WEBVTT

00:00:00.000 --> 00:00:02.520 Support for Yale Cancer Answers

NOTE Confidence: 0.7848418

00:00:02.520 --> 00:00:05.040 comes from Smilow Cancer Hospital

NOTE Confidence: 0.7848418

00:00:05.127 --> 00:00:07.453 and AstraZeneca.

NOTE Confidence: 0.7848418

00:00:07.453 --> 00:00:09.258 Welcome to Yale Cancer Answers with your host,

NOTE Confidence: 0.7848418

00:00:09.260 --> 00:00:11.288 Doctor Anees Chagpar.

NOTE Confidence: 0.7848418

00:00:11.288 --> 00:00:13.156 Yale Cancer Answers features the latest

NOTE Confidence: 0.7848418

00:00:13.156 --> 00:00:15.391 information on cancer care by

NOTE Confidence: 0.7848418

00:00:15.391 --> 00:00:17.179 welcoming oncologists and specialists

NOTE Confidence: 0.7848418

00:00:17.246 --> 00:00:19.234 who are on the forefront of the

NOTE Confidence: 0.7848418

00:00:19.234 --> 00:00:21.137 battle to fight cancer. This week,

NOTE Confidence: 0.7848418

00:00:21.137 --> 00:00:22.882 it's a conversation about radiation

NOTE Confidence: 0.7848418

00:00:22.882 --> 00:00:24.780 oncology with Doctor Krishan Jethwa.

NOTE Confidence: 0.7848418

00:00:24.780 --> 00:00:26.934 Doctor Jethwa is an assistant professor

NOTE Confidence: 0.7848418

00:00:26.934 --> 00:00:28.787 of therapeutic radiology at the

NOTE Confidence: 0.7848418

00:00:28.787 --> 00:00:30.557 Yale University School of Medicine,

NOTE Confidence: 0.7848418

00:00:30.560 --> 00:00:32.726 where Doctor Chagpar is a

NOTE Confidence: 0.7848418

00:00:32.726 --> 00:00:34.170 professor of surgical oncology.

NOTE Confidence: 0.88365483

00:00:35.220 --> 00:00:38.217 So maybe you can start off by telling us

NOTE Confidence: 0.88365483

00:00:38.217 --> 00:00:41.150 what exactly is a radiation oncologist?

NOTE Confidence: 0.88365483

00:00:41.150 --> 00:00:43.782 Often I find people confuse a

NOTE Confidence: 0.88365483

00:00:43.782 --> 00:00:45.889 radiation oncologist with a radiologist.

NOTE Confidence: 0.88365483

00:00:45.890 --> 00:00:48.648 So can you tell us the difference?

NOTE Confidence: 0.88365483

00:00:48.650 --> 00:00:49.440 Radiation oncologists

NOTE Confidence: 0.88365483

00:00:49.440 --> 00:00:51.415 are cancer specialists who care

NOTE Confidence: 0.88365483

00:00:51.415 --> 00:00:53.390 for adult and pediatric patients.

NOTE Confidence: 0.88365483

00:00:53.390 --> 00:00:55.742 We use radiation therapy with the

NOTE Confidence: 0.88365483

00:00:55.742 --> 00:00:58.471 goal of curing cancer or to help

NOTE Confidence: 0.88365483

00:00:58.471 --> 00:01:00.649 improve the quality of life for

NOTE Confidence: 0.88365483

00:01:00.649 --> 00:01:02.868 symptoms for patients with cancer,

NOTE Confidence: 0.88365483

00:01:02.870 --> 00:01:05.126 and often that's part of the

NOTE Confidence: 0.88365483

00:01:05.126 --> 00:01:06.254 multidisciplinary care which

NOTE Confidence: 0.88365483

00:01:06.254 --> 00:01:08.010 includes many other specialists.

NOTE Confidence: 0.88581145

00:01:08.110 --> 00:01:10.456 The other question that I often

NOTE Confidence: 0.88581145

00:01:10.456 --> 00:01:12.749 get is the difference between

NOTE Confidence: 0.88581145

00:01:12.749 --> 00:01:14.690 radiation and chemotherapy.

NOTE Confidence: 0.88581145

00:01:14.690 --> 00:01:17.534 So when people are talking about

NOTE Confidence: 0.88581145

00:01:17.534 --> 00:01:19.967 using various modalities to help

NOTE Confidence: 0.88581145

00:01:19.967 --> 00:01:22.207 manage cancer or cure cancer,

NOTE Confidence: 0.88581145

00:01:22.210 --> 00:01:24.856 people often get these mixed up

NOTE Confidence: 0.88581145

00:01:24.856 --> 00:01:28.318 and also mix up the side effects.

NOTE Confidence: 0.88581145

00:01:28.320 --> 00:01:31.352 So can you tell us a little bit

NOTE Confidence: 0.88581145

00:01:31.352 --> 00:01:33.959 about the differences between the two?

NOTE Confidence: 0.88581145

00:01:33.960 --> 00:01:36.335 Medical oncologists are

NOTE Confidence: 0.88581145

00:01:36.335 --> 00:01:38.710 cancer specialists who use medications

NOTE Confidence: 0.88581145

00:01:38.710 --> 00:01:42.259 or drugs to treat the entire body,

NOTE Confidence: 0.88581145

00:01:42.260 --> 00:01:44.954 some of which do include chemotherapy

NOTE Confidence: 0.88581145

00:01:44.954 --> 00:01:46.750 and those specific medications

NOTE Confidence: 0.88581145

00:01:46.817 --> 00:01:48.833 they use can target the cancer

NOTE Confidence: 0.88581145

00:01:48.833 --> 00:01:50.780 and help with cancer control.

NOTE Confidence: 0.88581145

00:01:50.780 --> 00:01:52.635 Radiation therapy is different in

NOTE Confidence: 0.88581145

00:01:52.635 --> 00:01:55.010 that we use typically high energy

NOTE Confidence: 0.88581145

00:01:55.010 --> 00:01:57.280 radiation beams targeting the cancer

NOTE Confidence: 0.88581145

00:01:57.280 --> 00:01:59.710 for a more local treatment effect,

NOTE Confidence: 0.88581145

00:01:59.710 --> 00:02:02.146 as opposed to a whole body

NOTE Confidence: 0.88581145

00:02:02.146 --> 00:02:03.364 wide treatment effect.

NOTE Confidence: 0.88581145

00:02:03.370 --> 00:02:05.350 Often we work together to

NOTE Confidence: 0.88581145

00:02:05.350 --> 00:02:07.830 help with the goals of care,

NOTE Confidence: 0.88581145

00:02:07.830 --> 00:02:09.860 whether it be curative or

NOTE Confidence: 0.88581145

00:02:09.860 --> 00:02:11.484 supportive or symptom directed.

NOTE Confidence: 0.8887197

00:02:12.760 --> 00:02:15.000 And so tell us a little bit

NOTE Confidence: 0.8887197

00:02:15.000 --> 00:02:17.258 about the side effects of each.

NOTE Confidence: 0.8887197

00:02:17.260 --> 00:02:19.787 Very often people are worried

NOTE Confidence: 0.8887197

00:02:19.787 --> 00:02:22.448 about will my hair fall out?

NOTE Confidence: 0.8887197

00:02:22.450 --> 00:02:25.570 Will I get really sick?

NOTE Confidence: 0.8887197

00:02:25.570 --> 00:02:28.010 And so can you talk a little bit

NOTE Confidence: 0.8887197

00:02:28.010 --> 00:02:30.207 about the differences between the

NOTE Confidence: 0.8887197

00:02:30.207 --> 00:02:32.717 side effects of radiation therapy

NOTE Confidence: 0.8887197

00:02:32.717 --> 00:02:35.180 versus more whole body systemic therapies?

NOTE Confidence: 0.8726783

00:02:35.180 --> 00:02:37.952 The side effects are really

NOTE Confidence: 0.8726783

00:02:37.952 --> 00:02:40.338 dependent upon which medication is

NOTE Confidence: 0.8726783

00:02:40.338 --> 00:02:42.190 choosen for systemic therapies.

NOTE Confidence: 0.8726783

00:02:42.190 --> 00:02:44.326 And for radiation therapy

NOTE Confidence: 0.8726783

00:02:44.330 --> 00:02:45.940 it's very much dependent upon

NOTE Confidence: 0.8726783

00:02:45.940 --> 00:02:48.409 which area of the body is treated

NOTE Confidence: 0.8726783

00:02:48.409 --> 00:02:50.399 with radiation therapy in general.

NOTE Confidence: 0.8726783

00:02:50.400 --> 00:02:52.542 Some common side effects of radiation

NOTE Confidence: 0.8726783

00:02:52.542 --> 00:02:53.970 therapy would include fatigue,

NOTE Confidence: 0.8726783

00:02:53.970 --> 00:02:55.514 people may feel tired.

NOTE Confidence: 0.8726783

00:02:55.514 --> 00:02:58.218 And there can be some reaction of

NOTE Confidence: 0.8726783

00:02:58.218 --> 00:03:00.666 the skin similar to that of a very

NOTE Confidence: 0.8726783

00:03:00.666 --> 00:03:02.948 mild sunburn in most instances.

NOTE Confidence: 0.8726783

00:03:02.950 --> 00:03:04.966 That is not always the case,

NOTE Confidence: 0.8726783

00:03:04.970 --> 00:03:07.376 but it can be depending upon

NOTE Confidence: 0.8726783

00:03:07.376 --> 00:03:08.579 what's treated.

NOTE Confidence: 0.8726783

00:03:08.580 --> 00:03:10.722 Apart from those more general side

NOTE Confidence: 0.8726783

00:03:10.722 --> 00:03:12.903 effects it is very much dependent upon

NOTE Confidence: 0.8726783

00:03:12.903 --> 00:03:15.311 which area of the body is focused

NOTE Confidence: 0.8726783

00:03:15.311 --> 00:03:16.992 with radiation therapy and part

NOTE Confidence: 0.8726783

00:03:16.992 --> 00:03:19.622 of the art and care of a radiation

NOTE Confidence: 0.8726783

00:03:19.622 --> 00:03:21.427 oncologist is guiding and supporting

NOTE Confidence: 0.8726783

00:03:21.427 --> 00:03:23.185 a specific patient through those

NOTE Confidence: 0.8726783

00:03:23.185 --> 00:03:25.027 side effects and supporting them

NOTE Confidence: 0.8726783

00:03:25.027 --> 00:03:27.158 as they recover from the treatment.

