

WEBVTT

NOTE duration:"00:57:40.6500000"

NOTE recognizability:0.793

NOTE language:en-us

NOTE Confidence: 0.8763470575

00:00:00.000 --> 00:00:02.108 So without further ado,

NOTE Confidence: 0.8763470575

00:00:02.108 --> 00:00:04.696 I want to introduce today's speaker

NOTE Confidence: 0.8763470575

00:00:04.696 --> 00:00:06.645 and it's a really pleasure to

NOTE Confidence: 0.8763470575

00:00:06.645 --> 00:00:08.909 introduce Doctor Cyrus Caldani,

NOTE Confidence: 0.8763470575

00:00:08.909 --> 00:00:11.927 who's a former Yale Pomarico care

NOTE Confidence: 0.8763470575

00:00:11.927 --> 00:00:14.737 and and Sleep Medicine Fellow.

NOTE Confidence: 0.8763470575

00:00:14.740 --> 00:00:18.100 He is also an alma mater from Ohh.

NOTE Confidence: 0.8763470575

00:00:18.100 --> 00:00:20.214 He's also a faculty at my former

NOTE Confidence: 0.8763470575

00:00:20.214 --> 00:00:22.010 alma mater Beth Israel Deaconess

NOTE Confidence: 0.8763470575

00:00:22.010 --> 00:00:24.454 Medical Center at Harvard now and

NOTE Confidence: 0.8763470575

00:00:24.454 --> 00:00:27.072 just give you a few Nuggets about

NOTE Confidence: 0.8763470575

00:00:27.072 --> 00:00:30.059 Cyrus who is an incredible physician.

NOTE Confidence: 0.8763470575

00:00:30.060 --> 00:00:30.588 And educator.

NOTE Confidence: 0.8763470575

00:00:30.588 --> 00:00:33.070 And so he was born in New York City,
NOTE Confidence: 0.8763470575

00:00:33.070 --> 00:00:35.025 and then immediately after that
NOTE Confidence: 0.8763470575

00:00:35.025 --> 00:00:36.980 he earned his Physiology degree
NOTE Confidence: 0.8763470575

00:00:37.043 --> 00:00:39.630 at Georgetown before he got his
NOTE Confidence: 0.8763470575

00:00:39.630 --> 00:00:41.855 training medical training at Drexel.
NOTE Confidence: 0.8763470575

00:00:41.860 --> 00:00:44.145 He then moved to beautiful
NOTE Confidence: 0.8763470575

00:00:44.145 --> 00:00:45.973 Charlottesville for his residency
NOTE Confidence: 0.8763470575

00:00:45.973 --> 00:00:47.947 and training in internal medicine,
NOTE Confidence: 0.8763470575

00:00:47.947 --> 00:00:49.681 and then moved on to Yale
NOTE Confidence: 0.8763470575

00:00:49.681 --> 00:00:51.398 for pulmonary critical care,
NOTE Confidence: 0.8763470575

00:00:51.400 --> 00:00:54.928 where he did research with doctor
NOTE Confidence: 0.8763470575

00:00:54.928 --> 00:00:57.594 with our own doctor Mossanen,
NOTE Confidence: 0.8763470575

00:00:57.594 --> 00:01:00.276 and had done some significant work
NOTE Confidence: 0.8763470575

00:01:00.276 --> 00:01:02.225 on relationships in hypertension
NOTE Confidence: 0.8763470575

00:01:02.225 --> 00:01:04.197 and sleep disorder breathing.
NOTE Confidence: 0.8763470575

00:01:04.200 --> 00:01:06.528 And so he then moved on to do

NOTE Confidence: 0.8763470575

00:01:06.528 --> 00:01:08.270 his pulmonary vascular disease

NOTE Confidence: 0.8763470575

00:01:08.270 --> 00:01:09.896 fellowship at Stanford,

NOTE Confidence: 0.8763470575

00:01:09.900 --> 00:01:12.636 where he then joined the faculty.

NOTE Confidence: 0.8763470575

00:01:12.640 --> 00:01:14.728 And then in 2018,

NOTE Confidence: 0.8763470575

00:01:14.728 --> 00:01:18.022 he moved to the Beth Israel

NOTE Confidence: 0.8763470575

00:01:18.022 --> 00:01:20.426 Deaconess and now Leahy.

NOTE Confidence: 0.8763470575

00:01:20.430 --> 00:01:21.678 Medical Center associate

NOTE Confidence: 0.8763470575

00:01:21.678 --> 00:01:22.926 affiliated with Harvard,

NOTE Confidence: 0.8763470575

00:01:22.930 --> 00:01:24.900 where he directs the Pulmonary

NOTE Confidence: 0.8763470575

00:01:24.900 --> 00:01:25.688 Hypertension Center,

NOTE Confidence: 0.8763470575

00:01:25.690 --> 00:01:27.832 and he's highly involved in teaching

NOTE Confidence: 0.8763470575

00:01:27.832 --> 00:01:29.260 residents and fellows there.

NOTE Confidence: 0.8763470575

00:01:29.260 --> 00:01:30.433 And so Cyrus,

NOTE Confidence: 0.8763470575

00:01:30.433 --> 00:01:33.170 like me as a lover of Physiology,

NOTE Confidence: 0.8763470575

00:01:33.170 --> 00:01:34.945 as evidenced by his publication

NOTE Confidence: 0.8763470575

00:01:34.945 --> 00:01:37.236 record and his published work on
NOTE Confidence: 0.8763470575

00:01:37.236 --> 00:01:39.064 the intersection of pulmonary
NOTE Confidence: 0.8763470575

00:01:39.064 --> 00:01:39.978 arterial hypertension,
NOTE Confidence: 0.8763470575

00:01:39.980 --> 00:01:41.273 pulmonary hypertension and
NOTE Confidence: 0.8763470575

00:01:41.273 --> 00:01:42.566 sleep disorder breathing,
NOTE Confidence: 0.8763470575

00:01:42.570 --> 00:01:44.554 addressing some mechanistic links
NOTE Confidence: 0.8763470575

00:01:44.554 --> 00:01:46.538 and also clinical implications.
NOTE Confidence: 0.8763470575

00:01:46.540 --> 00:01:48.244 And his recent work has actually
NOTE Confidence: 0.8763470575

00:01:48.244 --> 00:01:49.849 focused on some different implication
NOTE Confidence: 0.8763470575

00:01:49.849 --> 00:01:51.497 too for pulmonary circulation,
NOTE Confidence: 0.8763470575

00:01:51.500 --> 00:01:52.586 including vascular pruning.
NOTE Confidence: 0.8763470575

00:01:52.586 --> 00:01:54.396 It's a paper those recently
NOTE Confidence: 0.8763470575

00:01:54.396 --> 00:01:55.500 published in chest.
NOTE Confidence: 0.8763470575

00:01:55.500 --> 00:02:00.414 And so I am very excited to hear Cyrus's
NOTE Confidence: 0.8763470575

00:02:00.414 --> 00:02:02.178 talk today on the intersection of
NOTE Confidence: 0.8763470575

00:02:02.178 --> 00:02:04.539 the PD and sleep disorder breathing.

NOTE Confidence: 0.8763470575
00:02:04.540 --> 00:02:04.956 So Cyrus,
NOTE Confidence: 0.8763470575
00:02:04.956 --> 00:02:05.580 take it away.
NOTE Confidence: 0.8763470575
00:02:05.580 --> 00:02:06.030 Welcome.
NOTE Confidence: 0.912377366
00:02:06.280 --> 00:02:08.140 Thank you so much, Andre.
NOTE Confidence: 0.912377366
00:02:08.140 --> 00:02:10.624 Glad to see your face, hear your voice.
NOTE Confidence: 0.912377366
00:02:10.624 --> 00:02:12.575 And then before this started,
NOTE Confidence: 0.912377366
00:02:12.575 --> 00:02:13.985 I was sort of running through
NOTE Confidence: 0.912377366
00:02:13.985 --> 00:02:15.702 a list of names with Debbie to
NOTE Confidence: 0.912377366
00:02:15.702 --> 00:02:17.390 find out who's still at Yale and.
NOTE Confidence: 0.912377366
00:02:17.390 --> 00:02:20.594 Would love to be back in grab a a
NOTE Confidence: 0.912377366
00:02:20.594 --> 00:02:23.949 Kati roll if those are still around.
NOTE Confidence: 0.912377366
00:02:23.950 --> 00:02:26.776 Uh, this is the same disclosure
NOTE Confidence: 0.912377366
00:02:26.776 --> 00:02:28.189 and accreditation slide,
NOTE Confidence: 0.912377366
00:02:28.190 --> 00:02:29.780 the outline of today's talk.
NOTE Confidence: 0.912377366
00:02:29.780 --> 00:02:30.410 We're gonna,
NOTE Confidence: 0.912377366

00:02:30.410 --> 00:02:32.615 I'll start with sort of recent changes

NOTE Confidence: 0.912377366

00:02:32.615 --> 00:02:35.117 in the diagnosis and definition of

NOTE Confidence: 0.912377366

00:02:35.117 --> 00:02:37.134 pulmonary vascular disease and then

NOTE Confidence: 0.912377366

00:02:37.134 --> 00:02:39.738 we'll jump right to sort of like

NOTE Confidence: 0.912377366

00:02:39.738 --> 00:02:42.226 how to use existing phenotypes to

NOTE Confidence: 0.912377366

00:02:42.226 --> 00:02:44.786 try and describe a relationship

NOTE Confidence: 0.912377366

00:02:44.786 --> 00:02:47.150 between pH and sleep apnea.

NOTE Confidence: 0.912377366

00:02:47.150 --> 00:02:49.542 Will highlight the unique

NOTE Confidence: 0.912377366

00:02:49.542 --> 00:02:52.532 relationship between pH and obesity

NOTE Confidence: 0.912377366

00:02:52.532 --> 00:02:54.502 hyperventilation syndrome over the

NOTE Confidence: 0.912377366

00:02:54.502 --> 00:02:56.854 course of the talk will be talking

NOTE Confidence: 0.912377366

00:02:56.854 --> 00:02:59.091 about the implications of CPAP

NOTE Confidence: 0.912377366

00:02:59.091 --> 00:03:00.826 and noninvasive positive pressure

NOTE Confidence: 0.912377366

00:03:00.826 --> 00:03:02.866 ventilation on those two conditions

NOTE Confidence: 0.912377366

00:03:02.866 --> 00:03:04.590 and probably vascular disease.

NOTE Confidence: 0.912377366

00:03:04.590 --> 00:03:05.958 And then if there is time,

NOTE Confidence: 0.912377366

00:03:05.960 --> 00:03:07.794 I I do have an interesting case

NOTE Confidence: 0.912377366

00:03:07.794 --> 00:03:10.166 to finish up with that I I hope

NOTE Confidence: 0.912377366

00:03:10.166 --> 00:03:11.686 you guys would find interesting.

NOTE Confidence: 0.912377366

00:03:11.690 --> 00:03:14.546 So just as a you know background,

NOTE Confidence: 0.912377366

00:03:14.550 --> 00:03:17.510 there was a seminal paper published in 2016.

NOTE Confidence: 0.912377366

00:03:17.510 --> 00:03:19.750 Using the VA card database,

NOTE Confidence: 0.912377366

00:03:19.750 --> 00:03:24.286 which is sort of a linking of all VM

NOTE Confidence: 0.912377366

00:03:24.286 --> 00:03:26.574 catheterization laboratories in the

NOTE Confidence: 0.912377366

00:03:26.574 --> 00:03:29.364 VA system that participated in the

NOTE Confidence: 0.912377366

00:03:29.364 --> 00:03:32.300 generation of a database and you know,

NOTE Confidence: 0.912377366

00:03:32.300 --> 00:03:35.190 an evaluation of almost 22,000

NOTE Confidence: 0.912377366

00:03:35.190 --> 00:03:37.502 very well characterized individuals

NOTE Confidence: 0.912377366

00:03:37.502 --> 00:03:41.800 that underwent catheterizations.

NOTE Confidence: 0.912377366

00:03:41.800 --> 00:03:44.488 Were able to demonstration very important

NOTE Confidence: 0.912377366

00:03:44.488 --> 00:03:47.287 findings that changed our concept of

NOTE Confidence: 0.912377366

00:03:47.287 --> 00:03:49.627 what pulmonary hypertension should be.

NOTE Confidence: 0.834479969642857

00:03:53.330 --> 00:03:55.910 And importantly, what we were able

NOTE Confidence: 0.834479969642857

00:03:55.910 --> 00:03:58.861 to establish is that the previous cut

NOTE Confidence: 0.834479969642857

00:03:58.861 --> 00:04:02.045 off of the main peer pressure of 25

NOTE Confidence: 0.834479969642857

00:04:02.045 --> 00:04:04.565 and above missed a significant amount

NOTE Confidence: 0.834479969642857

00:04:04.565 --> 00:04:06.160 of clinically significant disease.

NOTE Confidence: 0.834479969642857

00:04:06.160 --> 00:04:09.287 And it was based on this paper that

NOTE Confidence: 0.834479969642857

00:04:09.287 --> 00:04:11.285 we changed the criteria to mean

NOTE Confidence: 0.834479969642857

00:04:11.285 --> 00:04:13.168 peer pressure of 20 and above.

NOTE Confidence: 0.834479969642857

00:04:13.170 --> 00:04:16.310 And you can see here that we

NOTE Confidence: 0.834479969642857

00:04:16.310 --> 00:04:18.150 have 3 categories here.

NOTE Confidence: 0.834479969642857

00:04:18.150 --> 00:04:20.710 You know, your reference is sort of your,

NOTE Confidence: 0.834479969642857

00:04:20.710 --> 00:04:23.113 your, your previous.

NOTE Confidence: 0.834479969642857

00:04:23.113 --> 00:04:27.424 Um, criteria of 25 and the

NOTE Confidence: 0.834479969642857

00:04:27.424 --> 00:04:28.640 middle line here is,

NOTE Confidence: 0.834479969642857

00:04:28.640 --> 00:04:31.226 I mean you have person 1924 and then

NOTE Confidence: 0.834479969642857

00:04:31.226 --> 00:04:33.518 lastly is a normal OK pressures

NOTE Confidence: 0.834479969642857

00:04:33.520 --> 00:04:36.360 and you can see that even having a

NOTE Confidence: 0.834479969642857

00:04:36.360 --> 00:04:38.460 slightly elevated PA pressure results

NOTE Confidence: 0.834479969642857

00:04:38.460 --> 00:04:40.916 in a significant increase in risk

NOTE Confidence: 0.834479969642857

00:04:40.916 --> 00:04:43.004 and a reduction in the probability

NOTE Confidence: 0.834479969642857

00:04:43.004 --> 00:04:45.542 of survival and then also increases

NOTE Confidence: 0.834479969642857

00:04:45.542 --> 00:04:47.314 your chance of hospitalization.

NOTE Confidence: 0.834479969642857

00:04:47.320 --> 00:04:47.614 Importantly,

NOTE Confidence: 0.834479969642857

00:04:47.614 --> 00:04:49.966 it's sort of hard to see on here

NOTE Confidence: 0.834479969642857

00:04:49.966 --> 00:04:50.999 on this graph,

NOTE Confidence: 0.834479969642857

00:04:51.000 --> 00:04:54.864 but the hazard ratio that increased

NOTE Confidence: 0.834479969642857

00:04:54.864 --> 00:04:58.151 that happens between 20 and 2121

NOTE Confidence: 0.834479969642857

00:04:58.151 --> 00:05:00.319 and 22 all the way up to 25,

NOTE Confidence: 0.834479969642857

00:05:00.320 --> 00:05:02.732 each of those one millimeter mercury

NOTE Confidence: 0.834479969642857

00:05:02.732 --> 00:05:05.232 increments is of greater clinical

NOTE Confidence: 0.834479969642857

00:05:05.232 --> 00:05:07.847 significance than any one millimeter
NOTE Confidence: 0.834479969642857

00:05:07.847 --> 00:05:10.478 mercury increment that follows it.
NOTE Confidence: 0.834479969642857

00:05:10.480 --> 00:05:12.657 This study was also able to establish
NOTE Confidence: 0.834479969642857

00:05:12.657 --> 00:05:14.968 that the risk that comes along with
NOTE Confidence: 0.834479969642857

00:05:14.968 --> 00:05:16.942 having this mean pay pressure of
NOTE Confidence: 0.834479969642857

00:05:17.008 --> 00:05:18.408 20 and above occurs irrespective
NOTE Confidence: 0.834479969642857

00:05:18.408 --> 00:05:20.078 of what the PR is.
NOTE Confidence: 0.834479969642857

00:05:20.080 --> 00:05:22.090 So whether you're a low PVR
NOTE Confidence: 0.834479969642857

00:05:22.090 --> 00:05:24.400 patient or a high PVR patient,
NOTE Confidence: 0.834479969642857

00:05:24.400 --> 00:05:26.906 having a mean pay pressure that is
NOTE Confidence: 0.834479969642857

00:05:26.906 --> 00:05:29.488 20 or above increases your risk of
NOTE Confidence: 0.834479969642857

00:05:29.488 --> 00:05:31.750 mortality and your risk of hospitalization.
NOTE Confidence: 0.834479969642857

00:05:31.750 --> 00:05:34.070 Fast forward a couple years,
NOTE Confidence: 0.834479969642857

00:05:34.070 --> 00:05:36.408 there was a paper using similar data,
NOTE Confidence: 0.834479969642857

00:05:36.410 --> 00:05:37.204 same database,
NOTE Confidence: 0.834479969642857

00:05:37.204 --> 00:05:39.586 that was able to establish that

NOTE Confidence: 0.834479969642857
00:05:39.586 --> 00:05:41.940 the previous PVR definition for pH,
NOTE Confidence: 0.834479969642857
00:05:41.940 --> 00:05:44.348 which was three wood units and above,
NOTE Confidence: 0.834479969642857
00:05:44.350 --> 00:05:47.280 similarly was missing a lot
NOTE Confidence: 0.834479969642857
00:05:47.280 --> 00:05:49.624 of morbidity and mortality.
NOTE Confidence: 0.834479969642857
00:05:49.630 --> 00:05:52.353 The red lines here sort of reflect
NOTE Confidence: 0.834479969642857
00:05:52.353 --> 00:05:54.462 the density of patients that
NOTE Confidence: 0.834479969642857
00:05:54.462 --> 00:05:57.024 exist at any given PVR value,
NOTE Confidence: 0.834479969642857
00:05:57.030 --> 00:05:59.856 and the blue line here represents
NOTE Confidence: 0.834479969642857
00:05:59.856 --> 00:06:01.740 the increase in mortality.
NOTE Confidence: 0.834479969642857
00:06:01.740 --> 00:06:03.520 And you can see that.
NOTE Confidence: 0.834479969642857
00:06:03.520 --> 00:06:06.526 In individuals that have many pressures
NOTE Confidence: 0.834479969642857
00:06:06.526 --> 00:06:11.126 of 19 or above having a PVR that is above.
NOTE Confidence: 0.834479969642857
00:06:11.130 --> 00:06:13.678 Two, although this one really is 2.2,
NOTE Confidence: 0.834479969642857
00:06:13.678 --> 00:06:15.382 does confer significant
NOTE Confidence: 0.834479969642857
00:06:15.382 --> 00:06:17.654 increase in mortality and.
NOTE Confidence: 0.834479969642857

00:06:17.660 --> 00:06:19.400 As we mentioned before,
NOTE Confidence: 0.834479969642857

00:06:19.400 --> 00:06:21.140 this increase in mortality
NOTE Confidence: 0.834479969642857

00:06:21.140 --> 00:06:23.470 occurs both with subjects that
NOTE Confidence: 0.834479969642857

00:06:23.470 --> 00:06:25.314 have classic pH Physiology,
NOTE Confidence: 0.834479969642857

00:06:25.320 --> 00:06:27.480 which is to say I mean
NOTE Confidence: 0.834479969642857

00:06:27.480 --> 00:06:28.678 pressure that's you know,
NOTE Confidence: 0.834479969642857

00:06:28.678 --> 00:06:30.590 19 or above in the setting of a
NOTE Confidence: 0.834479969642857

00:06:30.656 --> 00:06:32.956 low wedge pressure or pulmonary
NOTE Confidence: 0.834479969642857

00:06:32.956 --> 00:06:34.336 venous hypertension Physiology.
NOTE Confidence: 0.834479969642857

00:06:34.340 --> 00:06:36.392 So if you're PR is over 2 and you
NOTE Confidence: 0.834479969642857

00:06:36.392 --> 00:06:38.480 have pulmonary venous hypertension,
NOTE Confidence: 0.834479969642857

00:06:38.480 --> 00:06:39.032 same thing,
NOTE Confidence: 0.834479969642857

00:06:39.032 --> 00:06:40.412 increased risk of mortality and
NOTE Confidence: 0.834479969642857

00:06:40.412 --> 00:06:42.010 increased risk of hospitalization.
NOTE Confidence: 0.888029104

00:06:44.280 --> 00:06:47.388 The sum total of all of these
NOTE Confidence: 0.888029104

00:06:47.388 --> 00:06:49.012 recommendations sort of came

NOTE Confidence: 0.888029104

00:06:49.012 --> 00:06:51.486 to a head in the fall of 2022,

NOTE Confidence: 0.888029104

00:06:51.486 --> 00:06:53.616 where the European Respiratory Society

NOTE Confidence: 0.888029104

00:06:53.616 --> 00:06:55.819 and European Society of Cardiology

NOTE Confidence: 0.888029104

00:06:55.819 --> 00:06:58.399 released their new set of guidelines.

