WEBVTT NOTE duration:"00:41:18.1500000" NOTE language:en-us NOTE Confidence: 0.979712  $00:00:00.000 \rightarrow 00:00:02.768$  Hey there, thanks for your interest in doing NOTE Confidence: 0.979712  $00:00:02.768 \rightarrow 00:00:05.596$  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  $00{:}00{:}07{.}714 \dashrightarrow 00{:}00{:}09{.}269$  have an introductory lecture provided NOTE Confidence: 0.979712  $00{:}00{:}09{.}269 \dashrightarrow 00{:}00{:}11.637$  before your shift so they can have a NOTE Confidence: 0.979712  $00:00:11.699 \rightarrow 00:00:13.511$  little bit of background information to NOTE Confidence: 0.979712  $00:00:13.511 \rightarrow 00:00:16.100$  use as a guide when you're doing your NOTE Confidence: 0.979712  $00:00:16.100 \rightarrow 00:00:18.650$  hands on scanning with us on shift. NOTE Confidence: 0.979712  $00:00:18.650 \rightarrow 00:00:22.619$  Maybe after they do their next slide. NOTE Confidence: 0.979712  $00:00:22.620 \rightarrow 00:00:24.370$  So this intro presentation hopefully NOTE Confidence: 0.979712  $00:00:24.370 \longrightarrow 00:00:26.808$  will be able to view your scanning NOTE Confidence: 0.979712  $00:00:26.808 \rightarrow 00:00:29.312$  shift and then it'll give you a brief NOTE Confidence: 0.979712  $00:00:29.376 \rightarrow 00:00:31.186$  introduction to some key concepts NOTE Confidence: 0.979712  $00:00:31.186 \longrightarrow 00:00:33.572$  that you're going to need to be

 $00:00:33.572 \rightarrow 00:00:35.860$  clearly with most in order to be good

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 $00:00:35.928 \rightarrow 00:00:37.923$  at getting images and interpreting

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 $00:00:37.923 \longrightarrow 00:00:39.918$  the images on the screen.

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 $00{:}00{:}39{.}920 \dashrightarrow 00{:}00{:}42{.}184$  So we'll have to delve into a little

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 $00:00:42.184 \rightarrow 00:00:44.760$  bit and some basic ultrasound physics.

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 $00{:}00{:}44.760 \dashrightarrow 00{:}00{:}47.094$  We're going to talk about scamming

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 $00:00:47.094 \rightarrow 00:00:49.536$  concepts that are related to the type

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 $00{:}00{:}49.536 \dashrightarrow 00{:}00{:}52.030$  of probe that you use with you for ever.

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 $00:00:52.030 \longrightarrow 00:00:52.834$  Transducer orientation.

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 $00:00:52.834 \dashrightarrow 00:00:55.261$  On the screen, some function apps

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

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 $00{:}00{:}57{.}300 \dashrightarrow 00{:}00{:}58{.}410$  Doppler depth gain,

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 $00{:}00{:}58{.}410 \dashrightarrow 00{:}01{:}01{.}456$  things like that and nobody is an idea

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 $00{:}01{:}01{.}456 \dashrightarrow 00{:}01{:}04{.}144$  of all these different functions as it

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 $00:01:04.144 \rightarrow 00:01:06.658$  pertains to your particular machine.

 $00:01:06.660 \longrightarrow 00:01:09.810$  So this is something that is

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 $00:01:09.810 \longrightarrow 00:01:12.719$  often the rate limiting Step 4.

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 $00{:}01{:}12.720 \dashrightarrow 00{:}01{:}14.925$  Sonologist or positions were using

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 $00:01:14.925 \longrightarrow 00:01:17.611$  Hope Sam to get comfortable at

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

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 $00:01:19.630 \longrightarrow 00:01:21.170$  And then you know,

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 $00:01:21.170 \longrightarrow 00:01:23.480$  do the limited nature of trying

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 $00:01:23.564 \rightarrow 00:01:25.028$  to keep this short.

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 $00{:}01{:}25{.}030 \dashrightarrow 00{:}01{:}25{.}804$  Few guys,

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 $00{:}01{:}25.804 \dashrightarrow 00{:}01{:}28.126$  there's tons of other resources we

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

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

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 $00:01:33.140 \longrightarrow 00:01:35.474$  video based teaching materials and alien

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 $00:01:35.474 \rightarrow 00:01:38.537$  as well has some case based or person.

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 $00:01:51.580 \longrightarrow 00:01:54.870$  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

 $00:01:56.772 \longrightarrow 00:01:59.450$  a little bit time to teach how to

NOTE Confidence: 0.9732856

 $00:01:59.450 \rightarrow 00:02:01.040$  perform quality control, percent scans.

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

NOTE Confidence: 0.9732856

 $00:02:03.421 \rightarrow 00:02:05.932$  pressure that to do this so we don't have

NOTE Confidence: 0.9732856

 $00{:}02{:}05{.}932 \dashrightarrow 00{:}02{:}08{.}297$  competing interests and other clinical care

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 $00{:}02{:}08.297 \dashrightarrow 00{:}02{:}10.322$  needs that are happening simultaneously.

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 $00{:}02{:}10.330 \dashrightarrow 00{:}02{:}12.780$  So we can really spend the time

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 $00{:}02{:}12.780 \dashrightarrow 00{:}02{:}15.248$  to go over the approach to.

NOTE Confidence: 0.9732856

 $00{:}02{:}15{.}250 \dashrightarrow 00{:}02{:}17{.}758$  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

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 $00:02:21.380 \longrightarrow 00:02:24.119$  easier and smoother 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

 $00:02:27.922 \rightarrow 00:02:31.370$  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 bed side. NOTE Confidence: 0.9732856

 $00:02:34.590 \dashrightarrow 00:02:37.943$  So for both of them accommodation, yes or no. NOTE Confidence: 0.9732856

 $00{:}02{:}37{.}943 \dashrightarrow 00{:}02{:}40{.}120$  Is there free fluid in the abdomen

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 $00{:}02{:}40.191 \dashrightarrow 00{:}02{:}43.245$  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

 $00{:}02{:}45.626 \dashrightarrow 00{:}02{:}47.886$  The cardiac function preserved and

NOTE Confidence: 0.9732856

 $00:02:47.886 \longrightarrow 00:02:51.050$  so that really is, is a unique.

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 $00{:}02{:}53{.}930 \dashrightarrow 00{:}02{:}55{.}194$  Aspect of clinical percent,

NOTE Confidence: 0.9698476

 $00:02:55.194 \rightarrow 00:02:57.090$  which differs from radiology over sample,

NOTE Confidence: 0.9698476

 $00:02:57.090 \dashrightarrow 00:03:00.402$  tends to be a little more in depth and

NOTE Confidence: 0.9698476

 $00{:}03{:}00{.}402 \dashrightarrow 00{:}03{:}03{.}356$  detail in terms of their scope and

NOTE Confidence: 0.9698476

 $00{:}03{:}03{.}356 \dashrightarrow 00{:}03{:}06{.}010$  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,

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 $00:03:08.630 \longrightarrow 00:03:10.598$  clip it here for a moment.

NOTE Confidence: 0.9698476

 $00:03:10.600 \rightarrow 00:03:12.240$  There's multiple advantages over sounds,

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 $00:03:12.240 \longrightarrow 00:03:13.880$  sort of relative to other

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

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 $00:03:15.520 \rightarrow 00:03:18.800$  and you know we said CAT scans and even more,

- NOTE Confidence: 0.9698476
- $00:03:18.800 \longrightarrow 00:03:20.440$  and so our furniture or

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

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 $00:03:22.080 \rightarrow 00:03:24.186$  So you're looking at objects and

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 $00:03:24.186 \rightarrow 00:03:26.249$  organs and two planes of everything

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 $00{:}03{:}26{.}249 \dashrightarrow 00{:}03{:}28{.}593$  we want to image and we have an

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 $00:03:28.660 \rightarrow 00:03:30.935$  object of interest you want to get.

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 $00:03:30.940 \longrightarrow 00:03:32.908$  Get an image in perpendicular plane.

NOTE Confidence: 0.9698476

 $00:03:32.910 \rightarrow 00:03:36.798$  So we say along Axis and the short axis.

NOTE Confidence: 0.9698476

00:03:36.800 - 00:03:38.152 By the sales person doesn't

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 $00:03:38.152 \rightarrow 00:03:39.166$  employ any radiation,

NOTE Confidence: 0.9698476

 $00:03:39.170 \longrightarrow 00:03:40.958$  so it's safe for patients and

NOTE Confidence: 0.9698476

 $00{:}03{:}40{.}958 \dashrightarrow 00{:}03{:}43{.}239$  we could do it that seriously.

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 $00:03:43.240 \longrightarrow 00:03:46.180$  So you can check the progression of

NOTE Confidence: 0.9698476

 $00{:}03{:}46{.}180 \dashrightarrow 00{:}03{:}48{.}293$  illness with furniture or percent

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 $00:03:48.293 \dashrightarrow 00:03:50.627$  in two different points in time.

- $00:03:50.630 \longrightarrow 00:03:51.809$  It's fairly painless.
- NOTE Confidence: 0.9698476
- $00{:}03{:}51{.}809 \dashrightarrow 00{:}03{:}54{.}167$  There's been tons of studies on
- NOTE Confidence: 0.9698476
- $00{:}03{:}54{.}167 \dashrightarrow 00{:}03{:}55{.}915$  fracture literature with clinic
- NOTE Confidence: 0.9698476
- $00{:}03{:}55{.}915 \dashrightarrow 00{:}03{:}58{.}055$  programs in applied with paint,
- NOTE Confidence: 0.9698476
- 00:03:58.060 --> 00:03:58.738 faces, scores,
- NOTE Confidence: 0.9698476
- $00{:}03{:}58{.}738 \dashrightarrow 00{:}04{:}01{.}111$  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
- $00:04:03.430 \longrightarrow 00:04:05.908$  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
- $00:04:07.150 \dashrightarrow 00:04:09.380$  and certainly something that does
- NOTE Confidence: 0.9698476
- $00:04:09.380 \longrightarrow 00:04:12.070$  not require sedation or should not
- NOTE Confidence: 0.9698476
- $00{:}04{:}12.070 \dashrightarrow 00{:}04{:}14.368$  require sedation and little to be
- NOTE Confidence: 0.9698476
- $00:04:14.368 \rightarrow 00:04:17.480$  performed and then finally again sort of.
- NOTE Confidence: 0.9698476
- $00:04:17.480 \longrightarrow 00:04:18.286$  It's repeatable.
- NOTE Confidence: 0.9698476
- $00:04:18.286 \rightarrow 00:04:22.400$  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
- $00{:}04{:}22.731 \dashrightarrow 00{:}04{:}24.386$  or we say it's analogous,
- NOTE Confidence: 0.9698476
- $00:04:24.390 \longrightarrow 00:04:26.322$  but it's easy to repeat at
- NOTE Confidence: 0.9698476
- $00{:}04{:}26.322 \dashrightarrow 00{:}04{:}28.030$  a different point in time,
- NOTE Confidence: 0.9698476
- $00:04:28.030 \longrightarrow 00:04:30.016$  and having a machine at the
- NOTE Confidence: 0.9698476
- $00{:}04{:}30{.}016 \dashrightarrow 00{:}04{:}31{.}009$  radio for bedside.
- NOTE Confidence: 0.9698476
- $00:04:31.010 \longrightarrow 00:04:32.816$  So it's really great and adds a
- NOTE Confidence: 0.9698476
- $00:04:32.816 \rightarrow 00:04:34.535$  lot of really important information
- NOTE Confidence: 0.9698476
- $00:04:34.535 \longrightarrow 00:04:36.295$  to the clinical picture,
- NOTE Confidence: 0.9698476
- $00:04:36.300 \longrightarrow 00:04:39.088$  and in many cases.
- NOTE Confidence: 0.9698476
- $00:04:39.090 \rightarrow 00:04:41.818$  So the questions we always are gonna ask
- NOTE Confidence: 0.9698476
- $00:04:41.818 \rightarrow 00:04:44.397$  yourself with where was an ultrasound done?
- NOTE Confidence: 0.9698476
- $00{:}04{:}44{.}400 \dashrightarrow 00{:}04{:}46{.}500$  Is it done by a clinician at
- NOTE Confidence: 0.9698476
- $00:04:46.500 \longrightarrow 00:04:48.650$  the point of care Commission,
- NOTE Confidence: 0.9698476
- $00{:}04{:}48.650 \dashrightarrow 00{:}04{:}51.128$  who's likely taking care of the patient?
- NOTE Confidence: 0.9698476
- $00{:}04{:}51{.}130 \dashrightarrow 00{:}04{:}53{.}496$  Or is it a technician performed or
- NOTE Confidence: 0.9698476

 $00:04:53.496 \rightarrow 00:04:54.940$  radiology performed ultrasound done

NOTE Confidence: 0.9698476

 $00:04:54.940 \longrightarrow 00:04:56.436$  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

 $00:04:58.560 \longrightarrow 00:05:00.330$  Unique is that it's it's.

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 $00{:}05{:}00{.}330 \dashrightarrow 00{:}05{:}01{.}554$  It's very operator dependent.

NOTE Confidence: 0.9698476

 $00{:}05{:}01{.}554 \dashrightarrow 00{:}05{:}04{.}579$  So even if even within a certain application,

NOTE Confidence: 0.9698476

 $00:05:04.580 \dashrightarrow 00:05:07.058$  so let's take the appendix for example.

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 $00:05:07.060 \longrightarrow 00:05:12.200$  We can have two. And skilled.