NOTE Confidence: 0.8726783

00:03:27.160 --> 00:03:27.504 Similarly,

NOTE Confidence: 0.8726783

00:03:27.504 --> 00:03:29.224 with chemotherapy it's very much

NOTE Confidence: 0.8726783

00:03:29.224 --> 00:03:30.600 dependent upon the medication,

NOTE Confidence: 0.8726783

00:03:30.600 --> 00:03:33.029 but there can be the more global

NOTE Confidence: 0.8726783

00:03:33.029 --> 00:03:34.799 general side effects of fatigue

NOTE Confidence: 0.8726783

00:03:34.799 --> 00:03:36.439 that come along with it,

NOTE Confidence: 0.8726783

00:03:36.440 --> 00:03:38.932 but many of the other side effects

NOTE Confidence: 0.8726783

00:03:38.932 --> 00:03:39.644 are dependent

NOTE Confidence: 0.8726783

00:03:39.650 --> 00:03:40.730 on the medication.

NOTE Confidence: 0.8899477

00:03:40.730 --> 00:03:42.928 I think that when

NOTE Confidence: 0.8899477

00:03:42.928 --> 00:03:44.714 people think about radiation, they

NOTE Confidence: 0.8899477

00:03:44.714 --> 00:03:46.659 have seen movies where people

NOTE Confidence: 0.8899477

00:03:46.659 --> 00:03:48.650 were going through cancer care,

NOTE Confidence: 0.8899477

00:03:48.650 --> 00:03:51.242 lose their hair and so on and so forth

NOTE Confidence: 0.8899477

00:03:51.242 --> 00:03:53.766 that frequently is a side effect of

NOTE Confidence: 0.8899477

00:03:53.766 --> 00:03:55.726 chemotherapy and not so frequently

NOTE Confidence: 0.8899477

00:03:55.726 --> 00:03:58.366 a side effect of radiation therapy.

NOTE Confidence: 0.8899477

00:03:58.370 --> 00:03:59.450 Is that right?

NOTE Confidence: 0.8681657

00:04:00.410 --> 00:04:02.170 That's true when we're treating

NOTE Confidence: 0.8681657

00:04:02.170 --> 00:04:04.440 around the brain or head region

NOTE Confidence: 0.8681657

00:04:04.440 --> 00:04:06.265 there can be hair loss

NOTE Confidence: 0.8681657

00:04:06.265 --> 00:04:07.360 from radiation therapy,

NOTE Confidence: 0.8681657

00:04:07.360 --> 00:04:09.550 but apart from that circumstance and

NOTE Confidence: 0.8681657

00:04:09.550 --> 00:04:12.118 hair loss would not be expected from

NOTE Confidence: 0.8681657

00:04:12.120 --> 00:04:12.964 radiation therapy.

NOTE Confidence: 0.8681657

00:04:12.964 --> 00:04:16.340 The other question that I get a

NOTE Confidence: 0.8681657

00:04:16.421 --> 00:04:19.076 lot is if I take one or the other,

NOTE Confidence: 0.8681657

00:04:19.080 --> 00:04:20.910 can I avoid the other?

NOTE Confidence: 0.8681657

00:04:20.910 --> 00:04:22.370 So in other words,

NOTE Confidence: 0.8681657

00:04:22.370 --> 00:04:23.830 if I take radiation,

NOTE Confidence: 0.8681657

00:04:23.830 --> 00:04:25.294 can I avoid chemotherapy?

NOTE Confidence: 0.8681657

00:04:25.294 --> 00:04:27.124 Or if I take chemotherapy,

NOTE Confidence: 0.8681657

00:04:27.130 --> 00:04:28.228 can I avoid radiation?

NOTE Confidence: 0.8681657

00:04:28.230 --> 00:04:30.060 More often than not

NOTE Confidence: 0.8681657

00:04:30.060 --> 00:04:31.731 we combine both

NOTE Confidence: 0.8681657

00:04:31.731 --> 00:04:33.959 systemic treatments like chemotherapy

NOTE Confidence: 0.8681657

00:04:33.959 --> 00:04:36.203 and radiation therapy together

NOTE Confidence: 0.8681657

00:04:36.203 --> 00:04:38.167 because both have different

NOTE Confidence: 0.8681657

00:04:38.167 --> 00:04:40.622 effects on the cancer control.

NOTE Confidence: 0.8681657

00:04:40.630 --> 00:04:42.442 Radiation therapy specifically helps

NOTE Confidence: 0.8681657

00:04:42.442 --> 00:04:45.160 to decrease the risk or control

NOTE Confidence: 0.8681657

00:04:45.230 --> 00:04:47.890 the cancer at the site that it

NOTE Confidence: 0.8681657

00:04:47.890 --> 00:04:49.430 originally grew from.

NOTE Confidence: 0.8681657

00:04:49.430 --> 00:04:50.934 Whereas systemic treatments target

NOTE Confidence: 0.8681657

00:04:50.934 --> 00:04:53.717 the rest of the body to help

NOTE Confidence: 0.8681657

00:04:53.717 --> 00:04:55.533 control any microscopic cancer

NOTE Confidence: 0.8681657

00:04:55.533 --> 00:04:57.803 that may be progressing elsewhere.

NOTE Confidence: 0.8681657

00:04:57.810 --> 00:05:00.736 So typically it's not an either or,

NOTE Confidence: 0.8681657

00:05:00.740 --> 00:05:03.074 but usually and often a combination

NOTE Confidence: 0.8681657

00:05:03.074 --> 00:05:05.350 of both to improve outcomes.

NOTE Confidence: 0.8681657

00:05:05.350 --> 00:05:06.190 Which brings

NOTE Confidence: 0.87606657

00:05:06.190 --> 00:05:09.534 me to the question of surgery and radiation,

NOTE Confidence: 0.87606657

00:05:09.540 --> 00:05:11.640 so surgery, similar to radiation,

NOTE Confidence: 0.87606657

00:05:11.640 --> 00:05:13.296 is a local treatment.

NOTE Confidence: 0.87606657

00:05:13.296 --> 00:05:15.780 Are there instances where you choose

NOTE Confidence: 0.87606657

00:05:15.860 --> 00:05:18.220 between surgery versus radiation,

NOTE Confidence: 0.87606657

00:05:18.220 --> 00:05:20.340 or are there circumstances in

NOTE Confidence: 0.87606657

00:05:20.340 --> 00:05:22.460 which the two are combined?

NOTE Confidence: 0.87606657

00:05:22.460 --> 00:05:25.428 And if so, can you explain why?

NOTE Confidence: 0.8841839

00:05:25.430 --> 00:05:27.550 Again, a very great question.

NOTE Confidence: 0.8841839

00:05:27.550 --> 00:05:30.022 Often we're working with our surgical

NOTE Confidence: 0.8841839

00:05:30.022 --> 00:05:32.598 colleagues to help improve the outcomes

NOTE Confidence: 0.8841839

00:05:32.598 --> 00:05:34.758 with radiation therapy or surgery.

NOTE Confidence: 0.8841839

00:05:34.760 --> 00:05:35.951 In some instances,

NOTE Confidence: 0.8841839

00:05:35.951 --> 00:05:38.333 radiation therapy can be a very

NOTE Confidence: 0.8841839

00:05:38.333 --> 00:05:40.269 appropriate alternative to surgery.

NOTE Confidence: 0.8841839

00:05:40.270 --> 00:05:42.450 For instance, for treatment of

NOTE Confidence: 0.8841839

00:05:42.450 --> 00:05:44.630 many head and neck cancers.

NOTE Confidence: 0.8841839

00:05:44.630 --> 00:05:46.250 Radiation therapy or surgery

NOTE Confidence: 0.8841839

00:05:46.250 --> 00:05:48.275 are very suitable options and

NOTE Confidence: 0.8841839

00:05:48.275 --> 00:05:50.058 similarly with prostate cancers,

NOTE Confidence: 0.8841839

00:05:50.060 --> 00:05:52.052 radiation therapy or surgery,

NOTE Confidence: 0.8841839

00:05:52.052 --> 00:05:54.044 often very suitable options

NOTE Confidence: 0.8841839

00:05:54.044 --> 00:05:56.099 with the goal of cure.

NOTE Confidence: 0.8841839

00:05:56.100 --> 00:05:58.095 Although there are many other

NOTE Confidence: 0.8841839

00:05:58.095 --> 00:05:59.691 circumstances where a radiation

NOTE Confidence: 0.8841839

00:05:59.691 --> 00:06:01.892 therapy is either given before a

NOTE Confidence: 0.8841839

00:06:01.892 --> 00:06:03.280 surgical operation or afterwards

NOTE Confidence: 0.8841839

00:06:03.280 --> 00:06:05.197 to help improve the outcomes,

NOTE Confidence: 0.8841839

00:06:05.200 --> 00:06:08.128 and a great example of that is breast

NOTE Confidence: 0.8841839

00:06:08.128 --> 00:06:10.877 cancer where often we do surgery first,

NOTE Confidence: 0.8841839

00:06:10.880 --> 00:06:12.900 follow it with the radiation

NOTE Confidence: 0.8841839

00:06:12.900 --> 00:06:15.674 therapy to decrease the risk of the

NOTE Confidence: 0.8841839

00:06:15.674 --> 00:06:17.696 cancer coming back.

NOTE Confidence: 0.894132

00:06:17.700 --> 00:06:18.738 And in terms of radiation therapy,

NOTE Confidence: 0.894132

00:06:18.738 --> 00:06:21.160 can you talk a little bit about

NOTE Confidence: 0.894132

00:06:21.232 --> 00:06:23.387 the different kinds of radiation?

NOTE Confidence: 0.894132

00:06:23.390 --> 00:06:24.958 I know people have

NOTE Confidence: 0.894132

00:06:24.958 --> 00:06:26.526 heard about things like

NOTE Confidence: 0.894132

00:06:26.530 --> 00:06:28.603 photons and electrons,

NOTE Confidence: 0.894132

00:06:28.603 --> 00:06:30.676 and now protons.

NOTE Confidence: 0.894132

00:06:30.680 --> 00:06:32.870 How does one know what kind

NOTE Confidence: 0.894132

00:06:32.870 --> 00:06:33.965 of radiation therapy

NOTE Confidence: 0.894132

00:06:33.965 --> 00:06:35.668 one should be getting?

NOTE Confidence: 0.894132

00:06:35.670 --> 00:06:36.819 What are the

NOTE Confidence: 0.8746281

00:06:36.820 --> 00:06:38.850 differences?

NOTE Confidence: 0.8746281

00:06:38.850 --> 00:06:40.880 There are a tremendous amount of differences between each

NOTE Confidence: 0.8746281

00:06:40.939 --> 00:06:42.967 of those techniques and in general,

NOTE Confidence: 0.8746281

00:06:42.970 --> 00:06:45.268 radiation therapy comes in many forms.