NOTE Confidence: 0.888029104

00:06:58.400 --> 00:07:00.992 And define pulmonary hypertension

NOTE Confidence: 0.888029104

00:07:00.992 --> 00:07:05.309 and it's a subtypes as follows PH-20

NOTE Confidence: 0.888029104

00:07:05.309 --> 00:07:08.312 and above precapillary pH is sort of

NOTE Confidence: 0.888029104

00:07:08.312 --> 00:07:10.599 your your classic low wedge pressure

NOTE Confidence: 0.888029104

00:07:10.599 --> 00:07:12.880 but the PR cut off here is now too.

NOTE Confidence: 0.888029104

00:07:12.880 --> 00:07:14.625 And then we've isolated post

NOTE Confidence: 0.888029104

00:07:14.625 --> 00:07:16.370 capillary combined pre and post

NOTE Confidence: 0.888029104

00:07:16.429 --> 00:07:18.349 capillary and then exercise page also

NOTE Confidence: 0.888029104

00:07:18.349 --> 00:07:20.559 made it back into the definition.

NOTE Confidence: 0.888029104

00:07:20.560 --> 00:07:22.048 So now we're going to step back five

NOTE Confidence: 0.888029104

00:07:22.048 --> 00:07:23.629 years to the previous set of guidelines

NOTE Confidence: 0.888029104

00:07:23.629 --> 00:07:25.281 and instead of looking at the human

NOTE Confidence: 0.888029104

00:07:25.281 --> 00:07:26.619 dynamics as we know that changed,

NOTE Confidence: 0.888029104

00:07:26.620 --> 00:07:28.318 I want to just look at.

NOTE Confidence: 0.888029104

00:07:28.320 --> 00:07:30.108 Our Group 3 pH paradigm which

NOTE Confidence: 0.888029104

00:07:30.108 --> 00:07:32.908 was um pH in the setting of lung

NOTE Confidence: 0.888029104

00:07:32.908 --> 00:07:34.436 disease and or hypoxia,

NOTE Confidence: 0.888029104

00:07:34.440 --> 00:07:37.240 and then importantly both sleep

NOTE Confidence: 0.888029104

00:07:37.240 --> 00:07:39.480 disorder breathing and alveolar

NOTE Confidence: 0.888029104

00:07:39.480 --> 00:07:41.139 hypoventilation disorders were listed

NOTE Confidence: 0.888029104

00:07:41.139 --> 00:07:43.810 as causes of pH or Group 3 pH,

NOTE Confidence: 0.888029104

00:07:43.810 --> 00:07:46.660 specifically and.

NOTE Confidence: 0.678171770833333

00:07:49.570 --> 00:07:51.460 Group 2 PAH, which is P secondary

NOTE Confidence: 0.678171770833333

00:07:51.460 --> 00:07:53.150 left side of heart disease.

NOTE Confidence: 0.678171770833333

00:07:53.150 --> 00:07:55.470 They did recommend evaluating for

NOTE Confidence: 0.678171770833333

00:07:55.470 --> 00:07:57.790 sleep apnea syndrome and other

NOTE Confidence: 0.678171770833333

00:07:57.870 --> 00:07:59.806 commodities as well before any

NOTE Confidence: 0.678171770833333

00:07:59.806 --> 00:08:01.196 consideration of treatment of pH.

NOTE Confidence: 0.678171770833333

00:08:01.200 --> 00:08:02.195 So there's a little bit

NOTE Confidence: 0.678171770833333

00:08:02.195 --> 00:08:03.190 of a mixed picture here,

NOTE Confidence: 0.678171770833333

00:08:03.190 --> 00:08:06.270 but it's clear that sleep apnea appears

NOTE Confidence: 0.678171770833333

00:08:06.270 --> 00:08:08.909 in the guidelines Fast forward to.

NOTE Confidence: 0.678171770833333

00:08:08.910 --> 00:08:11.054 The new aesthetic guidelines

NOTE Confidence: 0.678171770833333

00:08:11.054 --> 00:08:12.910 2022 and I quote the authors,

NOTE Confidence: 0.678171770833333

00:08:12.910 --> 00:08:14.085 instead of the general term

NOTE Confidence: 0.678171770833333

00:08:14.085 --> 00:08:14.790 sleep disorder breathing,

NOTE Confidence: 0.678171770833333

00:08:14.790 --> 00:08:16.310 the term hypoventilation syndrome should

NOTE Confidence: 0.678171770833333

00:08:16.310 --> 00:08:18.474 be used within Group 3 to describe

NOTE Confidence: 0.678171770833333

00:08:18.474 --> 00:08:20.250 conditions with increased risk of pH.

NOTE Confidence: 0.678171770833333

00:08:20.250 --> 00:08:21.754 Sole nocturnal obstructive sleep

NOTE Confidence: 0.678171770833333

00:08:21.754 --> 00:08:24.430 apnea is generally not a cause of pH,

NOTE Confidence: 0.678171770833333

00:08:24.430 --> 00:08:26.500 but pH is frequent in patients

NOTE Confidence: 0.678171770833333

00:08:26.500 --> 00:08:27.535 with hypoventilation syndromes
NOTE Confidence: 0.678171770833333
00:08:27.535 --> 00:08:28.930 causing daytime hypercapnia.
NOTE Confidence: 0.678171770833333
00:08:28.930 --> 00:08:30.970 OK, so.
NOTE Confidence: 0.678171770833333
00:08:30.970 --> 00:08:32.610 Great.
NOTE Confidence: 0.678171770833333
00:08:32.610 --> 00:08:34.584 Now the problem here is that there
NOTE Confidence: 0.678171770833333
00:08:34.584 --> 00:08:36.345 really isn't much else on sleep
NOTE Confidence: 0.678171770833333
00:08:36.345 --> 00:08:38.049 apnea in these guidelines at all,
NOTE Confidence: 0.678171770833333
00:08:38.050 --> 00:08:40.726 so it's sort of just subtracted.
NOTE Confidence: 0.678171770833333
00:08:40.730 --> 00:08:44.366 But we know based on our.
NOTE Confidence: 0.678171770833333
00:08:44.370 --> 00:08:46.248 You know, reality in our clinical
NOTE Confidence: 0.678171770833333
00:08:46.248 --> 00:08:47.830 experience that there's something there.
NOTE Confidence: 0.678171770833333
00:08:47.830 --> 00:08:50.128 So let's go back in time.
NOTE Confidence: 0.678171770833333
00:08:50.130 --> 00:08:51.066 This is before I was born,
NOTE Confidence: 0.678171770833333
00:08:51.070 --> 00:08:53.552 but there was a study in 1976 that looked
NOTE Confidence: 0.678171770833333
00:08:53.552 --> 00:08:56.310 at 12 subjects with severe sleep apnea.
NOTE Confidence: 0.678171770833333
00:08:56.310 --> 00:08:57.624 There's no way you get IRB

NOTE Confidence: 0.678171770833333
00:08:57.624 --> 00:08:58.810 approval for this again today,
NOTE Confidence: 0.678171770833333
00:08:58.810 --> 00:09:01.606 but these patients were all catheterized
NOTE Confidence: 0.678171770833333
00:09:01.606 --> 00:09:03.957 with radial and pulmonary arterial
NOTE Confidence: 0.678171770833333
00:09:03.957 --> 00:09:06.007 catheters and they were just
NOTE Confidence: 0.678171770833333
00:09:06.007 --> 00:09:08.909 allowed to sleep and have as many
NOTE Confidence: 0.678171770833333
00:09:08.909 --> 00:09:10.894 apneic episodes as they desired.
NOTE Confidence: 0.678171770833333
00:09:10.900 --> 00:09:14.540 You can see that during waking hours,
NOTE Confidence: 0.678171770833333
00:09:14.540 --> 00:09:16.385 there was probably a couple
NOTE Confidence: 0.678171770833333
00:09:16.385 --> 00:09:18.480 subjects that had mean pressures of,
NOTE Confidence: 0.678171770833333
00:09:18.480 --> 00:09:19.272 you know,
NOTE Confidence: 0.678171770833333
00:09:19.272 --> 00:09:20.460 20 or above.
NOTE Confidence: 0.678171770833333
00:09:20.460 --> 00:09:23.490 But importantly with sleep there was
NOTE Confidence: 0.678171770833333
00:09:23.490 --> 00:09:25.005 significant pulmonary hypertension
NOTE Confidence: 0.678171770833333
00:09:25.005 --> 00:09:27.232 that developed oftentimes in
NOTE Confidence: 0.678171770833333
00:09:27.232 --> 00:09:29.690 the setting of systolic and
NOTE Confidence: 0.678171770833333

00:09:29.690 --> 00:09:31.090 systemic hypertension as well.
NOTE Confidence: 0.678171770833333

00:09:31.090 --> 00:09:31.640 But nonetheless,
NOTE Confidence: 0.678171770833333

00:09:31.640 --> 00:09:33.565 this is a fact of sleep apnea.
NOTE Confidence: 0.678171770833333

00:09:33.570 --> 00:09:36.858 We know this is happening overnight.
NOTE Confidence: 0.678171770833333

00:09:36.860 --> 00:09:38.935 The exact prevalence is sort
NOTE Confidence: 0.678171770833333

00:09:38.935 --> 00:09:40.595 of difficult to ascertain.
NOTE Confidence: 0.678171770833333

00:09:40.600 --> 00:09:44.576 The studies that look for pH and OSA
NOTE Confidence: 0.678171770833333

00:09:44.580 --> 00:09:49.298 have non uniform diagnostic criteria for pH.
NOTE Confidence: 0.678171770833333

00:09:49.300 --> 00:09:51.050 PA pressures of mean pressures
NOTE Confidence: 0.678171770833333

00:09:51.050 --> 00:09:53.080 of 20 mean papers of 25.
NOTE Confidence: 0.678171770833333

00:09:53.080 --> 00:09:55.282 The modalities used to diagnose the
NOTE Confidence: 0.678171770833333

00:09:55.282 --> 00:09:57.184 pH echocardiogram or relocation buried
NOTE Confidence: 0.678171770833333

00:09:57.184 --> 00:09:59.452 in the patient populations were not
NOTE Confidence: 0.678171770833333

00:09:59.452 --> 00:10:00.860 particularly phenotyped at all,
NOTE Confidence: 0.678171770833333

00:10:00.860 --> 00:10:03.768 so there was a lot of variants and subjects.
NOTE Confidence: 0.678171770833333

00:10:03.768 --> 00:10:07.330 Some studies had a high fraction

NOTE Confidence: 0.678171770833333
00:10:07.330 --> 00:10:09.555 of subjects with significant COPD
NOTE Confidence: 0.678171770833333
00:10:09.555 --> 00:10:11.260 as others had not,
NOTE Confidence: 0.678171770833333
00:10:11.260 --> 00:10:13.498 but within all these limitations there
NOTE Confidence: 0.678171770833333
00:10:13.498 --> 00:10:15.581 is a prevalence range of between
NOTE Confidence: 0.678171770833333
00:10:15.581 --> 00:10:19.626 12 and 34% across a variety of studies.
NOTE Confidence: 0.678171770833333
00:10:19.630 --> 00:10:20.654 More recently,
NOTE Confidence: 0.678171770833333
00:10:20.654 --> 00:10:24.313 the group out of Cleveland Clinic looked
NOTE Confidence: 0.678171770833333
00:10:24.313 --> 00:10:28.394 at a cohort of almost 500 patients.
NOTE Confidence: 0.678171770833333
00:10:28.400 --> 00:10:30.572 That had right heart catheter relations
NOTE Confidence: 0.678171770833333
00:10:30.572 --> 00:10:34.488 done within two years of polysomnography.
NOTE Confidence: 0.678171770833333
00:10:34.490 --> 00:10:37.220 And they find some, you know,
NOTE Confidence: 0.678171770833333
00:10:37.220 --> 00:10:38.602 interesting findings,
NOTE Confidence: 0.678171770833333
00:10:38.602 --> 00:10:43.439 notably that the HIV doesn't seem to
NOTE Confidence: 0.678171770833333
00:10:43.439 --> 00:10:46.446 discriminate between developing pH,
NOTE Confidence: 0.678171770833333
00:10:46.446 --> 00:10:48.776 which is these three cohorts,
NOTE Confidence: 0.678171770833333

00:10:48.780 --> 00:10:52.777 or not having pH but having OSA.
NOTE Confidence: 0.678171770833333

00:10:52.780 --> 00:10:54.160 What did correlate,
NOTE Confidence: 0.678171770833333

00:10:54.160 --> 00:10:54.620 however,
NOTE Confidence: 0.678171770833333

00:10:54.620 --> 00:10:58.596 was your T-90 and then also your
NOTE Confidence: 0.678171770833333

00:10:58.596 --> 00:11:00.354 nature auction saturations,
NOTE Confidence: 0.678171770833333

00:11:00.360 --> 00:11:02.424 which they don't have listed on
NOTE Confidence: 0.678171770833333

00:11:02.424 --> 00:11:05.494 this table here as well.
NOTE Confidence: 0.678171770833333

00:11:05.494 --> 00:11:09.022 But the findings on the polysomnography
NOTE Confidence: 0.678171770833333

00:11:09.022 --> 00:11:10.887 that were predictive of pulmonary
NOTE Confidence: 0.678171770833333

00:11:10.887 --> 00:11:12.150 vascular disease didn't really
NOTE Confidence: 0.678171770833333

00:11:12.150 --> 00:11:13.830 do a good job of predicting,
NOTE Confidence: 0.678171770833333

00:11:13.830 --> 00:11:14.566 you know,
NOTE Confidence: 0.678171770833333

00:11:14.566 --> 00:11:16.038 whether you pulmonary venous
NOTE Confidence: 0.678171770833333

00:11:16.038 --> 00:11:17.510 hypertension or pulmonary arterial
NOTE Confidence: 0.752070949666667

00:11:17.563 --> 00:11:19.528 hypertension or something that's mixed.
NOTE Confidence: 0.752070949666667

00:11:19.530 --> 00:11:21.864 We just know that these desaturations

NOTE Confidence: 0.752070949666667

00:11:21.864 --> 00:11:23.923 were happening and they're associated

NOTE Confidence: 0.752070949666667

00:11:23.923 --> 00:11:26.563 with pulmonary vascular disease of some

NOTE Confidence: 0.752070949666667

00:11:26.563 --> 00:11:29.754 variety and that's sort of like you know

NOTE Confidence: 0.752070949666667

00:11:29.754 --> 00:11:32.374 clarified further here where it's the

NOTE Confidence: 0.752070949666667

00:11:32.374 --> 00:11:34.649 the T-90 that really differentiates.

NOTE Confidence: 0.752070949666667

00:11:34.650 --> 00:11:37.856 Between having pH and not having pH.

NOTE Confidence: 0.752070949666667

00:11:37.860 --> 00:11:39.724 But it doesn't discriminate

NOTE Confidence: 0.752070949666667

00:11:39.724 --> 00:11:41.710 between the types of pH.

NOTE Confidence: 0.752070949666667

00:11:41.710 --> 00:11:43.460 AI, like I mentioned earlier,

NOTE Confidence: 0.752070949666667

00:11:43.460 --> 00:11:47.654 does not predict whether you have pH or not.

NOTE Confidence: 0.752070949666667

00:11:47.660 --> 00:11:50.528 OK. So, so now what it's

NOTE Confidence: 0.752070949666667

00:11:50.528 --> 00:11:52.160 out of the guidelines.

NOTE Confidence: 0.752070949666667

00:11:52.160 --> 00:11:53.356 We know it exists.

NOTE Confidence: 0.752070949666667

00:11:53.356 --> 00:11:55.559 We know it's probably have some clinical

NOTE Confidence: 0.752070949666667

00:11:55.559 --> 00:11:57.641 significance just because we know that

NOTE Confidence: 0.752070949666667

00:11:57.641 --> 00:12:00.238 mild pH is of clinical significance.
NOTE Confidence: 0.752070949666667

00:12:00.240 --> 00:12:02.220 So what do we do?
NOTE Confidence: 0.752070949666667

00:12:02.220 --> 00:12:06.116 And so in a lot of ways this talk is more
NOTE Confidence: 0.752070949666667

00:12:06.116 --> 00:12:08.974 about my approach and a lot of credit
NOTE Confidence: 0.752070949666667

00:12:08.974 --> 00:12:11.408 should go to Doctor Mosimane because
NOTE Confidence: 0.752070949666667

00:12:11.408 --> 00:12:15.016 when I was a pulmonary fellow and we
NOTE Confidence: 0.752070949666667

00:12:15.016 --> 00:12:18.005 were working with that set of guidelines.
NOTE Confidence: 0.752070949666667

00:12:18.010 --> 00:12:21.205 I assume that OSA belonged in in Group 3,
NOTE Confidence: 0.752070949666667

00:12:21.210 --> 00:12:25.719 pH and he he was immediately doubtful of it.
NOTE Confidence: 0.752070949666667

00:12:25.720 --> 00:12:29.269 And thought it was much more related
NOTE Confidence: 0.752070949666667

00:12:29.269 --> 00:12:32.010 to the consequent diabetology.
NOTE Confidence: 0.752070949666667

00:12:32.010 --> 00:12:34.400 So there is a role I think for sort of
NOTE Confidence: 0.752070949666667

00:12:34.468 --> 00:12:36.472 trying to phenotype these patients and
NOTE Confidence: 0.752070949666667

00:12:36.472 --> 00:12:39.440 to that end in the Blue Journal 2014
NOTE Confidence: 0.752070949666667

00:12:39.440 --> 00:12:43.360 there was a consensus statement made by.
NOTE Confidence: 0.752070949666667

00:12:43.360 --> 00:12:49.560 A group of pH specialists who suggested.

NOTE Confidence: 0.752070949666667

00:12:49.560 --> 00:12:53.176 That within pH there should be an effort

NOTE Confidence: 0.752070949666667

00:12:53.176 --> 00:12:55.724 made to more adequately phenotype these

NOTE Confidence: 0.752070949666667

00:12:55.724 --> 00:12:58.190 patients just because there's a lot

NOTE Confidence: 0.752070949666667

00:12:58.256 --> 00:13:00.671 of diversity within that bucket of pH

NOTE Confidence: 0.752070949666667

00:13:00.671 --> 00:13:02.528 between congenital heart disease and

NOTE Confidence: 0.752070949666667

00:13:02.528 --> 00:13:04.413 HIV and portal pulmonary hypertension,

NOTE Confidence: 0.752070949666667

00:13:04.420 --> 00:13:05.890 a drug and toxin related pH,

NOTE Confidence: 0.752070949666667

00:13:05.890 --> 00:13:10.769 there are the underlying causes are myriad.

NOTE Confidence: 0.752070949666667

00:13:10.770 --> 00:13:12.378 To that end,

NOTE Confidence: 0.752070949666667

00:13:12.378 --> 00:13:14.884 the 2022 consent guidelines did actually

NOTE Confidence: 0.752070949666667

00:13:14.884 --> 00:13:17.730 sort of move the needle on this a little bit.

NOTE Confidence: 0.752070949666667

00:13:17.730 --> 00:13:19.732 And that was based on a cluster

NOTE Confidence: 0.752070949666667

00:13:19.732 --> 00:13:21.818 analysis that was done using one of

NOTE Confidence: 0.752070949666667

00:13:21.818 --> 00:13:23.570 the big pH registries in Europe,

NOTE Confidence: 0.752070949666667

00:13:23.570 --> 00:13:25.950 which is the compare registry.

