

WEBVTT

NOTE duration:"00:41:18.1500000"

NOTE language:en-us

NOTE Confidence: 0.979712

00:00:00.000 --> 00:00:02.768 Hey there, thanks for your interest in doing

NOTE Confidence: 0.979712

00:00:02.768 --> 00:00:05.596 a scanning ship with us in the pediatric Ed.

NOTE Confidence: 0.979712

00:00:05.600 --> 00:00:07.714 We thought it likely be useful to

NOTE Confidence: 0.979712

00:00:07.714 --> 00:00:09.269 have an introductory lecture provided

NOTE Confidence: 0.979712

00:00:09.269 --> 00:00:11.637 before your shift so they can have a

NOTE Confidence: 0.979712

00:00:11.699 --> 00:00:13.511 little bit of background information to

NOTE Confidence: 0.979712

00:00:13.511 --> 00:00:16.100 use as a guide when you're doing your

NOTE Confidence: 0.979712

00:00:16.100 --> 00:00:18.650 hands on scanning with us on shift.

NOTE Confidence: 0.979712

00:00:18.650 --> 00:00:22.619 Maybe after they do their next slide.

NOTE Confidence: 0.979712

00:00:22.620 --> 00:00:24.370 So this intro presentation hopefully

NOTE Confidence: 0.979712

00:00:24.370 --> 00:00:26.808 will be able to view your scanning

NOTE Confidence: 0.979712

00:00:26.808 --> 00:00:29.312 shift and then it'll give you a brief

NOTE Confidence: 0.979712

00:00:29.376 --> 00:00:31.186 introduction to some key concepts

NOTE Confidence: 0.979712

00:00:31.186 --> 00:00:33.572 that you're going to need to be

NOTE Confidence: 0.979712

00:00:33.572 --> 00:00:35.860 clearly with most in order to be good

NOTE Confidence: 0.979712

00:00:35.928 --> 00:00:37.923 at getting images and interpreting

NOTE Confidence: 0.979712

00:00:37.923 --> 00:00:39.918 the images on the screen.

NOTE Confidence: 0.979712

00:00:39.920 --> 00:00:42.184 So we'll have to delve into a little

NOTE Confidence: 0.979712

00:00:42.184 --> 00:00:44.760 bit and some basic ultrasound physics.

NOTE Confidence: 0.979712

00:00:44.760 --> 00:00:47.094 We're going to talk about scamming

NOTE Confidence: 0.979712

00:00:47.094 --> 00:00:49.536 concepts that are related to the type

NOTE Confidence: 0.979712

00:00:49.536 --> 00:00:52.030 of probe that you use with you forever.

NOTE Confidence: 0.979712

00:00:52.030 --> 00:00:52.834 Transducer orientation.

NOTE Confidence: 0.979712

00:00:52.834 --> 00:00:55.261 On the screen, some function apps

NOTE Confidence: 0.979712

00:00:55.261 --> 00:00:57.296 and functionality such as color,

NOTE Confidence: 0.979712

00:00:57.300 --> 00:00:58.410 Doppler depth gain,

NOTE Confidence: 0.979712

00:00:58.410 --> 00:01:01.456 things like that and nobody is an idea

NOTE Confidence: 0.979712

00:01:01.456 --> 00:01:04.144 of all these different functions as it

NOTE Confidence: 0.979712

00:01:04.144 --> 00:01:06.658 pertains to your particular machine.

NOTE Confidence: 0.979712

00:01:06.660 --> 00:01:09.810 So this is something that is
NOTE Confidence: 0.979712

00:01:09.810 --> 00:01:12.719 often the rate limiting Step 4.
NOTE Confidence: 0.979712

00:01:12.720 --> 00:01:14.925 Sonologist or positions were using
NOTE Confidence: 0.979712

00:01:14.925 --> 00:01:17.611 Hope Sam to get comfortable at
NOTE Confidence: 0.979712

00:01:17.611 --> 00:01:19.626 that doing winter care studies.
NOTE Confidence: 0.979712

00:01:19.630 --> 00:01:21.170 And then you know,
NOTE Confidence: 0.979712

00:01:21.170 --> 00:01:23.480 do the limited nature of trying
NOTE Confidence: 0.979712

00:01:23.564 --> 00:01:25.028 to keep this short.
NOTE Confidence: 0.979712

00:01:25.030 --> 00:01:25.804 Few guys,
NOTE Confidence: 0.979712

00:01:25.804 --> 00:01:28.126 there's tons of other resources we
NOTE Confidence: 0.979712

00:01:28.126 --> 00:01:31.208 can tap into focus at least 5 minutes,
NOTE Confidence: 0.979712

00:01:31.210 --> 00:01:33.140 so no additional podcast picture,
NOTE Confidence: 0.979712

00:01:33.140 --> 00:01:35.474 video based teaching materials and alien
NOTE Confidence: 0.979712

00:01:35.474 --> 00:01:38.537 as well has some case based or person.
NOTE Confidence: 0.9732856

00:01:51.580 --> 00:01:54.870 So you know our goals for when we do this.
NOTE Confidence: 0.9732856

00:01:54.870 --> 00:01:56.772 Standing just together is just spend

NOTE Confidence: 0.9732856

00:01:56.772 --> 00:01:59.450 a little bit time to teach how to

NOTE Confidence: 0.9732856

00:01:59.450 --> 00:02:01.040 perform quality control, percent scans.

NOTE Confidence: 0.9732856

00:02:01.040 --> 00:02:03.360 And it's nice to have a dedicated time

NOTE Confidence: 0.9732856

00:02:03.421 --> 00:02:05.932 pressure that to do this so we don't have

NOTE Confidence: 0.9732856

00:02:05.932 --> 00:02:08.297 competing interests and other clinical care

NOTE Confidence: 0.9732856

00:02:08.297 --> 00:02:10.322 needs that are happening simultaneously.

NOTE Confidence: 0.9732856

00:02:10.330 --> 00:02:12.780 So we can really spend the time

NOTE Confidence: 0.9732856

00:02:12.780 --> 00:02:15.248 to go over the approach to.

NOTE Confidence: 0.9732856

00:02:15.250 --> 00:02:17.758 Patient how to integrate family members

NOTE Confidence: 0.9732856

00:02:17.758 --> 00:02:21.380 and some tricks to make things a little bit

NOTE Confidence: 0.9732856

00:02:21.380 --> 00:02:24.119 easier and smoother for for this games.

NOTE Confidence: 0.9732856

00:02:24.120 --> 00:02:27.830 And we talked a lot about what our role is

NOTE Confidence: 0.9732856

00:02:27.922 --> 00:02:31.370 in terms of binary yes or no questions.

NOTE Confidence: 0.9732856

00:02:31.370 --> 00:02:34.586 And then we're doing over summer the bedside.

NOTE Confidence: 0.9732856

00:02:34.590 --> 00:02:37.943 So for both of them accommodation, yes or no.

NOTE Confidence: 0.9732856

00:02:37.943 --> 00:02:40.120 Is there free fluid in the abdomen
NOTE Confidence: 0.9732856

00:02:40.191 --> 00:02:43.245 or patient they were concerned about
NOTE Confidence: 0.9732856

00:02:43.245 --> 00:02:45.626 undifferentiated chat, yes or no?
NOTE Confidence: 0.9732856

00:02:45.626 --> 00:02:47.886 The cardiac function preserved and
NOTE Confidence: 0.9732856

00:02:47.886 --> 00:02:51.050 so that really is, is a unique.
NOTE Confidence: 0.9698476

00:02:53.930 --> 00:02:55.194 Aspect of clinical percent,
NOTE Confidence: 0.9698476

00:02:55.194 --> 00:02:57.090 which differs from radiology over sample,
NOTE Confidence: 0.9698476

00:02:57.090 --> 00:03:00.402 tends to be a little more in depth and
NOTE Confidence: 0.9698476

00:03:00.402 --> 00:03:03.356 detail in terms of their scope and
NOTE Confidence: 0.9698476

00:03:03.356 --> 00:03:06.010 the questions out there in certain.
NOTE Confidence: 0.9698476

00:03:06.010 --> 00:03:08.626 So just to get on my orca sound,
NOTE Confidence: 0.9698476

00:03:08.630 --> 00:03:10.598 clip it here for a moment.
NOTE Confidence: 0.9698476

00:03:10.600 --> 00:03:12.240 There's multiple advantages over sounds,
NOTE Confidence: 0.9698476

00:03:12.240 --> 00:03:13.880 sort of relative to other
NOTE Confidence: 0.9698476

00:03:13.880 --> 00:03:15.520 diagnostic database like X rays,
NOTE Confidence: 0.9698476

00:03:15.520 --> 00:03:18.800 and you know we said CAT scans and even more,

NOTE Confidence: 0.9698476

00:03:18.800 --> 00:03:20.440 and so our furniture or

NOTE Confidence: 0.9698476

00:03:20.440 --> 00:03:22.080 sound is very dynamic study.

NOTE Confidence: 0.9698476

00:03:22.080 --> 00:03:24.186 So you're looking at objects and

NOTE Confidence: 0.9698476

00:03:24.186 --> 00:03:26.249 organs and two planes of everything

NOTE Confidence: 0.9698476

00:03:26.249 --> 00:03:28.593 we want to image and we have an

NOTE Confidence: 0.9698476

00:03:28.660 --> 00:03:30.935 object of interest you want to get.

NOTE Confidence: 0.9698476

00:03:30.940 --> 00:03:32.908 Get an image in perpendicular plane.

NOTE Confidence: 0.9698476

00:03:32.910 --> 00:03:36.798 So we say along Axis and the short axis.

NOTE Confidence: 0.9698476

00:03:36.800 --> 00:03:38.152 By the salesperson doesn't

NOTE Confidence: 0.9698476

00:03:38.152 --> 00:03:39.166 employ any radiation,

NOTE Confidence: 0.9698476

00:03:39.170 --> 00:03:40.958 so it's safe for patients and

NOTE Confidence: 0.9698476

00:03:40.958 --> 00:03:43.239 we could do it that seriously.

NOTE Confidence: 0.9698476

00:03:43.240 --> 00:03:46.180 So you can check the progression of

NOTE Confidence: 0.9698476

00:03:46.180 --> 00:03:48.293 illness with furniture or percent

NOTE Confidence: 0.9698476

00:03:48.293 --> 00:03:50.627 in two different points in time.

NOTE Confidence: 0.9698476

00:03:50.630 --> 00:03:51.809 It's fairly painless.
NOTE Confidence: 0.9698476

00:03:51.809 --> 00:03:54.167 There's been tons of studies on
NOTE Confidence: 0.9698476

00:03:54.167 --> 00:03:55.915 fracture literature with clinic
NOTE Confidence: 0.9698476

00:03:55.915 --> 00:03:58.055 programs in applied with paint,
NOTE Confidence: 0.9698476

00:03:58.060 --> 00:03:58.738 faces, scores,
NOTE Confidence: 0.9698476

00:03:58.738 --> 00:04:01.111 and and if you use enough gel
NOTE Confidence: 0.9698476

00:04:01.111 --> 00:04:03.430 and use appropriate techniques,
NOTE Confidence: 0.9698476

00:04:03.430 --> 00:04:05.908 we really should not be causing
NOTE Confidence: 0.9698476

00:04:05.908 --> 00:04:07.147 any additional pain,
NOTE Confidence: 0.9698476

00:04:07.150 --> 00:04:09.380 and certainly something that does
NOTE Confidence: 0.9698476

00:04:09.380 --> 00:04:12.070 not require sedation or should not
NOTE Confidence: 0.9698476

00:04:12.070 --> 00:04:14.368 require sedation and little to be
NOTE Confidence: 0.9698476

00:04:14.368 --> 00:04:17.480 performed and and then finally again sort of.
NOTE Confidence: 0.9698476

00:04:17.480 --> 00:04:18.286 It's repeatable.
NOTE Confidence: 0.9698476

00:04:18.286 --> 00:04:22.400 So if if repeatedly not only by a different.
NOTE Confidence: 0.9698476

00:04:22.400 --> 00:04:22.731 Later,

NOTE Confidence: 0.9698476

00:04:22.731 --> 00:04:24.386 or we say it's analogous,

NOTE Confidence: 0.9698476

00:04:24.390 --> 00:04:26.322 but it's easy to repeat at

NOTE Confidence: 0.9698476

00:04:26.322 --> 00:04:28.030 a different point in time,

NOTE Confidence: 0.9698476

00:04:28.030 --> 00:04:30.016 and having a machine at the

NOTE Confidence: 0.9698476

00:04:30.016 --> 00:04:31.009 radio for bedside.

NOTE Confidence: 0.9698476

00:04:31.010 --> 00:04:32.816 So it's really great and adds a

NOTE Confidence: 0.9698476

00:04:32.816 --> 00:04:34.535 lot of really important information

NOTE Confidence: 0.9698476

00:04:34.535 --> 00:04:36.295 to the clinical picture,

NOTE Confidence: 0.9698476

00:04:36.300 --> 00:04:39.088 and in many cases.

NOTE Confidence: 0.9698476

00:04:39.090 --> 00:04:41.818 So the questions we always are gonna ask

NOTE Confidence: 0.9698476

00:04:41.818 --> 00:04:44.397 yourself with where was an ultrasound done?

NOTE Confidence: 0.9698476

00:04:44.400 --> 00:04:46.500 Is it done by a clinician at

NOTE Confidence: 0.9698476

00:04:46.500 --> 00:04:48.650 the point of care Commission,

NOTE Confidence: 0.9698476

00:04:48.650 --> 00:04:51.128 who's likely taking care of the patient?

