WEBVTT

00:00:00.000 --> 00:00:02.485 Support for Yale Cancer Answers

NOTE Confidence: 0.850567996501923

00:00:02.485 --> 00:00:05.592 comes from AstraZeneca, committed to

NOTE Confidence: 0.850567996501923

00:00:05.592 --> 00:00:08.307 pioneering the next generation of

NOTE Confidence: 0.850567996501923

00:00:08.307 --> 00:00:10.479 innovative lung cancer treatments.

NOTE Confidence: 0.850567996501923

00:00:10.480 --> 00:00:14.148 Learn more at astrazeneca-us.com.

NOTE Confidence: 0.850567996501923

00:00:14.150 --> 00:00:16.316 Welcome to Yale Cancer Answers with

NOTE Confidence: 0.850567996501923

00:00:16.316 --> 00:00:18.690 your host doctor Anees Chagpar.

NOTE Confidence: 0.850567996501923

00:00:18.690 --> 00:00:20.550 Yale Cancer Answers features the

NOTE Confidence: 0.850567996501923

00:00:20.550 --> 00:00:22.841 latest information on cancer care by

NOTE Confidence: 0.850567996501923

00:00:22.841 --> 00:00:24.309 welcoming oncologists and specialists

NOTE Confidence: 0.850567996501923

00:00:24.309 --> 00:00:26.765 who are on the forefront of the

NOTE Confidence: 0.850567996501923

00:00:26.765 --> 00:00:28.457 battle to fight cancer. This week,

NOTE Confidence: 0.850567996501923

00:00:28.460 --> 00:00:30.205 it's a conversation about lung

NOTE Confidence: 0.850567996501923

00:00:30.205 --> 00:00:31.950 cancer with Doctor Sarah Goldberg.

NOTE Confidence: 0.850567996501923

00:00:31.950 --> 00:00:33.800 Doctor Goldberg is an associate

NOTE Confidence: 0.850567996501923

00:00:33.800 --> 00:00:35.650 professor of internal medicine and

NOTE Confidence: 0.850567996501923

00:00:35.712 --> 00:00:37.728 medical oncology at the Yale School

NOTE Confidence: 0.850567996501923

00:00:37.728 --> 00:00:39.781 of Medicine where Doctor Chagpar

NOTE Confidence: 0.850567996501923

00:00:39.781 --> 00:00:41.713 is a professor of surgical oncology.

NOTE Confidence: 0.890047371387482

00:00:42.610 --> 00:00:45.589 Sarah, maybe we can start off

NOTE Confidence: 0.890047371387482

00:00:45.590 --> 00:00:48.187 by talking about lung cancer.

NOTE Confidence: 0.890047371387482

00:00:48.190 --> 00:00:50.794 I mean when many people think

NOTE Confidence: 0.890047371387482

00:00:50.794 --> 00:00:53.398 about lung cancer, they think of it

NOTE Confidence: 0.890047371387482

00:00:53.398 --> 00:00:55.630 as kind of a devastating disease.

NOTE Confidence: 0.890047371387482

00:00:55.630 --> 00:00:58.136 Tell us a little bit more

NOTE Confidence: 0.890047371387482

00:00:58.136 --> 00:01:00.469 about how many people get it,

NOTE Confidence: 0.890047371387482

00:01:00.470 --> 00:01:02.330 who gets it, and historically,

NOTE Confidence: 0.890047371387482

00:01:02.330 --> 00:01:04.546 what has been the prognosis?

NOTE Confidence: 0.890047371387482

00:01:04.546 --> 00:01:06.069 So lung cancer is

NOTE Confidence: 0.856328725814819

00:01:06.070 --> 00:01:07.494 a very common cancer.

NOTE Confidence: 0.856328725814819

00:01:07.494 --> 00:01:09.630 It's the second most common cancer

NOTE Confidence: 0.856328725814819

00:01:09.694 --> 00:01:11.918 in the US among both men and women.

NOTE Confidence: 0.856328725814819

00:01:11.920 --> 00:01:14.616 But you're right, it absolutely can be a

NOTE Confidence: 0.856328725814819

00:01:14.616 --> 00:01:16.467 devastating illness and because of that,

NOTE Confidence: 0.856328725814819

00:01:16.470 --> 00:01:19.070 it's the number one cause of cancer deaths

NOTE Confidence: 0.856328725814819

00:01:19.070 --> 00:01:21.020 among both men and women.

NOTE Confidence: 0.856328725814819

00:01:21.020 --> 00:01:23.298 So it's common, and it's a common

NOTE Confidence: 0.856328725814819

00:01:23.298 --> 00:01:24.918 cause of death from cancer.

NOTE Confidence: 0.856328725814819

00:01:24.920 --> 00:01:27.195 But I think a lot has changed

NOTE Confidence: 0.856328725814819

00:01:27.195 --> 00:01:28.170 in recent years.

NOTE Confidence: 0.856328725814819

00:01:28.170 --> 00:01:31.095 I know we'll talk about a lot of that,

NOTE Confidence: 0.856328725814819

00:01:31.100 --> 00:01:33.820 but some of the things that we've

NOTE Confidence: 0.856328725814819

00:01:33.820 --> 00:01:36.320 known for a long time now is that

NOTE Confidence: 0.856328725814819

00:01:36.320 --> 00:01:38.134 people tend to be older when

NOTE Confidence: 0.856328725814819

00:01:38.134 --> 00:01:39.346 they get lung cancer,

NOTE Confidence: 0.856328725814819

00:01:39.346 --> 00:01:41.467 although some people are quite young.

NOTE Confidence: 0.856328725814819

00:01:41.470 --> 00:01:43.894 Smoking is a risk factor for lung cancer,

NOTE Confidence: 0.856328725814819

00:01:43.900 --> 00:01:44.486 but again,

NOTE Confidence: 0.856328725814819

00:01:44.486 --> 00:01:45.951 some people have never smoked

NOTE Confidence: 0.856328725814819

00:01:45.951 --> 00:01:48.119 a day in their life and they

NOTE Confidence: 0.856328725814819

00:01:48.119 --> 00:01:49.649 can still get the disease.

NOTE Confidence: 0.862467467784882

00:01:53.074 --> 00:01:54.454 Does genetics play into it?

NOTE Confidence: 0.862467467784882

00:01:54.460 --> 00:01:56.428 I mean on this show we talk a

NOTE Confidence: 0.862467467784882

00:01:56.428 --> 00:01:58.060 lot about genetics as well,

NOTE Confidence: 0.862467467784882

00:01:58.060 --> 00:01:59.999 but when it comes to lung cancer,

NOTE Confidence: 0.862467467784882

00:02:00.000 --> 00:02:01.960 most of us think that this

NOTE Confidence: 0.862467467784882

00:02:01.960 --> 00:02:03.878 is really a smoking related cancer.

NOTE Confidence: 0.862467467784882

00:02:03.880 --> 00:02:05.656 Although as you say there are

NOTE Confidence: 0.862467467784882

00:02:05.656 --> 00:02:07.646 people who never smoked a day in

NOTE Confidence: 0.862467467784882

00:02:07.646 --> 00:02:09.134 their life who get lung cancer.

NOTE Confidence: 0.862467467784882

00:02:09.140 --> 00:02:11.624 So for them, is it really genetics?

NOTE Confidence: 0.862467467784882

00:02:11.630 --> 00:02:12.470 What's an underlying

NOTE Confidence: 0.862467467784882

00:02:12.470 --> 00:02:13.295 cause for that?

NOTE Confidence: 0.862467467784882

00:02:13.295 --> 00:02:14.945 There's a lot about lung cancer

NOTE Confidence: 0.862467467784882

00:02:14.945 --> 00:02:16.340 that we still don't know.

NOTE Confidence: 0.862467467784882

00:02:16.340 --> 00:02:18.279 And your question is a great one,

NOTE Confidence: 0.862467467784882

00:02:18.280 --> 00:02:20.247 and it's something that we still don't

NOTE Confidence: 0.862467467784882

00:02:20.247 --> 00:02:21.699 fully understand about lung cancer

NOTE Confidence: 0.862467467784882

00:02:21.700 --> 00:02:25.436 because smoking is such a common risk

NOTE Confidence: 0.862467467784882

00:02:25.440 --> 00:02:29.184 factor for lung cancer.

NOTE Confidence: 0.862467467784882

00:02:29.190 --> 00:02:30.918 When we see someone who's smoked,

NOTE Confidence: 0.862467467784882

00:02:30.920 --> 00:02:33.440 who gets lung cancer, we think that it's

NOTE Confidence: 0.862467467784882

00:02:33.440 --> 00:02:35.237 probably related in some way.

NOTE Confidence: 0.862467467784882

00:02:35.240 --> 00:02:37.236 But again, when people have never smoked,

NOTE Confidence: 0.862467467784882

00:02:37.236 --> 00:02:38.904 we really don't understand the cause

NOTE Confidence: 0.862467467784882

00:02:38.904 --> 00:02:40.997 for the vast majority of those cancers.

NOTE Confidence: 0.862467467784882

00:02:41.000 --> 00:02:42.420 When you think of

NOTE Confidence: 0.862467467784882

00:02:42.420 --> 00:02:44.170 genetics in terms of

NOTE Confidence: 0.862467467784882

00:02:44.170 --> 00:02:45.946 inheriting a gene from your parents

NOTE Confidence: 0.862467467784882

00:02:45.946 --> 00:02:47.619 or passing it along to kids,

NOTE Confidence: 0.862467467784882

00:02:47.620 --> 00:02:49.250 that's not really common at all

NOTE Confidence: 0.862467467784882

00:02:49.250 --> 00:02:50.930 in lung cancer like it is in

NOTE Confidence: 0.862467467784882

00:02:50.930 --> 00:02:52.809 other cancers like breast cancer,

NOTE Confidence: 0.862467467784882

00:02:52.810 --> 00:02:54.526 which tends to be more common.

NOTE Confidence: 0.862467467784882

00:02:54.530 --> 00:02:56.258 We just don't see that very

NOTE Confidence: 0.862467467784882

00:02:56.258 --> 00:02:57.410 much in lung cancer,

NOTE Confidence: 0.862467467784882

00:02:57.410 --> 00:02:59.356 so why some people who have never

NOTE Confidence: 0.862467467784882

00:02:59.356 --> 00:03:01.198 smoked get it is still really

NOTE Confidence: 0.862467467784882

00:03:01.200 --> 00:03:03.420 an outstanding question in the field.

NOTE Confidence: 0.862467467784882

00:03:03.420 --> 00:03:05.640 There are some other environmental risks,

NOTE Confidence: 0.862467467784882

00:03:05.640 --> 00:03:06.380 but much,

NOTE Confidence: 0.862467467784882

00:03:06.380 --> 00:03:08.970 much lower than the risk of smoking.

NOTE Confidence: 0.862467467784882

00:03:08.970 --> 00:03:11.560 So secondhand smoke is also a risk,

NOTE Confidence: 0.862467467784882

00:03:11.560 --> 00:03:13.636 but again, much lower.

NOTE Confidence: 0.862467467784882

00:03:13.636 --> 00:03:16.369 Radon is always a question.

NOTE Confidence: 0.862467467784882

00:03:16.370 --> 00:03:18.590 There probably is some risk there,

NOTE Confidence: 0.862467467784882

00:03:18.590 --> 00:03:20.440 but how to quantify that?

NOTE Confidence: 0.862467467784882

00:03:20.440 --> 00:03:21.920 It is very difficult,

NOTE Confidence: 0.862467467784882

00:03:21.920 --> 00:03:24.880 so for many people who haven't

NOTE Confidence: 0.862467467784882

00:03:24.880 --> 00:03:27.100 smoked or haven't smoked much,

NOTE Confidence: 0.862467467784882

00:03:27.100 --> 00:03:28.950 it's still very unclear

NOTE Confidence: 0.862467467784882

00:03:28.950 --> 00:03:30.800 why they get this disease.

NOTE Confidence: 0.861562539701877

00:03:30.800 --> 00:03:32.888 You know the other thing

NOTE Confidence: 0.861562539701877

00:03:32.888 --> 00:03:35.410 that we talked about in a lot

NOTE Confidence: 0.861562539701877

00:03:35.410 --> 00:03:37.534 of different cancers is that any

NOTE Confidence: 0.861562539701877

00:03:37.534 --> 00:03:39.260 particular cancer lung cancer,

NOTE Confidence: 0.861562539701877

00:03:39.260 --> 00:03:40.724 breast cancer, colon cancer,

NOTE Confidence: 0.861562539701877

00:03:40.724 --> 00:03:42.554 whatever, it is rarely one disease, is

NOTE Confidence: 0.861562539701877

00:03:42.554 --> 00:03:44.750 lung cancer like that as well?