NOTE Confidence: 0.9698476

 $00{:}05{:}12.200 \dashrightarrow 00{:}05{:}14.388$ Ultrasound performers and one

NOTE Confidence: 0.9698476

 $00:05:14.388 \longrightarrow 00:05:18.090$  of the two has a higher on.

NOTE Confidence: 0.9698476

 $00{:}05{:}18.090 \dashrightarrow 00{:}05{:}20.892$  Oh accuracy in terms of appendix

NOTE Confidence: 0.9698476

 $00{:}05{:}20.892 \dashrightarrow 00{:}05{:}23.365$  identification and then ability to

NOTE Confidence: 0.9698476

 $00:05:23.365 \rightarrow 00:05:24.952$  interpret surrounding structures

NOTE Confidence: 0.9698476

 $00:05:24.952 \longrightarrow 00:05:27.068$  from things like that.

NOTE Confidence: 0.9698476

 $00{:}05{:}27{.}070 \dashrightarrow 00{:}05{:}29{.}415$  Saving amongst ourselves as an

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 $00:05:29.415 \rightarrow 00:05:30.822$  emergency medicine physicians

- NOTE Confidence: 0.9698476
- $00:05:30.822 \rightarrow 00:05:33.731$  and even in in the radiology and
- NOTE Confidence: 0.9698476
- $00{:}05{:}33{.}731 \dashrightarrow 00{:}05{:}35{.}251$  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
- $00{:}05{:}37{.}340 \dashrightarrow 00{:}05{:}40{.}244$  So it's very different than putting
- NOTE Confidence: 0.9698476
- $00{:}05{:}40{.}244 \dashrightarrow 00{:}05{:}43{.}106$  a plate on some body's back and
- NOTE Confidence: 0.9698476
- $00:05:43.106 \dashrightarrow 00:05:45.602$  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
- $00{:}05{:}48.740 \dashrightarrow 00{:}05{:}50.609$  So very important to be aware that
- NOTE Confidence: 0.9698476
- $00{:}05{:}50{.}609 \dashrightarrow 00{:}05{:}52{.}448$  is an operator dependent modality and
- NOTE Confidence: 0.9698476
- $00:05:52.448 \rightarrow 00:05:54.737$  then why is ultrasound being done so?
- NOTE Confidence: 0.9698476
- $00:05:54.740 \longrightarrow 00:05:55.940$  Where is it done?
- NOTE Confidence: 0.9698476
- $00:05:55.940 \longrightarrow 00:05:56.840$  Who's doing it?
- NOTE Confidence: 0.9698476
- $00:05:56.840 \longrightarrow 00:05:58.842$  Are you doing this as a as
- NOTE Confidence: 0.9698476
- $00:05:58.842 \longrightarrow 00:06:00.439$  a diagnostic and it should,
- NOTE Confidence: 0.9698476
- $00:06:00.440 \rightarrow 00:06:03.194$  and if so at the point of care should
- NOTE Confidence: 0.9698476

 $00:06:03.194 \longrightarrow 00:06:05.238$  really be a yes or no question.

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 $00{:}06{:}05{.}240 \dashrightarrow 00{:}06{:}07{.}116$  And for the most part and then

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 $00{:}06{:}07{.}116 \dashrightarrow 00{:}06{:}08{.}298$  there's times where ultrasound

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

NOTE Confidence: 0.9768277

 $00{:}06{:}10.224 \dashrightarrow 00{:}06{:}11.840$  clinical care because it's safer.

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

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 $00{:}06{:}13.758 \dashrightarrow 00{:}06{:}16.239$  and it has been shown time and time

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 $00:06:16.239 \rightarrow 00:06:17.834$  again to increase success rates.

NOTE Confidence: 0.9768277

 $00{:}06{:}17.840 \dashrightarrow 00{:}06{:}19.040$  So for certain procedures.

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 $00:06:21.580 \rightarrow 00:06:23.230$  So let's get into what you're

NOTE Confidence: 0.98321646

 $00:06:23.230 \longrightarrow 00:06:24.800$  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

 $00{:}06{:}27.200 \dashrightarrow 00{:}06{:}29.685$  either a handheld device or a

NOTE Confidence: 0.98321646

 $00:06:29.685 \rightarrow 00:06:31.695$  more standard for the ultrasound?

NOTE Confidence: 0.98321646

 $00{:}06{:}31.700 \dashrightarrow 00{:}06{:}35.180$  Machine, So what happens is you have that

NOTE Confidence: 0.98321646

 $00:06:35.180 \rightarrow 00:06:37.598$  everything starts with the transducer,

 $00:06:37.600 \rightarrow 00:06:40.778$  so the machine sends an electrical signal.

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

NOTE Confidence: 0.98321646

 $00:06:43.468 \dashrightarrow 00:06:46.274$  probe to the transducer and these

NOTE Confidence: 0.98321646

 $00{:}06{:}46.274 \dashrightarrow 00{:}06{:}49.058$  these probes are tightly packed with

NOTE Confidence: 0.98321646

 $00{:}06{:}49{.}058 \dashrightarrow 00{:}06{:}51{.}802$  crystals and so that that electricity

NOTE Confidence: 0.98321646

 $00{:}06{:}51{.}802 \dashrightarrow 00{:}06{:}54{.}810$  that that current what it does is

NOTE Confidence: 0.98321646

 $00{:}06{:}54.810 \dashrightarrow 00{:}06{:}57.270$  it it causes vibration of these

NOTE Confidence: 0.98321646

 $00:06:57.270 \rightarrow 00:07:00.300$  crystals at a very high frequency.

NOTE Confidence: 0.98321646

 $00{:}07{:}00{.}300 \dashrightarrow 00{:}07{:}03{.}268$  Hence the name ultrasound.

NOTE Confidence: 0.98321646

 $00:07:03.270 \longrightarrow 00:07:05.280$  So the sound signal at that

NOTE Confidence: 0.98321646

 $00{:}07{:}05{.}280 \dashrightarrow 00{:}07{:}07{.}389$  point is sent to a tissue.

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 $00{:}07{:}07{.}390 \dashrightarrow 00{:}07{:}11{.}380$  In this case, here you have.

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 $00:07:11.380 \longrightarrow 00:07:12.448$  Cardiac structure.

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 $00{:}07{:}12.448 \dashrightarrow 00{:}07{:}15.118$  And depending on the tissue

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

- $00:07:17.740 \longrightarrow 00:07:20.310$  how fluid filled it is,
- NOTE Confidence: 0.98321646
- $00:07:20.310 \dashrightarrow 00:07:24.538$  there is an interaction between the tissue.
- NOTE Confidence: 0.98321646
- $00{:}07{:}24.540 \dashrightarrow 00{:}07{:}25.944$  And the pro.
- NOTE Confidence: 0.98321646
- $00:07:25.944 \rightarrow 00:07:29.770$  And there's two concepts that come into play,
- NOTE Confidence: 0.98321646
- $00{:}07{:}29{.}770 \dashrightarrow 00{:}07{:}33{.}290$  so there is a attenuation which is lost.
- NOTE Confidence: 0.98321646
- $00{:}07{:}33.290 \dashrightarrow 00{:}07{:}35.980$  Signal entry energy and there's
- NOTE Confidence: 0.98321646
- $00{:}07{:}35{.}980 \dashrightarrow 00{:}07{:}38{.}670$  impedance which is reflection of
- NOTE Confidence: 0.98321646
- $00{:}07{:}38.754 \dashrightarrow 00{:}07{:}41.778$  ultrasound back to the to the court.
- NOTE Confidence: 0.98321646
- 00:07:41.780 --> 00:07:42.203 Yeah,
- NOTE Confidence: 0.98321646
- $00:07:42.203 \longrightarrow 00:07:44.741$  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
- $00{:}07{:}46.010 \dashrightarrow 00{:}07{:}49.386$  the computer is going to generate an image.
- NOTE Confidence: 0.98321646
- $00{:}07{:}49{.}390 \dashrightarrow 00{:}07{:}52{.}645$  It's going to be a grayscale image
- NOTE Confidence: 0.98321646
- $00:07:52.645 \rightarrow 00:07:55.279$  and with knowledge of important.
- NOTE Confidence: 0.98321646
- $00{:}07{:}55{.}280 \dashrightarrow 00{:}07{:}57{.}170$  Uh, concepts of general concepts
- NOTE Confidence: 0.98321646
- $00:07:57.170 \longrightarrow 00:07:59.480$  that we're going to go into.

- NOTE Confidence: 0.98321646
- $00:07:59.480 \longrightarrow 00:08:01.766$  You will be able to say,

00:08:01.770 --> 00:08:02.149 OK,

NOTE Confidence: 0.98321646

 $00:08:02.149 \longrightarrow 00:08:04.802$  this image that is dark on the

NOTE Confidence: 0.98321646

 $00{:}08{:}04.802 \dashrightarrow 00{:}08{:}06.868$ ultrasound screen is because it's

NOTE Confidence: 0.98321646

 $00{:}08{:}06{.}868 \dashrightarrow 00{:}08{:}08{.}913$  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

 $00:08:11.630 \longrightarrow 00:08:12.750$  And lack of influence.

NOTE Confidence: 0.9746281

 $00:08:15.410 \rightarrow 00:08:18.650$  And so let's look at these two properties,

NOTE Confidence: 0.9746281

 $00:08:18.650 \dashrightarrow 00:08:21.890$  average of 10 transmission one at a time.

NOTE Confidence: 0.9746281

 $00:08:21.890 \longrightarrow 00:08:23.534$  The first is attenuation,

NOTE Confidence: 0.9746281

 $00:08:23.534 \rightarrow 00:08:25.178$  so attenuation is essentially

NOTE Confidence: 0.9746281

 $00{:}08{:}25{.}178 \dashrightarrow 00{:}08{:}27{.}159$  the loss of signal energy,

NOTE Confidence: 0.9746281

 $00{:}08{:}27.160 \dashrightarrow 00{:}08{:}29.185$  as as ultrasound goes through

NOTE Confidence: 0.9746281

 $00{:}08{:}29{.}185 \dashrightarrow 00{:}08{:}31{.}210$  a certain object or structure,

NOTE Confidence: 0.9746281

 $00:08:31.210 \longrightarrow 00:08:34.106$  it's going to lose the amount of signal

 $00:08:34.106 \dashrightarrow 00:08:37.685$  that it can transmit deep to that structure.

NOTE Confidence: 0.9746281

 $00:08:37.690 \longrightarrow 00:08:41.488$  So you'll have a less define.

NOTE Confidence: 0.9746281

 $00:08:41.490 \longrightarrow 00:08:45.477$  The image on the screen that seems to happen.

NOTE Confidence: 0.9746281

 $00:08:45.480 \longrightarrow 00:08:47.902$  Now the amount of attenuation is going

NOTE Confidence: 0.9746281

 $00:08:47.902 \dashrightarrow 00:08:50.465$  to be different depending on the make

NOTE Confidence: 0.9746281

 $00{:}08{:}50.465 \dashrightarrow 00{:}08{:}52.655$  up the composition of the structure

NOTE Confidence: 0.9746281

 $00:08:52.723 \longrightarrow 00:08:54.709$  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

 $00{:}08{:}59{.}920 \dashrightarrow 00{:}09{:}02{.}314$  Imagine that there's some degree of

NOTE Confidence: 0.9746281

 $00{:}09{:}02{.}314 \dashrightarrow 00{:}09{:}04{.}360$  attenuation that's going to exist.

NOTE Confidence: 0.9746281

 $00{:}09{:}04{.}360 \dashrightarrow 00{:}09{:}06{.}880$  That's why the images at the top half of

NOTE Confidence: 0.9746281

 $00:09:06.880 \longrightarrow 00:09:09.248$  the screen are always crisper and nicer

NOTE Confidence: 0.9746281

 $00:09:09.248 \dashrightarrow 00:09:12.319$  than those at the bottom part of the screen.

NOTE Confidence: 0.9746281

 $00{:}09{:}12.320 \dashrightarrow 00{:}09{:}14.330$  And then the other property,

NOTE Confidence: 0.9746281

 $00:09:14.330 \longrightarrow 00:09:15.810$  Loper Sound is impedance.

NOTE Confidence: 0.9746281

 $00:09:15.810 \longrightarrow 00:09:18.485$  Impedance has to do with tissue density

- NOTE Confidence: 0.9746281
- $00:09:18.485 \longrightarrow 00:09:20.430$  and reflection of the ultrasound

 $00{:}09{:}20{.}430 \dashrightarrow 00{:}09{:}22{.}770$  being back to their transducer.

NOTE Confidence: 0.9746281

 $00{:}09{:}22.770 \dashrightarrow 00{:}09{:}25.322$  So in this case with bone which has

NOTE Confidence: 0.9746281

 $00:09:25.322 \dashrightarrow 00:09:27.416$  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

 $00:09:36.351 \rightarrow 00:09:39.393$  bone so everything goes dark behind

NOTE Confidence: 0.9746281

 $00:09:39.393 \rightarrow 00:09:41.725$  tissues that have high impedance

NOTE Confidence: 0.9746281

 $00:09:41.725 \longrightarrow 00:09:45.340$  and we we do call that a certain.

NOTE Confidence: 0.9746281

 $00{:}09{:}45{.}340 \dashrightarrow 00{:}09{:}48{.}808$  Artifact referred to his post here.

NOTE Confidence: 0.9746281

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

NOTE Confidence: 0.9732442

 $00:09:52.790 \longrightarrow 00:09:54.362$  So in this slide,

NOTE Confidence: 0.9732442

 $00{:}09{:}54{.}362 \dashrightarrow 00{:}09{:}56{.}720$  open sound is essentially the same

NOTE Confidence: 0.9732442

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

 $00:09:59.290 \rightarrow 00:10:01.890$  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

 $00{:}10{:}04.609 \dashrightarrow 00{:}10{:}06.599$  or fluid filled structures are

NOTE Confidence: 0.9732442

 $00{:}10{:}06.672 \dashrightarrow 00{:}10{:}09.348$  excellent transmitters of ultrasound.

