WEBVTT

NOTE duration:"00:58:25"

NOTE recognizability:0.834

NOTE language:en-us

NOTE Confidence: 0.895208558

00:00:00.000 --> 00:00:02.635 OK. So good afternoon everyone,

NOTE Confidence: 0.895208558

00:00:02.635 --> 00:00:05.270 and welcome to sleep seminar.

NOTE Confidence: 0.895208558

00:00:05.270 --> 00:00:07.258 So just as a reminder of these

NOTE Confidence: 0.895208558

00:00:07.258 --> 00:00:08.732 lectures are available for CME

NOTE Confidence: 0.895208558

00:00:08.732 --> 00:00:10.147 credit and to receive credit,

NOTE Confidence: 0.895208558

00:00:10.150 --> 00:00:11.428 please just text the ID for

NOTE Confidence: 0.895208558

00:00:11.428 --> 00:00:12.600 the lecture to Yale Cloud.

NOTE Confidence: 0.895208558

00:00:12.600 --> 00:00:15.588 CME needs to go in by 3:15 PM today,

NOTE Confidence: 0.895208558

00:00:15.590 --> 00:00:17.705 and if you don't catch it on the slide,

NOTE Confidence: 0.895208558

00:00:17.710 --> 00:00:19.630 it will show up in the chat later.

NOTE Confidence: 0.895208558

00:00:19.630 --> 00:00:21.025 Recordings of the lecture are

NOTE Confidence: 0.895208558

00:00:21.025 --> 00:00:22.420 available within two weeks at

NOTE Confidence: 0.895208558

00:00:22.471 --> 00:00:23.749 the site noted in the chat.

NOTE Confidence: 0.895208558

00:00:23.750 --> 00:00:25.558 And if you have questions during the talk,

NOTE Confidence: 0.895208558

00:00:25.560 --> 00:00:26.560 you will be muted.

NOTE Confidence: 0.895208558

00:00:26.560 --> 00:00:28.688 So use the chat feature and we'll address

NOTE Confidence: 0.895208558

00:00:28.688 --> 00:00:31.230 them at the end or otherwise I'll give you.

NOTE Confidence: 0.895208558

00:00:31.230 --> 00:00:33.435 Permission to unmute yourself at the end

NOTE Confidence: 0.895208558

00:00:33.440 --> 00:00:35.376 as far as upcoming events for next month.

NOTE Confidence: 0.895208558

00:00:35.380 --> 00:00:38.075 Next week, Michael Grandner will be speaking.

NOTE Confidence: 0.895208558

00:00:38.080 --> 00:00:39.970 He'll be talking about behavioral measures

NOTE Confidence: 0.895208558

00:00:39.970 --> 00:00:41.880 to optimize sleep for performance.

NOTE Confidence: 0.895208558

00:00:41.880 --> 00:00:43.994 You can feel free to share these

NOTE Confidence: 0.895208558

00:00:43.994 --> 00:00:45.681 lectures widely with colleagues as

NOTE Confidence: 0.895208558

00:00:45.681 --> 00:00:47.476 invitations and just e-mail Debbie

NOTE Confidence: 0.895208558

00:00:47.476 --> 00:00:49.809 Lovejoy if you have if you need

NOTE Confidence: 0.895208558

00:00:49.809 --> 00:00:51.299 to schedule for this semester.

NOTE Confidence: 0.895208558

00:00:51.300 --> 00:00:53.316 So it is my pleasure now to introduce

NOTE Confidence: 0.895208558

00:00:53.316 --> 00:00:54.659 today's sleep seminar speaker,

NOTE Confidence: 0.895208558

00:00:54.660 --> 00:00:55.812 Doctor Shannon Sullivan.

NOTE Confidence: 0.895208558

00:00:55.812 --> 00:00:58.500 Dr Sullivan is a clinical professor in

NOTE Confidence: 0.895208558

00:00:58.564 --> 00:01:00.759 the Division of Pediatric pulmonary,

NOTE Confidence: 0.895208558

00:01:00.760 --> 00:01:01.738 asthma and sleep.

NOTE Confidence: 0.895208558

00:01:01.738 --> 00:01:03.368 Person in the Department of

NOTE Confidence: 0.895208558

00:01:03.368 --> 00:01:05.179 Pediatrics at Stanford University.