NOTE Confidence: 0.861562539701877

00:03:44.750 --> 00:03:47.298 Or are all lung

NOTE Confidence: 0.861562539701877

00:03:47.298 --> 00:03:49.140 cancers essentially the same?

NOTE Confidence: 0.874221384525299

00:03:49.990 --> 00:03:52.526 So this is one of the things that

NOTE Confidence: 0.874221384525299

00:03:52.526 --> 00:03:54.732 I think is the most interesting and

NOTE Confidence: 0.874221384525299

00:03:54.732 --> 00:03:56.298 probably exciting about lung cancer.

NOTE Confidence: 0.874221384525299

00:03:56.298 --> 00:03:59.431 Up until a couple years ago we really

NOTE Confidence: 0.874221384525299

00:03:59.431 --> 00:04:01.999 thought there were two types of lung cancer,

NOTE Confidence: 0.874221384525299

00:04:02.000 --> 00:04:04.528 small cell and non small cell lung cancer.

NOTE Confidence: 0.874221384525299

00:04:04.530 --> 00:04:06.861 But over the last really 10 or 15 years

NOTE Confidence: 0.874221384525299

00:04:06.861 --> 00:04:08.977 it's become clear that it's multiple

NOTE Confidence: 0.874221384525299

00:04:08.977 --> 00:04:11.468 diseases that are all labeled as lung

NOTE Confidence: 0.874221384525299

00:04:11.468 --> 00:04:13.364 cancer because of where it started,

NOTE Confidence: 0.874221384525299

00:04:13.370 --> 00:04:15.589 where the cancer started in the lung.

NOTE Confidence: 0.874221384525299

00:04:15.590 --> 00:04:17.742 And this is one of the biggest advances

NOTE Confidence: 0.874221384525299

00:04:17.742 --> 00:04:20.341 in the field over the last several years

NOTE Confidence: 0.874221384525299

00:04:20.341 --> 00:04:22.560 is the understanding of the different

NOTE Confidence: 0.874221384525299

00:04:22.560 --> 00:04:25.206 types of lung cancer and it's not just so

NOTE Confidence: 0.874221384525299

00:04:25.206 --> 00:04:28.116 that we can define things in a different way.

NOTE Confidence: 0.874221384525299

00:04:28.120 --> 00:04:29.686 It's really because it impacts treatment

NOTE Confidence: 0.874221384525299

00:04:29.686 --> 00:04:31.542 and how well different cancers

NOTE Confidence: 0.874221384525299

00:04:31.542 --> 00:04:33.070 respond to different treatments.

NOTE Confidence: 0.874221384525299

00:04:33.070 --> 00:04:34.924 How well someone is going to

NOTE Confidence: 0.874221384525299

00:04:34.924 --> 00:04:36.160 do with various treatments,

NOTE Confidence: 0.874221384525299

00:04:36.160 --> 00:04:37.416 and so differentiating these

NOTE Confidence: 0.874221384525299

00:04:37.416 --> 00:04:39.300 different types of lung cancers is

NOTE Confidence: 0.874221384525299

00:04:39.355 --> 00:04:41.089 absolutely critical so that we can

NOTE Confidence: 0.874221384525299

00:04:41.089 --> 00:04:42.949 get the best treatments for patients.

NOTE Confidence: 0.874221384525299

00:04:42.950 --> 00:04:44.762 We still do think about small

NOTE Confidence: 0.874221384525299

00:04:44.762 --> 00:04:46.350 cell and non small cell,

NOTE Confidence: 0.874221384525299

00:04:46.350 --> 00:04:48.380 but mostly within the realm of non

NOTE Confidence: 0.874221384525299

00:04:48.380 --> 00:04:50.202 small cell lung cancer is where

NOTE Confidence: 0.874221384525299

00:04:50.202 --> 00:04:51.978 we've been able to divide things

NOTE Confidence: 0.874221384525299

00:04:51.978 --> 00:04:53.789 up even more and understand

NOTE Confidence: 0.874221384525299

00:04:53.790 --> 00:04:58.116 mostly the molecular basis of lung cancer.

NOTE Confidence: 0.874221384525299

00:04:58.120 --> 00:05:00.220 Meaning that the cancer has different

NOTE Confidence: 0.874221384525299

00:05:00.220 --> 00:05:01.994 mutations and that is really

NOTE Confidence: 0.874221384525299

00:05:01.994 --> 00:05:03.529 part of what defines it.

NOTE Confidence: 0.874221384525299

00:05:03.530 --> 00:05:06.446 Now you just asked me about mutations and I

NOTE Confidence: 0.874221384525299

00:05:06.446 --> 00:05:09.268 said it's not very common in lung cancer,

NOTE Confidence: 0.874221384525299

00:05:09.270 --> 00:05:11.298 but I'm talking about a different

NOTE Confidence: 0.874221384525299

00:05:11.298 --> 00:05:12.650 type of mutation here,

NOTE Confidence: 0.874221384525299

00:05:12.650 --> 00:05:15.354 so it's not very common that people have

00:05:16.034 --> 00:05:18.056 a genetic predisposition to lung cancer.

NOTE Confidence: 0.874221384525299

00:05:18.060 --> 00:05:20.028 But finding mutations in the cancer

NOTE Confidence: 0.874221384525299

00:05:20.028 --> 00:05:21.780 itself is actually quite common.

00:05:22.460 --> 00:05:24.924 Yeah, we've had

NOTE Confidence: 0.857857942581177

00:05:24.924 --> 00:05:27.963 other guests on the show here as well who

NOTE Confidence: 0.857857942581177

00:05:27.963 --> 00:05:30.289 talk about this concept where

NOTE Confidence: 0.857857942581177

00:05:30.290 --> 00:05:33.314 a biopsy is taken and the tumor is

NOTE Confidence: 0.857857942581177

00:05:33.314 --> 00:05:35.919 profiled for a number of mutations,

NOTE Confidence: 0.857857942581177

00:05:35.920 --> 00:05:38.155 genetic mutations that it could

NOTE Confidence: 0.857857942581177

00:05:38.155 --> 00:05:40.853 have that could tailor

NOTE Confidence: 0.857857942581177

00:05:40.853 --> 00:05:43.513 therapy and it sounds like lung cancer

NOTE Confidence: 0.857857942581177

00:05:43.513 --> 00:05:46.365 is in that realm as well.

NOTE Confidence: 0.857857942581177

00:05:46.370 --> 00:05:48.590 Tell us more about the mutations

NOTE Confidence: 0.857857942581177

00:05:48.590 --> 00:05:52.185 that you look for and the sub

NOTE Confidence: 0.857857942581177

00:05:52.185 --> 00:05:54.220 classifications that you think about

NOTE Confidence: 0.857857942581177

00:05:54.300 --> 00:05:56.820 when you're treating a lung cancer

NOTE Confidence: 0.869098103708691

00:05:56.820 --> 00:05:57.520 patient.

NOTE Confidence: 0.869098103708691

00:05:57.520 --> 00:05:59.620 Lung cancer is a great example

NOTE Confidence: 0.869098103708691

00:05:59.620 --> 00:06:02.289 of a disease where the molecular

NOTE Confidence: 0.869098103708691

00:06:02.289 --> 00:06:04.193 classifications are so important,

NOTE Confidence: 0.869098103708691

00:06:04.200 --> 00:06:06.503 and so whenever we see a patient

NOTE Confidence: 0.869098103708691

00:06:06.503 --> 00:06:09.340 with a non small cell lung cancer,

NOTE Confidence: 0.869098103708691

00:06:09.340 --> 00:06:10.393 that's advanced

NOTE Confidence: 0.869098103708691

00:06:10.393 --> 00:06:12.499 meaning at stage four, it's critical

NOTE Confidence: 0.869098103708691

00:06:12.499 --> 00:06:14.837 to get molecular or mutation testing.

NOTE Confidence: 0.869098103708691

00:06:14.840 --> 00:06:17.036 People will call it different things.

NOTE Confidence: 0.869098103708691

00:06:17.040 --> 00:06:18.508 Molecular testing, mutation testing.

NOTE Confidence: 0.869098103708691

00:06:18.508 --> 00:06:20.343 Tumor profiling is sometimes used,

NOTE Confidence: 0.869098103708691

00:06:20.350 --> 00:06:22.950 and so that is now entirely a standard

NOTE Confidence: 0.869098103708691

00:06:22.950 --> 00:06:25.319 part of treatment and what's really

NOTE Confidence: 0.869098103708691

00:06:25.319 --> 00:06:28.070 changed over the years is what we

NOTE Confidence: 0.869098103708691

00:06:28.070 --> 00:06:30.725 need to test and

NOTE Confidence: 0.869098103708691

00:06:30.730 --> 00:06:32.816 when I first started in this field

NOTE Confidence: 0.869098103708691

00:06:32.816 --> 00:06:34.855 now 10 years ago there was really

NOTE Confidence: 0.869098103708691

00:06:34.855 --> 00:06:36.836 just one mutation that we can target

NOTE Confidence: 0.869098103708691

00:06:36.836 --> 00:06:38.901 and that was the EGFR mutation and

NOTE Confidence: 0.869098103708691

00:06:38.901 --> 00:06:40.952 that was so exciting at the time

NOTE Confidence: 0.869098103708691

00:06:41.011 --> 00:06:42.799 because it was really the first

NOTE Confidence: 0.869098103708691

00:06:42.799 --> 00:06:44.735 time in lung cancer that we could

NOTE Confidence: 0.869098103708691

00:06:44.735 --> 00:06:47.145 get a biopsy as you say and do the

NOTE Confidence: 0.869098103708691

00:06:47.145 --> 00:06:49.364 mutation testing and if we found this

NOTE Confidence: 0.869098103708691

00:06:49.364 --> 00:06:51.291 mutation we had a great treatment

NOTE Confidence: 0.869098103708691

00:06:51.291 --> 00:06:53.384 which is a targeted therapy pill,

NOTE Confidence: 0.869098103708691

00:06:53.384 --> 00:06:55.253 EGFR inhibitor and that is still the

NOTE Confidence: 0.869098103708691

00:06:55.253 --> 00:06:57.112 case today where we're looking for

NOTE Confidence: 0.869098103708691

00:06:57.112 --> 00:06:59.080 EGFR mutations and we will target

NOTE Confidence: 0.869098103708691

00:06:59.080 --> 00:07:00.994 those cancers with pills that treat

NOTE Confidence: 0.869098103708691

00:07:00.994 --> 00:07:02.869 that specific abnormality in the cancer.

00:07:03.448 --> 00:07:05.182 Some people will call it targeted therapy

NOTE Confidence: 0.869098103708691

00:07:05.182 --> 00:07:06.979 or precision or personalized medicine,

NOTE Confidence: 0.869098103708691

00:07:06.980 --> 00:07:08.768 but now instead of just one

NOTE Confidence: 0.869098103708691

00:07:08.768 --> 00:07:10.460 mutation that we can target,

NOTE Confidence: 0.869098103708691

00:07:10.460 --> 00:07:12.098 we have several that have been

NOTE Confidence: 0.869098103708691

00:07:12.098 --> 00:07:14.027 discovered in lung cancer that have

NOTE Confidence: 0.869098103708691

00:07:14.027 --> 00:07:15.200 associated targeted therapies.

NOTE Confidence: 0.869098103708691

00:07:15.200 --> 00:07:17.244 So we've really come a

NOTE Confidence: 0.869098103708691

00:07:17.244 --> 00:07:19.834 long way in just a couple of years

NOTE Confidence: 0.869098103708691

00:07:19.834 --> 00:07:21.830 where now we don't test one,

NOTE Confidence: 0.869098103708691

00:07:21.830 --> 00:07:23.930 but we test many genes because we

NOTE Confidence: 0.869098103708691

00:07:23.930 --> 00:07:26.206 may be able to find a mutation

NOTE Confidence: 0.869098103708691

00:07:26.206 --> 00:07:27.836 that is important in that

NOTE Confidence: 0.841489374637604

00:07:27.840 --> 00:07:29.420 cancer.

