 01:15:59.798 Leading or or something will replace defense.  
NOTE Confidence: 0.8377316

01:15:59.800 --> 01:16:00.733 Now we say,  
NOTE Confidence: 0.8377316

01:16:00.733 --> 01:16:02.910 well we can play with offense here  
NOTE Confidence: 0.8377316

01:16:02.980 --> 01:16:05.276 and try to get rid of these spots.  
NOTE Confidence: 0.8377316

01:16:05.280 --> 01:16:07.278 The other study that was published  
NOTE Confidence: 0.8377316

01:16:07.278 --> 01:16:08.610 in a different Journal.  
NOTE Confidence: 0.8377316

01:16:08.610 --> 01:16:10.934 Another great Journal in 2019 seems narrow.  
NOTE Confidence: 0.8377316

01:16:10.940 --> 01:16:13.937 This is this is non small cell lung cancer.  
NOTE Confidence: 0.8377316

01:16:13.940 --> 01:16:15.956 Not to be clear and these patients

NOTE Confidence: 0.8377316

01:16:15.956 --> 01:16:17.930 had three or fewer metastases,

NOTE Confidence: 0.8377316

01:16:17.930 --> 01:16:20.142 but same idea where there's no real

NOTE Confidence: 0.8377316

01:16:20.142 --> 01:16:22.268 progression at the site in the lung

NOTE Confidence: 0.8377316

01:16:22.268 --> 01:16:24.444 for at least three months after doing

NOTE Confidence: 0.8377316

01:16:24.444 --> 01:16:26.589 chemotherapy or something is targeted.

NOTE Confidence: 0.8377316

01:16:26.590 --> 01:16:28.135 Therapies done channels mentioning and

NOTE Confidence: 0.8377316

01:16:28.135 --> 01:16:30.098 they were offered either what they

NOTE Confidence: 0.8377316

01:16:30.098 --> 01:16:31.586 called local consolidated treatment,

NOTE Confidence: 0.8377316

01:16:31.590 --> 01:16:33.914 which is either that SPRT or surgery,

NOTE Confidence: 0.8377316

01:16:33.920 --> 01:16:36.130 and for the most grounded.

NOTE Confidence: 0.8377316

01:16:36.130 --> 01:16:36.512 Trials,

NOTE Confidence: 0.8377316

01:16:36.512 --> 01:16:36.894 yes,

NOTE Confidence: 0.8377316

01:16:36.894 --> 01:16:38.804 your team or maintenance therapies

NOTE Confidence: 0.8377316

01:16:38.804 --> 01:16:41.340 are not observation and again a big

NOTE Confidence: 0.8377316

01:16:41.340 --> 01:16:43.326 difference in the median overall survival.

NOTE Confidence: 0.8377316



01:16:43.330 --> 01:16:45.130 17 months to 42 months.

NOTE Confidence: 0.8377316

01:16:45.130 --> 01:16:47.349 So we've seen really just in the

NOTE Confidence: 0.8377316

01:16:47.349 --> 01:16:49.990 last couple of years that we have

NOTE Confidence: 0.8377316

01:16:49.990 --> 01:16:51.610 a technique for stereotactic.

NOTE Confidence: 0.8377316

01:16:51.610 --> 01:16:54.301 We see how to safely use it and when

NOTE Confidence: 0.8377316

01:16:54.301 --> 01:16:57.370 to hold back when should have surgery.

NOTE Confidence: 0.8377316

01:16:57.370 --> 01:16:59.330 One should be radiation combination

NOTE Confidence: 0.8377316

01:16:59.330 --> 01:17:01.992 of some patients where one of the

NOTE Confidence: 0.8377316

01:17:01.992 --> 01:17:04.204 regions is a great target for surgery,

NOTE Confidence: 0.8377316

01:17:04.210 --> 01:17:06.290 but another one really isn't.

NOTE Confidence: 0.8377316

01:17:06.290 --> 01:17:08.376 And so make it survey for one

NOTE Confidence: 0.8377316

01:17:08.376 --> 01:17:09.270 and stereotactic for

NOTE Confidence: 0.8487329

01:17:09.333 --> 01:17:10.458 another, for example.

NOTE Confidence: 0.8487329

01:17:10.458 --> 01:17:12.726 And so we just have a better

NOTE Confidence: 0.8487329

01:17:12.726 --> 01:17:14.608 idea of how to apply this,

NOTE Confidence: 0.8487329

01:17:14.610 --> 01:17:16.458 especially in these unique settings where

NOTE Confidence: 0.8487329

01:17:16.458 --> 01:17:18.768 cancer has spread but not very extensively.

NOTE Confidence: 0.8487329

01:17:18.770 --> 01:17:21.948 And so that's very exciting for us.

NOTE Confidence: 0.8487329

01:17:21.950 --> 01:17:23.726 In terms of some future directions

NOTE Confidence: 0.8487329

01:17:23.726 --> 01:17:25.440 and how yells getting involved,

NOTE Confidence: 0.8487329

01:17:25.440 --> 01:17:27.386 one of my colleagues after Henry Park

NOTE Confidence: 0.8487329

01:17:27.386 --> 01:17:29.695 has opened a trial where we've had

NOTE Confidence: 0.8487329

01:17:29.695 --> 01:17:31.460 a little difficulty with radiation.

NOTE Confidence: 0.8487329

01:17:31.460 --> 01:17:33.679 For tumors that are called central tumors,

NOTE Confidence: 0.8487329

01:17:33.680 --> 01:17:35.582 mean ones that are right up

NOTE Confidence: 0.8487329

01:17:35.582 --> 01:17:36.850 against the main airway.

