## WEBVTT

00:00:00.000 --> 00:00:02.405 Support for Yale Cancer Answers NOTE Confidence: 0.86825037  $00{:}00{:}02{.}405 \dashrightarrow 00{:}00{:}04{.}810$  comes from AstraZeneca dedicated NOTE Confidence: 0.86825037  $00:00:04.890 \rightarrow 00:00:07.854$  to providing innovative treatment NOTE Confidence: 0.86825037  $00:00:07.854 \rightarrow 00:00:11.559$  options for people living with NOTE Confidence: 0.86825037 00:00:11.559 --> 00:00:12.300 cancer. Learn more at astrazeneca-us.com. NOTE Confidence: 0.8466502 00:00:14.420 --> 00:00:15.844 Welcome to Yale Cancer Answers NOTE Confidence: 0.8466502  $00:00:15.844 \rightarrow 00:00:17.268$  with your host NOTE Confidence: 0.8466502 00:00:17.270 --> 00:00:19.050 Doctor Anees Chagpar. NOTE Confidence: 0.8466502  $00:00:19.050 \rightarrow 00:00:20.950$  Yale Cancer Answers features the NOTE Confidence: 0.8466502  $00:00:20.950 \rightarrow 00:00:23.285$  latest information on cancer care by NOTE Confidence: 0.8466502  $00{:}00{:}23.285 \dashrightarrow 00{:}00{:}24.781$  welcoming on cologists and specialists NOTE Confidence: 0.8466502  $00{:}00{:}24.781 \dashrightarrow 00{:}00{:}27.291$  who are on the forefront of the NOTE Confidence: 0.8466502 00:00:27.291 - > 00:00:29.019 battle to fight cancer. This week NOTE Confidence: 0.8466502  $00{:}00{:}29{.}020 \dashrightarrow 00{:}00{:}30{.}800$  it's a conversation about liver NOTE Confidence: 0.8466502 00:00:30.800 --> 00:00:32.580 cancer with Doctor Stacy Stein. NOTE Confidence: 0.8466502

 $00{:}00{:}32.580 \dashrightarrow 00{:}00{:}34.722$  Doctor Stein is an associate professor

NOTE Confidence: 0.8466502

 $00{:}00{:}34.722 \dashrightarrow 00{:}00{:}36.904$  of internal medicine in medical on cology

NOTE Confidence: 0.8466502

00:00:36.904 --> 00:00:38.980 at the Yale School of Medicine,

NOTE Confidence: 0.8466502

 $00:00:38.980 \longrightarrow 00:00:41.116$  where doctor Chagpar is a

NOTE Confidence: 0.8466502

 $00:00:41.116 \dashrightarrow 00:00:42.540$  professor of surgical oncology.

NOTE Confidence: 0.8866099

 $00:00:43.870 \longrightarrow 00:00:45.956$  So Stacy, we don't know

NOTE Confidence: 0.8866099

 $00{:}00{:}45.956 \dashrightarrow 00{:}00{:}48.239$  a whole lot about liver cancers.

NOTE Confidence: 0.8866099

 $00:00:48.240 \longrightarrow 00:00:50.130$  We certainly talk a lot about

NOTE Confidence: 0.8866099

 $00{:}00{:}50{.}130 \dashrightarrow 00{:}00{:}51{.}930$  breast cancer and colon cancers,

NOTE Confidence: 0.8866099

00:00:51.930 --> 00:00:54.218 but tell us a little bit more about

NOTE Confidence: 0.8866099

 $00{:}00{:}54.218 \dashrightarrow 00{:}00{:}56.637$  how we think about liver cancers.

NOTE Confidence: 0.8866099

00:00:56.640 --> 00:00:57.980 Yeah,

NOTE Confidence: 0.8866099

 $00:00:57.980 \longrightarrow 00:00:58.640$  you're right.

NOTE Confidence: 0.8866099

 $00:00:58.640 \longrightarrow 00:01:00.950$  I don't think it gets the same

NOTE Confidence: 0.8866099

 $00{:}01{:}00{.}950 \dashrightarrow 00{:}01{:}02.688$  attention as some other cancers

NOTE Confidence: 0.8866099

 $00:01:02.690 \longrightarrow 00:01:04.700$  in the public.

- NOTE Confidence: 0.8866099
- $00{:}01{:}04.700 \dashrightarrow 00{:}01{:}07.269$  But I think it's a really important
- NOTE Confidence: 0.8866099
- $00{:}01{:}07{.}269 \dashrightarrow 00{:}01{:}09{.}664$  cancer to talk about because it's
- NOTE Confidence: 0.8866099
- $00:01:09.664 \longrightarrow 00:01:12.492$  actually one of the few cancers that is
- NOTE Confidence: 0.8866099
- $00{:}01{:}12.572 \dashrightarrow 00{:}01{:}14.994$  still on the rise in our country.
- NOTE Confidence: 0.8866099
- $00:01:15.000 \dashrightarrow 00:01:17.912$  Some people might be familiar
- NOTE Confidence: 0.8866099
- $00{:}01{:}17{.}912 \dashrightarrow 00{:}01{:}21{.}495$  with some of the traditional causes of
- NOTE Confidence: 0.8866099
- $00:01:21.495 \rightarrow 00:01:24.305$  cirrhosis which causes liver cancer.
- NOTE Confidence: 0.8866099
- $00:01:24.310 \longrightarrow 00:01:25.780$  Worldwide this is a very
- NOTE Confidence: 0.8866099
- $00:01:25.780 \longrightarrow 00:01:28.720$  prevalent cancer,
- NOTE Confidence: 0.8866099
- $00:01:28.720 \longrightarrow 00:01:31.180$  especially because of hepatitis B
- NOTE Confidence: 0.8866099
- $00{:}01{:}31{.}180 \dashrightarrow 00{:}01{:}34{.}196$  and mother's passing it on to their
- NOTE Confidence: 0.8866099
- 00:01:34.196 --> 00:01:36.556 babies. In the United States,
- NOTE Confidence: 0.8866099
- $00:01:36.560 \longrightarrow 00:01:39.758$  we see more people that have
- NOTE Confidence: 0.8866099
- 00:01:39.758 --> 00:01:41.890 developed cirrhosis from hepatitis
- NOTE Confidence: 0.8866099
- 00:01:41.980 --> 00:01:43.825 C or alcohol use, but
- NOTE Confidence: 0.8866099

 $00:01:43.825 \rightarrow 00:01:46.255$  another cause is actually on the

NOTE Confidence: 0.8866099

00:01:46.255 --> 00:01:49.174 rise in the United States that

NOTE Confidence: 0.8866099

 $00:01:49.174 \longrightarrow 00:01:52.748$  we don't talk about a lot and that

NOTE Confidence: 0.8866099

 $00:01:52.748 \rightarrow 00:01:55.398$  is something called NASH Cirrhosis,

NOTE Confidence: 0.8866099

 $00:01:55.400 \rightarrow 00:01:58.424$  which is related to the obesity epidemic,

NOTE Confidence: 0.8866099

 $00{:}01{:}58{.}430 \dashrightarrow 00{:}02{:}01{.}878$  and we're seeing that more commonly now and

NOTE Confidence: 0.8866099

 $00:02:01.880 \rightarrow 00:02:04.040$  I think it's something important

NOTE Confidence: 0.8866099

 $00:02:05.340 \rightarrow 00:02:08.420$  that people are more aware of and primary

NOTE Confidence: 0.8866099

00:02:08.420 $\operatorname{-->}$ 00:02:10.950 care physicians are more aware of,

NOTE Confidence: 0.8866099

 $00:02:10.950 \longrightarrow 00:02:12.678$  to screen their patients.

NOTE Confidence: 0.8418756

 $00{:}02{:}13.480 \dashrightarrow 00{:}02{:}16.280$  How exactly do they do that

NOTE Confidence: 0.8418756

 $00{:}02{:}16.280 \dashrightarrow 00{:}02{:}19.079$  and is that the same concept of

NOTE Confidence: 0.8418756

 $00:02:19.079 \rightarrow 00:02:21.878$  fatty liver that we sometimes hear about?

NOTE Confidence: 0.8418756

 $00{:}02{:}21.880 \dashrightarrow 00{:}02{:}24.680$  And is there screening for it? And

NOTE Confidence: 0.8418756

 $00:02:24.680 \longrightarrow 00:02:26.430$  if so, what is that?

NOTE Confidence: 0.8418756

 $00:02:26.430 \longrightarrow 00:02:28.830$  Often you know

- NOTE Confidence: 0.8418756
- $00:02:28.830 \longrightarrow 00:02:30.486$  who is at risk
- NOTE Confidence: 0.8418756
- $00:02:30.486 \longrightarrow 00:02:32.200$  for those kind of factors,
- NOTE Confidence: 0.8418756
- $00{:}02{:}32{.}200 \dashrightarrow 00{:}02{:}33{.}730$  so it's people that are
- NOTE Confidence: 0.8418756
- $00:02:33.730 \longrightarrow 00:02:35.260$  older that may have obesity,
- NOTE Confidence: 0.8418756
- 00:02:35.260 --> 00:02:36.178 high blood pressure,
- NOTE Confidence: 0.8418756
- 00:02:36.178 --> 00:02:36.790 diabetes, right?
- NOTE Confidence: 0.8418756
- $00{:}02{:}36.790 \dashrightarrow 00{:}02{:}38.897$  So a lot of these common diagnosis
- NOTE Confidence: 0.8418756
- $00{:}02{:}38.897 \dashrightarrow 00{:}02{:}40.693$  that travel together and then you
- NOTE Confidence: 0.8418756
- 00:02:40.693 --> 00:02:42.367 know it's also not uncommon for
- NOTE Confidence: 0.8418756
- $00:02:42.367 \longrightarrow 00:02:44.015$  people with all these diagnosis
- NOTE Confidence: 0.8418756
- $00:02:44.015 \rightarrow 00:02:45.655$  to be on several medications,
- NOTE Confidence: 0.8418756
- $00{:}02{:}45{.}660 \dashrightarrow 00{:}02{:}47{.}837$  and then they may have
- NOTE Confidence: 0.8418756
- $00:02:47.837 \rightarrow 00:02:49.720$  blood work where their liver enzymes
- NOTE Confidence: 0.8418756
- $00:02:49.720 \longrightarrow 00:02:51.778$  are a little bit out of range,
- NOTE Confidence: 0.8418756
- $00:02:51.780 \longrightarrow 00:02:53.478$  but I think it usually gets
- NOTE Confidence: 0.8418756

NOTE Confidence: 0.8418756 00:02:55.603 -> 00:02:57.451 one of the medications that they NOTE Confidence: 0.8418756  $00{:}02{:}57{.}451 \dashrightarrow 00{:}02{:}59{.}388$  were on instead of thinking about NOTE Confidence: 0.8418756  $00:02:59.390 \rightarrow 00:03:01.535$  underlying liver disease and so NOTE Confidence: 0.8418756 00:03:01.535 - 00:03:04.420 it's important when we see NOTE Confidence: 0.8418756  $00:03:04.420 \longrightarrow 00:03:06.585$  elevations in liver enzymes to NOTE Confidence: 0.8418756 00:03:06.585 --> 00:03:09.204 be thinking that this might be NOTE Confidence: 0.8418756 00:03:09.204 --> 00:03:10.696 a primary liver issue. NOTE Confidence: 0.88217324  $00:03:12.550 \longrightarrow 00:03:14.720$  Interesting, and NOTE Confidence: 0.88217324  $00{:}03{:}14.720 \dashrightarrow 00{:}03{:}17.450$  because we've talked on this show so NOTE Confidence: 0.88217324  $00:03:17.450 \rightarrow 00:03:21.062$  much and on others about how there really NOTE Confidence: 0.88217324  $00:03:21.062 \rightarrow 00:03:24.240$  is this obesity epidemic and NOTE Confidence: 0.88217324  $00:03:24.240 \longrightarrow 00:03:28.142$  over 40% some people even say over 50% of NOTE Confidence: 0.88217324  $00:03:28.142 \rightarrow 00:03:30.734$  our population are overweight or obese, NOTE Confidence: 0.88217324  $00:03:30.740 \rightarrow 00:03:33.596$  how often should you be getting NOTE Confidence: 0.88217324  $00:03:33.596 \rightarrow 00:03:35.500$  those liver enzymes checked? 6

 $00:02:53.478 \rightarrow 00:02:55.603$  ascribed to maybe a side effect of

- NOTE Confidence: 0.88217324
- $00:03:35.500 \rightarrow 00:03:37.660$  And if they are abnormal,

 $00:03:37.660 \rightarrow 00:03:38.959$  what should ensue?