NOTE Confidence: 0.8746281

00:06:45.270 --> 00:06:47.741 A way of differentiating the major forms

NOTE Confidence: 0.8746281

00:06:47.741 --> 00:06:50.258 would be external beam radiation therapy,

NOTE Confidence: 0.8746281

00:06:50.260 --> 00:06:53.340 which is somewhat similar to standard X rays,

NOTE Confidence: 0.8746281

00:06:53.340 --> 00:06:55.716 where the radiation beams are coming

NOTE Confidence: 0.8746281

00:06:55.716 --> 00:06:58.095 from the outside from a large

NOTE Confidence: 0.8746281

00:06:58.095 --> 00:07:00.249 machine and directed to the tumor.

NOTE Confidence: 0.8746281

00:07:00.250 --> 00:07:02.405 An alternative form to that

NOTE Confidence: 0.8746281

00:07:02.405 --> 00:07:04.129 would be internal radiation.

NOTE Confidence: 0.8746281

00:07:04.130 --> 00:07:06.085 And that could include procedures

NOTE Confidence: 0.8746281

00:07:06.085 --> 00:07:09.279 such as what we call brachytherapy,

NOTE Confidence: 0.8746281

00:07:09.280 --> 00:07:11.280 which involves inserting the

NOTE Confidence: 0.8746281

00:07:11.280 --> 00:07:13.280 radiation therapy device actually

NOTE Confidence: 0.8746281

00:07:13.280 --> 00:07:16.276 into or directly next to the tumor.

NOTE Confidence: 0.8746281

00:07:16.280 --> 00:07:18.785 Or there are some circumstances

NOTE Confidence: 0.8746281

00:07:18.785 --> 00:07:21.290 where we use radiotherapy releasing

NOTE Confidence: 0.8746281

00:07:21.365 --> 00:07:23.495 isotopes into the bloodstream that

NOTE Confidence: 0.8746281

00:07:23.495 --> 00:07:26.150 can be targeted to the tumor.

NOTE Confidence: 0.8746281

00:07:26.150 --> 00:07:29.129 Part of the art and skill of a radiation oncologist

NOTE Confidence: 0.8746281

00:07:29.129 --> 00:07:32.324 is determining the most ideal

NOTE Confidence: 0.8746281

00:07:32.324 --> 00:07:34.610 radiation therapy technique and plan

NOTE Confidence: 0.8746281

00:07:34.610 --> 00:07:36.920 to help design and target the

NOTE Confidence: 0.8746281

00:07:36.920 --> 00:07:38.460 cancer while minimizing radiation

NOTE Confidence: 0.8746281

00:07:38.521 --> 00:07:40.109 exposure to normal organs,

NOTE Confidence: 0.8746281

00:07:40.110 --> 00:07:42.384 and so it's challenging to say

NOTE Confidence: 0.8746281

00:07:42.384 --> 00:07:44.806 you know what questions might a

NOTE Confidence: 0.8746281

00:07:44.806 --> 00:07:47.290 patient ask to help direct which

NOTE Confidence: 0.8746281

00:07:47.290 --> 00:07:48.759 specific technique is used,

NOTE Confidence: 0.8746281

00:07:48.760 --> 00:07:51.703 but I do think it's a fair question to

NOTE Confidence: 0.8746281

00:07:51.703 --> 00:07:54.363 simply ask your radiation oncologist, what

NOTE Confidence: 0.8746281

00:07:54.363 --> 00:07:57.010 type of cancer treatment or radiation

NOTE Confidence: 0.8546323

00:07:57.010 --> 00:07:58.582 treatment am I receiving.

NOTE Confidence: 0.8546323

00:07:58.582 --> 00:08:00.154 And so you know,

NOTE Confidence: 0.8546323

00:08:00.160 --> 00:08:03.178 there are now

NOTE Confidence: 0.8546323

00:08:03.180 --> 00:08:05.735 newer therapies or newer therapeutic

NOTE Confidence: 0.8546323

00:08:05.735 --> 00:08:08.745 modalities that are being considered

NOTE Confidence: 0.8546323

00:08:08.745 --> 00:08:11.440 in radiation for various tumors and so

NOTE Confidence: 0.8546323

00:08:11.440 --> 00:08:14.310 when patients want to get more information

NOTE Confidence: 0.8546323

00:08:14.310 --> 00:08:17.348 for example, breast

NOTE Confidence: 0.8546323

00:08:17.348 --> 00:08:19.964 cancer patients who are often treated

NOTE Confidence: 0.8546323

00:08:19.964 --> 00:08:22.834 with photons but who are now being

NOTE Confidence: 0.8546323

00:08:22.920 --> 00:08:25.764 offered proton therapy and are wondering

NOTE Confidence: 0.8546323

00:08:25.764 --> 00:08:28.548 should I be getting proton therapy?

NOTE Confidence: 0.8546323

00:08:28.548 --> 00:08:31.656 Is that the right thing for me?

NOTE Confidence: 0.8546323

00:08:31.660 --> 00:08:33.940 Where do you suggest that

NOTE Confidence: 0.8546323

00:08:33.940 --> 00:08:35.764 they get more information?

NOTE Confidence: 0.8546323

00:08:35.770 --> 00:08:38.578 Or can you shed a bit of light on

NOTE Confidence: 0.8546323

00:08:38.578 --> 00:08:41.533 in what circumstances different

NOTE Confidence: 0.8546323

00:08:41.533 --> 00:08:44.089 modalities might be better?

00:08:44.420 --> 00:08:46.045 I love this question because it's

NOTE Confidence: 0.8650519

00:08:46.045 --> 00:08:48.429 one of my real areas of passion.

NOTE Confidence: 0.8650519

00:08:48.430 --> 00:08:50.722 How can we use advanced radiation

NOTE Confidence: 0.8650519

00:08:50.722 --> 00:08:52.632 therapy technologies to improve the

NOTE Confidence: 0.8650519

00:08:52.632 --> 00:08:54.570 outcomes and reduce the side effects

NOTE Confidence: 0.8650519

00:08:54.570 --> 00:08:57.008 of patients as they go through therapy?

NOTE Confidence: 0.8650519

00:08:57.010 --> 00:08:58.651 Standard radiation therapy

NOTE Confidence: 0.8650519

00:08:58.651 --> 00:09:01.933 uses high energy radiation beams and

NOTE Confidence: 0.8650519

00:09:01.933 --> 00:09:04.813 those often are called photons or X

NOTE Confidence: 0.8650519

00:09:04.813 --> 00:09:07.490 rays to be focused on the cancer.

NOTE Confidence: 0.8650519

00:09:07.490 --> 00:09:10.034 A downside of X rays is that they

NOTE Confidence: 0.8650519

00:09:10.034 --> 00:09:13.034 enter the body and they actually pass

NOTE Confidence: 0.8650519

00:09:13.034 --> 00:09:15.324 through the entire body deposit,

NOTE Confidence: 0.8650519

00:09:15.330 --> 00:09:16.894 depositing radiation therapy through

NOTE Confidence: 0.8650519

00:09:16.894 --> 00:09:19.520 their path, and this can include

NOTE Confidence: 0.8650519

00:09:19.520 --> 00:09:21.820 normal organs in many circumstances.

NOTE Confidence: 0.8650519

00:09:21.820 --> 00:09:23.610 Now, unfortunately we have developed

NOTE Confidence: 0.8650519

00:09:23.610 --> 00:09:26.179 many methods to reduce the exposure of

NOTE Confidence: 0.8650519

00:09:26.179 --> 00:09:28.699 normal organs and therefore the side effects.

NOTE Confidence: 0.8650519

00:09:28.700 --> 00:09:30.740 And honestly the technological advances

NOTE Confidence: 0.8650519

00:09:30.740 --> 00:09:33.172 in radiation therapy over the decades

NOTE Confidence: 0.8650519

00:09:33.172 --> 00:09:35.447 have been so immense and very exciting

NOTE Confidence: 0.8650519

00:09:35.447 --> 00:09:37.880 and this has resulted in dramatically

NOTE Confidence: 0.8650519

00:09:37.880 --> 00:09:39.596 better outcomes for patients.

NOTE Confidence: 0.8650519

00:09:39.600 --> 00:09:41.232 Proton therapy, for example,

NOTE Confidence: 0.8650519

00:09:41.232 --> 00:09:43.272 is a real major advancement,

NOTE Confidence: 0.8650519

00:09:43.280 --> 00:09:45.330 and similarly to X rays,

NOTE Confidence: 0.8650519

00:09:45.330 --> 00:09:47.864 proton beams do enter the body and

NOTE Confidence: 0.8650519

00:09:47.864 --> 00:09:50.229 deliver some radiation exposure initially,

NOTE Confidence: 0.8650519

00:09:50.230 --> 00:09:50.772 however,

NOTE Confidence: 0.8650519

00:09:50.772 --> 00:09:54.566 that's where the key advantages is that

NOTE Confidence: 0.8650519

00:09:54.570 --> 00:09:57.013 they can be designed to actually stop

NOTE Confidence: 0.8650519

00:09:57.013 --> 00:09:59.140 shortly after the targeting tumor.

NOTE Confidence: 0.8650519

00:09:59.140 --> 00:10:00.199 So in brief,

NOTE Confidence: 0.8650519

00:10:00.199 --> 00:10:02.670 there is little to no radiation that

NOTE Confidence: 0.8650519

00:10:02.742 --> 00:10:05.465 continues to pass beyond the tumor or

NOTE Confidence: 0.8650519

00:10:05.465 --> 00:10:08.289 through the rest of the patient's body,

NOTE Confidence: 0.8650519

00:10:08.290 --> 00:10:10.310 and this theoretically may

NOTE Confidence: 0.8650519

00:10:10.310 --> 00:10:11.320 substantially improve

NOTE Confidence: 0.8650519

00:10:11.320 --> 00:10:12.952 and benefit some patients.

NOTE Confidence: 0.8650519

00:10:12.952 --> 00:10:14.176 Not all patients,

NOTE Confidence: 0.8650519

00:10:14.180 --> 00:10:15.845 but some patients.

00:10:16.400 --> 00:10:17.836 That sounds really exciting and

NOTE Confidence: 0.9000687

00:10:17.836 --> 00:10:19.990 certainly we know that there are

NOTE Confidence: 0.9000687

00:10:20.052 --> 00:10:21.817 various proton facilities that have

NOTE Confidence: 0.9000687

00:10:21.817 --> 00:10:24.130 popped up all over the country.

NOTE Confidence: 0.9000687

00:10:24.130 --> 00:10:27.426 If patients are not near a proton facility,

NOTE Confidence: 0.9000687

00:10:27.430 --> 00:10:30.302 should they be looking to go to a

NOTE Confidence: 0.9000687

00:10:30.302 --> 00:10:32.779 facility that offers proton therapy?

NOTE Confidence: 0.9000687

00:10:32.780 --> 00:10:35.594 Or is that something that is pretty

NOTE Confidence: 0.9000687

00:10:35.594 --> 00:10:38.140 specialized and still on clinical trial?

NOTE Confidence: 0.9000687

00:10:38.140 --> 00:10:41.848 Or does it really depend on the tumor type?