NOTE Confidence: 0.752070949666667

00:13:25.950 --> 00:13:29.247 And it was an analysis of the
NOTE Confidence: 0.752070949666667

00:13:29.247 --> 00:13:33.352 compare registry that generated 3
NOTE Confidence: 0.752070949666667

00:13:33.352 --> 00:13:37.568 sort of main clusters.
NOTE Confidence: 0.752070949666667

00:13:37.570 --> 00:13:39.880 The classic idiopathic PAH cluster.
NOTE Confidence: 0.752070949666667

00:13:39.880 --> 00:13:41.630 So that's your, you know,
NOTE Confidence: 0.752070949666667

00:13:41.630 --> 00:13:45.630 30-40 year old woman.
NOTE Confidence: 0.752070949666667

00:13:45.630 --> 00:13:47.676 As opposed to a left heart
NOTE Confidence: 0.752070949666667

00:13:47.676 --> 00:13:49.794 phenotype or a cardio pulmonary
NOTE Confidence: 0.752070949666667

00:13:49.794 --> 00:13:52.302 phenotype which are often men,
NOTE Confidence: 0.752070949666667

00:13:52.302 --> 00:13:53.218 former smokers,
NOTE Confidence: 0.752070949666667

00:13:53.220 --> 00:13:56.310 low DL Co not particularly significant
NOTE Confidence: 0.752070949666667

00:13:56.310 --> 00:13:59.164 findings on CT scanning with risk
NOTE Confidence: 0.752070949666667

00:13:59.164 --> 00:14:02.041 factors left side of heart disease and
NOTE Confidence: 0.752070949666667

00:14:02.041 --> 00:14:05.478 these patients have well we the the
NOTE Confidence: 0.752070949666667

00:14:05.478 --> 00:14:08.299 classic idiopathic phenotype and these
NOTE Confidence: 0.752070949666667

00:14:08.299 --> 00:14:11.219 two phenotypes have fairly different

NOTE Confidence: 0.752070949666667
00:14:11.219 --> 00:14:14.035 responses to pH therapies both when it
NOTE Confidence: 0.752070949666667
00:14:14.035 --> 00:14:16.120 comes to improvement in functional status.
NOTE Confidence: 0.752070949666667
00:14:16.120 --> 00:14:18.955 Uh and then also sort of physiologic
NOTE Confidence: 0.752070949666667
00:14:18.955 --> 00:14:21.280 improvement on subsequent catheterization.
NOTE Confidence: 0.752070949666667
00:14:21.280 --> 00:14:22.292 Nonetheless in the guidelines
NOTE Confidence: 0.752070949666667
00:14:22.292 --> 00:14:24.129 they make a point to say that
NOTE Confidence: 0.752070949666667
00:14:24.129 --> 00:14:25.755 there are currently are still no
NOTE Confidence: 0.752070949666667
00:14:25.755 --> 00:14:27.484 evidence based rules for how best
NOTE Confidence: 0.752070949666667
00:14:27.484 --> 00:14:28.919 to determine the patients phenotype.
NOTE Confidence: 0.752070949666667
00:14:28.920 --> 00:14:31.916 We just know that there's something there.
NOTE Confidence: 0.752070949666667
00:14:31.920 --> 00:14:35.880 So what would an OSA pH phenotype look like?
NOTE Confidence: 0.752070949666667
00:14:35.880 --> 00:14:39.636 We know that there's some relationship,
NOTE Confidence: 0.752070949666667
00:14:39.640 --> 00:14:41.680 but how would we go about trying to do so?
NOTE Confidence: 0.752070949666667
00:14:41.680 --> 00:14:44.938 And so this is my approach.
NOTE Confidence: 0.752070949666667
00:14:44.940 --> 00:14:47.761 The guidelines do try and describe a
NOTE Confidence: 0.752070949666667

00:14:47.761 --> 00:14:49.514 phenotype for pulmonary hypertension
NOTE Confidence: 0.752070949666667

00:14:49.514 --> 00:14:52.334 secondary left side of heart disease
NOTE Confidence: 0.823288484545455

00:14:52.340 --> 00:14:53.605 and I'll draw your attention
NOTE Confidence: 0.823288484545455

00:14:53.605 --> 00:14:55.340 to a couple of these factors.
NOTE Confidence: 0.823288484545455

00:14:55.340 --> 00:14:58.280 And so patients that have
NOTE Confidence: 0.823288484545455

00:14:58.280 --> 00:15:00.632 a high likelihood of.
NOTE Confidence: 0.823288484545455

00:15:00.640 --> 00:15:02.173 PH second to left side of heart
NOTE Confidence: 0.823288484545455

00:15:02.173 --> 00:15:03.540 disease have a constellation of
NOTE Confidence: 0.823288484545455

00:15:03.540 --> 00:15:05.175 sort of the metabolic syndrome,
NOTE Confidence: 0.823288484545455

00:15:05.180 --> 00:15:07.148 obesity, hypertension and
NOTE Confidence: 0.823288484545455

00:15:07.148 --> 00:15:09.116 dyslipidemia glucose intolerance.
NOTE Confidence: 0.823288484545455

00:15:09.120 --> 00:15:11.136 They have no less side of heart disease
NOTE Confidence: 0.823288484545455

00:15:11.136 --> 00:15:13.340 or the risk factors for hypertension,
NOTE Confidence: 0.823288484545455

00:15:13.340 --> 00:15:14.340 diastolic dysfunction,
NOTE Confidence: 0.823288484545455

00:15:14.340 --> 00:15:15.840 coronary artery disease,
NOTE Confidence: 0.823288484545455

00:15:15.840 --> 00:15:18.080 clinical diagnosis of heart failure,

NOTE Confidence: 0.823288484545455
00:15:18.080 --> 00:15:20.180 much higher prevalence of atrial
NOTE Confidence: 0.823288484545455
00:15:20.180 --> 00:15:21.860 fibrillation and then echocardiographic
NOTE Confidence: 0.823288484545455
00:15:21.860 --> 00:15:23.515 findings that are suggested of
NOTE Confidence: 0.823288484545455
00:15:23.515 --> 00:15:24.990 a significant burning of left
NOTE Confidence: 0.823288484545455
00:15:24.990 --> 00:15:26.926 sided heart disease primarily with
NOTE Confidence: 0.823288484545455
00:15:26.926 --> 00:15:29.191 the left atrial dilatation and
NOTE Confidence: 0.823288484545455
00:15:29.191 --> 00:15:30.800 then echocardiographic signs of.
NOTE Confidence: 0.823288484545455
00:15:30.800 --> 00:15:32.265 Mythology I I should point
NOTE Confidence: 0.823288484545455
00:15:32.265 --> 00:15:33.910 out here that there is a,
NOTE Confidence: 0.823288484545455
00:15:33.910 --> 00:15:36.490 there is good data on insulin
NOTE Confidence: 0.823288484545455
00:15:36.490 --> 00:15:39.418 resistance in in pH but not
NOTE Confidence: 0.823288484545455
00:15:39.418 --> 00:15:41.230 necessarily frank diabetes.
NOTE Confidence: 0.823288484545455
00:15:41.230 --> 00:15:43.673 And so I sleep audience would look
NOTE Confidence: 0.823288484545455
00:15:43.673 --> 00:15:46.670 at this chart and say that's kind of
NOTE Confidence: 0.823288484545455
00:15:46.670 --> 00:15:48.960 familiar and we know that patients
NOTE Confidence: 0.823288484545455

00:15:48.960 --> 00:15:52.259 with OSA have a variety of associated
NOTE Confidence: 0.823288484545455

00:15:52.259 --> 00:15:56.121 commodities that are are shared with
NOTE Confidence: 0.823288484545455

00:15:56.121 --> 00:15:58.250 the pH left hand side of heart disease,
NOTE Confidence: 0.823288484545455

00:15:58.250 --> 00:16:00.162 phenotype, obesity,
NOTE Confidence: 0.823288484545455

00:16:00.162 --> 00:16:02.074 metabolic syndrome.
NOTE Confidence: 0.823288484545455

00:16:02.074 --> 00:16:04.011 Discology and atrial fibrillation
NOTE Confidence: 0.823288484545455

00:16:04.011 --> 00:16:06.982 to start the lease and so I I think
NOTE Confidence: 0.823288484545455

00:16:06.982 --> 00:16:08.830 a way to start this conversation
NOTE Confidence: 0.823288484545455

00:16:08.830 --> 00:16:11.050 is sort of just go through these
NOTE Confidence: 0.823288484545455

00:16:11.050 --> 00:16:14.658 to to to try and prove this point.
NOTE Confidence: 0.823288484545455

00:16:14.660 --> 00:16:16.428 I I will say there is you know
NOTE Confidence: 0.823288484545455

00:16:16.428 --> 00:16:18.002 maybe some data that would suggest
NOTE Confidence: 0.823288484545455

00:16:18.002 --> 00:16:20.030 that there is a little bit of
NOTE Confidence: 0.823288484545455

00:16:20.030 --> 00:16:21.089 bidirectionality between some
NOTE Confidence: 0.823288484545455

00:16:21.089 --> 00:16:22.854 of these findings and OSA.
NOTE Confidence: 0.823288484545455

00:16:22.860 --> 00:16:25.229 You know so for example patients

NOTE Confidence: 0.823288484545455

00:16:25.229 --> 00:16:26.974 with really bad heart failure

NOTE Confidence: 0.823288484545455

00:16:26.974 --> 00:16:28.370 might retain fluid overnight.

NOTE Confidence: 0.823288484545455

00:16:28.370 --> 00:16:30.566 Those fluid chest might sort of

NOTE Confidence: 0.823288484545455

00:16:30.566 --> 00:16:32.030 predisposed to worse obstructive

NOTE Confidence: 0.823288484545455

00:16:32.087 --> 00:16:34.082 symptoms since but you know by and

NOTE Confidence: 0.823288484545455

00:16:34.082 --> 00:16:35.665 large these are the communities

NOTE Confidence: 0.823288484545455

00:16:35.665 --> 00:16:37.651 we associate with OSA are driven

NOTE Confidence: 0.823288484545455

00:16:37.651 --> 00:16:39.088 that that lead to SA.

NOTE Confidence: 0.825119618571429

00:16:41.890 --> 00:16:43.750 So obesity alone can result

NOTE Confidence: 0.825119618571429

00:16:43.750 --> 00:16:45.238 in pulmonary vascular disease

NOTE Confidence: 0.825119618571429

00:16:45.238 --> 00:16:47.050 through a variety of mechanisms,

NOTE Confidence: 0.825119618571429

00:16:47.050 --> 00:16:48.634 prior use of anorexia,

NOTE Confidence: 0.825119618571429

00:16:48.634 --> 00:16:50.454 eens, frank cardiomyopathy,

NOTE Confidence: 0.825119618571429

00:16:50.454 --> 00:16:53.302 predisposition to thromboembolism and

NOTE Confidence: 0.825119618571429

00:16:53.302 --> 00:16:57.830 to fill this function and hyperuricemia.

NOTE Confidence: 0.825119618571429

00:16:57.830 --> 00:17:01.774 There is an interesting study that was done.

NOTE Confidence: 0.825119618571429

00:17:01.780 --> 00:17:06.588 Uh, in 2008, that looked at 76 consecutive

NOTE Confidence: 0.825119618571429

00:17:06.588 --> 00:17:09.721 autopsies of subjects with obesity.

NOTE Confidence: 0.825119618571429

00:17:09.721 --> 00:17:11.726 These are fairly high BMI.

NOTE Confidence: 0.777333919090909

00:17:13.900 --> 00:17:15.970 45 and above I believe and

NOTE Confidence: 0.777333919090909

00:17:15.970 --> 00:17:17.860 based on this autopsy study,

NOTE Confidence: 0.777333919090909

00:17:17.860 --> 00:17:21.108 there was a very high prevalence of

NOTE Confidence: 0.777333919090909

00:17:21.108 --> 00:17:24.066 pulmonary vascular changes that have

NOTE Confidence: 0.777333919090909

00:17:24.066 --> 00:17:27.198 implications for pulmonary hypertension,

NOTE Confidence: 0.777333919090909

00:17:27.200 --> 00:17:29.171 primarily pulmonary venous

NOTE Confidence: 0.777333919090909

00:17:29.171 --> 00:17:31.799 hypertensive changes but but

NOTE Confidence: 0.777333919090909

00:17:31.799 --> 00:17:35.580 also arterial changes as well.

NOTE Confidence: 0.777333919090909

00:17:35.580 --> 00:17:38.821 And then an increased fractures of Frank

NOTE Confidence: 0.777333919090909

00:17:38.821 --> 00:17:41.801 Hemosiderosis and findings that that look

NOTE Confidence: 0.777333919090909

00:17:41.801 --> 00:17:43.817 like pulmonary capillary Hemangioma.

NOTE Confidence: 0.777333919090909

00:17:43.820 --> 00:17:48.002 Business as well on biopsy here on

NOTE Confidence: 0.777333919090909
00:17:48.002 --> 00:17:51.785 autopsy you know here we've got sort of
NOTE Confidence: 0.777333919090909
00:17:51.785 --> 00:17:54.610 interstitial changes and then a lot of
NOTE Confidence: 0.777333919090909
00:17:54.610 --> 00:17:57.190 medial thickening and and pulmonary veins,
NOTE Confidence: 0.777333919090909
00:17:57.190 --> 00:17:59.569 tortuosity pulmonary veins,
NOTE Confidence: 0.777333919090909
00:17:59.569 --> 00:18:03.534 so in a non phenotyped.
NOTE Confidence: 0.777333919090909
00:18:03.540 --> 00:18:05.228 Cohort of OB subjects,
NOTE Confidence: 0.777333919090909
00:18:05.228 --> 00:18:07.760 we know that there are significant
NOTE Confidence: 0.777333919090909
00:18:07.840 --> 00:18:09.556 vascular changes happening in
NOTE Confidence: 0.777333919090909
00:18:09.556 --> 00:18:12.130 the lung and we know nothing
NOTE Confidence: 0.777333919090909
00:18:12.214 --> 00:18:14.659 about these patients besides that
NOTE Confidence: 0.777333919090909
00:18:14.660 --> 00:18:17.670 this is just sort of all comers.
NOTE Confidence: 0.777333919090909
00:18:17.670 --> 00:18:21.446 The other way to look at this is.
NOTE Confidence: 0.777333919090909
00:18:21.450 --> 00:18:22.578 Using cardiac Mr.
NOTE Confidence: 0.777333919090909
00:18:22.578 --> 00:18:25.210 Data and some of you might be
NOTE Confidence: 0.777333919090909
00:18:25.296 --> 00:18:27.616 familiar with the Mesa study,
NOTE Confidence: 0.777333919090909

00:18:27.620 --> 00:18:30.374 so the multi ethnic study for
NOTE Confidence: 0.777333919090909

00:18:30.374 --> 00:18:32.730 atherosclerosis trying to look at
NOTE Confidence: 0.777333919090909

00:18:32.730 --> 00:18:35.346 subclinical heart disease in a variety
NOTE Confidence: 0.777333919090909

00:18:35.346 --> 00:18:38.499 of subjects and communities in America.
NOTE Confidence: 0.777333919090909

00:18:38.500 --> 00:18:41.055 There was an ancillary study that was
NOTE Confidence: 0.777333919090909

00:18:41.055 --> 00:18:45.512 performed and 4127 subjects were obtained.
NOTE Confidence: 0.777333919090909

00:18:45.512 --> 00:18:49.119 Of those around 2/3 were overweight or
NOTE Confidence: 0.777333919090909

00:18:49.119 --> 00:18:51.795 obese compared to a lean population.
NOTE Confidence: 0.777333919090909

00:18:51.800 --> 00:18:55.280 And there was an obvious and
NOTE Confidence: 0.777333919090909

00:18:55.280 --> 00:18:58.928 linear trend with BMI and increased
NOTE Confidence: 0.777333919090909

00:18:58.928 --> 00:19:00.920 right ventricular mass,
NOTE Confidence: 0.777333919090909

00:19:00.920 --> 00:19:02.488 increased right ventricular diastolic
NOTE Confidence: 0.777333919090909

00:19:02.488 --> 00:19:05.420 volume and a decrease in the right
NOTE Confidence: 0.777333919090909

00:19:05.420 --> 00:19:07.448 ventricular ejection fraction even
NOTE Confidence: 0.777333919090909

00:19:07.448 --> 00:19:10.724 after adjustment for a variety at all
NOTE Confidence: 0.777333919090909

00:19:10.724 --> 00:19:12.700 demographic factors and

NOTE Confidence: 0.777333919090909
00:19:12.700 --> 00:19:15.784 then also left ventricular function as well.
NOTE Confidence: 0.777333919090909
00:19:15.784 --> 00:19:18.893 And so we know at a vascular level and
NOTE Confidence: 0.777333919090909
00:19:18.893 --> 00:19:21.845 then now we know at a functional level.
NOTE Confidence: 0.777333919090909
00:19:21.850 --> 00:19:24.445 That obesity is associated with
NOTE Confidence: 0.777333919090909
00:19:24.445 --> 00:19:26.521 significant right ventricular changes
NOTE Confidence: 0.777333919090909
00:19:26.521 --> 00:19:29.028 and pulmonary vascular changes.
NOTE Confidence: 0.777333919090909
00:19:29.030 --> 00:19:30.812 Now going through the rest of
NOTE Confidence: 0.777333919090909
00:19:30.812 --> 00:19:31.703 those risk factors.
NOTE Confidence: 0.777333919090909
00:19:31.710 --> 00:19:34.266 The metabolic syndrome, like I said,
NOTE Confidence: 0.777333919090909
00:19:34.270 --> 00:19:39.118 is importantly it's a driver of.
NOTE Confidence: 0.777333919090909
00:19:39.120 --> 00:19:40.790 Both the development of pulmonary
NOTE Confidence: 0.777333919090909
00:19:40.790 --> 00:19:42.460 hypertension due to left side
NOTE Confidence: 0.777333919090909
00:19:42.518 --> 00:19:43.418 of heart disease,
NOTE Confidence: 0.777333919090909
00:19:43.420 --> 00:19:45.844 but there's some nascent data that
NOTE Confidence: 0.777333919090909
00:19:45.844 --> 00:19:48.621 would suggest that it also exacerbates
NOTE Confidence: 0.777333919090909

00:19:48.621 --> 00:19:50.785 and worsens that Physiology.
NOTE Confidence: 0.777333919090909

00:19:50.790 --> 00:19:52.920 We know that OS is associated
NOTE Confidence: 0.777333919090909

00:19:52.920 --> 00:19:53.985 with metabolic syndrome.
NOTE Confidence: 0.777333919090909

00:19:53.990 --> 00:19:56.334 And now I'm going to sort of like
NOTE Confidence: 0.777333919090909

00:19:56.334 --> 00:19:58.161 toggle between both the risk factor
NOTE Confidence: 0.777333919090909

00:19:58.161 --> 00:20:00.251 and then sort of the effect of
NOTE Confidence: 0.777333919090909

00:20:00.251 --> 00:20:02.355 CPAP on the risk factor and in this
NOTE Confidence: 0.777333919090909

00:20:02.355 --> 00:20:05.020 case the treat OSA Ms.
NOTE Confidence: 0.777333919090909

00:20:05.020 --> 00:20:05.620 study.
NOTE Confidence: 0.777333919090909

00:20:05.620 --> 00:20:06.540 This is pretty recent,
NOTE Confidence: 0.777333919090909

00:20:06.540 --> 00:20:08.582 I think came out at the end of 2022,
NOTE Confidence: 0.777333919090909

00:20:08.582 --> 00:20:10.394 looked at the effect of CPAP
NOTE Confidence: 0.777333919090909

00:20:10.394 --> 00:20:11.900 on the metabolic syndrome.
NOTE Confidence: 0.777333919090909

00:20:11.900 --> 00:20:13.284 And these aren't necessarily
NOTE Confidence: 0.777333919090909

00:20:13.284 --> 00:20:13.976 dramatic changes,
NOTE Confidence: 0.777333919090909