NOTE Confidence: 0.8487329

01:17:36.850 --> 01:17:38.430 Some of the big vessels,

NOTE Confidence: 0.8487329

01:17:38.430 --> 01:17:40.886 and we know that we have to be

NOTE Confidence: 0.8487329

01:17:40.886 --> 01:17:42.869 more careful in the dose there.

NOTE Confidence: 0.8487329

01:17:42.870 --> 01:17:44.138 Those have typically been

NOTE Confidence: 0.8487329

01:17:44.138 --> 01:17:45.406 done with five treatments,

NOTE Confidence: 0.8487329

01:17:45.410 --> 01:17:47.252 and he started trying to see  
NOTE Confidence: 0.8487329

01:17:47.252 --> 01:17:48.480 about safely and effectively  
NOTE Confidence: 0.8487329

01:17:48.541 --> 01:17:50.156 true that in three treatments,  
NOTE Confidence: 0.8487329

01:17:50.160 --> 01:17:52.800 and that was started in New Haven movies.  
NOTE Confidence: 0.8487329

01:17:52.800 --> 01:17:55.494 We've opened up in the multiple  
NOTE Confidence: 0.8487329

01:17:55.494 --> 01:17:57.769 care center at this point  
NOTE Confidence: 0.8487329

01:17:57.769 --> 01:18:00.464 and the other one is is this.  
NOTE Confidence: 0.8487329

01:18:00.470 --> 01:18:02.290 Trial where they taking us for your  
NOTE Confidence: 0.8487329

01:18:02.290 --> 01:18:04.289 tea and then it's without adding  
NOTE Confidence: 0.8487329

01:18:04.289 --> 01:18:05.837 some union therapy afterwards.  
NOTE Confidence: 0.8487329

01:18:05.840 --> 01:18:08.368 And actually a few that are going on.  
NOTE Confidence: 0.8487329

01:18:08.370 --> 01:18:09.638 But this keynote 867.  
NOTE Confidence: 0.8487329

01:18:09.638 --> 01:18:12.298 It has a lot of saving and we  
NOTE Confidence: 0.8487329

01:18:12.298 --> 01:18:13.998 could see that has opened.  
NOTE Confidence: 0.8487329

01:18:14.000 --> 01:18:15.925 Its about to open and at Yale.  
NOTE Confidence: 0.8487329

01:18:15.930 --> 01:18:18.405 And so we're very excited about that as well.

NOTE Confidence: 0.8069872

01:18:20.450 --> 01:18:22.700 Ann, just a brief word in

NOTE Confidence: 0.8069872

01:18:22.700 --> 01:18:24.200 Connecticut and surrounding states.

NOTE Confidence: 0.8069872

01:18:24.200 --> 01:18:26.622 There tends to be a lot of

NOTE Confidence: 0.8069872

01:18:26.622 --> 01:18:28.330 advertising about certain machines,

NOTE Confidence: 0.8069872

01:18:28.330 --> 01:18:30.045 especially the cyber knife machine

NOTE Confidence: 0.8069872

01:18:30.045 --> 01:18:32.205 at the bottom right and sometimes

NOTE Confidence: 0.8069872

01:18:32.205 --> 01:18:34.509 about protons and just talk about

NOTE Confidence: 0.8069872

01:18:34.509 --> 01:18:36.200 this briefly describe machine.

NOTE Confidence: 0.8069872

01:18:36.200 --> 01:18:37.680 If you look carefully,

NOTE Confidence: 0.8069872

01:18:37.680 --> 01:18:40.330 it's really the robot that is used,

NOTE Confidence: 0.8069872

01:18:40.330 --> 01:18:41.494 not the robot.

NOTE Confidence: 0.8069872

01:18:41.494 --> 01:18:44.210 Like Doctor Blocks were talking about with

NOTE Confidence: 0.8069872

01:18:44.285 --> 01:18:47.077 the robot they used for building cars on.

NOTE Confidence: 0.8069872

01:18:47.080 --> 01:18:50.256 The assembly line is the base of that.

NOTE Confidence: 0.8069872

01:18:50.260 --> 01:18:52.414 That machine and the top of

NOTE Confidence: 0.8069872

01:18:52.414 --> 01:18:54.453 it is a miniaturized version  
NOTE Confidence: 0.8069872  
01:18:54.453 --> 01:18:56.549 of that linear accelerator.  
NOTE Confidence: 0.8069872  
01:18:56.550 --> 01:18:58.328 An it delivers a little pencil beams  
NOTE Confidence: 0.8069872  
01:18:58.328 --> 01:19:00.847 out to tumors and it's it's a very good  
NOTE Confidence: 0.8069872  
01:19:00.847 --> 01:19:02.600 machine for doing stereotactic treatments.  
NOTE Confidence: 0.8069872  
01:19:02.600 --> 01:19:04.896 It doesn't have the flexibility to do other,  
NOTE Confidence: 0.8069872  
01:19:04.900 --> 01:19:05.761 larger, more traditional  
NOTE Confidence: 0.8069872  
01:19:05.761 --> 01:19:07.483 treatments like the true beam does,  
NOTE Confidence: 0.8069872  
01:19:07.490 --> 01:19:09.218 so it's a little bit pigeonholed  
NOTE Confidence: 0.8069872  
01:19:09.218 --> 01:19:10.370 and what it does,  
NOTE Confidence: 0.8069872  
01:19:10.370 --> 01:19:14.026 but it is excellent at what it does.  
NOTE Confidence: 0.8069872  
01:19:14.030 --> 01:19:15.050 In the problem really,  
NOTE Confidence: 0.8069872  
01:19:15.050 --> 01:19:17.240 for those use it is that you know  
NOTE Confidence: 0.8069872  
01:19:17.240 --> 01:19:18.452 there's no particular reason  
NOTE Confidence: 0.8069872  
01:19:18.452 --> 01:19:20.160 to travel for that machine.  
NOTE Confidence: 0.8069872  
01:19:20.160 --> 01:19:21.984 When you have other machines that

NOTE Confidence: 0.8069872

01:19:21.984 --> 01:19:24.083 can do just just as good job

NOTE Confidence: 0.8069872

01:19:24.083 --> 01:19:25.709 and are much closer to home,

NOTE Confidence: 0.8069872

01:19:25.710 --> 01:19:27.170 so was something was quite

NOTE Confidence: 0.8069872

01:19:27.170 --> 01:19:28.338 exciting some years ago.