NOTE Confidence: 0.9000687

00:10:41.850 --> 00:10:43.080 It's highly dependent

NOTE Confidence: 0.8675426

00:10:43.080 --> 00:10:45.140 upon the tumor type and

NOTE Confidence: 0.8675426

00:10:45.140 --> 00:10:46.376 the individual patient.

NOTE Confidence: 0.8675426

00:10:46.380 --> 00:10:48.915 I would encourage patients to

NOTE Confidence: 0.8675426

00:10:48.915 --> 00:10:50.943 ask their radiation oncologists

NOTE Confidence: 0.8675426

00:10:50.943 --> 00:10:54.019 just the question of what do you

NOTE Confidence: 0.8675426

00:10:54.019 --> 00:10:56.111 think about proton therapy and

NOTE Confidence: 0.8675426

00:10:56.111 --> 00:10:58.596 do you think it would benefit me?

NOTE Confidence: 0.8675426

00:10:58.600 --> 00:11:01.099 And even if they don't live close

NOTE Confidence: 0.8675426

00:11:01.099 --> 00:11:03.449 to a proton therapy center,

NOTE Confidence: 0.8675426

00:11:03.450 --> 00:11:06.271 I do think that an individual radiation

NOTE Confidence: 0.8675426

00:11:06.271 --> 00:11:07.943 oncologist would provide their

NOTE Confidence: 0.8675426

00:11:07.943 --> 00:11:10.319 opinion or thoughts on that technique.

NOTE Confidence: 0.8675426

00:11:10.320 --> 00:11:12.707 I get asked that question actually

NOTE Confidence: 0.8675426

00:11:12.707 --> 00:11:15.117 quite regularly and in many circumstances

NOTE Confidence: 0.8675426

00:11:15.117 --> 00:11:16.877 standard radiation therapy would

NOTE Confidence: 0.8675426

00:11:16.877 --> 00:11:19.199 be equivalent to proton therapy,

NOTE Confidence: 0.8675426

00:11:19.200 --> 00:11:21.545 and I do think that we can

NOTE Confidence: 0.8675426

00:11:21.545 --> 00:11:23.181 deliver exceptional care with

NOTE Confidence: 0.8675426

00:11:23.181 --> 00:11:24.858 standard radiation treatment.

NOTE Confidence: 0.8675426

00:11:24.860 --> 00:11:26.264 As I mentioned,

NOTE Confidence: 0.8675426

00:11:26.264 --> 00:11:28.604 tremendous advancements have been made

NOTE Confidence: 0.8675426

00:11:28.604 --> 00:11:31.590 even with standard X rays or photons.

NOTE Confidence: 0.8675426

00:11:31.590 --> 00:11:35.238 But in some circumstances I must say that

NOTE Confidence: 0.8675426

00:11:35.240 --> 00:11:37.205 I have recommended patients

NOTE Confidence: 0.8675426

00:11:37.205 --> 00:11:39.170 to receive a second opinion

NOTE Confidence: 0.8675426

00:11:39.237 --> 00:11:40.937 at a proton therapy center

NOTE Confidence: 0.8671422

00:11:40.940 --> 00:11:43.188 Can you talk a little bit

NOTE Confidence: 0.8671422

00:11:43.188 --> 00:11:45.471 about some of the other techniques

NOTE Confidence: 0.8671422

00:11:45.471 --> 00:11:47.531 that have been developed using

NOTE Confidence: 0.8671422

00:11:47.531 --> 00:11:49.744 standard radiation therapy that might

NOTE Confidence: 0.8671422

00:11:49.744 --> 00:11:52.336 minimize the dosage to normal organs.

NOTE Confidence: 0.8671422

00:11:52.340 --> 00:11:54.620 Many patients are always worried about,

NOTE Confidence: 0.8671422

00:11:54.620 --> 00:11:56.475 for example, if they're getting

NOTE Confidence: 0.8671422

00:11:56.475 --> 00:11:58.800 radiation therapy after a breast cancer,

NOTE Confidence: 0.8671422

00:11:58.800 --> 00:12:00.700 let's say to their chest.

NOTE Confidence: 0.8671422

00:12:00.700 --> 00:12:02.830 They're worried about the radiation

NOTE Confidence: 0.8671422

00:12:02.830 --> 00:12:05.420 affecting their heart or their lungs.

NOTE Confidence: 0.8671422

00:12:05.420 --> 00:12:07.230 What advancements have been made

NOTE Confidence: 0.8671422

00:12:07.230 --> 00:12:09.525 to protect those organs and should

NOTE Confidence: 0.8671422

00:12:09.525 --> 00:12:11.610 patients be worried about the

NOTE Confidence: 0.8671422

00:12:11.610 --> 00:12:13.278 extra radiation hitting those

NOTE Confidence: 0.8671422

00:12:13.280 --> 00:12:15.632 normal tissues?

NOTE Confidence: 0.8671422

00:12:15.632 --> 00:12:16.820 As a radiation oncologist, these

NOTE Confidence: 0.8422647

00:12:16.820 --> 00:12:19.070 are the things that are on

NOTE Confidence: 0.8422647

00:12:19.070 --> 00:12:21.530 my mind each and every day.

NOTE Confidence: 0.8422647

00:12:21.530 --> 00:12:23.784 How do I design a radiation treatment

NOTE Confidence: 0.8422647

00:12:23.784 --> 00:12:25.668 plan that can minimize effectively

NOTE Confidence: 0.8422647

00:12:25.668 --> 00:12:28.212 the dose of radiation therapy to

NOTE Confidence: 0.8422647

00:12:28.212 --> 00:12:30.404 normal organs and with standard

NOTE Confidence: 0.8422647

00:12:30.404 --> 00:12:32.539 radiation therapy for breast cancer

NOTE Confidence: 0.8422647

00:12:32.540 --> 00:12:35.764 we've come up with very nice ways to

NOTE Confidence: 0.8422647

00:12:35.770 --> 00:12:37.960 displace or move the heart or

NOTE Confidence: 0.8422647

00:12:37.960 --> 00:12:40.460 lungs away from the targeted breast

NOTE Confidence: 0.8422647

00:12:40.460 --> 00:12:42.855 tissue and for other cancers

NOTE Confidence: 0.8422647

00:12:42.860 --> 00:12:44.396 we've developed highly sophisticated

NOTE Confidence: 0.8422647

00:12:44.396 --> 00:12:46.700 X ray techniques such as intensity

NOTE Confidence: 0.8422647

00:12:46.762 --> 00:12:48.280 modulated radiation therapy,

NOTE Confidence: 0.8422647

00:12:48.280 --> 00:12:50.420 which, in simplified terms,

NOTE Confidence: 0.8422647

00:12:50.420 --> 00:12:52.560 involves advanced computer technology

NOTE Confidence: 0.8422647

00:12:52.560 --> 00:12:54.405 and sophisticated radiation beam

NOTE Confidence: 0.8422647

00:12:54.405 --> 00:12:56.883 design to better focus the high doses

NOTE Confidence: 0.8422647

00:12:56.883 --> 00:12:59.396 of radiation therapy to the tumor

NOTE Confidence: 0.8422647

00:12:59.396 --> 00:13:02.354 and spare the normal tissues so we do

NOTE Confidence: 0.8422647

00:13:02.354 --> 00:13:04.309 have very effective alternatives to

NOTE Confidence: 0.8422647

00:13:04.309 --> 00:13:06.698 proton therapy that can effectively

NOTE Confidence: 0.8422647

00:13:06.700 --> 00:13:09.120 and very well treat patients.

00:13:09.500 --> 00:13:10.868 That's really great to hear,

NOTE Confidence: 0.8489297

00:13:10.868 --> 00:13:13.395 so we're going to pick up this

NOTE Confidence: 0.8489297

00:13:13.395 --> 00:13:15.795 conversation right after we take a

NOTE Confidence: 0.8489297

00:13:15.795 --> 00:13:18.308 short break for a medical minute.

NOTE Confidence: 0.8489297

00:13:18.310 --> 00:13:20.608 Please stay tuned to learn more

NOTE Confidence: 0.8489297

00:13:20.608 --> 00:13:22.140 about radiation oncology with

NOTE Confidence: 0.8489297

00:13:22.140 --> 00:13:24.180 my guest Doctor Krishnan Jethwa.

NOTE Confidence: 0.8489297

00:13:24.180 --> 00:13:26.220 Support for Yale Cancer Answers

NOTE Confidence: 0.8489297

00:13:26.286 --> 00:13:28.458 comes from AstraZeneca, working to

NOTE Confidence: 0.8489297

00:13:28.458 --> 00:13:30.950 eliminate cancer as a cause of death.

NOTE Confidence: 0.8489297

00:13:30.950 --> 00:13:34.230 Learn more at astrazeneca-us.com.

NOTE Confidence: 0.8489297

00:13:34.230 --> 00:13:37.646 This is a medical minute about survivorship.

NOTE Confidence: 0.8489297

00:13:37.650 --> 00:13:39.322 Completing treatment for cancer

NOTE Confidence: 0.8489297

00:13:39.322 --> 00:13:41.412 is a very exciting milestone,

NOTE Confidence: 0.8489297

00:13:41.420 --> 00:13:44.624 but cancer and its treatment can be a life

NOTE Confidence: 0.8489297

00:13:44.624 --> 00:13:47.290 changing experience for cancer survivors.

NOTE Confidence: 0.8489297

00:13:47.290 --> 00:13:49.804 The return to normal activities and

NOTE Confidence: 0.8489297

00:13:49.804 --> 00:13:51.937 relationships can be difficult and

NOTE Confidence: 0.8489297

00:13:51.937 --> 00:13:54.259 some survivors face long term side

NOTE Confidence: 0.8489297

00:13:54.259 --> 00:13:56.509 effects resulting from their treatment,

NOTE Confidence: 0.8489297

00:13:56.510 --> 00:13:57.764 including heart problems,

NOTE Confidence: 0.8489297

00:13:57.764 --> 00:13:59.018 osteoporosis, fertility issues,

NOTE Confidence: 0.8489297

00:13:59.020 --> 00:14:01.946 and an increased risk of second cancers.

NOTE Confidence: 0.8489297

00:14:01.950 --> 00:14:04.245 Resources are available to help

NOTE Confidence: 0.8489297

00:14:04.245 --> 00:14:06.081 keep cancer survivors well and

NOTE Confidence: 0.8489297

00:14:06.081 --> 00:14:07.828 focused on healthy living.

NOTE Confidence: 0.8489297

00:14:07.830 --> 00:14:09.862 More information is available

NOTE Confidence: 0.8489297

00:14:09.862 --> 00:14:10.878 at yalecancercenter.org.

NOTE Confidence: 0.8489297

00:14:10.880 --> 00:14:15.038 You're listening to Connecticut public radio.