00:20:13.980 --> 00:20:15.877 but you can see that CPAP does

NOTE Confidence: 0.777333919090909
00:20:15.877 --> 00:20:17.888 seem to have a significant effect
NOTE Confidence: 0.777333919090909
00:20:17.888 --> 00:20:19.778 on a variety of parameters.
NOTE Confidence: 0.777333919090909
00:20:19.780 --> 00:20:23.752 In the metabolic syndrome where you
NOTE Confidence: 0.777333919090909
00:20:23.752 --> 00:20:27.570 had frank reversal of of some of these
NOTE Confidence: 0.777333919090909
00:20:27.570 --> 00:20:30.404 findings and very little development
NOTE Confidence: 0.777333919090909
00:20:30.404 --> 00:20:33.090 of of new findings over the course
NOTE Confidence: 0.777333919090909
00:20:33.090 --> 00:20:35.120 of six months of CPAP therapy.
NOTE Confidence: 0.777333919090909
00:20:35.120 --> 00:20:38.478 This is 100 subjects with moderate
NOTE Confidence: 0.777333919090909
00:20:38.478 --> 00:20:39.792 to severe OSA.
NOTE Confidence: 0.777333919090909
00:20:39.792 --> 00:20:45.170 So HI's are all 15 and above and.
NOTE Confidence: 0.777333919090909
00:20:45.170 --> 00:20:46.439 It was, um,
NOTE Confidence: 0.777333919090909
00:20:46.439 --> 00:20:46.862 placebo-controlled.
NOTE Confidence: 0.777333919090909
00:20:46.862 --> 00:20:49.802 So there's both CPAP and then I
NOTE Confidence: 0.777333919090909
00:20:49.802 --> 00:20:51.794 think they used the nasal dilator
NOTE Confidence: 0.777333919090909
00:20:51.794 --> 00:20:53.700 strip as the other group.
NOTE Confidence: 0.667146455

00:20:56.350 --> 00:20:56.990 Diastolic dysfunction,
NOTE Confidence: 0.667146455

00:20:56.990 --> 00:20:58.270 like I said earlier,
NOTE Confidence: 0.667146455

00:20:58.270 --> 00:21:00.806 is probably a big driver of pH Physiology.
NOTE Confidence: 0.667146455

00:21:00.810 --> 00:21:03.855 We know that you can develop diastolic
NOTE Confidence: 0.667146455

00:21:03.855 --> 00:21:07.100 dysfunction in OSA even in the
NOTE Confidence: 0.667146455

00:21:07.100 --> 00:21:09.348 absence of diurnal hypertension.
NOTE Confidence: 0.667146455

00:21:09.350 --> 00:21:11.974 This is a I'm showing you data here
NOTE Confidence: 0.667146455

00:21:11.974 --> 00:21:14.248 looking at 61 subjects with OSA
NOTE Confidence: 0.667146455

00:21:14.248 --> 00:21:16.558 who are being evaluated for ethyl
NOTE Confidence: 0.667146455

00:21:16.638 --> 00:21:18.673 pletal fragile plasty and there
NOTE Confidence: 0.667146455

00:21:18.673 --> 00:21:21.734 were compared to an equal number of
NOTE Confidence: 0.667146455

00:21:21.734 --> 00:21:24.755 normal tensive controls and based on
NOTE Confidence: 0.667146455

00:21:24.755 --> 00:21:26.735 echocardiographic findings of diastolic.
NOTE Confidence: 0.667146455

00:21:26.740 --> 00:21:30.300 Dysfunction um, even those with
NOTE Confidence: 0.667146455

00:21:30.300 --> 00:21:33.860 OSA with normal blood pressure,
NOTE Confidence: 0.667146455

00:21:33.860 --> 00:21:35.328 they had significant increases

NOTE Confidence: 0.667146455

00:21:35.328 --> 00:21:37.163 in left ventricular mass index

NOTE Confidence: 0.667146455

00:21:37.163 --> 00:21:39.200 to suggest The Isaacs function.

NOTE Confidence: 0.667146455

00:21:39.200 --> 00:21:40.820 We know that CPAP therapy,

NOTE Confidence: 0.667146455

00:21:40.820 --> 00:21:43.605 particularly in subjects that have

NOTE Confidence: 0.667146455

00:21:43.605 --> 00:21:45.833 clinically diagnosed heart failure,

NOTE Confidence: 0.667146455

00:21:45.840 --> 00:21:48.768 reduces LV after load and has a positive

NOTE Confidence: 0.667146455

00:21:48.768 --> 00:21:52.000 effect on parameters of diastolic function,

NOTE Confidence: 0.667146455

00:21:52.000 --> 00:21:53.953 both using echocardiographic

NOTE Confidence: 0.667146455

00:21:53.953 --> 00:21:56.557 data and then separately.

NOTE Confidence: 0.667146455

00:21:56.560 --> 00:21:58.456 Based on Cmdr Data as well.

NOTE Confidence: 0.724166031

00:22:00.480 --> 00:22:03.816 The Discology is sort of linked

NOTE Confidence: 0.724166031

00:22:03.816 --> 00:22:06.040 to another pertinent finding.

NOTE Confidence: 0.724166031

00:22:06.040 --> 00:22:08.648 If you guys will call from that first

NOTE Confidence: 0.724166031

00:22:08.648 --> 00:22:11.510 table that deals with left atrial

NOTE Confidence: 0.724166031

00:22:11.510 --> 00:22:15.540 structure and then in a sense function

NOTE Confidence: 0.724166031

00:22:15.540 --> 00:22:17.960 with progressive diastolic dysfunction,
NOTE Confidence: 0.724166031

00:22:17.960 --> 00:22:20.985 left atrial size will increase
NOTE Confidence: 0.724166031

00:22:20.985 --> 00:22:23.890 and that will predispose you to
NOTE Confidence: 0.724166031

00:22:23.890 --> 00:22:26.230 atrial fibrillation as well.
NOTE Confidence: 0.724166031

00:22:26.230 --> 00:22:30.460 Cpap therapy does definitely have an impact.
NOTE Confidence: 0.724166031

00:22:30.460 --> 00:22:31.984 On left atrial functions,
NOTE Confidence: 0.724166031

00:22:31.984 --> 00:22:34.270 so sort of left atrial contraction,
NOTE Confidence: 0.724166031

00:22:34.270 --> 00:22:36.304 um, it's less likely to actually
NOTE Confidence: 0.724166031

00:22:36.304 --> 00:22:38.884 cause a reduction in LA volume based
NOTE Confidence: 0.724166031

00:22:38.884 --> 00:22:40.606 on echocardiographic parameters.
NOTE Confidence: 0.724166031

00:22:40.606 --> 00:22:45.448 And I'm not sure if there's any data on Mr.
NOTE Confidence: 0.724166031

00:22:45.450 --> 00:22:48.036 The link here is towards a
NOTE Confidence: 0.724166031

00:22:48.036 --> 00:22:48.898 atrial fibrillation.
NOTE Confidence: 0.754333314444444

00:22:51.750 --> 00:22:56.902 And we know that OSA is a predictor
NOTE Confidence: 0.754333314444444

00:22:56.902 --> 00:23:00.030 of incident prevalent and worsening
NOTE Confidence: 0.754333314444444

00:23:00.030 --> 00:23:01.890 severity mitral fibrillation.

NOTE Confidence: 0.754333314444444

00:23:01.890 --> 00:23:04.368 We know that untreated sleep apnea

NOTE Confidence: 0.754333314444444

00:23:04.368 --> 00:23:06.659 reduces the efficacy of rhythm

NOTE Confidence: 0.754333314444444

00:23:06.659 --> 00:23:08.907 control interventions for the

NOTE Confidence: 0.754333314444444

00:23:08.907 --> 00:23:11.155 management of atrial fibrillation.

NOTE Confidence: 0.754333314444444

00:23:11.160 --> 00:23:14.388 More recently, the sleep AF trial

NOTE Confidence: 0.754333314444444

00:23:14.390 --> 00:23:16.238 that was published also I think at

NOTE Confidence: 0.754333314444444

00:23:16.238 --> 00:23:18.850 end of 2022 did demonstrate that

NOTE Confidence: 0.754333314444444

00:23:18.850 --> 00:23:21.865 CPAP therapy is associated with the

NOTE Confidence: 0.754333314444444

00:23:21.865 --> 00:23:24.355 reversal of HR modeling that happens

NOTE Confidence: 0.754333314444444

00:23:24.355 --> 00:23:26.743 along with the atrial fibrillation

NOTE Confidence: 0.754333314444444

00:23:26.743 --> 00:23:29.388 based on atrial mapping data.

NOTE Confidence: 0.754333314444444

00:23:29.390 --> 00:23:32.470 I've read this paper three times and I

NOTE Confidence: 0.754333314444444

00:23:32.470 --> 00:23:35.287 still really struggle with the methods,

NOTE Confidence: 0.754333314444444

00:23:35.290 --> 00:23:37.270 primarily because of sort of the,

NOTE Confidence: 0.754333314444444

00:23:37.270 --> 00:23:38.570 the technique of atrial mapping.

NOTE Confidence: 0.754333314444444

00:23:38.570 --> 00:23:41.492 There's a lot of vocabulary that you know.
NOTE Confidence: 0.754333314444444

00:23:41.492 --> 00:23:44.999 Is not familiar to a non electrophysiologist.
NOTE Confidence: 0.754333314444444

00:23:45.000 --> 00:23:48.856 But the data looked to be fairly convincing.
NOTE Confidence: 0.754333314444444

00:23:48.860 --> 00:23:52.416 It would also appear that CPAP therapy
NOTE Confidence: 0.754333314444444

00:23:52.420 --> 00:23:54.345 allows for improved efficacy over
NOTE Confidence: 0.754333314444444

00:23:54.345 --> 00:23:56.270 the control interventions as well.
NOTE Confidence: 0.861929275

00:23:59.440 --> 00:24:06.034 So what's the impact of OSA on pH?
NOTE Confidence: 0.861929275

00:24:06.034 --> 00:24:10.410 Well, the. Same things that impacted
NOTE Confidence: 0.861929275

00:24:10.410 --> 00:24:13.620 our ability to define the prevalence
NOTE Confidence: 0.861929275

00:24:13.708 --> 00:24:16.201 of pH and OSA sort of impact,
NOTE Confidence: 0.861929275

00:24:16.201 --> 00:24:18.966 our ability to define how much of an
NOTE Confidence: 0.861929275

00:24:18.966 --> 00:24:21.042 impact CPAP is happening on, on pH.
NOTE Confidence: 0.861929275

00:24:21.042 --> 00:24:24.199 And so the modalities that were used
NOTE Confidence: 0.861929275

00:24:24.199 --> 00:24:26.970 to determine how the pH was being
NOTE Confidence: 0.861929275

00:24:26.970 --> 00:24:28.310 surveilled was a catheter based,
NOTE Confidence: 0.861929275

00:24:28.310 --> 00:24:30.085 was a catheter based both

NOTE Confidence: 0.861929275

00:24:30.085 --> 00:24:31.505 pre and post intervention,

NOTE Confidence: 0.861929275

00:24:31.510 --> 00:24:33.298 was it echocardiogram based or was

NOTE Confidence: 0.861929275

00:24:33.298 --> 00:24:35.511 it based on different cut offs of

NOTE Confidence: 0.861929275

00:24:35.511 --> 00:24:37.111 pH systolic pressures or inferred

NOTE Confidence: 0.861929275

00:24:37.111 --> 00:24:38.816 mean pressures so on and so forth.

NOTE Confidence: 0.861929275

00:24:38.820 --> 00:24:40.131 Within those limitations,

NOTE Confidence: 0.861929275

00:24:40.131 --> 00:24:42.753 it would appear that CPAP therapy

NOTE Confidence: 0.861929275

00:24:42.760 --> 00:24:45.315 looking at completely on phenotype

NOTE Confidence: 0.861929275

00:24:45.315 --> 00:24:48.824 cohorts can have some effect on the

NOTE Confidence: 0.861929275

00:24:48.824 --> 00:24:51.440 calculator reduction in the mean PAP

NOTE Confidence: 0.861929275

00:24:51.440 --> 00:24:54.768 from nothing to a fairly mild to modest

NOTE Confidence: 0.861929275

00:24:54.768 --> 00:24:57.438 reduction of 6 millimeters mercury.

NOTE Confidence: 0.861929275

00:24:57.440 --> 00:25:00.212 Based on what we know about the risk that's

NOTE Confidence: 0.861929275

00:25:00.212 --> 00:25:02.378 conferred by elevations and key pressure,

NOTE Confidence: 0.861929275

00:25:02.380 --> 00:25:03.482 that's.

NOTE Confidence: 0.861929275

00:25:03.482 --> 00:25:09.210 Probably not insignificant, I I will say.
NOTE Confidence: 0.861929275

00:25:09.210 --> 00:25:10.925 Probably a liberty to speak about this
NOTE Confidence: 0.861929275

00:25:10.925 --> 00:25:12.429 because hopefully will be published soon,
NOTE Confidence: 0.861929275

00:25:12.430 --> 00:25:16.110 but but you know we will be showing
NOTE Confidence: 0.861929275

00:25:16.110 --> 00:25:19.780 momentarily that changes in the tricuspid
NOTE Confidence: 0.861929275

00:25:19.780 --> 00:25:22.841 regurgitation velocity jet which is used
NOTE Confidence: 0.861929275

00:25:22.841 --> 00:25:25.480 to calculate the estimated PA pressure on
NOTE Confidence: 0.861929275

00:25:25.550 --> 00:25:28.136 echocardiogram are clinically significant.
NOTE Confidence: 0.861929275

00:25:28.136 --> 00:25:31.216 So people that whose charge of
NOTE Confidence: 0.861929275

00:25:31.216 --> 00:25:34.387 velocity goes up even my small amounts
NOTE Confidence: 0.861929275

00:25:34.387 --> 00:25:37.289 are at increased risk risk for.
NOTE Confidence: 0.861929275

00:25:37.290 --> 00:25:37.777 Death.
NOTE Confidence: 0.861929275

00:25:37.777 --> 00:25:41.673 And we know that those whose TCRF velocity
NOTE Confidence: 0.861929275

00:25:41.673 --> 00:25:44.718 decreases over time for whatever reason.
NOTE Confidence: 0.861929275

00:25:44.720 --> 00:25:46.040 Do have a reduction in,
NOTE Confidence: 0.861929275

00:25:46.040 --> 00:25:46.892 in, in,

NOTE Confidence: 0.861929275

00:25:46.892 --> 00:25:49.000 in their mortality risk again

NOTE Confidence: 0.861929275

00:25:49.000 --> 00:25:51.000 in an all Comer population.

NOTE Confidence: 0.861929275

00:25:51.000 --> 00:25:54.073 And so I think that the the

NOTE Confidence: 0.861929275

00:25:54.073 --> 00:25:56.760 general take away from this is.

NOTE Confidence: 0.861929275

00:25:56.760 --> 00:25:59.640 The most legible way to try and define a

NOTE Confidence: 0.861929275

00:25:59.640 --> 00:26:02.694 OSA pH subject is using the paradigm that

NOTE Confidence: 0.861929275

00:26:02.694 --> 00:26:04.827 we're used for pulmonary hypertension

NOTE Confidence: 0.861929275

00:26:04.827 --> 00:26:08.054 due to left side of heart disease.

NOTE Confidence: 0.861929275

00:26:08.060 --> 00:26:10.286 And my approach in clinic and where

NOTE Confidence: 0.861929275

00:26:10.286 --> 00:26:12.278 you know occurs with the group to

NOTE Confidence: 0.861929275

00:26:12.278 --> 00:26:14.452 do is to sort of look through all

NOTE Confidence: 0.861929275

00:26:14.452 --> 00:26:16.396 of those risk factors that are

NOTE Confidence: 0.861929275

00:26:16.396 --> 00:26:18.430 shared in common between pH,

NOTE Confidence: 0.861929275

00:26:18.430 --> 00:26:21.650 LHD and OSA and sort of just

NOTE Confidence: 0.861929275

00:26:21.748 --> 00:26:25.400 have endpoints for all of them.

NOTE Confidence: 0.861929275

00:26:25.400 --> 00:26:28.776 Cpap and weight loss are the big inventions,

NOTE Confidence: 0.861929275

00:26:28.780 --> 00:26:29.189 obviously,

NOTE Confidence: 0.861929275

00:26:29.189 --> 00:26:31.234 because they'll have an outsize

NOTE Confidence: 0.861929275

00:26:31.234 --> 00:26:33.860 effect on all those subcategories,

NOTE Confidence: 0.861929275

00:26:33.860 --> 00:26:36.848 be it metabolic syndrome.

NOTE Confidence: 0.861929275

00:26:36.850 --> 00:26:37.613 Umm.

NOTE Confidence: 0.861929275

00:26:37.613 --> 00:26:41.428 And it's a associated manifestations

NOTE Confidence: 0.861929275

00:26:41.430 --> 00:26:45.294 but also with a noticeable impact on

NOTE Confidence: 0.861929275

00:26:45.294 --> 00:26:48.351 the frequency of the fibrillation

NOTE Confidence: 0.861929275

00:26:48.351 --> 00:26:53.130 which you know we seem to think in

NOTE Confidence: 0.861929275

00:26:53.130 --> 00:26:56.392 our practice has one of the higher

NOTE Confidence: 0.861929275

00:26:56.392 --> 00:26:58.257 correlations with the developing with

NOTE Confidence: 0.861929275

00:26:58.257 --> 00:27:00.099 having pH left side heart disease.

NOTE Confidence: 0.861929275

00:27:00.100 --> 00:27:02.548 So now I'm going to segue to the

NOTE Confidence: 0.861929275

00:27:02.548 --> 00:27:03.509 obesity Hyperventilation syndrome

NOTE Confidence: 0.861929275

00:27:03.509 --> 00:27:05.255 because this is a little bit.

NOTE Confidence: 0.826194647777778

00:27:07.430 --> 00:27:08.798 Some of the same,

NOTE Confidence: 0.826194647777778

00:27:08.798 --> 00:27:10.508 but some things are different.

NOTE Confidence: 0.826194647777778

00:27:10.510 --> 00:27:11.626 This is not the audience to

NOTE Confidence: 0.826194647777778

00:27:11.626 --> 00:27:12.730 sort of redefine the disease,

NOTE Confidence: 0.826194647777778

00:27:12.730 --> 00:27:16.027 but for those that are not providers,

NOTE Confidence: 0.826194647777778

00:27:16.030 --> 00:27:18.298 you know, obesity is defined as a

NOTE Confidence: 0.826194647777778

00:27:18.298 --> 00:27:21.061 BMI of greater than or 30 or more

NOTE Confidence: 0.826194647777778

00:27:21.061 --> 00:27:23.146 kilogram meter squared with the

NOTE Confidence: 0.826194647777778

00:27:23.146 --> 00:27:24.943 presence of daytime hypercapnia

NOTE Confidence: 0.826194647777778

00:27:24.943 --> 00:27:28.463 defined as a PCO two of greater than,

NOTE Confidence: 0.826194647777778

00:27:28.470 --> 00:27:31.530 equal to 49 millimeters mercury,

NOTE Confidence: 0.826194647777778

00:27:31.530 --> 00:27:33.086 without other causes of

NOTE Confidence: 0.826194647777778

00:27:33.086 --> 00:27:35.031 hypoventilation and with the known

NOTE Confidence: 0.826194647777778

00:27:35.031 --> 00:27:36.509 diagnosis of sleep disorder.

NOTE Confidence: 0.826194647777778

00:27:36.510 --> 00:27:38.640 Anything.

NOTE Confidence: 0.826194647777778

00:27:38.640 --> 00:27:40.528 It's oftentimes diagnosed during
NOTE Confidence: 0.826194647777778

00:27:40.528 --> 00:27:42.888 an acute on chronic episode
NOTE Confidence: 0.826194647777778

00:27:42.888 --> 00:27:45.458 of Hypercapnic grocery failure
NOTE Confidence: 0.826194647777778

00:27:45.460 --> 00:27:48.124 and with the presence of the
NOTE Confidence: 0.826194647777778

00:27:48.124 --> 00:27:49.900 classic constellation of symptoms
NOTE Confidence: 0.826194647777778

00:27:49.979 --> 00:27:53.216 and findings of sleep apnea.
NOTE Confidence: 0.826194647777778

00:27:53.216 --> 00:27:54.800 And then.
NOTE Confidence: 0.770920345

00:27:57.190 --> 00:28:00.879 In the case, I'll show this is
NOTE Confidence: 0.770920345

00:28:00.879 --> 00:28:03.360 an inpatient diagnosis as well.
NOTE Confidence: 0.770920345

00:28:03.360 --> 00:28:05.280 Ohh, just diagnosis are costly.
NOTE Confidence: 0.770920345

00:28:05.280 --> 00:28:06.410 They're delayed,
NOTE Confidence: 0.770920345

00:28:06.410 --> 00:28:09.800 they're oftentimes made fairly late and.
NOTE Confidence: 0.770920345

00:28:09.800 --> 00:28:12.240 Probably in the, you know,
NOTE Confidence: 0.770920345

00:28:12.240 --> 00:28:15.208 in the same age structure as OSA,
NOTE Confidence: 0.770920345

00:28:15.210 --> 00:28:17.436 but during that period of time
NOTE Confidence: 0.770920345

00:28:17.440 --> 00:28:20.737 patients with OHS will use a lot

NOTE Confidence: 0.770920345

00:28:20.737 --> 00:28:23.159 of healthcare resources compared to

NOTE Confidence: 0.770920345

00:28:23.160 --> 00:28:25.730 comparably obese you catnic subjects.