NOTE Confidence: 0.84738743

 $00:03:39.840 \longrightarrow 00:03:42.246$  Yeah, that's a good question,

NOTE Confidence: 0.84738743

 $00:03:42.246 \rightarrow 00:03:45.470$  so I think the screening needs to be updated.

NOTE Confidence: 0.84738743

 $00{:}03{:}45{.}470 \dashrightarrow 00{:}03{:}47{.}576$  You know most of the screening

NOTE Confidence: 0.84738743

 $00{:}03{:}47.576 \dashrightarrow 00{:}03{:}49.699$  and efforts in the

NOTE Confidence: 0.84738743

00:03:49.700 --> 00:03:51.460 hepatology guidelines really focus around,

NOTE Confidence: 0.84738743

00:03:51.460 - 00:03:53.589 which is still very important,

NOTE Confidence: 0.84738743

00:03:53.589 --> 00:03:55.434 screening people for hepatitis B

NOTE Confidence: 0.84738743

 $00:03:55.434 \dashrightarrow 00:03:57.608$  and hepatitis C because we have

NOTE Confidence: 0.84738743

00:03:57.608 - 00:03:59.198 treatment now for hepatitis C.

NOTE Confidence: 0.84738743

 $00{:}03{:}59{.}200 \dashrightarrow 00{:}04{:}01{.}312$  We have treatment

NOTE Confidence: 0.84738743

 $00:04:01.312 \longrightarrow 00:04:03.423$  for not curatives, but we have

NOTE Confidence: 0.84738743

 $00:04:03.423 \rightarrow 00:04:05.178$  suppressive treatment for hepatitis B.

 $00:04:06.668 \rightarrow 00:04:09.779$  And the question is then who should we be

NOTE Confidence: 0.84738743

00:04:09.779 --> 00:04:11.784 screening for this NASH Cirrhosis?

 $00:04:11.790 \longrightarrow 00:04:14.070$  You know the guidelines are not

NOTE Confidence: 0.84738743

00:04:14.070 $\operatorname{-->}$ 00:04:16.337 completely set the same way as

NOTE Confidence: 0.84738743

00:04:16.337 -> 00:04:18.359 they are for these other causes,

NOTE Confidence: 0.84738743

00:04:18.360 - 00:04:20.640 but I think certainly when you

NOTE Confidence: 0.84738743

 $00:04:20.640 \longrightarrow 00:04:23.058$  see someone that's having elevated liver

NOTE Confidence: 0.84738743

00:04:23.058 --> 00:04:25.293 enzymes or potentially decreased platelets,

NOTE Confidence: 0.84738743

 $00:04:25.300 \longrightarrow 00:04:27.120$  that could be a sign.

NOTE Confidence: 0.84738743

 $00:04:27.120 \longrightarrow 00:04:28.950$  And portal hypertension,

NOTE Confidence: 0.84738743

 $00:04:28.950 \longrightarrow 00:04:30.864$  or people have had imaging for

NOTE Confidence: 0.84738743

 $00{:}04{:}30{.}864 \dashrightarrow 00{:}04{:}33{.}045$  other reasons and you find changes

NOTE Confidence: 0.84738743

 $00{:}04{:}33.045 \dashrightarrow 00{:}04{:}35.150$  that are consistent with cirrhosis.

NOTE Confidence: 0.84738743

00:04:35.150 --> 00:04:38.062 I think it's important to really go

NOTE Confidence: 0.84738743

 $00:04:38.062 \dashrightarrow 00:04:41.517$  down the path of fully working that up.

 $00:04:42.238 \dashrightarrow 00:04:44.392$  But I don't think the guidelines

NOTE Confidence: 0.84738743

 $00:04:44.392 \longrightarrow 00:04:46.911$  are really clear yet of how we

NOTE Confidence: 0.84738743

 $00:04:46.911 \longrightarrow 00:04:48.295$  screen for NASH Cirrhosis.

- NOTE Confidence: 0.84738743
- 00:04:48.300 --> 00:04:50.466 But I think it's going to

 $00:04:50.466 \longrightarrow 00:04:52.230$  be important to

NOTE Confidence: 0.84738743

 $00:04:52.942 \longrightarrow 00:04:54.366$  give better direction to

NOTE Confidence: 0.8705947

 $00:04:54.370 \longrightarrow 00:04:56.506$  people in primary care about that.

 $00:04:58.496 \rightarrow 00:05:00.289$  You mentioned that there's good screening

NOTE Confidence: 0.8705947

 $00{:}05{:}00{.}289 \dashrightarrow 00{:}05{:}02{.}548$  for hepatitis B and C, and

NOTE Confidence: 0.8705947

 $00:05:02.548 \rightarrow 00:05:05.440$  certainly we have vaccines for both of those,

NOTE Confidence: 0.8705947

 $00{:}05{:}05{.}440 \dashrightarrow 00{:}05{:}08{.}491$  but let's talk a little bit about how we

NOTE Confidence: 0.8705947

 $00{:}05{:}08{.}491 \dashrightarrow 00{:}05{:}11{.}147$  screen for those HEPAs as well.

NOTE Confidence: 0.8705947

00:05:11.150 --> 00:05:13.747 I mean, should that be something that

NOTE Confidence: 0.8705947

 $00:05:13.750 \longrightarrow 00:05:16.487$  is routine at your doctors office.

NOTE Confidence: 0.8705947

 $00:05:16.490 \rightarrow 00:05:18.440$  How frequently should that happen?

NOTE Confidence: 0.8705947

 $00:05:18.440 \longrightarrow 00:05:21.219$  Or is that something that you only

NOTE Confidence: 0.8705947

 $00:05:21.219 \longrightarrow 00:05:23.657$  really screen for if you're at

NOTE Confidence: 0.8705947

 $00{:}05{:}23.657 \dashrightarrow 00{:}05{:}25.991$  risk of getting those hepatitides

NOTE Confidence: 0.8705947

 $00:05:25.991 \longrightarrow 00:05:28.218$  and what are those risk

 $00:05:28.220 \rightarrow 00:05:30.170$  factors?

NOTE Confidence: 0.87121505

 $00{:}05{:}30{.}170 \dashrightarrow 00{:}05{:}32{.}739$  In the United States, all babies are

NOTE Confidence: 0.87121505

 $00:05:32.739 \rightarrow 00:05:35.647$  given a series of hepatitis B vaccines,

NOTE Confidence: 0.87121505

 $00{:}05{:}35{.}650 \dashrightarrow 00{:}05{:}39{.}151$  so it's really more of an issue of screening

NOTE Confidence: 0.87121505

 $00:05:39.151 \rightarrow 00:05:42.286$  people that were not born in this country,

NOTE Confidence: 0.87121505

 $00{:}05{:}42.290 \dashrightarrow 00{:}05{:}43.586$  especially Asian populations

NOTE Confidence: 0.87121505

 $00{:}05{:}43.586 \dashrightarrow 00{:}05{:}46.178$  where the numbers are the highest.

NOTE Confidence: 0.87121505

00:05:46.180 --> 00:05:49.428 For hepatitis C, it's recommended

NOTE Confidence: 0.87121505

 $00{:}05{:}49{.}428 \dashrightarrow 00{:}05{:}52{.}103$  that especially every one from the baby

NOTE Confidence: 0.87121505

 $00:05:52.103 \rightarrow 00:05:54.917$  boomer generation is screened at least once,

NOTE Confidence: 0.87121505

 $00{:}05{:}54{.}920 \dashrightarrow 00{:}05{:}57{.}902$  and then certainly you know if there's

NOTE Confidence: 0.87121505

 $00{:}05{:}57{.}902 \dashrightarrow 00{:}06{:}01{.}024$  any concern for a more acute liver

NOTE Confidence: 0.87121505

 $00{:}06{:}01{.}024 \dashrightarrow 00{:}06{:}03{.}219$  process, that could be repeated.

NOTE Confidence: 0.87121505

 $00{:}06{:}03.220 \dashrightarrow 00{:}06{:}04.968$  There are initiatives

NOTE Confidence: 0.87121505

 $00:06:04.968 \longrightarrow 00:06:06.716$  through primary care,

 $00:06:06.720 \rightarrow 00:06:09.336$  and especially through the VA system.

NOTE Confidence: 0.87121505

00:06:09.340 --> 00:06:10.238 Unfortunately,

NOTE Confidence: 0.87121505

 $00:06:10.238 \rightarrow 00:06:12.932$  there's a large burden of hepatitis

NOTE Confidence: 0.87121505

 $00:06:12.932 \rightarrow 00:06:16.309$  C to really make sure that everyone

NOTE Confidence: 0.87121505

 $00{:}06{:}16.310 \dashrightarrow 00{:}06{:}19.355$  is screened at least once,

NOTE Confidence: 0.87121505

 $00{:}06{:}19.360 \dashrightarrow 00{:}06{:}21.976$  because we do have treatment now,

NOTE Confidence: 0.87121505

 $00:06:21.980 \longrightarrow 00:06:24.590$  which is important to know

NOTE Confidence: 0.87121505

 $00{:}06{:}24.590 \dashrightarrow 00{:}06{:}27.206$  and make sure that's started in

NOTE Confidence: 0.8826564

 $00{:}06{:}27{.}210 \dashrightarrow 00{:}06{:}31{.}125$  a timely fashion.

NOTE Confidence: 0.8826564

 $00:06:31.130 \rightarrow 00:06:33.310$  And screening is a routine blood test,

 $00:06:36.561 \longrightarrow 00:06:39.692$  so if you haven't had a blood test

NOTE Confidence: 0.8826564

 $00:06:39.692 \dashrightarrow 00:06:42.908$  and are in that baby Boomer generation,

NOTE Confidence: 0.8826564

00:06:42.910 --> 00:06:46.390 or you have been born in another country,

NOTE Confidence: 0.8826564

 $00{:}06{:}46{.}390 \dashrightarrow 00{:}06{:}47{.}950$ it's a good idea

NOTE Confidence: 0.8826564

 $00{:}06{:}47{.}950 \dashrightarrow 00{:}06{:}50{.}730$  to at least get checked and

NOTE Confidence: 0.8826564

 $00{:}06{:}50.730 \dashrightarrow 00{:}06{:}53.514$  see if you have one of these two

 $00:06:53.514 \rightarrow 00:06:56.649$  hepatitides which may put you at NOTE Confidence: 0.8826564  $00{:}06{:}56{.}649 \dashrightarrow 00{:}06{:}58{.}805$  risk of developing liver cancer. NOTE Confidence: 0.8826564 00:06:58.805 --> 00:07:01.290 So let's talk a little bit about NOTE Confidence: 0.8826564  $00:07:01.290 \longrightarrow 00:07:03.855$  that next step when you NOTE Confidence: 0.8826564 00:07:03.855 --> 00:07:06.159 were talking about how if your NOTE Confidence: 0.8826564  $00:07:06.159 \rightarrow 00:07:08.409$  liver enzymes are elevated that NOTE Confidence: 0.8826564  $00:07:08.409 \longrightarrow 00:07:11.044$  should really spur people on to NOTE Confidence: 0.8826564  $00:07:11.044 \longrightarrow 00:07:13.546$  thinking about liver cancer as a NOTE Confidence: 0.8826564  $00{:}07{:}13.546 \dashrightarrow 00{:}07{:}16.090$  potential cause for that, so NOTE Confidence: 0.8826564  $00:07:16.090 \rightarrow 00:07:18.833$  aside from an abnormal blood test of NOTE Confidence: 0.8826564 00:07:18.833 --> 00:07:20.798 your liver enzymes being elevated, NOTE Confidence: 0.8826564  $00:07:20.800 \rightarrow 00:07:23.278$  are there other symptoms that people NOTE Confidence: 0.8826564  $00:07:23.280 \dashrightarrow 00:07:25.296$  should be looking for in terms NOTE Confidence: 0.8826564  $00:07:25.296 \longrightarrow 00:07:28.107$  of liver cancer or can it be NOTE Confidence: 0.8826564  $00:07:28.107 \rightarrow 00:07:29.039$  completely asymptomatic?  $00:07:29.810 \longrightarrow 00:07:32.108$  That's a good question. NOTE Confidence: 0.8591709

 $00:07:32.110 \longrightarrow 00:07:34.798$  So what's so interesting about liver cancer

NOTE Confidence: 0.8591709

 $00{:}07{:}34.800 \dashrightarrow 00{:}07{:}37.327$  is that it's so tied to Cirrhosis

NOTE Confidence: 0.8591709

00:07:37.327 --> 00:07:39.020 and underlying liver disease,

NOTE Confidence: 0.8591709

 $00:07:39.020 \longrightarrow 00:07:41.222$  and so those two things obviously

NOTE Confidence: 0.8591709

 $00:07:41.222 \longrightarrow 00:07:43.629$  are separate but also very related.