NOTE Confidence: 0.841489374637604

00:07:29.420 --> 00:07:31.000 Tell us the other mutations that you

NOTE Confidence: 0.841114143530528

00:07:31.000 --> 00:07:33.464 look for.

NOTE Confidence: 0.841114143530528

00:07:33.464 --> 00:07:35.984 Thinking about a timeline, so ALK was probably

NOTE Confidence: 0.841114143530528

00:07:35.984 --> 00:07:38.156 the next one that was discovered.

NOTE Confidence: 0.841114143530528

00:07:38.160 --> 00:07:41.016 Alk is a mutation in a gene that

NOTE Confidence: 0.841114143530528

00:07:41.016 --> 00:07:43.945 again can be part of a lung cancer,

NOTE Confidence: 0.841114143530528

00:07:43.950 --> 00:07:45.006 especially lung adenocarcinomas.

NOTE Confidence: 0.841114143530528

00:07:45.006 --> 00:07:47.118 Most of these mutations really all

NOTE Confidence: 0.841114143530528

00:07:47.118 --> 00:07:49.370 these mutations are mostly found in

NOTE Confidence: 0.841114143530528

00:07:49.370 --> 00:07:51.188 adenocarcinomas, which is a type

NOTE Confidence: 0.841114143530528

00:07:51.188 --> 00:07:53.360 of non small cell lung cancer.

NOTE Confidence: 0.841114143530528

00:07:53.360 --> 00:07:56.576 And so ALK is another mutation like the

NOTE Confidence: 0.841114143530528

00:07:56.576 --> 00:07:59.504 EGFR mutation where if we find it

NOTE Confidence: 0.841114143530528

00:07:59.510 --> 00:08:02.016 I get very excited for patients because

NOTE Confidence: 0.841114143530528

00:08:02.016 --> 00:08:04.289 we have fantastic therapies for Alk.

NOTE Confidence: 0.841114143530528

00:08:04.290 --> 00:08:05.550 So that's another one.

NOTE Confidence: 0.841114143530528

00:08:05.550 --> 00:08:07.765 It's rare, ALK rearrangements are found

NOTE Confidence: 0.841114143530528

00:08:07.765 --> 00:08:10.204 in just a couple percent of lung cancers.

NOTE Confidence: 0.841114143530528

00:08:10.210 --> 00:08:11.053 But again,

NOTE Confidence: 0.841114143530528

00:08:11.053 --> 00:08:12.739 absolutely critical to look for because

NOTE Confidence: 0.841114143530528

00:08:12.739 --> 00:08:14.646 of the great options for treatment,

NOTE Confidence: 0.841114143530528

00:08:14.650 --> 00:08:16.378 we have another another gene that

NOTE Confidence: 0.841114143530528

00:08:16.378 --> 00:08:18.500 we always test is called RAS one,

NOTE Confidence: 0.841114143530528

00:08:18.500 --> 00:08:20.460 and that also can have a mutation

NOTE Confidence: 0.841114143530528

00:08:20.460 --> 00:08:22.938 in it and the list keeps going on.

NOTE Confidence: 0.841114143530528

00:08:22.940 --> 00:08:25.010 So that was really all we had

NOTE Confidence: 0.841114143530528

00:08:25.010 --> 00:08:26.485 for a couple of years.

NOTE Confidence: 0.841114143530528

00:08:26.490 --> 00:08:27.074 But really,

NOTE Confidence: 0.841114143530528

00:08:27.074 --> 00:08:29.750 in the last I would say year or two,

NOTE Confidence: 0.841114143530528

00:08:29.750 --> 00:08:31.225 there's been even more of

NOTE Confidence: 0.841114143530528

00:08:31.225 --> 00:08:32.110 discovery of alterations,

NOTE Confidence: 0.841114143530528

00:08:32.110 --> 00:08:33.972 so now we always will need to

NOTE Confidence: 0.841114143530528

00:08:33.972 --> 00:08:35.420 assess for BRAF mutations.

NOTE Confidence: 0.841114143530528

00:08:35.420 --> 00:08:37.572 BRAF is a gene that

NOTE Confidence: 0.841114143530528

00:08:37.572 --> 00:08:39.699 commonly has mutations in Melanoma,

NOTE Confidence: 0.841114143530528

00:08:39.700 --> 00:08:41.446 but more recently was also found

NOTE Confidence: 0.841114143530528

00:08:41.446 --> 00:08:43.380 to have mutations in lung cancers.

NOTE Confidence: 0.841114143530528

00:08:43.380 --> 00:08:45.333 Again just a couple of percent of

NOTE Confidence: 0.841114143530528

00:08:45.333 --> 00:08:47.050 lung cancers have BNRAF mutations,

NOTE Confidence: 0.841114143530528

00:08:47.050 --> 00:08:48.940 but now we have targeted therapies

NOTE Confidence: 0.841114143530528

00:08:48.940 --> 00:08:51.335 that we can use for that and then

NOTE Confidence: 0.841114143530528

00:08:51.335 --> 00:08:53.054 really recently within just the last

NOTE Confidence: 0.841114143530528

00:08:53.054 --> 00:08:55.351 couple of months or year we look at

NOTE Confidence: 0.841114143530528

00:08:55.351 --> 00:08:57.146 MET mutations and ntrk mutations,

NOTE Confidence: 0.841114143530528

00:08:57.150 --> 00:08:59.614 RET I might have forgotten a couple

NOTE Confidence: 0.841114143530528

00:08:59.614 --> 00:09:01.737 there's getting to be so many.

00:09:02.655 --> 00:09:04.485 We have now several new FDA

NOTE Confidence: 0.841114143530528

00:09:04.485 --> 00:09:05.469 approvals for these

NOTE Confidence: 0.841114143530528

00:09:05.470 --> 00:09:06.150 targeted therapies,

NOTE Confidence: 0.841114143530528

00:09:06.150 --> 00:09:09.290 but if you don't know the mutation is there,

NOTE Confidence: 0.841114143530528

00:09:09.290 --> 00:09:11.719 you're not going to use the drug,

NOTE Confidence: 0.841114143530528

00:09:11.720 --> 00:09:13.450 so it's really become very

NOTE Confidence: 0.841114143530528

00:09:13.450 --> 00:09:14.834 important to test even

NOTE Confidence: 0.866534113883972

00:09:14.840 --> 00:09:16.176 more than ever before.

NOTE Confidence: 0.866534113883972

00:09:16.176 --> 00:09:18.180 And you mentioned

NOTE Confidence: 0.866534113883972

00:09:18.255 --> 00:09:19.699 that this is standard,

NOTE Confidence: 0.866534113883972

00:09:19.700 --> 00:09:21.088 but you've mentioned now

NOTE Confidence: 0.866534113883972

00:09:21.088 --> 00:09:23.860 at least half a

NOTE Confidence: 0.866534113883972

00:09:23.860 --> 00:09:25.940 dozen mutations that you look for.

NOTE Confidence: 0.866534113883972

00:09:25.940 --> 00:09:27.675 So is that something that

NOTE Confidence: 0.866534113883972

00:09:27.675 --> 00:09:29.063 is standard of care?

NOTE Confidence: 0.866534113883972

00:09:29.070 --> 00:09:30.800 So any of our listeners,

NOTE Confidence: 0.866534113883972

00:09:30.800 --> 00:09:32.540 no matter where they go,

NOTE Confidence: 0.866534113883972

00:09:32.540 --> 00:09:34.616 whether they go to

NOTE Confidence: 0.866534113883972

00:09:34.620 --> 00:09:36.032 a large academic Cancer

NOTE Confidence: 0.866534113883972

00:09:36.032 --> 00:09:38.150 Center or whether they go to

NOTE Confidence: 0.866534113883972

00:09:38.150 --> 00:09:40.730 a local private practice oncologist,

NOTE Confidence: 0.866534113883972

00:09:40.730 --> 00:09:43.202 is that something that is going

NOTE Confidence: 0.866534113883972

00:09:43.202 --> 00:09:46.264 to be tested for them for

NOTE Confidence: 0.866534113883972

00:09:46.264 --> 00:09:48.464 their lung cancer across the

NOTE Confidence: 0.866534113883972

00:09:48.470 --> 00:09:50.676 board and across the country?

NOTE Confidence: 0.866534113883972

00:09:50.676 --> 00:09:53.882 Or is this still something that really

NOTE Confidence: 0.866534113883972

00:09:53.882 --> 00:09:56.640 hasn't found its way out of academe

NOTE Confidence: 0.877079343795776

00:09:56.640 --> 00:09:58.780 yet?

NOTE Confidence: 0.877079343795776

00:09:58.780 --> 00:10:00.964 It absolutely should be standard of care

NOTE Confidence: 0.877079343795776

00:10:00.964 --> 00:10:02.979 because we have FDA approved therapies

NOTE Confidence: 0.877079343795776

00:10:02.980 --> 00:10:05.255 when you find one of these targets

NOTE Confidence: 0.877079343795776

00:10:05.255 --> 00:10:06.882 that aren't useful unless the

NOTE Confidence: 0.877079343795776

00:10:06.882 --> 00:10:08.940 target is there and you don't know

NOTE Confidence: 0.877079343795776

00:10:08.940 --> 00:10:11.078 to use it unless you find it so,

NOTE Confidence: 0.877079343795776

00:10:11.080 --> 00:10:12.748 this should be part of standard

NOTE Confidence: 0.877079343795776

00:10:12.748 --> 00:10:14.380 of care for every patient,

NOTE Confidence: 0.877079343795776

00:10:14.380 --> 00:10:15.880 no matter where they are.

NOTE Confidence: 0.877079343795776

00:10:15.880 --> 00:10:17.380 The testing is available anywhere.

NOTE Confidence: 0.877079343795776

00:10:18.280 --> 00:10:20.080 We do the testing in house,

NOTE Confidence: 0.877079343795776

00:10:20.080 --> 00:10:21.880 so our pathology Department is fantastic.

NOTE Confidence: 0.877079343795776

00:10:21.880 --> 00:10:23.980 They do the testing here, but there's

NOTE Confidence: 0.877079343795776

00:10:23.980 --> 00:10:25.780 companies that do this testing now,

NOTE Confidence: 0.877079343795776

00:10:25.780 --> 00:10:28.324 so it is available anywhere in the US.

NOTE Confidence: 0.877079343795776

00:10:28.330 --> 00:10:30.780 It's a matter of whether it's done,

NOTE Confidence: 0.877079343795776

00:10:30.780 --> 00:10:33.230 and I think that's the bigger question,

NOTE Confidence: 0.877079343795776

00:10:33.230 --> 00:10:34.558 so I think now,

NOTE Confidence: 0.877079343795776

00:10:34.558 --> 00:10:36.218 because EGFR mutations have been

NOTE Confidence: 0.877079343795776

00:10:36.218 --> 00:10:38.130 part of the standard testing,

NOTE Confidence: 0.877079343795776

00:10:38.130 --> 00:10:40.930 you really have to test for EGFR mutations,

NOTE Confidence: 0.877079343795776

00:10:40.930 --> 00:10:43.030 and that's been for 2004 was

NOTE Confidence: 0.877079343795776

00:10:44.430 --> 00:10:46.180 when the mutation was first discovered,

NOTE Confidence: 0.877079343795776

00:10:46.180 --> 00:10:47.251 so we've

NOTE Confidence: 0.877079343795776

00:10:47.251 --> 00:10:49.036 known about EGFR mutations

NOTE Confidence: 0.877079343795776

00:10:49.036 --> 00:10:50.729 for well over a decade.

NOTE Confidence: 0.877079343795776

00:10:50.730 --> 00:10:53.117 I think that's become very standard to

NOTE Confidence: 0.877079343795776

00:10:53.117 --> 00:10:55.978 test and then the other ones I mentioned,

NOTE Confidence: 0.877079343795776

00:10:55.980 --> 00:10:57.348 initially, Alk and RAS,

NOTE Confidence: 0.877079343795776

00:10:57.348 --> 00:10:59.824 those have become more common because

NOTE Confidence: 0.877079343795776

00:10:59.824 --> 00:11:01.996 they've been around for awhile too.

NOTE Confidence: 0.877079343795776

00:11:02.000 --> 00:11:03.838 But the other ones that I

NOTE Confidence: 0.877079343795776

00:11:03.838 --> 00:11:05.058 mentioned are equally important.