NOTE Confidence: 0.8069872

01:19:28.340 --> 01:19:30.573 Now it's a little less exciting because

NOTE Confidence: 0.8069872

01:19:30.573 --> 01:19:32.720 other genes we do do just as well,

NOTE Confidence: 0.8069872

01:19:32.720 --> 01:19:35.610 but you do hear bout on the radio a lot

NOTE Confidence: 0.8069872

01:19:35.694 --> 01:19:38.368 for long and even more for prostate.

NOTE Confidence: 0.8069872

01:19:38.370 --> 01:19:41.574 And the other side is there on the protons,

NOTE Confidence: 0.8069872

01:19:41.580 --> 01:19:43.842 protons is spitting out a totally

NOTE Confidence: 0.8069872

01:19:43.842 --> 01:19:45.350 different particle national proton

NOTE Confidence: 0.8069872

01:19:45.409 --> 01:19:47.775 particle instead of an X Ray and

NOTE Confidence: 0.8069872

01:19:47.775 --> 01:19:49.193 tremendous advertising their very

NOTE Confidence: 0.8069872

01:19:49.193 --> 01:19:51.257 expensive machines to build yales is

NOTE Confidence: 0.8069872

01:19:51.257 --> 01:19:53.438 looking into whether I might want to

NOTE Confidence: 0.8069872

01:19:53.438 --> 01:19:55.674 be involved in having one of those  
NOTE Confidence: 0.8069872

01:19:55.674 --> 01:19:58.356 are signals or collaborating with someone,  
NOTE Confidence: 0.8069872

01:19:58.360 --> 01:20:00.598 and it does seem to have.  
NOTE Confidence: 0.8069872

01:20:00.600 --> 01:20:02.165 Here advantages in certain tumors  
NOTE Confidence: 0.8069872

01:20:02.165 --> 01:20:04.010 and other tumors not at all.  
NOTE Confidence: 0.8069872

01:20:04.010 --> 01:20:05.942 Lung cancer is one of those ones  
NOTE Confidence: 0.8069872

01:20:05.942 --> 01:20:07.519 where it's much less certain  
NOTE Confidence: 0.8069872

01:20:07.519 --> 01:20:09.589 whether there's an advantage to it.  
NOTE Confidence: 0.8069872

01:20:09.590 --> 01:20:11.822 So we get some trials to see if  
NOTE Confidence: 0.8069872

01:20:11.822 --> 01:20:13.620 it's better or actually worse.  
NOTE Confidence: 0.8069872

01:20:13.620 --> 01:20:13.930 Eventually,  
NOTE Confidence: 0.8069872

01:20:13.930 --> 01:20:16.100 there have been some studies have shown.  
NOTE Confidence: 0.7998338

01:20:18.270 --> 01:20:19.742 Trial for breast cancer.  
NOTE Confidence: 0.7998338

01:20:19.742 --> 01:20:21.581 For example, it showed little  
NOTE Confidence: 0.7998338

01:20:21.581 --> 01:20:23.783 bit higher risk of rib fracture.  
NOTE Confidence: 0.7998338

01:20:23.790 --> 01:20:25.998 The same protons instead X Rays.

NOTE Confidence: 0.7998338

01:20:26.000 --> 01:20:28.148 So protons are something that are

NOTE Confidence: 0.7998338

01:20:28.148 --> 01:20:30.763 really starting get more popular in the

NOTE Confidence: 0.7998338

01:20:30.763 --> 01:20:32.989 country miss anymore machines but mode.

NOTE Confidence: 0.7998338

01:20:32.990 --> 01:20:34.922 The vast majority of the treatments

NOTE Confidence: 0.7998338

01:20:34.922 --> 01:20:37.069 going down the US are being

NOTE Confidence: 0.7998338

01:20:37.069 --> 01:20:39.044 done with the traditional linear

NOTE Confidence: 0.7998338

01:20:39.044 --> 01:20:41.090 accelerators that have been refined,

NOTE Confidence: 0.7998338

01:20:41.090 --> 01:20:43.350 refined like the true beam

NOTE Confidence: 0.7998338

01:20:43.350 --> 01:20:45.610 shown in the top there.

NOTE Confidence: 0.7998338

01:20:45.610 --> 01:20:47.162 And so that's it for me to be

NOTE Confidence: 0.7998338

01:20:47.162 --> 01:20:48.790 happy to take questions as well.

NOTE Confidence: 0.8974694

01:20:51.390 --> 01:20:52.734 Thank you very much.

NOTE Confidence: 0.8974694

01:20:52.734 --> 01:20:54.414 That was that was wonderful.

NOTE Confidence: 0.8974694

01:20:54.420 --> 01:20:57.960 Let's see what questions we have.

NOTE Confidence: 0.8974694

01:20:57.960 --> 01:20:58.908 Here's a couple.