NOTE Confidence: 0.9732442

 $00{:}10{:}09{.}350 \dashrightarrow 00{:}10{:}14.660$  So when a say in orca or corpus or a dolphin.

NOTE Confidence: 0.9732442

 $00{:}10{:}14.660 \dashrightarrow 00{:}10{:}17.670$  Uh, send it over sound signals in in the

NOTE Confidence: 0.9732442

 $00{:}10{:}17{.}740 \dashrightarrow 00{:}10{:}20{.}680$  ocean through their application mechanism.

NOTE Confidence: 0.9732442

 $00:10:20.680 \longrightarrow 00:10:23.368$  That signal is going to continue

NOTE Confidence: 0.9732442

 $00{:}10{:}23.368 \dashrightarrow 00{:}10{:}26.568$  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

 $00{:}10{:}32{.}516 \dashrightarrow 00{:}10{:}35{.}300$  life and potentially the size of

NOTE Confidence: 0.9732442

 $00:10:35.300 \dashrightarrow 00:10:38.317$  that object or multiple objects.

NOTE Confidence: 0.9732442

 $00{:}10{:}38{.}320 \dashrightarrow 00{:}10{:}41{.}626$  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

 $00:10:45.270 \longrightarrow 00:10:47.349$  And then how far did they would

- NOTE Confidence: 0.9732442
- $00:10:47.349 \longrightarrow 00:10:49.209$  have to travel to reach that?

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

 $00{:}10{:}53.840 \dashrightarrow 00{:}10{:}56.458$  but there how far the object would

NOTE Confidence: 0.9732442

 $00{:}10{:}56.458 \dashrightarrow 00{:}10{:}58.899$  make they pose potential risks to

NOTE Confidence: 0.9732442

 $00:10:58.899 \longrightarrow 00:11:01.371$  their livelihood is so so that

NOTE Confidence: 0.9732442

 $00{:}11{:}01{.}371 \dashrightarrow 00{:}11{:}04{.}009$  they can react in attending them.

NOTE Confidence: 0.9732442

 $00:11:04.010 \longrightarrow 00:11:06.490$  So it's it's a great example of how

NOTE Confidence: 0.9732442

 $00{:}11{:}06{.}490 \dashrightarrow 00{:}11{:}09{.}252$  there is very little attenuation of

NOTE Confidence: 0.9732442

 $00{:}11{:}09{.}252 \dashrightarrow 00{:}11{:}11{.}837$  ultrasound and fluid filled structures,

NOTE Confidence: 0.9732442

 $00:11:11.840 \dashrightarrow 00:11:15.784$  and we we talked about this a lot.

NOTE Confidence: 0.9732442

 $00{:}11{:}15{.}790 \dashrightarrow 00{:}11{:}21{.}094$  And when we're imaging, we want to see.

NOTE Confidence: 0.9732442

 $00{:}11{:}21{.}100 \dashrightarrow 00{:}11{:}23{.}098$  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

 $00{:}11{:}25.625 \dashrightarrow 00{:}11{:}27.510$  at work after ovarian pathology,

 $00:11:27.510 \longrightarrow 00:11:29.285$  ovarian torsion if we're doing

NOTE Confidence: 0.9732442

00:11:29.285 --> 00:11:29.995 transabdominal ultrasound,

NOTE Confidence: 0.9732442

 $00:11:30.000 \rightarrow 00:11:33.322$  we want to have a nice, fluid filled bladder.

NOTE Confidence: 0.9732442

 $00{:}11{:}33{.}322 \dashrightarrow 00{:}11{:}35{.}686$  So that the ultrasound beam can

NOTE Confidence: 0.9732442

 $00{:}11{:}35.686 \dashrightarrow 00{:}11{:}38.087$  be well transmitted to the public

NOTE Confidence: 0.9732442

 $00:11:38.087 \rightarrow 00:11:41.429$  structures to get a good look at the police.

NOTE Confidence: 0.88115036

 $00{:}11{:}45{.}110 \dashrightarrow 00{:}11{:}47{.}329$  And here we had one last slide

NOTE Confidence: 0.88115036

 $00:11:47.329 \longrightarrow 00:11:49.960$  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

 $00{:}11{:}51{.}970 \dashrightarrow 00{:}11{:}54{.}328$  And when we talk about transmission,

NOTE Confidence: 0.88115036

 $00:11:54.330 \rightarrow 00:11:56.186$  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

 $00:11:59.046 \rightarrow 00:12:01.190$  penetrated through the tissue.

NOTE Confidence: 0.88115036

 $00:12:01.190 \longrightarrow 00:12:03.170$  This has to do with the

NOTE Confidence: 0.88115036

 $00:12:03.170 \longrightarrow 00:12:04.490$  composition of that issue.

NOTE Confidence: 0.88115036

 $00:12:04.490 \rightarrow 00:12:07.130$  So if you have a fluid filled structure,

- NOTE Confidence: 0.88115036
- $00{:}12{:}07{.}130 \dashrightarrow 00{:}12{:}08{.}450$  we have excellent transmission
- NOTE Confidence: 0.88115036
- $00:12:08.450 \longrightarrow 00:12:10.100$  and nice fluid filled nicely.
- NOTE Confidence: 0.88115036
- $00:12:10.100 \longrightarrow 00:12:11.610$  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
- $00{:}12{:}13{.}547 \dashrightarrow 00{:}12{:}15{.}352$  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
- $00{:}12{:}17.030 \dashrightarrow 00{:}12{:}18.899$  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
- $00:12:23.750 \longrightarrow 00:12:26.350$  When you have a.
- NOTE Confidence: 0.69933295
- $00:12:26.350 \longrightarrow 00:12:28.434$  Structure with high impedance.
- NOTE Confidence: 0.69933295
- $00:12:28.434 \longrightarrow 00:12:31.560$  There is a very very poor
- NOTE Confidence: 0.69933295
- $00:12:31.661 \longrightarrow 00:12:33.989$  transmission behind that.
- NOTE Confidence: 0.69933295
- 00:12:33.990 --> 00:12:36.050 Get or sometimes in fact,
- NOTE Confidence: 0.69933295
- $00:12:36.050 \rightarrow 00:12:37.152$  no transition.
- NOTE Confidence: 0.69933295

 $00:12:37.152 \longrightarrow 00:12:39.907$  And then you have air.

NOTE Confidence: 0.69933295

 $00:12:39.910 \rightarrow 00:12:43.235$  Air is actually the enemy for ultrasound.

NOTE Confidence: 0.69933295

 $00{:}12{:}43{.}240 \dashrightarrow 00{:}12{:}46{.}488$  So in terms of the appearance of ultrasound

NOTE Confidence: 0.69933295

 $00{:}12{:}46.488 \dashrightarrow 00{:}12{:}50.376$  as it crosses above an airfield structure,

NOTE Confidence: 0.69933295

 $00{:}12{:}50{.}380 \dashrightarrow 00{:}12{:}53{.}075$  you really cannot delineate any

NOTE Confidence: 0.69933295

 $00{:}12{:}53.075 \dashrightarrow 00{:}12{:}56.240$  Christmas on the screen at all.

NOTE Confidence: 0.69933295

 $00:12:56.240 \longrightarrow 00:12:59.313$  I put air essentially does is it

NOTE Confidence: 0.69933295

 $00:12:59.313 \rightarrow 00:13:01.530$  causes scattered over something?

NOTE Confidence: 0.69933295

 $00{:}13{:}01{.}530 \dashrightarrow 00{:}13{:}04{.}694$  Air can cause a very bright or

NOTE Confidence: 0.69933295

 $00:13:04.694 \rightarrow 00:13:06.939$  hyperechoic appearance to the image,

NOTE Confidence: 0.69933295

 $00{:}13{:}06{.}940 \dashrightarrow 00{:}13{:}10{.}999$  and it can and what it will do is.

NOTE Confidence: 0.69933295

 $00:13:11.000 \rightarrow 00:13:15.344$  It will give you a very poorly defined.

NOTE Confidence: 0.69933295

 $00{:}13{:}15{.}350 \dashrightarrow 00{:}13{:}15{.}904$  Me.

NOTE Confidence: 0.69933295

 $00:13:15.904 \rightarrow 00:13:18.120$  Picture on the screen.

NOTE Confidence: 0.98196346

 $00:13:21.700 \longrightarrow 00:13:23.260$  Alright, so let's apply this.

NOTE Confidence: 0.98196346

 $00:13:23.260 \longrightarrow 00:13:24.740$  These concepts of ultrasound

- NOTE Confidence: 0.98196346
- $00:13:24.740 \rightarrow 00:13:26.960$  transmission to an actual still image.

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

 $00:13:32.339 \rightarrow 00:13:35.249$  the midline of a pregnant patients,

NOTE Confidence: 0.98196346

 $00:13:35.250 \rightarrow 00:13:38.319$  and you can see that come over the bladder

NOTE Confidence: 0.98196346

 $00:13:38.319 \rightarrow 00:13:40.908$  because it's a nice fulfilled structure.

NOTE Confidence: 0.98196346

 $00:13:40.910 \longrightarrow 00:13:43.549$  There is no attenuation to alter sound,

NOTE Confidence: 0.98196346

 $00:13:43.550 \longrightarrow 00:13:47.430$  so you can actually see.

NOTE Confidence: 0.98196346

 $00:13:47.430 \longrightarrow 00:13:48.422$  Structures deep to it.

NOTE Confidence: 0.98196346

 $00:13:48.422 \longrightarrow 00:13:50.780$  In this case, there's a bag and a

NOTE Confidence: 0.98196346

 $00{:}13{:}50{.}780 \dashrightarrow 00{:}13{:}53{.}149$  strike which is a landline that lets

NOTE Confidence: 0.98196346

 $00{:}13{:}53.149 \dashrightarrow 00{:}13{:}55.543$  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

 $00{:}13{:}59{.}180 \dashrightarrow 00{:}14{:}02{.}028$  And then you can think about the uterus.

 $00{:}14{:}02{.}030 \dashrightarrow 00{:}14{:}04{.}676$  Look at how the the fund is portion is sort

NOTE Confidence: 0.98196346

 $00:14:04.676 \longrightarrow 00:14:07.715$  of well delineated with the gestational SAC.

NOTE Confidence: 0.98196346

 $00:14:07.720 \longrightarrow 00:14:09.855$  And also you can get a sense

NOTE Confidence: 0.98196346

 $00:14:09.855 \longrightarrow 00:14:12.707$  here of a fetal pole right there.

NOTE Confidence: 0.98196346

 $00{:}14{:}12.710 \dashrightarrow 00{:}14{:}14.762$  And so the ultrasound transmission here

NOTE Confidence: 0.98196346

 $00{:}14{:}14{.}762 \dashrightarrow 00{:}14{:}16{.}979$  maybe a slight little bit different,

NOTE Confidence: 0.98196346

 $00{:}14{:}16{.}980 \dashrightarrow 00{:}14{:}19{.}176$  so more attenuation deep to the

NOTE Confidence: 0.98196346

 $00{:}14{:}19{.}176 \dashrightarrow 00{:}14{:}21{.}723$  structures so you don't see as crisp

NOTE Confidence: 0.98196346

 $00{:}14{:}21.723 \dashrightarrow 00{:}14{:}24.096$  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

 $00{:}14{:}27.010 \dashrightarrow 00{:}14{:}30.104$  And guess what's behind the uterus well?

NOTE Confidence: 0.98196346

 $00:14:30.110 \longrightarrow 00:14:31.301$  It's mostly bad,

NOTE Confidence: 0.98196346

 $00{:}14{:}31{.}301 \dashrightarrow 00{:}14{:}34{.}080$  and it's probably bow that's filled with

NOTE Confidence: 0.98196346

 $00:14:34.152 \rightarrow 00:14:36.798$  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

 $00{:}14{:}38{.}368 \dashrightarrow 00{:}14{:}41{.}246$  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
- $00:14:43.070 \longrightarrow 00:14:44.243$  so that here,
- NOTE Confidence: 0.98196346
- $00:14:44.243 \rightarrow 00:14:46.198$  even though there is intestines
- NOTE Confidence: 0.98196346
- $00:14:46.198 \rightarrow 00:14:48.079$  and there's actual anatomy,
- NOTE Confidence: 0.98196346
- $00:14:48.080 \rightarrow 00:14:51.139$  we're not seeing anything on the screen
- NOTE Confidence: 0.98196346
- $00{:}14{:}51{.}139 \dashrightarrow 00{:}14{:}53{.}721$  because bowel gas causes ultrasound beam
- NOTE Confidence: 0.98196346
- $00:14:53.721 \longrightarrow 00:14:57.280$  to scatter and just had a lot of white,
- NOTE Confidence: 0.98196346
- $00:14:57.280 \longrightarrow 00:14:59.060$  right?
- NOTE Confidence: 0.98196346
- $00:14:59.060 \longrightarrow 00:15:00.328$  Enhancement other than that
- NOTE Confidence: 0.98196346
- $00:15:00.328 \rightarrow 00:15:02.230$  computer scheme and we never really
- NOTE Confidence: 0.98196346
- $00:15:02.280 \longrightarrow 00:15:03.790$  seen anything other than that.
- NOTE Confidence: 0.8395981
- $00{:}15{:}08{.}020 \dashrightarrow 00{:}15{:}14{.}970$  OK, so here we have a quiz named that phone.
- NOTE Confidence: 0.8395981
- $00{:}15{:}14{.}970 \dashrightarrow 00{:}15{:}17{.}805$  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
- $00{:}15{:}20.595 \dashrightarrow 00{:}15{:}22.996$  an eye out when we're reviewing clips,
- NOTE Confidence: 0.8395981

 $00:15:23.000 \rightarrow 00:15:24.760$  and also when you're performing

NOTE Confidence: 0.8395981

 $00{:}15{:}24.760 \dashrightarrow 00{:}15{:}27.150$  order sound scans is the settings.