NOTE Confidence: 0.9698476

00:04:51.130 --> 00:04:53.496 Or is it a technician performed or

NOTE Confidence: 0.9698476

00:04:53.496 --> 00:04:54.940 radiology performed ultrasound done
NOTE Confidence: 0.9698476

00:04:54.940 --> 00:04:56.436 with diagnostic imaging street?
NOTE Confidence: 0.9698476

00:04:56.440 --> 00:04:58.558 Then who's doing it? Or ultrasounds?
NOTE Confidence: 0.9698476

00:04:58.560 --> 00:05:00.330 Unique is that it's it's.
NOTE Confidence: 0.9698476

00:05:00.330 --> 00:05:01.554 It's very operator dependent.
NOTE Confidence: 0.9698476

00:05:01.554 --> 00:05:04.579 So even if even within a certain application,
NOTE Confidence: 0.9698476

00:05:04.580 --> 00:05:07.058 so let's take the appendix for example.
NOTE Confidence: 0.9698476

00:05:07.060 --> 00:05:12.200 We can have two. And skilled.
NOTE Confidence: 0.9698476

00:05:12.200 --> 00:05:14.388 Ultrasound performers and one
NOTE Confidence: 0.9698476

00:05:14.388 --> 00:05:18.090 of the two has a higher on.
NOTE Confidence: 0.9698476

00:05:18.090 --> 00:05:20.892 Oh accuracy in terms of appendix
NOTE Confidence: 0.9698476

00:05:20.892 --> 00:05:23.365 identification and then ability to
NOTE Confidence: 0.9698476

00:05:23.365 --> 00:05:24.952 interpret surrounding structures
NOTE Confidence: 0.9698476

00:05:24.952 --> 00:05:27.068 from things like that.
NOTE Confidence: 0.9698476

00:05:27.070 --> 00:05:29.415 Saving amongst ourselves as an
NOTE Confidence: 0.9698476

00:05:29.415 --> 00:05:30.822 emergency medicine physicians

NOTE Confidence: 0.9698476

00:05:30.822 --> 00:05:33.731 and even in in the radiology and

NOTE Confidence: 0.9698476

00:05:33.731 --> 00:05:35.251 environment with the operator

NOTE Confidence: 0.9698476

00:05:35.251 --> 00:05:37.340 is gonna make a difference.

NOTE Confidence: 0.9698476

00:05:37.340 --> 00:05:40.244 So it's very different than putting

NOTE Confidence: 0.9698476

00:05:40.244 --> 00:05:43.106 a plate on somebody's back and

NOTE Confidence: 0.9698476

00:05:43.106 --> 00:05:45.602 shooting a picture like that they

NOTE Confidence: 0.9698476

00:05:45.602 --> 00:05:48.738 do for radiography for X rays so.

NOTE Confidence: 0.9698476

00:05:48.740 --> 00:05:50.609 So very important to be aware that

NOTE Confidence: 0.9698476

00:05:50.609 --> 00:05:52.448 is an operator dependent modality and

NOTE Confidence: 0.9698476

00:05:52.448 --> 00:05:54.737 then why is ultrasound being done so?

NOTE Confidence: 0.9698476

00:05:54.740 --> 00:05:55.940 Where is it done?

NOTE Confidence: 0.9698476

00:05:55.940 --> 00:05:56.840 Who's doing it?

NOTE Confidence: 0.9698476

00:05:56.840 --> 00:05:58.842 Are you doing this as a as

NOTE Confidence: 0.9698476

00:05:58.842 --> 00:06:00.439 a diagnostic and it should,

NOTE Confidence: 0.9698476

00:06:00.440 --> 00:06:03.194 and if so at the point of care should

NOTE Confidence: 0.9698476

00:06:03.194 --> 00:06:05.238 really be a yes or no question.
NOTE Confidence: 0.9768277

00:06:05.240 --> 00:06:07.116 And for the most part and then
NOTE Confidence: 0.9768277

00:06:07.116 --> 00:06:08.298 there's times where ultrasound
NOTE Confidence: 0.9768277

00:06:08.298 --> 00:06:10.224 is just a necessary part of
NOTE Confidence: 0.9768277

00:06:10.224 --> 00:06:11.840 clinical care because it's safer.
NOTE Confidence: 0.9768277

00:06:11.840 --> 00:06:13.758 It's safer when it comes to procedures
NOTE Confidence: 0.9768277

00:06:13.758 --> 00:06:16.239 and it has been shown time and time
NOTE Confidence: 0.9768277

00:06:16.239 --> 00:06:17.834 again to increase success rates.
NOTE Confidence: 0.9768277

00:06:17.840 --> 00:06:19.040 So for certain procedures.
NOTE Confidence: 0.98321646

00:06:21.580 --> 00:06:23.230 So let's get into what you're
NOTE Confidence: 0.98321646

00:06:23.230 --> 00:06:24.800 looking at on the screen.
NOTE Confidence: 0.98321646

00:06:24.800 --> 00:06:27.200 How are the images created by
NOTE Confidence: 0.98321646

00:06:27.200 --> 00:06:29.685 either a handheld device or a
NOTE Confidence: 0.98321646

00:06:29.685 --> 00:06:31.695 more standard for the ultrasound?
NOTE Confidence: 0.98321646

00:06:31.700 --> 00:06:35.180 Machine, So what happens is you have that
NOTE Confidence: 0.98321646

00:06:35.180 --> 00:06:37.598 everything starts with the transducer,

NOTE Confidence: 0.98321646

00:06:37.600 --> 00:06:40.778 so the machine sends an electrical signal.

NOTE Confidence: 0.98321646

00:06:40.780 --> 00:06:43.468 Some energy is transmitted to the

NOTE Confidence: 0.98321646

00:06:43.468 --> 00:06:46.274 probe to the transducer and these

NOTE Confidence: 0.98321646

00:06:46.274 --> 00:06:49.058 these probes are tightly packed with

NOTE Confidence: 0.98321646

00:06:49.058 --> 00:06:51.802 crystals and so that that electricity

NOTE Confidence: 0.98321646

00:06:51.802 --> 00:06:54.810 that that current what it does is

NOTE Confidence: 0.98321646

00:06:54.810 --> 00:06:57.270 it it causes vibration of these

NOTE Confidence: 0.98321646

00:06:57.270 --> 00:07:00.300 crystals at a very high frequency.

NOTE Confidence: 0.98321646

00:07:00.300 --> 00:07:03.268 Hence the name ultrasound.

NOTE Confidence: 0.98321646

00:07:03.270 --> 00:07:05.280 So the sound signal at that

NOTE Confidence: 0.98321646

00:07:05.280 --> 00:07:07.389 point is sent to a tissue.

NOTE Confidence: 0.98321646

00:07:07.390 --> 00:07:11.380 In this case, here you have.

NOTE Confidence: 0.98321646

00:07:11.380 --> 00:07:12.448 Cardiac structure.

NOTE Confidence: 0.98321646

00:07:12.448 --> 00:07:15.118 And depending on the tissue

NOTE Confidence: 0.98321646

00:07:15.118 --> 00:07:17.740 density and some properties,

NOTE Confidence: 0.98321646

00:07:17.740 --> 00:07:20.310 how fluid filled it is,
NOTE Confidence: 0.98321646

00:07:20.310 --> 00:07:24.538 there is an interaction between the tissue.
NOTE Confidence: 0.98321646

00:07:24.540 --> 00:07:25.944 And the pro.
NOTE Confidence: 0.98321646

00:07:25.944 --> 00:07:29.770 And there's two concepts that come into play,
NOTE Confidence: 0.98321646

00:07:29.770 --> 00:07:33.290 so there is a attenuation which is lost.
NOTE Confidence: 0.98321646

00:07:33.290 --> 00:07:35.980 Signal entry energy and there's
NOTE Confidence: 0.98321646

00:07:35.980 --> 00:07:38.670 impedance which is reflection of
NOTE Confidence: 0.98321646

00:07:38.754 --> 00:07:41.778 ultrasound back to the to the court.
NOTE Confidence: 0.98321646

00:07:41.780 --> 00:07:42.203 Yeah,
NOTE Confidence: 0.98321646

00:07:42.203 --> 00:07:44.741 in a combination of these two
NOTE Confidence: 0.98321646

00:07:44.741 --> 00:07:46.010 properties of ultrasound,
NOTE Confidence: 0.98321646

00:07:46.010 --> 00:07:49.386 the computer is going to generate an image.
NOTE Confidence: 0.98321646

00:07:49.390 --> 00:07:52.645 It's going to be a grayscale image
NOTE Confidence: 0.98321646

00:07:52.645 --> 00:07:55.279 and with knowledge of important.
NOTE Confidence: 0.98321646

00:07:55.280 --> 00:07:57.170 Uh, concepts of general concepts
NOTE Confidence: 0.98321646

00:07:57.170 --> 00:07:59.480 that we're going to go into.

NOTE Confidence: 0.98321646
00:07:59.480 --> 00:08:01.766 You will be able to say,
NOTE Confidence: 0.98321646
00:08:01.770 --> 00:08:02.149 OK,
NOTE Confidence: 0.98321646
00:08:02.149 --> 00:08:04.802 this image that is dark on the
NOTE Confidence: 0.98321646
00:08:04.802 --> 00:08:06.868 ultrasound screen is because it's
NOTE Confidence: 0.98321646
00:08:06.868 --> 00:08:08.913 a fluid filled structure because
NOTE Confidence: 0.98321646
00:08:08.913 --> 00:08:11.628 Doo Doo Doo Doo full attenuation.
NOTE Confidence: 0.98321646
00:08:11.630 --> 00:08:12.750 And lack of influence.
NOTE Confidence: 0.9746281
00:08:15.410 --> 00:08:18.650 And so let's look at these two properties,
NOTE Confidence: 0.9746281
00:08:18.650 --> 00:08:21.890 average of 10 transmission one at a time.
NOTE Confidence: 0.9746281
00:08:21.890 --> 00:08:23.534 The first is attenuation,
NOTE Confidence: 0.9746281
00:08:23.534 --> 00:08:25.178 so attenuation is essentially
NOTE Confidence: 0.9746281
00:08:25.178 --> 00:08:27.159 the loss of signal energy,
NOTE Confidence: 0.9746281
00:08:27.160 --> 00:08:29.185 as as ultrasound goes through
NOTE Confidence: 0.9746281
00:08:29.185 --> 00:08:31.210 a certain object or structure,
NOTE Confidence: 0.9746281
00:08:31.210 --> 00:08:34.106 it's going to lose the amount of signal
NOTE Confidence: 0.9746281

00:08:34.106 --> 00:08:37.685 that it can transmit deep to that structure.
NOTE Confidence: 0.9746281

00:08:37.690 --> 00:08:41.488 So you'll have a less define.
NOTE Confidence: 0.9746281

00:08:41.490 --> 00:08:45.477 The image on the screen that seems to happen.
NOTE Confidence: 0.9746281

00:08:45.480 --> 00:08:47.902 Now the amount of attenuation is going
NOTE Confidence: 0.9746281

00:08:47.902 --> 00:08:50.465 to be different depending on the make
NOTE Confidence: 0.9746281

00:08:50.465 --> 00:08:52.655 up the composition of the structure
NOTE Confidence: 0.9746281

00:08:52.723 --> 00:08:54.709 that the beam is going through,
NOTE Confidence: 0.9746281

00:08:54.710 --> 00:08:59.920 but you can almost always come. Man.
NOTE Confidence: 0.9746281

00:08:59.920 --> 00:09:02.314 Imagine that there's some degree of
NOTE Confidence: 0.9746281

00:09:02.314 --> 00:09:04.360 attenuation that's going to exist.
NOTE Confidence: 0.9746281

00:09:04.360 --> 00:09:06.880 That's why the images at the top half of
NOTE Confidence: 0.9746281

00:09:06.880 --> 00:09:09.248 the screen are always crisper and nicer
NOTE Confidence: 0.9746281

00:09:09.248 --> 00:09:12.319 than those at the bottom part of the screen.
NOTE Confidence: 0.9746281

00:09:12.320 --> 00:09:14.330 And then the other property,
NOTE Confidence: 0.9746281

00:09:14.330 --> 00:09:15.810 Loper Sound is impedance.
NOTE Confidence: 0.9746281

00:09:15.810 --> 00:09:18.485 Impedance has to do with tissue density

NOTE Confidence: 0.9746281

00:09:18.485 --> 00:09:20.430 and reflection of the ultrasound

NOTE Confidence: 0.9746281

00:09:20.430 --> 00:09:22.770 being back to their transducer.

NOTE Confidence: 0.9746281

00:09:22.770 --> 00:09:25.322 So in this case with bone which has

NOTE Confidence: 0.9746281

00:09:25.322 --> 00:09:27.416 high high impedance property that

NOTE Confidence: 0.9746281

00:09:27.416 --> 00:09:30.182 ultrasound reflects off the bone and

NOTE Confidence: 0.9746281

00:09:30.182 --> 00:09:33.181 back to the transducer and the machine

NOTE Confidence: 0.9746281

00:09:33.181 --> 00:09:36.351 cannot generate an image deep to the

NOTE Confidence: 0.9746281

00:09:36.351 --> 00:09:39.393 bone so everything goes dark behind

NOTE Confidence: 0.9746281

00:09:39.393 --> 00:09:41.725 tissues that have high impedance

NOTE Confidence: 0.9746281

00:09:41.725 --> 00:09:45.340 and we we do call that a certain.

NOTE Confidence: 0.9746281

00:09:45.340 --> 00:09:48.808 Artifact referred to his post here.

NOTE Confidence: 0.9746281

00:09:48.810 --> 00:09:49.960 Acoustic shadow.