NOTE Confidence: 0.877079343795776

00:11:05.058 --> 00:11:07.144 The issue is that there are more

NOTE Confidence: 0.877079343795776

00:11:07.144 --> 00:11:09.038 recent so that sometimes

NOTE Confidence: 0.877079343795776

00:11:09.038 --> 00:11:10.892 things take longer to catch on,

NOTE Confidence: 0.877079343795776

00:11:10.900 --> 00:11:12.440 and they're also really rare,

NOTE Confidence: 0.877079343795776

00:11:12.440 --> 00:11:15.194 so each one of the other ones I mentioned,

00:11:16.428 --> 00:11:18.647 are no more than 2% of lung adenocarcinomas,

NOTE Confidence: 0.877079343795776

00:11:18.647 --> 00:11:20.621 so they are rare but really

NOTE Confidence: 0.877079343795776

00:11:20.621 --> 00:11:21.648 important to test for,

NOTE Confidence: 0.877079343795776

00:11:21.650 --> 00:11:23.682 so I would hope and expect that they

NOTE Confidence: 0.877079343795776

00:11:23.682 --> 00:11:26.020 are being tested in every patient with

NOTE Confidence: 0.877079343795776

00:11:26.020 --> 00:11:27.790 an advanced form of adenocarcinoma,

NOTE Confidence: 0.877079343795776

00:11:27.790 --> 00:11:30.016 but I suspect that that's not always

NOTE Confidence: 0.877079343795776

00:11:30.016 --> 00:11:32.089 happening because of the rarity of them,

NOTE Confidence: 0.877079343795776

00:11:32.090 --> 00:11:33.266 and because it's

NOTE Confidence: 0.877079343795776

00:11:33.266 --> 00:11:34.736 a relatively

NOTE Confidence: 0.877079343795776

00:11:34.736 --> 00:11:36.210 recent advance in lung cancer,

NOTE Confidence: 0.877079343795776

00:11:36.210 --> 00:11:38.506 but they should be tested.

NOTE Confidence: 0.877079343795776

00:11:38.510 --> 00:11:40.477 Now we actually test for a whole

NOTE Confidence: 0.877079343795776

00:11:40.477 --> 00:11:42.258 lot of other genes at Yale,

NOTE Confidence: 0.877079343795776

00:11:42.260 --> 00:11:44.276 and I think that a lot of

NOTE Confidence: 0.877079343795776

00:11:44.276 --> 00:11:45.140 other academic centers,

NOTE Confidence: 0.877079343795776

00:11:45.140 --> 00:11:47.436 so that part is maybe not as necessary.

NOTE Confidence: 0.877079343795776

00:11:47.440 --> 00:11:49.710 You know, we test for

NOTE Confidence: 0.877079343795776

00:11:49.710 --> 00:11:52.185 at least 50 genes at Yale and some of

NOTE Confidence: 0.877079343795776

00:11:52.185 --> 00:11:54.775 that is trying to think about clinical

NOTE Confidence: 0.877079343795776

00:11:54.775 --> 00:11:57.189 trials for patients and other things,

NOTE Confidence: 0.877079343795776

00:11:57.190 --> 00:11:57.870 but those,

NOTE Confidence: 0.877079343795776

00:11:57.870 --> 00:11:58.890 as you said,

NOTE Confidence: 0.877079343795776

00:11:58.890 --> 00:12:00.250 more than half a

NOTE Confidence: 0.880074501037598

00:12:00.250 --> 00:12:01.950 dozen genes are standard care.

NOTE Confidence: 0.880074501037598

00:12:01.950 --> 00:12:03.310 Obviously, important to test for

NOTE Confidence: 0.880074501037598

00:12:03.310 --> 00:12:05.350 and is that covered by insurance?

NOTE Confidence: 0.880074501037598

00:12:05.350 --> 00:12:07.050 I mean, is that expensive?

NOTE Confidence: 0.880074501037598

00:12:07.050 --> 00:12:09.506 I'm kind of trying

NOTE Confidence: 0.880074501037598

00:12:09.506 --> 00:12:12.273 to think of this from the standpoint of

NOTE Confidence: 0.880074501037598

00:12:12.273 --> 00:12:14.868 our listeners who may have lung cancer,

NOTE Confidence: 0.880074501037598

00:12:14.870 --> 00:12:17.066 may have family members or friends

NOTE Confidence: 0.880074501037598

00:12:17.066 --> 00:12:19.212 who have been recently diagnosed

NOTE Confidence: 0.880074501037598

00:12:19.212 --> 00:12:21.676 and who may not have known to ask.

NOTE Confidence: 0.880074501037598

00:12:21.680 --> 00:12:25.235 You know what is my ALK status, you know?

NOTE Confidence: 0.880074501037598

00:12:25.235 --> 00:12:27.210 Do I have a RAS

NOTE Confidence: 0.880074501037598

00:12:27.210 --> 00:12:29.190 mutation and so you know,

NOTE Confidence: 0.880074501037598

00:12:29.190 --> 00:12:32.088 in broaching that subject, one of the

NOTE Confidence: 0.880074501037598

00:12:32.088 --> 00:12:35.108 issues that always comes up is number one,

NOTE Confidence: 0.880074501037598

00:12:35.110 --> 00:12:37.480 what is the cost and #2,

NOTE Confidence: 0.880074501037598

00:12:37.480 --> 00:12:39.850 is it covered by my insurance?

NOTE Confidence: 0.880074501037598

00:12:39.850 --> 00:12:41.830 And then of course #3,

NOTE Confidence: 0.880074501037598

00:12:41.830 --> 00:12:44.990 can I really avail myself of the therapies?

NOTE Confidence: 0.880074501037598

00:12:44.990 --> 00:12:46.965 But we'll get to the

NOTE Confidence: 0.880074501037598

00:12:46.965 --> 00:12:48.940 therapies part in a moment.

NOTE Confidence: 0.880074501037598

00:12:48.940 --> 00:12:50.520 What about the testing?

NOTE Confidence: 0.880074501037598

00:12:50.520 --> 00:12:52.890 Is it covered or not covered?

NOTE Confidence: 0.880074501037598

00:12:52.890 --> 00:12:53.928 Is it expensive?

NOTE Confidence: 0.880074501037598

00:12:53.928 --> 00:12:55.658 If people haven't been tested,

NOTE Confidence: 0.880074501037598

00:12:55.660 --> 00:12:57.753 can they get their own specimens and

NOTE Confidence: 0.880074501037598

00:12:57.753 --> 00:13:00.289 send them off to some lab that can do

NOTE Confidence: 0.880074501037598

00:13:00.289 --> 00:13:02.300 a commercial test if they so wanted?

NOTE Confidence: 0.880074501037598

00:13:02.300 --> 00:13:03.750 How does that all work?

NOTE Confidence: 0.838485896587372

00:13:04.440 --> 00:13:06.355 Right, so because the testing

NOTE Confidence: 0.838485896587372

00:13:06.355 --> 00:13:08.637 and the treatment is standard of

NOTE Confidence: 0.838485896587372

00:13:08.637 --> 00:13:10.419 care and approved by the FDA,

NOTE Confidence: 0.838485896587372

00:13:10.420 --> 00:13:12.180 it's covered by insurance,

NOTE Confidence: 0.838485896587372

00:13:12.180 --> 00:13:13.940 so these tests are expensive.

NOTE Confidence: 0.838485896587372

00:13:13.940 --> 00:13:15.660 It's all genetic testing DNA

NOTE Confidence: 0.838485896587372

00:13:15.660 --> 00:13:17.380 sequencing things like that

NOTE Confidence: 0.838485896587372

00:13:17.441 --> 00:13:19.216 but it's covered it's standard,

NOTE Confidence: 0.838485896587372

00:13:19.220 --> 00:13:20.980 so it's covered by insurance.

NOTE Confidence: 0.838485896587372

00:13:20.980 --> 00:13:24.500 So in terms of if someone could just go,

NOTE Confidence: 0.838485896587372

00:13:24.500 --> 00:13:26.618 you know, do their own testing,

NOTE Confidence: 0.838485896587372

00:13:26.620 --> 00:13:29.084 the nice thing is

NOTE Confidence: 0.838485896587372

00:13:29.084 --> 00:13:31.188 that once you've had a biopsy,

NOTE Confidence: 0.838485896587372

00:13:31.190 --> 00:13:34.187 it goes to the lab and it stays there

NOTE Confidence: 0.838485896587372

00:13:34.187 --> 00:13:36.753 for as far as I understand, decades.

NOTE Confidence: 0.838485896587372

00:13:36.753 --> 00:13:38.451 So if someone

NOTE Confidence: 0.838485896587372

00:13:38.451 --> 00:13:39.300 asked their oncologist,

NOTE Confidence: 0.838485896587372

00:13:39.300 --> 00:13:42.270 have I had this test and the answer is no.

NOTE Confidence: 0.838485896587372

00:13:42.270 --> 00:13:44.160 Actually we didn't test for all these.

NOTE Confidence: 0.838485896587372

00:13:44.160 --> 00:13:45.780 It's not like all is lost.

NOTE Confidence: 0.838485896587372

00:13:45.780 --> 00:13:47.130 You can still test it.

NOTE Confidence: 0.838485896587372

00:13:47.130 --> 00:13:48.516 So I think that has to be

NOTE Confidence: 0.838485896587372

00:13:48.516 --> 00:13:49.925 done from the doctor's office

NOTE Confidence: 0.838485896587372

00:13:49.925 --> 00:13:51.449 and the pathology Department,

NOTE Confidence: 0.838485896587372

00:13:51.450 --> 00:13:53.070 but it absolutely could be done

00:13:53.610 --> 00:13:54.420 even years after

NOTE Confidence: 0.873368322849274

00:13:54.420 --> 00:13:55.770 a diagnosis is made.

NOTE Confidence: 0.873368322849274

00:13:55.770 --> 00:13:57.534 Well, we're going to dig more into

NOTE Confidence: 0.873368322849274

00:13:57.534 --> 00:13:59.198 what happens after you have that

NOTE Confidence: 0.873368322849274

00:13:59.198 --> 00:14:00.623 information in terms of treatment,

NOTE Confidence: 0.873368322849274

00:14:00.630 --> 00:14:02.250 right after we take a short

NOTE Confidence: 0.873368322849274

00:14:02.250 --> 00:14:03.330 break for medical minute.

NOTE Confidence: 0.873368322849274

00:14:03.330 --> 00:14:04.600 Please stay tuned to learn

NOTE Confidence: 0.873368322849274

00:14:04.600 --> 00:14:06.212 more about lung cancer with my

NOTE Confidence: 0.873368322849274

00:14:06.212 --> 00:14:07.380 guest doctor Sarah Goldberg.

NOTE Confidence: 0.854985177516937

00:14:07.970 --> 00:14:10.420 Support for Yale Cancer Answers

NOTE Confidence: 0.854985177516937

00:14:10.420 --> 00:14:12.380 comes from AstraZeneca,

NOTE Confidence: 0.854985177516937

00:14:12.380 --> 00:14:16.139 an industry leader in the development of

NOTE Confidence: 0.854985177516937

00:14:16.139 --> 00:14:18.246 breakthrough immunooncology therapies across

NOTE Confidence: 0.854985177516937

00:14:18.246 --> 00:14:21.200 multiple tumor types and stages of cancer.

NOTE Confidence: 0.854985177516937

00:14:21.200 --> 00:14:24.560 Learn more at astrazeneca-us.com.

NOTE Confidence: 0.854985177516937

00:14:24.560 --> 00:14:27.346 This is a medical minute about Melanoma.

NOTE Confidence: 0.854985177516937

00:14:27.350 --> 00:14:29.335 While Melanoma accounts for only

NOTE Confidence: 0.854985177516937

00:14:29.335 --> 00:14:31.578 about 4% of skin cancer cases,

NOTE Confidence: 0.854985177516937

00:14:31.578 --> 00:14:33.750 it causes the most skin cancer

NOTE Confidence: 0.854985177516937

00:14:33.820 --> 00:14:35.700 deaths. When detected early,

NOTE Confidence: 0.854985177516937

00:14:35.700 --> 00:14:37.690 however, Melanoma is easily treated

NOTE Confidence: 0.854985177516937

00:14:37.690 --> 00:14:39.282 and highly curable. Clinical

NOTE Confidence: 0.854985177516937

00:14:39.290 --> 00:14:41.570 trials are currently underway to test

NOTE Confidence: 0.854985177516937

00:14:41.570 --> 00:14:43.660 innovative new treatments for Melanoma.