NOTE Confidence: 0.8591709

 $00{:}07{:}43.630 \dashrightarrow 00{:}07{:}46.214$  So you know the symptoms of the cancer

NOTE Confidence: 0.8591709

 $00:07:46.214 \longrightarrow 00:07:48.619$  may not be traditional symptoms.

NOTE Confidence: 0.8591709

 $00:07:48.620 \rightarrow 00:07:50.056$  People think about,

NOTE Confidence: 0.8591709

 $00{:}07{:}50.056 \dashrightarrow 00{:}07{:}53.320$  we don't have a lot of nerve endings

NOTE Confidence: 0.8591709

 $00:07:53.320 \longrightarrow 00:07:54.616$  inside the liver.

NOTE Confidence: 0.8591709

 $00{:}07{:}54.616$ --> $00{:}07{:}57.053$ So often people don't feel a difference

NOTE Confidence: 0.8591709

 $00{:}07{:}57{.}053 \dashrightarrow 00{:}07{:}59{.}615$  necessarily the way someone might feel

NOTE Confidence: 0.8591709

 $00:07:59.615 \dashrightarrow 00:08:02.200$  a mass somewhere else in their body.

NOTE Confidence: 0.8591709

 $00{:}08{:}02{.}200 \dashrightarrow 00{:}08{:}04{.}594$  And unless there's really tumor

NOTE Confidence: 0.8591709

 $00{:}08{:}04{.}594 \dashrightarrow 00{:}08{:}07{.}181$  pressing on the capsule of the liver

NOTE Confidence: 0.8591709

 $00:08:07.181 \longrightarrow 00:08:09.970$  where there are a lot of nerve endings,

 $00:08:09.970 \longrightarrow 00:08:12.190$  they probably won't feel any different.

NOTE Confidence: 0.8591709

 $00:08:12.832 \rightarrow 00:08:15.400$  So a lot of the screening really winds

NOTE Confidence: 0.8591709

 $00:08:15.467 \longrightarrow 00:08:17.711$  up being identifying the people at

NOTE Confidence: 0.8591709

 $00:08:17.711 \rightarrow 00:08:20.080$  risk of for Cirrhosis and identifying

NOTE Confidence: 0.8591709

 $00{:}08{:}20{.}080 \dashrightarrow 00{:}08{:}22{.}486$  cirrhosis and then looking at that

NOTE Confidence: 0.8591709

 $00{:}08{:}22.486 \dashrightarrow 00{:}08{:}24.463$  group and screening them with

NOTE Confidence: 0.8591709

 $00:08:24.463 \rightarrow 00:08:26.418$  imaging for liver cancer.

NOTE Confidence: 0.8591709

 $00:08:26.420 \dashrightarrow 00:08:29.204$  Because we know that the cure rate and

NOTE Confidence: 0.8591709

 $00{:}08{:}29{.}204 \dashrightarrow 00{:}08{:}32{.}637$  the success at treatment is better

NOTE Confidence: 0.8591709

 $00:08:32.640 \longrightarrow 00:08:34.968$  the earlier we can find it.

 $00{:}08{:}36{.}062 \dashrightarrow 00{:}08{:}37{.}882$  So for patients that present with

NOTE Confidence: 0.8591709

 $00:08:37.882 \longrightarrow 00:08:40.329$  a single liver lesion and they

NOTE Confidence: 0.8591709

 $00:08:40.329 \rightarrow 00:08:41.973$  have good liver function,

NOTE Confidence: 0.8591709

 $00:08:41.980 \longrightarrow 00:08:44.368$  they could be candidates for surgery

NOTE Confidence: 0.8591709

 $00{:}08{:}44{.}368 \dashrightarrow 00{:}08{:}47{.}418$  where the tumor is able to be removed.

NOTE Confidence: 0.8591709

 $00:08:47.420 \longrightarrow 00:08:50.078$  For some patients who have still

- NOTE Confidence: 0.8591709
- $00:08:50.078 \rightarrow 00:08:52.351$  pretty limited disease and they

00:08:52.351 -> 00:08:54.476 may also have some cirrhosis,

NOTE Confidence: 0.8591709

 $00:08:54.480 \rightarrow 00:08:56.238$  or declining liver function,

 $00:08:57.107 \rightarrow 00:08:59.480$  and there's a lot of rules surrounding this,

NOTE Confidence: 0.8591709

 $00:08:59.480 \longrightarrow 00:09:01.205$  but they could potentially be

NOTE Confidence: 0.8591709

 $00{:}09{:}01.205 \dashrightarrow 00{:}09{:}02.930$  candidates for liver transplant and that

NOTE Confidence: 0.8591709

00:09:02.989 --> 00:09:04.765 could also be a curative option,

NOTE Confidence: 0.8591709

 $00:09:04.770 \longrightarrow 00:09:06.828$  but if the cancer is found later,

 $00:09:07.432 \rightarrow 00:09:09.840$  then we don't have those kind of options

NOTE Confidence: 0.8591709

 $00{:}09{:}09{.}902 \dashrightarrow 00{:}09{:}11.827$  and we have to then think about

NOTE Confidence: 0.8591709

 $00:09:11.830 \longrightarrow 00:09:12.998$  other treatments.

NOTE Confidence: 0.8781914

 $00:09:14.110 \longrightarrow 00:09:16.966$  So it's important to find it

NOTE Confidence: 0.8781914

 $00:09:16.966 \longrightarrow 00:09:20.618$  at an early stage as with so many cancers.

NOTE Confidence: 0.8781914

 $00:09:20.620 \longrightarrow 00:09:23.428$  Tell us a little bit about the

NOTE Confidence: 0.8781914

 $00{:}09{:}23.428 \dashrightarrow 00{:}09{:}25.977$  imaging that needs to happen.

NOTE Confidence: 0.8781914

 $00:09:25.980 \rightarrow 00:09:28.278$  You may be feeling completely asymptomatic.

 $00:09:28.280 \rightarrow 00:09:30.944$  You hear this on the radio and you

NOTE Confidence: 0.8781914

00:09:30.944 --> 00:09:33.813 decide to go and see your doctor

NOTE Confidence: 0.8781914

 $00:09:33.813 \rightarrow 00:09:35.933$  because maybe you are overweight.

NOTE Confidence: 0.8781914

 $00:09:35.940 \longrightarrow 00:09:39.153$  Or maybe you have

NOTE Confidence: 0.8781914

 $00{:}09{:}39{.}153 \dashrightarrow 00{:}09{:}42{.}319$  a history of alcohol in the past and

NOTE Confidence: 0.8781914

 $00:09:42.319 \rightarrow 00:09:45.647$  and are worried about cirrhosis or maybe

NOTE Confidence: 0.8781914

00:09:45.650 --> 00:09:47.630 you've been screened for

NOTE Confidence: 0.8781914

 $00:09:47.630 \dashrightarrow 00:09:50.580$  hepatitis B or C and your doctor

NOTE Confidence: 0.8781914

 $00{:}09{:}50{.}580 \dashrightarrow 00{:}09{:}53{.}256$  does that screening test and says,

NOTE Confidence: 0.8781914

 $00:09:53.260 \longrightarrow 00:09:55.678$  your liver function

NOTE Confidence: 0.8781914

 $00:09:55.678 \dashrightarrow 00:09:58.339$  studies are a little bit abnormal.

 $00{:}09{:}59{.}804 \dashrightarrow 00{:}10{:}02{.}404$  So imaging is the next thing that you should

NOTE Confidence: 0.8781914

 $00{:}10{:}02{.}404 \dashrightarrow 00{:}10{:}05{.}365$  expect in order to try to find a liver

NOTE Confidence: 0.86345017

 $00:10:05.370 \longrightarrow 00:10:06.342$  cancer early, right?

NOTE Confidence: 0.86345017

 $00{:}10{:}06{.}342 \dashrightarrow 00{:}10{:}09{.}319$  So there's a few ways to image the liver,

NOTE Confidence: 0.86345017

 $00{:}10{:}09{.}320 \dashrightarrow 00{:}10{:}10{.}965$  so sometimes for screening they

00:10:10.965 --> 00:10:12.610 start with just an ultrasound,

NOTE Confidence: 0.86345017

 $00{:}10{:}12{.}610 \dashrightarrow 00{:}10{:}14{.}920$  which is pretty easy to get, noninvasive.

NOTE Confidence: 0.86345017

 $00:10:14.920 \longrightarrow 00:10:16.248$  There's a probe that is

NOTE Confidence: 0.86345017

 $00:10:16.248 \rightarrow 00:10:19.188$  put over the abdomen and is kind of pushed down,

NOTE Confidence: 0.86345017

 $00{:}10{:}19{.}190 \dashrightarrow 00{:}10{:}20{.}840$  and then there's

NOTE Confidence: 0.86345017

 $00:10:20.840 \longrightarrow 00:10:22.064$  images that show up,

NOTE Confidence: 0.86345017

 $00:10:22.064 \rightarrow 00:10:23.900$  and they could often find changes

NOTE Confidence: 0.86345017

 $00:10:23.957 \dashrightarrow 00:10:25.767$  of Cirrhosis and possible tumor.

NOTE Confidence: 0.86345017

 $00{:}10{:}25.770 \dashrightarrow 00{:}10{:}27.666$  And when we're really

NOTE Confidence: 0.86345017

 $00:10:27.666 \longrightarrow 00:10:29.390$  concerned that there is cancer,

NOTE Confidence: 0.86345017

 $00{:}10{:}29{.}390 \dashrightarrow 00{:}10{:}32{.}260$  and we best want to characterize it,

NOTE Confidence: 0.86345017

 $00{:}10{:}32{.}260 \dashrightarrow 00{:}10{:}34{.}696$  the best imaging, what's considered

NOTE Confidence: 0.86345017

 $00{:}10{:}34.696 \dashrightarrow 00{:}10{:}37.415$  the gold standard is really an MRI

NOTE Confidence: 0.86345017

 $00:10:37.415 \longrightarrow 00:10:39.795$  for patients that are not able to

NOTE Confidence: 0.86345017

 $00{:}10{:}39.876 \dashrightarrow 00{:}10{:}42.556$  get an MRI for one reason or another,

NOTE Confidence: 0.86345017

 $00:10:42.560 \longrightarrow 00:10:45.104$  we're able to do a CAT scan with

- NOTE Confidence: 0.86345017
- $00:10:45.104 \rightarrow 00:10:46.980$  something called triphasic imaging,
- NOTE Confidence: 0.86345017
- $00{:}10{:}46{.}980 \dashrightarrow 00{:}10{:}49{.}213$  where we're able to get a very
- NOTE Confidence: 0.86345017
- $00:10:49.213 \longrightarrow 00:10:52.170$  good look at the liver also so
- NOTE Confidence: 0.86345017
- $00:10:52.170 \longrightarrow 00:10:54.095$  most patients once there's
- NOTE Confidence: 0.86345017
- 00:10:54.178 --> 00:10:55.810 any real concern,
- $00:10:57.278 \rightarrow 00:10:59.113$  they usually getting an MRI,
- NOTE Confidence: 0.86345017
- $00{:}10{:}59{.}120 \dashrightarrow 00{:}11{:}00{.}230$  and if not
- NOTE Confidence: 0.85019046
- 00:11:00.230 --> 00:11:02.460 a CAT scan and so
- NOTE Confidence: 0.85019046
- $00:11:02.460 \longrightarrow 00:11:04.064$  what's the next step?
- NOTE Confidence: 0.85019046
- 00:11:04.064 --> 00:11:06.079 A biopsy now?
- NOTE Confidence: 0.8700136
- $00:11:06.080 \longrightarrow 00:11:08.887$  That's an excellent question.
- NOTE Confidence: 0.8700136
- 00:11:08.890 --> 00:11:10.900 You know, for every cancer,
- NOTE Confidence: 0.8700136
- $00:11:10.900 \rightarrow 00:11:13.763$  I think most patients would identify a
- NOTE Confidence: 0.8700136
- $00:11:13.763 \rightarrow 00:11:16.531$  biopsy as being the next step, right?
- NOTE Confidence: 0.8700136
- $00:11:16.531 \rightarrow 00:11:19.744$  So if we have imaging that's concerning,
- NOTE Confidence: 0.8700136
- $00:11:19.744 \rightarrow 00:11:21.754$  typically as oncologists,