NOTE Confidence: 0.769427687272727

00:28:27.960 --> 00:28:30.576 The Physiology would be city sort

NOTE Confidence: 0.769427687272727

00:28:30.576 --> 00:28:32.780 of like well delineated here.

NOTE Confidence: 0.769427687272727

00:28:32.780 --> 00:28:34.120 The impacts on you know,

NOTE Confidence: 0.769427687272727

00:28:34.120 --> 00:28:37.416 pulmonary mechanics on airway

NOTE Confidence: 0.769427687272727

00:28:37.416 --> 00:28:39.720 diameter are are fairly obvious.

NOTE Confidence: 0.948041538

00:28:41.950 --> 00:28:44.684 The big difference is that in

NOTE Confidence: 0.948041538

00:28:44.684 --> 00:28:47.162 addition to all the sort of burns

NOTE Confidence: 0.948041538

00:28:47.162 --> 00:28:49.559 that we talked about before,

NOTE Confidence: 0.948041538

00:28:49.560 --> 00:28:51.594 the metabolic syndrome,

NOTE Confidence: 0.948041538

00:28:51.594 --> 00:28:54.006 diastolic dysfunction, atrial fibrillation,

NOTE Confidence: 0.948041538

00:28:54.006 --> 00:28:55.062 echocardiographic findings,

NOTE Confidence: 0.948041538

00:28:55.062 --> 00:28:59.130 there is the added burden of hypercapnia.

NOTE Confidence: 0.948041538

00:28:59.130 --> 00:29:00.670 We oftentimes talk about the

NOTE Confidence: 0.948041538

00:29:00.670 --> 00:29:01.902 impact of hypercapnia on,
NOTE Confidence: 0.948041538

00:29:01.910 --> 00:29:03.790 on on the pulmonary vasculature.
NOTE Confidence: 0.948041538

00:29:03.790 --> 00:29:06.760 The the the data on it is is good,
NOTE Confidence: 0.948041538

00:29:06.760 --> 00:29:08.260 but there's less human based data
NOTE Confidence: 0.948041538

00:29:08.260 --> 00:29:10.145 that's high quality than you would like.
NOTE Confidence: 0.948041538

00:29:10.150 --> 00:29:11.905 So a lot of it comes from animal based.
NOTE Confidence: 0.948041538

00:29:11.910 --> 00:29:13.392 Um studies,
NOTE Confidence: 0.948041538

00:29:13.392 --> 00:29:17.838 but in the setting of hypercapnia,
NOTE Confidence: 0.948041538

00:29:17.840 --> 00:29:21.578 oftentimes with concurrent hypoxia as well,
NOTE Confidence: 0.948041538

00:29:21.580 --> 00:29:24.046 the impact of hypercapnia on right
NOTE Confidence: 0.948041538

00:29:24.046 --> 00:29:26.199 ventricular size relative to left
NOTE Confidence: 0.948041538

00:29:26.199 --> 00:29:28.821 ventricular size and then also right
NOTE Confidence: 0.948041538

00:29:28.821 --> 00:29:31.282 ventricular size relative to the body
NOTE Confidence: 0.948041538

00:29:31.282 --> 00:29:35.860 weight in general is significant and.
NOTE Confidence: 0.948041538

00:29:35.860 --> 00:29:39.094 We know is a driver of increased
NOTE Confidence: 0.948041538

00:29:39.094 --> 00:29:41.117 pulmonary vascular tone and

NOTE Confidence: 0.948041538

00:29:41.117 --> 00:29:43.297 right for circular afterload.

NOTE Confidence: 0.948041538

00:29:43.300 --> 00:29:45.100 Based on cartographic data,

NOTE Confidence: 0.948041538

00:29:45.100 --> 00:29:47.350 we think the prevalence of

NOTE Confidence: 0.948041538

00:29:47.350 --> 00:29:49.617 pH and OHS is almost 70%.

NOTE Confidence: 0.948041538

00:29:49.620 --> 00:29:52.602 At the higher end and on

NOTE Confidence: 0.948041538

00:29:52.602 --> 00:29:54.093 prospective observational data,

NOTE Confidence: 0.948041538

00:29:54.100 --> 00:29:59.180 we know that patients with OHS are highly

NOTE Confidence: 0.948041538

00:29:59.180 --> 00:30:01.180 at risk for diastolic dysfunction,

NOTE Confidence: 0.948041538

00:30:01.180 --> 00:30:03.280 even the absence of their OSA

NOTE Confidence: 0.948041538

00:30:03.280 --> 00:30:04.330 being particularly severe.

NOTE Confidence: 0.7711788412

00:30:08.570 --> 00:30:10.858 This is a study based on 18 subjects

NOTE Confidence: 0.7711788412

00:30:10.858 --> 00:30:13.856 that had OHSU without any risk factors

NOTE Confidence: 0.7711788412

00:30:13.856 --> 00:30:15.740 for precapillary pulmonary arteriopathy

NOTE Confidence: 0.7711788412

00:30:15.740 --> 00:30:18.000 that we would associate with pH.

NOTE Confidence: 0.7711788412

00:30:18.000 --> 00:30:21.126 So no HIV, no portal pulmonary,

NOTE Confidence: 0.7711788412

00:30:21.130 --> 00:30:23.926 no portal hypertension.
NOTE Confidence: 0.7711788412

00:30:23.926 --> 00:30:27.470 Um, no anorexigenic use and so on.
NOTE Confidence: 0.7711788412

00:30:27.470 --> 00:30:31.763 And and you can see that there's a decent
NOTE Confidence: 0.7711788412

00:30:31.763 --> 00:30:35.114 correlation between BMI and me and keep
NOTE Confidence: 0.7711788412

00:30:35.114 --> 00:30:39.380 pressure on right heart catheterization.
NOTE Confidence: 0.7711788412

00:30:39.380 --> 00:30:43.548 And then also on the degree of hypercapnia,
NOTE Confidence: 0.7711788412

00:30:43.550 --> 00:30:46.440 in this case nocturnal hypercapnia
NOTE Confidence: 0.7711788412

00:30:46.440 --> 00:30:50.219 and the mean PA pressure as well.
NOTE Confidence: 0.7711788412

00:30:50.220 --> 00:30:52.890 In these subjects.
NOTE Confidence: 0.7711788412

00:30:52.890 --> 00:30:56.754 They underwent 3 months of titrated Bipap
NOTE Confidence: 0.7711788412

00:30:56.754 --> 00:30:59.840 therapy with a follow-up right heart
NOTE Confidence: 0.7711788412

00:30:59.840 --> 00:31:02.735 catheterization and they were able to
NOTE Confidence: 0.7711788412

00:31:02.735 --> 00:31:05.120 demonstrate a significant reduction in
NOTE Confidence: 0.7711788412

00:31:05.207 --> 00:31:08.790 the mean PA pressure from a mean of 49 to 31,
NOTE Confidence: 0.7711788412

00:31:08.790 --> 00:31:10.854 which is fairly dramatic,
NOTE Confidence: 0.7711788412

00:31:10.854 --> 00:31:13.434 a significant reduction in the

NOTE Confidence: 0.7711788412

00:31:13.434 --> 00:31:15.766 PVR from 491 dines to 292.

NOTE Confidence: 0.7711788412

00:31:15.766 --> 00:31:19.330 And so this is roughly, you know.

NOTE Confidence: 0.7711788412

00:31:19.330 --> 00:31:21.010 Between 5:00 and six wood units,

NOTE Confidence: 0.7711788412

00:31:21.010 --> 00:31:22.348 all the way down to between

NOTE Confidence: 0.7711788412

00:31:22.348 --> 00:31:23.580 three and four good units,

NOTE Confidence: 0.7711788412

00:31:23.580 --> 00:31:26.808 so fairly significant.

NOTE Confidence: 0.7711788412

00:31:26.810 --> 00:31:29.894 And not necessarily a particularly huge

NOTE Confidence: 0.7711788412

00:31:29.894 --> 00:31:32.336 difference in in in the cardiac index.

NOTE Confidence: 0.718568588888889

00:31:36.600 --> 00:31:38.650 But that's still a significant

NOTE Confidence: 0.718568588888889

00:31:38.650 --> 00:31:41.260 reduction in the PR. Um, these?

NOTE Confidence: 0.718568588888889

00:31:41.260 --> 00:31:43.200 This intervention was also

NOTE Confidence: 0.718568588888889

00:31:43.200 --> 00:31:44.655 associated with significant

NOTE Confidence: 0.718568588888889

00:31:44.655 --> 00:31:46.509 improvements in functional status,

NOTE Confidence: 0.718568588888889

00:31:46.510 --> 00:31:49.780 with improvement 6 minute walk distance.

NOTE Confidence: 0.718568588888889

00:31:49.780 --> 00:31:51.485 And functionality based on CPET

NOTE Confidence: 0.718568588888889

00:31:51.485 --> 00:31:54.346 study and then lastly on a you know
NOTE Confidence: 0.718568588888889

00:31:54.346 --> 00:31:56.171 commonly obtained parameter for the
NOTE Confidence: 0.718568588888889

00:31:56.171 --> 00:31:57.895 management of heart failure which
NOTE Confidence: 0.718568588888889

00:31:57.895 --> 00:32:00.065 is your anti probie NP as well.
NOTE Confidence: 0.718568588888889

00:32:00.070 --> 00:32:04.284 So dramatic reduction from 2500 down to
NOTE Confidence: 0.718568588888889

00:32:04.290 --> 00:32:07.058 377 in this case is there was probably
NOTE Confidence: 0.718568588888889

00:32:07.058 --> 00:32:09.280 diuresis that was happening as well.
NOTE Confidence: 0.870205343333333

00:32:11.500 --> 00:32:13.768 Which is a bit of a.
NOTE Confidence: 0.870205343333333

00:32:13.770 --> 00:32:18.898 Confounder, but I think the the sort of.
NOTE Confidence: 0.870205343333333

00:32:18.900 --> 00:32:22.050 Very strong data for what Bipap can
NOTE Confidence: 0.870205343333333

00:32:22.050 --> 00:32:25.900 can do in this patient population.
NOTE Confidence: 0.870205343333333

00:32:25.900 --> 00:32:28.504 More recently, I'm sure you guys are
NOTE Confidence: 0.870205343333333

00:32:28.504 --> 00:32:30.859 familiar with the Pickwick project.
NOTE Confidence: 0.870205343333333

00:32:30.860 --> 00:32:32.869 So the Pickwick study was a multi
NOTE Confidence: 0.870205343333333

00:32:32.869 --> 00:32:34.080 center randomized control trial.
NOTE Confidence: 0.870205343333333

00:32:34.080 --> 00:32:37.699 They looked at just over 220 subjects.

NOTE Confidence: 0.8702053433333333
00:32:37.700 --> 00:32:39.506 It was done in the late aughts
NOTE Confidence: 0.8702053433333333
00:32:39.506 --> 00:32:41.628 to the mid 2000 tens and to
NOTE Confidence: 0.8702053433333333
00:32:41.628 --> 00:32:43.233 compare the efficacy of CPAP,
NOTE Confidence: 0.8702053433333333
00:32:43.240 --> 00:32:45.556 non invasive ventilation,
NOTE Confidence: 0.8702053433333333
00:32:45.556 --> 00:32:48.548 lifestyle modifications on symptoms
NOTE Confidence: 0.8702053433333333
00:32:48.548 --> 00:32:50.720 and polysomnographic parameters.
NOTE Confidence: 0.8702053433333333
00:32:50.720 --> 00:32:52.976 The lifestyle modification was
NOTE Confidence: 0.8702053433333333
00:32:52.976 --> 00:32:56.360 primarily entailed a low calorie diet.
NOTE Confidence: 0.8702053433333333
00:32:56.360 --> 00:32:58.535 With a good sleep hygiene
NOTE Confidence: 0.8702053433333333
00:32:58.535 --> 00:33:01.100 and then appropriately used
NOTE Confidence: 0.8702053433333333
00:33:01.100 --> 00:33:04.480 supplemental oxygen as well.
NOTE Confidence: 0.8702053433333333
00:33:04.480 --> 00:33:06.867 The study was designed to sort of
NOTE Confidence: 0.8702053433333333
00:33:06.867 --> 00:33:08.326 determine the comparative efficacy
NOTE Confidence: 0.8702053433333333
00:33:08.326 --> 00:33:10.186 of non invasive ventilation and
NOTE Confidence: 0.8702053433333333
00:33:10.186 --> 00:33:13.389 cpap and lifestyle modification.
NOTE Confidence: 0.8702053433333333

00:33:13.390 --> 00:33:14.014 And uh,
NOTE Confidence: 0.8702053433333333

00:33:14.014 --> 00:33:15.574 there was an initial two-month
NOTE Confidence: 0.8702053433333333

00:33:15.574 --> 00:33:19.940 follow up with the baseline and.
NOTE Confidence: 0.8702053433333333

00:33:19.940 --> 00:33:21.888 Subsequent echocardiograms and then
NOTE Confidence: 0.8702053433333333

00:33:21.888 --> 00:33:24.810 there was a subsequent long term
NOTE Confidence: 0.8702053433333333

00:33:24.882 --> 00:33:27.456 study which I'll get to momentarily.
NOTE Confidence: 0.8702053433333333

00:33:27.460 --> 00:33:29.690 Umm.
NOTE Confidence: 0.8702053433333333

00:33:29.690 --> 00:33:32.615 There was a significant improvement
NOTE Confidence: 0.8702053433333333

00:33:32.615 --> 00:33:34.482 in Echocardiographic systolic
NOTE Confidence: 0.8702053433333333

00:33:34.482 --> 00:33:37.942 PA pressure estimates and then
NOTE Confidence: 0.8702053433333333

00:33:37.942 --> 00:33:40.710 also significant improvement in.
NOTE Confidence: 0.8702053433333333

00:33:40.710 --> 00:33:43.290 6 minute walk distance using
NOTE Confidence: 0.8702053433333333

00:33:43.290 --> 00:33:45.354 non invasive positive pressure
NOTE Confidence: 0.8702053433333333

00:33:45.354 --> 00:33:47.016 ventilation in these subjects.
NOTE Confidence: 0.8702053433333333

00:33:47.016 --> 00:33:50.108 So the main results we can summarize is
NOTE Confidence: 0.8702053433333333

00:33:50.108 --> 00:33:52.828 more than half the patients that had OHS.

NOTE Confidence: 0.870205343333333

00:33:52.830 --> 00:33:54.840 First off they had echocardiographic

NOTE Confidence: 0.870205343333333

00:33:54.840 --> 00:33:56.448 evidence of of pH,

NOTE Confidence: 0.870205343333333

00:33:56.450 --> 00:33:58.482 they had echocardiographic evidence

NOTE Confidence: 0.870205343333333

00:33:58.482 --> 00:34:01.117 of diastolic dysfunction and the non

NOTE Confidence: 0.870205343333333

00:34:01.117 --> 00:34:02.962 invasive ventilation was more effective

NOTE Confidence: 0.870205343333333

00:34:02.962 --> 00:34:04.999 in improving the LV hypertrophy

NOTE Confidence: 0.870205343333333

00:34:04.999 --> 00:34:06.647 parameters compared to control.

NOTE Confidence: 0.870205343333333

00:34:06.650 --> 00:34:11.200 Maybe CPAP was was decent at it.

NOTE Confidence: 0.870205343333333

00:34:11.200 --> 00:34:13.405 That but it was only the non

NOTE Confidence: 0.870205343333333

00:34:13.405 --> 00:34:15.054 invasive ventilation that led to

NOTE Confidence: 0.870205343333333

00:34:15.054 --> 00:34:16.980 a significant reduction in in this

NOTE Confidence: 0.870205343333333

00:34:16.980 --> 00:34:18.910 peer pressure estimate and the

NOTE Confidence: 0.870205343333333

00:34:18.910 --> 00:34:20.430 significant improvement in the

NOTE Confidence: 0.870205343333333

00:34:20.430 --> 00:34:22.499 six minute walk distance as well.

NOTE Confidence: 0.870205343333333

00:34:22.500 --> 00:34:22.924 So,

NOTE Confidence: 0.870205343333333

00:34:22.924 --> 00:34:26.316 so big impacts of of of non invasive
NOTE Confidence: 0.8702053433333333

00:34:26.316 --> 00:34:28.155 positive pressure ventilation
NOTE Confidence: 0.8702053433333333

00:34:28.155 --> 00:34:30.152 on structural parameters but
NOTE Confidence: 0.8702053433333333

00:34:30.152 --> 00:34:32.372 also on estimated peer pressures
NOTE Confidence: 0.8702053433333333

00:34:32.372 --> 00:34:34.270 and and functionality.
NOTE Confidence: 0.677453076

00:34:36.560 --> 00:34:39.240 The Pickwick Project was continued
NOTE Confidence: 0.677453076

00:34:39.240 --> 00:34:42.390 over three years with the evaluations
NOTE Confidence: 0.677453076

00:34:42.390 --> 00:34:45.269 done during that period of time.
NOTE Confidence: 0.677453076

00:34:45.270 --> 00:34:49.220 And the results were sort
NOTE Confidence: 0.677453076

00:34:49.220 --> 00:34:52.380 of like further compelling.
NOTE Confidence: 0.677453076

00:34:52.380 --> 00:34:55.103 Here we see both CPAP and noninvasive
NOTE Confidence: 0.677453076

00:34:55.103 --> 00:34:57.208 ventilation having a significant impact
NOTE Confidence: 0.677453076

00:34:57.208 --> 00:35:00.232 on the estimated PA pressure over time.
NOTE Confidence: 0.677453076

00:35:00.240 --> 00:35:02.240 You got the, it seemed like there were
NOTE Confidence: 0.677453076

00:35:02.240 --> 00:35:04.360 still big returns happening at one year,
NOTE Confidence: 0.677453076

00:35:04.360 --> 00:35:05.384 but beyond one year,

NOTE Confidence: 0.677453076

00:35:05.384 --> 00:35:06.920 there wasn't really much in the

NOTE Confidence: 0.677453076

00:35:06.979 --> 00:35:08.559 way of significant reductions in

NOTE Confidence: 0.677453076

00:35:08.560 --> 00:35:10.710 for the reductions in pressure.

NOTE Confidence: 0.677453076

00:35:10.710 --> 00:35:11.670 And so in all likelihood,

NOTE Confidence: 0.677453076

00:35:11.670 --> 00:35:13.140 the study by hell that looked at

NOTE Confidence: 0.677453076

00:35:13.140 --> 00:35:14.331 those initial 18 subjects phase

NOTE Confidence: 0.677453076

00:35:14.331 --> 00:35:15.616 the cutoff of three months,

NOTE Confidence: 0.677453076

00:35:15.620 --> 00:35:19.337 there's probably more benefit to be had

NOTE Confidence: 0.677453076

00:35:19.337 --> 00:35:24.400 with additional time on therapy and then.

NOTE Confidence: 0.677453076

00:35:24.400 --> 00:35:26.850 Parameters of reticular function also

NOTE Confidence: 0.677453076

00:35:26.850 --> 00:35:29.300 were significantly improved as well,

NOTE Confidence: 0.677453076

00:35:29.300 --> 00:35:31.756 with both noninvasive ventilation

NOTE Confidence: 0.677453076

00:35:31.756 --> 00:35:33.598 and CPAP therapy.

NOTE Confidence: 0.677453076

00:35:33.600 --> 00:35:35.256 Again, if there was improvement to be had,

NOTE Confidence: 0.677453076

00:35:35.260 --> 00:35:38.795 it was usually happening by one year.

NOTE Confidence: 0.677453076

00:35:38.800 --> 00:35:41.375 And then these are parameters

NOTE Confidence: 0.677453076

00:35:41.375 --> 00:35:42.920 of diastolic function.

NOTE Confidence: 0.677453076

00:35:42.920 --> 00:35:43.754 And again,

NOTE Confidence: 0.677453076

00:35:43.754 --> 00:35:44.588 same thing.