NOTE Confidence: 0.854985177516937

00:14:43.660 --> 00:14:46.180 The goal of the specialized programs

NOTE Confidence: 0.854985177516937

00:14:46.180 --> 00:14:48.666 of research excellence in skin cancer

NOTE Confidence: 0.854985177516937

00:14:48.666 --> 00:14:51.228 or SPORE grant is to better understand

NOTE Confidence: 0.854985177516937

00:14:51.228 --> 00:14:54.416 the biology of skin cancer with a focus

NOTE Confidence: 0.854985177516937

00:14:54.416 --> 00:14:56.944 on discovering targets that will lead

NOTE Confidence: 0.854985177516937

00:14:56.944 --> 00:14:59.184 to improved diagnosis and treatment.

NOTE Confidence: 0.854985177516937

00:14:59.190 --> 00:15:01.282 More information is available

NOTE Confidence: 0.854985177516937

00:15:01.282 --> 00:15:02.328 at yalecancercenter.org.

NOTE Confidence: 0.854985177516937

00:15:02.330 --> 00:15:07.226 You're listening to Connecticut Public Radio.

NOTE Confidence: 0.854985177516937

00:15:07.230 --> 00:15:07.610 Welcome

NOTE Confidence: 0.837457656860352

00:15:07.610 --> 00:15:09.490 back to Yale Cancer Answers.

NOTE Confidence: 0.837457656860352

00:15:09.490 --> 00:15:12.298 This is doctor Anees Chagpar and I'm

NOTE Confidence: 0.837457656860352

00:15:12.298 --> 00:15:14.648 joined tonight by my guest doctor

NOTE Confidence: 0.837457656860352

00:15:14.648 --> 00:15:16.613 Sarah Goldberg and we're talking about

NOTE Confidence: 0.837457656860352

00:15:16.613 --> 00:15:19.308 lung cancer and right before the break

NOTE Confidence: 0.837457656860352

00:15:19.308 --> 00:15:21.811 Sarah was telling us about how lung

NOTE Confidence: 0.837457656860352

00:15:21.811 --> 00:15:24.170 cancer is actually a much more complex

NOTE Confidence: 0.837457656860352

00:15:24.234 --> 00:15:26.459 disease than we thought previously.

NOTE Confidence: 0.837457656860352

00:15:26.460 --> 00:15:29.628 No longer do we think about it just as

NOTE Confidence: 0.837457656860352

00:15:29.628 --> 00:15:32.866 small cell and non small cell but really,

NOTE Confidence: 0.837457656860352

00:15:32.870 --> 00:15:34.535 lung cancer has burgeoned into

NOTE Confidence: 0.837457656860352

00:15:34.535 --> 00:15:36.725 a whole plethora of of diseases

NOTE Confidence: 0.837457656860352

00:15:36.725 --> 00:15:38.537 based on genetic mutations

NOTE Confidence: 0.837457656860352

00:15:38.540 --> 00:15:42.108 of the cancer itself that can be profiled

NOTE Confidence: 0.837457656860352

00:15:42.108 --> 00:15:44.880 and potentially targeted for therapies,

NOTE Confidence: 0.837457656860352

00:15:44.880 --> 00:15:47.320 and this testing, while expensive,

NOTE Confidence: 0.837457656860352

00:15:47.320 --> 00:15:49.348 is covered by insurance.

NOTE Confidence: 0.837457656860352

00:15:49.348 --> 00:15:52.915 Sarah the one question I wanted

NOTE Confidence: 0.837457656860352

00:15:52.915 --> 00:15:55.848 to pick up on just before we

NOTE Confidence: 0.837457656860352

00:15:55.848 --> 00:15:58.550 move on to the treatments,

NOTE Confidence: 0.837457656860352

00:15:58.550 --> 00:16:01.998 which I think is going to be super

NOTE Confidence: 0.837457656860352

00:16:01.998 --> 00:16:05.155 interesting, is what about for our

NOTE Confidence: 0.837457656860352

00:16:05.155 --> 00:16:07.355 non insured uninsured patients?

NOTE Confidence: 0.837457656860352

00:16:07.360 --> 00:16:10.175 It's great that the testing

NOTE Confidence: 0.837457656860352

00:16:10.175 --> 00:16:12.427 is covered by insurance,

NOTE Confidence: 0.837457656860352

00:16:12.430 --> 00:16:15.240 but if somebody doesn't have

NOTE Confidence: 0.837457656860352

00:16:15.240 --> 00:16:16.926 insurance as many,

NOTE Confidence: 0.837457656860352

00:16:16.930 --> 00:16:19.750 many American patients don't,

NOTE Confidence: 0.837457656860352

00:16:19.750 --> 00:16:21.439 what are their

NOTE Confidence: 0.86816759620394

00:16:21.440 --> 00:16:21.831 alternatives?

NOTE Confidence: 0.86816759620394

00:16:21.831 --> 00:16:24.177 Yeah, lack of insurance is

NOTE Confidence: 0.86816759620394

00:16:24.177 --> 00:16:26.908 difficult in a lot of different ways,

NOTE Confidence: 0.86816759620394

00:16:26.910 --> 00:16:28.500 not just with testing.

NOTE Confidence: 0.86816759620394

00:16:28.500 --> 00:16:30.408 It also comes down to doctors

NOTE Confidence: 0.86816759620394

00:16:30.408 --> 00:16:31.680 visits and treatment too,

NOTE Confidence: 0.86816759620394

00:16:31.680 --> 00:16:33.215 so I think that's something

NOTE Confidence: 0.86816759620394

00:16:35.180 --> 00:16:37.357 that we sometimes see and

NOTE Confidence: 0.86816759620394

00:16:37.357 --> 00:16:39.604 we work

NOTE Confidence: 0.86816759620394

00:16:39.604 --> 00:16:41.452 very closely with

NOTE Confidence: 0.86816759620394

00:16:41.452 --> 00:16:43.112 multiple people to try

NOTE Confidence: 0.86816759620394

00:16:43.112 --> 00:16:45.038 to to work on these issues,

NOTE Confidence: 0.86816759620394

00:16:45.040 --> 00:16:46.368 especially our social workers

NOTE Confidence: 0.86816759620394

00:16:46.368 --> 00:16:48.706 and try to make every effort to

NOTE Confidence: 0.86816759620394

00:16:48.706 --> 00:16:50.392 get people the care that they

NOTE Confidence: 0.86816759620394

00:16:50.392 --> 00:16:52.040 need in whatever way possible,

NOTE Confidence: 0.86816759620394

00:16:52.040 --> 00:16:53.408 whether that's helping them

NOTE Confidence: 0.86816759620394

00:16:53.408 --> 00:16:55.118 find insurance or figure out

NOTE Confidence: 0.86816759620394

00:16:55.118 --> 00:16:56.719 other resources

NOTE Confidence: 0.86816759620394

00:16:56.720 --> 00:16:58.634 because it's such an important part

NOTE Confidence: 0.86816759620394

00:16:58.634 --> 00:17:01.129 of care to get this testing done.

NOTE Confidence: 0.86816759620394

00:17:01.130 --> 00:17:03.356 I think that kind of is wrapped

NOTE Confidence: 0.86816759620394

00:17:03.356 --> 00:17:04.860 up in the whole

NOTE Confidence: 0.86816759620394

00:17:04.860 --> 00:17:06.732 issue with diagnosis and

NOTE Confidence: 0.86816759620394

00:17:06.732 --> 00:17:08.590 then finding the right treatment.

NOTE Confidence: 0.86816759620394

00:17:08.590 --> 00:17:10.280 It's all part of that.

NOTE Confidence: 0.86816759620394

00:17:10.280 --> 00:17:12.314 So typically were able to find

NOTE Confidence: 0.86816759620394

00:17:12.314 --> 00:17:14.690 a way to cover this in some

NOTE Confidence: 0.86816759620394

00:17:14.690 --> 00:17:15.706 capacity for patients.

NOTE Confidence: 0.871644258499146

00:17:16.380 --> 00:17:18.621 We could do a whole show on all

NOTE Confidence: 0.871644258499146

00:17:18.621 --> 00:17:21.263 of the implications of having so many

NOTE Confidence: 0.871644258499146

00:17:21.263 --> 00:17:23.500 millions of Americans being uninsured,

NOTE Confidence: 0.871644258499146

00:17:23.500 --> 00:17:25.260 and what that does for

NOTE Confidence: 0.871644258499146

00:17:25.260 --> 00:17:27.560 the health of our nation,

NOTE Confidence: 0.871644258499146

00:17:27.560 --> 00:17:29.356 but that's another show.

NOTE Confidence: 0.871644258499146

00:17:29.356 --> 00:17:32.600 Let's turn to a happier topic,

NOTE Confidence: 0.871644258499146

00:17:32.600 --> 00:17:36.632 which is now that we have an

NOTE Confidence: 0.871644258499146

00:17:36.632 --> 00:17:39.415 understanding of all of these mutations

NOTE Confidence: 0.871644258499146

00:17:39.415 --> 00:17:42.700 that every cancer can exhibit,

NOTE Confidence: 0.871644258499146

00:17:42.700 --> 00:17:46.330 we now can figure out what

NOTE Confidence: 0.871644258499146

00:17:46.420 --> 00:17:50.050 makes one cancer different from another.

NOTE Confidence: 0.871644258499146

00:17:50.050 --> 00:17:52.726 And once we can figure out

NOTE Confidence: 0.871644258499146

00:17:52.726 --> 00:17:55.100 what makes a cancer tick,

NOTE Confidence: 0.871644258499146

00:17:55.100 --> 00:17:56.477 we can potentially

NOTE Confidence: 0.871644258499146

00:17:56.477 --> 00:17:59.231 stop it from ticking through personalized

NOTE Confidence: 0.871644258499146

00:17:59.231 --> 00:18:01.791 therapies and targeted agents that

NOTE Confidence: 0.871644258499146

00:18:01.791 --> 00:18:03.826 can really address these pathways.

NOTE Confidence: 0.871644258499146

00:18:03.830 --> 00:18:07.204 So can you talk a little bit about

NOTE Confidence: 0.871644258499146

00:18:07.204 --> 00:18:09.956 what we know and what are some of

NOTE Confidence: 0.871644258499146

00:18:09.956 --> 00:18:12.940 the exciting drugs that

NOTE Confidence: 0.871644258499146

00:18:12.940 --> 00:18:15.500 address each of these mutations?

NOTE Confidence: 0.873613238334656

00:18:16.070 --> 00:18:17.750 Sure, so as you mentioned,

NOTE Confidence: 0.873613238334656

00:18:17.750 --> 00:18:19.430 there's many different exciting

NOTE Confidence: 0.873613238334656

00:18:19.430 --> 00:18:21.110 drugs for the various mutations,

NOTE Confidence: 0.873613238334656

00:18:21.110 --> 00:18:22.785 and each one generally

NOTE Confidence: 0.873613238334656

00:18:22.785 --> 00:18:24.125 does the same thing.

NOTE Confidence: 0.873613238334656

00:18:24.130 --> 00:18:26.391 It tries to block the activity of

NOTE Confidence: 0.873613238334656

00:18:26.391 --> 00:18:28.135 the abnormal mutation that's

00:18:30.283 --> 00:18:32.000 causing the cancer

NOTE Confidence: 0.873613238334656

00:18:32.000 --> 00:18:33.878 cell to grow and be abnormal.

NOTE Confidence: 0.873613238334656

00:18:33.880 --> 00:18:35.890 And if you could block that,

NOTE Confidence: 0.873613238334656

00:18:35.890 --> 00:18:37.570 it could be extremely effective,

NOTE Confidence: 0.873613238334656

00:18:37.570 --> 00:18:40.850 and so that's true regardless of which of

NOTE Confidence: 0.873613238334656

00:18:40.850 --> 00:18:43.480 these mutations are found in the cancer.