- NOTE Confidence: 0.8700136
- $00{:}11{:}21.760 \dashrightarrow 00{:}11{:}24.744$  we always order a biopsy for cancers and
- NOTE Confidence: 0.8700136
- $00{:}11{:}24{.}744 \dashrightarrow 00{:}11{:}27{.}790$  that really gives us the definitive answer.
- NOTE Confidence: 0.8700136
- 00:11:27.790 --> 00:11:30.870 Interestingly in the history of liver
- NOTE Confidence: 0.8700136
- 00:11:30.870 --> 00:11:33.490 cancer imaging has been so good at
- NOTE Confidence: 0.8700136
- $00{:}11{:}33{.}490 \dashrightarrow 00{:}11{:}35{.}766$  looking at specific characteristics
- NOTE Confidence: 0.8700136
- $00:11:35.766 \rightarrow 00:11:39.180$  of the cancer that traditionally you
- NOTE Confidence: 0.8700136
- 00:11:39.260 --> 00:11:41.857 have not needed a biopsy to identify
- NOTE Confidence: 0.8700136
- 00:11:41.857 --> 00:11:45.110 each HCC or hepatocellular carcinoma,
- NOTE Confidence: 0.8700136
- $00{:}11{:}45{.}110 \dashrightarrow 00{:}11{:}47{.}834$  and we've been challenging that
- NOTE Confidence: 0.8700136
- $00{:}11{:}47.834 \dashrightarrow 00{:}11{:}51.169$  a little bit more recently because
- NOTE Confidence: 0.8700136
- $00:11:51.170 \longrightarrow 00:11:54.957$  there's a lot of caveats
- NOTE Confidence: 0.8700136
- $00{:}11{:}54{.}957 \dashrightarrow 00{:}11{:}58{.}419$  where you could have mixed tumors
- NOTE Confidence: 0.8700136
- $00:11:58.419 \longrightarrow 00:12:02.437$  of bile duct cancers with HCC.
- NOTE Confidence: 0.8700136
- 00:12:02.440 --> 00:12:05.404 Or you know, as tumor profiling
- NOTE Confidence: 0.8700136
- 00:12:05.404 --> 00:12:07.900 is becoming more commonly used,
- NOTE Confidence: 0.8700136

 $00:12:07.900 \rightarrow 00:12:11.374$  we really like to have tissue biopsy

NOTE Confidence: 0.8700136

 $00{:}12{:}11{.}374 \dashrightarrow 00{:}12{:}14{.}984$  so that we could do these molecular tests,

NOTE Confidence: 0.8700136

00:12:14.990 --> 00:12:17.750 and so it has become more common to

NOTE Confidence: 0.8700136

 $00{:}12{:}17.750 \dashrightarrow 00{:}12{:}21.236$  have a biopsy before we start treatment.

NOTE Confidence: 0.8700136

 $00{:}12{:}21{.}240 \dashrightarrow 00{:}12{:}24{.}208$  But I would say historically a

NOTE Confidence: 0.8700136

 $00{:}12{:}24.208 \dashrightarrow 00{:}12{:}27.294$  lot of patients wind up getting treated

NOTE Confidence: 0.8700136

 $00:12:27.294 \rightarrow 00:12:31.247$  for liver cancer in the absence of a biopsy,

NOTE Confidence: 0.8700136

 $00:12:31.250 \longrightarrow 00:12:33.900$  which is definitely

NOTE Confidence: 0.8700136

 $00:12:33.900 \longrightarrow 00:12:36.306$  unusual as compared to other cancers.

00:12:36.710 --> 00:12:40.220 And I guess the other thing that is unique

NOTE Confidence: 0.84940416

 $00{:}12{:}40{.}220 \dashrightarrow 00{:}12{:}43{.}033$  about the liver or somewhat unique is

NOTE Confidence: 0.84940416

 $00{:}12{:}43.033 \dashrightarrow 00{:}12{:}46.300$  that it's a good place for cancers that

NOTE Confidence: 0.84940416

00:12:46.300 --> 00:12:49.901 start in other places to go not just as

NOTE Confidence: 0.84940416

 $00{:}12{:}49{.}901 \dashrightarrow 00{:}12{:}53{.}150$  a place for cancers to arise.

NOTE Confidence: 0.84940416

 $00{:}12{:}53{.}150 \dashrightarrow 00{:}12{:}56{.}097$  How can you tell the difference between

NOTE Confidence: 0.84940416

 $00:12:56.097 \rightarrow 00:12:58.586$  a primary liver

 $00{:}12{:}58{.}586 \dashrightarrow 00{:}13{:}01{.}267$  cancer that starts and grows in

NOTE Confidence: 0.84940416

00:13:01.347 --> 00:13:04.126 the liver, often in a cirrhotic liver,

NOTE Confidence: 0.84940416

 $00:13:04.130 \longrightarrow 00:13:06.356$  versus a cancer that started somewhere else,

NOTE Confidence: 0.84940416

 $00:13:06.360 \rightarrow 00:13:09.213$  say in the colon or somewhere else and

NOTE Confidence: 0.84007126

 $00:13:09.220 \longrightarrow 00:13:11.439$  goes to the liver.

NOTE Confidence: 0.84007126

 $00:13:11.440 \dashrightarrow 00:13:13.666$  And so that's always the first question.

NOTE Confidence: 0.84007126

 $00:13:13.670 \rightarrow 00:13:16.206$  When you see a mass in the liver,

NOTE Confidence: 0.84007126

 $00{:}13{:}16{.}210 \dashrightarrow 00{:}13{:}18{.}594$  did it start there or did it spread

NOTE Confidence: 0.84007126

 $00{:}13{:}18.594 \dashrightarrow 00{:}13{:}20.878$  there from somewhere else so the

NOTE Confidence: 0.84007126

 $00:13:20.878 \longrightarrow 00:13:23.526$  imaging does help with that.

NOTE Confidence: 0.84007126

 $00{:}13{:}23.526 \dashrightarrow 00{:}13{:}25.752$  If you do what's called this triphasic

NOTE Confidence: 0.84007126

 $00:13:25.752 \longrightarrow 00:13:27.660$  imaging, when the

NOTE Confidence: 0.84007126

00:13:27.660 --> 00:13:29.250 contrast is injected into someone,

NOTE Confidence: 0.84007126

 $00:13:29.250 \longrightarrow 00:13:31.157$  they look at certain phases.

NOTE Confidence: 0.84007126

 $00:13:31.157 \rightarrow 00:13:33.693$  So that the liver has two blood supplies,

NOTE Confidence: 0.84007126

00:13:33.700 --> 00:13:34.444 there's a

- NOTE Confidence: 0.84007126
- 00:13:34.444 --> 00:13:36.304 blood supply from arteries and
- NOTE Confidence: 0.84007126
- 00:13:36.304 --> 00:13:38.480 from veins so the liver is unique in
- NOTE Confidence: 0.84007126
- $00:13:38.480 \longrightarrow 00:13:40.797$  that way and there's kind of a
- NOTE Confidence: 0.84007126
- $00{:}13{:}40.869 \dashrightarrow 00{:}13{:}42.693$  characteristic appearance that
- NOTE Confidence: 0.84007126
- 00:13:42.693 --> 00:13:45.125 is different between metastases
- NOTE Confidence: 0.84007126
- $00{:}13{:}45{.}130 \dashrightarrow 00{:}13{:}46{.}366$  and liver cancer.
- NOTE Confidence: 0.84007126
- $00:13:46.366 \longrightarrow 00:13:48.014$  But that being said,
- NOTE Confidence: 0.84007126
- $00{:}13{:}48.020 \dashrightarrow 00{:}13{:}51.132$  sometimes the imaging is not as clear and
- NOTE Confidence: 0.84007126
- 00:13:51.132 --> 00:13:54.209 you don't feel confident
- NOTE Confidence: 0.84007126
- $00:13:54.210 \longrightarrow 00:13:56.688$  and that's really where a biopsy is
- NOTE Confidence: 0.8660273
- $00{:}13{:}58{.}340 \dashrightarrow 00{:}13{:}59{.}166$  helpful.
- NOTE Confidence: 0.8660273
- $00{:}13{:}59{.}166 \dashrightarrow 00{:}14{:}02{.}057$  And so once you get that biopsy,
- NOTE Confidence: 0.8660273
- $00{:}14{:}02{.}060 \dashrightarrow 00{:}14{:}05{.}356$  you can figure out is this primary cancer.
- NOTE Confidence: 0.8660273
- $00:14:05.360 \longrightarrow 00:14:07.680$  Is this a secondary cancer?
- NOTE Confidence: 0.8660273
- $00{:}14{:}07.680 \dashrightarrow 00{:}14{:}09.876$  And hopefully get a little bit
- NOTE Confidence: 0.8660273

 $00:14:09.876 \longrightarrow 00:14:12.123$  more in terms of clues that

NOTE Confidence: 0.8660273

 $00{:}14{:}12{.}123 \dashrightarrow 00{:}14{:}14{.}223$  can help you to treat it.

NOTE Confidence: 0.8660273

00:14:14.230 --> 00:14:15.690 Absolutely

NOTE Confidence: 0.8694535

 $00:14:15.690 \rightarrow 00:14:17.814$  and also what's interesting

NOTE Confidence: 0.8694535

00:14:17.814 --> 00:14:20.419 is that liver cancer can

NOTE Confidence: 0.8694535

 $00{:}14{:}20{.}420 \dashrightarrow 00{:}14{:}23{.}692$  occur as a single tumor,

NOTE Confidence: 0.8694535

 $00:14:23.692 \rightarrow 00:14:26.595$  which is what happens in most cancers, right?

NOTE Confidence: 0.8694535

00:14:26.595 --> 00:14:28.725 Most cancers start out as a

NOTE Confidence: 0.8694535

 $00{:}14{:}28.725 \dashrightarrow 00{:}14{:}30.978$  single tumor and then can spread.

NOTE Confidence: 0.8694535

 $00:14:30.980 \longrightarrow 00:14:32.800$  With liver cancer

NOTE Confidence: 0.8694535

 $00:14:32.800 \longrightarrow 00:14:33.886$  sometimes it's what's

NOTE Confidence: 0.8694535

00:14:33.886 --> 00:14:35.334 called Multi focal disease,

NOTE Confidence: 0.8694535

 $00:14:35.340 \rightarrow 00:14:37.476$  meaning that it's not really one

NOTE Confidence: 0.8694535

 $00:14:37.476 \longrightarrow 00:14:39.799$  area that spread to other areas.

NOTE Confidence: 0.8694535

 $00{:}14{:}39{.}800 \dashrightarrow 00{:}14{:}42{.}180$  But that because of the cirrhosis

NOTE Confidence: 0.8694535

 $00:14:42.180 \longrightarrow 00:14:44.572$  you could think of the whole liver as

- NOTE Confidence: 0.8694535
- 00:14:44.572 --> 00:14:46.937 being at risk for developing tumor,

 $00{:}14{:}46{.}940 \dashrightarrow 00{:}14{:}48{.}675$  and so sometimes there's actually

NOTE Confidence: 0.8694535

 $00{:}14{:}48.675 \dashrightarrow 00{:}14{:}51.119$  more than one area at the same

NOTE Confidence: 0.8694535

 $00:14:51.119 \rightarrow 00:14:53.057$  time that has developed a tumor.