NOTE Confidence: 0.8489297

00:14:15.040 --> 00:14:15.460 Welcome

NOTE Confidence: 0.8349248

00:14:15.460 --> 00:14:17.580 back to Yale Cancer Answers.

NOTE Confidence: 0.8349248

00:14:17.580 --> 00:14:19.854 This is doctor Anees Chagpar

NOTE Confidence: 0.8349248

00:14:19.854 --> 00:14:22.400 and I'm joined tonight by

NOTE Confidence: 0.8349248

00:14:22.400 --> 00:14:24.770 my guest Doctor Krishan Jethwa.

NOTE Confidence: 0.8349248

00:14:24.770 --> 00:14:27.030 We're discussing radiation therapy in

NOTE Confidence: 0.8349248

00:14:27.030 --> 00:14:29.763 the treatment of cancers and right

NOTE Confidence: 0.8349248

00:14:29.763 --> 00:14:32.542 before the break we were talking about

NOTE Confidence: 0.8349248

00:14:32.542 --> 00:14:34.625 some advanced techniques that have

NOTE Confidence: 0.8349248

00:14:34.625 --> 00:14:37.453 been developed that can really help in

NOTE Confidence: 0.8349248

00:14:37.460 --> 00:14:39.998 minimizing the side effects of radiation.

00:14:40.844 --> 00:14:43.798 Before I dive into some specific cancers,

NOTE Confidence: 0.8349248

00:14:43.800 --> 00:14:46.845 one question that we're always asked about

NOTE Confidence: 0.8349248

00:14:46.850 --> 00:14:48.233 is secondary malignancies.

NOTE Confidence: 0.8349248

00:14:48.233 --> 00:14:50.540 In other words,

NOTE Confidence: 0.8349248

00:14:50.540 --> 00:14:53.369 people often say, well, radiation therapy,

NOTE Confidence: 0.8349248

00:14:53.369 --> 00:14:55.784 it's kind of like radiation

NOTE Confidence: 0.8349248

00:14:55.784 --> 00:14:57.450 similar to the sun,

NOTE Confidence: 0.8349248

00:14:57.450 --> 00:15:00.216 but we know that with radiation,

NOTE Confidence: 0.8349248

00:15:00.220 --> 00:15:02.525 whether it's from sunlight or

NOTE Confidence: 0.8349248

00:15:02.525 --> 00:15:04.830 whether it's from nuclear explosions,

NOTE Confidence: 0.8349248

00:15:04.830 --> 00:15:06.240 can cause cancers.

NOTE Confidence: 0.8349248

00:15:06.240 --> 00:15:09.530 So is there a risk of developing

NOTE Confidence: 0.8349248

00:15:09.628 --> 00:15:12.253 a cancer from your radiation

NOTE Confidence: 0.8349248

00:15:12.253 --> 00:15:14.878 therapy which is designed to

NOTE Confidence: 0.8349248

00:15:14.980 --> 00:15:17.836 help you get rid of the cancer?

00:15:18.200 --> 00:15:20.390 That's a really, really good question,

NOTE Confidence: 0.9037382

00:15:20.390 --> 00:15:24.390 one which I get asked from most patients.

NOTE Confidence: 0.9037382

00:15:24.390 --> 00:15:25.822 And you're exactly right.

NOTE Confidence: 0.9037382

00:15:25.822 --> 00:15:26.896 With radiation therapy,

NOTE Confidence: 0.9037382

00:15:26.900 --> 00:15:30.122 while we focus it directly on to the tumor,

NOTE Confidence: 0.9037382

00:15:30.130 --> 00:15:33.720 and we do a very nice job at doing so,

NOTE Confidence: 0.9037382

00:15:33.720 --> 00:15:36.024 there is theoretically a risk that

NOTE Confidence: 0.9037382

00:15:36.024 --> 00:15:38.257 radiation therapy can increase the risk

NOTE Confidence: 0.9037382

00:15:38.257 --> 00:15:40.490 of developing a new cancer within or

NOTE Confidence: 0.9037382

00:15:40.490 --> 00:15:42.699 adjacent to the radiation therapy field.

NOTE Confidence: 0.9037382

00:15:42.700 --> 00:15:45.206 Thankfully, that risk is not very high.

NOTE Confidence: 0.9037382

00:15:45.210 --> 00:15:47.730 In fact, it's far less than 1%,

NOTE Confidence: 0.9037382

00:15:47.730 --> 00:15:49.878 and if it is to happen,

NOTE Confidence: 0.9037382

00:15:49.880 --> 00:15:51.312 it often takes many,

NOTE Confidence: 0.9037382

00:15:51.312 --> 00:15:54.295 many years to develop and I mean

NOTE Confidence: 0.9037382

00:15:54.295 --> 00:15:56.665 5-10, 30-40 years to develop.

NOTE Confidence: 0.9037382

00:15:56.670 --> 00:15:59.838 So there is a relatively low risk of it

NOTE Confidence: 0.9037382

00:15:59.838 --> 00:16:02.130 occurring and it's a more significant

NOTE Confidence: 0.9037382

00:16:02.130 --> 00:16:04.650 risk in patients who are younger,

NOTE Confidence: 0.9037382

00:16:04.650 --> 00:16:06.330 particularly our pediatric patients,

NOTE Confidence: 0.9037382

00:16:06.330 --> 00:16:09.551 but as a radiation oncologist it is

NOTE Confidence: 0.9037382

00:16:09.551 --> 00:16:11.447 always something on my mind when

NOTE Confidence: 0.9037382

00:16:11.447 --> 00:16:13.769 I'm caring for those young patients.

NOTE Confidence: 0.9037382

00:16:13.770 --> 00:16:16.346 And that is one of the benefits of

NOTE Confidence: 0.9037382

00:16:16.346 --> 00:16:18.329 advanced radiation therapy technologies.

NOTE Confidence: 0.9037382

00:16:18.330 --> 00:16:19.974 For instance, proton therapy,

NOTE Confidence: 0.9037382

00:16:19.974 --> 00:16:22.839 that can theoretically decrease the risk

NOTE Confidence: 0.9037382

00:16:22.839 --> 00:16:25.163 of what we call a secondary malignancy.

NOTE Confidence: 0.8558176

00:16:26.150 --> 00:16:28.184 And so during the break

NOTE Confidence: 0.8558176

00:16:28.184 --> 00:16:30.314 you were telling me that your

NOTE Confidence: 0.8558176

00:16:30.314 --> 00:16:32.426 particular focus is on GI cancers.

NOTE Confidence: 0.8558176

00:16:32.430 --> 00:16:34.509 Can you tell us a little bit

NOTE Confidence: 0.8558176

00:16:34.509 --> 00:16:36.711 more about the use of radiation

NOTE Confidence: 0.8558176

00:16:36.711 --> 00:16:38.710 therapy in those cancers?

NOTE Confidence: 0.8558176

00:16:38.710 --> 00:16:41.153 Radiation therapies are used in the vast majority

NOTE Confidence: 0.8558176

00:16:41.153 --> 00:16:43.948 of GI cancer spanning head to toe.

NOTE Confidence: 0.8558176

00:16:43.950 --> 00:16:46.974 It has a role in either the curative

NOTE Confidence: 0.8558176

00:16:46.974 --> 00:16:49.695 intent treatment or in many it would

NOTE Confidence: 0.8558176

00:16:49.695 --> 00:16:51.585 be the symptom directed treatment.

NOTE Confidence: 0.8558176

00:16:51.590 --> 00:16:54.299 So that could be for esophagus cancers,

NOTE Confidence: 0.8558176

00:16:54.300 --> 00:16:55.844 stomach cancers, liver, pancreas,

NOTE Confidence: 0.8558176

00:16:55.844 --> 00:16:58.170 colon, rectal or even anal cancers.

NOTE Confidence: 0.8558176

00:16:58.170 --> 00:17:02.040 And we have a very nice role in doing so,

NOTE Confidence: 0.8558176

00:17:02.040 --> 00:17:03.950 often in combination with our

NOTE Confidence: 0.8558176

00:17:03.950 --> 00:17:05.478 colleagues from medical oncology

NOTE Confidence: 0.8558176

00:17:05.478 --> 00:17:07.458 and surgical oncology to help

NOTE Confidence: 0.8558176

00:17:07.458 --> 00:17:09.383 improve the outcomes for patients.

NOTE Confidence: 0.877728

00:17:10.680 --> 00:17:13.479 So let's go through each of those in a

NOTE Confidence: 0.877728

00:17:13.479 --> 00:17:16.476 bit more detail so that you can give us

NOTE Confidence: 0.877728

00:17:16.476 --> 00:17:19.423 a little bit of color of what radiation

NOTE Confidence: 0.877728

00:17:19.423 --> 00:17:21.933 therapy is like for each of those.

NOTE Confidence: 0.877728

00:17:21.933 --> 00:17:24.318 I'd imagine that it's different, for example,

NOTE Confidence: 0.877728

00:17:24.318 --> 00:17:26.691 in the esophagus versus in liver versus

NOTE Confidence: 0.877728

00:17:26.691 --> 00:17:29.440 in the pancreas versus in the anal canal.

NOTE Confidence: 0.877728

00:17:29.440 --> 00:17:32.160 How does radiation vary based on the site?

NOTE Confidence: 0.87571305

00:17:32.810 --> 00:17:35.246 So of course it is a different

NOTE Confidence: 0.87571305

00:17:35.246 --> 00:17:36.999 anatomical site of the body,

NOTE Confidence: 0.87571305

00:17:37.000 --> 00:17:38.800 and in many of those different

NOTE Confidence: 0.87571305

00:17:38.800 --> 00:17:40.000 circumstances we use different

NOTE Confidence: 0.87571305

00:17:40.056 --> 00:17:41.886 radiation technologies, which we

NOTE Confidence: 0.87571305

00:17:41.886 --> 00:17:44.322 think are best for the specific site.

NOTE Confidence: 0.87571305

00:17:44.330 --> 00:17:45.626 So for instance,

NOTE Confidence: 0.87571305

00:17:45.626 --> 00:17:48.218 when we treat an esophagus cancer,

NOTE Confidence: 0.87571305

00:17:48.220 --> 00:17:49.948 what's always on our mind is

NOTE Confidence: 0.87571305

00:17:49.948 --> 00:17:52.635 how do we treat the tumor while

NOTE Confidence: 0.87571305

00:17:52.635 --> 00:17:54.105 minimizing radiation therapy

NOTE Confidence: 0.87571305

00:17:54.110 --> 00:17:56.318 dose to organs like the heart,

NOTE Confidence: 0.87571305

00:17:56.320 --> 00:17:58.840 lungs, liver or even kidneys?