NOTE Confidence: 0.8395981

 $00:15:27.150 \longrightarrow 00:15:29.607$  So here's a bit of a clue,

NOTE Confidence: 0.8395981

 $00:15:29.610 \longrightarrow 00:15:32.502$  and this happens to be more

NOTE Confidence: 0.8395981

 $00:15:32.502 \rightarrow 00:15:35.290$  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

 $00:15:37.880 \dashrightarrow 00:15:40.840$  what bone would be seen in front of?

NOTE Confidence: 0.938931

 $00{:}15{:}42{.}900 \dashrightarrow 00{:}15{:}46{.}460$  One that would be a question groups so.

NOTE Confidence: 0.938931

 $00{:}15{:}46{.}460 \dashrightarrow 00{:}15{:}50{.}735$  Here you see the top of the rib in

NOTE Confidence: 0.938931

 $00:15:50.735 \longrightarrow 00:15:54.980$  short access. And as you can see.

NOTE Confidence: 0.938931

 $00{:}15{:}54{.}980 \dashrightarrow 00{:}15{:}57{.}924$  Focus and cannot penetrate deep to the red.

NOTE Confidence: 0.938931

 $00:15:57.930 \rightarrow 00:16:01.095$  So everything here is dark. Dark.

NOTE Confidence: 0.938931

 $00{:}16{:}01.095 \dashrightarrow 00{:}16{:}03.660$  And so that is his artifact that we have

NOTE Confidence: 0.938931

 $00:16:03.722 \rightarrow 00:16:06.506$  alluded to as posterior acoustic enhancement.

NOTE Confidence: 0.938931

 $00{:}16{:}06{.}510 \dashrightarrow 00{:}16{:}11{.}172$  So we know that this is a ribbed here.

NOTE Confidence: 0.938931

 $00:16:11.180 \rightarrow 00:16:13.356$  Interesting story finding is

- NOTE Confidence: 0.938931
- $00:16:13.356 \longrightarrow 00:16:16.076$  that we typically will see.

00:16:16.080 --> 00:16:18.545 Flora here very bright line

NOTE Confidence: 0.938931

 $00:16:18.545 \longrightarrow 00:16:21.010$  in between the rooms faces.

NOTE Confidence: 0.938931

 $00{:}16{:}21.010 \dashrightarrow 00{:}16{:}22.566$  So in this case,

NOTE Confidence: 0.938931

 $00:16:22.566 \longrightarrow 00:16:25.886$  come not only do you sort of see

NOTE Confidence: 0.938931

 $00:16:25.886 \rightarrow 00:16:28.987$  separation or look for a right here.

NOTE Confidence: 0.938931

 $00{:}16{:}28{.}990 \dashrightarrow 00{:}16{:}31{.}930$  Looks like there's one line another one.

NOTE Confidence: 0.8623172

 $00:16:34.170 \longrightarrow 00:16:36.252$  Do this mother fluid collection device

NOTE Confidence: 0.8623172

 $00:16:36.252 \longrightarrow 00:16:38.401$  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

 $00{:}16{:}40.603 \dashrightarrow 00{:}16{:}44.770$  by one 8% in the break fast area field.

NOTE Confidence: 0.8623172

 $00{:}16{:}44{.}770 \dashrightarrow 00{:}16{:}49{.}306$  We said briefly, then air gives no image,

NOTE Confidence: 0.8623172

 $00{:}16{:}49{.}310 \dashrightarrow 00{:}16{:}54{.}110$  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,

 $00:16:59.890 \rightarrow 00:17:02.400$  but essentially this jaggedness here.

NOTE Confidence: 0.9798741

 $00{:}17{:}02{.}400 \dashrightarrow 00{:}17{:}06{.}915$  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

 $00{:}17{:}10.229 \dashrightarrow 00{:}17{:}12.859$  see with a subfloor consolidation.

NOTE Confidence: 0.9798741

 $00:17:12.860 \longrightarrow 00:17:14.850$  And just some other findings.

NOTE Confidence: 0.9798741

 $00{:}17{:}14.850 \dashrightarrow 00{:}17{:}17.244$  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

 $00:17:19.652 \longrightarrow 00:17:22.262$  appearance is come in within a

NOTE Confidence: 0.9798741

 $00:17:22.262 \rightarrow 00:17:24.767$  tissue that we shouldn't be seeing.

NOTE Confidence: 0.9798741

 $00{:}17{:}24.770 \dashrightarrow 00{:}17{:}27.122$  We shouldn't be seeing a distinct NOTE Confidence: 0.9798741

 $00{:}17{:}27{.}122 \dashrightarrow 00{:}17{:}29{.}575$  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

 $00{:}17{:}32.011 \dashrightarrow 00{:}17{:}34.406$  because since it's when it's health

NOTE Confidence: 0.9798741

 $00{:}17{:}34.406 \dashrightarrow 00{:}17{:}36.674$  healthy as airfield does not give

NOTE Confidence: 0.9798741

 $00{:}17{:}36.680 \dashrightarrow 00{:}17{:}39.056$  up any appearance on their person.

NOTE Confidence: 0.9798741

 $00:17:39.060 \dashrightarrow 00:17:42.156$  We just see the regulation artifact.

- NOTE Confidence: 0.9798741
- $00:17:42.160 \rightarrow 00:17:45.149$  Which weakened spectrum little bit ahead of.
- NOTE Confidence: 0.9831707
- $00{:}17{:}47{.}420 \dashrightarrow 00{:}17{:}49{.}688$  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
- $00:17:51.200 \longrightarrow 00:17:53.588$  but I'm hoping you can get
- NOTE Confidence: 0.9831707
- $00:17:53.588 \longrightarrow 00:17:56.419$  a good sense of ribbon here.
- NOTE Confidence: 0.9831707
- $00{:}17{:}56{.}420 \dashrightarrow 00{:}17{:}58{.}838$  Open sound hitting the red bone.
- NOTE Confidence: 0.9831707
- $00:17:58.840 \longrightarrow 00:18:01.680$  It looks bright and echogenic.
- NOTE Confidence: 0.9831707
- $00{:}18{:}01{.}680 \dashrightarrow 00{:}18{:}02{.}919$  There's high impedance,
- NOTE Confidence: 0.9831707
- $00:18:02.919 \longrightarrow 00:18:04.158$  there's no transmission,
- NOTE Confidence: 0.9831707
- $00:18:04.160 \longrightarrow 00:18:06.446$  so you get this complete acoustic
- NOTE Confidence: 0.9831707
- $00{:}18{:}06{.}446 \dashrightarrow 00{:}18{:}08{.}720$  shadowing deep to that structure.
- NOTE Confidence: 0.92378813
- $00:18:10.830 \longrightarrow 00:18:13.140$  Right, so when we're talking
- NOTE Confidence: 0.92378813
- $00:18:13.140 \longrightarrow 00:18:15.450$  about what transducer to choose,
- NOTE Confidence: 0.92378813
- $00{:}18{:}15{.}450 \dashrightarrow 00{:}18{:}17{.}680$  the transducer sort of the
- NOTE Confidence: 0.92378813
- $00:18:17.680 \longrightarrow 00:18:20.530$  film return for a person probe.
- NOTE Confidence: 0.92378813

 $00:18:20.530 \rightarrow 00:18:22.498$  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

 $00:18:25.534 \rightarrow 00:18:27.916$  has a nice flat footprint here,

NOTE Confidence: 0.92378813

 $00:18:27.920 \rightarrow 00:18:30.112$  great for superficial structures.

NOTE Confidence: 0.92378813

 $00:18:30.112 \longrightarrow 00:18:32.852$  You have a curvilinear Rd.

NOTE Confidence: 0.92378813

 $00{:}18{:}32{.}860 \dashrightarrow 00{:}18{:}35{.}050$  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

 $00{:}18{:}37{.}321 \dashrightarrow 00{:}18{:}40{.}289$  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

 $00:18:42.530 \longrightarrow 00:18:45.068$  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

 $00{:}18{:}50{.}579 \dashrightarrow 00{:}18{:}53{.}039$  doing a focus projector person.

NOTE Confidence: 0.92378813

 $00:18:53.040 \longrightarrow 00:18:55.242$  So when we talk about post

NOTE Confidence: 0.92378813

 $00:18:55.242 \longrightarrow 00:18:56.710$  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
- $00:19:00.460 \longrightarrow 00:19:03.197$  Which is going to fit your needs.
- NOTE Confidence: 0.92378813
- $00{:}19{:}03.200 \dashrightarrow 00{:}19{:}05.490$  So the tradeoff between a
- NOTE Confidence: 0.92378813
- $00:19:05.490 \longrightarrow 00:19:07.780$  curvilinear low frequency and a.
- NOTE Confidence: 0.92378813
- $00:19:07.780 \rightarrow 00:19:09.840$  Linear high frequency is resolution
- NOTE Confidence: 0.92378813
- $00:19:09.840 \longrightarrow 00:19:12.270$  to depth or depth is how.
- NOTE Confidence: 0.92378813
- $00:19:12.270 \longrightarrow 00:19:14.305$  How much penetration can the
- NOTE Confidence: 0.92378813
- $00:19:14.305 \rightarrow 00:19:15.933$  older sound being achieved?
- NOTE Confidence: 0.92378813
- $00:19:15.940 \longrightarrow 00:19:18.000$  So the linear probe.
- NOTE Confidence: 0.92378813
- $00:19:18.000 \rightarrow 00:19:21.470$  The higher frequency pros are able to.
- NOTE Confidence: 0.92378813
- $00:19:21.470 \longrightarrow 00:19:24.182$  It should be greater resolution and
- NOTE Confidence: 0.92378813
- $00:19:24.182 \rightarrow 00:19:27.055$  higher level of detail for superficial
- NOTE Confidence: 0.92378813
- $00{:}19{:}27.055 \dashrightarrow 00{:}19{:}29.505$  structures at the trade off.
- NOTE Confidence: 0.92378813
- $00:19:29.510 \rightarrow 00:19:31.934$  ML penetrate to deeper structures and
- NOTE Confidence: 0.92378813
- $00{:}19{:}31{.}934 \dashrightarrow 00{:}19{:}34{.}584$  vice versa with the curvilinear probes
- NOTE Confidence: 0.92378813
- $00:19:34.584 \rightarrow 00:19:37.944$  and the phased array publicly linear code.
- NOTE Confidence: 0.92378813

 $00:19:37.950 \rightarrow 00:19:40.904$  So with these probes you're going to

NOTE Confidence: 0.92378813

 $00:19:40.904 \rightarrow 00:19:43.167$  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

 $00:19:45.490 \longrightarrow 00:19:46.536$  so intrabdominal.

NOTE Confidence: 0.92378813

 $00:19:46.536 \longrightarrow 00:19:47.059$  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

 $00:19:50.200 \longrightarrow 00:19:51.042$  Sonography comma.

NOTE Confidence: 0.92378813

 $00{:}19{:}51{.}042 \dashrightarrow 00{:}19{:}53{.}568$  So the first exam you're going

NOTE Confidence: 0.92378813

 $00{:}19{:}53{.}568 \dashrightarrow 00{:}19{:}55{.}457$  to perform with curvilinear

NOTE Confidence: 0.92378813

 $00:19:55.457 \longrightarrow 00:19:57.405$  or low frequency plates.

NOTE Confidence: 0.9713788

 $00{:}19{:}59{.}630 \dashrightarrow 00{:}20{:}01{.}205$  So there's two scanning planes

NOTE Confidence: 0.9713788

 $00:20:01.205 \longrightarrow 00:20:03.154$  to be familiar with, and then

NOTE Confidence: 0.9713788

 $00:20:03.154 \longrightarrow 00:20:04.864$  it's important because we have

NOTE Confidence: 0.9713788

 $00{:}20{:}04.864 \dashrightarrow 00{:}20{:}06.880$  convention in terms of how we image.

NOTE Confidence: 0.9921644

 $00:20:10.120 \rightarrow 00:20:13.511$  Patience. Better pattern recognition

- NOTE Confidence: 0.9921644
- $00:20:13.511 \rightarrow 00:20:15.646$  can be consistent across patients.

 $00:20:15.650 \rightarrow 00:20:18.620$  So we will use in the long axis of the

NOTE Confidence: 0.9921644

 $00:20:18.699 \rightarrow 00:20:22.059$  sagittal or longitudinal axis on the plane.

NOTE Confidence: 0.9921644

 $00{:}20{:}22{.}060 \dashrightarrow 00{:}20{:}24{.}692$  We will use the Convention of having

NOTE Confidence: 0.9921644

 $00{:}20{:}24.692 \dashrightarrow 00{:}20{:}27.540$  the indicator, which is usually like a

NOTE Confidence: 0.9921644

 $00:20:27.540 \longrightarrow 00:20:30.780$  little non shoreline on the probe itself.

NOTE Confidence: 0.9921644

 $00:20:30.780 \longrightarrow 00:20:33.300$  Who is the head of the patient?

NOTE Confidence: 0.9921644

 $00:20:33.300 \longrightarrow 00:20:35.492$  So the indicator always

NOTE Confidence: 0.9921644

 $00{:}20{:}35{.}492 \dashrightarrow 00{:}20{:}38{.}232$  faces the head when we're.