NOTE Confidence: 0.8694535

00:14:53.060 --> 00:14:54.080 Well, we're

NOTE Confidence: 0.87646395

 $00{:}14{:}54{.}080 \dashrightarrow 00{:}14{:}56{.}760$  going to dig into all kinds of a spects

NOTE Confidence: 0.87646395

 $00{:}14{:}56.760 \dashrightarrow 00{:}14{:}59.179$  in terms of the qualities of tumors

NOTE Confidence: 0.87646395

 $00:14:59.179 \longrightarrow 00:15:01.933$  in the liver and how we go about

NOTE Confidence: 0.87646395

00:15:01.933 --> 00:15:04.278 treating them right after we take a

NOTE Confidence: 0.87646395

 $00{:}15{:}04{.}280 \dashrightarrow 00{:}15{:}06{.}320$  short break for a medical minute.

NOTE Confidence: 0.87646395

 $00{:}15{:}06{.}320 \dashrightarrow 00{:}15{:}08{.}462$  Please stay tuned to learn more

NOTE Confidence: 0.87646395

00:15:08.462 --> 00:15:10.550 about liver cancer with my guest

NOTE Confidence: 0.87646395

00:15:10.550 --> 00:15:11.819 Doctor Stacey Stein.

NOTE Confidence: 0.8686853

00:15:12.440 --> 00:15:15.005 Support for Yale Cancer Answers

NOTE Confidence: 0.8686853

00:15:15.005 --> 00:15:17.570 comes from AstraZeneca, providing

 $00{:}15{:}17.651 \dashrightarrow 00{:}15{:}19.763$  important treatment options for

NOTE Confidence: 0.8686853

 $00{:}15{:}19.763 \dashrightarrow 00{:}15{:}22.931$  various types and stages of cancer.

NOTE Confidence: 0.8686853

 $00{:}15{:}22.940 \dashrightarrow 00{:}15{:}26.600$  More information at a strazeneca-us.com.

NOTE Confidence: 0.8686853

 $00{:}15{:}26.600 \dashrightarrow 00{:}15{:}28.455$  This is a medical minute

NOTE Confidence: 0.8686853

 $00{:}15{:}28{.}455 \dashrightarrow 00{:}15{:}30{.}310$  about head and neck cancers,

NOTE Confidence: 0.8686853

 $00{:}15{:}30{.}310 \dashrightarrow 00{:}15{:}32{.}225$  although the percentage of oral

NOTE Confidence: 0.8686853

 $00{:}15{:}32{.}225 \dashrightarrow 00{:}15{:}34{.}560$  and head and neck cancer patients

NOTE Confidence: 0.8686853

 $00{:}15{:}34{.}560 \dashrightarrow 00{:}15{:}37{.}003$  in the United States is only about

NOTE Confidence: 0.8686853

00:15:37.003 --> 00:15:38.952 5% of all diagnosed cancers,

NOTE Confidence: 0.8686853

 $00{:}15{:}38{.}952 \dashrightarrow 00{:}15{:}40{.}942$  there are challenging side effects

NOTE Confidence: 0.8686853

 $00:15:40.942 \longrightarrow 00:15:42.718$  associated with these types of

NOTE Confidence: 0.8686853

 $00{:}15{:}42.718$  -->  $00{:}15{:}44.034$  cancer and their treatment.

NOTE Confidence: 0.8686853

 $00:15:44.040 \rightarrow 00:15:45.656$  Clinical trials are currently

NOTE Confidence: 0.8686853

 $00{:}15{:}45.656 \dashrightarrow 00{:}15{:}47.676$  underway to test innovative new

NOTE Confidence: 0.8686853

 $00:15:47.676 \rightarrow 00:15:49.600$  treatments for head and neck cancers,

NOTE Confidence: 0.8686853

 $00:15:49.600 \rightarrow 00:15:51.610$  and in many cases less radical

- NOTE Confidence: 0.8686853
- $00:15:51.610 \rightarrow 00:15:54.050$  surgeries are able to preserve nerves,
- NOTE Confidence: 0.8686853
- $00:15:54.050 \rightarrow 00:15:56.276$  arteries and muscles in the neck,
- NOTE Confidence: 0.8686853
- 00:15:56.280 --> 00:15:58.200 enabling patients to move, speak,
- NOTE Confidence: 0.8686853
- $00:15:58.200 \rightarrow 00:16:01.176$  breathe, and eat normally after surgery.
- NOTE Confidence: 0.8686853
- $00{:}16{:}01{.}180 \dashrightarrow 00{:}16{:}03{.}164$  More information is available
- NOTE Confidence: 0.8686853
- $00:16:03.164 \longrightarrow 00:16:04.156$  at yale cancercenter.org.
- NOTE Confidence: 0.8686853
- 00:16:04.160 --> 00:16:07.148 You're listening to Connecticut public radio.
- NOTE Confidence: 0.8621683
- $00{:}16{:}08{.}580 \dashrightarrow 00{:}16{:}10{.}860$  Welcome back to Yale Cancer Answers.
- NOTE Confidence: 0.8621683
- 00:16:10.860 --> 00:16:12.954 This is doctor Anees Chagpar
- NOTE Confidence: 0.8621683
- $00:16:12.954 \rightarrow 00:16:15.250$  and I'm joined tonight by
- NOTE Confidence: 0.8621683
- 00:16:15.250 --> 00:16:17.315 my guest doctor Stacy Stein.
- NOTE Confidence: 0.8621683
- 00:16:17.320 --> 00:16:19.220 We're talking about GI cancers
- NOTE Confidence: 0.8621683
- $00:16:19.220 \longrightarrow 00:16:20.740$  in particular liver cancer,
- NOTE Confidence: 0.8621683
- $00{:}16{:}20{.}740 \dashrightarrow 00{:}16{:}23{.}218$  and right before the break we talked
- NOTE Confidence: 0.8621683
- $00{:}16{:}23.218 \dashrightarrow 00{:}16{:}26.129$  a little bit about all of the risk
- NOTE Confidence: 0.8621683

00:16:26.129 --> 00:16:29.253 factors that can really put you at risk

NOTE Confidence: 0.8621683

00:16:29.253 --> 00:16:31.378 of developing primary liver cancer,

NOTE Confidence: 0.8621683

 $00:16:31.380 \longrightarrow 00:16:33.660$  which can be an isolated event,

NOTE Confidence: 0.8621683

00:16:33.660 - 00:16:36.738 or it could be multi focal. So Stacy,

NOTE Confidence: 0.8621683

 $00{:}16{:}36{.}738 \dashrightarrow 00{:}16{:}39{.}930$  when we talk about liver cancers,

NOTE Confidence: 0.8621683

00:16:39.930 --> 00:16:42.018 how often are these

NOTE Confidence: 0.8621683

 $00{:}16{:}42.020 \dashrightarrow 00{:}16{:}44.396$  found as a single spot in the liver

NOTE Confidence: 0.8621683

 $00:16:44.396 \rightarrow 00:16:46.189$  versus more extensive disease?

NOTE Confidence: 0.8621683

00:16:46.190 --> 00:16:47.240 That's a

NOTE Confidence: 0.8849255

 $00:16:47.240 \longrightarrow 00:16:49.196$  good question, so I think it

NOTE Confidence: 0.8849255

 $00:16:49.196 \longrightarrow 00:16:51.298$  really depends on which

NOTE Confidence: 0.8849255

 $00:16:51.298 \dashrightarrow 00:16:53.494$  group of people you're looking at.

NOTE Confidence: 0.8849255

 $00{:}16{:}53{.}500 \dashrightarrow 00{:}16{:}55{.}438$  For patients who have known that

NOTE Confidence: 0.8849255

 $00{:}16{:}55{.}438 \dashrightarrow 00{:}16{:}57{.}166$  they have underlying risk factors

NOTE Confidence: 0.8849255

 $00:16:57.166 \rightarrow 00:16:59.066$  and they've been getting screens,

NOTE Confidence: 0.8849255

 $00:16:59.070 \rightarrow 00:17:01.002$  they are much more likely to

 $00:17:01.002 \longrightarrow 00:17:02.900$  be found with early disease.

NOTE Confidence: 0.8849255

00:17:02.900 --> 00:17:04.640 But I would say, unfortunately, I see patients all the time who

 $00{:}17{:}07{.}493 \dashrightarrow 00{:}17{:}09{.}959$  present with much more advanced disease.

NOTE Confidence: 0.8849255

 $00:17:09.960 \longrightarrow 00:17:12.150$  Because you they either

NOTE Confidence: 0.8849255

00:17:12.150 - 00:17:14.970 were not being followed by anyone,

NOTE Confidence: 0.8849255

 $00:17:14.970 \longrightarrow 00:17:17.490$  or they didn't realize that they

NOTE Confidence: 0.8849255

00:17:17.490 --> 00:17:20.266 had cirrhosis and so they could

NOTE Confidence: 0.8849255

 $00{:}17{:}20.266 \dashrightarrow 00{:}17{:}21.787$  present with disease

NOTE Confidence: 0.8849255

 $00:17:21.790 \longrightarrow 00:17:23.610$  that's already

NOTE Confidence: 0.8849255

 $00:17:23.610 \longrightarrow 00:17:26.340$  not eligible for surgery or transplant.

NOTE Confidence: 0.8849255

00:17:26.340 --> 00:17:29.070 The disease may have metastasized already,

NOTE Confidence: 0.8849255

 $00:17:29.070 \longrightarrow 00:17:31.786$  and so we certainly see

NOTE Confidence: 0.8849255

 $00:17:31.786 \longrightarrow 00:17:34.598$  people that have either presented with

NOTE Confidence: 0.8849255

 $00:17:34.598 \rightarrow 00:17:37.718$  disease very late or after treatment.

NOTE Confidence: 0.8849255

 $00:17:37.720 \longrightarrow 00:17:40.606$  For early disease, the disease has

- $00:17:40.610 \longrightarrow 00:17:41.798$  progressed and
- NOTE Confidence: 0.85350454
- $00:17:41.800 \longrightarrow 00:17:44.565$  as we talked about before the break,
- NOTE Confidence: 0.85350454
- $00{:}17{:}44.570 \dashrightarrow 00{:}17{:}46.946$  I mean certainly it's always better
- NOTE Confidence: 0.85350454
- 00:17:46.950 --> 00:17:49.386 if you can find cancer early
- NOTE Confidence: 0.85350454
- $00{:}17{:}49{.}386 \dashrightarrow 00{:}17{:}51{.}931$  when it's most treatable and when
- NOTE Confidence: 0.85350454
- $00:17:51.931 \longrightarrow 00:17:54.457$  either surgery or local
- NOTE Confidence: 0.85350454
- $00:17:54.457 \longrightarrow 00:17:57.101$  therapies are an option to get
- NOTE Confidence: 0.85350454
- $00:17:57.101 \longrightarrow 00:17:59.722$  rid of the primary cancer.
- NOTE Confidence: 0.85350454
- $00{:}17{:}59{.}722 \dashrightarrow 00{:}18{:}02{.}398$  But when that cancer is locally
- NOTE Confidence: 0.85350454
- 00:18:02.398 --> 00:18:05.255 advanced or even metastatic when
- NOTE Confidence: 0.85350454
- $00{:}18{:}05{.}255 \dashrightarrow 00{:}18{:}08{.}075$  it spread and those local the rapies
- NOTE Confidence: 0.85350454
- $00:18:08.167 \rightarrow 00:18:10.147$  are no longer an option,
- NOTE Confidence: 0.85350454
- $00:18:10.150 \longrightarrow 00:18:13.166$  we still have options to treat
- NOTE Confidence: 0.8718654
- $00:18:13.170 \longrightarrow 00:18:14.352$  these patients.
- NOTE Confidence: 0.8718654
- $00{:}18{:}14.352 \dashrightarrow 00{:}18{:}16.322$  And that's really the area
- NOTE Confidence: 0.8718654
- $00:18:16.322 \longrightarrow 00:18:18.468$  that I've been most focused in.

- NOTE Confidence: 0.8718654
- 00:18:18.470 00:18:20.766 I'm very lucky at Yale

 $00:18:20.766 \longrightarrow 00:18:22.266$  to have a fantastic multidisciplinary

NOTE Confidence: 0.8718654

 $00:18:22.266 \longrightarrow 00:18:25.644$  liver team and I just want

NOTE Confidence: 0.8718654

 $00:18:25.644 \rightarrow 00:18:27.912$  to mention we actually meet weekly.