NOTE Confidence: 0.9732442

00:09:52.790 --> 00:09:54.362 So in this slide,

NOTE Confidence: 0.9732442

00:09:54.362 --> 00:09:56.720 open sound is essentially the same

NOTE Confidence: 0.9732442

00:09:56.796 --> 00:09:59.286 as marine life with echolocation.

NOTE Confidence: 0.9732442

00:09:59.290 --> 00:10:01.890 I like to bring up this example to
NOTE Confidence: 0.9732442

00:10:01.890 --> 00:10:04.609 drive home the point that the water
NOTE Confidence: 0.9732442

00:10:04.609 --> 00:10:06.599 or fluid filled structures are
NOTE Confidence: 0.9732442

00:10:06.672 --> 00:10:09.348 excellent transmitters of ultrasound.
NOTE Confidence: 0.9732442

00:10:09.350 --> 00:10:14.660 So when a say in orca or corpus or a dolphin.
NOTE Confidence: 0.9732442

00:10:14.660 --> 00:10:17.670 Uh, send it over sound signals in in in the
NOTE Confidence: 0.9732442

00:10:17.740 --> 00:10:20.680 ocean through their application mechanism.
NOTE Confidence: 0.9732442

00:10:20.680 --> 00:10:23.368 That signal is going to continue
NOTE Confidence: 0.9732442

00:10:23.368 --> 00:10:26.568 to travel until it hits an object.
NOTE Confidence: 0.9732442

00:10:26.570 --> 00:10:29.246 And then based on the distance
NOTE Confidence: 0.9732442

00:10:29.246 --> 00:10:32.516 of that object and to the marine
NOTE Confidence: 0.9732442

00:10:32.516 --> 00:10:35.300 life and potentially the size of
NOTE Confidence: 0.9732442

00:10:35.300 --> 00:10:38.317 that object or multiple objects.
NOTE Confidence: 0.9732442

00:10:38.320 --> 00:10:41.626 The movie life mammal will get
NOTE Confidence: 0.9732442

00:10:41.626 --> 00:10:45.270 a sense of predator versus prey.
NOTE Confidence: 0.9732442

00:10:45.270 --> 00:10:47.349 And then how far did they would

NOTE Confidence: 0.9732442

00:10:47.349 --> 00:10:49.209 have to travel to reach that?

NOTE Confidence: 0.9732442

00:10:49.210 --> 00:10:51.940 That object that's in front of them?

NOTE Confidence: 0.9732442

00:10:51.940 --> 00:10:53.840 Or perhaps in some cases,

NOTE Confidence: 0.9732442

00:10:53.840 --> 00:10:56.458 but there how far the object would

NOTE Confidence: 0.9732442

00:10:56.458 --> 00:10:58.899 make they pose potential risks to

NOTE Confidence: 0.9732442

00:10:58.899 --> 00:11:01.371 their livelihood is so so that

NOTE Confidence: 0.9732442

00:11:01.371 --> 00:11:04.009 they can react in attending them.

NOTE Confidence: 0.9732442

00:11:04.010 --> 00:11:06.490 So it's it's a great example of how

NOTE Confidence: 0.9732442

00:11:06.490 --> 00:11:09.252 there is very little attenuation of

NOTE Confidence: 0.9732442

00:11:09.252 --> 00:11:11.837 ultrasound and fluid filled structures,

NOTE Confidence: 0.9732442

00:11:11.840 --> 00:11:15.784 and we we talked about this a lot.

NOTE Confidence: 0.9732442

00:11:15.790 --> 00:11:21.094 And when we're imaging, we want to see.

NOTE Confidence: 0.9732442

00:11:21.100 --> 00:11:23.098 Organs that are potentially deep in

NOTE Confidence: 0.9732442

00:11:23.098 --> 00:11:25.625 the pelvis or the common would be

NOTE Confidence: 0.9732442

00:11:25.625 --> 00:11:27.510 at work after ovarian pathology,

NOTE Confidence: 0.9732442

00:11:27.510 --> 00:11:29.285 ovarian torsion if we're doing
NOTE Confidence: 0.9732442

00:11:29.285 --> 00:11:29.995 transabdominal ultrasound,
NOTE Confidence: 0.9732442

00:11:30.000 --> 00:11:33.322 we want to have a nice, fluid filled bladder.
NOTE Confidence: 0.9732442

00:11:33.322 --> 00:11:35.686 So that the ultrasound beam can
NOTE Confidence: 0.9732442

00:11:35.686 --> 00:11:38.087 be well transmitted to the public
NOTE Confidence: 0.9732442

00:11:38.087 --> 00:11:41.429 structures to get a good look at the police.
NOTE Confidence: 0.88115036

00:11:45.110 --> 00:11:47.329 And here we had one last slide
NOTE Confidence: 0.88115036

00:11:47.329 --> 00:11:49.960 just to once again go over this
NOTE Confidence: 0.88115036

00:11:49.960 --> 00:11:51.965 idea of a person transmission.
NOTE Confidence: 0.88115036

00:11:51.970 --> 00:11:54.328 And when we talk about transmission,
NOTE Confidence: 0.88115036

00:11:54.330 --> 00:11:56.186 we're essentially asking yourself
NOTE Confidence: 0.88115036

00:11:56.186 --> 00:11:58.970 how well is my ultrasound being
NOTE Confidence: 0.88115036

00:11:59.046 --> 00:12:01.190 penetrated through the tissue.
NOTE Confidence: 0.88115036

00:12:01.190 --> 00:12:03.170 This has to do with the
NOTE Confidence: 0.88115036

00:12:03.170 --> 00:12:04.490 composition of that issue.
NOTE Confidence: 0.88115036

00:12:04.490 --> 00:12:07.130 So if you have a fluid filled structure,

NOTE Confidence: 0.88115036
00:12:07.130 --> 00:12:08.450 we have excellent transmission
NOTE Confidence: 0.88115036
00:12:08.450 --> 00:12:10.100 and nice fluid filled nicely.
NOTE Confidence: 0.88115036
00:12:10.100 --> 00:12:11.610 Nicely filled bladder is going
NOTE Confidence: 0.88115036
00:12:11.610 --> 00:12:13.547 to act as an acoustic window
NOTE Confidence: 0.88115036
00:12:13.547 --> 00:12:15.352 so that the ultrasound can
NOTE Confidence: 0.88115036
00:12:15.352 --> 00:12:17.030 visualize structures deep to it,
NOTE Confidence: 0.88115036
00:12:17.030 --> 00:12:18.899 such as the older is worried about
NOTE Confidence: 0.88115036
00:12:18.899 --> 00:12:20.232 a very enclosure morphologic
NOTE Confidence: 0.88115036
00:12:20.232 --> 00:12:21.648 sester ordering biology.
NOTE Confidence: 0.69933295
00:12:23.750 --> 00:12:26.350 When you have a.
NOTE Confidence: 0.69933295
00:12:26.350 --> 00:12:28.434 Structure with high impedance.
NOTE Confidence: 0.69933295
00:12:28.434 --> 00:12:31.560 There is a very very poor
NOTE Confidence: 0.69933295
00:12:31.661 --> 00:12:33.989 transmission behind that.
NOTE Confidence: 0.69933295
00:12:33.990 --> 00:12:36.050 Get or sometimes in fact,
NOTE Confidence: 0.69933295
00:12:36.050 --> 00:12:37.152 no transition.
NOTE Confidence: 0.69933295

00:12:37.152 --> 00:12:39.907 And then you have air.
NOTE Confidence: 0.69933295

00:12:39.910 --> 00:12:43.235 Air is actually the enemy for ultrasound.
NOTE Confidence: 0.69933295

00:12:43.240 --> 00:12:46.488 So in terms of the appearance of ultrasound
NOTE Confidence: 0.69933295

00:12:46.488 --> 00:12:50.376 as it crosses above an airfield structure,
NOTE Confidence: 0.69933295

00:12:50.380 --> 00:12:53.075 you really cannot delineate any
NOTE Confidence: 0.69933295

00:12:53.075 --> 00:12:56.240 Christmas on the screen at all.
NOTE Confidence: 0.69933295

00:12:56.240 --> 00:12:59.313 I put air essentially does is it
NOTE Confidence: 0.69933295

00:12:59.313 --> 00:13:01.530 causes scattered over something?
NOTE Confidence: 0.69933295

00:13:01.530 --> 00:13:04.694 Air can cause a very bright or
NOTE Confidence: 0.69933295

00:13:04.694 --> 00:13:06.939 hyperechoic appearance to the image,
NOTE Confidence: 0.69933295

00:13:06.940 --> 00:13:10.999 and it can and what it will do is.
NOTE Confidence: 0.69933295

00:13:11.000 --> 00:13:15.344 It will give you a very poorly defined.
NOTE Confidence: 0.69933295

00:13:15.350 --> 00:13:15.904 Me.
NOTE Confidence: 0.69933295

00:13:15.904 --> 00:13:18.120 Picture on the screen.
NOTE Confidence: 0.98196346

00:13:21.700 --> 00:13:23.260 Alright, so let's apply this.
NOTE Confidence: 0.98196346

00:13:23.260 --> 00:13:24.740 These concepts of ultrasound

NOTE Confidence: 0.98196346

00:13:24.740 --> 00:13:26.960 transmission to an actual still image.

NOTE Confidence: 0.98196346

00:13:26.960 --> 00:13:29.741 In this case, I will let you know this

NOTE Confidence: 0.98196346

00:13:29.741 --> 00:13:32.339 is a long access London Olympics in

NOTE Confidence: 0.98196346

00:13:32.339 --> 00:13:35.249 the midline of a pregnant patients,

NOTE Confidence: 0.98196346

00:13:35.250 --> 00:13:38.319 and you can see that come over the bladder

NOTE Confidence: 0.98196346

00:13:38.319 --> 00:13:40.908 because it's a nice fulfilled structure.

NOTE Confidence: 0.98196346

00:13:40.910 --> 00:13:43.549 There is no attenuation to alter sound,

NOTE Confidence: 0.98196346

00:13:43.550 --> 00:13:47.430 so you can actually see.

NOTE Confidence: 0.98196346

00:13:47.430 --> 00:13:48.422 Structures deep to it.

NOTE Confidence: 0.98196346

00:13:48.422 --> 00:13:50.780 In this case, there's a bag and a

NOTE Confidence: 0.98196346

00:13:50.780 --> 00:13:53.149 strike which is a landline that lets

NOTE Confidence: 0.98196346

00:13:53.149 --> 00:13:55.543 us know that we're at the midline.

NOTE Confidence: 0.98196346

00:13:55.550 --> 00:13:57.622 I am very sad.

NOTE Confidence: 0.98196346

00:13:57.622 --> 00:13:59.176 Transit transported here.

NOTE Confidence: 0.98196346

00:13:59.180 --> 00:14:02.028 And then you can think about the uterus.

NOTE Confidence: 0.98196346

00:14:02.030 --> 00:14:04.676 Look at how the the fundis portion is sort
NOTE Confidence: 0.98196346

00:14:04.676 --> 00:14:07.715 of well delineated with the gestational SAC.
NOTE Confidence: 0.98196346

00:14:07.720 --> 00:14:09.855 And also you can get a sense
NOTE Confidence: 0.98196346

00:14:09.855 --> 00:14:12.707 here of a fetal pole right there.
NOTE Confidence: 0.98196346

00:14:12.710 --> 00:14:14.762 And so the ultrasound transmission here
NOTE Confidence: 0.98196346

00:14:14.762 --> 00:14:16.979 maybe a slight little bit different,
NOTE Confidence: 0.98196346

00:14:16.980 --> 00:14:19.176 so more attenuation deep to the
NOTE Confidence: 0.98196346

00:14:19.176 --> 00:14:21.723 structures so you don't see as crisp
NOTE Confidence: 0.98196346

00:14:21.723 --> 00:14:24.096 of the margin of the posterior border.
NOTE Confidence: 0.98196346

00:14:24.100 --> 00:14:27.010 The uterus, like you do anteriorly.
NOTE Confidence: 0.98196346

00:14:27.010 --> 00:14:30.104 And guess what's behind the uterus well?
NOTE Confidence: 0.98196346

00:14:30.110 --> 00:14:31.301 It's mostly bad,
NOTE Confidence: 0.98196346

00:14:31.301 --> 00:14:34.080 and it's probably bow that's filled with
NOTE Confidence: 0.98196346

00:14:34.152 --> 00:14:36.798 air because we're not seeing anything.
NOTE Confidence: 0.98196346

00:14:36.800 --> 00:14:38.368 Everything looks very indistinct
NOTE Confidence: 0.98196346

00:14:38.368 --> 00:14:41.246 and that makes sense based on the

NOTE Confidence: 0.98196346
00:14:41.246 --> 00:14:43.070 ultrasound interaction with her,
NOTE Confidence: 0.98196346
00:14:43.070 --> 00:14:44.243 so that here,
NOTE Confidence: 0.98196346
00:14:44.243 --> 00:14:46.198 even though there is intestines
NOTE Confidence: 0.98196346
00:14:46.198 --> 00:14:48.079 and there's actual anatomy,
NOTE Confidence: 0.98196346
00:14:48.080 --> 00:14:51.139 we're not seeing anything on the screen
NOTE Confidence: 0.98196346
00:14:51.139 --> 00:14:53.721 because bowel gas causes ultrasound beam
NOTE Confidence: 0.98196346
00:14:53.721 --> 00:14:57.280 to scatter and just had a lot of white,
NOTE Confidence: 0.98196346
00:14:57.280 --> 00:14:59.060 right?
NOTE Confidence: 0.98196346
00:14:59.060 --> 00:15:00.328 Enhancement other than that
NOTE Confidence: 0.98196346
00:15:00.328 --> 00:15:02.230 computer scheme and we never really
NOTE Confidence: 0.98196346
00:15:02.280 --> 00:15:03.790 seen anything other than that.
NOTE Confidence: 0.8395981
00:15:08.020 --> 00:15:14.970 OK, so here we have a quiz named that phone.
NOTE Confidence: 0.8395981
00:15:14.970 --> 00:15:17.805 So how do we know what we're looking from?
NOTE Confidence: 0.8395981
00:15:17.810 --> 00:15:20.530 So one of the things we always want to keep
NOTE Confidence: 0.8395981
00:15:20.595 --> 00:15:22.996 an eye out when we're reviewing clips,
NOTE Confidence: 0.8395981