NOTE Confidence: 0.677453076

00:35:44.588 --> 00:35:46.673 Whatever improvement was to be

NOTE Confidence: 0.677453076

00:35:46.673 --> 00:35:49.215 had seemed to happen in one year

NOTE Confidence: 0.677453076

00:35:49.220 --> 00:35:51.975 on both of these parameters and

NOTE Confidence: 0.677453076

00:35:51.975 --> 00:35:54.460 there was less of an impact on

NOTE Confidence: 0.677453076

00:35:54.460 --> 00:35:56.176 actual left atrial morphology,

NOTE Confidence: 0.677453076

00:35:56.176 --> 00:36:00.280 but but maybe a little bit of a signal

NOTE Confidence: 0.677453076

00:36:00.375 --> 00:36:03.338 here as well at one year's time.

NOTE Confidence: 0.677453076

00:36:03.340 --> 00:36:06.217 And so to sort of illustrate this,

NOTE Confidence: 0.677453076

00:36:06.220 --> 00:36:09.028 I'm going to go through a case that.

NOTE Confidence: 0.677453076

00:36:09.030 --> 00:36:11.590 I came across just a couple years ago.

NOTE Confidence: 0.677453076

00:36:11.590 --> 00:36:13.270 He was a 67 year old female.

NOTE Confidence: 0.677453076

00:36:13.270 --> 00:36:15.550 She had a medical history

NOTE Confidence: 0.677453076

00:36:15.550 --> 00:36:18.100 for OSA that was not treated.

NOTE Confidence: 0.677453076

00:36:18.100 --> 00:36:19.660 Her chart set.

NOTE Confidence: 0.677453076

00:36:19.660 --> 00:36:21.220 She had COPD.

NOTE Confidence: 0.677453076

00:36:21.220 --> 00:36:23.540 She had his own hypertension,

NOTE Confidence: 0.677453076

00:36:23.540 --> 00:36:24.298 diabetes mellitus,

NOTE Confidence: 0.677453076

00:36:24.298 --> 00:36:27.800 and then a history of a Tia as well.

NOTE Confidence: 0.677453076

00:36:27.800 --> 00:36:29.885 She presented to the hospital

NOTE Confidence: 0.677453076

00:36:29.885 --> 00:36:31.136 with progressive waking,

NOTE Confidence: 0.677453076

00:36:31.140 --> 00:36:32.360 hypoxemic failure,

NOTE Confidence: 0.677453076

00:36:32.360 --> 00:36:36.020 and concern for right ventricular failure.

NOTE Confidence: 0.677453076

00:36:36.020 --> 00:36:37.720 At the time of presentation,

NOTE Confidence: 0.677453076

00:36:37.720 --> 00:36:40.102 vital signs were not typically worrisome

NOTE Confidence: 0.677453076

00:36:40.102 --> 00:36:42.876 except for the degree of hypoxemia that

NOTE Confidence: 0.677453076

00:36:42.876 --> 00:36:45.480 she had reporting 15 liters of oxidizer,

NOTE Confidence: 0.677453076

00:36:45.480 --> 00:36:47.472 no Earth or cytosin.

NOTE Confidence: 0.677453076

00:36:47.472 --> 00:36:48.966 Renal function was
NOTE Confidence: 0.677453076

00:36:48.966 --> 00:36:50.460 probably largely preserved,
NOTE Confidence: 0.677453076

00:36:50.460 --> 00:36:55.094 but notably had a significant and chronically
NOTE Confidence: 0.677453076

00:36:55.094 --> 00:36:59.096 elevated PCO₂ on blood gas analysis,
NOTE Confidence: 0.677453076

00:36:59.100 --> 00:37:00.148 chest X-ray,
NOTE Confidence: 0.677453076

00:37:00.148 --> 00:37:01.720 nothing shocking here,
NOTE Confidence: 0.677453076

00:37:01.720 --> 00:37:03.622 a little bit of pulmonary vascular
NOTE Confidence: 0.677453076

00:37:03.622 --> 00:37:04.573 congestion and cephalization,
NOTE Confidence: 0.677453076

00:37:04.580 --> 00:37:05.768 lung volumes not.
NOTE Confidence: 0.859708812

00:37:08.750 --> 00:37:10.390 Too high, not too low.
NOTE Confidence: 0.859708812

00:37:10.390 --> 00:37:11.318 And echocardiography,
NOTE Confidence: 0.859708812

00:37:11.318 --> 00:37:14.566 here's a picture of a TR jet,
NOTE Confidence: 0.859708812

00:37:14.570 --> 00:37:15.950 you know, high value.
NOTE Confidence: 0.859708812

00:37:15.950 --> 00:37:19.070 So estimates in the low 60s, high,
NOTE Confidence: 0.859708812

00:37:19.070 --> 00:37:21.130 low 70s without the addition
NOTE Confidence: 0.859708812

00:37:21.130 --> 00:37:22.630 of the right atrial pressure.

NOTE Confidence: 0.859708812
00:37:22.630 --> 00:37:24.494 And then an echocardiography,
NOTE Confidence: 0.859708812
00:37:24.494 --> 00:37:27.760 we've got our apical 4 chamber view.
NOTE Confidence: 0.859708812
00:37:27.760 --> 00:37:29.356 We've got a very large right atrium.
NOTE Confidence: 0.859708812
00:37:29.360 --> 00:37:31.894 We've got a very large right ventricle
NOTE Confidence: 0.859708812
00:37:31.894 --> 00:37:34.558 that exceeds the size of left ventricle.
NOTE Confidence: 0.859708812
00:37:34.560 --> 00:37:37.234 With signs of right for truly dysfunction.
NOTE Confidence: 0.859708812
00:37:37.240 --> 00:37:38.920 So probably a moderately enlarged
NOTE Confidence: 0.859708812
00:37:38.920 --> 00:37:41.000 right ventricle to say at least,
NOTE Confidence: 0.859708812
00:37:41.000 --> 00:37:44.227 maybe like 5 centimeters with I would
NOTE Confidence: 0.859708812
00:37:44.227 --> 00:37:46.279 say moderate dysfunction as well.
NOTE Confidence: 0.859708812
00:37:46.280 --> 00:37:49.064 Her clinical evaluation looked
NOTE Confidence: 0.859708812
00:37:49.064 --> 00:37:52.544 for secondary causes of PAH.
NOTE Confidence: 0.859708812
00:37:52.550 --> 00:37:55.586 Her antibody panels were strictly negative.
NOTE Confidence: 0.859708812
00:37:55.590 --> 00:37:57.414 There was no evidence of portal
NOTE Confidence: 0.859708812
00:37:57.414 --> 00:37:59.210 hypertension based on ultrasonic optic data.
NOTE Confidence: 0.859708812

00:37:59.210 --> 00:38:01.448 She had no history of stimulant
NOTE Confidence: 0.859708812

00:38:01.448 --> 00:38:02.940 use and orexigen use.
NOTE Confidence: 0.859708812

00:38:02.940 --> 00:38:04.836 And then lastly on a spirometry
NOTE Confidence: 0.859708812

00:38:04.836 --> 00:38:06.495 didn't have any evidence of
NOTE Confidence: 0.859708812

00:38:06.495 --> 00:38:07.847 actual obstruction as well,
NOTE Confidence: 0.859708812

00:38:07.850 --> 00:38:09.265 just a suggestion of a
NOTE Confidence: 0.859708812

00:38:09.265 --> 00:38:10.114 restrictive ventilatory defect.
NOTE Confidence: 0.661694761666667

00:38:12.440 --> 00:38:15.218 She had to write her catheterization.
NOTE Confidence: 0.661694761666667

00:38:15.220 --> 00:38:17.760 Notably our subject was £317.00,
NOTE Confidence: 0.661694761666667

00:38:17.760 --> 00:38:20.376 pretty high PSA as you can see here.
NOTE Confidence: 0.661694761666667

00:38:20.380 --> 00:38:23.218 This is our PA pressure tracing.
NOTE Confidence: 0.661694761666667

00:38:23.220 --> 00:38:25.980 I reported here as a papers of
NOTE Confidence: 0.661694761666667

00:38:25.980 --> 00:38:28.140 84 or 34 of the mean of 53.
NOTE Confidence: 0.661694761666667

00:38:28.140 --> 00:38:29.845 And then importantly, her wedge
NOTE Confidence: 0.661694761666667

00:38:29.845 --> 00:38:31.550 pressure wasn't all that impressive.
NOTE Confidence: 0.661694761666667

00:38:31.550 --> 00:38:35.033 This is again after a little bit of diuresis.

NOTE Confidence: 0.661694761666667
00:38:35.040 --> 00:38:38.628 But. If you were to sort of
NOTE Confidence: 0.661694761666667
00:38:38.630 --> 00:38:40.408 calculate this out and if I were
NOTE Confidence: 0.661694761666667
00:38:40.408 --> 00:38:42.541 to sort of like hide this data,
NOTE Confidence: 0.661694761666667
00:38:42.541 --> 00:38:46.285 this would look very much like a subject that
NOTE Confidence: 0.661694761666667
00:38:46.285 --> 00:38:49.205 had frank pulmonary arterial hypertension.
NOTE Confidence: 0.661694761666667
00:38:49.210 --> 00:38:50.578 And here you can see her
NOTE Confidence: 0.661694761666667
00:38:50.578 --> 00:38:51.262 peer pressure tracing.
NOTE Confidence: 0.661694761666667
00:38:51.270 --> 00:38:52.542 So you can probably if you
NOTE Confidence: 0.661694761666667
00:38:52.542 --> 00:38:53.909 can try and commit to memory.
NOTE Confidence: 0.661694761666667
00:38:53.910 --> 00:38:56.860 This is a fairly broad.
NOTE Confidence: 0.661694761666667
00:38:56.860 --> 00:38:58.870 About pulmonary artery pulse pressure,
NOTE Confidence: 0.661694761666667
00:38:58.870 --> 00:39:01.410 you know, 50 points.
NOTE Confidence: 0.661694761666667
00:39:01.410 --> 00:39:02.550 With the.
NOTE Confidence: 0.821993723846154
00:39:05.690 --> 00:39:09.281 Index of 2.51 so just at the
NOTE Confidence: 0.821993723846154
00:39:09.281 --> 00:39:12.380 very lower end of a normal.
NOTE Confidence: 0.821993723846154

00:39:12.380 --> 00:39:14.684 Her diagnostic polysomnogram was
NOTE Confidence: 0.821993723846154

00:39:14.684 --> 00:39:18.140 significant for a fairly high HIV
NOTE Confidence: 0.821993723846154

00:39:18.140 --> 00:39:22.319 using the 3% criteria and then notably
NOTE Confidence: 0.821993723846154

00:39:22.319 --> 00:39:25.154 significant amount of nocturnal
NOTE Confidence: 0.821993723846154

00:39:25.154 --> 00:39:28.057 hypoxemia with the nature of a 58%
NOTE Confidence: 0.821993723846154

00:39:28.057 --> 00:39:30.276 and then I can't quite figure out
NOTE Confidence: 0.821993723846154

00:39:30.276 --> 00:39:32.905 how this got calculated, but I am.
NOTE Confidence: 0.821993723846154

00:39:32.905 --> 00:39:34.675 I am not a sleep doctor.
NOTE Confidence: 0.821993723846154

00:39:34.680 --> 00:39:37.872 I just guessed that sometimes T88 can
NOTE Confidence: 0.821993723846154

00:39:37.872 --> 00:39:42.037 get above 100% with and then lastly.
NOTE Confidence: 0.821993723846154

00:39:42.037 --> 00:39:44.900 I think here we have some transcutaneous
NOTE Confidence: 0.821993723846154

00:39:44.900 --> 00:39:47.260 carbon dioxide monitoring as well.
NOTE Confidence: 0.821993723846154

00:39:47.260 --> 00:39:49.560 So definitely has pretty significant
NOTE Confidence: 0.821993723846154

00:39:49.560 --> 00:39:52.505 sleep apnea with both hypercapnia
NOTE Confidence: 0.821993723846154

00:39:52.505 --> 00:39:55.205 suggested by the transcutaneous
NOTE Confidence: 0.821993723846154

00:39:55.205 --> 00:39:58.488 monitoring and hypoxemia as well.

NOTE Confidence: 0.821993723846154
00:39:58.488 --> 00:40:01.078 So we got to Sleep Medicine consultation,
NOTE Confidence: 0.821993723846154
00:40:01.080 --> 00:40:03.336 she was put on Bipap therapy.
NOTE Confidence: 0.821993723846154
00:40:03.340 --> 00:40:05.865 Everybody that saw those hemodynamics
NOTE Confidence: 0.821993723846154
00:40:05.865 --> 00:40:08.708 thought I was committing a mild form
NOTE Confidence: 0.821993723846154
00:40:08.708 --> 00:40:10.700 of malpractice by not treating her
NOTE Confidence: 0.821993723846154
00:40:10.763 --> 00:40:12.629 pH with a basic dilator therapy.
NOTE Confidence: 0.821993723846154
00:40:12.630 --> 00:40:15.708 Her outpatients Bipap was a ultimately
NOTE Confidence: 0.821993723846154
00:40:15.708 --> 00:40:19.860 titrated up to 20 / 16 and then we
NOTE Confidence: 0.821993723846154
00:40:19.860 --> 00:40:22.600 subsequently got a blood gas that.
NOTE Confidence: 0.821993723846154
00:40:22.600 --> 00:40:23.467 Sort of the,
NOTE Confidence: 0.821993723846154
00:40:23.467 --> 00:40:26.960 the best one we got had a PCO two of a 46.
NOTE Confidence: 0.782192535555556
00:40:29.070 --> 00:40:30.129 Her subsequent echocardiogram,
NOTE Confidence: 0.782192535555556
00:40:30.129 --> 00:40:32.247 this is her new TR jet.
NOTE Confidence: 0.782192535555556
00:40:32.250 --> 00:40:35.050 So you can see that they were
NOTE Confidence: 0.782192535555556
00:40:35.050 --> 00:40:37.269 divining the envelope around here,
NOTE Confidence: 0.782192535555556

00:40:37.270 --> 00:40:39.947 honestly not the worst placement.
NOTE Confidence: 0.782192535555556

00:40:39.947 --> 00:40:42.089 So just not a very good
NOTE Confidence: 0.782192535555556

00:40:42.089 --> 00:40:44.189 quality TR jet to work with.
NOTE Confidence: 0.782192535555556

00:40:44.190 --> 00:40:46.248 But you can see that echocardiogram is,
NOTE Confidence: 0.782192535555556

00:40:46.250 --> 00:40:47.975 is, is dramatically improved and
NOTE Confidence: 0.782192535555556

00:40:47.975 --> 00:40:50.158 this was strictly with BIPAP therapy
NOTE Confidence: 0.782192535555556

00:40:50.158 --> 00:40:52.018 alone and maintenance of her
NOTE Confidence: 0.782192535555556

00:40:52.018 --> 00:40:54.193 diuretic therapy when she had that
NOTE Confidence: 0.782192535555556

00:40:54.193 --> 00:40:55.938 catheterization that was a diuretic
NOTE Confidence: 0.782192535555556

00:40:55.997 --> 00:40:57.999 therapy that that she went home on.
NOTE Confidence: 0.782192535555556

00:40:58.000 --> 00:40:59.540 And so you can see an improvement
NOTE Confidence: 0.782192535555556

00:40:59.540 --> 00:41:00.480 in right atrial size,
NOTE Confidence: 0.782192535555556

00:41:00.480 --> 00:41:02.615 you can see an improvement in right
NOTE Confidence: 0.782192535555556

00:41:02.615 --> 00:41:04.576 ventricular size and then also
NOTE Confidence: 0.782192535555556

00:41:04.576 --> 00:41:06.646 right ventricular function as well.
NOTE Confidence: 0.782192535555556

00:41:06.650 --> 00:41:08.022 We repeated the catheterization,

NOTE Confidence: 0.782192535555556

00:41:08.022 --> 00:41:10.969 a lot of weight reduction and happened right.

NOTE Confidence: 0.782192535555556

00:41:10.970 --> 00:41:14.474 She was over 300 pounds the first time.

NOTE Confidence: 0.782192535555556

00:41:14.480 --> 00:41:17.010 But we've seen improvement in

NOTE Confidence: 0.782192535555556

00:41:17.010 --> 00:41:19.034 significant improvement or pressure.

NOTE Confidence: 0.782192535555556

00:41:19.040 --> 00:41:20.720 Oops.

NOTE Confidence: 0.782192535555556

00:41:20.720 --> 00:41:22.760 Umm.

NOTE Confidence: 0.782192535555556

00:41:22.760 --> 00:41:25.214 Countermine value of 31 and you

NOTE Confidence: 0.782192535555556

00:41:25.214 --> 00:41:28.068 can see that that PA pulse pressure

NOTE Confidence: 0.782192535555556

00:41:28.068 --> 00:41:31.002 went from 50 to 20 and she did have

NOTE Confidence: 0.782192535555556

00:41:31.002 --> 00:41:32.580 a little bit of an improvement

NOTE Confidence: 0.782192535555556

00:41:32.643 --> 00:41:34.269 in her cardiac index as well.

NOTE Confidence: 0.782192535555556

00:41:34.270 --> 00:41:37.202 The clinical significance of

NOTE Confidence: 0.782192535555556

00:41:37.202 --> 00:41:40.134 this is that your.

NOTE Confidence: 0.782192535555556

00:41:40.140 --> 00:41:41.925 Pulmonary compliance is going to

NOTE Confidence: 0.782192535555556

00:41:41.925 --> 00:41:44.174 be determined by your PA pulse

NOTE Confidence: 0.782192535555556

00:41:44.174 --> 00:41:46.159 pressure and your stroke volume.
NOTE Confidence: 0.782192535555556

00:41:46.160 --> 00:41:49.112 And so it's going to be pulse
NOTE Confidence: 0.782192535555556

00:41:49.112 --> 00:41:50.472 pressure divided by stroke volume
NOTE Confidence: 0.782192535555556

00:41:50.472 --> 00:41:52.667 is going to be the the determinant
NOTE Confidence: 0.782192535555556

00:41:52.667 --> 00:41:54.075 of your pulmonary compliance.
NOTE Confidence: 0.782192535555556

00:41:54.080 --> 00:41:56.150 And so in this case we have a PA
NOTE Confidence: 0.782192535555556

00:41:56.150 --> 00:41:57.888 compliant all special that went
NOTE Confidence: 0.782192535555556

00:41:57.888 --> 00:42:01.300 from 50 down to 30 or 20 rather and
NOTE Confidence: 0.782192535555556

00:42:01.300 --> 00:42:03.200 her stroke volume increase given
NOTE Confidence: 0.782192535555556

00:42:03.200 --> 00:42:05.478 this increase in cardiac index.
NOTE Confidence: 0.782192535555556

00:42:05.480 --> 00:42:07.804 And so this is a dramatic improvement
NOTE Confidence: 0.782192535555556

00:42:07.804 --> 00:42:10.047 in take compliance which is again best.
NOTE Confidence: 0.782192535555556

00:42:10.050 --> 00:42:13.248 Explained by a change in vascular
NOTE Confidence: 0.782192535555556

00:42:13.248 --> 00:42:16.990 tone and possibly a change in Frank
NOTE Confidence: 0.782192535555556

00:42:16.990 --> 00:42:20.850 Arteriopathy and Venography as well.
NOTE Confidence: 0.782192535555556

00:42:20.850 --> 00:42:21.176 Um.

NOTE Confidence: 0.782192535555556

00:42:21.176 --> 00:42:23.458 And so one of the better examples

NOTE Confidence: 0.782192535555556

00:42:23.458 --> 00:42:25.876 I have of just how significant

NOTE Confidence: 0.782192535555556

00:42:25.876 --> 00:42:28.408 an impact BIPAP therapy by itself

NOTE Confidence: 0.782192535555556

00:42:28.491 --> 00:42:31.081 can have on patients with OHS and

NOTE Confidence: 0.782192535555556

00:42:31.081 --> 00:42:33.392 this really does differentiate the

NOTE Confidence: 0.782192535555556

00:42:33.392 --> 00:42:37.720 OHS phenotype from this? Umm.

NOTE Confidence: 0.782192535555556

00:42:37.720 --> 00:42:41.920 O SAPH phenotype as well.