NOTE Confidence: 0.8718654

 $00{:}18{:}27{.}920 \dashrightarrow 00{:}18{:}30{.}266$  We have our own separate conference

NOTE Confidence: 0.8718654

 $00:18:30.266 \rightarrow 00:18:32.608$  just for liver cancer and there's

NOTE Confidence: 0.8718654

 $00:18:32.608 \rightarrow 00:18:34.720$  such a great group of people.

NOTE Confidence: 0.8718654

00:18:34.720 $\operatorname{-->}$ 00:18:36.982 We work with the surgeons, the

NOTE Confidence: 0.8718654

 $00{:}18{:}36{.}982 \dashrightarrow 00{:}18{:}38{.}558$  transplant surgeons, the hepatologist,

NOTE Confidence: 0.8718654

 $00{:}18{:}38{.}558 \dashrightarrow 00{:}18{:}39{.}785$  the Interventional radiologist.

NOTE Confidence: 0.8718654

 $00:18:44.170 \longrightarrow 00:18:45.180$  There's Oncologists.

NOTE Confidence: 0.8718654

 $00{:}18{:}45{.}180 \dashrightarrow 00{:}18{:}48{.}809$  We really have a great group that

NOTE Confidence: 0.8718654

 $00{:}18{:}48.809 \dashrightarrow 00{:}18{:}51.869$  focuses on all aspects of treatment.

NOTE Confidence: 0.8718654

00:18:51.870 --> 00:18:55.174 My focus as an oncologist

NOTE Confidence: 0.8718654

 $00:18:55.174 \rightarrow 00:18:57.812$  is really more in patients

 $00:18:57.812 \longrightarrow 00:19:00.060$  who are not candidates

NOTE Confidence: 0.8718654

 $00:19:00.060 \longrightarrow 00:19:03.126$  for these curative intent

NOTE Confidence: 0.8718654

 $00:19:03.130 \longrightarrow 00:19:07.010$  treatments like transplant or surgery.

NOTE Confidence: 0.8718654

00:19:07.010 --> 00:19:09.254 For patients with local disease where

NOTE Confidence: 0.8718654

00:19:09.254 --> 00:19:11.770 the disease is still confined to the

NOTE Confidence: 0.8718654

 $00{:}19{:}11{.}770$  -->  $00{:}19{:}14{.}524$  liver and there's not more than a few NOTE Confidence: 0.8718654

 $00{:}19{:}14.524 \dashrightarrow 00{:}19{:}16.408$  separate tumors that Interventional

NOTE Confidence: 0.8718654

 $00:19:16.408 \rightarrow 00:19:18.763$  radiologists have really played a

NOTE Confidence: 0.8718654

 $00{:}19{:}18{.}770 \dashrightarrow 00{:}19{:}21{.}116$  large role in treating those patients,

NOTE Confidence: 0.8718654

00:19:21.120 --> 00:19:23.773 and they treat with a wide variety

NOTE Confidence: 0.8718654

 $00:19:23.773 \rightarrow 00:19:26.180$  of modalities where they could apply NOTE Confidence: 0.8718654

 $00:19:26.180 \rightarrow 00:19:28.568$  some chemotherapy or heat or cold,

NOTE Confidence: 0.8718654

 $00{:}19{:}28{.}570 \dashrightarrow 00{:}19{:}31{.}307$  or they do ablation techniques,

NOTE Confidence: 0.8718654

 $00:19:31.310 \longrightarrow 00:19:34.398$  and then at some point either

NOTE Confidence: 0.8718654

 $00:19:34.398 \rightarrow 00:19:37.320$  because someone is developing more tumors or

NOTE Confidence: 0.8718654

 $00:19:37.320 \rightarrow 00:19:39.030$  if there's any metastatic disease,

- NOTE Confidence: 0.8718654
- $00:19:39.030 \rightarrow 00:19:41.076$  meaning tumor has left the liver,
- NOTE Confidence: 0.8718654
- $00:19:41.080 \longrightarrow 00:19:43.132$  then we really focus on what
- NOTE Confidence: 0.8718654
- $00:19:43.132 \longrightarrow 00:19:44.500$  we call systemic therapies.
- NOTE Confidence: 0.8718654
- $00{:}19{:}44{.}500 \dashrightarrow 00{:}19{:}46{.}522$  So either the treatment is a
- NOTE Confidence: 0.8718654
- 00:19:46.522 --> 00:19:48.260 pill form or intravenous form,
- NOTE Confidence: 0.8718654
- $00{:}19{:}48{.}260 \dashrightarrow 00{:}19{:}50{.}479$  but then the drugs are
- NOTE Confidence: 0.8718654
- $00:19:50.479 \rightarrow 00:19:53.050$  absorbed in the body and go everywhere,
- NOTE Confidence: 0.8718654
- $00{:}19{:}53.050 \dashrightarrow 00{:}19{:}56.650$  and I have to say over the time that
- NOTE Confidence: 0.8718654
- $00:19:56.650 \longrightarrow 00:20:00.463$  I've been at Yale, in the last 10 years,
- NOTE Confidence: 0.8718654
- $00{:}20{:}00{.}470 \dashrightarrow 00{:}20{:}02{.}455$  we have made tremendous strides
- NOTE Confidence: 0.8718654
- $00:20:02.455 \rightarrow 00:20:05.436$  in the last few years and having
- NOTE Confidence: 0.8718654
- $00{:}20{:}05{.}436 \dashrightarrow 00{:}20{:}07{.}721$  more treatment options that are
- NOTE Confidence: 0.8718654
- $00{:}20{:}07{.}721 \dashrightarrow 00{:}20{:}10{.}150$  more effective for liver cancer,
- NOTE Confidence: 0.8718654
- $00{:}20{:}10.150 \dashrightarrow 00{:}20{:}12.350$  so that's been really exciting.
- NOTE Confidence: 0.85544723
- $00{:}20{:}12{.}910 \dashrightarrow 00{:}20{:}15{.}507$  So tell us more about those developments.
- NOTE Confidence: 0.85544723

00:20:15.510 --> 00:20:17.981 I mean for many people the concept

NOTE Confidence: 0.85544723

00:20:17.981 - 00:20:19.959 of chemotherapy is really scary,

NOTE Confidence: 0.85544723

 $00:20:19.960 \longrightarrow 00:20:21.816$  but you mentioned that some

NOTE Confidence: 0.85544723

00:20:21.816 --> 00:20:23.670 of these therapies that you

NOTE Confidence: 0.85544723

 $00:20:23.670 \longrightarrow 00:20:25.520$  give actually can be oral.

 $00:20:27.380 \rightarrow 00:20:30.103$  The first drug that actually showed a benefit

NOTE Confidence: 0.85544723

 $00:20:30.103 \rightarrow 00:20:32.713$  in helping people live longer with liver

NOTE Confidence: 0.85544723

 $00:20:32.713 \rightarrow 00:20:35.170$  cancer is a drug called sorafenib

NOTE Confidence: 0.85544723

 $00:20:35.170 \rightarrow 00:20:38.138$  and that's actually a pill form of treatment.

NOTE Confidence: 0.85544723

 $00:20:38.140 \longrightarrow 00:20:39.990$  It's not really traditional chemotherapy,

NOTE Confidence: 0.85544723

 $00:20:39.990 \longrightarrow 00:20:42.120$  we call them

NOTE Confidence: 0.85544723

00:20:42.120 --> 00:20:44.260 tyrosine kinase inhibitors.

NOTE Confidence: 0.85544723

 $00{:}20{:}44.260 \dashrightarrow 00{:}20{:}46.160$  So it's more targeted the rapy.

NOTE Confidence: 0.85544723

00:20:46.160 -> 00:20:48.050 While sorafenib had some benefit,

NOTE Confidence: 0.85544723

 $00{:}20{:}48.050 \dashrightarrow 00{:}20{:}50.696$  we all recognize that it wasn't enough.

NOTE Confidence: 0.85544723

 $00:20:50.700 \longrightarrow 00:20:52.590$  And then if patients didn't

- $00:20:52.590 \rightarrow 00:20:54.102$  really tolerate it,
- NOTE Confidence: 0.85544723
- $00{:}20{:}54.110 \dashrightarrow 00{:}20{:}56.770$  than their cancer started to grow again.
- NOTE Confidence: 0.85544723
- 00:20:56.770 --> 00:20:58.822 You know there were many years
- NOTE Confidence: 0.85544723
- $00:20:58.822 \longrightarrow 00:21:00.694$  where we really didn't have
- NOTE Confidence: 0.85544723
- $00{:}21{:}00{.}694 \dashrightarrow 00{:}21{:}02{.}450$  other good treatment options.
- NOTE Confidence: 0.85544723
- $00{:}21{:}02{.}450 \dashrightarrow 00{:}21{:}04{.}842$  And then in the last few years there's NOTE Confidence: 0.85544723
- $00{:}21{:}04.842 \dashrightarrow 00{:}21{:}07.621$  been a lot of success in both finding
- NOTE Confidence: 0.85544723
- $00:21:07.621 \longrightarrow 00:21:10.043$  more of these tyrosine kinase inhibitors
- NOTE Confidence: 0.85544723
- $00{:}21{:}10.043 \dashrightarrow 00{:}21{:}12.403$  that are more effective potentially.
- 00:21:16.530 --> 00:21:19.330 and then the other area that's been
- NOTE Confidence: 0.85544723
- $00{:}21{:}19{.}330 \dashrightarrow 00{:}21{:}21{.}748$  really exciting has been the use
- NOTE Confidence: 0.85544723
- $00{:}21{:}21{.}748 \dashrightarrow 00{:}21{:}24{.}028$  of immune the rapy in liver cancer,
- NOTE Confidence: 0.85544723
- 00:21:24.030 --> 00:21:25.218 so I want
- NOTE Confidence: 0.8481173
- $00:21:25.220 \longrightarrow 00:21:27.628$  to dig into both of those kind
- NOTE Confidence: 0.8481173
- $00:21:27.628 \longrightarrow 00:21:30.348$  of arms of the equation first.
- NOTE Confidence: 0.8481173
- $00{:}21{:}30{.}350 \dashrightarrow 00{:}21{:}33{.}722$  You know when we talk about
- NOTE Confidence: 0.8481173

 $00:21:33.722 \rightarrow 00:21:35.408$  tyrosine kinase inhibitors

NOTE Confidence: 0.8481173

 $00:21:35.410 \longrightarrow 00:21:37.380$  sometimes that's very similar to

NOTE Confidence: 0.8481173

 $00{:}21{:}37{.}380 \dashrightarrow 00{:}21{:}40{.}449$  what we talk about in breast cancer.

NOTE Confidence: 0.8481173

 $00{:}21{:}40{.}450 \dashrightarrow 00{:}21{:}42{.}560$  For example, many of our

NOTE Confidence: 0.8481173

00:21:42.560 --> 00:21:45.070 listeners may know about HER2

NOTE Confidence: 0.8481173

00:21:45.070 --> 00:21:47.947 and the fact that we can have

NOTE Confidence: 0.8481173

 $00{:}21{:}47{.}947 \dashrightarrow 00{:}21{:}50{.}528$  a targeted agent against HER2

NOTE Confidence: 0.8481173

 $00:21:50.530 \longrightarrow 00:21:53.023$  that can be very effective.

NOTE Confidence: 0.8481173

00:21:53.023 --> 00:21:55.078 So with these tyrosine kinase

NOTE Confidence: 0.8481173

 $00:21:55.078 \longrightarrow 00:21:56.830$  inhibitors in liver cancer,

NOTE Confidence: 0.8481173

 $00{:}21{:}56{.}830 \dashrightarrow 00{:}21{:}58{.}510$  are there particular receptors

NOTE Confidence: 0.8481173

 $00:21:58.510 \longrightarrow 00:22:00.190$  that you're going after?

NOTE Confidence: 0.8481173

 $00{:}22{:}00{.}190 \dashrightarrow 00{:}22{:}02{.}969$  So are there markers that you can

NOTE Confidence: 0.8481173

00:22:02.969 --> 00:22:06.420 look at a cancer and say, ah, ha,

NOTE Confidence: 0.8481173

00:22:06.420 --> 00:22:07.960 Mrs Jones

NOTE Confidence: 0.8481173

 $00:22:07.960 \longrightarrow 00:22:09.585$  has this particular receptor and

- NOTE Confidence: 0.8481173
- $00:22:09.585 \longrightarrow 00:22:11.980$  I have a drug that can target.