00:15:23.000 --> 00:15:24.760 and also when you're performing
NOTE Confidence: 0.8395981

00:15:24.760 --> 00:15:27.150 order sound scans is the settings.
NOTE Confidence: 0.8395981

00:15:27.150 --> 00:15:29.607 So here's a bit of a clue,
NOTE Confidence: 0.8395981

00:15:29.610 --> 00:15:32.502 and this happens to be more
NOTE Confidence: 0.8395981

00:15:32.502 --> 00:15:35.290 for sound of lung tissue.
NOTE Confidence: 0.8395981

00:15:35.290 --> 00:15:37.880 So in terms of meaning of bone,
NOTE Confidence: 0.8395981

00:15:37.880 --> 00:15:40.840 what bone would be seen in front of?
NOTE Confidence: 0.938931

00:15:42.900 --> 00:15:46.460 One that would be a question groups so.
NOTE Confidence: 0.938931

00:15:46.460 --> 00:15:50.735 Here you see the top of the rib in
NOTE Confidence: 0.938931

00:15:50.735 --> 00:15:54.980 short access. And as you can see.
NOTE Confidence: 0.938931

00:15:54.980 --> 00:15:57.924 Focus and cannot penetrate deep to the red.
NOTE Confidence: 0.938931

00:15:57.930 --> 00:16:01.095 So everything here is dark. Dark.
NOTE Confidence: 0.938931

00:16:01.095 --> 00:16:03.660 And so that is his artifact that we have
NOTE Confidence: 0.938931

00:16:03.722 --> 00:16:06.506 alluded to as posterior acoustic enhancement.
NOTE Confidence: 0.938931

00:16:06.510 --> 00:16:11.172 So we know that this is a ribbed here.
NOTE Confidence: 0.938931

00:16:11.180 --> 00:16:13.356 Interesting story finding is

NOTE Confidence: 0.938931
00:16:13.356 --> 00:16:16.076 that we typically will see.
NOTE Confidence: 0.938931
00:16:16.080 --> 00:16:18.545 Flora here very bright line
NOTE Confidence: 0.938931
00:16:18.545 --> 00:16:21.010 in between the rooms faces.
NOTE Confidence: 0.938931
00:16:21.010 --> 00:16:22.566 So in this case,
NOTE Confidence: 0.938931
00:16:22.566 --> 00:16:25.886 come not only do you sort of see
NOTE Confidence: 0.938931
00:16:25.886 --> 00:16:28.987 separation or look for a right here.
NOTE Confidence: 0.938931
00:16:28.990 --> 00:16:31.930 Looks like there's one line another one.
NOTE Confidence: 0.8623172
00:16:34.170 --> 00:16:36.252 Do this mother fluid collection device
NOTE Confidence: 0.8623172
00:16:36.252 --> 00:16:38.401 model period fusion, but this is
NOTE Confidence: 0.8623172
00:16:38.401 --> 00:16:40.603 actually a patient who has pneumonia
NOTE Confidence: 0.8623172
00:16:40.603 --> 00:16:44.770 by one 8% in the breakfast area field.
NOTE Confidence: 0.8623172
00:16:44.770 --> 00:16:49.306 We said briefly, then air gives no image,
NOTE Confidence: 0.8623172
00:16:49.310 --> 00:16:54.110 so just a sensually artifact. And dumb.
NOTE Confidence: 0.9798741
00:16:56.340 --> 00:16:58.545 We can spend an attack now we're
NOTE Confidence: 0.9798741
00:16:58.545 --> 00:16:59.890 talking about wonderful sound,
NOTE Confidence: 0.9798741

00:16:59.890 --> 00:17:02.400 but essentially this jaggedness here.

NOTE Confidence: 0.9798741

00:17:02.400 --> 00:17:06.915 Of the. That issue of this lung

NOTE Confidence: 0.9798741

00:17:06.915 --> 00:17:10.229 tissue is an appearance that you would

NOTE Confidence: 0.9798741

00:17:10.229 --> 00:17:12.859 see with a subfloor consolidation.

NOTE Confidence: 0.9798741

00:17:12.860 --> 00:17:14.850 And just some other findings.

NOTE Confidence: 0.9798741

00:17:14.850 --> 00:17:17.244 And in addition to that shred sign

NOTE Confidence: 0.9798741

00:17:17.244 --> 00:17:19.652 you had these little bright echogenic

NOTE Confidence: 0.9798741

00:17:19.652 --> 00:17:22.262 appearance is come in within a

NOTE Confidence: 0.9798741

00:17:22.262 --> 00:17:24.767 tissue that we shouldn't be seeing.

NOTE Confidence: 0.9798741

00:17:24.770 --> 00:17:27.122 We shouldn't be seeing a distinct

NOTE Confidence: 0.9798741

00:17:27.122 --> 00:17:29.575 sort of organ appearing tissue up

NOTE Confidence: 0.9798741

00:17:29.575 --> 00:17:32.011 there under the pleura because lung

NOTE Confidence: 0.9798741

00:17:32.011 --> 00:17:34.406 because since it's when it's health

NOTE Confidence: 0.9798741

00:17:34.406 --> 00:17:36.674 healthy as airfield does not give

NOTE Confidence: 0.9798741

00:17:36.680 --> 00:17:39.056 up any appearance on their person.

NOTE Confidence: 0.9798741

00:17:39.060 --> 00:17:42.156 We just see the regulation artifact.

NOTE Confidence: 0.9798741

00:17:42.160 --> 00:17:45.149 Which weakened spectrum little bit ahead of.

NOTE Confidence: 0.9831707

00:17:47.420 --> 00:17:49.688 Where we are right now in

NOTE Confidence: 0.9831707

00:17:49.688 --> 00:17:51.200 terms of this lecture,

NOTE Confidence: 0.9831707

00:17:51.200 --> 00:17:53.588 but I'm hoping you can get

NOTE Confidence: 0.9831707

00:17:53.588 --> 00:17:56.419 a good sense of ribbon here.

NOTE Confidence: 0.9831707

00:17:56.420 --> 00:17:58.838 Open sound hitting the red bone.

NOTE Confidence: 0.9831707

00:17:58.840 --> 00:18:01.680 It looks bright and echogenic.

NOTE Confidence: 0.9831707

00:18:01.680 --> 00:18:02.919 There's high impedance,

NOTE Confidence: 0.9831707

00:18:02.919 --> 00:18:04.158 there's no transmission,

NOTE Confidence: 0.9831707

00:18:04.160 --> 00:18:06.446 so you get this complete acoustic

NOTE Confidence: 0.9831707

00:18:06.446 --> 00:18:08.720 shadowing deep to that structure.

NOTE Confidence: 0.92378813

00:18:10.830 --> 00:18:13.140 Right, so when we're talking

NOTE Confidence: 0.92378813

00:18:13.140 --> 00:18:15.450 about what transducer to choose,

NOTE Confidence: 0.92378813

00:18:15.450 --> 00:18:17.680 the transducer sort of the

NOTE Confidence: 0.92378813

00:18:17.680 --> 00:18:20.530 film return for a person probe.

NOTE Confidence: 0.92378813

00:18:20.530 --> 00:18:22.498 There's essentially three choices.

NOTE Confidence: 0.92378813

00:18:22.498 --> 00:18:25.450 You have a linear probe which

NOTE Confidence: 0.92378813

00:18:25.534 --> 00:18:27.916 has a nice flat footprint here,

NOTE Confidence: 0.92378813

00:18:27.920 --> 00:18:30.112 great for superficial structures.

NOTE Confidence: 0.92378813

00:18:30.112 --> 00:18:32.852 You have a curvilinear Rd.

NOTE Confidence: 0.92378813

00:18:32.860 --> 00:18:35.050 There's a curved footprint which is

NOTE Confidence: 0.92378813

00:18:35.050 --> 00:18:37.321 better to look for deeper structures

NOTE Confidence: 0.92378813

00:18:37.321 --> 00:18:40.289 and you have a type of trouble linear

NOTE Confidence: 0.92378813

00:18:40.366 --> 00:18:42.526 code for the phased array probe,

NOTE Confidence: 0.92378813

00:18:42.530 --> 00:18:45.068 which is a cardiac together between

NOTE Confidence: 0.92378813

00:18:45.068 --> 00:18:48.504 rib spaces and get a nice view of

NOTE Confidence: 0.92378813

00:18:48.504 --> 00:18:50.579 the heart structures when you're

NOTE Confidence: 0.92378813

00:18:50.579 --> 00:18:53.039 doing a focus projector person.

NOTE Confidence: 0.92378813

00:18:53.040 --> 00:18:55.242 So when we talk about post

NOTE Confidence: 0.92378813

00:18:55.242 --> 00:18:56.710 election or cancer selection,

NOTE Confidence: 0.92378813

00:18:56.710 --> 00:19:00.460 you're gonna pick a a probe.

NOTE Confidence: 0.92378813

00:19:00.460 --> 00:19:03.197 Which is going to fit your needs.

NOTE Confidence: 0.92378813

00:19:03.200 --> 00:19:05.490 So the tradeoff between a

NOTE Confidence: 0.92378813

00:19:05.490 --> 00:19:07.780 curvilinear low frequency and a.

NOTE Confidence: 0.92378813

00:19:07.780 --> 00:19:09.840 Linear high frequency is resolution

NOTE Confidence: 0.92378813

00:19:09.840 --> 00:19:12.270 to depth or depth is how.

NOTE Confidence: 0.92378813

00:19:12.270 --> 00:19:14.305 How much penetration can the

NOTE Confidence: 0.92378813

00:19:14.305 --> 00:19:15.933 older sound being achieved?

NOTE Confidence: 0.92378813

00:19:15.940 --> 00:19:18.000 So the linear probe.

NOTE Confidence: 0.92378813

00:19:18.000 --> 00:19:21.470 The higher frequency pros are able to.

NOTE Confidence: 0.92378813

00:19:21.470 --> 00:19:24.182 It should be greater resolution and

NOTE Confidence: 0.92378813

00:19:24.182 --> 00:19:27.055 higher level of detail for superficial

NOTE Confidence: 0.92378813

00:19:27.055 --> 00:19:29.505 structures at the trade off.

NOTE Confidence: 0.92378813

00:19:29.510 --> 00:19:31.934 ML penetrate to deeper structures and

NOTE Confidence: 0.92378813

00:19:31.934 --> 00:19:34.584 vice versa with the curvilinear probes

NOTE Confidence: 0.92378813

00:19:34.584 --> 00:19:37.944 and the phased array publicly linear code.

NOTE Confidence: 0.92378813

00:19:37.950 --> 00:19:40.904 So with these probes you're going to
NOTE Confidence: 0.92378813

00:19:40.904 --> 00:19:43.167 sacrifice resolution for your ability
NOTE Confidence: 0.92378813

00:19:43.167 --> 00:19:45.487 to penetrate to deeper structures,
NOTE Confidence: 0.92378813

00:19:45.490 --> 00:19:46.536 so intrabdominal.
NOTE Confidence: 0.92378813

00:19:46.536 --> 00:19:47.059 Examinations,
NOTE Confidence: 0.92378813

00:19:47.059 --> 00:19:49.151 the classical being trauma
NOTE Confidence: 0.92378813

00:19:49.151 --> 00:19:50.197 focused assessment.
NOTE Confidence: 0.92378813

00:19:50.200 --> 00:19:51.042 Sonography comma.
NOTE Confidence: 0.92378813

00:19:51.042 --> 00:19:53.568 So the first exam you're going
NOTE Confidence: 0.92378813

00:19:53.568 --> 00:19:55.457 to perform with curvilinear
NOTE Confidence: 0.92378813

00:19:55.457 --> 00:19:57.405 or low frequency plates.
NOTE Confidence: 0.9713788

00:19:59.630 --> 00:20:01.205 So there's two scanning planes
NOTE Confidence: 0.9713788

00:20:01.205 --> 00:20:03.154 to be familiar with, and then
NOTE Confidence: 0.9713788

00:20:03.154 --> 00:20:04.864 it's important because we have
NOTE Confidence: 0.9713788

00:20:04.864 --> 00:20:06.880 convention in terms of how we image.
NOTE Confidence: 0.9921644

00:20:10.120 --> 00:20:13.511 Patience. Better pattern recognition

NOTE Confidence: 0.9921644

00:20:13.511 --> 00:20:15.646 can be consistent across patients.

NOTE Confidence: 0.9921644

00:20:15.650 --> 00:20:18.620 So we will use in the long axis of the

NOTE Confidence: 0.9921644

00:20:18.699 --> 00:20:22.059 sagittal or longitudinal axis on the plane.

NOTE Confidence: 0.9921644

00:20:22.060 --> 00:20:24.692 We will use the Convention of having

NOTE Confidence: 0.9921644

00:20:24.692 --> 00:20:27.540 the indicator, which is usually like a

NOTE Confidence: 0.9921644

00:20:27.540 --> 00:20:30.780 little non shoreline on the probe itself.