NOTE Confidence: 0.873613238334656

00:18:43.480 --> 00:18:46.495 EGFR is a great example,

NOTE Confidence: 0.873613238334656

00:18:46.500 --> 00:18:48.145 because we've known about it

NOTE Confidence: 0.873613238334656

00:18:48.145 --> 00:18:50.180 for the most amount of time,

NOTE Confidence: 0.873613238334656

00:18:50.180 --> 00:18:52.350 there was an EGFR inhibitor

NOTE Confidence: 0.873613238334656

00:18:52.350 --> 00:18:54.869 that we used initially called erlotinib

NOTE Confidence: 0.873613238334656

00:18:54.870 --> 00:18:56.880 and if that was really effective.

NOTE Confidence: 0.873613238334656

00:18:56.880 --> 00:18:59.028 But over the years we've realized

NOTE Confidence: 0.873613238334656

00:18:59.028 --> 00:19:01.235 that other EGFR inhibitors that have

NOTE Confidence: 0.873613238334656

00:19:01.235 --> 00:19:03.353 been developed since then are even

NOTE Confidence: 0.873613238334656

00:19:03.353 --> 00:19:05.523 more effective and seemed to work in

NOTE Confidence: 0.873613238334656

00:19:05.523 --> 00:19:07.592 more people and work for longer,

NOTE Confidence: 0.873613238334656

00:19:07.592 --> 00:19:09.578 because one thing that I haven't

NOTE Confidence: 0.873613238334656

00:19:09.578 --> 00:19:11.289 mentioned is that these drugs,

NOTE Confidence: 0.873613238334656

00:19:11.290 --> 00:19:13.705 while they can be extremely effective and

NOTE Confidence: 0.873613238334656

00:19:13.710 --> 00:19:14.982 help people,

00:19:15.300 --> 00:19:18.144 and shrink the cancer and work for a long,

NOTE Confidence: 0.873613238334656

00:19:18.150 --> 00:19:20.369 long time when the cancer is at

NOTE Confidence: 0.873613238334656

00:19:20.369 --> 00:19:21.320 an advanced stage,

NOTE Confidence: 0.873613238334656

00:19:21.320 --> 00:19:23.816 it's not curable so the drugs can work

NOTE Confidence: 0.873613238334656

00:19:23.816 --> 00:19:26.068 and again they can work for years.

NOTE Confidence: 0.873613238334656

00:19:26.070 --> 00:19:28.182 But at some point the cancer gets smarter

NOTE Confidence: 0.873613238334656

00:19:28.182 --> 00:19:30.510 and grows despite these targeted therapies.

NOTE Confidence: 0.873613238334656

00:19:30.510 --> 00:19:33.046 So as we've developed newer and better drugs,

NOTE Confidence: 0.873613238334656

00:19:33.050 --> 00:19:34.946 they tend to work for longer,

NOTE Confidence: 0.873613238334656

00:19:34.950 --> 00:19:36.708 and so that's really what we're

NOTE Confidence: 0.873613238334656

00:19:36.708 --> 00:19:39.116 trying to do is find drugs that work

NOTE Confidence: 0.873613238334656

00:19:39.116 --> 00:19:41.670 for a really long time and make this

NOTE Confidence: 0.873613238334656

00:19:41.670 --> 00:19:43.866 cancer a chronic disease that people

NOTE Confidence: 0.873613238334656

00:19:43.870 --> 00:19:45.910 may not be able to cure or get

NOTE Confidence: 0.873613238334656

00:19:45.910 --> 00:19:47.120 rid of entirely,

NOTE Confidence: 0.873613238334656

00:19:47.120 --> 00:19:48.525 but they can live

NOTE Confidence: 0.873613238334656

00:19:48.525 --> 00:19:50.360 with it for a long time,

NOTE Confidence: 0.873613238334656

00:19:50.360 --> 00:19:52.488 and so in each of the different

NOTE Confidence: 0.873613238334656

00:19:52.488 --> 00:19:54.053 targeted therapy realms for each

NOTE Confidence: 0.873613238334656

00:19:54.053 --> 00:19:55.543 mutation we have great examples

NOTE Confidence: 0.873613238334656

00:19:55.543 --> 00:19:57.313 of drugs that can give people

NOTE Confidence: 0.873613238334656

00:19:57.313 --> 00:19:59.210 many more years of life than they

NOTE Confidence: 0.873613238334656

00:19:59.210 --> 00:20:01.026 otherwise would have had.

00:20:01.480 --> 00:20:03.904 And with each of these drugs, though

NOTE Confidence: 0.841715693473816

00:20:03.904 --> 00:20:05.520 there's presumably side effects,

NOTE Confidence: 0.841715693473816

00:20:05.520 --> 00:20:08.350 what does that look

NOTE Confidence: 0.858503695577383

00:20:08.350 --> 00:20:09.714 like?

NOTE Confidence: 0.858503695577383

00:20:09.714 --> 00:20:12.216 Any drug can have its share of

NOTE Confidence: 0.858503695577383

00:20:12.216 --> 00:20:14.146 side effects and it's variable

NOTE Confidence: 0.858503695577383

00:20:14.150 --> 00:20:16.040 depending on the drug, but overall,

NOTE Confidence: 0.858503695577383

00:20:16.040 --> 00:20:17.625 the targeted therapies tend to

NOTE Confidence: 0.858503695577383

00:20:17.625 --> 00:20:19.573 have less side effects than kind

NOTE Confidence: 0.858503695577383

00:20:19.573 --> 00:20:21.078 of our classic cancer drugs,

NOTE Confidence: 0.858503695577383

00:20:21.080 --> 00:20:22.040 mainly chemotherapy because

NOTE Confidence: 0.858503695577383

00:20:22.040 --> 00:20:23.640 they're targeted and aimed

NOTE Confidence: 0.858503695577383

00:20:23.640 --> 00:20:24.860 specifically at the mutation.

NOTE Confidence: 0.858503695577383

00:20:24.860 --> 00:20:26.645 That's the abnormality in the

NOTE Confidence: 0.858503695577383

00:20:26.645 --> 00:20:28.430 cancer cells which doesn't exist

NOTE Confidence: 0.858503695577383

00:20:28.496 --> 00:20:30.470 in other cells,

NOTE Confidence: 0.858503695577383

00:20:30.470 --> 00:20:32.417 in the normal cells in the body.

NOTE Confidence: 0.858503695577383

00:20:32.420 --> 00:20:33.676 The non cancer cells.

NOTE Confidence: 0.858503695577383

00:20:33.676 --> 00:20:35.246 The mutation is not there,

NOTE Confidence: 0.858503695577383

00:20:35.250 --> 00:20:37.308 so the drugs don't tend to bother

NOTE Confidence: 0.858503695577383

00:20:37.308 --> 00:20:39.286 the normal cells quite as much

NOTE Confidence: 0.858503695577383

00:20:39.286 --> 00:20:40.315 as with chemotherapy.

NOTE Confidence: 0.858503695577383

00:20:40.320 --> 00:20:42.078 So again, every drug is different.

NOTE Confidence: 0.858503695577383

00:20:42.080 --> 00:20:43.874 Some of the more common ones

NOTE Confidence: 0.858503695577383

00:20:43.874 --> 00:20:45.609 that we sometimes see is rash,

NOTE Confidence: 0.858503695577383

00:20:45.610 --> 00:20:46.786 sometimes people are more

NOTE Confidence: 0.858503695577383

00:20:46.786 --> 00:20:48.256 tired than they usually are,

NOTE Confidence: 0.858503695577383

00:20:48.260 --> 00:20:50.318 but generally they are much better tolerated.

NOTE Confidence: 0.858503695577383

00:20:50.320 --> 00:20:52.364 So it's almost like a win win.

NOTE Confidence: 0.858503695577383

00:20:52.370 --> 00:20:54.428 They work better than other cancer therapies,

NOTE Confidence: 0.858503695577383

00:20:54.430 --> 00:20:56.488 and they have less side effects,

NOTE Confidence: 0.858503695577383

00:20:56.490 --> 00:20:57.070 so again,

NOTE Confidence: 0.858503695577383

00:20:57.070 --> 00:20:58.810 we find one of these mutations

NOTE Confidence: 0.858503695577383

00:20:58.810 --> 00:21:00.900 that we can target in a patient.

NOTE Confidence: 0.858503695577383

00:21:00.900 --> 00:21:03.007 I am very excited and I think

NOTE Confidence: 0.858503695577383

00:21:03.007 --> 00:21:04.248 hopefully my enthusiasm catches

NOTE Confidence: 0.858503695577383

00:21:04.248 --> 00:21:06.159 on to the page with the patient

NOTE Confidence: 0.858503695577383

00:21:06.159 --> 00:21:07.960 and they get very excited too,

NOTE Confidence: 0.858503695577383

00:21:07.960 --> 00:21:09.718 especially once they see how well

NOTE Confidence: 0.87557362426411

00:21:09.720 --> 00:21:12.044 it works. Now you know when people

NOTE Confidence: 0.87557362426411

00:21:12.044 --> 00:21:13.750 are talking about therapies,

NOTE Confidence: 0.87557362426411

00:21:13.750 --> 00:21:15.940 I mean on the one hand,

NOTE Confidence: 0.87557362426411

00:21:15.940 --> 00:21:17.760 clearly they're really excited about

NOTE Confidence: 0.87557362426411

00:21:17.760 --> 00:21:19.216 these really effective therapies

NOTE Confidence: 0.87557362426411

00:21:19.220 --> 00:21:21.050 that last a really along time,

NOTE Confidence: 0.87557362426411

00:21:21.050 --> 00:21:24.018 but the other thing is that they don't

NOTE Confidence: 0.87557362426411

00:21:24.018 --> 00:21:26.617 really want to come to the hospital

NOTE Confidence: 0.87557362426411

00:21:26.617 --> 00:21:29.438 and have an IV infusion of a therapy.

NOTE Confidence: 0.87557362426411

00:21:29.440 --> 00:21:31.630 And when people think about chemotherapy,

NOTE Confidence: 0.87557362426411

00:21:31.630 --> 00:21:34.190 that's what they think about they think

NOTE Confidence: 0.87557362426411

00:21:34.190 --> 00:21:36.376 about being in the infusion suite,

NOTE Confidence: 0.87557362426411

00:21:36.376 --> 00:21:38.196 hooked up to an IV

NOTE Confidence: 0.87557362426411

00:21:38.200 --> 00:21:40.390 losing their hair and getting nauseous,

NOTE Confidence: 0.87557362426411

00:21:40.390 --> 00:21:41.960 and repeating that cycle

NOTE Confidence: 0.87557362426411

00:21:41.960 --> 00:21:44.810 multiple times, so are these therapies

NOTE Confidence: 0.87557362426411

00:21:44.810 --> 00:21:46.558 IV, or are they oral?

NOTE Confidence: 0.87557362426411

00:21:46.558 --> 00:21:50.640 How well do they fit into peoples lives?

NOTE Confidence: 0.87557362426411

00:21:50.640 --> 00:21:53.070 Especially if we're talking about

NOTE Confidence: 0.87557362426411

00:21:53.070 --> 00:21:56.037 taking them for a long time

NOTE Confidence: 0.87557362426411

00:21:56.037 --> 00:21:58.252 and making what was previously

NOTE Confidence: 0.87557362426411

00:21:58.252 --> 00:22:01.329 thought of as a fatal disease,

NOTE Confidence: 0.87557362426411

00:22:01.330 --> 00:22:05.083 more of a chronic one that you can live

NOTE Confidence: 0.87557362426411

00:22:05.083 --> 00:22:09.110 with rather than die from.

00:22:12.166 --> 00:22:13.418 The IV treatments are challenging because

NOTE Confidence: 0.839639723300934

00:22:13.418 --> 00:22:15.554 people usually have to

NOTE Confidence: 0.839639723300934

00:22:15.554 --> 00:22:17.216 come in fairly frequently for them,

NOTE Confidence: 0.839639723300934

00:22:17.220 --> 00:22:18.942 and you spend time here instead

NOTE Confidence: 0.839639723300934

00:22:18.942 --> 00:22:20.509 of where you want to be.

NOTE Confidence: 0.839639723300934

00:22:20.510 --> 00:22:21.880 These drugs are all pills,

NOTE Confidence: 0.839639723300934

00:22:21.880 --> 00:22:23.936 so that does make it a really nice

NOTE Confidence: 0.839639723300934

00:22:23.936 --> 00:22:26.359 part of it is that you take your

NOTE Confidence: 0.839639723300934

00:22:26.359 --> 00:22:28.945 daily pill or twice a day pill like you

NOTE Confidence: 0.839639723300934

00:22:28.945 --> 00:22:30.620 would take your blood pressure pills

NOTE Confidence: 0.839639723300934

00:22:30.620 --> 00:22:33.035 and you don't need to come into the

NOTE Confidence: 0.839639723300934

00:22:33.035 --> 00:22:35.299 hospital nearly as often as an IV medicine.