NOTE Confidence: 0.87571305

00:17:58.840 --> 00:18:01.556 Whereas when we're down in the pelvis

NOTE Confidence: 0.87571305

00:18:01.556 --> 00:18:04.560 treating a rectal cancer or an anal cancer,

NOTE Confidence: 0.87571305

00:18:04.560 --> 00:18:06.750 we worry about the radiation effects

NOTE Confidence: 0.87571305

00:18:06.750 --> 00:18:08.673 on the bowel, bladder, genitalia

NOTE Confidence: 0.87571305

00:18:08.673 --> 00:18:10.648 and bones like the femur

NOTE Confidence: 0.87571305

00:18:10.650 --> 00:18:13.698 which can be at risk of weakening or

NOTE Confidence: 0.87571305

00:18:13.698 --> 00:18:15.508 developing fractures as patients get

NOTE Confidence: 0.87571305

00:18:15.508 --> 00:18:18.290 older and there's a lot of nuance and

NOTE Confidence: 0.87571305

00:18:18.290 --> 00:18:20.395 art in how a radiation oncologist

NOTE Confidence: 0.87571305

00:18:20.395 --> 00:18:23.043 designs those fields and is in part

NOTE Confidence: 0.87571305

00:18:23.043 --> 00:18:25.290 why it's nice to have a specialty

NOTE Confidence: 0.87571305

00:18:25.365 --> 00:18:28.209 team involved in the care because

NOTE Confidence: 0.87571305

00:18:28.209 --> 00:18:30.105 there's such tremendous nuance

NOTE Confidence: 0.87571305

00:18:30.110 --> 00:18:32.624 in radiation therapy design and the

NOTE Confidence: 0.87571305

00:18:32.624 --> 00:18:35.050 technical specifics of the treatment,

NOTE Confidence: 0.87571305

00:18:35.050 --> 00:18:37.250 somewhat analogous to the expertise

NOTE Confidence: 0.87571305

00:18:37.250 --> 00:18:39.985 you may have from a surgical

NOTE Confidence: 0.87571305

00:18:39.985 --> 00:18:41.777 team as they design

NOTE Confidence: 0.8719969

00:18:41.780 --> 00:18:44.050 a complex surgical operation.

NOTE Confidence: 0.8719969

00:18:44.050 --> 00:18:47.170 And timing is the other issue too, right?

NOTE Confidence: 0.8719969

00:18:47.170 --> 00:18:48.520 So sometimes radiation

NOTE Confidence: 0.8719969

00:18:48.520 --> 00:18:50.320 is given before surgery,

NOTE Confidence: 0.8719969

00:18:50.320 --> 00:18:53.008 and sometimes it's given after surgery.

NOTE Confidence: 0.8719969

00:18:53.010 --> 00:18:55.698 How do you decide which way that works?

NOTE Confidence: 0.8719969

00:18:55.700 --> 00:18:58.646 For most of the

NOTE Confidence: 0.8719969

00:18:58.646 --> 00:19:00.119 gastrointestinal cancers we've

NOTE Confidence: 0.8719969

00:19:00.120 --> 00:19:02.320 through much research learned

NOTE Confidence: 0.8719969

00:19:02.320 --> 00:19:04.520 that delivering radiation therapy

NOTE Confidence: 0.8719969

00:19:04.520 --> 00:19:07.529 prior to a surgery is beneficial.

NOTE Confidence: 0.8719969

00:19:07.530 --> 00:19:09.610 And often that also includes

NOTE Confidence: 0.8719969

00:19:09.610 --> 00:19:11.690 delivery of the systemic treatment,

NOTE Confidence: 0.8719969

00:19:11.690 --> 00:19:13.770 the chemotherapy before the operation,

NOTE Confidence: 0.8719969

00:19:13.770 --> 00:19:15.845 and we've learned that we

NOTE Confidence: 0.8719969

00:19:15.845 --> 00:19:17.505 improve the cancer control.

NOTE Confidence: 0.8719969

00:19:17.510 --> 00:19:19.058 And in many instances,

NOTE Confidence: 0.8719969

00:19:19.058 --> 00:19:20.993 the survival of patients by

NOTE Confidence: 0.8719969

00:19:20.993 --> 00:19:23.221 delivering both of those treatment

NOTE Confidence: 0.8719969

00:19:23.221 --> 00:19:24.997 techniques before the operation.

NOTE Confidence: 0.8719969

00:19:25.000 --> 00:19:27.080 And that includes esophagus cancer,

NOTE Confidence: 0.8719969

00:19:27.080 --> 00:19:28.325 stomach cancers,

NOTE Confidence: 0.8719969

00:19:28.325 --> 00:19:29.985 pancreas, and rectal cancers,

NOTE Confidence: 0.8719969

00:19:29.990 --> 00:19:32.060 each of which we treat with

NOTE Confidence: 0.8719969

00:19:32.060 --> 00:19:34.092 therapy prior to the operation

NOTE Confidence: 0.8719969

00:19:34.092 --> 00:19:36.230 in many circumstances, and

NOTE Confidence: 0.87105453

00:19:36.230 --> 00:19:38.828 one can imagine that doing so

NOTE Confidence: 0.87105453

00:19:38.830 --> 00:19:41.810 might reduce the tumor burden.

NOTE Confidence: 0.87105453

00:19:41.810 --> 00:19:44.162 But how does that affect scaring

NOTE Confidence: 0.87105453

00:19:44.162 --> 00:19:46.120 for the surgeons?

NOTE Confidence: 0.8516787

00:19:46.120 --> 00:19:48.346 There's many beneficial effects of delivering the

NOTE Confidence: 0.8516787

00:19:48.346 --> 00:19:50.430 radiation therapy or chemotherapy beforehand,

NOTE Confidence: 0.8516787

00:19:50.430 --> 00:19:53.406 one of which is that we can actually

NOTE Confidence: 0.8516787

00:19:53.406 --> 00:19:56.222 see the tumor, rather than treating an

NOTE Confidence: 0.8516787

00:19:56.222 --> 00:19:59.060 area where the tumor has been removed.

NOTE Confidence: 0.8516787

00:19:59.060 --> 00:20:02.586 When we can see the tumor, we can focus

NOTE Confidence: 0.8516787

00:20:02.586 --> 00:20:04.546 the radiation beams more specifically,

NOTE Confidence: 0.8516787

00:20:04.550 --> 00:20:07.070 and often the area that we have to

NOTE Confidence: 0.8516787

00:20:07.070 --> 00:20:09.347 treat is considerably smaller when

NOTE Confidence: 0.8516787

00:20:09.347 --> 00:20:12.479 delivered in the pre surgical setting.

NOTE Confidence: 0.8516787

00:20:12.480 --> 00:20:14.650 That allows us to reduce the side

NOTE Confidence: 0.8516787

00:20:14.650 --> 00:20:17.130 effects that a patient may experience.

NOTE Confidence: 0.8516787

00:20:17.130 --> 00:20:19.836 Additionally, by shrinking down the tumor,

NOTE Confidence: 0.8516787

00:20:19.840 --> 00:20:23.432 it is often easier or more effective for

NOTE Confidence: 0.8516787

00:20:23.432 --> 00:20:27.225 the surgeon to remove all of the tumor

NOTE Confidence: 0.8516787

00:20:27.225 --> 00:20:30.389 with negative margins after the operation.

NOTE Confidence: 0.8516787

00:20:30.390 --> 00:20:33.670 And after doing this for decades and having

NOTE Confidence: 0.8516787

00:20:33.670 --> 00:20:36.297 clinical trials look at this for decades,

NOTE Confidence: 0.8516787

00:20:36.300 --> 00:20:39.191 there doesn't seem to be a dramatic

NOTE Confidence: 0.8516787

00:20:39.191 --> 00:20:41.237 difference in complications from the

NOTE Confidence: 0.8516787

00:20:41.237 --> 00:20:43.072 operation when it's done effectively

NOTE Confidence: 0.8516787

00:20:43.072 --> 00:20:44.173 as part of

NOTE Confidence: 0.8926751

00:20:44.180 --> 00:20:45.756 a multi disciplinary team.

NOTE Confidence: 0.8926751

00:20:45.756 --> 00:20:47.726 And yet in some cancers,

NOTE Confidence: 0.8926751

00:20:47.730 --> 00:20:48.906 radiation is frequently

NOTE Confidence: 0.8926751

00:20:48.906 --> 00:20:50.474 given after the surgery.

NOTE Confidence: 0.8926751

00:20:50.480 --> 00:20:52.850 So you had mentioned, for example,

NOTE Confidence: 0.8926751

00:20:52.850 --> 00:20:54.735 in breast cancer we generally

NOTE Confidence: 0.8926751

00:20:54.735 --> 00:20:56.243 give radiation therapy after

NOTE Confidence: 0.8926751

00:20:56.243 --> 00:20:57.968 the surgery is completed.

NOTE Confidence: 0.8926751

00:20:57.970 --> 00:21:00.460 So why is that?

NOTE Confidence: 0.8730454

00:21:00.460 --> 00:21:02.230 There's a number of reasons for that,

NOTE Confidence: 0.8730454

00:21:02.230 --> 00:21:04.582 and I think in the breast cancer

NOTE Confidence: 0.8730454

00:21:04.582 --> 00:21:05.982 community, now acknowledging I'm

NOTE Confidence: 0.8730454

00:21:05.982 --> 00:21:07.617 not a breast cancer specialist,

NOTE Confidence: 0.8730454

00:21:07.620 --> 00:21:09.480 but the typical paradigm has

NOTE Confidence: 0.8730454

00:21:09.480 --> 00:21:11.340 been to do surgery first,

NOTE Confidence: 0.8730454

00:21:11.340 --> 00:21:14.343 in part for concern of wound complications

NOTE Confidence: 0.8730454

00:21:14.343 --> 00:21:16.800 that may develop along the skin.

NOTE Confidence: 0.8730454

00:21:16.800 --> 00:21:19.856 And in part because it's nice to have

NOTE Confidence: 0.8730454

00:21:19.856 --> 00:21:22.532 an opportunity to look at the cancer

NOTE Confidence: 0.8730454

00:21:22.532 --> 00:21:24.807 under the microscope and see the

NOTE Confidence: 0.8730454

00:21:24.807 --> 00:21:27.687 extent of spread so that we can better

NOTE Confidence: 0.8730454

00:21:27.687 --> 00:21:29.550 design our radiation therapy fields.

NOTE Confidence: 0.8334995

00:21:30.300 --> 00:21:32.670 So it sounds like there's good

NOTE Confidence: 0.8334995

00:21:32.670 --> 00:21:35.917 reasons in GI cancer to do it before

NOTE Confidence: 0.8334995

00:21:35.917 --> 00:21:37.897 good reasons in breast cancer

NOTE Confidence: 0.8334995

00:21:37.900 --> 00:21:39.408 to do it afterwards.

NOTE Confidence: 0.8334995

00:21:39.408 --> 00:21:43.099 So it seems to be really dependent on the

NOTE Confidence: 0.8334995

00:21:43.100 --> 00:21:45.100 tumor itself.