NOTE Confidence: 0.782192535555556

00:42:41.920 --> 00:42:43.540 And so summary points,

NOTE Confidence: 0.782192535555556

00:42:43.540 --> 00:42:46.414 you know the the current rubric we

NOTE Confidence: 0.782192535555556

00:42:46.414 --> 00:42:48.616 have for pH phenotypes does lack

NOTE Confidence: 0.782192535555556

00:42:48.616 --> 00:42:50.699 a clear space for for OSA.

NOTE Confidence: 0.782192535555556

00:42:50.700 --> 00:42:53.670 But based on what we know about pH

NOTE Confidence: 0.782192535555556

00:42:53.670 --> 00:42:55.840 and secondary left side of heart disease,

NOTE Confidence: 0.782192535555556

00:42:55.840 --> 00:42:58.448 I think we can use that to sort

NOTE Confidence: 0.782192535555556

00:42:58.448 --> 00:43:00.850 of create a phenotype for for for

NOTE Confidence: 0.782192535555556

00:43:00.850 --> 00:43:03.032 pH OS and to guide therapeutic
NOTE Confidence: 0.782192535555556

00:43:03.032 --> 00:43:05.080 approaches for those patients.
NOTE Confidence: 0.782192535555556

00:43:05.080 --> 00:43:08.290 And then lastly CPAP and non
NOTE Confidence: 0.782192535555556

00:43:08.290 --> 00:43:10.010 invasive positive pressure therapy
NOTE Confidence: 0.782192535555556

00:43:10.010 --> 00:43:12.160 can have significant if not.
NOTE Confidence: 0.782192535555556

00:43:12.160 --> 00:43:14.024 Dramatic positive impacts on
NOTE Confidence: 0.782192535555556

00:43:14.024 --> 00:43:16.354 pulmonary hemodynamics and I would
NOTE Confidence: 0.782192535555556

00:43:16.354 --> 00:43:18.598 suspect outcomes as well in subjects
NOTE Confidence: 0.782192535555556

00:43:18.598 --> 00:43:21.035 with a variety of sleep disorder
NOTE Confidence: 0.782192535555556

00:43:21.035 --> 00:43:22.349 breathing conditions.
NOTE Confidence: 0.782192535555556

00:43:22.350 --> 00:43:25.829 So I ran through that pretty quickly.
NOTE Confidence: 0.782192535555556

00:43:25.830 --> 00:43:28.038 But there is plenty of time
NOTE Confidence: 0.782192535555556

00:43:28.038 --> 00:43:29.889 for questions and I'm happy
NOTE Confidence: 0.782192535555556

00:43:29.889 --> 00:43:31.260 to chat about any of this.
NOTE Confidence: 0.769572228

00:43:35.250 --> 00:43:36.380 Hey, Sarah, it's very good.
NOTE Confidence: 0.769572228

00:43:36.380 --> 00:43:38.788 Thank you so much. A great talk.

NOTE Confidence: 0.769572228

00:43:38.790 --> 00:43:41.694 So everybody, please feel free to

NOTE Confidence: 0.769572228

00:43:41.694 --> 00:43:44.350 leave your questions in the chat

NOTE Confidence: 0.769572228

00:43:44.350 --> 00:43:46.746 or if you want to be unmuted,

NOTE Confidence: 0.769572228

00:43:46.746 --> 00:43:50.690 raise your hand and I'll be happy to oblige.

NOTE Confidence: 0.769572228

00:43:50.690 --> 00:43:51.300 Doctor mossanen.

NOTE Confidence: 0.769572228

00:43:51.300 --> 00:43:52.825 All right, here we go.

NOTE Confidence: 0.6242726

00:43:56.830 --> 00:44:01.670 Hello, Cyrus. Good to see you likewise

NOTE Confidence: 0.6242726

00:44:01.670 --> 00:44:04.510 and I was glad that you brought some

NOTE Confidence: 0.6242726

00:44:04.510 --> 00:44:07.083 clarity to this confusing areas and

NOTE Confidence: 0.6242726

00:44:07.083 --> 00:44:09.759 I was somewhat disappointed by the

NOTE Confidence: 0.6242726

00:44:09.836 --> 00:44:13.302 latest 2022 International Conference

NOTE Confidence: 0.6242726

00:44:13.302 --> 00:44:17.825 on H2 Remove sleep apnea or sleep

NOTE Confidence: 0.6242726

00:44:17.825 --> 00:44:20.340 disordered breathing and it only

NOTE Confidence: 0.6242726

00:44:20.428 --> 00:44:23.668 include the the OS and as as you know

NOTE Confidence: 0.6242726

00:44:23.668 --> 00:44:27.015 there are several case studies that

NOTE Confidence: 0.6242726

00:44:27.015 --> 00:44:29.910 showed sleep apnea without necessarily.
NOTE Confidence: 0.6242726

00:44:29.910 --> 00:44:33.080 Having hypercapnia during the daytime
NOTE Confidence: 0.6242726

00:44:33.080 --> 00:44:36.260 they had the hypertension either
NOTE Confidence: 0.6242726

00:44:36.260 --> 00:44:39.460 a pre capillary type pulmonary
NOTE Confidence: 0.6242726

00:44:39.460 --> 00:44:43.070 hypertension or or post or mixed.
NOTE Confidence: 0.6242726

00:44:43.070 --> 00:44:45.938 I think what they're not considering
NOTE Confidence: 0.6242726

00:44:45.938 --> 00:44:47.850 is the phenotypic expression,
NOTE Confidence: 0.6242726

00:44:47.850 --> 00:44:50.938 or rather the individual
NOTE Confidence: 0.6242726

00:44:50.938 --> 00:44:54.026 susceptibility to sleep disorder,
NOTE Confidence: 0.6242726

00:44:54.030 --> 00:44:55.304 breathing consequences,
NOTE Confidence: 0.6242726

00:44:55.304 --> 00:44:58.489 hypoxia plus or minus hypercapnia,
NOTE Confidence: 0.6242726

00:44:58.490 --> 00:45:01.628 plus their own perhaps genetic component
NOTE Confidence: 0.6242726

00:45:01.628 --> 00:45:05.670 that will set the reactions to a
NOTE Confidence: 0.6242726

00:45:05.670 --> 00:45:08.770 remodeling of the pulmonary vasculature.
NOTE Confidence: 0.6242726

00:45:08.770 --> 00:45:12.260 The data on hyper responsiveness,
NOTE Confidence: 0.6242726

00:45:12.260 --> 00:45:14.462 so high altitude hypoxia size is

NOTE Confidence: 0.6242726

00:45:14.462 --> 00:45:16.759 really telling that there are some

NOTE Confidence: 0.6242726

00:45:16.759 --> 00:45:19.039 subset of individuals at high altitude

NOTE Confidence: 0.6242726

00:45:19.039 --> 00:45:21.136 they develop on their hypertension

NOTE Confidence: 0.6242726

00:45:21.136 --> 00:45:23.256 and others don't with therefore

NOTE Confidence: 0.6242726

00:45:23.256 --> 00:45:25.397 they're given exposure to hypoxia.

NOTE Confidence: 0.6242726

00:45:25.397 --> 00:45:27.971 So if you just lump everything

NOTE Confidence: 0.6242726

00:45:27.971 --> 00:45:30.681 into an OHSU is going to eliminate

NOTE Confidence: 0.6242726

00:45:30.681 --> 00:45:34.103 lots of folks that they may have a

NOTE Confidence: 0.6242726

00:45:34.103 --> 00:45:36.438 lingering pH through sleep disorder

NOTE Confidence: 0.6242726

00:45:36.438 --> 00:45:39.710 breathing undiagnosed or or or not.

NOTE Confidence: 0.6242726

00:45:39.710 --> 00:45:42.194 Consider it to be a worthwhile

NOTE Confidence: 0.6242726

00:45:42.194 --> 00:45:44.279 to investigate either by doing

NOTE Confidence: 0.6242726

00:45:44.279 --> 00:45:46.750 an echo or or follow up actually

NOTE Confidence: 0.6242726

00:45:46.750 --> 00:45:48.820 with the echocardiography.

NOTE Confidence: 0.6242726

00:45:48.820 --> 00:45:52.285 So would you in your practice continue

NOTE Confidence: 0.6242726

00:45:52.285 --> 00:45:55.300 perhaps to look more carefully into
NOTE Confidence: 0.6242726

00:45:55.300 --> 00:45:58.639 the presence or absence of pH in
NOTE Confidence: 0.6242726

00:45:58.735 --> 00:46:02.035 those individuals that they may have
NOTE Confidence: 0.6242726

00:46:02.040 --> 00:46:06.405 non hypercapnic during the daytime
NOTE Confidence: 0.6242726

00:46:06.405 --> 00:46:08.840 hypoxia and they may have actually
NOTE Confidence: 0.6242726

00:46:08.840 --> 00:46:10.088 hypercapnia during the night?
NOTE Confidence: 0.6242726

00:46:10.090 --> 00:46:12.764 But not during the daytime and and
NOTE Confidence: 0.6242726

00:46:12.764 --> 00:46:14.838 pursue whether they may have pH.
NOTE Confidence: 0.7585127

00:46:15.690 --> 00:46:18.320 Yeah. So. So great points
NOTE Confidence: 0.7585127

00:46:18.320 --> 00:46:20.424 and then great question.
NOTE Confidence: 0.7585127

00:46:20.430 --> 00:46:23.638 So just the first part you said about
NOTE Confidence: 0.7585127

00:46:23.638 --> 00:46:27.484 the the ERS and ESC conferences in 2022,
NOTE Confidence: 0.7585127

00:46:27.484 --> 00:46:33.360 I went to ER S and you know there really was.
NOTE Confidence: 0.7585127

00:46:33.360 --> 00:46:36.352 No mention of it at all except for
NOTE Confidence: 0.7585127

00:46:36.352 --> 00:46:38.940 one comment that Marius Hooper made
NOTE Confidence: 0.7585127

00:46:38.940 --> 00:46:42.066 and one comment that that that Mark

NOTE Confidence: 0.7585127

00:46:42.066 --> 00:46:44.050 Huber made during one of the sessions

NOTE Confidence: 0.7585127

00:46:44.050 --> 00:46:45.497 about just it being removed because

NOTE Confidence: 0.7585127

00:46:45.497 --> 00:46:46.853 it wasn't a factor separately on

NOTE Confidence: 0.7585127

00:46:46.853 --> 00:46:48.599 the side of the Marius would would

NOTE Confidence: 0.7585127

00:46:48.599 --> 00:46:50.135 agree that there is something there.

NOTE Confidence: 0.7585127

00:46:50.140 --> 00:46:52.660 It's just it's such a difficult

NOTE Confidence: 0.7585127

00:46:52.660 --> 00:46:54.312 thing to study. Definitively,

NOTE Confidence: 0.7585127

00:46:54.312 --> 00:46:57.448 you know, So what we would need to

NOTE Confidence: 0.7585127

00:46:57.448 --> 00:47:00.418 really create a link in order to

NOTE Confidence: 0.7585127

00:47:00.418 --> 00:47:03.048 sort of phenotype these patients.

NOTE Confidence: 0.7585127

00:47:03.050 --> 00:47:05.276 Would be a complicated site that

NOTE Confidence: 0.7585127

00:47:05.276 --> 00:47:07.550 would require a lot of people,

NOTE Confidence: 0.7585127

00:47:07.550 --> 00:47:09.951 and it would be a fairly big

NOTE Confidence: 0.7585127

00:47:09.951 --> 00:47:12.000 diversion from routine clinical care.

NOTE Confidence: 0.7585127

00:47:12.000 --> 00:47:16.304 Now to your point about how well are we

NOTE Confidence: 0.7585127

00:47:16.304 --> 00:47:18.572 surveilling these subjects that we're
NOTE Confidence: 0.7585127

00:47:18.572 --> 00:47:20.837 getting during routine clinical care,
NOTE Confidence: 0.7585127

00:47:20.840 --> 00:47:24.989 one of the challenges that I have is that.
NOTE Confidence: 0.7585127

00:47:24.990 --> 00:47:28.800 Monitoring for nocturnal hypercapnia is not
NOTE Confidence: 0.7585127

00:47:28.800 --> 00:47:32.150 particularly straightforward in our practice.
NOTE Confidence: 0.7585127

00:47:32.150 --> 00:47:35.084 Those sleep studies get delayed because
NOTE Confidence: 0.7585127

00:47:35.084 --> 00:47:38.329 there's only one site that does them.
NOTE Confidence: 0.7585127

00:47:38.330 --> 00:47:41.210 And a lot of times I'm more compelled
NOTE Confidence: 0.7585127

00:47:41.210 --> 00:47:44.569 to just get a sleep study and establish
NOTE Confidence: 0.7585127

00:47:44.569 --> 00:47:47.131 somebody with a sleep doctor and
NOTE Confidence: 0.7585127

00:47:47.131 --> 00:47:49.238 and sort of have them make sure
NOTE Confidence: 0.7585127

00:47:49.238 --> 00:47:51.377 that the therapy is most tailored
NOTE Confidence: 0.7585127

00:47:51.377 --> 00:47:53.202 for them as opposed to.
NOTE Confidence: 0.7585127

00:47:53.210 --> 00:47:54.900 Getting that additional layer of
NOTE Confidence: 0.7585127

00:47:54.900 --> 00:47:56.590 information that I think would
NOTE Confidence: 0.7585127

00:47:56.646 --> 00:47:58.608 be really useful to know to

NOTE Confidence: 0.7585127

00:47:58.608 --> 00:47:59.916 actually properly phenotype them.

NOTE Confidence: 0.834250916666667

00:48:03.300 --> 00:48:05.022 You know, I have a colleague here

NOTE Confidence: 0.834250916666667

00:48:05.022 --> 00:48:07.754 that has a a lot of interest in in

NOTE Confidence: 0.834250916666667

00:48:07.754 --> 00:48:09.440 diastolic dysfunction, you know,

NOTE Confidence: 0.834250916666667

00:48:09.440 --> 00:48:11.520 through the cardiology practice

NOTE Confidence: 0.834250916666667

00:48:11.520 --> 00:48:13.750 who you know would be interested in

NOTE Confidence: 0.834250916666667

00:48:13.750 --> 00:48:15.879 trying to tease this out a little bit.

NOTE Confidence: 0.834250916666667

00:48:15.880 --> 00:48:17.888 It would just be.

NOTE Confidence: 0.834250916666667

00:48:17.890 --> 00:48:23.189 Difficult to do using routine clinical care.

NOTE Confidence: 0.834250916666667

00:48:23.190 --> 00:48:30.355 Uh. And I I don't foresee any.

NOTE Confidence: 0.834250916666667

00:48:30.355 --> 00:48:32.830 I'm not aware of any.

NOTE Confidence: 0.834250916666667

00:48:32.830 --> 00:48:34.735 Developing or ongoing studies that

NOTE Confidence: 0.834250916666667

00:48:34.735 --> 00:48:37.448 are trying to tease us out at all,

NOTE Confidence: 0.834250916666667

00:48:37.450 --> 00:48:43.240 but that is the goal to to to be able to

NOTE Confidence: 0.834250916666667

00:48:43.240 --> 00:48:48.120 sort of establish a clear phenotype of of.

NOTE Confidence: 0.834250916666667

00:48:48.120 --> 00:48:50.348 Hypoxic and hypercapnic intermittently.
NOTE Confidence: 0.834250916666667

00:48:50.348 --> 00:48:52.576 Hypoxic intermittently hypercapnic OSA
NOTE Confidence: 0.834250916666667

00:48:52.576 --> 00:48:55.670 patient and seeing what the risk is for pH.
NOTE Confidence: 0.86696047

00:48:58.670 --> 00:49:01.270 Great. Thank you. Thank you, Cyrus.
NOTE Confidence: 0.77664826

00:49:01.270 --> 00:49:02.740 Claudia, you have the next question.
NOTE Confidence: 0.795783178

00:49:03.070 --> 00:49:04.038 Thank you, Andre. Cyrus,
NOTE Confidence: 0.795783178

00:49:04.038 --> 00:49:05.490 it's so good to see you.
NOTE Confidence: 0.795783178

00:49:05.490 --> 00:49:07.782 Thank you for an excellent and
NOTE Confidence: 0.795783178

00:49:07.782 --> 00:49:08.928 very thoughtful presentation.
NOTE Confidence: 0.841242545

00:49:11.510 --> 00:49:13.520 SO2 questions, two comments, one is.
NOTE Confidence: 0.8414785325

00:49:15.710 --> 00:49:18.230 We in the field of Sleep Medicine too,
NOTE Confidence: 0.8414785325

00:49:18.230 --> 00:49:20.854 we are starting to better phenotype
NOTE Confidence: 0.8414785325

00:49:20.854 --> 00:49:23.446 our patients both with respect to
NOTE Confidence: 0.8414785325

00:49:23.446 --> 00:49:25.760 the physiologic sequelae of sleep
NOTE Confidence: 0.8414785325

00:49:25.760 --> 00:49:28.055 apnea and better understanding more
NOTE Confidence: 0.8414785325

00:49:28.055 --> 00:49:30.278 precise measures that may impact

NOTE Confidence: 0.8414785325

00:49:30.278 --> 00:49:32.343 adverse health outcomes and for

NOTE Confidence: 0.8414785325

00:49:32.343 --> 00:49:34.236 the development of sleep apnea.

NOTE Confidence: 0.8414785325

00:49:34.236 --> 00:49:35.758 And so one of those measures that

NOTE Confidence: 0.8414785325

00:49:35.758 --> 00:49:38.166 has risen to the top with respect

NOTE Confidence: 0.8414785325

00:49:38.166 --> 00:49:40.597 to the physiologic sequels as a

NOTE Confidence: 0.8414785325

00:49:40.597 --> 00:49:42.668 metric called the hypoxic burden.

NOTE Confidence: 0.8414785325

00:49:42.670 --> 00:49:46.225 So unlike the frequency or the T-90 this is.

NOTE Confidence: 0.8414785325

00:49:46.230 --> 00:49:49.550 A measure of hypoxia that is very specific

NOTE Confidence: 0.8414785325

00:49:49.550 --> 00:49:56.560 to that related to apnic events and.

NOTE Confidence: 0.8414785325

00:49:56.560 --> 00:49:58.632 There have been a number of publications

NOTE Confidence: 0.8414785325

00:49:58.632 --> 00:50:00.577 now showing that this is a much

NOTE Confidence: 0.8414785325

00:50:00.577 --> 00:50:02.673 better measure of cardiovascular risk.

NOTE Confidence: 0.8414785325

00:50:02.673 --> 00:50:05.040 I was curious if one is it to your

NOTE Confidence: 0.8414785325

00:50:05.115 --> 00:50:06.933 knowledge as it's been looked at

NOTE Confidence: 0.8414785325

00:50:06.933 --> 00:50:09.873 or is this at play in the field

NOTE Confidence: 0.8414785325

00:50:09.873 --> 00:50:11.115 of pulmonary hypertension?
NOTE Confidence: 0.857057246666667

00:50:13.140 --> 00:50:14.336 Not to my knowledge.
NOTE Confidence: 0.857057246666667

00:50:14.336 --> 00:50:16.700 So you know I I think the the
NOTE Confidence: 0.857057246666667

00:50:16.700 --> 00:50:20.053 long term pick study is the best
NOTE Confidence: 0.857057246666667

00:50:20.053 --> 00:50:23.890 one of late that's. You know.
NOTE Confidence: 0.857057246666667

00:50:23.890 --> 00:50:25.954 Tried to tease this out and I don't
NOTE Confidence: 0.857057246666667

00:50:25.954 --> 00:50:27.709 think I've come across anything,
NOTE Confidence: 0.857057246666667

00:50:27.710 --> 00:50:30.504 at least up until the end of 2022 when I
NOTE Confidence: 0.857057246666667

00:50:30.504 --> 00:50:33.770 was doing my last searches that looked at.
NOTE Confidence: 0.857057246666667

00:50:33.770 --> 00:50:34.308 Predictive.
NOTE Confidence: 0.857057246666667

00:50:34.308 --> 00:50:38.612 Parameters that are predictive of pH in OSA,
NOTE Confidence: 0.857057246666667

00:50:38.620 --> 00:50:40.748 apart from the study that I showed that
NOTE Confidence: 0.857057246666667

00:50:40.748 --> 00:50:42.809 looked at the Cleveland Clinic cohort
NOTE Confidence: 0.693623045

00:50:43.280 --> 00:50:48.350 90 and the exactly, exactly so.
NOTE Confidence: 0.78468576375

00:50:48.350 --> 00:50:53.262 Uh, but but a really good point now, is this
NOTE Confidence: 0.78468576375

00:50:53.262 --> 00:50:56.118 a parameter that is derived or measured?