NOTE Confidence: 0.7484765



01:21:02.040 --> 01:21:04.574 Who's I marquita treated tumor that has  
NOTE Confidence: 0.7484765

01:21:04.574 --> 01:21:06.906 become resistant to immunotherapy in the  
NOTE Confidence: 0.7484765

01:21:06.906 --> 01:21:09.276 hopes of reducing or illuminating it?  
NOTE Confidence: 0.7484765

01:21:09.280 --> 01:21:11.008 Even though you're in late stage.  
NOTE Confidence: 0.79065764

01:21:12.030 --> 01:21:13.560 As a great question, so yeah,  
NOTE Confidence: 0.79065764

01:21:13.560 --> 01:21:15.540 so that that's been one of the that ties  
NOTE Confidence: 0.79065764

01:21:15.540 --> 01:21:17.542 into the spirit of those two articles  
NOTE Confidence: 0.79065764

01:21:17.542 --> 01:21:20.240 that was mentioning, you know, the.  
NOTE Confidence: 0.79065764

01:21:20.240 --> 01:21:22.599 The one of the paradigms in medical  
NOTE Confidence: 0.79065764

01:21:22.599 --> 01:21:24.445 oncology from before I think have  
NOTE Confidence: 0.79065764

01:21:24.445 --> 01:21:26.650 been you know if there are one or  
NOTE Confidence: 0.79065764

01:21:26.650 --> 01:21:28.305 two spots that weren't responding  
NOTE Confidence: 0.79065764

01:21:28.305 --> 01:21:30.569 and the other ones were that maybe  
NOTE Confidence: 0.79065764

01:21:30.569 --> 01:21:32.447 it's time to change drugs entirely.  
NOTE Confidence: 0.79065764

01:21:32.450 --> 01:21:34.501 And now that we have better more  
NOTE Confidence: 0.79065764

01:21:34.501 --> 01:21:36.199 focal treatments like against party,

NOTE Confidence: 0.79065764

01:21:36.200 --> 01:21:38.356 we know that you may not be

NOTE Confidence: 0.79065764

01:21:38.356 --> 01:21:39.960 the best with go back.

NOTE Confidence: 0.79065764

01:21:39.960 --> 01:21:43.320 Maybe since you're controlling let's say 8A.

NOTE Confidence: 0.79065764

01:21:43.320 --> 01:21:45.984 Treat the two that are acting up and which

NOTE Confidence: 0.79065764

01:21:45.984 --> 01:21:48.317 may have a slight different mutation

NOTE Confidence: 0.79065764

01:21:48.317 --> 01:21:51.007 or something that's going on with them

NOTE Confidence: 0.79065764

01:21:51.007 --> 01:21:53.303 and level the playing field again so

NOTE Confidence: 0.79065764

01:21:53.303 --> 01:21:55.360 that that has been very successful.

NOTE Confidence: 0.79065764

01:21:55.360 --> 01:21:58.456 Lot more that in the last last few years.

NOTE Confidence: 0.79065764

01:21:58.460 --> 01:22:00.700 You know there's some interest as to

NOTE Confidence: 0.79065764

01:22:00.700 --> 01:22:02.826 whether immune therapy and rating play

NOTE Confidence: 0.79065764

01:22:02.826 --> 01:22:04.302 particularly well together because

NOTE Confidence: 0.79065764

01:22:04.302 --> 01:22:06.129 there's a thought that radiation

NOTE Confidence: 0.79065764

01:22:06.129 --> 01:22:08.115 therapy is breaking up the tumors

NOTE Confidence: 0.79065764

01:22:08.115 --> 01:22:10.004 and exposing more of the pieces.

NOTE Confidence: 0.79065764

01:22:10.004 --> 01:22:12.396 If you will to be immune system  
NOTE Confidence: 0.79065764

01:22:12.396 --> 01:22:13.368 and therefore.  
NOTE Confidence: 0.79065764

01:22:13.370 --> 01:22:16.926 Stopping at Supercharger in system can do.  
NOTE Confidence: 0.79065764

01:22:16.930 --> 01:22:19.352 And it's unclear when that happens or  
NOTE Confidence: 0.79065764

01:22:19.352 --> 01:22:21.956 to what degree and and so that's why  
NOTE Confidence: 0.79065764

01:22:21.956 --> 01:22:24.612 some of the trials like that key trials  
NOTE Confidence: 0.79065764

01:22:24.612 --> 01:22:26.784 timed out our our great interest.  
NOTE Confidence: 0.79065764

01:22:26.790 --> 01:22:28.812 We've seen even some cases where  
NOTE Confidence: 0.79065764

01:22:28.812 --> 01:22:30.869 we've treated one or two spots.  
NOTE Confidence: 0.79065764

01:22:30.870 --> 01:22:32.910 An additional spots that we did  
NOTE Confidence: 0.79065764

01:22:32.910 --> 01:22:35.325 not treat got better and they call  
NOTE Confidence: 0.79065764

01:22:35.325 --> 01:22:36.306 that the Scoble.  
NOTE Confidence: 0.79065764

01:22:36.310 --> 01:22:38.068 In fact and it's another one  
NOTE Confidence: 0.79065764

01:22:38.068 --> 01:22:39.717 that we're only beginning to  
NOTE Confidence: 0.79065764

01:22:39.717 --> 01:22:41.409 understand certainly doesn't happen.  
NOTE Confidence: 0.79065764