 $00:22:11.980 \longrightarrow 00:22:13.660$  Yeah, that's a really

NOTE Confidence: 0.8812151

 $00:22:13.660 \longrightarrow 00:22:15.910$  good question and there's a

NOTE Confidence: 0.8812151

 $00:22:15.910 \longrightarrow 00:22:18.364$  few things that you asked

NOTE Confidence: 0.8812151

 $00{:}22{:}18.364 \dashrightarrow 00{:}22{:}20.690$  that I want to address and one is

NOTE Confidence: 0.8812151

 $00:22:20.690 \longrightarrow 00:22:22.370$  do we have a biomarker?

NOTE Confidence: 0.8812151

 $00:22:22.370 \longrightarrow 00:22:24.575$  Which really means is there some way

NOTE Confidence: 0.8812151

 $00:22:24.575 \rightarrow 00:22:26.631$  from the patient that I'm treating

NOTE Confidence: 0.8812151

 $00{:}22{:}26.631 \dashrightarrow 00{:}22{:}29.081$  either from their blood work or something

NOTE Confidence: 0.8812151

 $00:22:29.149 \rightarrow 00:22:31.438$  from there from their biopsy that I

NOTE Confidence: 0.8812151

 $00:22:31.438 \longrightarrow 00:22:35.020$  could identify that would predict

NOTE Confidence: 0.8812151

 $00{:}22{:}35{.}020 \dashrightarrow 00{:}22{:}36{.}412$  whether they would respond

NOTE Confidence: 0.8812151

 $00{:}22{:}36{.}412 \dashrightarrow 00{:}22{:}37{.}804$  to treatment or not,

NOTE Confidence: 0.8812151

 $00{:}22{:}37{.}810 \dashrightarrow 00{:}22{:}40{.}050$  and unfortunately the answer is we really

NOTE Confidence: 0.8812151

 $00{:}22{:}40.050 \dashrightarrow 00{:}22{:}42.698$  don't have a biomarker for liver cancer

 $00:22:42.700 \longrightarrow 00:22:44.788$  the way that we could test

NOTE Confidence: 0.8812151

00:22:44.790 --> 00:22:47.574 HER2 expression in breast cancer,

NOTE Confidence: 0.8812151

 $00{:}22{:}47.580 \dashrightarrow 00{:}22{:}49.290$  or other cancers and say this

NOTE Confidence: 0.8812151

 $00:22:49.290 \longrightarrow 00:22:51.420$  drug is more likely to work.

NOTE Confidence: 0.8812151

 $00:22:51.420 \longrightarrow 00:22:53.508$  We do follow something

NOTE Confidence: 0.8812151

 $00{:}22{:}53{.}508 \dashrightarrow 00{:}22{:}54{.}552$  called the AFP.

NOTE Confidence: 0.8812151

 $00:22:54.560 \longrightarrow 00:22:56.310$  The Alpha fetal protein and

NOTE Confidence: 0.8812151

 $00:22:56.310 \longrightarrow 00:22:58.464$  in about 80% of liver cancers

NOTE Confidence: 0.8812151

 $00{:}22{:}58.464 \dashrightarrow 00{:}23{:}01.040$  that protein is made and so the

NOTE Confidence: 0.8812151

 $00{:}23{:}01{.}119 \dashrightarrow 00{:}23{:}03{.}891$  value of it and it going up or down

NOTE Confidence: 0.8812151

00:23:03.891 --> 00:23:06.076 gives you a sense of response,

NOTE Confidence: 0.8812151

 $00{:}23{:}06{.}080 \dashrightarrow 00{:}23{:}08{.}649$  but it doesn't actually predict what drug

NOTE Confidence: 0.8812151

 $00{:}23{:}08{.}650 \dashrightarrow 00{:}23{:}10{.}729$  he would respond to if there is a

NOTE Confidence: 0.8812151

00:23:10.729 --> 00:23:13.002 real need for finding a biomarker

NOTE Confidence: 0.8812151

 $00{:}23{:}13.002 \dashrightarrow 00{:}23{:}15.630$  that would predict response to any

NOTE Confidence: 0.8812151

 $00:23:15.630 \rightarrow 00:23:17.972$  particular drug, but the truth is,

- NOTE Confidence: 0.8812151
- $00:23:17.972 \longrightarrow 00:23:19.464$  we don't have one,

 $00:23:19.470 \rightarrow 00:23:22.172$  and so we really are giving these

NOTE Confidence: 0.8812151

 $00:23:22.172 \rightarrow 00:23:24.687$  drugs without really knowing who it is

NOTE Confidence: 0.8812151

 $00:23:24.690 \longrightarrow 00:23:27.294$  that is going to respond or not,

NOTE Confidence: 0.8812151

 $00:23:27.300 \longrightarrow 00:23:29.170$  and we're trying

NOTE Confidence: 0.8812151

 $00:23:29.170 \longrightarrow 00:23:31.030$  sequences of drugs.

NOTE Confidence: 0.8812151

 $00:23:31.030 \longrightarrow 00:23:33.634$  I wish we did have a biomarker.

NOTE Confidence: 0.8812151

 $00:23:33.640 \longrightarrow 00:23:35.878$  There's a lot of interest in

NOTE Confidence: 0.8812151

00:23:36.644 --> 00:23:39.318 developing one when you ask what

NOTE Confidence: 0.8812151

 $00:23:39.318 \longrightarrow 00:23:41.608$  target are we hitting with

NOTE Confidence: 0.8812151

 $00{:}23{:}41.610 \dashrightarrow 00{:}23{:}43.390$  this tyrosine kinase approach,

NOTE Confidence: 0.8812151

 $00{:}23{:}43{.}390 \dashrightarrow 00{:}23{:}45{.}532$  the truth is these are what we

NOTE Confidence: 0.8812151

00:23:45.532 --> 00:23:47.660 call dirty tyrosine kinases,

NOTE Confidence: 0.8812151

 $00{:}23{:}47.660 \dashrightarrow 00{:}23{:}50.145$  meaning they don't target just one protein,

NOTE Confidence: 0.8812151

 $00{:}23{:}50{.}150 \dashrightarrow 00{:}23{:}52{.}796$  so one of the proteins they target

 $00:23:52.796 \rightarrow 00:23:54.429$  is something called veg F.

NOTE Confidence: 0.8812151

 $00{:}23{:}54{.}430 \dashrightarrow 00{:}23{:}56{.}006$  The vascular endothelial growth

NOTE Confidence: 0.8812151

 $00{:}23{:}56{.}006 \dashrightarrow 00{:}23{:}58{.}370$  factor which is involved in blood NOTE Confidence: 0.8812151

00:23:58.437 --> 00:24:00.377 vessel formation for the tumors.

NOTE Confidence: 0.8812151

 $00{:}24{:}00{.}380 \dashrightarrow 00{:}24{:}02{.}246$  We do know that that's an

NOTE Confidence: 0.8812151

 $00{:}24{:}02{.}246$  -->  $00{:}24{:}03{.}970$  important target for liver cancer, NOTE Confidence: 0.8812151

 $00:24:03.970 \longrightarrow 00:24:06.168$  but it's not the only one that's

NOTE Confidence: 0.8812151

 $00:24:06.168 \rightarrow 00:24:07.550$  targeted by these drugs,

NOTE Confidence: 0.8812151

 $00{:}24{:}07{.}550 \dashrightarrow 00{:}24{:}09{.}600$  so there's there's other pathways

NOTE Confidence: 0.8812151

 $00{:}24{:}09{.}600 \dashrightarrow 00{:}24{:}12{.}083$  that are being targeted and they

NOTE Confidence: 0.8812151

00:24:12.083 --> 00:24:14.219 probably have some role in the

NOTE Confidence: 0.8812151

00:24:14.219 --> 00:24:16.039 benefit of these drugs too.

NOTE Confidence: 0.8812151

00:24:16.040 --> 00:24:17.810 And you know, there's still

NOTE Confidence: 0.8812151

 $00:24:17.810 \longrightarrow 00:24:20.610$  a lot more to really understand

NOTE Confidence: 0.8812151

 $00:24:20.610 \rightarrow 00:24:23.099$  about how these drugs work in this

NOTE Confidence: 0.8564623

 $00{:}24{:}23.100 \dashrightarrow 00{:}24{:}25.218$  cancer.

- NOTE Confidence: 0.8564623
- $00:24:25.220 \longrightarrow 00:24:27.684$  It would be nicer if you could

 $00:24:27.684 \rightarrow 00:24:29.772$  biopsy a tumor and say,

NOTE Confidence: 0.8564623

 $00:24:29.772 \rightarrow 00:24:32.348$  this tumor has a very high veg F

NOTE Confidence: 0.8564623

 $00{:}24{:}32{.}348 \dashrightarrow 00{:}24{:}34{.}945$  level and you have a specific drug

NOTE Confidence: 0.8564623

 $00:24:34.945 \longrightarrow 00:24:37.219$  that would target that and Voila,

NOTE Confidence: 0.8564623

 $00:24:37.220 \rightarrow 00:24:38.692$  the cancer magically disappears,

NOTE Confidence: 0.8564623

 $00{:}24{:}38.692 \dashrightarrow 00{:}24{:}42.158$  but I guess we're a bit far off from that.

 $00:24:43.220 \longrightarrow 00:24:44.985$  And what's interesting too is

NOTE Confidence: 0.8564623

 $00{:}24{:}44{.}985 \dashrightarrow 00{:}24{:}46{.}728$  that in immune the rapy

NOTE Confidence: 0.8564623

 $00{:}24{:}46{.}728 \dashrightarrow 00{:}24{:}48{.}368$  there's been so many recent

NOTE Confidence: 0.8564623

 $00:24:48.368 \longrightarrow 00:24:50.145$  studies looking at the role

NOTE Confidence: 0.8564623

00:24:50.145 - 00:24:51.749 of different immune therapy,

NOTE Confidence: 0.8564623

 $00:24:51.750 \longrightarrow 00:24:52.998$  drugs, and liver cancer,

NOTE Confidence: 0.8564623

 $00{:}24{:}52{.}998 \dashrightarrow 00{:}24{:}55{.}909$  and even then for a lot of

NOTE Confidence: 0.8564623

 $00{:}24{:}55{.}909 \dashrightarrow 00{:}24{:}57{.}529$  cancers you could check something

NOTE Confidence: 0.8564623

 $00:24:57.529 \rightarrow 00:24:59.410$  called the PDL one expression,

- NOTE Confidence: 0.8564623
- $00:24:59.410 \longrightarrow 00:25:01.408$  and by looking at the number
- NOTE Confidence: 0.8564623
- 00:25:01.408 --> 00:25:02.740 of immune cells infiltrating,
- NOTE Confidence: 0.8564623
- $00:25:02.740 \longrightarrow 00:25:06.716$  in the tumor on the biopsy,
- NOTE Confidence: 0.8564623
- $00:25:06.720 \longrightarrow 00:25:09.499$  you could have some kind of
- NOTE Confidence: 0.8564623
- $00:25:09.499 \longrightarrow 00:25:12.901$  sense of prediction of how likely it is
- NOTE Confidence: 0.8564623
- $00:25:12.901 \rightarrow 00:25:15.031$  someone would respond to immunotherapy,
- NOTE Confidence: 0.8564623
- $00:25:15.040 \longrightarrow 00:25:17.536$  but even that for liver cancer
- NOTE Confidence: 0.8564623
- $00:25:17.536 \longrightarrow 00:25:19.200$  has been very unreliable.
- NOTE Confidence: 0.8564623
- $00{:}25{:}19{.}200 \dashrightarrow 00{:}25{:}21{.}030$  The expression of that protein
- NOTE Confidence: 0.8564623
- 00:25:21.030 --> 00:25:23.450 does not predict who will respond
- NOTE Confidence: 0.8564623
- $00:25:23.450 \longrightarrow 00:25:25.019$  to immunotherapy either.
- NOTE Confidence: 0.87378585
- $00:25:25.020 \longrightarrow 00:25:27.100$  Interesting that really is
- NOTE Confidence: 0.87378585
- 00:25:27.100 --> 00:25:29.600 unique, I think
- NOTE Confidence: 0.87378585
- 00:25:29.600 --> 00:25:33.132 for liver cancer, because I know in
- NOTE Confidence: 0.87378585
- $00{:}25{:}33{.}132 \dashrightarrow 00{:}25{:}36{.}403$  other cancers we actually do look at
- NOTE Confidence: 0.87378585

 $00:25:36.403 \rightarrow 00:25:39.706$  that and say, if we see

NOTE Confidence: 0.87378585

 $00{:}25{:}39{.}710 \dashrightarrow 00{:}25{:}42{.}638$  PD L1 expression then we know that

NOTE Confidence: 0.87378585

 $00:25:42.638 \rightarrow 00:25:45.200$  immunotherapy is going to be more effective.