NOTE Confidence: 0.9921644

 $00:20:38.240 \longrightarrow 00:20:39.848$  Doing a logical access.

NOTE Confidence: 0.9921644

 $00:20:39.848 \longrightarrow 00:20:42.260$  Scan this is going to correlate

NOTE Confidence: 0.9921644

 $00{:}20{:}42{.}336 \dashrightarrow 00{:}20{:}43{.}578$  with the monitor.

NOTE Confidence: 0.9921644

 $00:20:43.580 \rightarrow 00:20:46.178$  This way you're gonna have head.

NOTE Confidence: 0.9921644

 $00:20:46.180 \longrightarrow 00:20:47.330$  Here you're going to have

NOTE Confidence: 0.9921644

 $00{:}20{:}47{.}330 \dashrightarrow 00{:}20{:}48{.}950$  the top part of the patient.

 $00:20:48.950 \rightarrow 00:20:51.218$  You can have the bottom part of the patient,

NOTE Confidence: 0.9921644

 $00:20:51.220 \rightarrow 00:20:54.380$  and you're going to have to keep working.

NOTE Confidence: 0.9921644

 $00{:}20{:}54{.}380 \dashrightarrow 00{:}20{:}59{.}650$  And when we're doing the transverse, UM?

NOTE Confidence: 0.9921644

 $00{:}20{:}59{.}650 \dashrightarrow 00{:}21{:}02{.}429$  Orientation at the Convention is always going

NOTE Confidence: 0.9921644

 $00:21:02.429 \longrightarrow 00:21:05.789$  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

 $00:21:07.720 \longrightarrow 00:21:09.500$  So indicated to them right?

NOTE Confidence: 0.9921644

 $00:21:09.500 \rightarrow 00:21:11.964$  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

 $00:21:14.506 \rightarrow 00:21:16.618$  the right side of the patient,

NOTE Confidence: 0.9921644

 $00{:}21{:}16.620 \dashrightarrow 00{:}21{:}19.468$  and these are almost like a cross section.

NOTE Confidence: 0.9921644

 $00{:}21{:}19{.}470 \dashrightarrow 00{:}21{:}21{.}600$  Your CT scan cross sections where

NOTE Confidence: 0.9921644

 $00:21:21.600 \longrightarrow 00:21:23.739$  you have indicated to the right.

NOTE Confidence: 0.9921644

 $00{:}21{:}23.740 \dashrightarrow 00{:}21{:}26.428$  You have the right kidney here and on

NOTE Confidence: 0.9921644

 $00{:}21{:}26{.}428 \dashrightarrow 00{:}21{:}29{.}396$  the screen the right kidney is going to

NOTE Confidence: 0.9921644

 $00:21:29.396 \rightarrow 00:21:31.928$  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
- $00:21:34.780 \longrightarrow 00:21:39.324$  but it's the right side of the patient.
- NOTE Confidence: 0.9921644
- $00:21:39.330 \longrightarrow 00:21:39.881$  So.
- NOTE Confidence: 0.9921644
- 00:21:39.881 --> 00:21:42.636 Once you get this down,
- NOTE Confidence: 0.9921644
- $00:21:42.640 \rightarrow 00:21:46.707$  visually spatially and you're in your brain.
- NOTE Confidence: 0.9921644
- $00{:}21{:}46.710 \dashrightarrow 00{:}21{:}49.815$  Two times it's a very easy concept to tackle.
- NOTE Confidence: 0.9529909
- $00:21:52.040 \longrightarrow 00:21:54.630$  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
- $00{:}21{:}57{.}600 \dashrightarrow 00{:}22{:}00{.}258$  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
- $00:22:08.720 \rightarrow 00:22:11.936$  And when you walk along this waxes line,
- NOTE Confidence: 0.9529909
- $00{:}22{:}11{.}940 \dashrightarrow 00{:}22{:}14{.}700$  you would essentially keep the hand
- NOTE Confidence: 0.9529909
- $00:22:14.700 \rightarrow 00:22:17.460$  still and just sort of swivel.
- NOTE Confidence: 0.9529909

 $00:22:17.460 \longrightarrow 00:22:20.290$  But probe back and forth.

NOTE Confidence: 0.9529909

 $00{:}22{:}20{.}290 \dashrightarrow 00{:}22{:}22{.}265$  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

 $00:22:24.308 \longrightarrow 00:22:26.247$  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

 $00{:}22{:}27.825 \dashrightarrow 00{:}22{:}29.950$  beam is to a certain structure,

NOTE Confidence: 0.9529909

 $00:22:29.950 \longrightarrow 00:22:32.630$  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

 $00{:}22{:}33{.}974 \dashrightarrow 00{:}22{:}35{.}990$  you may have a gall bladder here,

NOTE Confidence: 0.9529909

 $00:22:35.990 \rightarrow 00:22:38.446$  but if you don't rock the probe just

NOTE Confidence: 0.9529909

 $00:22:38.446 \rightarrow 00:22:40.698$  right to have it for particular,

NOTE Confidence: 0.9529909

 $00:22:40.700 \longrightarrow 00:22:42.710$  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

 $00:22:44.390 \rightarrow 00:22:46.736$  it's right there nearby hiding out

NOTE Confidence: 0.9529909

 $00{:}22{:}46.736 \dashrightarrow 00{:}22{:}49.097$  but something some small motions or

NOTE Confidence: 0.9529909

 $00{:}22{:}49.097 \dashrightarrow 00{:}22{:}51.281$  their hand with with these maneuvers

- NOTE Confidence: 0.9529909
- $00:22:51.281 \longrightarrow 00:22:53.749$  is what we need to do in order to

 $00{:}22{:}53.749 \dashrightarrow 00{:}22{:}55.854$  get a good image on the screen.

NOTE Confidence: 0.9529909

 $00{:}22{:}55{.}854 \dashrightarrow 00{:}22{:}58{.}794$  So we have the sliding and the

NOTE Confidence: 0.9529909

 $00:22:58.794 \rightarrow 00:23:00.749$  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

 $00{:}23{:}03{.}736 \dashrightarrow 00{:}23{:}05{.}911$  access plane and then sweeping

NOTE Confidence: 0.9529909

 $00:23:05.911 \longrightarrow 00:23:07.654$  would be in short access.

NOTE Confidence: 0.9529909

 $00:23:07.654 \longrightarrow 00:23:10.900$  So so you have a say you have a

NOTE Confidence: 0.9529909

 $00{:}23{:}10{.}900 \dashrightarrow 00{:}23{:}13{.}300$  blood vessel here and it's you're

NOTE Confidence: 0.9529909

 $00:23:13.300 \longrightarrow 00:23:15.418$  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

 $00{:}23{:}18.180 \dashrightarrow 00{:}23{:}19.560$  down the vessel.

NOTE Confidence: 0.9529909

 $00:23:19.560 \rightarrow 00:23:22.360$  To see it entirely and on the screen

NOTE Confidence: 0.9529909

 $00{:}23{:}22{.}360 \dashrightarrow 00{:}23{:}25{.}320$  rather than see it as a circle when

NOTE Confidence: 0.9529909

 $00:23:25.320 \rightarrow 00:23:27.659$  you're when you're imaging the vessel.

 $00{:}23{:}27.660 \dashrightarrow 00{:}23{:}30.131$  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

 $00{:}23{:}32{.}440 \dashrightarrow 00{:}23{:}33{.}812$  circle in the stream.

NOTE Confidence: 0.9529909

 $00{:}23{:}33{.}812 \dashrightarrow 00{:}23{:}37{.}219$  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

 $00:23:40.900 \longrightarrow 00:23:41.928$  so again,

NOTE Confidence: 0.9529909

 $00:23:41.928 \longrightarrow 00:23:45.012$  it's a swivel motion in this

NOTE Confidence: 0.9529909

 $00{:}23{:}45.012 \dashrightarrow 00{:}23{:}47.049$  short access cut with.

NOTE Confidence: 0.9529909

 $00:23:47.050 \longrightarrow 00:23:47.351$  Essentially,

NOTE Confidence: 0.9529909

 $00{:}23{:}47{.}351 \dashrightarrow 00{:}23{:}49{.}157$  your hand isn't moving up or

NOTE Confidence: 0.9529909

 $00:23:49.157 \longrightarrow 00:23:50.970$  down in the patient's body.

NOTE Confidence: 0.9529909

 $00:23:50.970 \longrightarrow 00:23:52.610$  You have to stand still,

NOTE Confidence: 0.9529909

 $00{:}23{:}52{.}610 \dashrightarrow 00{:}23{:}54{.}892$  but you're sort of fanning or rotating

NOTE Confidence: 0.9529909

 $00:23:54.892 \rightarrow 00:23:57.521$  like this, rotating the pole.

NOTE Confidence: 0.9529909

 $00{:}23{:}57{.}521 \dashrightarrow 00{:}23{:}58{.}178$  Me.

NOTE Confidence: 0.9608452

 $00:24:00.220 \longrightarrow 00:24:02.412$  Down to get a good look at the

 $00:24:02.412 \rightarrow 00:24:04.118$  structure that you interested in.

NOTE Confidence: 0.95178664

 $00{:}24{:}06{.}750 \dashrightarrow 00{:}24{:}09{.}486$  Alright, so let's look at this another way,

NOTE Confidence: 0.95178664

 $00{:}24{:}09{.}490 \dashrightarrow 00{:}24{:}12{.}034$  so you have indicators which have a notch NOTE Confidence: 0.95178664

 $00{:}24{:}12.034 \dashrightarrow 00{:}24{:}14.916$  or at our probes have a team match and NOTE Confidence: 0.95178664

 $00:24:14.916 \longrightarrow 00:24:17.461$  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

 $00:24:20.138 \longrightarrow 00:24:22.286$  the indicator is going to point

NOTE Confidence: 0.95178664

 $00:24:22.286 \longrightarrow 00:24:24.385$  towards the right of the patient

NOTE Confidence: 0.95178664

 $00{:}24{:}24{.}385 \dashrightarrow 00{:}24{:}26{.}632$  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

 $00{:}24{:}29.748 \dashrightarrow 00{:}24{:}32.679$  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

 $00:24:35.152 \rightarrow 00:24:37.289$  as you're looking at this thing,

NOTE Confidence: 0.95178664

 $00{:}24{:}37{.}290 \dashrightarrow 00{:}24{:}39{.}747$  so this is a convention for transverse

NOTE Confidence: 0.95178664

 $00{:}24{:}39{.}747 \dashrightarrow 00{:}24{:}43{.}028$  you have a fluid filled structure with a.

 $00:24:43.030 \longrightarrow 00:24:44.710$  Balloon catheter inside of it.

NOTE Confidence: 0.95178664

 $00{:}24{:}44{.}710 \dashrightarrow 00{:}24{:}47{.}230$  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

 $00{:}24{:}51{.}447 \dashrightarrow 00{:}24{:}53{.}655$  look like in and transfers orientation

NOTE Confidence: 0.95178664

 $00{:}24{:}53.655 \dashrightarrow 00{:}24{:}55.360$  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

 $00{:}24{:}59{.}110 \dashrightarrow 00{:}25{:}00{.}785$  the indicator is going to

NOTE Confidence: 0.95178664

 $00:25:00.785 \longrightarrow 00:25:02.460$  go to the patients head.

NOTE Confidence: 0.95178664

 $00{:}25{:}02{.}460 \dashrightarrow 00{:}25{:}05{.}828$  So the indicator the notch is going to

NOTE Confidence: 0.95178664

 $00:25:05.828 \rightarrow 00:25:08.700$  point towards the head of the patient.

NOTE Confidence: 0.95178664

 $00{:}25{:}08{.}700 \dashrightarrow 00{:}25{:}11.628$  On the screen it's gonna appear a little

NOTE Confidence: 0.95178664

 $00{:}25{:}11.628 \dashrightarrow 00{:}25{:}14.490$  circle on the left side of the screen.

NOTE Confidence: 0.95178664

 $00:25:14.490 \longrightarrow 00:25:16.662$  If you're looking at the screen

NOTE Confidence: 0.95178664

 $00:25:16.662 \rightarrow 00:25:18.110$  and the image itself,

- NOTE Confidence: 0.95178664
- $00:25:18.110 \longrightarrow 00:25:19.806$  you're gonna have bladder.

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

NOTE Confidence: 0.95178664

 $00{:}25{:}22{.}430 \dashrightarrow 00{:}25{:}23{.}280$  right there.

NOTE Confidence: 0.95178664

 $00:25:23.280 \longrightarrow 00:25:24.980$  So that's just the Convention,

NOTE Confidence: 0.95178664

 $00:25:24.980 \longrightarrow 00:25:28.158$  and that's how you're going to keep

NOTE Confidence: 0.95178664

 $00{:}25{:}28{.}158 \dashrightarrow 00{:}25{:}30{.}840$  this little mark on the screen.

NOTE Confidence: 0.95178664

 $00:25:30.840 \rightarrow 00:25:33.520$  This general sense of awareness so that you

NOTE Confidence: 0.95178664

 $00{:}25{:}33{.}520 \dashrightarrow 00{:}25{:}36{.}086$  know that if things were converted you,

NOTE Confidence: 0.95178664

 $00:25:36.090 \rightarrow 00:25:38.743$  it's likely that your crew is turn

NOTE Confidence: 0.95178664

 $00:25:38.743 \longrightarrow 00:25:40.660$  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

 $00{:}25{:}42.650 \dashrightarrow 00{:}25{:}46.098$  this is a pretty easy concept to understand

NOTE Confidence: 0.95178664

 $00{:}25{:}46.098 \dashrightarrow 00{:}25{:}48.872$  structures that are closer to the probe

NOTE Confidence: 0.95178664

 $00{:}25{:}48.872 \dashrightarrow 00{:}25{:}51.798$  are going to appear higher on the screen.