01:22:41.410 --> 01:22:42.409 All the time,

NOTE Confidence: 0.79065764  
01:22:42.409 --> 01:22:43.741 but there's something special  
NOTE Confidence: 0.79065764  
01:22:43.741 --> 01:22:45.150 that happens sometimes between  
NOTE Confidence: 0.80556405  
01:22:45.150 --> 01:22:46.314 radiation immune system  
NOTE Confidence: 0.80556405  
01:22:46.314 --> 01:22:47.478 so radiation activating.  
NOTE Confidence: 0.80556405  
01:22:47.480 --> 01:22:48.628 Immune system, you know?  
NOTE Confidence: 0.80556405  
01:22:48.628 --> 01:22:50.705 So you see affects at other sites  
NOTE Confidence: 0.80556405  
01:22:50.705 --> 01:22:52.457 even where you did not radiate.  
NOTE Confidence: 0.8316689  
01:22:53.030 --> 01:22:55.094 Yeah, and we've seen that we  
NOTE Confidence: 0.8316689  
01:22:55.094 --> 01:22:57.179 see that lung cancer for sure.  
NOTE Confidence: 0.8316689  
01:22:57.180 --> 01:22:59.256 We've seen that and ice trials  
NOTE Confidence: 0.8316689  
01:22:59.256 --> 01:23:00.640 with prostate cancer recently.  
NOTE Confidence: 0.8316689  
01:23:00.640 --> 01:23:02.370 Yeah, I think we'll see.  
NOTE Confidence: 0.8316689  
01:23:02.370 --> 01:23:05.138 See more, but it's as we're seeing it,  
NOTE Confidence: 0.8316689  
01:23:05.140 --> 01:23:07.444 but we haven't fully realized how  
NOTE Confidence: 0.8316689  
01:23:07.444 --> 01:23:09.637 about harness that potential or or  
NOTE Confidence: 0.8316689

01:23:09.637 --> 01:23:11.709 when it's going to happen versus not.  
NOTE Confidence: 0.8316689

01:23:11.710 --> 01:23:12.060 So  
NOTE Confidence: 0.8316689

01:23:12.060 --> 01:23:14.136 that's where some of the trials  
NOTE Confidence: 0.8316689

01:23:14.136 --> 01:23:15.865 are coming. Here's an interesting  
NOTE Confidence: 0.8316689

01:23:15.865 --> 01:23:17.245 question about the Nice.  
NOTE Confidence: 0.8316689

01:23:17.250 --> 01:23:19.326 What's the difference between cyber knife  
NOTE Confidence: 0.8316689

01:23:19.330 --> 01:23:20.365 and Gamma Knife?  
NOTE Confidence: 0.8316689

01:23:20.365 --> 01:23:21.400 That's good question.  
NOTE Confidence: 0.8316689

01:23:21.400 --> 01:23:23.590 So both were were designed by.  
NOTE Confidence: 0.8316689

01:23:23.590 --> 01:23:25.882 Marketing geniuses were good with good  
NOTE Confidence: 0.8316689

01:23:25.882 --> 01:23:28.450 with names and words and Cyberknife,  
NOTE Confidence: 0.8316689

01:23:28.450 --> 01:23:32.125 so it's surely that machine against that  
NOTE Confidence: 0.8316689

01:23:32.125 --> 01:23:35.658 miniaturized robot on top of dimension size.  
NOTE Confidence: 0.8316689

01:23:35.660 --> 01:23:38.390 What? And that machine is for  
NOTE Confidence: 0.8316689

01:23:38.390 --> 01:23:39.755 stereotactic treatment only.  
NOTE Confidence: 0.8316689

01:23:39.760 --> 01:23:42.336 It can treat in their brain the neck

NOTE Confidence: 0.8316689

01:23:42.336 --> 01:23:45.160 to buy really anywhere in the body.

NOTE Confidence: 0.8316689

01:23:45.160 --> 01:23:47.325 It contentedly get to because

NOTE Confidence: 0.8316689

01:23:47.325 --> 01:23:49.490 of the gamma knife machine.

NOTE Confidence: 0.8316689

01:23:49.490 --> 01:23:51.410 Let me go cybernetics also.

NOTE Confidence: 0.8316689

01:23:51.410 --> 01:23:54.098 It's it's fundamentally shooting out X Rays.

NOTE Confidence: 0.8316689

01:23:54.100 --> 01:23:56.000 Gamma Knife Machine is looks

NOTE Confidence: 0.8316689

01:23:56.000 --> 01:23:58.354 like 1/2 Dome really and it's

NOTE Confidence: 0.8316689

01:23:58.354 --> 01:24:00.628 for treatments in the head only.

NOTE Confidence: 0.8316689

01:24:00.630 --> 01:24:02.595 It's usually for brain metastases

NOTE Confidence: 0.8316689

01:24:02.595 --> 01:24:05.620 and a helmet is bolted to the heaven.

NOTE Confidence: 0.8316689

01:24:05.620 --> 01:24:07.828 Patient is put into the Dome

NOTE Confidence: 0.8316689

01:24:07.828 --> 01:24:10.230 and in the Dome there are.

NOTE Confidence: 0.8316689

01:24:10.230 --> 01:24:11.790 There's a constellation of

NOTE Confidence: 0.8316689

01:24:11.790 --> 01:24:13.740 radioactive pieces of COBOL that

NOTE Confidence: 0.8316689

01:24:13.740 --> 01:24:15.989 all Shinedown into into one spot.

NOTE Confidence: 0.8316689

01:24:15.990 --> 01:24:19.599 So you move the head around so that spot.

NOTE Confidence: 0.8316689

01:24:19.600 --> 01:24:20.880 Is overlying the tumor,

NOTE Confidence: 0.8316689

01:24:20.880 --> 01:24:22.800 and you kill the tumor that

NOTE Confidence: 0.8316689

01:24:22.866 --> 01:24:24.060 way with radiation.