NOTE Confidence: 0.9921644

00:20:30.780 --> 00:20:33.300 Who is the head of the patient?

NOTE Confidence: 0.9921644

00:20:33.300 --> 00:20:35.492 So the indicator always

NOTE Confidence: 0.9921644

00:20:35.492 --> 00:20:38.232 faces the head when we're.

NOTE Confidence: 0.9921644

00:20:38.240 --> 00:20:39.848 Doing a logical access.

NOTE Confidence: 0.9921644

00:20:39.848 --> 00:20:42.260 Scan this is going to correlate

NOTE Confidence: 0.9921644

00:20:42.336 --> 00:20:43.578 with the monitor.

NOTE Confidence: 0.9921644

00:20:43.580 --> 00:20:46.178 This way you're gonna have head.

NOTE Confidence: 0.9921644

00:20:46.180 --> 00:20:47.330 Here you're going to have

NOTE Confidence: 0.9921644

00:20:47.330 --> 00:20:48.950 the top part of the patient.

NOTE Confidence: 0.9921644

00:20:48.950 --> 00:20:51.218 You can have the bottom part of the patient,
NOTE Confidence: 0.9921644

00:20:51.220 --> 00:20:54.380 and you're going to have to keep working.
NOTE Confidence: 0.9921644

00:20:54.380 --> 00:20:59.650 And when we're doing the transverse, UM?
NOTE Confidence: 0.9921644

00:20:59.650 --> 00:21:02.429 Orientation at the Convention is always going
NOTE Confidence: 0.9921644

00:21:02.429 --> 00:21:05.789 to be for that indicator to be too low,
NOTE Confidence: 0.9921644

00:21:05.790 --> 00:21:07.720 right?
NOTE Confidence: 0.9921644

00:21:07.720 --> 00:21:09.500 So indicated to them right?
NOTE Confidence: 0.9921644

00:21:09.500 --> 00:21:11.964 Again, it's going to be a little
NOTE Confidence: 0.9921644

00:21:11.964 --> 00:21:14.506 notch or some sort of mark on
NOTE Confidence: 0.9921644

00:21:14.506 --> 00:21:16.618 the right side of the patient,
NOTE Confidence: 0.9921644

00:21:16.620 --> 00:21:19.468 and these are almost like a cross section.
NOTE Confidence: 0.9921644

00:21:19.470 --> 00:21:21.600 Your CT scan cross sections where
NOTE Confidence: 0.9921644

00:21:21.600 --> 00:21:23.739 you have indicated to the right.
NOTE Confidence: 0.9921644

00:21:23.740 --> 00:21:26.428 You have the right kidney here and on
NOTE Confidence: 0.9921644

00:21:26.428 --> 00:21:29.396 the screen the right kidney is going to
NOTE Confidence: 0.9921644

00:21:29.396 --> 00:21:31.928 appear as you're looking at the screen.

NOTE Confidence: 0.9921644

00:21:31.930 --> 00:21:34.778 It's actually the left side of the screen,

NOTE Confidence: 0.9921644

00:21:34.780 --> 00:21:39.324 but it's the right side of the patient.

NOTE Confidence: 0.9921644

00:21:39.330 --> 00:21:39.881 So.

NOTE Confidence: 0.9921644

00:21:39.881 --> 00:21:42.636 Once you get this down,

NOTE Confidence: 0.9921644

00:21:42.640 --> 00:21:46.707 visually spatially and you're in your brain.

NOTE Confidence: 0.9921644

00:21:46.710 --> 00:21:49.815 Two times it's a very easy concept to tackle.

NOTE Confidence: 0.9529909

00:21:52.040 --> 00:21:54.630 And then we will use some scanning

NOTE Confidence: 0.9529909

00:21:54.630 --> 00:21:57.600 lingo so we will slide rock sweep

NOTE Confidence: 0.9529909

00:21:57.600 --> 00:22:00.258 and fanned the Pro sliding means.

NOTE Confidence: 0.9529909

00:22:00.260 --> 00:22:02.875 You're just bringing the transducer

NOTE Confidence: 0.9529909

00:22:02.875 --> 00:22:06.276 back and forth along the Y axis

NOTE Confidence: 0.9529909

00:22:06.276 --> 00:22:08.712 or the long axis of a object.

NOTE Confidence: 0.9529909

00:22:08.720 --> 00:22:11.936 And when you walk along this waxed line,

NOTE Confidence: 0.9529909

00:22:11.940 --> 00:22:14.700 you would essentially keep the hand

NOTE Confidence: 0.9529909

00:22:14.700 --> 00:22:17.460 still and just sort of swivel.

NOTE Confidence: 0.9529909

00:22:17.460 --> 00:22:20.290 But probe back and forth.
NOTE Confidence: 0.9529909

00:22:20.290 --> 00:22:22.265 Because remember the image that
NOTE Confidence: 0.9529909

00:22:22.265 --> 00:22:24.240 you're going to generate is
NOTE Confidence: 0.9529909

00:22:24.308 --> 00:22:26.247 going to have to do with how.
NOTE Confidence: 0.9529909

00:22:26.250 --> 00:22:27.825 Perpendicular how straight that ultrasound
NOTE Confidence: 0.9529909

00:22:27.825 --> 00:22:29.950 beam is to a certain structure,
NOTE Confidence: 0.9529909

00:22:29.950 --> 00:22:32.630 so you may have a gallbladder for example.
NOTE Confidence: 0.9529909

00:22:32.630 --> 00:22:33.974 Just picking the example,
NOTE Confidence: 0.9529909

00:22:33.974 --> 00:22:35.990 you may have a gallbladder here,
NOTE Confidence: 0.9529909

00:22:35.990 --> 00:22:38.446 but if you don't rock the probe just
NOTE Confidence: 0.9529909

00:22:38.446 --> 00:22:40.698 right to have it for particular,
NOTE Confidence: 0.9529909

00:22:40.700 --> 00:22:42.710 you're not going to see it.
NOTE Confidence: 0.9529909

00:22:42.710 --> 00:22:44.390 It's not that it's unfair,
NOTE Confidence: 0.9529909

00:22:44.390 --> 00:22:46.736 it's right there nearby hiding out
NOTE Confidence: 0.9529909

00:22:46.736 --> 00:22:49.097 but something some small motions or
NOTE Confidence: 0.9529909

00:22:49.097 --> 00:22:51.281 their hand with with these maneuvers

NOTE Confidence: 0.9529909

00:22:51.281 --> 00:22:53.749 is what we need to do in order to

NOTE Confidence: 0.9529909

00:22:53.749 --> 00:22:55.854 get a good image on the screen.

NOTE Confidence: 0.9529909

00:22:55.854 --> 00:22:58.794 So we have the sliding and and the

NOTE Confidence: 0.9529909

00:22:58.794 --> 00:23:00.749 rocking which is essentially along

NOTE Confidence: 0.9529909

00:23:00.749 --> 00:23:03.736 the Y axis plane or London tunnel

NOTE Confidence: 0.9529909

00:23:03.736 --> 00:23:05.911 access plane and then sweeping

NOTE Confidence: 0.9529909

00:23:05.911 --> 00:23:07.654 would be in short access.

NOTE Confidence: 0.9529909

00:23:07.654 --> 00:23:10.900 So so you have a say you have a

NOTE Confidence: 0.9529909

00:23:10.900 --> 00:23:13.300 blood vessel here and it's you're

NOTE Confidence: 0.9529909

00:23:13.300 --> 00:23:15.418 sort of forcing the code.

NOTE Confidence: 0.9529909

00:23:15.420 --> 00:23:18.180 You're sleeping over it up and

NOTE Confidence: 0.9529909

00:23:18.180 --> 00:23:19.560 down the vessel.

NOTE Confidence: 0.9529909

00:23:19.560 --> 00:23:22.360 To see it entirely and on the screen

NOTE Confidence: 0.9529909

00:23:22.360 --> 00:23:25.320 rather than see it as a circle when

NOTE Confidence: 0.9529909

00:23:25.320 --> 00:23:27.659 you're when you're imaging the vessel.

NOTE Confidence: 0.9529909

00:23:27.660 --> 00:23:30.131 That location is critical in this way
NOTE Confidence: 0.9529909

00:23:30.131 --> 00:23:32.440 and you're gonna see Circle Circle,
NOTE Confidence: 0.9529909

00:23:32.440 --> 00:23:33.812 circle in the stream.
NOTE Confidence: 0.9529909

00:23:33.812 --> 00:23:37.219 I just sweep up and down and then fanning.
NOTE Confidence: 0.9529909

00:23:37.220 --> 00:23:40.900 We do a lot of planning with our fast exam,
NOTE Confidence: 0.9529909

00:23:40.900 --> 00:23:41.928 so again,
NOTE Confidence: 0.9529909

00:23:41.928 --> 00:23:45.012 it's a swivel motion in this
NOTE Confidence: 0.9529909

00:23:45.012 --> 00:23:47.049 short access cut with.
NOTE Confidence: 0.9529909

00:23:47.050 --> 00:23:47.351 Essentially,
NOTE Confidence: 0.9529909

00:23:47.351 --> 00:23:49.157 your hand isn't moving up or
NOTE Confidence: 0.9529909

00:23:49.157 --> 00:23:50.970 down in the patient's body.
NOTE Confidence: 0.9529909

00:23:50.970 --> 00:23:52.610 You have to stand still,
NOTE Confidence: 0.9529909

00:23:52.610 --> 00:23:54.892 but you're sort of fanning or rotating
NOTE Confidence: 0.9529909

00:23:54.892 --> 00:23:57.521 like this, rotating the pole.
NOTE Confidence: 0.9529909

00:23:57.521 --> 00:23:58.178 Me.
NOTE Confidence: 0.9608452

00:24:00.220 --> 00:24:02.412 Down to get a good look at the

NOTE Confidence: 0.9608452

00:24:02.412 --> 00:24:04.118 structure that you interested in.

NOTE Confidence: 0.95178664

00:24:06.750 --> 00:24:09.486 Alright, so let's look at this another way,

NOTE Confidence: 0.95178664

00:24:09.490 --> 00:24:12.034 so you have indicators which have a notch

NOTE Confidence: 0.95178664

00:24:12.034 --> 00:24:14.916 or at our probes have a team match and

NOTE Confidence: 0.95178664

00:24:14.916 --> 00:24:17.461 when we image and individual and the

NOTE Confidence: 0.95178664

00:24:17.461 --> 00:24:20.138 transverse plane or the short axis pointing,

NOTE Confidence: 0.95178664

00:24:20.138 --> 00:24:22.286 the indicator is going to point

NOTE Confidence: 0.95178664

00:24:22.286 --> 00:24:24.385 towards the right of the patient

NOTE Confidence: 0.95178664

00:24:24.385 --> 00:24:26.632 which is here on this gingerbread man.

NOTE Confidence: 0.95178664

00:24:26.640 --> 00:24:29.748 The right of the patient and you're

NOTE Confidence: 0.95178664

00:24:29.748 --> 00:24:32.679 going to actually see the indicator.

NOTE Confidence: 0.95178664

00:24:32.680 --> 00:24:35.152 Appear on the left side of the screen

NOTE Confidence: 0.95178664

00:24:35.152 --> 00:24:37.289 as you're looking at this thing,

NOTE Confidence: 0.95178664

00:24:37.290 --> 00:24:39.747 so this is a convention for transverse

NOTE Confidence: 0.95178664

00:24:39.747 --> 00:24:43.028 you have a fluid filled structure with a.

NOTE Confidence: 0.95178664

00:24:43.030 --> 00:24:44.710 Balloon catheter inside of it.
NOTE Confidence: 0.95178664

00:24:44.710 --> 00:24:47.230 This is a child with hearing the tension
NOTE Confidence: 0.95178664

00:24:47.230 --> 00:24:49.160 that happened with a Foley catheter
NOTE Confidence: 0.95178664

00:24:49.160 --> 00:24:51.447 placed and mess with the latter would
NOTE Confidence: 0.95178664

00:24:51.447 --> 00:24:53.655 look like in and transfers orientation
NOTE Confidence: 0.95178664

00:24:53.655 --> 00:24:55.360 with the indicated participation right.
NOTE Confidence: 0.95178664

00:24:55.360 --> 00:24:57.460 And if we're getting image it and
NOTE Confidence: 0.95178664

00:24:57.460 --> 00:24:59.108 longitudinal access lunchroom orientation,
NOTE Confidence: 0.95178664

00:24:59.110 --> 00:25:00.785 the indicator is going to
NOTE Confidence: 0.95178664

00:25:00.785 --> 00:25:02.460 go to the patients head.
NOTE Confidence: 0.95178664

00:25:02.460 --> 00:25:05.828 So the indicator the notch is going to
NOTE Confidence: 0.95178664

00:25:05.828 --> 00:25:08.700 point towards the head of the patient.
NOTE Confidence: 0.95178664

00:25:08.700 --> 00:25:11.628 On the screen it's gonna appear a little
NOTE Confidence: 0.95178664

00:25:11.628 --> 00:25:14.490 circle on the left side of the screen.
NOTE Confidence: 0.95178664

00:25:14.490 --> 00:25:16.662 If you're looking at the screen
NOTE Confidence: 0.95178664

00:25:16.662 --> 00:25:18.110 and the image itself,

NOTE Confidence: 0.95178664

00:25:18.110 --> 00:25:19.806 you're gonna have bladder.

NOTE Confidence: 0.95178664

00:25:19.806 --> 00:25:22.350 And then pour le balloon catheter

NOTE Confidence: 0.95178664

00:25:22.430 --> 00:25:23.280 right there.