NOTE Confidence: 0.95178664

 $00:25:51.800 \longrightarrow 00:25:55.616$  So in in this case we have liver.

 $00:25:55.620 \longrightarrow 00:25:57.726$  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

 $00:25:59.940 \longrightarrow 00:26:03.180$  and that's closer to the top of the screen,

NOTE Confidence: 0.95178664

 $00:26:03.180 \longrightarrow 00:26:05.646$  whereas he had a kidney that's

NOTE Confidence: 0.95178664

 $00:26:05.646 \rightarrow 00:26:08.149$  more posterior and the kidney is.

NOTE Confidence: 0.95178664

 $00{:}26{:}08.150 \dashrightarrow 00{:}26{:}09.220$  Yeah there.

NOTE Confidence: 0.9202077

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

NOTE Confidence: 0.9202077

 $00{:}26{:}15.110 \dashrightarrow 00{:}26{:}18.080$  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

 $00{:}26{:}21.063 \dashrightarrow 00{:}26{:}24.085$  top of the screen closer to the port.

NOTE Confidence: 0.9202077

 $00{:}26{:}24.090 \dashrightarrow 00{:}26{:}26.490$  Alright, so the game is going to be

NOTE Confidence: 0.9202077

 $00{:}26{:}26{.}490 \dashrightarrow 00{:}26{:}28{.}574$  an important function that you're

NOTE Confidence: 0.9202077

 $00{:}26{:}28{.}574 \dashrightarrow 00{:}26{:}30{.}466$  gonna familiarize yourself with,

NOTE Confidence: 0.9202077

 $00{:}26{:}30{.}470 \dashrightarrow 00{:}26{:}32{.}564$  so you can become comfortable with

NOTE Confidence: 0.9202077

 $00{:}26{:}32{.}564 \dashrightarrow 00{:}26{:}35{.}215$  how to adjust it when you're doing

NOTE Confidence: 0.9202077

 $00{:}26{:}35{.}215 \dashrightarrow 00{:}26{:}37{.}585$  scans and how to interpret images.

 $00:26:37.590 \rightarrow 00:26:41.510$  So think about gamers, the volume of UM.

NOTE Confidence: 0.9202077

 $00{:}26{:}41.510 \dashrightarrow 00{:}26{:}43.448$  Uh, electric sound, I guess globally,

NOTE Confidence: 0.9202077

 $00{:}26{:}43.450 \dashrightarrow 00{:}26{:}46.285$  so if it gain if the volume is turned

NOTE Confidence: 0.9202077

 $00:26:46.285 \rightarrow 00:26:48.612$  up to five, everything is going to

NOTE Confidence: 0.9202077

 $00{:}26{:}48.612 \dashrightarrow 00{:}26{:}50.550$  appear very bright on the screen,

NOTE Confidence: 0.9202077

 $00:26:50.550 \rightarrow 00:26:52.818$  whereas if the game is too low,

NOTE Confidence: 0.9202077

 $00:26:52.820 \longrightarrow 00:26:54.746$  if the volume is turned down,

NOTE Confidence: 0.9202077

 $00{:}26{:}54.750 \dashrightarrow 00{:}26{:}57.004$  everything is going to appear to duck,

NOTE Confidence: 0.9202077

 $00:26:57.010 \longrightarrow 00:26:59.770$  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

 $00{:}27{:}04.200 \dashrightarrow 00{:}27{:}05.456$  On the first one,

NOTE Confidence: 0.9202077

 $00:27:05.456 \longrightarrow 00:27:07.340$  the game is a little high.

NOTE Confidence: 0.9202077

 $00{:}27{:}07{.}340 \dashrightarrow 00{:}27{:}10{.}476$  In that clip there with the UM.

NOTE Confidence: 0.9202077

 $00:27:10.480 \longrightarrow 00:27:11.512$  Kidney over here,

 $00:27:11.512 \rightarrow 00:27:13.920$  and this is actually it's a screen

NOTE Confidence: 0.9202077

 $00:27:13.991 \longrightarrow 00:27:15.893$  over here and this entire area

NOTE Confidence: 0.9202077

 $00:27:15.893 \longrightarrow 00:27:17.700$  here is is fairly bright,

NOTE Confidence: 0.9202077

 $00{:}27{:}17.700 \dashrightarrow 00{:}27{:}19.704$  so in terms of assessing for

NOTE Confidence: 0.9202077

 $00:27:19.704 \longrightarrow 00:27:21.490$  fluid collecting in that space.

NOTE Confidence: 0.9202077

 $00{:}27{:}21{.}490 \dashrightarrow 00{:}27{:}23{.}898$  And sometimes we look for or not. NOTE Confidence: 0.9202077

 $00{:}27{:}23{.}900 \dashrightarrow 00{:}27{:}26{.}546$  Sometimes we we want to look for

NOTE Confidence: 0.9202077

 $00{:}27{:}26.546 \dashrightarrow 00{:}27{:}28.722$  pleural effusions when we do these

NOTE Confidence: 0.9202077

 $00{:}27{:}28.722 \dashrightarrow 00{:}27{:}30.983$  fast exams you you're going to want NOTE Confidence: 0.9202077

 $00{:}27{:}31.055 \dashrightarrow 00{:}27{:}33.267$  to have a just a slight adjustment

NOTE Confidence: 0.9202077

 $00:27:33.267 \longrightarrow 00:27:36.310$  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

 $00:27:38.400 \rightarrow 00:27:39.054$  And conversely,

NOTE Confidence: 0.9202077

 $00:27:39.054 \longrightarrow 00:27:41.343$  we have a a child here patient

NOTE Confidence: 0.9202077

 $00:27:41.343 \rightarrow 00:27:43.348$  with concern for likely a hit.

NOTE Confidence: 0.9202077

 $00:27:43.350 \longrightarrow 00:27:45.000$  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,

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

NOTE Confidence: 0.9202077

 $00{:}27{:}49.620 \dashrightarrow 00{:}27{:}51.528$  and that's where we would teach

NOTE Confidence: 0.9202077

 $00:27:51.528 \longrightarrow 00:27:53.580$  to look for fluid to collect.

NOTE Confidence: 0.9202077

 $00:27:53.580 \rightarrow 00:27:55.890$  But this is actually an operator error,

NOTE Confidence: 0.9202077

 $00{:}27{:}55{.}890 \dashrightarrow 00{:}27{:}57{.}870$  not even operator error machine error.

NOTE Confidence: 0.9202077

 $00:27:57.870 \longrightarrow 00:28:00.510$  However, you want to call a false error.

NOTE Confidence: 0.9202077

 $00:28:00.510 \longrightarrow 00:28:03.966$  It would be a false positive.

NOTE Confidence: 0.9202077

 $00{:}28{:}03{.}970 \dashrightarrow 00{:}28{:}05{.}986$  This this is a case where the

NOTE Confidence: 0.9202077

 $00:28:05.986 \longrightarrow 00:28:07.469$  game is just too low.

NOTE Confidence: 0.9202077

 $00{:}28{:}07{.}470 \dashrightarrow 00{:}28{:}09{.}254$  You have to increase the game to be

NOTE Confidence: 0.9202077

 $00{:}28{:}09{.}254 \dashrightarrow 00{:}28{:}11{.}132$  able to distinguish that that

NOTE Confidence: 0.9202077

 $00:28:11.132 \rightarrow 00:28:13.190$  issue here is actually normal appearing

NOTE Confidence: 0.9202077

 $00{:}28{:}13.248 \dashrightarrow 00{:}28{:}15.066$  relative to the hip flexor muscles.

NOTE Confidence: 0.9202077

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

 $00:28:18.680 \rightarrow 00:28:21.648$  So this is learning for another day,

NOTE Confidence: 0.9479758

 $00{:}28{:}21{.}650 \dashrightarrow 00{:}28{:}24{.}176$  but gained too high is not

NOTE Confidence: 0.9479758

 $00:28:24.176 \longrightarrow 00:28:26.310$  helpful and gain too low.

NOTE Confidence: 0.9479758

 $00:28:26.310 \longrightarrow 00:28:29.230$  Also is a potential problem.

NOTE Confidence: 0.9479758

 $00:28:29.230 \longrightarrow 00:28:32.184$  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

 $00{:}28{:}35{.}221 \dashrightarrow 00{:}28{:}37{.}400$  colic intus susception 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

 $00{:}28{:}39{.}810 \dashrightarrow 00{:}28{:}43{.}186$  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

 $00{:}28{:}47{.}840 \dashrightarrow 00{:}28{:}50{.}378$  Mark is a centimeter, so 123456,

NOTE Confidence: 0.9479758

 $00{:}28{:}50{.}380 \dashrightarrow 00{:}28{:}52{.}918$  and it comes down here to night.

NOTE Confidence: 0.9479758

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

NOTE Confidence: 0.9479758

 $00{:}28{:}55{.}458 \dashrightarrow 00{:}28{:}56{.}727$  instinct structure there.

NOTE Confidence: 0.9479758

 $00:28:56.730 \longrightarrow 00:28:59.340$  Just look like there's something random.

- NOTE Confidence: 0.9479758
- $00:28:59.340 \longrightarrow 00:29:01.330$  And it's really hard to
- NOTE Confidence: 0.9479758
- $00:29:01.330 \longrightarrow 00:29:02.922$  make a judgement call.
- NOTE Confidence: 0.9479758
- $00:29:02.930 \longrightarrow 00:29:05.720$  As to what that could be.
- NOTE Confidence: 0.9479758
- $00:29:05.720 \longrightarrow 00:29:07.610$  And the depth is adjusted
- NOTE Confidence: 0.9479758
- $00:29:07.610 \longrightarrow 00:29:09.122$  here to 4 centimeters.
- NOTE Confidence: 0.9479758
- $00{:}29{:}09{.}130 \dashrightarrow 00{:}29{:}11{.}909$  You have a much more crisp appearing
- NOTE Confidence: 0.9479758
- $00:29:11.909 \rightarrow 00:29:14.969$  target sign or this is illion here and
- NOTE Confidence: 0.9479758
- $00{:}29{:}14.969 \dashrightarrow 00{:}29{:}17.849$  this is the outer wall of the cecum.
- NOTE Confidence: 0.9479758
- $00:29:17.850 \longrightarrow 00:29:19.210$  Here is their target,
- NOTE Confidence: 0.9479758
- $00{:}29{:}19{.}210 \dashrightarrow 00{:}29{:}21{.}752$  more than two and a half centimeters
- NOTE Confidence: 0.9479758
- $00:29:21.752 \longrightarrow 00:29:24.290$  in terms of the 80 diameter.
- NOTE Confidence: 0.9479758
- $00:29:24.290 \rightarrow 00:29:26.936$  So this is really a pilot intussusception,
- NOTE Confidence: 0.9479758
- $00:29:26.940 \longrightarrow 00:29:29.580$  which could easily be missed
- NOTE Confidence: 0.9479758
- $00{:}29{:}29{.}580 \dashrightarrow 00{:}29{:}32{.}940$  if you're looking at an image.
- NOTE Confidence: 0.9479758
- $00:29:32.940 \rightarrow 00:29:34.960$  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

 $00{:}29{:}40.666 \dashrightarrow 00{:}29{:}43.790$  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

 $00{:}29{:}47{.}190 \dashrightarrow 00{:}29{:}50{.}472$  So essentially you have a application

NOTE Confidence: 0.86952585

 $00:29:50.472 \rightarrow 00:29:54.429$  where the ultrasound can detect flow. Uhm?

NOTE Confidence: 0.86952585

 $00{:}29{:}54{.}429 \dashrightarrow 00{:}29{:}59{.}381$  So the the the important thing to remember NOTE Confidence: 0.86952585

 $00{:}29{:}59{.}381 \dashrightarrow 00{:}30{:}04{.}205$  is that here in in this first image.

NOTE Confidence: 0.86952585

 $00:30:04.210 \rightarrow 00:30:07.199$  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

 $00{:}30{:}12.155 \dashrightarrow 00{:}30{:}14.790$  is flow away from the transducer,

NOTE Confidence: 0.86952585

 $00{:}30{:}14.790 \dashrightarrow 00{:}30{:}16.690$  whereas flow to the transducer

NOTE Confidence: 0.86952585

 $00:30:16.690 \rightarrow 00:30:19.329$  is going to appear as you read.

NOTE Confidence: 0.86952585

 $00:30:19.330 \dashrightarrow 00:30:21.976$  So even this is an arterial structure,

NOTE Confidence: 0.86952585

 $00:30:21.980 \longrightarrow 00:30:25.790$  it's regal artery in this case.

NOTE Confidence: 0.86952585

 $00:30:25.790 \rightarrow 00:30:28.800$  The the appearance of the.

- NOTE Confidence: 0.87725776
- $00:30:31.110 \longrightarrow 00:30:33.826$  Building of that lumen is blue because

 $00{:}30{:}33{.}826 \dashrightarrow 00{:}30{:}37{.}312$  the probe is slightly twisted away, so.

NOTE Confidence: 0.87725776

 $00{:}30{:}37{.}312 \dashrightarrow 00{:}30{:}41{.}888$  If I have a vessel here and I'm

NOTE Confidence: 0.87725776

 $00:30:41.888 \rightarrow 00:30:46.068$  looking at it. With micro this way.

NOTE Confidence: 0.87725776

 $00:30:46.070 \longrightarrow 00:30:46.946$  They found tilted.