NOTE Confidence: 0.8316689

01:24:24.060 --> 01:24:26.608 But because the Dome effect in the

NOTE Confidence: 0.8316689

01:24:26.608 --> 01:24:28.180 constellation there's only so far,

NOTE Confidence: 0.8316689

01:24:28.180 --> 01:24:30.574 you can put someone into the Dome,

NOTE Confidence: 0.8316689

01:24:30.580 --> 01:24:32.708 and so it's really only practical for

NOTE Confidence: 0.8316689

01:24:32.708 --> 01:24:35.879 it's one of the earliest and best of the

NOTE Confidence: 0.8316689

01:24:35.879 --> 01:24:37.780 radiosurgery machines for brain tumors.

NOTE Confidence: 0.8316689

01:24:37.780 --> 01:24:39.072 And so you see,

NOTE Confidence: 0.8316689

01:24:39.072 --> 01:24:41.010 certain programs like Yale's it doesn't

NOTE Confidence: 0.8316689

01:24:41.078 --> 01:24:42.933 very robust remote access program

NOTE Confidence: 0.8316689

01:24:42.933 --> 01:24:45.163 where you'll have a dedicated team

NOTE Confidence: 0.8316689

01:24:45.163 --> 01:24:47.375 that just does tons of treatment very,

NOTE Confidence: 0.8316689

01:24:47.380 --> 01:24:49.100 very well with that machine.

NOTE Confidence: 0.8316689

01:24:49.100 --> 01:24:50.512 That's all they do.

NOTE Confidence: 0.8316689

01:24:50.512 --> 01:24:52.630 She's so Doctor Veronica Chang is

NOTE Confidence: 0.8316689

01:24:52.705 --> 01:24:54.592 the neurosurgeon, for example,

NOTE Confidence: 0.8316689

01:24:54.592 --> 01:24:55.344 in charge.

NOTE Confidence: 0.8316689

01:24:55.344 --> 01:24:57.600 Then she works with our radiation

NOTE Confidence: 0.8316689

01:24:57.672 --> 01:24:59.717 doctors to do those treatments.

NOTE Confidence: 0.8316689

01:24:59.720 --> 01:25:02.216 So that's how that's handled in New Haven

NOTE Confidence: 0.8316689

01:25:02.216 --> 01:25:05.198 at some satellites Laika Greenwich Hospital,

NOTE Confidence: 0.8316689

01:25:05.200 --> 01:25:07.160 we actually use the linear

NOTE Confidence: 0.8316689

01:25:07.160 --> 01:25:08.728 accelerator treat brain metastases,

NOTE Confidence: 0.8316689

01:25:08.730 --> 01:25:12.930 But anyway that's doing cyber defense.

NOTE Confidence: 0.8316689

01:25:12.930 --> 01:25:13.770 Very helpful,

NOTE Confidence: 0.8316689

01:25:13.770 --> 01:25:14.620 maybe one

NOTE Confidence: 0.80261815

01:25:14.620 --> 01:25:16.632 more question. Proton therapy?

NOTE Confidence: 0.80261815

01:25:16.632 --> 01:25:19.980 Is it more effective than some of?

NOTE Confidence: 0.80261815



01:25:19.980 --> 01:25:22.610 Code and where is the  
NOTE Confidence: 0.80261815

01:25:22.610 --> 01:25:24.490 nearest proton therapy? And  
NOTE Confidence: 0.7911075

01:25:24.490 --> 01:25:26.278 so, as far as you know,  
NOTE Confidence: 0.7911075

01:25:26.280 --> 01:25:28.359 in lung cancer is not more effective.  
NOTE Confidence: 0.7911075

01:25:28.360 --> 01:25:31.104 You know the first chance in terms of  
NOTE Confidence: 0.7911075

01:25:31.104 --> 01:25:32.705 effectiveness really comes down to  
NOTE Confidence: 0.7911075

01:25:32.705 --> 01:25:34.693 dose is is this something where we  
NOTE Confidence: 0.7911075

01:25:34.754 --> 01:25:36.786 can put more dose into an area and  
NOTE Confidence: 0.7911075

01:25:36.786 --> 01:25:39.088 for most cancers we can think of it.  
NOTE Confidence: 0.7911075

01:25:39.090 --> 01:25:40.878 That's not the case. We're not.  
NOTE Confidence: 0.7911075

01:25:40.880 --> 01:25:42.630 We're not putting more dose in with  
NOTE Confidence: 0.7911075

01:25:42.630 --> 01:25:44.774 X Rays than protons or photons then  
NOTE Confidence: 0.7911075

01:25:44.774 --> 01:25:46.114 expertise we're really referring  
NOTE Confidence: 0.7911075

01:25:46.114 --> 01:25:48.628 to the same set of data and trials  
NOTE Confidence: 0.7911075

01:25:48.628 --> 01:25:50.322 that have established proper doses.  
NOTE Confidence: 0.7911075

01:25:50.322 --> 01:25:53.443 Here are some very, very limited exceptions,

NOTE Confidence: 0.7911075

01:25:53.443 --> 01:25:54.927 but but not many.

NOTE Confidence: 0.7911075

01:25:54.930 --> 01:25:57.240 The hopes and dreams of you know

NOTE Confidence: 0.7911075

01:25:57.240 --> 01:25:59.556 around protons really has deal with

NOTE Confidence: 0.7911075

01:25:59.556 --> 01:26:01.661 side effects because under optimal

NOTE Confidence: 0.7911075

01:26:01.661 --> 01:26:03.488 circumstances proton will will part.

NOTE Confidence: 0.7911075

01:26:03.490 --> 01:26:05.716 I mean goes into the body.