NOTE Confidence: 0.8334995

00:21:45.100 --> 00:21:47.500 And individual patients and again

NOTE Confidence: 0.8334995

00:21:47.500 --> 00:21:48.776 this emphasizes why being

NOTE Confidence: 0.8334995

00:21:48.776 --> 00:21:50.690 seen and cared for amongst a

NOTE Confidence: 0.8334995

00:21:50.750 --> 00:21:52.700 multidisciplinary specialty team,

NOTE Confidence: 0.8334995

00:21:52.700 --> 00:21:56.237 such as that we have at Yale is

NOTE Confidence: 0.8334995

00:21:56.237 --> 00:21:59.099 really so critical in the care of

NOTE Confidence: 0.8334995

00:21:59.100 --> 00:22:01.100 our patients.

NOTE Confidence: 0.8334995

00:22:01.100 --> 00:22:02.597 And you mentioned clinical trials

NOTE Confidence: 0.8334995

00:22:02.597 --> 00:22:05.092 adding to the evidence

NOTE Confidence: 0.8334995

00:22:05.092 --> 00:22:08.476 that we have in terms of what we

NOTE Confidence: 0.8334995

00:22:08.476 --> 00:22:10.539 know works versus doesn't work

NOTE Confidence: 0.8334995

00:22:10.539 --> 00:22:12.779 in terms of radiation therapy.

NOTE Confidence: 0.8334995

00:22:12.780 --> 00:22:14.995 Are there ongoing clinical trials

NOTE Confidence: 0.8334995

00:22:14.995 --> 00:22:17.210 that you're particularly excited about?

NOTE Confidence: 0.8622672

00:22:17.210 --> 00:22:19.420 There's so many.

NOTE Confidence: 0.8622672

00:22:19.420 --> 00:22:21.922 My interests are in using multiple

NOTE Confidence: 0.8622672

00:22:21.922 --> 00:22:24.593 methods of patient and cancer response

NOTE Confidence: 0.8622672

00:22:24.593 --> 00:22:27.834 assessment to guide the care of patients,

NOTE Confidence: 0.8622672

00:22:27.840 --> 00:22:31.218 and that can include advanced imaging.

NOTE Confidence: 0.8622672

00:22:31.220 --> 00:22:35.336 It can involve tumor genetics or genomics.

NOTE Confidence: 0.8622672

00:22:35.340 --> 00:22:39.020 It can include specific targets on a cancer

NOTE Confidence: 0.8622672

00:22:39.020 --> 00:22:42.730 cell that may be targeted by medications.

NOTE Confidence: 0.8622672

00:22:42.730 --> 00:22:44.809 Or it can be specific blood tests

NOTE Confidence: 0.8622672

00:22:44.809 --> 00:22:47.004 that guide the prognosis for patients.

NOTE Confidence: 0.8622672

00:22:47.004 --> 00:22:49.074 Potential therapies for patients

NOTE Confidence: 0.8622672

00:22:49.074 --> 00:22:51.329 can also involve immunotherapy,

NOTE Confidence: 0.8622672

00:22:51.330 --> 00:22:53.285 and specifically in GI cancers

NOTE Confidence: 0.8622672

00:22:53.285 --> 00:22:54.458 we've been utilizing

NOTE Confidence: 0.8622672

00:22:54.460 --> 00:22:56.140 each of those techniques to

NOTE Confidence: 0.8622672

00:22:56.140 --> 00:22:57.820 help risk stratify and guide

NOTE Confidence: 0.8622672

00:22:57.886 --> 00:22:59.930 patients for subsequent therapies.

NOTE Confidence: 0.8622672

00:22:59.930 --> 00:23:02.384 And it's so exciting because many

NOTE Confidence: 0.8622672

00:23:02.384 --> 00:23:04.458 of these developments are relatively

NOTE Confidence: 0.8622672

00:23:04.458 --> 00:23:07.354 recent in the past five to 10 years,

NOTE Confidence: 0.8622672

00:23:07.360 --> 00:23:10.104 and we're really seeing some of the

NOTE Confidence: 0.8622672

00:23:10.104 --> 00:23:12.900 fruits of these clinical trials now.

NOTE Confidence: 0.8622672

00:23:12.900 --> 00:23:15.735 Our major cancer conference is ASCO

00:23:18.190 --> 00:23:20.623 and it's exciting seeing some of the new

NOTE Confidence: 0.8622672

00:23:20.623 --> 00:23:22.363 clinical trial developments that

NOTE Confidence: 0.8622672

00:23:22.363 --> 00:23:24.650 really improve the survival,

NOTE Confidence: 0.8622672

00:23:24.650 --> 00:23:27.478 but also the quality of life for

NOTE Confidence: 0.86764556

00:23:27.480 --> 00:23:30.315 our patients as they go through therapy.

NOTE Confidence: 0.86764556

00:23:30.320 --> 00:23:33.148 Do you think that these novel markers,

NOTE Confidence: 0.86764556

00:23:33.150 --> 00:23:34.236 the genomic markers,

NOTE Confidence: 0.86764556

00:23:34.236 --> 00:23:36.770 the biomarkers that we're using to tailor

NOTE Confidence: 0.86764556

00:23:36.833 --> 00:23:38.817 chemotherapy and systemic therapy,

NOTE Confidence: 0.86764556

00:23:38.820 --> 00:23:40.680 for example, might actually play

NOTE Confidence: 0.86764556

00:23:40.680 --> 00:23:43.280 a role in terms of deciding,

NOTE Confidence: 0.86764556

00:23:43.280 --> 00:23:46.110 for example, whether radiation therapy

NOTE Confidence: 0.86764556

00:23:46.110 --> 00:23:48.602 should be used or not or what

NOTE Confidence: 0.86764556

00:23:48.602 --> 00:23:50.280 kind of radiation therapy

NOTE Confidence: 0.87248236

00:23:50.280 --> 00:23:52.170 I completely do.

NOTE Confidence: 0.87248236

00:23:52.170 --> 00:23:54.746 I think we're learning so much more

NOTE Confidence: 0.87248236

00:23:54.746 --> 00:23:56.690 about the prognosis of patients

NOTE Confidence: 0.87248236

00:23:56.690 --> 00:23:59.000 and the pathways of cancer spread,

NOTE Confidence: 0.87248236

00:23:59.000 --> 00:24:01.112 which does seem to be influenced

NOTE Confidence: 0.87248236

00:24:01.112 --> 00:24:03.170 by each of these factors,

NOTE Confidence: 0.87248236

00:24:03.170 --> 00:24:05.222 and we're learning how to select

NOTE Confidence: 0.87248236

00:24:05.222 --> 00:24:07.090 patients who may derive more

NOTE Confidence: 0.87248236

00:24:07.090 --> 00:24:08.846 benefit from radiation therapy.

NOTE Confidence: 0.87248236

00:24:08.850 --> 00:24:11.052 And on the contrary, we're learning

NOTE Confidence: 0.87248236

00:24:11.052 --> 00:24:13.400 patients who may derive less benefit,

NOTE Confidence: 0.87248236

00:24:13.400 --> 00:24:16.214 and that in itself is rewarding because

NOTE Confidence: 0.87248236

00:24:16.220 --> 00:24:18.452 that provides an opportunity for a

NOTE Confidence: 0.87248236

00:24:18.452 --> 00:24:20.889 radiation oncologist to help treat patients,

NOTE Confidence: 0.87248236

00:24:20.890 --> 00:24:24.780 but know that if they do have a side effect,

NOTE Confidence: 0.87248236

00:24:24.780 --> 00:24:27.342 it was a side effect that developed in a

NOTE Confidence: 0.87248236

00:24:27.342 --> 00:24:29.838 patient that really needed the treatment.

NOTE Confidence: 0.87248236

00:24:29.840 --> 00:24:31.755 Those who derive less benefit

NOTE Confidence: 0.87248236

00:24:31.755 --> 00:24:34.500 can be spared many of those side

NOTE Confidence: 0.86517096

00:24:34.500 --> 00:24:35.532 effects of therapy.

NOTE Confidence: 0.86517096

00:24:35.532 --> 00:24:37.596 And what about figuring out which

NOTE Confidence: 0.86517096

00:24:37.596 --> 00:24:39.319 tumors are more radiosensitive

NOTE Confidence: 0.86517096

00:24:39.319 --> 00:24:41.509 versus those that are radioresistant?

NOTE Confidence: 0.86517096

00:24:41.510 --> 00:24:43.410 Are there techniques that we

NOTE Confidence: 0.86517096

00:24:43.410 --> 00:24:46.280 can use that will help us to

NOTE Confidence: 0.86517096

00:24:46.280 --> 00:24:48.068 deliver radiation therapy to

NOTE Confidence: 0.86517096

00:24:48.070 --> 00:24:50.886 tumors that might not be as sensitive to it?

NOTE Confidence: 0.8655079

00:24:50.890 --> 00:24:53.236 Yeah, this is another very

NOTE Confidence: 0.8655079

00:24:53.236 --> 00:24:54.800 interesting area of research

NOTE Confidence: 0.8655079

00:24:54.869 --> 00:24:56.699 which I think we've really just

NOTE Confidence: 0.8655079

00:24:56.699 --> 00:24:58.978 hit the tip of the iceberg on.

NOTE Confidence: 0.8655079

00:24:58.980 --> 00:25:00.740 We're learning that genomics or

NOTE Confidence: 0.8655079

00:25:00.740 --> 00:25:02.500 tumor genetics has an impact.

NOTE Confidence: 0.8655079

00:25:02.500 --> 00:25:04.195 We're learning that the tissue

NOTE Confidence: 0.8655079

00:25:04.195 --> 00:25:06.370 surrounding a tumor has an impact,

NOTE Confidence: 0.8655079

00:25:06.370 --> 00:25:08.365 and I do think that with more

NOTE Confidence: 0.8655079

00:25:08.365 --> 00:25:10.481 time we'll learn how to combine

NOTE Confidence: 0.8655079

00:25:10.481 --> 00:25:12.069 new medications with radiation

NOTE Confidence: 0.8655079

00:25:12.069 --> 00:25:14.047 therapy to improve cancer control

NOTE Confidence: 0.8655079

00:25:14.047 --> 00:25:16.567 and will learn that there may be

NOTE Confidence: 0.8655079

00:25:16.567 --> 00:25:18.162 differences in radiation therapy dose.

NOTE Confidence: 0.8655079

00:25:18.162 --> 00:25:20.426 Or areas that we need to treat

NOTE Confidence: 0.8655079

00:25:20.426 --> 00:25:21.826 to derive more benefit.