NOTE Confidence: 0.87725776

 $00{:}30{:}46{.}946 \dashrightarrow 00{:}30{:}49{.}740$  That way you may have a blue appearance,

NOTE Confidence: 0.87725776

 $00:30:49.740 \longrightarrow 00:30:52.645$  whereas if I'm twisting this way and

NOTE Confidence: 0.87725776

 $00:30:52.645 \rightarrow 00:30:55.542$  the the arteries coming from my wrist

NOTE Confidence: 0.87725776

 $00{:}30{:}55{.}542 \dashrightarrow 00{:}30{:}58{.}736$  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

 $00:31:04.232 \rightarrow 00:31:07.604$  but it's essentially the same vessel.

NOTE Confidence: 0.87725776

 $00:31:07.610 \longrightarrow 00:31:10.532$  And so, so that's an important

NOTE Confidence: 0.87725776

 $00:31:10.532 \longrightarrow 00:31:12.870$  concept to be aware of,

NOTE Confidence: 0.87725776

 $00{:}31{:}12{.}870 \dashrightarrow 00{:}31{:}15{.}732$  and we also use color Doppler

NOTE Confidence: 0.87725776

 $00:31:15.732 \longrightarrow 00:31:17.163$  flow for inflammation.

 $00:31:17.170 \longrightarrow 00:31:20.778$  So hyperemia is a common finding when there's

NOTE Confidence: 0.87725776

 $00:31:20.778 \rightarrow 00:31:23.380$  inflammatory to tissues and anthology.

NOTE Confidence: 0.87725776

 $00:31:23.380 \longrightarrow 00:31:26.509$  This is an example of hyperemia around

NOTE Confidence: 0.87725776

 $00:31:26.509 \dashrightarrow 00:31:28.950$  a somewhat ill defined appendix

NOTE Confidence: 0.87725776

 $00:31:28.950 \longrightarrow 00:31:31.986$  actually on this one clip here,

NOTE Confidence: 0.87725776

 $00{:}31{:}31{.}990 \dashrightarrow 00{:}31{:}35{.}385$  but this is the partial wall of

NOTE Confidence: 0.87725776

 $00:31:35.385 \longrightarrow 00:31:37.810$  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

 $00{:}31{:}40{.}380 \dashrightarrow 00{:}31{:}43{.}455$  So detection of inflammation and

NOTE Confidence: 0.87725776

 $00:31:43.455 \longrightarrow 00:31:46.830$  also detect detection of flow 2.

NOTE Confidence: 0.87725776

 $00{:}31{:}46{.}830 \dashrightarrow 00{:}31{:}50{.}796$  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

 $00{:}31{:}54{.}910 \dashrightarrow 00{:}31{:}56{.}410$  so we have.

NOTE Confidence: 0.87725776

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

NOTE Confidence: 0.87725776

 $00:31:57.910 \rightarrow 00:32:01.774$  which is an artifact that's caused by.

- NOTE Confidence: 0.87725776
- $00:32:01.780 \longrightarrow 00:32:04.246$  Failure of the Soundbeam to pass

 $00:32:04.246 \longrightarrow 00:32:05.479$  through certain tissue.

NOTE Confidence: 0.87725776

 $00:32:05.480 \longrightarrow 00:32:08.704$  So in still clip number one we have

NOTE Confidence: 0.87725776

 $00:32:08.704 \rightarrow 00:32:10.591$  acoustic shadowing because there's

NOTE Confidence: 0.87725776

 $00{:}32{:}10.591 \dashrightarrow 00{:}32{:}13.096$  gallstones in the global order.

NOTE Confidence: 0.87725776

 $00:32:13.100 \dashrightarrow 00:32:15.676$  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

 $00{:}32{:}17.171 \dashrightarrow 00{:}32{:}19.656$  down stairs and then this.

NOTE Confidence: 0.87725776

 $00:32:19.660 \dashrightarrow 00:32:21.620$  Dark defect behind the gallstone.

NOTE Confidence: 0.87725776

 $00:32:21.620 \rightarrow 00:32:23.960$  Here is an acoustic shadowing phenomenon.

NOTE Confidence: 0.87725776

 $00:32:23.960 \longrightarrow 00:32:26.306$  UM not to be concerned with.

NOTE Confidence: 0.87725776

 $00{:}32{:}26{.}310 \dashrightarrow 00{:}32{:}27{.}874$  Not to be confused.

NOTE Confidence: 0.87725776

00:32:27.874 --> 00:32:29.438 Sorry with Edge Artifact,

NOTE Confidence: 0.87725776

 $00{:}32{:}29{.}440 \dashrightarrow 00{:}32{:}31{.}740$  which is seen right next

NOTE Confidence: 0.87725776

 $00:32:31.740 \longrightarrow 00:32:33.580$  to the battery there.

00:32:33.580 --> 00:32:33.964 Uh,

NOTE Confidence: 0.87725776

 $00:32:33.964 \rightarrow 00:32:36.268$  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

 $00{:}32{:}38{.}916 \dashrightarrow 00{:}32{:}42{.}030$  for eign 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

 $00{:}32{:}47.790 \dashrightarrow 00{:}32{:}49.855$  So that's some acoustic shadowing

NOTE Confidence: 0.87725776

 $00{:}32{:}49.855 \dashrightarrow 00{:}32{:}52{.}324$  which is an important artifact that

NOTE Confidence: 0.87725776

 $00{:}32{:}52{.}324 \dashrightarrow 00{:}32{:}54{.}316$  we use to interpret our images.

NOTE Confidence: 0.9805913

 $00{:}32{:}56{.}360 \dashrightarrow 00{:}32{:}58{.}826$  The next important artifact to talk

NOTE Confidence: 0.9805913

 $00:32:58.826 \dashrightarrow 00:33:01.170$  about is mirror imaging artifact,

NOTE Confidence: 0.9805913

 $00:33:01.170 \longrightarrow 00:33:03.350$  which isn't a normal finding.

NOTE Confidence: 0.9805913

 $00{:}33{:}03{.}350 \dashrightarrow 00{:}33{:}06{.}930$  Most of the time so.

NOTE Confidence: 0.9805913

 $00:33:06.930 \dashrightarrow 00:33:09.560$  This artifact is created when

NOTE Confidence: 0.9805913

 $00:33:09.560 \longrightarrow 00:33:12.190$  you have a curved structure,

NOTE Confidence: 0.9805913

 $00:33:12.190 \longrightarrow 00:33:15.244$  which is a stronger reflector of

- NOTE Confidence: 0.9805913
- $00:33:15.244 \rightarrow 00:33:17.980$  ultrasound relative to the object.

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

NOTE Confidence: 0.9805913

 $00:33:21.641 \rightarrow 00:33:24.810$  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

 $00:33:27.690 \dashrightarrow 00:33:30.570$  object distance diagram there and

NOTE Confidence: 0.9805913

 $00:33:30.660 \rightarrow 00:33:33.438$  given the difference in the tissue

NOTE Confidence: 0.9805913

 $00:33:33.438 \rightarrow 00:33:36.510$  interface you have the appearance of.

NOTE Confidence: 0.9805913

 $00:33:36.510 \rightarrow 00:33:39.606$  Liver. That mean the other thing,

NOTE Confidence: 0.9805913

 $00{:}33{:}39{.}610 \dashrightarrow 00{:}33{:}41{.}956$  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

 $00:33:43.520 \rightarrow 00:33:46.184$  which is useful to know because if you

NOTE Confidence: 0.9805913

 $00{:}33{:}46.184 \dashrightarrow 00{:}33{:}49.377$  have a pleural effusion or human thorax,

NOTE Confidence: 0.9805913

 $00:33:49.380 \dashrightarrow 00:33:52.508$  and this is all going dark over here.

NOTE Confidence: 0.9805913

 $00{:}33{:}52{.}510 \dashrightarrow 00{:}33{:}54{.}850$  So instead of the mirror imaging,

NOTE Confidence: 0.9805913

 $00{:}33{:}54.850 \dashrightarrow 00{:}33{:}59.434$  and that you're likely to see is complete.

 $00{:}33{:}59{.}440 \dashrightarrow 00{:}34{:}02{.}842$  And collect technical through a collection

NOTE Confidence: 0.9805913

 $00{:}34{:}02{.}842 \dashrightarrow 00{:}34{:}07{.}279$  there in and pushing his appointment so uhm.

NOTE Confidence: 0.9805913

 $00{:}34{:}07{.}280 \dashrightarrow 00{:}34{:}10{.}095$  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

 $00{:}34{:}12{.}350 \dashrightarrow 00{:}34{:}15{.}160$  say, a scalp chemo Thomas.

NOTE Confidence: 0.9805913

 $00{:}34{:}15{.}160 \dashrightarrow 00{:}34{:}19{.}400$  So here we have bone.

NOTE Confidence: 0.9805913

 $00:34:19.400 \longrightarrow 00:34:21.388$  It's a strong reflector.

NOTE Confidence: 0.9805913

 $00:34:21.388 \rightarrow 00:34:25.050$  It's curved with the skulls, the scalp,

NOTE Confidence: 0.9805913

 $00{:}34{:}25.050 \dashrightarrow 00{:}34{:}28.560$  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

 $00{:}34{:}33{.}906 \dashrightarrow 00{:}34{:}37{.}504$  so this appearance here is not in epidural

NOTE Confidence: 0.9805913

 $00{:}34{:}37{.}504 \dashrightarrow 00{:}34{:}40{.}360$  subdural or a subcranial entertainer bleed,

NOTE Confidence: 0.9805913

 $00:34:40.360 \longrightarrow 00:34:43.965$  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

 $00:34:47.100 \rightarrow 00:34:51.410$  artifact that you will need to get dressed.

- NOTE Confidence: 0.9805913
- $00:34:51.410 \longrightarrow 00:34:53.440$  When you do this skins.
- NOTE Confidence: 0.9805913
- $00:34:53.440 \longrightarrow 00:34:56.009$  We have posterior up to stick enhancement,
- NOTE Confidence: 0.9805913
- $00:34:56.010 \rightarrow 00:34:59.167$  which is a bright or hypoechoic appearance.
- NOTE Confidence: 0.9805913
- $00:34:59.170 \longrightarrow 00:35:01.858$  At the posterior or far side of a
- NOTE Confidence: 0.9805913
- $00{:}35{:}01{.}858 \dashrightarrow 00{:}35{:}04{.}685$  cystic foods to structure due to the
- NOTE Confidence: 0.9805913
- $00{:}35{:}04.685 \dashrightarrow 00{:}35{:}07.210$  lack of attenuation of ultrasound beam.
- NOTE Confidence: 0.9805913
- $00{:}35{:}07{.}210 \dashrightarrow 00{:}35{:}09{.}682$  So we have a bladder here and the
- NOTE Confidence: 0.9805913
- $00{:}35{:}09{.}682 \dashrightarrow 00{:}35{:}11{.}771$  posterior wall appears very bright
- NOTE Confidence: 0.9805913
- $00{:}35{:}11.771 \dashrightarrow 00{:}35{:}14.106$  due to posterior acoustic enhancement.
- NOTE Confidence: 0.9805913
- $00{:}35{:}14.110 \dashrightarrow 00{:}35{:}16.366$  It's not any different consistency in
- NOTE Confidence: 0.9805913
- $00{:}35{:}16{.}366 \dashrightarrow 00{:}35{:}19{.}089$  terms of the wall there relative to
- NOTE Confidence: 0.9805913
- $00{:}35{:}19.089 \dashrightarrow 00{:}35{:}21.770$  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
- $00:35:25.162 \dashrightarrow 00:35:28.877$  of the ocean transmission through that.
- NOTE Confidence: 0.9805913
- $00{:}35{:}28{.}880 \dashrightarrow 00{:}35{:}31{.}286$  And it's important again because of
- NOTE Confidence: 0.9805913

 $00:35:31.286 \rightarrow 00:35:33.630$  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

 $00:35:38.380 \rightarrow 00:35:41.854$  very bright behind the bladder, you may miss.

NOTE Confidence: 0.9805913

 $00:35:41.854 \dashrightarrow 00:35:44.920$  We flew in from the customer period.

NOTE Confidence: 0.9805913

 $00:35:44.920 \rightarrow 00:35:47.349$  He may miss briefly behind the bladder,

NOTE Confidence: 0.9805913

 $00:35:47.350 \dashrightarrow 00:35:50.738$  so just be cognizant of this artifact

NOTE Confidence: 0.9805913

 $00:35:50.738 \rightarrow 00:35:54.198$  and adjust your game for quoting him.

NOTE Confidence: 0.9805913

 $00{:}35{:}54{.}200 \dashrightarrow 00{:}35{:}56{.}516$  OK, and two more quick ones,

NOTE Confidence: 0.9805913

 $00:35:56.520 \rightarrow 00:35:58.460$  so reverberation artifact very important.

NOTE Confidence: 0.9805913

 $00:35:58.460 \longrightarrow 00:35:59.618$  Windows coming along.

NOTE Confidence: 0.9805913

 $00:35:59.618 \rightarrow 00:36:00.390$  Very important.

NOTE Confidence: 0.9805913

 $00:36:00.390 \longrightarrow 00:36:02.330$  We looking at Kirkland bodies.

NOTE Confidence: 0.9805913

 $00:36:02.330 \longrightarrow 00:36:04.628$  These are equidistant horizontal lines that

NOTE Confidence: 0.9805913

 $00:36:04.628 \rightarrow 00:36:07.748$  tend to decrease in intensity on the monitor.

NOTE Confidence: 0.9805913

 $00{:}36{:}07.750 \dashrightarrow 00{:}36{:}11.334$  It has to do with reflection or

- NOTE Confidence: 0.9805913
- $00:36:11.334 \rightarrow 00:36:13.760$  regulation of echoes too and.