NOTE Confidence: 0.839639723300934

00:22:35.300 --> 00:22:37.856 I will say that

NOTE Confidence: 0.839639723300934

00:22:37.860 --> 00:22:40.396 as exciting as all of this is,

NOTE Confidence: 0.839639723300934

00:22:40.400 --> 00:22:41.664 and hopefully you can

NOTE Confidence: 0.839639723300934

00:22:41.664 --> 00:22:43.244 sense my enthusiasm for it,

NOTE Confidence: 0.839639723300934

00:22:43.250 --> 00:22:44.814 it still is only

NOTE Confidence: 0.839639723300934

00:22:44.814 --> 00:22:48.170 maybe about 20 or 25% of patients

NOTE Confidence: 0.839639723300934

00:22:48.170 --> 00:22:50.770 with lung cancer that we can find one

NOTE Confidence: 0.839639723300934

00:22:50.844 --> 00:22:53.364 of these mutations that we can target.

NOTE Confidence: 0.839639723300934

00:22:53.370 --> 00:22:55.547 So the numbers are

NOTE Confidence: 0.839639723300934

00:22:55.547 --> 00:22:58.177 going up as we find more mutations,

NOTE Confidence: 0.839639723300934

00:22:58.180 --> 00:22:59.972 but it's still unfortunately

NOTE Confidence: 0.839639723300934

00:22:59.972 --> 00:23:02.212 not everyone and so

NOTE Confidence: 0.839639723300934

00:23:02.220 --> 00:23:04.460 there's been a huge amount of work in

NOTE Confidence: 0.839639723300934

00:23:04.460 --> 00:23:06.482 other areas of lung cancer where

NOTE Confidence: 0.839639723300934

00:23:06.482 --> 00:23:08.460 we can't find a targetable mutation,

NOTE Confidence: 0.839639723300934

00:23:08.460 --> 00:23:10.539 and then the other end

NOTE Confidence: 0.839639723300934

00:23:10.540 --> 00:23:12.020 that's mainly with immune therapies.

00:23:14.396 --> 00:23:16.472 What about the other 75% of people?

NOTE Confidence: 0.839639723300934

00:23:16.472 --> 00:23:17.656 What's in their cancer

NOTE Confidence: 0.839639723300934

00:23:17.660 --> 00:23:19.448 if they don't have targetable mutations,

NOTE Confidence: 0.839639723300934

00:23:19.450 --> 00:23:21.818 and what can we do about that?

NOTE Confidence: 0.839639723300934

00:23:21.820 --> 00:23:24.052 So I think those two areas are so

NOTE Confidence: 0.839639723300934

00:23:24.052 --> 00:23:25.980 critical as well because we

00:23:26.508 --> 00:23:28.092 haven't come far enough to

NOTE Confidence: 0.839639723300934

00:23:28.092 --> 00:23:29.674 figure out a targeted therapy

NOTE Confidence: 0.839639723300934

00:23:29.674 --> 00:23:31.329 strategy for every patient yet.

NOTE Confidence: 0.86216402053833

00:23:31.330 --> 00:23:33.578 And I think that both of those

NOTE Confidence: 0.86216402053833

00:23:33.578 --> 00:23:35.567 issues are are so critical.

NOTE Confidence: 0.86216402053833

00:23:35.567 --> 00:23:37.829 Let's dig into those.

NOTE Confidence: 0.86216402053833

00:23:37.830 --> 00:23:40.080 But before we get there,

NOTE Confidence: 0.86216402053833

00:23:40.080 --> 00:23:42.318 these targeted therapies are,

NOTE Confidence: 0.86216402053833

00:23:42.320 --> 00:23:44.564 for example, in breast cancer we

NOTE Confidence: 0.86216402053833

00:23:44.564 --> 00:23:46.440 have targeted therapies as well,

NOTE Confidence: 0.86216402053833

00:23:46.440 --> 00:23:48.305 which often are given in

NOTE Confidence: 0.86216402053833

00:23:48.305 --> 00:23:49.424 combination with chemotherapy.

NOTE Confidence: 0.86216402053833

00:23:49.430 --> 00:23:51.686 But it sounds like these targeted

NOTE Confidence: 0.86216402053833

00:23:51.686 --> 00:23:54.289 therapies can be used as sole agents.

NOTE Confidence: 0.86216402053833

00:23:54.290 --> 00:23:55.412 Is that right?

NOTE Confidence: 0.86216402053833

00:23:55.412 --> 00:23:56.910 That's right. Yes.

NOTE Confidence: 0.867206156253815

00:23:56.910 --> 00:23:59.523 There is some research going

NOTE Confidence: 0.867206156253815

00:23:59.523 --> 00:24:02.140 on trying to combine them with chemotherapy,

NOTE Confidence: 0.867206156253815

00:24:02.140 --> 00:24:04.390 but you're right at this point,

NOTE Confidence: 0.867206156253815

00:24:04.390 --> 00:24:06.640 the way we use them is

NOTE Confidence: 0.867206156253815

00:24:06.640 --> 00:24:07.928 the targeted therapy alone.

NOTE Confidence: 0.867206156253815

00:24:07.928 --> 00:24:09.538 They've been really in almost

NOTE Confidence: 0.867206156253815

00:24:09.538 --> 00:24:10.839 every case

NOTE Confidence: 0.867206156253815

00:24:10.840 --> 00:24:12.778 there's been trials comparing the targeted

NOTE Confidence: 0.867206156253815

00:24:12.778 --> 00:24:14.070 therapy compared to chemotherapy,

NOTE Confidence: 0.867206156253815

00:24:14.070 --> 00:24:16.324 and it's superior in all the cases.

NOTE Confidence: 0.867206156253815

00:24:16.330 --> 00:24:18.142 Again, when you have the target

NOTE Confidence: 0.867206156253815

00:24:18.142 --> 00:24:19.880 and use the targeted therapy,

NOTE Confidence: 0.867206156253815

00:24:19.880 --> 00:24:21.818 it's better than using chemotherapy,

NOTE Confidence: 0.867206156253815

00:24:21.820 --> 00:24:24.727 and we haven't found a reason to combine it,

NOTE Confidence: 0.867206156253815

00:24:24.730 --> 00:24:25.642 although there again,

NOTE Confidence: 0.867206156253815

00:24:25.642 --> 00:24:27.466 is some research looking at

NOTE Confidence: 0.867206156253815

00:24:27.466 --> 00:24:29.247 if combining it is beneficial.

NOTE Confidence: 0.867206156253815

00:24:29.250 --> 00:24:31.188 The standard is to use the

NOTE Confidence: 0.867206156253815

00:24:31.188 --> 00:24:32.157 targeted therapy alone.

00:24:33.126 --> 00:24:35.712 It's really nice for a logistic point of

NOTE Confidence: 0.867206156253815

00:24:35.712 --> 00:24:38.685 view and side effect point of view as well.

NOTE Confidence: 0.867206156253815

00:24:38.685 --> 00:24:40.730 Yeah, I mean that's so exciting,

00:24:41.750 --> 00:24:44.576 it does kind of sound like if

NOTE Confidence: 0.874267816543579

00:24:44.576 --> 00:24:47.504 you've got one of these mutations, you can

NOTE Confidence: 0.874267816543579

00:24:47.504 --> 00:24:50.914 take a pill and

NOTE Confidence: 0.874267816543579

00:24:50.914 --> 00:24:53.310 have fewer side effects and a better

NOTE Confidence: 0.874267816543579

00:24:53.310 --> 00:24:55.690 outcome than being hooked up to chemo.

NOTE Confidence: 0.874267816543579

00:24:55.690 --> 00:24:57.993 And you can take your pills on

NOTE Confidence: 0.874267816543579

00:24:57.993 --> 00:25:00.085 vacation with you to wherever you're

NOTE Confidence: 0.874267816543579

00:25:00.085 --> 00:25:02.486 going to go and live your life.

NOTE Confidence: 0.874267816543579

00:25:02.490 --> 00:25:05.210 And it sounds like that is just so

NOTE Confidence: 0.874267816543579

00:25:05.210 --> 00:25:07.250 exciting in terms of an advance,

NOTE Confidence: 0.874267816543579

00:25:07.250 --> 00:25:09.602 but it does bring us to the

NOTE Confidence: 0.874267816543579

00:25:09.602 --> 00:25:11.758 question of what if you're not

NOTE Confidence: 0.874267816543579

00:25:11.760 --> 00:25:14.679 in one of those lucky groups that

NOTE Confidence: 0.874267816543579

00:25:14.679 --> 00:25:16.680 has a known targetable mutation,

NOTE Confidence: 0.874267816543579

00:25:16.680 --> 00:25:17.985 you mentioned immunotherapy.

NOTE Confidence: 0.874267816543579

00:25:17.985 --> 00:25:21.030 You know we've talked on this show

NOTE Confidence: 0.874267816543579

00:25:21.101 --> 00:25:23.376 about immunotherapy a little bit,

NOTE Confidence: 0.874267816543579

00:25:23.380 --> 00:25:26.062 and I'd like to dig into

NOTE Confidence: 0.874267816543579

00:25:26.062 --> 00:25:27.850 immunotherapy for lung cancer.

NOTE Confidence: 0.874267816543579

00:25:27.850 --> 00:25:30.769 But the one thing that some have

NOTE Confidence: 0.874267816543579

00:25:30.769 --> 00:25:33.659 found is that for some cancers,

NOTE Confidence: 0.874267816543579

00:25:33.660 --> 00:25:36.372 they actually still will look for

NOTE Confidence: 0.874267816543579

00:25:36.372 --> 00:25:39.477 a checkpoint in order to use a

NOTE Confidence: 0.874267816543579

00:25:39.477 --> 00:25:41.492 checkpoint inhibitor just to

NOTE Confidence: 0.874267816543579

00:25:41.492 --> 00:25:44.439 see what people's PDL1 status is.

NOTE Confidence: 0.874267816543579

00:25:44.440 --> 00:25:46.496 But in other cancers,

NOTE Confidence: 0.874267816543579

00:25:46.496 --> 00:25:48.552 that isn't necessarily something

NOTE Confidence: 0.874267816543579

00:25:48.552 --> 00:25:50.811 that necessarily plays into whether

NOTE Confidence: 0.874267816543579

00:25:50.811 --> 00:25:53.499 or not you can use immune therapy.

NOTE Confidence: 0.874267816543579

00:25:53.500 --> 00:25:56.218 So how does it work in

NOTE Confidence: 0.869971593221029

00:25:56.220 --> 00:25:58.724 lung cancer?

NOTE Confidence: 0.869971593221029

00:25:58.724 --> 00:26:00.927 This has been a huge area of research over the last few years

NOTE Confidence: 0.869971593221029

00:26:00.927 --> 00:26:03.000 in lung cancer and other cancers.

NOTE Confidence: 0.869971593221029

00:26:03.000 --> 00:26:04.860 As you mentioned, in lung cancer,

NOTE Confidence: 0.869971593221029

00:26:04.860 --> 00:26:07.016 we have now started using immune therapy,

NOTE Confidence: 0.869971593221029

00:26:07.020 --> 00:26:08.874 for I would say almost every

NOTE Confidence: 0.869971593221029

00:26:08.874 --> 00:26:10.110 patient with advanced cancer.

NOTE Confidence: 0.869971593221029

00:26:10.110 --> 00:26:11.724 Again stage four cancer who does

NOTE Confidence: 0.869971593221029

00:26:11.724 --> 00:26:13.564 not have one of those mutations

NOTE Confidence: 0.869971593221029

00:26:13.564 --> 00:26:15.670 that we were talking about before.