NOTE Confidence: 0.8655079

00:25:21.830 --> 00:25:22.998 But like I said,

NOTE Confidence: 0.8655079

00:25:22.998 --> 00:25:24.750 it's really the tip of the

NOTE Confidence: 0.8655079

00:25:24.825 --> 00:25:27.135 iceberg in regards to that area of

NOTE Confidence: 0.87531376

00:25:27.140 --> 00:25:28.700 research, which is really exciting.

NOTE Confidence: 0.87531376

00:25:28.700 --> 00:25:31.188 And so as we think about radiation therapy,

NOTE Confidence: 0.87531376

00:25:31.190 --> 00:25:33.470 I mean thus far we've really been talking

NOTE Confidence: 0.87531376

00:25:33.470 --> 00:25:35.760 about using radiation as part of a

NOTE Confidence: 0.87531376

00:25:35.760 --> 00:25:37.425 treatment paradigm for curative intent.

NOTE Confidence: 0.87531376

00:25:37.430 --> 00:25:39.726 But you had mentioned early on at the

NOTE Confidence: 0.87531376

00:25:39.726 --> 00:25:41.624 beginning of the show that radiation

NOTE Confidence: 0.87531376

00:25:41.624 --> 00:25:43.980 can also be used for palliative intent.

NOTE Confidence: 0.87531376

00:25:43.980 --> 00:25:45.751 Can you tell us a little bit

NOTE Confidence: 0.87531376

00:25:45.751 --> 00:25:47.350 more about how radiation therapy

NOTE Confidence: 0.87531376

00:25:47.350 --> 00:25:49.285 is used for symptom control?

NOTE Confidence: 0.8710075

00:25:50.040 --> 00:25:51.688 Radiation therapy is very

NOTE Confidence: 0.8710075

00:25:51.688 --> 00:25:53.336 effective at symptom control,

NOTE Confidence: 0.8710075

00:25:53.340 --> 00:25:56.292 and I tend to quote that about 2/3 or

NOTE Confidence: 0.8710075

00:25:56.292 --> 00:25:59.086 more of patients will derive a benefit.

NOTE Confidence: 0.8710075

00:25:59.086 --> 00:26:02.400 In regards to the specific indications,

NOTE Confidence: 0.8710075

00:26:02.400 --> 00:26:05.480 often it's for pain control when cancer

NOTE Confidence: 0.8710075

00:26:05.480 --> 00:26:07.758 has spread elsewhere in the body,

NOTE Confidence: 0.8710075

00:26:07.760 --> 00:26:10.035 or if it's causing pain in its

NOTE Confidence: 0.8710075

00:26:10.035 --> 00:26:11.894 original site of development or

NOTE Confidence: 0.8710075

00:26:11.894 --> 00:26:14.330 radiation therapy can be used to

NOTE Confidence: 0.8710075

00:26:14.330 --> 00:26:16.788 help prevent organ dysfunction or

NOTE Confidence: 0.8710075

00:26:16.788 --> 00:26:18.880 complications from cancer growth.

NOTE Confidence: 0.8710075

00:26:18.880 --> 00:26:19.700 What do

NOTE Confidence: 0.8710075

00:26:19.700 --> 00:26:21.760 you mean by organ dysfunction?

NOTE Confidence: 0.8772873

00:26:21.930 --> 00:26:24.602 So a common situation that we end up

NOTE Confidence: 0.8772873

00:26:24.602 --> 00:26:27.688 seeing is if cancer has spread to a bone

NOTE Confidence: 0.8772873

00:26:27.688 --> 00:26:30.587 like the spinal column or vertebral body,

NOTE Confidence: 0.8772873

00:26:30.590 --> 00:26:33.425 that cancer can actually grow into the

NOTE Confidence: 0.8772873

00:26:33.425 --> 00:26:35.871 spinal canal and start applying pressure

NOTE Confidence: 0.8772873

00:26:35.871 --> 00:26:39.150 to the spinal cord or to the nerves.

NOTE Confidence: 0.8772873

00:26:39.150 --> 00:26:39.926 And unfortunately,

NOTE Confidence: 0.8772873

00:26:39.926 --> 00:26:43.030 one of the consequences of that is that

NOTE Confidence: 0.8772873

00:26:43.102 --> 00:26:45.268 patients can develop weakness in their

NOTE Confidence: 0.8772873

00:26:45.268 --> 00:26:47.604 legs or in some circumstances even

NOTE Confidence: 0.8772873

00:26:47.604 --> 00:26:50.467 the inability to walk because of it.

NOTE Confidence: 0.8772873

00:26:50.470 --> 00:26:52.510 Radiation therapy can slow down and

NOTE Confidence: 0.8772873

00:26:52.510 --> 00:26:54.936 shrink the cancer in those bones and

NOTE Confidence: 0.8772873

00:26:54.936 --> 00:26:56.940 really help relieve the pressure on

NOTE Confidence: 0.8772873

00:26:56.940 --> 00:26:59.098 the spinal canal or those nerves.

NOTE Confidence: 0.8772873

00:26:59.100 --> 00:27:01.260 And sometimes that's done in combination

NOTE Confidence: 0.8772873

00:27:01.260 --> 00:27:03.240 with surgery and sometimes it's not.

NOTE Confidence: 0.8772873

00:27:03.240 --> 00:27:04.960 We use radiation therapy alone

NOTE Confidence: 0.8772873

00:27:04.960 --> 00:27:06.336 and it's quite effective.

NOTE Confidence: 0.8772873

00:27:06.340 --> 00:27:08.070 One of the

NOTE Confidence: 0.8688339

00:27:08.070 --> 00:27:10.128 things that's so interesting you had

NOTE Confidence: 0.8688339

00:27:10.128 --> 00:27:11.892 mentioned earlier that when you're

NOTE Confidence: 0.8688339

00:27:11.892 --> 00:27:13.587 giving radiation in the pelvis,

NOTE Confidence: 0.8688339

00:27:13.590 --> 00:27:15.893 one of the things you worry about

NOTE Confidence: 0.8688339

00:27:15.893 --> 00:27:18.420 is the side effects on the bone.

NOTE Confidence: 0.8688339

00:27:18.420 --> 00:27:20.958 That radiation could weaken the bone.

NOTE Confidence: 0.8688339

00:27:20.960 --> 00:27:23.528 And yet, at the same time,

NOTE Confidence: 0.8688339

00:27:23.530 --> 00:27:26.110 when we see patients who have,

NOTE Confidence: 0.8688339

00:27:26.110 --> 00:27:28.070 for example, bone metastases,

NOTE Confidence: 0.8688339

00:27:28.070 --> 00:27:30.520 we frequently will use radiation

NOTE Confidence: 0.8688339

00:27:30.520 --> 00:27:32.970 therapy not only to help with pain,

NOTE Confidence: 0.8688339

00:27:32.970 --> 00:27:36.043 but sometimes even to help with patients

NOTE Confidence: 0.8688339

00:27:36.043 --> 00:27:39.198 who might have an impending fracture.

NOTE Confidence: 0.8688339

00:27:39.200 --> 00:27:41.360 Tell me about how that works.

NOTE Confidence: 0.8688339

00:27:41.360 --> 00:27:43.160 That seems to be a dichotomy.

NOTE Confidence: 0.85057867

00:27:43.160 --> 00:27:45.320 Yeah, that's a good question.

NOTE Confidence: 0.85057867

00:27:45.320 --> 00:27:47.840 When I see patients with bone metastases,

NOTE Confidence: 0.85057867

00:27:47.840 --> 00:27:50.360 the common questions I ask myself are,

NOTE Confidence: 0.85057867

00:27:50.360 --> 00:27:52.593 is this metastasis in a bone that

NOTE Confidence: 0.85057867

00:27:52.593 --> 00:27:54.436 is involved in weight bearing

NOTE Confidence: 0.85057867

00:27:54.436 --> 00:27:56.476 like the femurs for example?

NOTE Confidence: 0.85057867

00:27:56.480 --> 00:27:59.168 Or how much of the bone seems to

NOTE Confidence: 0.85057867

00:27:59.168 --> 00:28:01.517 be destroyed because of the cancer?

NOTE Confidence: 0.85057867

00:28:01.520 --> 00:28:04.032 If I do think of patients at very

NOTE Confidence: 0.85057867

00:28:04.032 --> 00:28:06.558 high risk of developing a fracture,

NOTE Confidence: 0.85057867

00:28:06.560 --> 00:28:09.688 I do ask my colleagues in orthopedic surgery

NOTE Confidence: 0.85057867

00:28:09.690 --> 00:28:12.346 or neurosurgery to see the patients as well.

NOTE Confidence: 0.85057867

00:28:12.350 --> 00:28:14.786 Because I do think that surgery

NOTE Confidence: 0.85057867

00:28:14.786 --> 00:28:16.410 can sometimes be warranted.

NOTE Confidence: 0.85057867

00:28:16.410 --> 00:28:18.986 In others where it's not a weight

NOTE Confidence: 0.85057867

00:28:18.986 --> 00:28:21.269 bearing joint or an area that's

NOTE Confidence: 0.85057867

00:28:21.270 --> 00:28:23.568 involved in a lot of mechanical

NOTE Confidence: 0.85057867

00:28:23.568 --> 00:28:25.550 strain then radiation therapy is

NOTE Confidence: 0.85057867

00:28:25.550 --> 00:28:27.465 very effective at shrinking the

NOTE Confidence: 0.85057867

00:28:27.465 --> 00:28:29.190 cancer and getting control of pain.

NOTE Confidence: 0.86678976

00:28:29.190 --> 00:28:31.578 Doctor Krishan Jethwa is an

NOTE Confidence: 0.86678976

00:28:31.578 --> 00:28:33.170 assistant professor of therapeutic

NOTE Confidence: 0.86678976

00:28:33.232 --> 00:28:35.598 radiology at the Yale School of Medicine.

NOTE Confidence: 0.86678976

00:28:35.600 --> 00:28:37.112 If you have questions,

NOTE Confidence: 0.86678976

00:28:37.112 --> 00:28:38.624 the address is canceranswers@yale.edu

NOTE Confidence: 0.86678976

00:28:38.624 --> 00:28:40.713 and past editions of the program

NOTE Confidence: 0.86678976

00:28:40.713 --> 00:28:42.621 are available in audio and written

NOTE Confidence: 0.86678976

00:28:42.679 --> 00:28:44.269 form at yalecancercenter.org.

NOTE Confidence: 0.86678976

00:28:44.270 --> 00:28:46.766 We hope you'll join us next week to

NOTE Confidence: 0.86678976

00:28:46.766 --> 00:28:49.199 learn more about the fight against

NOTE Confidence: 0.86678976

00:28:49.199 --> 00:28:51.803 cancer here on Connecticut Public Radio.

NOTE Confidence: 0.78609216

00:28:54.870 --> 00:28:57.754 Support for Yale Cancer Answers comes from

NOTE Confidence: 0.78609216

00:28:57.754 --> 00:29:00.071 Smilow Cancer Hospital and AstraZeneca.