 $00{:}36{:}13.760 \dashrightarrow 00{:}36{:}15.884$  From the pros so.

NOTE Confidence: 0.9805913

 $00{:}36{:}15.884 \dashrightarrow 00{:}36{:}20.589$  In this case we have the probe here.

NOTE Confidence: 0.9805913

 $00:36:20.590 \rightarrow 00:36:23.467$  And we're looking at a lung tissue.

NOTE Confidence: 0.9805913

 $00:36:23.470 \longrightarrow 00:36:25.098$  This is the pleura.

NOTE Confidence: 0.9805913

 $00{:}36{:}25.098 \dashrightarrow 00{:}36{:}28.446$  So this isn't a line here and this

NOTE Confidence: 0.9805913

 $00{:}36{:}28{.}446 \dashrightarrow 00{:}36{:}31{.}702$  is a really great thing here and you

NOTE Confidence: 0.9805913

 $00{:}36{:}31.794 \dashrightarrow 00{:}36{:}34.866$  can see the distance between this.

NOTE Confidence: 0.9805913

 $00:36:34.870 \longrightarrow 00:36:35.282$  Uh.

NOTE Confidence: 0.9805913

 $00{:}36{:}35{.}282 \dashrightarrow 00{:}36{:}38{.}578$  And this is the same which is also

NOTE Confidence: 0.9805913

 $00{:}36{:}38{.}578 \dashrightarrow 00{:}36{:}41{.}767$  similar to the distance between right.

NOTE Confidence: 0.9805913

 $00{:}36{:}41.770 \dashrightarrow 00{:}36{:}43.715$  Exactly precisely the distance from

NOTE Confidence: 0.9805913

 $00{:}36{:}43.715 \dashrightarrow 00{:}36{:}46.155$  the probe to when the ultrasound

NOTE Confidence: 0.9805913

 $00{:}36{:}46.155 \dashrightarrow 00{:}36{:}47.847$  beam hits the floor.

NOTE Confidence: 0.9805913

 $00{:}36{:}47.850 \dashrightarrow 00{:}36{:}51.090$  So normal filled air airlines are good day.

 $00:36:51.090 \rightarrow 00:36:53.771$  OK, this is the type of reverberation

NOTE Confidence: 0.922559499999999

 $00{:}36{:}53.771 \dashrightarrow 00{:}36{:}56.694$  artifact that we assume or that we should

NOTE Confidence: 0.922559499999999

 $00:36:56.694 \rightarrow 00:36:59.485$  be seeing when there is healthy lung

NOTE Confidence: 0.922559499999999

 $00:36:59.485 \rightarrow 00:37:02.020$  tissue without any problems reported.

NOTE Confidence: 0.94312334

 $00:37:04.690 \rightarrow 00:37:06.795$  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

 $00:37:09.323 \rightarrow 00:37:11.428$  artifact or comma tail artifact,

NOTE Confidence: 0.94312334

 $00{:}37{:}11{.}430 \dashrightarrow 00{:}37{:}15{.}198$  and this has to do with.

NOTE Confidence: 0.94312334

 $00:37:15.200 \rightarrow 00:37:18.206$  And essentially the interface of the

NOTE Confidence: 0.94312334

 $00:37:18.206 \rightarrow 00:37:21.179$  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

 $00:37:23.112 \longrightarrow 00:37:26.010$  and which creates a deep dive

NOTE Confidence: 0.94312334

 $00:37:26.100 \longrightarrow 00:37:28.148$  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

 $00:37:33.130 \longrightarrow 00:37:36.450$  and then you have a.

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

 $00:37{:}40.934 \dashrightarrow 00{:}37{:}43.636$  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

 $00:37{:}46.003 \dashrightarrow 00{:}37{:}48.277$  anterior portion and the post here NOTE Confidence: 0.94312334

 $00{:}37{:}48.277 \dashrightarrow 00{:}37{:}51.252$  portion so it ends up happening is

NOTE Confidence: 0.94312334

 $00{:}37{:}51{.}252 \dashrightarrow 00{:}37{:}53{.}512$  that ultrasound beam gets trapped

NOTE Confidence: 0.94312334

 $00:37:53.512 \rightarrow 00:37:56.648$  between the two parts of that needle

NOTE Confidence: 0.94312334

 $00{:}37{:}56{.}648 \dashrightarrow 00{:}37{:}59{.}873$  in italic tip and it's going to

NOTE Confidence: 0.94312334

 $00:37:59.873 \rightarrow 00:38:02.113$  create these sort of repetitive.

NOTE Confidence: 0.94312334

 $00{:}38{:}02{.}120 \dashrightarrow 00{:}38{:}04{.}946$  Verdict never will be racing dates,

NOTE Confidence: 0.94312334

 $00{:}38{:}04{.}950 \dashrightarrow 00{:}38{:}09{.}189$  so it's going to be down to the machine.

NOTE Confidence: 0.94312334

 $00{:}38{:}09{.}190 \dashrightarrow 00{:}38{:}12{.}082$  So I'm unlike just the airlines

NOTE Confidence: 0.94312334

 $00{:}38{:}12.082 \dashrightarrow 00{:}38{:}14.996$  that are separated by the distance

NOTE Confidence: 0.94312334

 $00:38:14.996 \longrightarrow 00:38:17.660$  of the probe to the flora.

 $00:38:17.660 \rightarrow 00:38:21.428$  This is more of a persistent ping pong

NOTE Confidence: 0.94312334

 $00:38:21.428 \rightarrow 00:38:24.729$  effect within the lumen of that needle,

NOTE Confidence: 0.94312334

 $00{:}38{:}24.730 \dashrightarrow 00{:}38{:}27.685$  causing a vertical dive and

NOTE Confidence: 0.94312334

 $00:38:27.685 \longrightarrow 00:38:30.640$  you would expect to see.

NOTE Confidence: 0.94312334

 $00:38:30.640 \rightarrow 00:38:34.504$  Bring down the appearance on the screen.

NOTE Confidence: 0.94312334

00:38:34.510 --> 00:38:34.973 Alright,

NOTE Confidence: 0.94312334

 $00{:}38{:}34{.}973 \dashrightarrow 00{:}38{:}39{.}932$  so we've made it to the end and I thank

NOTE Confidence: 0.94312334

 $00:38:39.932 \rightarrow 00:38:43.994$  you for sticking through the lecture.

NOTE Confidence: 0.94312334

 $00{:}38{:}44.000 \dashrightarrow 00{:}38{:}46.065$  Recap how you can get good images.

NOTE Confidence: 0.94312334

 $00:38:46.070 \rightarrow 00:38:48.734$  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

 $00:38:49.330 \longrightarrow 00:38:51.690$  practice and more practice.

NOTE Confidence: 0.94312334

 $00:38:51.690 \rightarrow 00:38:54.420$  But you're gonna and impose some

NOTE Confidence: 0.94312334

 $00{:}38{:}54{.}420 \dashrightarrow 00{:}38{:}56{.}830$  of the important concepts and

NOTE Confidence: 0.94312334

 $00{:}38{:}56{.}830 \dashrightarrow 00{:}38{:}59{.}380$  understanding of physics that dumb.

NOTE Confidence: 0.94312334

 $00:38:59.380 \longrightarrow 00:39:02.422$  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

 $00{:}39{:}04.766 \dashrightarrow 00{:}39{:}06.710$  choosing the right probe is sometimes

NOTE Confidence: 0.94312334

 $00:39:06.710 \longrightarrow 00:39:09.126$  half the battle for for the the

NOTE Confidence: 0.94312334

 $00:39:09.126 \rightarrow 00:39:11.580$  application that you're trying to achieve,

NOTE Confidence: 0.94312334

 $00:39:11.580 \longrightarrow 00:39:12.774$  use good windows.

NOTE Confidence: 0.94312334

 $00:39:12.774 \longrightarrow 00:39:14.764$  Use fluid filled structures to

NOTE Confidence: 0.94312334

 $00:39:14.764 \rightarrow 00:39:17.030$  see objects that are behind them.

NOTE Confidence: 0.94312334

00:39:17.030 --> 00:39:17.700 Identify landmarks,

NOTE Confidence: 0.94312334

 $00:39:17.700 \longrightarrow 00:39:21.220$  a lot of what we do with pattern recognition.

NOTE Confidence: 0.94312334

 $00:39:21.220 \longrightarrow 00:39:23.506$  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

 $00{:}39{:}27{.}219 \dashrightarrow 00{:}39{:}28{.}788$  expedition to some extent

NOTE Confidence: 0.94312334

 $00{:}39{:}28.788 \dashrightarrow 00{:}39{:}30.368$  and adjust the depth.

NOTE Confidence: 0.94312334

 $00:39:30.370 \rightarrow 00:39:33.790$  We don't want any wasted space on the screen,

00:39:33.790 -> 00:39:36.604 so we want to maximize your object

NOTE Confidence: 0.94312334

 $00{:}39{:}36{.}604 \dashrightarrow 00{:}39{:}39{.}823$  of interest and make it as big as

NOTE Confidence: 0.94312334

 $00:39:39.823 \longrightarrow 00:39:41.753$  possible without losing any of

NOTE Confidence: 0.94312334

 $00:39:41.836 \longrightarrow 00:39:44.326$  the important detail behind it.

NOTE Confidence: 0.94312334

 $00:39:44.330 \longrightarrow 00:39:46.410$  Get to know your machine,

NOTE Confidence: 0.94312334

 $00:39:46.410 \longrightarrow 00:39:47.817$  you different settings.

NOTE Confidence: 0.94312334

 $00:39:47.817 \rightarrow 00:39:50.631$  Even within a single hospital are

NOTE Confidence: 0.94312334

 $00:39:50.631 \rightarrow 00:39:53.376$  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

 $00{:}39{:}56{.}294 \dashrightarrow 00{:}39{:}58{.}854$  able to be a good cynologist or or

NOTE Confidence: 0.94312334

 $00:39:58.860 \dashrightarrow 00:40:01.205$  good clinician who include ultrasound NOTE Confidence: 0.94312334

 $00{:}40{:}01{.}205 \dashrightarrow 00{:}40{:}04{.}908$  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

 $00:40:07.215 \longrightarrow 00:40:10.369$  having to sort of fiddle with the

NOTE Confidence: 0.94312334

 $00{:}40{:}10.369 \dashrightarrow 00{:}40{:}12.655$  machine is here there in vivo.

NOTE Confidence: 0.94312334

 $00:40:12.660 \rightarrow 00:40:15.360$  Caring for kids and their families.

- NOTE Confidence: 0.94312334
- $00{:}40{:}15{.}360 \dashrightarrow 00{:}40{:}16{.}870$  And and that's it.
- NOTE Confidence: 0.94869137
- 00:40:19.340 --> 00:40:21.866 Your friendly pimp Focus<br/>in consists of
- NOTE Confidence: 0.94869137
- $00{:}40{:}21.866 \dashrightarrow 00{:}40{:}24.886$  myself and lichen and Julie Lavender and
- NOTE Confidence: 0.94869137
- $00{:}40{:}24.886 \dashrightarrow 00{:}40{:}27.833$  will be doing the scanning shift sessions
- NOTE Confidence: 0.94869137
- $00{:}40{:}27{.}906 \dashrightarrow 00{:}40{:}30{.}558$  together and we're excited for this
- NOTE Confidence: 0.94869137
- $00{:}40{:}30{.}558 \dashrightarrow 00{:}40{:}32{.}756$  opportunity to augment your experience.
- NOTE Confidence: 0.94869137
- $00:40:32.756 \longrightarrow 00:40:35.738$  We do realize this is an optional
- NOTE Confidence: 0.94869137
- $00:40:35.738 \longrightarrow 00:40:37.529$  commitment on your behalf.
- NOTE Confidence: 0.94869137
- $00:40:37.530 \longrightarrow 00:40:39.690$  So with that in mind,
- NOTE Confidence: 0.94869137
- $00:40:39.690 \longrightarrow 00:40:42.288$  we're going to provide an extra
- NOTE Confidence: 0.94869137
- $00:40:42.288 \longrightarrow 00:40:44.020$  fruitful experience. We hope.
- NOTE Confidence: 0.92296535
- $00{:}40{:}46{.}140 \dashrightarrow 00{:}40{:}48{.}906$  When we when we spend time
- NOTE Confidence: 0.92296535
- $00:40:48.906 \rightarrow 00:40:51.410$  together on his gaming ships,
- NOTE Confidence: 0.92296535
- $00{:}40{:}51{.}410 \dashrightarrow 00{:}40{:}54{.}728$  so the the same sheet will be
- NOTE Confidence: 0.92296535
- $00:40:54.728 \rightarrow 00:40:57.640$  updated quarterly and dumb right now.
- NOTE Confidence: 0.92296535

- $00{:}40{:}57.640 \dashrightarrow 00{:}41{:}00.986$  With COVID we're only limiting to 1.
- NOTE Confidence: 0.92296535
- $00:41:00.990 \longrightarrow 00:41:04.960$  Maybe two rotators on today.
- NOTE Confidence: 0.92296535
- $00:41:04.960 \longrightarrow 00:41:07.837$  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
- $00{:}41{:}09{.}828 \dashrightarrow 00{:}41{:}12{.}313$  multiple scanning ships with us
- NOTE Confidence: 0.92296535
- $00{:}41{:}12{.}313 \dashrightarrow 00{:}41{:}14{.}089$  throughout the academic year.
- NOTE Confidence: 0.92296535
- $00{:}41{:}14.090 \dashrightarrow 00{:}41{:}16.178$  And so solution.
- NOTE Confidence: 0.92296535
- 00:41:16.180 --> 00:41:18.148 And thanks for listening.