NOTE Confidence: 0.869971593221029

00:26:15.670 --> 00:26:17.902 Again, if you have one of the mutations

NOTE Confidence: 0.869971593221029

00:26:17.902 --> 00:26:19.997 targeted therapies are great options,

NOTE Confidence: 0.869971593221029

00:26:20.000 --> 00:26:21.605 but otherwise typically immune therapy

NOTE Confidence: 0.869971593221029

00:26:21.605 --> 00:26:24.156 is going to be some part of the

NOTE Confidence: 0.869971593221029

00:26:24.156 --> 00:26:25.626 treatment because of how effective

NOTE Confidence: 0.869971593221029

00:26:25.626 --> 00:26:27.766 it can be and your question about

NOTE Confidence: 0.869971593221029

00:26:27.770 --> 00:26:29.975 the PD L1 status in lung cancer

NOTE Confidence: 0.869971593221029

00:26:29.980 --> 00:26:31.112 is really important.

NOTE Confidence: 0.869971593221029

00:26:31.112 --> 00:26:33.531 So just like we get those mutation tests

NOTE Confidence: 0.869971593221029

00:26:33.531 --> 00:26:35.505 and it's so important for patients

NOTE Confidence: 0.869971593221029

00:26:35.505 --> 00:26:37.850 to find the best treatment for them.

NOTE Confidence: 0.869971593221029

00:26:37.850 --> 00:26:40.060 It's the same with PD L1 status.

NOTE Confidence: 0.869971593221029

00:26:40.060 --> 00:26:42.657 So PD L1 is not a mutation or gene

NOTE Confidence: 0.869971593221029

00:26:42.657 --> 00:26:45.212 like we were talking about with the

NOTE Confidence: 0.869971593221029

00:26:45.212 --> 00:26:47.678 other area in lung cancer treatments.

NOTE Confidence: 0.869971593221029

00:26:47.680 --> 00:26:49.556 But it's a protein on the surface

NOTE Confidence: 0.869971593221029

00:26:49.556 --> 00:26:51.761 of cells of cancer cells or of

NOTE Confidence: 0.869971593221029

00:26:51.761 --> 00:26:52.760 immune system cells.

NOTE Confidence: 0.869971593221029

00:26:52.760 --> 00:26:53.920 But in lung cancer,

NOTE Confidence: 0.869971593221029

00:26:53.920 --> 00:26:56.026 we look at the cancer cells and

NOTE Confidence: 0.869971593221029

00:26:56.026 --> 00:26:58.105 that protein PDL1

NOTE Confidence: 0.869971593221029

00:26:58.105 --> 00:27:00.241 can tell us if immune therapy

NOTE Confidence: 0.869971593221029

00:27:00.241 --> 00:27:02.294 is more or less likely to work.

NOTE Confidence: 0.869971593221029

00:27:02.294 --> 00:27:05.020 So it's not a perfect test by any means.

NOTE Confidence: 0.869971593221029

00:27:05.020 --> 00:27:06.515 I've had patients where the

NOTE Confidence: 0.869971593221029

00:27:06.515 --> 00:27:08.010 PD L1 status is zero,

NOTE Confidence: 0.869971593221029

00:27:08.010 --> 00:27:09.804 which tells you it has a

NOTE Confidence: 0.869971593221029

00:27:09.804 --> 00:27:11.000 low chance of working.

NOTE Confidence: 0.869971593221029

00:27:11.000 --> 00:27:11.298 However,

NOTE Confidence: 0.869971593221029

00:27:11.298 --> 00:27:12.490 they've done incredibly well

NOTE Confidence: 0.869971593221029

00:27:12.490 --> 00:27:13.682 with immune therapy,

NOTE Confidence: 0.869971593221029

00:27:13.690 --> 00:27:15.790 and sometimes it's high and the

NOTE Confidence: 0.869971593221029

00:27:15.790 --> 00:27:17.578 drugs doesn't seem to work,

NOTE Confidence: 0.869971593221029

00:27:17.580 --> 00:27:19.428 so it's not a perfect biomarker.

NOTE Confidence: 0.869971593221029

00:27:19.430 --> 00:27:21.414 But we do use it as part of

NOTE Confidence: 0.869971593221029

00:27:21.414 --> 00:27:22.780 standard treatment in lung cancer,

NOTE Confidence: 0.869971593221029

00:27:22.780 --> 00:27:24.716 and so when I meet a new patient

NOTE Confidence: 0.869971593221029

00:27:24.716 --> 00:27:26.649 with lung cancer again at Stage 4,

NOTE Confidence: 0.869971593221029

00:27:26.650 --> 00:27:27.940 advanced form of lung cancer,

NOTE Confidence: 0.869971593221029

00:27:27.940 --> 00:27:29.746 we always will check mutations in PDL1

NOTE Confidence: 0.869971593221029

00:27:30.002 --> 00:27:31.766 and the reason really is if someone

NOTE Confidence: 0.869971593221029

00:27:31.766 --> 00:27:33.620 has a high level of that PDL1

NOTE Confidence: 0.869971593221029

00:27:33.620 --> 00:27:35.252 marker we think we might be able

NOTE Confidence: 0.869971593221029

00:27:35.252 --> 00:27:37.019 to get away with just giving immune

NOTE Confidence: 0.869971593221029

00:27:37.019 --> 00:27:38.704 therapy just like we were

NOTE Confidence: 0.869971593221029

00:27:38.704 --> 00:27:40.329 talking about with targeted therapy,

NOTE Confidence: 0.869971593221029

00:27:40.330 --> 00:27:41.878 how it's nice to avoid the

NOTE Confidence: 0.869971593221029

00:27:41.878 --> 00:27:42.910 chemotherapy if you can.

NOTE Confidence: 0.869971593221029

00:27:42.910 --> 00:27:44.482 It's the same thing with immune

NOTE Confidence: 0.869971593221029

00:27:44.482 --> 00:27:46.259 therapy with a high level of PDL1

NOTE Confidence: 0.869971593221029

00:27:46.534 --> 00:27:48.452 there's a high chance of the immune

NOTE Confidence: 0.869971593221029

00:27:48.452 --> 00:27:49.640 therapy working even on its

NOTE Confidence: 0.869971593221029

00:27:49.640 --> 00:27:51.980 own, so we will try that

00:27:52.447 --> 00:27:54.315 instead of giving chemotherapy

NOTE Confidence: 0.869971593221029

00:27:54.315 --> 00:27:55.716 or other medicines.

NOTE Confidence: 0.841959297657013

00:27:56.720 --> 00:28:00.432 And so if you are PDL1 low and

NOTE Confidence: 0.841959297657013

00:28:00.432 --> 00:28:02.412 you don't have another targeted

NOTE Confidence: 0.841959297657013

00:28:02.412 --> 00:28:04.230 over another targetable mutation,

NOTE Confidence: 0.841959297657013

00:28:04.230 --> 00:28:06.726 those patients are more likely to

NOTE Confidence: 0.841959297657013

00:28:06.726 --> 00:28:08.811 get chemotherapy, but they'll still

NOTE Confidence: 0.841959297657013

00:28:08.811 --> 00:28:10.896 get the immunotherapy as well.

00:28:15.024 --> 00:28:17.990 Therapy can work so well we will

NOTE Confidence: 0.841959297657013

00:28:17.990 --> 00:28:21.318 typically give it no matter what,

NOTE Confidence: 0.841959297657013

00:28:21.320 --> 00:28:23.064 unless there's a contraindication.

NOTE Confidence: 0.841959297657013

00:28:23.064 --> 00:28:25.244 If someone has an underlying

NOTE Confidence: 0.841959297657013

00:28:25.244 --> 00:28:26.749 autoimmune disorder

NOTE Confidence: 0.841959297657013

00:28:26.750 --> 00:28:28.886 but yes, if someone has that low PDL1

NOTE Confidence: 0.841959297657013

00:28:28.890 --> 00:28:30.826 status or we don't know PDL1 status

NOTE Confidence: 0.841959297657013

00:28:30.826 --> 00:28:33.224 then we don't think and this is based

NOTE Confidence: 0.841959297657013

00:28:33.224 --> 00:28:35.059 on several different clinical trials.

NOTE Confidence: 0.841959297657013

00:28:35.060 --> 00:28:37.212 We don't think we can get away with

NOTE Confidence: 0.841959297657013

00:28:37.212 --> 00:28:39.021 just immune therapy on its own and

NOTE Confidence: 0.841959297657013

00:28:39.021 --> 00:28:40.886 it seems to be much more effective

NOTE Confidence: 0.841959297657013

00:28:40.886 --> 00:28:42.817 if you combine it with something else

NOTE Confidence: 0.841959297657013

00:28:42.817 --> 00:28:44.616 and that something else is a

NOTE Confidence: 0.841959297657013

00:28:44.616 --> 00:28:46.850 bit of a question mark in lung cancer.

NOTE Confidence: 0.841959297657013

00:28:46.850 --> 00:28:48.453 Until recently it used to be we

NOTE Confidence: 0.841959297657013

00:28:48.453 --> 00:28:49.762 would combine it with chemotherapy

NOTE Confidence: 0.841959297657013

00:28:49.762 --> 00:28:51.478 so people would get a combination

NOTE Confidence: 0.841959297657013

00:28:51.478 --> 00:28:53.009 of chemo and immune therapy.

NOTE Confidence: 0.841959297657013

00:28:53.010 --> 00:28:54.618 But more recently now based on

NOTE Confidence: 0.841959297657013

00:28:54.618 --> 00:28:55.690 several recent clinical trials,

NOTE Confidence: 0.841959297657013

00:28:55.690 --> 00:28:57.060 we're actually combining two

NOTE Confidence: 0.841959297657013

00:28:57.060 --> 00:28:58.156 different immune therapies together.

NOTE Confidence: 0.841959297657013

00:28:58.160 --> 00:28:59.186 So avoiding chemotherapy,

NOTE Confidence: 0.841959297657013

00:28:59.186 --> 00:29:00.896 but combining the immune therapies.

NOTE Confidence: 0.841959297657013

00:29:00.900 --> 00:29:03.434 And that's an area of future research

NOTE Confidence: 0.841959297657013

00:29:03.434 --> 00:29:05.710 that is currently ongoing.

NOTE Confidence: 0.841959297657013

00:29:05.710 --> 00:29:07.425 We have several different

NOTE Confidence: 0.841959297657013

00:29:07.425 --> 00:29:09.140 clinical trials at Yale

NOTE Confidence: 0.841959297657013

00:29:09.140 --> 00:29:10.508 looking at these different

NOTE Confidence: 0.841959297657013

00:29:10.508 --> 00:29:11.876 combinations of immune therapy.

NOTE Confidence: 0.841959297657013

00:29:11.880 --> 00:29:14.351 Really trying to get away from the

NOTE Confidence: 0.841959297657013

00:29:14.351 --> 00:29:16.553 chemotherapy if we can and using

NOTE Confidence: 0.841959297657013

00:29:16.553 --> 00:29:18.236 combinations of immune therapy to

NOTE Confidence: 0.841959297657013

00:29:18.236 --> 00:29:20.508 really try to beat the cancer and

NOTE Confidence: 0.841959297657013

00:29:20.508 --> 00:29:22.188 really try to improve patients

NOTE Confidence: 0.841959297657013

00:29:22.188 --> 00:29:24.566 quality of life and how long they

NOTE Confidence: 0.841959297657013

00:29:24.566 --> 00:29:25.934 are able to live.

NOTE Confidence: 0.85850328207016

00:29:27.926 --> 00:29:29.638 Doctor Sarah Goldberg is an associate professor of internal

NOTE Confidence: 0.85850328207016

00:29:29.638 --> 00:29:31.293 medicine in medical oncology at

NOTE Confidence: 0.85850328207016

00:29:31.293 --> 00:29:33.180 the Yale School of Medicine.

NOTE Confidence: 0.85850328207016

00:29:33.180 --> 00:29:34.676 If you have questions,

NOTE Confidence: 0.85850328207016

00:29:34.676 --> 00:29:36.172 the address is canceranswers@yale.edu

NOTE Confidence: 0.85850328207016

00:29:36.172 --> 00:29:38.241 and past editions of the program

NOTE Confidence: 0.85850328207016

00:29:38.241 --> 00:29:40.131 are available in audio and written

NOTE Confidence: 0.85850328207016

00:29:40.185 --> 00:29:41.760 form at yalecancercenter.org.

NOTE Confidence: 0.85850328207016

00:29:41.760 --> 00:29:44.488 We hope you'll join us next week to

NOTE Confidence: 0.85850328207016

00:29:44.488 --> 00:29:47.142 learn more about the fight against

NOTE Confidence: 0.85850328207016

00:29:47.142 --> 00:29:49.986 cancer here on Connecticut Public Radio.