NOTE Confidence: 0.95178664

00:25:23.280 --> 00:25:24.980 So that's just the Convention,

NOTE Confidence: 0.95178664

00:25:24.980 --> 00:25:28.158 and that's how you're going to keep

NOTE Confidence: 0.95178664

00:25:28.158 --> 00:25:30.840 this little mark on the screen.

NOTE Confidence: 0.95178664

00:25:30.840 --> 00:25:33.520 This general sense of awareness so that you

NOTE Confidence: 0.95178664

00:25:33.520 --> 00:25:36.086 know that if things were converted you,

NOTE Confidence: 0.95178664

00:25:36.090 --> 00:25:38.743 it's likely that your crew is turn

NOTE Confidence: 0.95178664

00:25:38.743 --> 00:25:40.660 180 degrees by accident.

NOTE Confidence: 0.95178664

00:25:40.660 --> 00:25:42.650 Now in terms of positioning,

NOTE Confidence: 0.95178664

00:25:42.650 --> 00:25:46.098 this is a pretty easy concept to understand

NOTE Confidence: 0.95178664

00:25:46.098 --> 00:25:48.872 structures that are closer to the probe

NOTE Confidence: 0.95178664

00:25:48.872 --> 00:25:51.798 are going to appear higher on the screen.

NOTE Confidence: 0.95178664

00:25:51.800 --> 00:25:55.616 So in in this case we have liver.

NOTE Confidence: 0.95178664

00:25:55.620 --> 00:25:57.726 Here in front of kidney and
NOTE Confidence: 0.95178664

00:25:57.726 --> 00:25:59.940 here's your liver on this view,
NOTE Confidence: 0.95178664

00:25:59.940 --> 00:26:03.180 and that's closer to the top of the screen,
NOTE Confidence: 0.95178664

00:26:03.180 --> 00:26:05.646 whereas he had a kidney that's
NOTE Confidence: 0.95178664

00:26:05.646 --> 00:26:08.149 more posterior and the kidney is.
NOTE Confidence: 0.95178664

00:26:08.150 --> 00:26:09.220 Yeah there.
NOTE Confidence: 0.9202077

00:26:13.740 --> 00:26:15.110 You can read that handwriting,
NOTE Confidence: 0.9202077

00:26:15.110 --> 00:26:18.080 so a position on the monitor has to do
NOTE Confidence: 0.9202077

00:26:18.080 --> 00:26:21.063 with how close an object is to the probe
NOTE Confidence: 0.9202077

00:26:21.063 --> 00:26:24.085 top of the screen closer to the port.
NOTE Confidence: 0.9202077

00:26:24.090 --> 00:26:26.490 Alright, so the game is going to be
NOTE Confidence: 0.9202077

00:26:26.490 --> 00:26:28.574 an important function that you're
NOTE Confidence: 0.9202077

00:26:28.574 --> 00:26:30.466 gonna familiarize yourself with,
NOTE Confidence: 0.9202077

00:26:30.470 --> 00:26:32.564 so you can become comfortable with
NOTE Confidence: 0.9202077

00:26:32.564 --> 00:26:35.215 how to adjust it when you're doing
NOTE Confidence: 0.9202077

00:26:35.215 --> 00:26:37.585 scans and how to interpret images.

NOTE Confidence: 0.9202077

00:26:37.590 --> 00:26:41.510 So think about gamers, the volume of UM.

NOTE Confidence: 0.9202077

00:26:41.510 --> 00:26:43.448 Uh, electric sound, I guess globally,

NOTE Confidence: 0.9202077

00:26:43.450 --> 00:26:46.285 so if it gain if the volume is turned

NOTE Confidence: 0.9202077

00:26:46.285 --> 00:26:48.612 up to five, everything is going to

NOTE Confidence: 0.9202077

00:26:48.612 --> 00:26:50.550 appear very bright on the screen,

NOTE Confidence: 0.9202077

00:26:50.550 --> 00:26:52.818 whereas if the game is too low,

NOTE Confidence: 0.9202077

00:26:52.820 --> 00:26:54.746 if the volume is turned down,

NOTE Confidence: 0.9202077

00:26:54.750 --> 00:26:57.004 everything is going to appear to duck,

NOTE Confidence: 0.9202077

00:26:57.010 --> 00:26:59.770 and this is going to affect your image

NOTE Confidence: 0.9202077

00:26:59.770 --> 00:27:02.000 quality and it's going to affect

NOTE Confidence: 0.9202077

00:27:02.000 --> 00:27:04.196 your way to interpret images so.

NOTE Confidence: 0.9202077

00:27:04.200 --> 00:27:05.456 On the first one,

NOTE Confidence: 0.9202077

00:27:05.456 --> 00:27:07.340 the game is a little high.

NOTE Confidence: 0.9202077

00:27:07.340 --> 00:27:10.476 In that clip there with the UM.

NOTE Confidence: 0.9202077

00:27:10.480 --> 00:27:11.512 Kidney over here,

NOTE Confidence: 0.9202077

00:27:11.512 --> 00:27:13.920 and this is actually it's a screen
NOTE Confidence: 0.9202077

00:27:13.991 --> 00:27:15.893 over here and this entire area
NOTE Confidence: 0.9202077

00:27:15.893 --> 00:27:17.700 here is is fairly bright,
NOTE Confidence: 0.9202077

00:27:17.700 --> 00:27:19.704 so in terms of assessing for
NOTE Confidence: 0.9202077

00:27:19.704 --> 00:27:21.490 fluid collecting in that space.
NOTE Confidence: 0.9202077

00:27:21.490 --> 00:27:23.898 And sometimes we look for or not.
NOTE Confidence: 0.9202077

00:27:23.900 --> 00:27:26.546 Sometimes we we want to look for
NOTE Confidence: 0.9202077

00:27:26.546 --> 00:27:28.722 pleural effusions when we do these
NOTE Confidence: 0.9202077

00:27:28.722 --> 00:27:30.983 fast exams you you're going to want
NOTE Confidence: 0.9202077

00:27:31.055 --> 00:27:33.267 to have a just a slight adjustment
NOTE Confidence: 0.9202077

00:27:33.267 --> 00:27:36.310 of the game here just to avoid all
NOTE Confidence: 0.9202077

00:27:36.310 --> 00:27:38.400 this bright artifact down here.
NOTE Confidence: 0.9202077

00:27:38.400 --> 00:27:39.054 And conversely,
NOTE Confidence: 0.9202077

00:27:39.054 --> 00:27:41.343 we have a a child here patient
NOTE Confidence: 0.9202077

00:27:41.343 --> 00:27:43.348 with concern for likely a hit.
NOTE Confidence: 0.9202077

00:27:43.350 --> 00:27:45.000 The fusion of fluid collection.

NOTE Confidence: 0.9202077

00:27:45.000 --> 00:27:47.970 And if you're just looking at this area here,

NOTE Confidence: 0.9202077

00:27:47.970 --> 00:27:49.620 it looks kind of dark,

NOTE Confidence: 0.9202077

00:27:49.620 --> 00:27:51.528 and that's where we would teach

NOTE Confidence: 0.9202077

00:27:51.528 --> 00:27:53.580 to look for fluid to collect.

NOTE Confidence: 0.9202077

00:27:53.580 --> 00:27:55.890 But this is actually an operator error,

NOTE Confidence: 0.9202077

00:27:55.890 --> 00:27:57.870 not even operator error machine error.

NOTE Confidence: 0.9202077

00:27:57.870 --> 00:28:00.510 However, you want to call a false error.

NOTE Confidence: 0.9202077

00:28:00.510 --> 00:28:03.966 It would be a false positive.

NOTE Confidence: 0.9202077

00:28:03.970 --> 00:28:05.986 This this is a case where the

NOTE Confidence: 0.9202077

00:28:05.986 --> 00:28:07.469 game is just too low.

NOTE Confidence: 0.9202077

00:28:07.470 --> 00:28:09.254 You have to increase the game to be

NOTE Confidence: 0.9202077

00:28:09.254 --> 00:28:11.132 able to distinguish that that that

NOTE Confidence: 0.9202077

00:28:11.132 --> 00:28:13.190 issue here is actually normal appearing

NOTE Confidence: 0.9202077

00:28:13.248 --> 00:28:15.066 relative to the hip flexor muscles.

NOTE Confidence: 0.9202077

00:28:15.070 --> 00:28:16.530 Over here this is the.

NOTE Confidence: 0.9479758

00:28:18.680 --> 00:28:21.648 So this is learning for another day,
NOTE Confidence: 0.9479758

00:28:21.650 --> 00:28:24.176 but gained too high is not
NOTE Confidence: 0.9479758

00:28:24.176 --> 00:28:26.310 helpful and gain too low.
NOTE Confidence: 0.9479758

00:28:26.310 --> 00:28:29.230 Also is a potential problem.
NOTE Confidence: 0.9479758

00:28:29.230 --> 00:28:32.184 Yeah, death also is another big one,
NOTE Confidence: 0.9479758

00:28:32.190 --> 00:28:35.221 so here's a patient with the Halo
NOTE Confidence: 0.9479758

00:28:35.221 --> 00:28:37.400 colic intussusception on the first
NOTE Confidence: 0.9479758

00:28:37.400 --> 00:28:39.806 image with a linear linear probe.
NOTE Confidence: 0.9479758

00:28:39.810 --> 00:28:43.186 You have a debt set at 9 centimeters.
NOTE Confidence: 0.9479758

00:28:43.190 --> 00:28:46.060 So how do I know it's 9
NOTE Confidence: 0.9479758

00:28:46.060 --> 00:28:47.840 centimeters for every hash?
NOTE Confidence: 0.9479758

00:28:47.840 --> 00:28:50.378 Mark is a centimeter, so 123456,
NOTE Confidence: 0.9479758

00:28:50.380 --> 00:28:52.918 and it comes down here tonight.
NOTE Confidence: 0.9479758

00:28:52.920 --> 00:28:55.458 So you have a very end
NOTE Confidence: 0.9479758

00:28:55.458 --> 00:28:56.727 instinct structure there.
NOTE Confidence: 0.9479758

00:28:56.730 --> 00:28:59.340 Just look like there's something random.

NOTE Confidence: 0.9479758

00:28:59.340 --> 00:29:01.330 And it's really hard to

NOTE Confidence: 0.9479758

00:29:01.330 --> 00:29:02.922 make a judgement call.

NOTE Confidence: 0.9479758

00:29:02.930 --> 00:29:05.720 As to what that could be.

NOTE Confidence: 0.9479758

00:29:05.720 --> 00:29:07.610 And the depth is adjusted

NOTE Confidence: 0.9479758

00:29:07.610 --> 00:29:09.122 here to 4 centimeters.

NOTE Confidence: 0.9479758

00:29:09.130 --> 00:29:11.909 You have a much more crisp appearing

NOTE Confidence: 0.9479758

00:29:11.909 --> 00:29:14.969 target sign or this is illion here and

NOTE Confidence: 0.9479758

00:29:14.969 --> 00:29:17.849 this is the outer wall of the cecum.

NOTE Confidence: 0.9479758

00:29:17.850 --> 00:29:19.210 Here is their target,

NOTE Confidence: 0.9479758

00:29:19.210 --> 00:29:21.752 more than two and a half centimeters

NOTE Confidence: 0.9479758

00:29:21.752 --> 00:29:24.290 in terms of the 80 diameter.

NOTE Confidence: 0.9479758

00:29:24.290 --> 00:29:26.936 So this is really a pilot intussusception,

NOTE Confidence: 0.9479758

00:29:26.940 --> 00:29:29.580 which could easily be missed

NOTE Confidence: 0.9479758

00:29:29.580 --> 00:29:32.940 if you're looking at an image.

NOTE Confidence: 0.9479758

00:29:32.940 --> 00:29:34.960 Not the appropriate depth setting.

NOTE Confidence: 0.86952585

00:29:37.390 --> 00:29:40.666 Writing color Doppler is a really
NOTE Confidence: 0.86952585

00:29:40.666 --> 00:29:43.790 important function that we're going to
NOTE Confidence: 0.86952585

00:29:43.790 --> 00:29:47.190 use all the time when we're doing scans.
NOTE Confidence: 0.86952585

00:29:47.190 --> 00:29:50.472 So essentially you have a application
NOTE Confidence: 0.86952585

00:29:50.472 --> 00:29:54.429 where the ultrasound can detect flow. Uhm?
NOTE Confidence: 0.86952585

00:29:54.429 --> 00:29:59.381 So the the the important thing to remember
NOTE Confidence: 0.86952585

00:29:59.381 --> 00:30:04.205 is that here in in this first image.
NOTE Confidence: 0.86952585

00:30:04.210 --> 00:30:07.199 Right here we have a pulsating vessel, right?
NOTE Confidence: 0.86952585

00:30:07.199 --> 00:30:09.911 So the reason it appears blue is because
NOTE Confidence: 0.86952585

00:30:09.911 --> 00:30:12.155 the appearance of blue and ultrasound
NOTE Confidence: 0.86952585

00:30:12.155 --> 00:30:14.790 is flow away from the transducer,
NOTE Confidence: 0.86952585

00:30:14.790 --> 00:30:16.690 whereas flow to the transducer
NOTE Confidence: 0.86952585

00:30:16.690 --> 00:30:19.329 is going to appear as you read.
NOTE Confidence: 0.86952585

00:30:19.330 --> 00:30:21.976 So even this is an arterial structure,
NOTE Confidence: 0.86952585

00:30:21.980 --> 00:30:25.790 it's renal artery in this case.
NOTE Confidence: 0.86952585

00:30:25.790 --> 00:30:28.800 The the appearance of the.