NOTE Confidence: 0.7911075

01:26:05.720 --> 01:26:07.496 Suddenly deposits build status,

NOTE Confidence: 0.7911075

01:26:07.496 --> 01:26:09.716 super point and then stopped.

NOTE Confidence: 0.7911075

01:26:09.720 --> 01:26:11.743 Person X Ray goes into the body

NOTE Confidence: 0.7911075

01:26:11.743 --> 01:26:12.610 deposits and bills,

NOTE Confidence: 0.7911075

01:26:12.610 --> 01:26:14.626 but then pops out the other side.

NOTE Confidence: 0.7911075

01:26:14.630 --> 01:26:16.710 So you have like a track of dose

NOTE Confidence: 0.7911075

01:26:16.710 --> 01:26:18.099 and so protons for,

NOTE Confidence: 0.7911075

01:26:18.100 --> 01:26:19.834 let's say treating a child spine

NOTE Confidence: 0.7911075

01:26:19.834 --> 01:26:21.636 to me are clearly better because

NOTE Confidence: 0.7911075

01:26:21.636 --> 01:26:23.694 you can take one being from the  
NOTE Confidence: 0.7911075

01:26:23.694 --> 01:26:25.679 back and treat it and you're not  
NOTE Confidence: 0.7911075

01:26:25.679 --> 01:26:28.850 treating any of the abdominal organs.  
NOTE Confidence: 0.7911075

01:26:28.850 --> 01:26:31.238 But if you're treating prostate long,  
NOTE Confidence: 0.7911075

01:26:31.240 --> 01:26:33.634 most breast treatments you know most  
NOTE Confidence: 0.7911075

01:26:33.634 --> 01:26:36.472 things in the head and you just  
NOTE Confidence: 0.7911075

01:26:36.472 --> 01:26:38.794 don't have that same advantage yet,  
NOTE Confidence: 0.7911075

01:26:38.800 --> 01:26:39.991 meaning multiple beams.  
NOTE Confidence: 0.7911075

01:26:39.991 --> 01:26:42.373 You're still going through through things,  
NOTE Confidence: 0.7911075

01:26:42.380 --> 01:26:44.370 so the protons aren't magic,  
NOTE Confidence: 0.7911075

01:26:44.370 --> 01:26:46.360 they're just very helpful in  
NOTE Confidence: 0.7911075

01:26:46.360 --> 01:26:47.156 certain situations.  
NOTE Confidence: 0.7911075

01:26:47.160 --> 01:26:50.492 And what happens because they are in  
NOTE Confidence: 0.7911075

01:26:50.492 --> 01:26:53.090 part because they're so expensive.  
NOTE Confidence: 0.7911075

01:26:53.090 --> 01:26:55.046 To develop and run and build,  
NOTE Confidence: 0.7911075

01:26:55.050 --> 01:26:57.248 then you know the number of protons

NOTE Confidence: 0.7911075

01:26:57.248 --> 01:26:59.589 in the country for many many years

NOTE Confidence: 0.7911075

01:26:59.589 --> 01:27:00.585 was really small.

NOTE Confidence: 0.7911075

01:27:00.590 --> 01:27:02.426 You're talking about two or three

NOTE Confidence: 0.7911075

01:27:02.426 --> 01:27:04.170 units in the entire country,

NOTE Confidence: 0.7911075

01:27:04.170 --> 01:27:06.126 and not many outside the US.

NOTE Confidence: 0.7911075

01:27:06.130 --> 01:27:07.754 And it's really just in the last

NOTE Confidence: 0.7911075

01:27:07.754 --> 01:27:10.036 maybe 5 to 10 years that with

NOTE Confidence: 0.7911075

01:27:10.036 --> 01:27:11.568 collaborations between academic centers

NOTE Confidence: 0.7911075

01:27:11.568 --> 01:27:13.628 or sometimes between that consumers,

NOTE Confidence: 0.7911075

01:27:13.630 --> 01:27:15.580 private centers and venture capital groups.

NOTE Confidence: 0.7911075

01:27:15.580 --> 01:27:17.869 You're seeing more of these pop up,

NOTE Confidence: 0.7911075

01:27:17.870 --> 01:27:20.574 and so we're just beginning to run some

NOTE Confidence: 0.7911075

01:27:20.574 --> 01:27:23.317 trials to really be able to figure out.

NOTE Confidence: 0.7911075

01:27:23.320 --> 01:27:24.712 More more academically,

NOTE Confidence: 0.7911075

01:27:24.712 --> 01:27:27.539 more scientifically, which is better,

NOTE Confidence: 0.7911075

01:27:27.539 --> 01:27:28.172 anwen,  
NOTE Confidence: 0.7911075

01:27:28.172 --> 01:27:32.749 and so the nearest proton centers to us?  
NOTE Confidence: 0.7911075

01:27:32.750 --> 01:27:33.947 Boston new jerseyan.  
NOTE Confidence: 0.7911075

01:27:33.947 --> 01:27:37.160 Recently one opened up in East Harlem area.  
NOTE Confidence: 0.7911075

01:27:37.160 --> 01:27:39.175 It's a collaboration site between  
NOTE Confidence: 0.7911075

01:27:39.175 --> 01:27:42.304 some centers and Yale is in talks  
NOTE Confidence: 0.7911075

01:27:42.304 --> 01:27:44.386 about whether to develop their own  
NOTE Confidence: 0.7911075

01:27:44.386 --> 01:27:46.561 and participate in research and  
NOTE Confidence: 0.7911075

01:27:46.561 --> 01:27:49.189 everything that goes along with it.  
NOTE Confidence: 0.7911075