NOTE Confidence: 0.87378585

00:25:45.200 --> 00:25:47.396 So how do you decide who

NOTE Confidence: 0.87378585

 $00:25:47.396 \longrightarrow 00:25:48.860$  to give immunotherapy to?

NOTE Confidence: 0.87378585

 $00:25:48.860 \rightarrow 00:25:51.788$  And who to treat with a TKI or a chemotherapy?

 $00:25:52.888 \longrightarrow 00:25:53.620$  Yeah, that's

NOTE Confidence: 0.84691036

 $00:25:53.620 \longrightarrow 00:25:55.810$  a great question, and

NOTE Confidence: 0.84691036

 $00{:}25{:}55{.}810 \dashrightarrow 00{:}25{:}57{.}274$  until very recently the

NOTE Confidence: 0.84691036

 $00{:}25{:}57{.}274 \dashrightarrow 00{:}25{:}59{.}104$  treatment has been a TKI

NOTE Confidence: 0.84691036

00:25:59.110 --> 00:26:01.300 first and then immune therapy,

NOTE Confidence: 0.84691036

 $00{:}26{:}01{.}300 \dashrightarrow 00{:}26{:}04{.}080$  but I want to tell you about one of the

NOTE Confidence: 0.84691036

 $00{:}26{:}04.159 \dashrightarrow 00{:}26{:}07.159$  newest combinations that's been looked at,

NOTE Confidence: 0.84691036

 $00:26:07.160 \longrightarrow 00:26:09.407$  which is a combination of an immune

NOTE Confidence: 0.84691036

 $00{:}26{:}09{.}407 \dashrightarrow 00{:}26{:}11{.}190$  the rapy drug called a tezolizumab.

NOTE Confidence: 0.84691036

 $00{:}26{:}11.190 \dashrightarrow 00{:}26{:}14.158$  So that's what we call a PDL1

00:26:14.160 --> 00:26:16.230 antibody and it targets the immune system

NOTE Confidence: 0.84691036

 $00{:}26{:}16{.}230 \dashrightarrow 00{:}26{:}18{.}949$  and then it was given in combination

NOTE Confidence: 0.84691036

00:26:18.949 --> 00:26:21.481 with be<br/>vacizumab which is an antibody

NOTE Confidence: 0.84691036

00:26:21.481 --> 00:26:23.817 against veg F which I had just

NOTE Confidence: 0.84691036

 $00{:}26{:}23.817 \dashrightarrow 00{:}26{:}25.423$  mentioned before and that combination

NOTE Confidence: 0.84691036

 $00{:}26{:}25{.}423 \dashrightarrow 00{:}26{:}27{.}661$  and we had participated

NOTE Confidence: 0.84691036

 $00:26:27.661 \longrightarrow 00:26:30.128$  at Yale in the phase one study

NOTE Confidence: 0.84691036

 $00{:}26{:}30{.}130 \dashrightarrow 00{:}26{:}33{.}650$  looking at this and I will tell you that out

NOTE Confidence: 0.84691036

 $00{:}26{:}33.735 \dashrightarrow 00{:}26{:}37.020$  of the patients that I had on that study,

NOTE Confidence: 0.84691036

 $00{:}26{:}37.020 \dashrightarrow 00{:}26{:}40.068$  I actually have two patients who had a

NOTE Confidence: 0.84691036

 $00{:}26{:}40.068 \dashrightarrow 00{:}26{:}42.467$  complete response to treatment which was

NOTE Confidence: 0.84691036

 $00:26:42.470 \longrightarrow 00:26:43.598$  amazing to me,

NOTE Confidence: 0.84691036

 $00:26:43.598 \rightarrow 00:26:46.656$  and they're both still doing very well with

NOTE Confidence: 0.84691036

 $00:26:46.656 \rightarrow 00:26:49.788$  no disease that could be seen on their MRIs

NOTE Confidence: 0.84691036

 $00:26:49.790 \longrightarrow 00:26:51.986$  which is something that I had

NOTE Confidence: 0.84691036

00:26:51.986 - 00:26:53.450 never had happen before,

- NOTE Confidence: 0.84691036
- $00:26:53.450 \rightarrow 00:26:55.879$  so that was really exciting and the

 $00:26:55.879 \rightarrow 00:26:58.384$  phase one study was positive and based

NOTE Confidence: 0.84691036

 $00:26:58.384 \rightarrow 00:27:00.931$  on those results there was a large

NOTE Confidence: 0.84691036

 $00:27:00.931 \longrightarrow 00:27:03.647$  phase three study so they

NOTE Confidence: 0.84691036

00:27:03.647 --> 00:27:06.260 compared this combination back to sorafenib,

NOTE Confidence: 0.84691036

 $00:27:06.260 \longrightarrow 00:27:08.090$  which had been often given,

 $00{:}27{:}08.824 \dashrightarrow 00{:}27{:}10.659$  as a first treatment and

NOTE Confidence: 0.84691036

 $00:27:10.659 \longrightarrow 00:27:12.559$  they showed that there was

NOTE Confidence: 0.84691036

 $00{:}27{:}12.560 \dashrightarrow 00{:}27{:}15.182$  a benefit of giving this combination

NOTE Confidence: 0.84691036

 $00:27:15.182 \rightarrow 00:27:17.996$  immunotherapy and so that just got approved

NOTE Confidence: 0.84691036

 $00{:}27{:}17{.}996 \dashrightarrow 00{:}27{:}20{.}670$  by the FDA a couple of months ago.

NOTE Confidence: 0.84691036

 $00{:}27{:}20.670 \dashrightarrow 00{:}27{:}23.323$  And for patients who are good candidates

NOTE Confidence: 0.84691036

 $00{:}27{:}23{.}323 \dashrightarrow 00{:}27{:}26{.}647$  for that which some people may not be a

NOTE Confidence: 0.84691036

 $00:27:26.647 \rightarrow 00:27:29.159$  good candidate for getting that treatment,

NOTE Confidence: 0.84691036

 $00:27:29.160 \rightarrow 00:27:31.260$  either because of the immune therapy

NOTE Confidence: 0.84691036

00:27:31.260 --> 00:27:34.179 part or thebevacizumab part,

- NOTE Confidence: 0.84691036
- $00{:}27{:}34.180 \dashrightarrow 00{:}27{:}36.202$  that's become the new standard of

 $00:27:36.202 \longrightarrow 00:27:38.420$  care to give this combination.

NOTE Confidence: 0.84691036

 $00:27:38.420 \longrightarrow 00:27:40.350$  We see higher response rates.

NOTE Confidence: 0.84691036

 $00:27:40.350 \rightarrow 00:27:42.828$  We see patients have longer responses

NOTE Confidence: 0.84691036

 $00{:}27{:}42.828 \dashrightarrow 00{:}27{:}43.654$  to treatment.

 $00{:}27{:}44.782 \dashrightarrow 00{:}27{:}48.175$  We don't have a biomarker to predict who is

NOTE Confidence: 0.84691036

 $00:27:48.175 \rightarrow 00:27:50.991$  going to do the best with that combination,

NOTE Confidence: 0.84691036

 $00:27:51.000 \rightarrow 00:27:52.408$  but this is really

NOTE Confidence: 0.84691036

 $00{:}27{:}52{.}408 \dashrightarrow 00{:}27{:}55{.}769$  a big change in our practice,

NOTE Confidence: 0.84691036

 $00{:}27{:}55{.}770 \dashrightarrow 00{:}27{:}58{.}162$  just in the last few months to think

NOTE Confidence: 0.84691036

 $00{:}27{:}58.162 \dashrightarrow 00{:}28{:}00{.}320$  about giving this type of combination

NOTE Confidence: 0.84691036

 $00:28:00.320 \longrightarrow 00:28:02.185$  to patients before starting with

NOTE Confidence: 0.84691036

 $00{:}28{:}02{.}185 \dashrightarrow 00{:}28{:}04{.}210$  the tyrosine kinase inhibitor.

NOTE Confidence: 0.84691036

00:28:04.210 --> 00:28:05.311 So you know,

NOTE Confidence: 0.84691036

 $00:28:05.311 \rightarrow 00:28:07.513$  we think carefully about each patient,

NOTE Confidence: 0.84691036

 $00:28:07.520 \longrightarrow 00:28:09.686$  and certainly there's other

- NOTE Confidence: 0.84691036
- $00:28:09.686 \rightarrow 00:28:12.291$  immune therapy drugs to give and there

 $00:28:12.291 \rightarrow 00:28:14.860$  still are tyrosine kinase inhibitors to give,

 $00{:}28{:}15{.}502 \dashrightarrow 00{:}28{:}19{.}354$  but the discussion now about how to

NOTE Confidence: 0.84691036

 $00:28:19.354 \rightarrow 00:28:22.530$  sequence these treatments has become

NOTE Confidence: 0.84691036

 $00{:}28{:}22{.}530 \dashrightarrow 00{:}28{:}24{.}918$  much more relevant.

NOTE Confidence: 0.84691036

 $00{:}28{:}24{.}920 \dashrightarrow 00{:}28{:}26{.}772$  There's other

NOTE Confidence: 0.84691036

00:28:26.772 --> 00:28:28.624 studies looking at combination

NOTE Confidence: 0.84691036

 $00:28:28.624 \longrightarrow 00:28:30.548$  the rapies that the full data

NOTE Confidence: 0.84691036

 $00{:}28{:}30{.}548 \dashrightarrow 00{:}28{:}32{.}108$  has not been presented yet.

NOTE Confidence: 0.84691036

 $00:28:32.110 \longrightarrow 00:28:34.100$  It hasn't been published yet,

NOTE Confidence: 0.84691036

 $00{:}28{:}34{.}100 \dashrightarrow 00{:}28{:}36{.}470$  but there's other studies that are

NOTE Confidence: 0.84691036

 $00{:}28{:}36{.}470 \dashrightarrow 00{:}28{:}38{.}907$  showing more positive data than just

NOTE Confidence: 0.84691036

 $00:28:38.907 \rightarrow 00:28:41.672$  giving a tyrosine kinase inhibitor by itself,

NOTE Confidence: 0.84691036

 $00{:}28{:}41.680 \dashrightarrow 00{:}28{:}44.480$  and so it's just been really exciting.

NOTE Confidence: 0.84691036

00:28:44.480 --> 00:28:44.870 Doctor

NOTE Confidence: 0.8795743

 $00:28:44.870 \longrightarrow 00:28:47.420$  Stacy Stein is an associate professor

- NOTE Confidence: 0.8795743
- $00:28:47.420 \rightarrow 00:28:50.029$  of internal medicine in medical oncology

 $00{:}28{:}50{.}029 \dashrightarrow 00{:}28{:}52{.}537$  at the Yale School of Medicine.

NOTE Confidence: 0.8795743

 $00:28:52.540 \longrightarrow 00:28:54.100$  If you have questions,

NOTE Confidence: 0.8795743

 $00{:}28{:}54{.}100 \dashrightarrow 00{:}28{:}55{.}660$  the address is canceranswers@yale.edu

NOTE Confidence: 0.8795743

 $00{:}28{:}55{.}660 \dashrightarrow 00{:}28{:}57{.}817$  and past editions of the program

NOTE Confidence: 0.8795743

 $00{:}28{:}57{.}817 \dashrightarrow 00{:}28{:}59{.}785$  are available in audio and written

NOTE Confidence: 0.8795743

 $00{:}28{:}59{.}847 \dashrightarrow 00{:}29{:}01{.}488$  form at Yale cancercenter.org.

NOTE Confidence: 0.8795743

00:29:01.490 --> 00:29:04.442 We hope you'll join us next week to

NOTE Confidence: 0.8795743

 $00{:}29{:}04{.}442 \dashrightarrow 00{:}29{:}07{.}325$  learn more about the fight against

NOTE Confidence: 0.8795743

 $00:29:07.325 \rightarrow 00:29:10.409$  cancer here on Connecticut public radio.