NOTE Confidence: 0.87725776

00:30:31.110 --> 00:30:33.826 Building of that lumen is blue because

NOTE Confidence: 0.87725776

00:30:33.826 --> 00:30:37.312 the probe is slightly twisted away, so.

NOTE Confidence: 0.87725776

00:30:37.312 --> 00:30:41.888 If I have a vessel here and I'm

NOTE Confidence: 0.87725776

00:30:41.888 --> 00:30:46.068 looking at it. With micro this way.

NOTE Confidence: 0.87725776

00:30:46.070 --> 00:30:46.946 They found tilted.

NOTE Confidence: 0.87725776

00:30:46.946 --> 00:30:49.740 That way you may have a blue appearance,

NOTE Confidence: 0.87725776

00:30:49.740 --> 00:30:52.645 whereas if I'm twisting this way and

NOTE Confidence: 0.87725776

00:30:52.645 --> 00:30:55.542 the the arteries coming from my wrist

NOTE Confidence: 0.87725776

00:30:55.542 --> 00:30:58.736 to positive is coming from my wrist is

NOTE Confidence: 0.87725776

00:30:58.736 --> 00:31:04.232 then it's going to appear red. Blue red,

NOTE Confidence: 0.87725776

00:31:04.232 --> 00:31:07.604 but it's essentially the same vessel.

NOTE Confidence: 0.87725776

00:31:07.610 --> 00:31:10.532 And so, so that's an important

NOTE Confidence: 0.87725776

00:31:10.532 --> 00:31:12.870 concept to be aware of,

NOTE Confidence: 0.87725776

00:31:12.870 --> 00:31:15.732 and we also use color Doppler

NOTE Confidence: 0.87725776

00:31:15.732 --> 00:31:17.163 flow for inflammation.

NOTE Confidence: 0.87725776

00:31:17.170 --> 00:31:20.778 So hyperemia is a common finding when there's

NOTE Confidence: 0.87725776

00:31:20.778 --> 00:31:23.380 inflammatory to tissues and anthology.

NOTE Confidence: 0.87725776

00:31:23.380 --> 00:31:26.509 This is an example of hyperemia around

NOTE Confidence: 0.87725776

00:31:26.509 --> 00:31:28.950 a somewhat ill defined appendix

NOTE Confidence: 0.87725776

00:31:28.950 --> 00:31:31.986 actually on this one clip here,

NOTE Confidence: 0.87725776

00:31:31.990 --> 00:31:35.385 but this is the partial wall of

NOTE Confidence: 0.87725776

00:31:35.385 --> 00:31:37.810 independence set within a patient.

NOTE Confidence: 0.87725776

00:31:37.810 --> 00:31:40.380 Thank you, defend the silence.

NOTE Confidence: 0.87725776

00:31:40.380 --> 00:31:43.455 So detection of inflammation and

NOTE Confidence: 0.87725776

00:31:43.455 --> 00:31:46.830 also detect detection of flow 2.

NOTE Confidence: 0.87725776

00:31:46.830 --> 00:31:50.796 Or away from the train station.

NOTE Confidence: 0.87725776

00:31:50.800 --> 00:31:52.830 OK, we're gonna do some quick hits

NOTE Confidence: 0.87725776

00:31:52.830 --> 00:31:54.908 to finish off here for shadowing,

NOTE Confidence: 0.87725776

00:31:54.910 --> 00:31:56.410 so we have.

NOTE Confidence: 0.87725776

00:31:56.410 --> 00:31:57.910 And acoustic shadowing,

NOTE Confidence: 0.87725776

00:31:57.910 --> 00:32:01.774 which is an artifact that's caused by.

NOTE Confidence: 0.87725776
00:32:01.780 --> 00:32:04.246 Failure of the Soundbeam to pass
NOTE Confidence: 0.87725776
00:32:04.246 --> 00:32:05.479 through certain tissue.
NOTE Confidence: 0.87725776
00:32:05.480 --> 00:32:08.704 So in still clip number one we have
NOTE Confidence: 0.87725776
00:32:08.704 --> 00:32:10.591 acoustic shadowing because there's
NOTE Confidence: 0.87725776
00:32:10.591 --> 00:32:13.096 gallstones in the global order.
NOTE Confidence: 0.87725776
00:32:13.100 --> 00:32:15.676 So you have hope sound coming here.
NOTE Confidence: 0.87725776
00:32:15.680 --> 00:32:17.171 Political structure falls
NOTE Confidence: 0.87725776
00:32:17.171 --> 00:32:19.656 down stairs and then this.
NOTE Confidence: 0.87725776
00:32:19.660 --> 00:32:21.620 Dark defect behind the gallstone.
NOTE Confidence: 0.87725776
00:32:21.620 --> 00:32:23.960 Here is an acoustic shadowing phenomenon.
NOTE Confidence: 0.87725776
00:32:23.960 --> 00:32:26.306 UM not to be concerned with.
NOTE Confidence: 0.87725776
00:32:26.310 --> 00:32:27.874 Not to be confused.
NOTE Confidence: 0.87725776
00:32:27.874 --> 00:32:29.438 Sorry with Edge Artifact,
NOTE Confidence: 0.87725776
00:32:29.440 --> 00:32:31.740 which is seen right next
NOTE Confidence: 0.87725776
00:32:31.740 --> 00:32:33.580 to the battery there.
NOTE Confidence: 0.87725776

00:32:33.580 --> 00:32:33.964 Uh,
NOTE Confidence: 0.87725776

00:32:33.964 --> 00:32:36.268 and probably a little slightly better,
NOTE Confidence: 0.87725776

00:32:36.270 --> 00:32:38.916 more clear example would be a heel
NOTE Confidence: 0.87725776

00:32:38.916 --> 00:32:42.030 foreign body so you have a splinter here.
NOTE Confidence: 0.87725776

00:32:42.030 --> 00:32:44.946 It looks a little bit right and then you
NOTE Confidence: 0.87725776

00:32:44.946 --> 00:32:47.787 give off this complete shadow artifact.
NOTE Confidence: 0.87725776

00:32:47.790 --> 00:32:49.855 So that's some acoustic shadowing
NOTE Confidence: 0.87725776

00:32:49.855 --> 00:32:52.324 which is an important artifact that
NOTE Confidence: 0.87725776

00:32:52.324 --> 00:32:54.316 we use to interpret our images.
NOTE Confidence: 0.9805913

00:32:56.360 --> 00:32:58.826 The next important artifact to talk
NOTE Confidence: 0.9805913

00:32:58.826 --> 00:33:01.170 about is mirror imaging artifact,
NOTE Confidence: 0.9805913

00:33:01.170 --> 00:33:03.350 which isn't a normal finding.
NOTE Confidence: 0.9805913

00:33:03.350 --> 00:33:06.930 Most of the time so.
NOTE Confidence: 0.9805913

00:33:06.930 --> 00:33:09.560 This artifact is created when
NOTE Confidence: 0.9805913

00:33:09.560 --> 00:33:12.190 you have a curved structure,
NOTE Confidence: 0.9805913

00:33:12.190 --> 00:33:15.244 which is a stronger reflector of

NOTE Confidence: 0.9805913

00:33:15.244 --> 00:33:17.980 ultrasound relative to the object.

NOTE Confidence: 0.9805913

00:33:17.980 --> 00:33:21.641 It's informative, so on the fast exam

NOTE Confidence: 0.9805913

00:33:21.641 --> 00:33:24.810 you have typically spleen or liver.

NOTE Confidence: 0.9805913

00:33:24.810 --> 00:33:27.690 Here you're stronger reflector curved

NOTE Confidence: 0.9805913

00:33:27.690 --> 00:33:30.570 object distance diagram there and

NOTE Confidence: 0.9805913

00:33:30.660 --> 00:33:33.438 given the difference in the tissue

NOTE Confidence: 0.9805913

00:33:33.438 --> 00:33:36.510 interface you have the appearance of.

NOTE Confidence: 0.9805913

00:33:36.510 --> 00:33:39.606 Liver. That mean the other thing,

NOTE Confidence: 0.9805913

00:33:39.610 --> 00:33:41.956 but it's really just a mirror

NOTE Confidence: 0.9805913

00:33:41.956 --> 00:33:43.520 imaging artifact that's created,

NOTE Confidence: 0.9805913

00:33:43.520 --> 00:33:46.184 which is useful to know because if you

NOTE Confidence: 0.9805913

00:33:46.184 --> 00:33:49.377 have a pleural effusion or human thorax,

NOTE Confidence: 0.9805913

00:33:49.380 --> 00:33:52.508 and this is all going dark over here.

NOTE Confidence: 0.9805913

00:33:52.510 --> 00:33:54.850 So instead of the mirror imaging,

NOTE Confidence: 0.9805913

00:33:54.850 --> 00:33:59.434 and that you're likely to see is complete.

NOTE Confidence: 0.9805913

00:33:59.440 --> 00:34:02.842 And collect technical through a collection
NOTE Confidence: 0.9805913

00:34:02.842 --> 00:34:07.279 there in and pushing his appointment so uhm.
NOTE Confidence: 0.9805913

00:34:07.280 --> 00:34:10.095 New imaging artifact and another
NOTE Confidence: 0.9805913

00:34:10.095 --> 00:34:12.347 example potentially would be,
NOTE Confidence: 0.9805913

00:34:12.350 --> 00:34:15.160 say, a scalp chemo Thomas.
NOTE Confidence: 0.9805913

00:34:15.160 --> 00:34:19.400 So here we have bone.
NOTE Confidence: 0.9805913

00:34:19.400 --> 00:34:21.388 It's a strong reflector.
NOTE Confidence: 0.9805913

00:34:21.388 --> 00:34:25.050 It's curved with the skulls, the scalp,
NOTE Confidence: 0.9805913

00:34:25.050 --> 00:34:28.560 and this is your scalp hematoma.
NOTE Confidence: 0.9805913

00:34:28.560 --> 00:34:32.184 In attainment, so that's just Dad is on.
NOTE Confidence: 0.9805913

00:34:32.190 --> 00:34:33.906 Injuries appreciated over time,
NOTE Confidence: 0.9805913

00:34:33.906 --> 00:34:37.504 so this appearance here is not in epidural
NOTE Confidence: 0.9805913

00:34:37.504 --> 00:34:40.360 subdural or a subcranial entertainer bleed,
NOTE Confidence: 0.9805913

00:34:40.360 --> 00:34:43.965 but it's rather a reflection of this
NOTE Confidence: 0.9805913

00:34:43.965 --> 00:34:47.100 material behind the bone mirror imaging
NOTE Confidence: 0.9805913

00:34:47.100 --> 00:34:51.410 artifact that you will need to get dressed.

NOTE Confidence: 0.9805913

00:34:51.410 --> 00:34:53.440 When you do this skins.

NOTE Confidence: 0.9805913

00:34:53.440 --> 00:34:56.009 We have posterior up to stick enhancement,

NOTE Confidence: 0.9805913

00:34:56.010 --> 00:34:59.167 which is a bright or hypoechoic appearance.

NOTE Confidence: 0.9805913

00:34:59.170 --> 00:35:01.858 At the posterior or far side of a

NOTE Confidence: 0.9805913

00:35:01.858 --> 00:35:04.685 cystic foods to structure due to the

NOTE Confidence: 0.9805913

00:35:04.685 --> 00:35:07.210 lack of attenuation of ultrasound beam.

NOTE Confidence: 0.9805913

00:35:07.210 --> 00:35:09.682 So we have a bladder here and the

NOTE Confidence: 0.9805913

00:35:09.682 --> 00:35:11.771 posterior wall appears very bright

NOTE Confidence: 0.9805913

00:35:11.771 --> 00:35:14.106 due to posterior acoustic enhancement.

NOTE Confidence: 0.9805913

00:35:14.110 --> 00:35:16.366 It's not any different consistency in

NOTE Confidence: 0.9805913

00:35:16.366 --> 00:35:19.089 terms of the wall there relative to

NOTE Confidence: 0.9805913

00:35:19.089 --> 00:35:21.770 the lateral side or the anterior side,

NOTE Confidence: 0.9805913

00:35:21.770 --> 00:35:25.162 but it just looks so much brighter because

NOTE Confidence: 0.9805913

00:35:25.162 --> 00:35:28.877 of the ocean transmission through that.

NOTE Confidence: 0.9805913

00:35:28.880 --> 00:35:31.286 And it's important again because of

NOTE Confidence: 0.9805913

00:35:31.286 --> 00:35:33.630 the possibility for Miss Pathology.
NOTE Confidence: 0.9805913

00:35:33.630 --> 00:35:36.605 So if you're doing a fast exam
NOTE Confidence: 0.9805913

00:35:36.605 --> 00:35:38.380 and everything looks very,
NOTE Confidence: 0.9805913

00:35:38.380 --> 00:35:41.854 very bright behind the bladder, you may miss.
NOTE Confidence: 0.9805913

00:35:41.854 --> 00:35:44.920 We flew in from the customer period.
NOTE Confidence: 0.9805913

00:35:44.920 --> 00:35:47.349 He may miss briefly behind the bladder,
NOTE Confidence: 0.9805913

00:35:47.350 --> 00:35:50.738 so just be cognizant of this artifact
NOTE Confidence: 0.9805913

00:35:50.738 --> 00:35:54.198 and adjust your game for quoting him.
NOTE Confidence: 0.9805913

00:35:54.200 --> 00:35:56.516 OK, and two more quick ones,
NOTE Confidence: 0.9805913

00:35:56.520 --> 00:35:58.460 so reverberation artifact very important.
NOTE Confidence: 0.9805913

00:35:58.460 --> 00:35:59.618 Windows coming along.
NOTE Confidence: 0.9805913

00:35:59.618 --> 00:36:00.390 Very important.
NOTE Confidence: 0.9805913

00:36:00.390 --> 00:36:02.330 We looking at Kirkland bodies.
NOTE Confidence: 0.9805913

00:36:02.330 --> 00:36:04.628 These are equidistant horizontal lines that
NOTE Confidence: 0.9805913

00:36:04.628 --> 00:36:07.748 tend to decrease in intensity on the monitor.
NOTE Confidence: 0.9805913

00:36:07.750 --> 00:36:11.334 It has to do with reflection or

NOTE Confidence: 0.9805913

00:36:11.334 --> 00:36:13.760 regulation of echoes too and.