01:27:49.190 --> 01:27:53.200 But for most people now that we see a time,  
NOTE Confidence: 0.7911075

01:27:53.200 --> 01:27:55.909 you lose this not many occasions where  
NOTE Confidence: 0.7911075

01:27:55.909 --> 01:27:59.217 you really need or should travel for protons,  
NOTE Confidence: 0.7911075

01:27:59.220 --> 01:28:01.260 but certainly in very interesting  
NOTE Confidence: 0.7911075

01:28:01.260 --> 01:28:03.801 machine and is going to have  
NOTE Confidence: 0.7911075

01:28:03.801 --> 01:28:05.517 its advantages and stuff.  
NOTE Confidence: 0.7911075

01:28:05.520 --> 01:28:06.252 Some situations,

NOTE Confidence: 0.7911075

01:28:06.252 --> 01:28:06.618 right?

NOTE Confidence: 0.8260322

01:28:06.620 --> 01:28:08.810 I hear rumors we're going to

NOTE Confidence: 0.8260322

01:28:08.810 --> 01:28:11.008 have one soon, but, you know,

NOTE Confidence: 0.8260322

01:28:11.008 --> 01:28:13.570 at least in lung cancer, sounds like

NOTE Confidence: 0.8260322

01:28:13.570 --> 01:28:16.125 we have state of the art equipment.

NOTE Confidence: 0.8260322

01:28:16.130 --> 01:28:20.410 That is what's needed at this time.

NOTE Confidence: 0.8051511

01:28:20.410 --> 01:28:22.025 I have some particular challenges

NOTE Confidence: 0.8051511

01:28:22.025 --> 01:28:23.640 in lung cancer because they're

NOTE Confidence: 0.8051511

01:28:23.699 --> 01:28:25.457 they're a little bit fussy about

NOTE Confidence: 0.8051511

01:28:25.457 --> 01:28:27.090 what tissue they're going through,

NOTE Confidence: 0.8051511

01:28:27.090 --> 01:28:29.309 and moving tissue and accounting for that,

NOTE Confidence: 0.8051511

01:28:29.310 --> 01:28:31.218 so I think there's you know,

NOTE Confidence: 0.8051511

01:28:31.220 --> 01:28:32.159 excited about everything,

NOTE Confidence: 0.8051511

01:28:32.159 --> 01:28:34.037 but not not as much about

NOTE Confidence: 0.8051511

01:28:34.037 --> 01:28:35.360 lung cancer this time.

NOTE Confidence: 0.8051511

01:28:35.360 --> 01:28:37.411 So yeah, I'll definitely has all the  
NOTE Confidence: 0.8051511

01:28:37.411 --> 01:28:39.703 all the state of the art radiation  
NOTE Confidence: 0.8051511

01:28:39.703 --> 01:28:41.393 machines for lung cancer really  
NOTE Confidence: 0.8051511

01:28:41.400 --> 01:28:43.619 is incredible, and so all of you,  
NOTE Confidence: 0.8051511

01:28:43.620 --> 01:28:45.846 as it's been a great panel tonight,  
NOTE Confidence: 0.8051511

01:28:45.850 --> 01:28:47.758 I really appreciate everyone who's joined.  
NOTE Confidence: 0.8051511

01:28:47.760 --> 01:28:50.440 I want to make a few announcements that.  
NOTE Confidence: 0.8051511

01:28:50.440 --> 01:28:52.660 Out this will be posted.  
NOTE Confidence: 0.8051511

01:28:52.660 --> 01:28:55.660 The recording will be posted on  
NOTE Confidence: 0.8051511

01:28:55.660 --> 01:28:57.660 yelpcancercenter.org so you can  
NOTE Confidence: 0.8051511

01:28:57.746 --> 01:29:00.210 go and you can hear this again.  
NOTE Confidence: 0.8051511

01:29:00.210 --> 01:29:02.754 And if you have additional questions  
NOTE Confidence: 0.8051511

01:29:02.754 --> 01:29:06.376 you can reach out to cancer answers at  
NOTE Confidence: 0.8051511

01:29:06.376 --> 01:29:09.440 yale.edu at anytime, so that's cancer.  
NOTE Confidence: 0.8051511

01:29:09.440 --> 01:29:11.120 Answers at yale.edu.  
NOTE Confidence: 0.8051511

01:29:11.120 --> 01:29:14.189 Bruce Vinny just in an I think Renee good,

NOTE Confidence: 0.8051511

01:29:14.190 --> 01:29:16.236 who's our coordinator for these programs?

NOTE Confidence: 0.8051511

01:29:16.240 --> 01:29:19.075 Thank you very much for exactly on time and

NOTE Confidence: 0.8051511

01:29:19.075 --> 01:29:21.689 it's my pleasure now close the evening.

NOTE Confidence: 0.8051511

01:29:21.690 --> 01:29:23.736 Thank everyone who was on line.

NOTE Confidence: 0.8051511

01:29:23.740 --> 01:29:26.468 Please reach out to us with any questions.

NOTE Confidence: 0.8051511

01:29:26.470 --> 01:29:28.510 I know I've learned about tonight.

NOTE Confidence: 0.8051511

01:29:28.510 --> 01:29:30.220 It's been a great evening.

NOTE Confidence: 0.8051511

01:29:30.220 --> 01:29:31.580 Have a good night.

NOTE Confidence: 0.8051511

01:29:31.580 --> 01:29:32.260 Be safe.

NOTE Confidence: 0.8051511

01:29:32.260 --> 01:29:33.289 Everyone, thank you.

NOTE Confidence: 0.8254609

01:29:33.290 --> 01:29:34.310 Thanks for coming.