NOTE Confidence: 0.865116868666667
00:50:57.210 --> 00:50:58.434 It is both.
NOTE Confidence: 0.865116868666667
00:50:58.434 --> 00:51:00.474 It requires some sophistication and
NOTE Confidence: 0.865116868666667
00:51:00.474 --> 00:51:03.098 there's not ready for for prime time.
NOTE Confidence: 0.865116868666667
00:51:03.100 --> 00:51:05.392 It's not something we can automatically
NOTE Confidence: 0.865116868666667
00:51:05.392 --> 00:51:07.190 download on our clinical studies.
NOTE Confidence: 0.865116868666667
00:51:07.190 --> 00:51:08.800 So we can get proxy of that.
NOTE Confidence: 0.865116868666667
00:51:08.800 --> 00:51:11.194 But it's something actually the Harvard
NOTE Confidence: 0.865116868666667
00:51:11.194 --> 00:51:13.478 group has developed and looked at
NOTE Confidence: 0.865116868666667
00:51:13.478 --> 00:51:15.648 it in a number of cohorts including
NOTE Confidence: 0.865116868666667
00:51:15.648 --> 00:51:18.614 the Maza cohorts and some other sort
NOTE Confidence: 0.865116868666667
00:51:18.614 --> 00:51:20.338 of national cardiovascular cohorts.
NOTE Confidence: 0.865116868666667
00:51:20.340 --> 00:51:24.060 It'd be interesting to examine that in the
NOTE Confidence: 0.865116868666667
00:51:24.060 --> 00:51:27.120 context of pH because I think you know.
NOTE Confidence: 0.865116868666667
00:51:27.120 --> 00:51:30.802 Measures like the AI and T-90 may
NOTE Confidence: 0.865116868666667
00:51:30.802 --> 00:51:33.266 not be deriving some of the risk
NOTE Confidence: 0.865116868666667

00:51:33.266 --> 00:51:35.510 and we obviously hypoxemia is
NOTE Confidence: 0.865116868666667

00:51:35.510 --> 00:51:38.408 a maybe a central driver here.
NOTE Confidence: 0.865116868666667

00:51:38.410 --> 00:51:40.198 Yeah, yeah, absolutely have potential.
NOTE Confidence: 0.865116868666667

00:51:40.198 --> 00:51:42.382 The other comment question is that
NOTE Confidence: 0.865116868666667

00:51:42.382 --> 00:51:45.203 one of the things that our group has
NOTE Confidence: 0.865116868666667

00:51:45.203 --> 00:51:47.200 been interested in more recently.
NOTE Confidence: 0.865116868666667

00:51:47.200 --> 00:51:49.438 And and we've started to establish
NOTE Confidence: 0.865116868666667

00:51:49.438 --> 00:51:51.300 this link by the way,
NOTE Confidence: 0.865116868666667

00:51:51.300 --> 00:51:53.598 diabetology is my new favorite word.
NOTE Confidence: 0.865116868666667

00:51:53.600 --> 00:51:55.576 I haven't heard for your present day
NOTE Confidence: 0.865116868666667

00:51:55.576 --> 00:51:57.904 is it diabetology or diastole apathy?
NOTE Confidence: 0.6200703198

00:51:58.240 --> 00:51:59.920 I use diabetology just
NOTE Confidence: 0.6200703198

00:51:59.920 --> 00:52:02.440 and I it's now a reflex.
NOTE Confidence: 0.6200703198

00:52:02.440 --> 00:52:04.520 So I try not to do it when
NOTE Confidence: 0.6200703198

00:52:04.520 --> 00:52:07.100 I'm in you know informally,
NOTE Confidence: 0.6200703198

00:52:07.100 --> 00:52:09.968 but it's yeah. Anyway

NOTE Confidence: 0.853887991

00:52:10.060 --> 00:52:12.932 love the word and but one of the

NOTE Confidence: 0.853887991

00:52:12.932 --> 00:52:15.490 mechanisms that we've been looking at

NOTE Confidence: 0.853887991

00:52:15.490 --> 00:52:18.136 and this link between sleep disorder.

NOTE Confidence: 0.853887991

00:52:18.140 --> 00:52:20.021 Breathing and die.

NOTE Confidence: 0.853887991

00:52:20.021 --> 00:52:23.156 Astrology or diastole apathy is

NOTE Confidence: 0.853887991

00:52:23.156 --> 00:52:25.281 through coronary microvascular

NOTE Confidence: 0.853887991

00:52:25.281 --> 00:52:28.336 dysfunction and which is something

NOTE Confidence: 0.853887991

00:52:28.336 --> 00:52:32.777 we can look at now with pet imaging

NOTE Confidence: 0.853887991

00:52:32.777 --> 00:52:35.627 or at least proxies of that.

NOTE Confidence: 0.853887991

00:52:35.630 --> 00:52:38.000 And so beyond just the left

NOTE Confidence: 0.853887991

00:52:38.000 --> 00:52:39.580 atrial enlargement and atrial

NOTE Confidence: 0.853887991

00:52:39.653 --> 00:52:42.218 fibrillation that you were measuring,

NOTE Confidence: 0.853887991

00:52:42.220 --> 00:52:44.770 this could be another plausible

NOTE Confidence: 0.853887991

00:52:44.770 --> 00:52:48.556 mechanistic way between sleep apnea and.

NOTE Confidence: 0.853887991

00:52:48.560 --> 00:52:49.300 And diastolic.

NOTE Confidence: 0.782576298333333

00:52:49.310 --> 00:52:52.556 Yeah, that I'm more familiar with.
NOTE Confidence: 0.782576298333333

00:52:52.560 --> 00:52:54.378 There's sort of like a, you know,
NOTE Confidence: 0.782576298333333

00:52:54.378 --> 00:52:56.052 there's a just like there's a
NOTE Confidence: 0.782576298333333

00:52:56.052 --> 00:52:57.551 fractal pattern that we see
NOTE Confidence: 0.782576298333333

00:52:57.551 --> 00:52:58.739 in the pulmonary circulation,
NOTE Confidence: 0.782576298333333

00:52:58.740 --> 00:53:00.876 there's a fractal pattern in the
NOTE Confidence: 0.782576298333333

00:53:00.876 --> 00:53:02.300 myocardial circulation that gets
NOTE Confidence: 0.782576298333333

00:53:02.364 --> 00:53:04.449 obliterated in certain disease states.
NOTE Confidence: 0.782576298333333

00:53:04.450 --> 00:53:06.774 And I wouldn't be surprised if that
NOTE Confidence: 0.782576298333333

00:53:06.774 --> 00:53:09.536 happened in in the in the setting of
NOTE Confidence: 0.782576298333333

00:53:09.536 --> 00:53:11.830 OSA like you're implying that it does.
NOTE Confidence: 0.782576298333333

00:53:11.830 --> 00:53:13.174 Sounds good. Great talk.
NOTE Confidence: 0.782576298333333

00:53:13.174 --> 00:53:13.846 Thank you.
NOTE Confidence: 0.825643748333333

00:53:14.670 --> 00:53:16.290 Yeah, this is, this is great.
NOTE Confidence: 0.825643748333333

00:53:16.290 --> 00:53:18.486 Thanks for the good questions Clark.
NOTE Confidence: 0.825643748333333

00:53:18.490 --> 00:53:20.162 So I might I wanted to ask a

NOTE Confidence: 0.825643748333333

00:53:20.162 --> 00:53:21.918 question you know are are there

NOTE Confidence: 0.825643748333333

00:53:21.918 --> 00:53:23.202 physiological studies looking at

NOTE Confidence: 0.825643748333333

00:53:23.202 --> 00:53:25.125 people with pH and sleep apnea and

NOTE Confidence: 0.825643748333333

00:53:25.125 --> 00:53:26.850 what happens to them when they're on,

NOTE Confidence: 0.825643748333333

00:53:26.850 --> 00:53:29.485 when they get pap like in the lab with a

NOTE Confidence: 0.825643748333333

00:53:29.485 --> 00:53:31.480 catheter in place that you're aware of?

NOTE Confidence: 0.32607538

00:53:32.890 --> 00:53:39.020 Umm. And I I've looked so.

NOTE Confidence: 0.32607538

00:53:39.020 --> 00:53:42.156 And I would love to that would be great.

NOTE Confidence: 0.32607538

00:53:42.156 --> 00:53:44.787 But the that one in the 70s

NOTE Confidence: 0.32607538

00:53:44.787 --> 00:53:46.917 I I wish they had applied.

NOTE Confidence: 0.32607538

00:53:46.920 --> 00:53:48.910 Yeah at the time like that. Well

NOTE Confidence: 0.776556739

00:53:48.950 --> 00:53:51.726 you know because we do have a new

NOTE Confidence: 0.776556739

00:53:51.726 --> 00:53:54.475 biobehavioral lab that Clare Clare

NOTE Confidence: 0.776556739

00:53:54.475 --> 00:53:57.335 has has Co leading and so this might

NOTE Confidence: 0.776556739

00:53:57.335 --> 00:53:59.600 be a nice nice way to actually have

NOTE Confidence: 0.776556739

00:53:59.600 --> 00:54:01.436 some some you know our pulmonary

NOTE Confidence: 0.776556739

00:54:01.436 --> 00:54:02.660 hypertension group folks right

NOTE Confidence: 0.802660767

00:54:03.620 --> 00:54:04.456 that's low hanging fruit

NOTE Confidence: 0.802660767

00:54:04.456 --> 00:54:05.710 if you guys can do that.

NOTE Confidence: 0.846810849411765

00:54:06.440 --> 00:54:08.320 Yeah. And and so it might be a

NOTE Confidence: 0.846810849411765

00:54:08.320 --> 00:54:09.745 a very interesting mechanistic

NOTE Confidence: 0.846810849411765

00:54:09.745 --> 00:54:11.970 study to look at because.

NOTE Confidence: 0.846810849411765

00:54:11.970 --> 00:54:13.978 You know, there's nothing,

NOTE Confidence: 0.846810849411765

00:54:13.978 --> 00:54:15.795 nothing better than looking

NOTE Confidence: 0.846810849411765

00:54:15.795 --> 00:54:17.625 at what happens in real time

NOTE Confidence: 0.846810849411765

00:54:17.625 --> 00:54:18.540 for these physiological

NOTE Confidence: 0.767272578263158

00:54:18.550 --> 00:54:20.026 studies, especially if you're

NOTE Confidence: 0.767272578263158

00:54:20.026 --> 00:54:21.502 getting a relatively clean

NOTE Confidence: 0.767272578263158

00:54:21.502 --> 00:54:23.467 patient that doesn't have a lot

NOTE Confidence: 0.767272578263158

00:54:23.467 --> 00:54:24.922 of combat conditions that are,

NOTE Confidence: 0.767272578263158

00:54:24.930 --> 00:54:28.430 you know, have frankly developed.

NOTE Confidence: 0.767272578263158

00:54:28.430 --> 00:54:29.822 Um, that'd be fantastic.

NOTE Confidence: 0.767272578263158

00:54:29.822 --> 00:54:32.210 But it it would just be it.

NOTE Confidence: 0.767272578263158

00:54:32.210 --> 00:54:33.298 It'd be, you know.

NOTE Confidence: 0.877763865

00:54:36.240 --> 00:54:38.136 I mean, yeah, go ahead.

NOTE Confidence: 0.877763865

00:54:38.136 --> 00:54:39.620 I mean even even for those with

NOTE Confidence: 0.851992766923077

00:54:39.670 --> 00:54:41.380 diastolic dysfunction or, you know,

NOTE Confidence: 0.851992766923077

00:54:41.380 --> 00:54:43.072 have that, for example, you know,

NOTE Confidence: 0.851992766923077

00:54:43.072 --> 00:54:44.740 you have an acute change in.

NOTE Confidence: 0.851992766923077

00:54:44.740 --> 00:54:47.332 Absolutely. And and treatment and

NOTE Confidence: 0.851992766923077

00:54:47.332 --> 00:54:48.820 so that that's just one thought.

NOTE Confidence: 0.851992766923077

00:54:48.820 --> 00:54:50.205 I was wondering whether that's

NOTE Confidence: 0.851992766923077

00:54:50.205 --> 00:54:52.146 happened before and so and also for

NOTE Confidence: 0.851992766923077

00:54:52.146 --> 00:54:54.470 the case that you presented kudos for

NOTE Confidence: 0.851992766923077

00:54:54.470 --> 00:54:58.215 for sticking to your guns and not.

NOTE Confidence: 0.851992766923077

00:54:58.220 --> 00:55:00.089 Now get back to phase dilator therapy.

NOTE Confidence: 0.7420131935

00:55:02.370 --> 00:55:03.552 That it's a it's interesting I
NOTE Confidence: 0.7420131935

00:55:03.552 --> 00:55:05.118 mean it's sort of hard you may not
NOTE Confidence: 0.7420131935

00:55:05.118 --> 00:55:06.300 for a lot of these patients. I
NOTE Confidence: 0.911725923636364

00:55:06.310 --> 00:55:07.696 wonder if we may not be
NOTE Confidence: 0.911725923636364

00:55:07.696 --> 00:55:08.890 able to dissect you know
NOTE Confidence: 0.95451569

00:55:08.900 --> 00:55:12.392 how much of this is sleep apnea how
NOTE Confidence: 0.95451569

00:55:12.392 --> 00:55:14.524 much of this is you know obesity and
NOTE Confidence: 0.95451569

00:55:14.524 --> 00:55:16.390 diastolic and have death type situation
NOTE Confidence: 0.95451569

00:55:16.390 --> 00:55:19.195 because oftentimes I mean they they
NOTE Confidence: 0.95451569

00:55:19.195 --> 00:55:21.020 just comes this together right.
NOTE Confidence: 0.84862763

00:55:21.030 --> 00:55:24.018 Yeah you know in that case what I was
NOTE Confidence: 0.84862763

00:55:24.018 --> 00:55:26.246 able to do with risk calculators for pH
NOTE Confidence: 0.84862763

00:55:26.246 --> 00:55:28.259 and I was able to demonstrate that her,
NOTE Confidence: 0.84862763

00:55:28.260 --> 00:55:30.030 her risk wasn't dramatically high
NOTE Confidence: 0.84862763

00:55:30.030 --> 00:55:32.580 and you know with her functional.
NOTE Confidence: 0.84862763

00:55:32.580 --> 00:55:34.502 At us being what it was. Yeah.

NOTE Confidence: 0.84862763

00:55:34.502 --> 00:55:35.830 People felt comfortable discharged

NOTE Confidence: 0.84862763

00:55:35.830 --> 00:55:37.801 because I was a consultant, right.

NOTE Confidence: 0.84862763

00:55:37.801 --> 00:55:39.978 Like they they I wasn't making the

NOTE Confidence: 0.84862763

00:55:39.978 --> 00:55:42.507 call on her leaving the medical ward.

NOTE Confidence: 0.84862763

00:55:42.510 --> 00:55:46.848 But I think people saw her walking around and

NOTE Confidence: 0.84862763

00:55:46.850 --> 00:55:49.050 lots of very good and they said OK you know,

NOTE Confidence: 0.84862763

00:55:49.050 --> 00:55:51.570 as long as she's got follow up and uses the

NOTE Confidence: 0.84862763

00:55:51.635 --> 00:55:54.054 mask and it's on you then then go right

NOTE Confidence: 0.787100874

00:55:54.070 --> 00:55:57.490 ahead. So. So all right, sounds good.

NOTE Confidence: 0.787100874

00:55:57.490 --> 00:55:59.835 And so here's a clinical question unless

NOTE Confidence: 0.787100874

00:55:59.835 --> 00:56:01.651 let's see are there any questions

NOTE Confidence: 0.787100874

00:56:01.651 --> 00:56:03.609 down in the chat? Not quite yet.

NOTE Confidence: 0.787100874

00:56:03.609 --> 00:56:05.246 And so I guess the clinical

NOTE Confidence: 0.787100874

00:56:05.246 --> 00:56:06.990 question is when you see patients

NOTE Confidence: 0.787100874

00:56:06.990 --> 00:56:09.389 with pH who are at risk for OSA,

NOTE Confidence: 0.787100874

00:56:09.390 --> 00:56:11.196 do you send them to sleep docs in
NOTE Confidence: 0.787100874

00:56:11.196 --> 00:56:12.700 hopes of improving their pH or you
NOTE Confidence: 0.787100874

00:56:12.700 --> 00:56:14.329 just send them to sleep docs because
NOTE Confidence: 0.787100874

00:56:14.329 --> 00:56:15.799 they should see a sleep period?
NOTE Confidence: 0.84508714

00:56:17.700 --> 00:56:20.176 Mostly the latter. I mean, I just,
NOTE Confidence: 0.84508714

00:56:20.176 --> 00:56:25.420 you know, I care most about. Uh.
NOTE Confidence: 0.84508714

00:56:25.420 --> 00:56:27.394 The data would suggest that the big
NOTE Confidence: 0.84508714

00:56:27.394 --> 00:56:28.946 drivers are the nocturnal hypoxemia
NOTE Confidence: 0.84508714

00:56:28.946 --> 00:56:31.514 and so as long as that gets addressed,
NOTE Confidence: 0.84508714

00:56:31.520 --> 00:56:36.984 I feel good. But there's no way that.
NOTE Confidence: 0.84508714

00:56:36.990 --> 00:56:39.202 Apnic and obstructive episodes
NOTE Confidence: 0.84508714

00:56:39.202 --> 00:56:44.318 are good, and so I.
NOTE Confidence: 0.84508714

00:56:44.320 --> 00:56:47.880 I sent them for for for both reasons.
NOTE Confidence: 0.84508714

00:56:47.880 --> 00:56:49.760 And I feel fairly comfortable
NOTE Confidence: 0.84508714

00:56:49.760 --> 00:56:51.640 reading them the riot act.
NOTE Confidence: 0.84508714

00:56:51.640 --> 00:56:53.020 And if they, you know,

NOTE Confidence: 0.84508714

00:56:53.020 --> 00:56:54.964 trust you when it comes to managing their pH,

NOTE Confidence: 0.84508714

00:56:54.970 --> 00:56:55.978 then they'll, they'll listen to you.

NOTE Confidence: 0.84508714

00:56:55.980 --> 00:56:58.206 When it comes to sort of the

NOTE Confidence: 0.84508714

00:56:58.206 --> 00:56:59.460 consequences of untreated OSA,

NOTE Confidence: 0.84508714

00:56:59.460 --> 00:57:01.540 I do have a handful of patients that

NOTE Confidence: 0.84508714

00:57:01.540 --> 00:57:03.288 just can't tolerate PAP therapy,

NOTE Confidence: 0.84508714

00:57:03.290 --> 00:57:04.616 but they've all made an effort.

NOTE Confidence: 0.809980507

00:57:08.660 --> 00:57:11.850 And I I I hold the record for a for.

NOTE Confidence: 0.809980507

00:57:11.850 --> 00:57:13.770 The highest fraction of patients

NOTE Confidence: 0.809980507

00:57:13.770 --> 00:57:16.025 referred to the Sleep Lab with

NOTE Confidence: 0.809980507

00:57:16.025 --> 00:57:17.960 BMI is less than 30 because of.

NOTE Confidence: 0.935295006

00:57:21.100 --> 00:57:22.356 Very good, very good.

NOTE Confidence: 0.935295006

00:57:22.356 --> 00:57:23.720 Alright, well, thank you so much.

NOTE Confidence: 0.935295006

00:57:23.720 --> 00:57:28.580 Great talk, very important area and.

NOTE Confidence: 0.935295006

00:57:28.580 --> 00:57:29.270 Good discussion.

NOTE Confidence: 0.935295006

00:57:29.270 --> 00:57:30.995 Good to see you everybody.

NOTE Confidence: 0.935295006

00:57:31.000 --> 00:57:31.864 And we are gonna,

NOTE Confidence: 0.935295006

00:57:31.864 --> 00:57:33.527 most of us are going to head

NOTE Confidence: 0.935295006

00:57:33.527 --> 00:57:35.057 over to the pulmonary critical

NOTE Confidence: 0.935295006

00:57:35.057 --> 00:57:36.710 care and sleep messing around.

NOTE Confidence: 0.935295006

00:57:36.710 --> 00:57:38.230 And so we'll see you next week everyone.

NOTE Confidence: 0.935295006

00:57:38.230 --> 00:57:39.610 Thanks very much for participating.

NOTE Confidence: 0.935295006

00:57:39.800 --> 00:57:40.650 Take care.