NOTE Confidence: 0.9805913

00:36:13.760 --> 00:36:15.884 From the pros so.

NOTE Confidence: 0.9805913

00:36:15.884 --> 00:36:20.589 In this case we have the probe here.

NOTE Confidence: 0.9805913

00:36:20.590 --> 00:36:23.467 And we're looking at a lung tissue.

NOTE Confidence: 0.9805913

00:36:23.470 --> 00:36:25.098 This is the pleura.

NOTE Confidence: 0.9805913

00:36:25.098 --> 00:36:28.446 So this isn't a line here and this

NOTE Confidence: 0.9805913

00:36:28.446 --> 00:36:31.702 is a really great thing here and you

NOTE Confidence: 0.9805913

00:36:31.794 --> 00:36:34.866 can see the distance between this.

NOTE Confidence: 0.9805913

00:36:34.870 --> 00:36:35.282 Uh.

NOTE Confidence: 0.9805913

00:36:35.282 --> 00:36:38.578 And this is the same which is also

NOTE Confidence: 0.9805913

00:36:38.578 --> 00:36:41.767 similar to the distance between right.

NOTE Confidence: 0.9805913

00:36:41.770 --> 00:36:43.715 Exactly precisely the distance from

NOTE Confidence: 0.9805913

00:36:43.715 --> 00:36:46.155 the probe to when the ultrasound

NOTE Confidence: 0.9805913

00:36:46.155 --> 00:36:47.847 beam hits the floor.

NOTE Confidence: 0.9805913

00:36:47.850 --> 00:36:51.090 So normal filled air airlines are good day.

NOTE Confidence: 0.9225594999999999

00:36:51.090 --> 00:36:53.771 OK, this is the type of reverberation
NOTE Confidence: 0.9225594999999999

00:36:53.771 --> 00:36:56.694 artifact that we assume or that we should
NOTE Confidence: 0.9225594999999999

00:36:56.694 --> 00:36:59.485 be seeing when there is healthy lung
NOTE Confidence: 0.9225594999999999

00:36:59.485 --> 00:37:02.020 tissue without any problems reported.
NOTE Confidence: 0.94312334

00:37:04.690 --> 00:37:06.795 OK, and here's another example
NOTE Confidence: 0.94312334

00:37:06.795 --> 00:37:08.058 of reverberation artifact,
NOTE Confidence: 0.94312334

00:37:08.060 --> 00:37:09.323 sometimes called ringdown
NOTE Confidence: 0.94312334

00:37:09.323 --> 00:37:11.428 artifact or comma tail artifact,
NOTE Confidence: 0.94312334

00:37:11.430 --> 00:37:15.198 and this has to do with.
NOTE Confidence: 0.94312334

00:37:15.200 --> 00:37:18.206 And essentially the interface of the
NOTE Confidence: 0.94312334

00:37:18.206 --> 00:37:21.179 object where the sunbeams were stuck,
NOTE Confidence: 0.94312334

00:37:21.180 --> 00:37:23.112 reverberating back and forth,
NOTE Confidence: 0.94312334

00:37:23.112 --> 00:37:26.010 and which creates a deep dive
NOTE Confidence: 0.94312334

00:37:26.100 --> 00:37:28.148 vertically on the screen.
NOTE Confidence: 0.94312334

00:37:28.150 --> 00:37:33.130 So here is an image in terms of jugular vein,
NOTE Confidence: 0.94312334

00:37:33.130 --> 00:37:36.450 and then you have a.

NOTE Confidence: 0.94312334

00:37:36.450 --> 00:37:38.655 Presumably a needle here that's

NOTE Confidence: 0.94312334

00:37:38.655 --> 00:37:40.860 coming towards self alumina that

NOTE Confidence: 0.94312334

00:37:40.934 --> 00:37:43.636 thing so the the needle itself has

NOTE Confidence: 0.94312334

00:37:43.636 --> 00:37:46.003 two metallic portions right as the

NOTE Confidence: 0.94312334

00:37:46.003 --> 00:37:48.277 anterior portion and the post here

NOTE Confidence: 0.94312334

00:37:48.277 --> 00:37:51.252 portion so it ends up happening is

NOTE Confidence: 0.94312334

00:37:51.252 --> 00:37:53.512 that ultrasound beam gets trapped

NOTE Confidence: 0.94312334

00:37:53.512 --> 00:37:56.648 between the two parts of that needle

NOTE Confidence: 0.94312334

00:37:56.648 --> 00:37:59.873 in italic tip and it's going to

NOTE Confidence: 0.94312334

00:37:59.873 --> 00:38:02.113 create these sort of repetitive.

NOTE Confidence: 0.94312334

00:38:02.120 --> 00:38:04.946 Verdict never will be racing dates,

NOTE Confidence: 0.94312334

00:38:04.950 --> 00:38:09.189 so it's going to be down to the machine.

NOTE Confidence: 0.94312334

00:38:09.190 --> 00:38:12.082 So I'm unlike just the airlines

NOTE Confidence: 0.94312334

00:38:12.082 --> 00:38:14.996 that are separated by the distance

NOTE Confidence: 0.94312334

00:38:14.996 --> 00:38:17.660 of the probe to the flora.

NOTE Confidence: 0.94312334

00:38:17.660 --> 00:38:21.428 This is more of a persistent ping pong
NOTE Confidence: 0.94312334

00:38:21.428 --> 00:38:24.729 effect within the lumen of that needle,
NOTE Confidence: 0.94312334

00:38:24.730 --> 00:38:27.685 causing a vertical dive and
NOTE Confidence: 0.94312334

00:38:27.685 --> 00:38:30.640 you would expect to see.
NOTE Confidence: 0.94312334

00:38:30.640 --> 00:38:34.504 Bring down the appearance on the screen.
NOTE Confidence: 0.94312334

00:38:34.510 --> 00:38:34.973 Alright,
NOTE Confidence: 0.94312334

00:38:34.973 --> 00:38:39.932 so we've made it to the end and I thank
NOTE Confidence: 0.94312334

00:38:39.932 --> 00:38:43.994 you for sticking through the lecture.
NOTE Confidence: 0.94312334

00:38:44.000 --> 00:38:46.065 Recap how you can get good images.
NOTE Confidence: 0.94312334

00:38:46.070 --> 00:38:48.734 A lot of it is going to be practice.
NOTE Confidence: 0.94312334

00:38:48.740 --> 00:38:49.330 Practice,
NOTE Confidence: 0.94312334

00:38:49.330 --> 00:38:51.690 practice and more practice.
NOTE Confidence: 0.94312334

00:38:51.690 --> 00:38:54.420 But you're gonna and impose some
NOTE Confidence: 0.94312334

00:38:54.420 --> 00:38:56.830 of the important concepts and
NOTE Confidence: 0.94312334

00:38:56.830 --> 00:38:59.380 understanding of physics that dumb.
NOTE Confidence: 0.94312334

00:38:59.380 --> 00:39:02.422 Now we can throw in some of these slides.

NOTE Confidence: 0.94312334

00:39:02.430 --> 00:39:04.766 You're going to pick a good Pro is

NOTE Confidence: 0.94312334

00:39:04.766 --> 00:39:06.710 choosing the right probe is sometimes

NOTE Confidence: 0.94312334

00:39:06.710 --> 00:39:09.126 half the battle for for the the

NOTE Confidence: 0.94312334

00:39:09.126 --> 00:39:11.580 application that you're trying to achieve,

NOTE Confidence: 0.94312334

00:39:11.580 --> 00:39:12.774 use good windows.

NOTE Confidence: 0.94312334

00:39:12.774 --> 00:39:14.764 Use fluid filled structures to

NOTE Confidence: 0.94312334

00:39:14.764 --> 00:39:17.030 see objects that are behind them.

NOTE Confidence: 0.94312334

00:39:17.030 --> 00:39:17.700 Identify landmarks,

NOTE Confidence: 0.94312334

00:39:17.700 --> 00:39:21.220 a lot of what we do with pattern recognition.

NOTE Confidence: 0.94312334

00:39:21.220 --> 00:39:23.506 So if you don't start with

NOTE Confidence: 0.94312334

00:39:23.506 --> 00:39:24.649 good landmark identification,

NOTE Confidence: 0.94312334

00:39:24.650 --> 00:39:27.219 you're sort of going on a fishing

NOTE Confidence: 0.94312334

00:39:27.219 --> 00:39:28.788 expedition to some extent

NOTE Confidence: 0.94312334

00:39:28.788 --> 00:39:30.368 and adjust the depth.

NOTE Confidence: 0.94312334

00:39:30.370 --> 00:39:33.790 We don't want any wasted space on the screen,

NOTE Confidence: 0.94312334

00:39:33.790 --> 00:39:36.604 so we want to maximize your object
NOTE Confidence: 0.94312334

00:39:36.604 --> 00:39:39.823 of interest and make it as big as
NOTE Confidence: 0.94312334

00:39:39.823 --> 00:39:41.753 possible without losing any of
NOTE Confidence: 0.94312334

00:39:41.836 --> 00:39:44.326 the important detail behind it.
NOTE Confidence: 0.94312334

00:39:44.330 --> 00:39:46.410 Get to know your machine,
NOTE Confidence: 0.94312334

00:39:46.410 --> 00:39:47.817 you different settings.
NOTE Confidence: 0.94312334

00:39:47.817 --> 00:39:50.631 Even within a single hospital are
NOTE Confidence: 0.94312334

00:39:50.631 --> 00:39:53.376 going to have different machines with
NOTE Confidence: 0.94312334

00:39:53.376 --> 00:39:56.294 different knobs and so part of being
NOTE Confidence: 0.94312334

00:39:56.294 --> 00:39:58.854 able to be a good cynologist or or
NOTE Confidence: 0.94312334

00:39:58.860 --> 00:40:01.205 good clinician who include ultrasound
NOTE Confidence: 0.94312334

00:40:01.205 --> 00:40:04.908 to help care for your patient is dumb.
NOTE Confidence: 0.94312334

00:40:04.910 --> 00:40:07.215 Getting really comfortable and not
NOTE Confidence: 0.94312334

00:40:07.215 --> 00:40:10.369 having to sort of fiddle with the
NOTE Confidence: 0.94312334

00:40:10.369 --> 00:40:12.655 machine is here there in vivo.
NOTE Confidence: 0.94312334

00:40:12.660 --> 00:40:15.360 Caring for kids and their families.

NOTE Confidence: 0.94312334

00:40:15.360 --> 00:40:16.870 And and and that's it.

NOTE Confidence: 0.94869137

00:40:19.340 --> 00:40:21.866 Your friendly pimp Focusin consists of

NOTE Confidence: 0.94869137

00:40:21.866 --> 00:40:24.886 myself and lichen and Julie Lavender and

NOTE Confidence: 0.94869137

00:40:24.886 --> 00:40:27.833 will be doing the scanning shift sessions

NOTE Confidence: 0.94869137

00:40:27.906 --> 00:40:30.558 together and we're excited for this

NOTE Confidence: 0.94869137

00:40:30.558 --> 00:40:32.756 opportunity to augment your experience.

NOTE Confidence: 0.94869137

00:40:32.756 --> 00:40:35.738 We do realize this is an optional

NOTE Confidence: 0.94869137

00:40:35.738 --> 00:40:37.529 commitment on your behalf.

NOTE Confidence: 0.94869137

00:40:37.530 --> 00:40:39.690 So with that in mind,

NOTE Confidence: 0.94869137

00:40:39.690 --> 00:40:42.288 we're going to provide an extra

NOTE Confidence: 0.94869137

00:40:42.288 --> 00:40:44.020 fruitful experience. We hope.

NOTE Confidence: 0.92296535

00:40:46.140 --> 00:40:48.906 When we when we spend time

NOTE Confidence: 0.92296535

00:40:48.906 --> 00:40:51.410 together on his gaming ships,

NOTE Confidence: 0.92296535

00:40:51.410 --> 00:40:54.728 so the the same sheet will be

NOTE Confidence: 0.92296535

00:40:54.728 --> 00:40:57.640 updated quarterly and dumb right now.

NOTE Confidence: 0.92296535

00:40:57.640 --> 00:41:00.986 With COVID we're only limiting to 1.

NOTE Confidence: 0.92296535

00:41:00.990 --> 00:41:04.960 Maybe two rotators on today.

NOTE Confidence: 0.92296535

00:41:04.960 --> 00:41:07.837 But there's no limit you can do.

NOTE Confidence: 0.92296535

00:41:07.840 --> 00:41:09.828 Certainly if you're interested,

NOTE Confidence: 0.92296535

00:41:09.828 --> 00:41:12.313 multiple scanning ships with us

NOTE Confidence: 0.92296535

00:41:12.313 --> 00:41:14.089 throughout the academic year.

NOTE Confidence: 0.92296535

00:41:14.090 --> 00:41:16.178 And so solution.

NOTE Confidence: 0.92296535

00:41:16.180 --> 00:41:18.148 And thanks for listening.