NOTE Confidence: 0.895208558

00:01:05.180 --> 00:01:05.519 Additionally,

NOTE Confidence: 0.895208558

00:01:05.519 --> 00:01:07.892 she has a courtesy appointment in the

NOTE Confidence: 0.895208558

00:01:07.892 --> 00:01:10.078 Division of Sleep Medicine at Stanford.

NOTE Confidence: 0.895208558

00:01:10.080 --> 00:01:11.420 Doctor Sullivan received her

NOTE Confidence: 0.895208558

00:01:11.420 --> 00:01:13.095 MD from University of Michigan,

NOTE Confidence: 0.895208558

00:01:13.100 --> 00:01:15.116 and while there she also did

NOTE Confidence: 0.895208558

00:01:15.116 --> 00:01:16.460 additional training in epidemiology

NOTE Confidence: 0.895208558

00:01:16.519 --> 00:01:18.094 at the University of Michigan

NOTE Confidence: 0.895208558

00:01:18.094 --> 00:01:19.354 School of Public Health.

NOTE Confidence: 0.895208558

00:01:19.360 --> 00:01:20.920 She moved to University of California,

NOTE Confidence: 0.895208558

00:01:20.920 --> 00:01:23.632 San Francisco for both pediatric residency

NOTE Confidence: 0.895208558

00:01:23.632 --> 00:01:25.440 and Pediatric Pulmonology Fellowship.

NOTE Confidence: 0.895208558

00:01:25.440 --> 00:01:27.070 She then completed a fellowship

NOTE Confidence: 0.895208558

00:01:27.070 --> 00:01:28.700 in Sleep Medicine at Stanford.

NOTE Confidence: 0.895208558

00:01:28.700 --> 00:01:31.161 She joined the faculty at Stanford in 2008

NOTE Confidence: 0.895208558

00:01:31.161 --> 00:01:33.478 and is now clinical professor in Pediatrics,

NOTE Confidence: 0.895208558

00:01:33.480 --> 00:01:35.244 and she's also a clinical science team

NOTE Confidence: 0.895208558

00:01:35.244 --> 00:01:37.158 lead of the Baseline Health study.

NOTE Confidence: 0.895208558

00:01:37.160 --> 00:01:38.755 She served as medical director

NOTE Confidence: 0.895208558

00:01:38.755 --> 00:01:40.350 of the Eval Research Institute.

NOTE Confidence: 0.895208558

00:01:40.350 --> 00:01:41.346 On Palo Alto,

NOTE Confidence: 0.895208558

00:01:41.346 --> 00:01:43.006 and she previously served as

NOTE Confidence: 0.895208558

00:01:43.006 --> 00:01:44.938 program director for the Stanford

NOTE Confidence: 0.895208558

00:01:44.938 --> 00:01:46.147 Sleep Medicine Fellowship.

NOTE Confidence: 0.895208558

00:01:46.150 --> 00:01:48.178 She is an active member of

NOTE Confidence: 0.895208558

00:01:48.178 --> 00:01:48.854 multiple organizations,

NOTE Confidence: 0.895208558

00:01:48.860 --> 00:01:49.606 including ETS,

NOTE Confidence: 0.895208558

00:01:49.606 --> 00:01:51.471 American Academy of Sleep Medicine

NOTE Confidence: 0.895208558

00:01:51.471 --> 00:01:53.250 and National Sleep Foundation,

NOTE Confidence: 0.895208558

00:01:53.250 --> 00:01:56.148 and among her many service contributions.

NOTE Confidence: 0.895208558

00:01:56.150 --> 00:01:58.369 She recently served as vice chair of

NOTE Confidence: 0.895208558

00:01:58.369 --> 00:02:00.526 the ASM COVID-19 Task Force and Chair

NOTE Confidence: 0.895208558

00:02:00.526 --> 00:02:02.830 of the ASM Public Safety Committee,

NOTE Confidence: 0.895208558

00:02:02.830 --> 00:02:04.867 and she has an active role on

NOTE Confidence: 0.895208558

00:02:04.867 --> 00:02:06.188 the National Foundation Sleep

NOTE Confidence: 0.895208558

00:02:06.188 --> 00:02:07.728 Health Technology Task Force.

NOTE Confidence: 0.895208558

00:02:07.730 --> 00:02:10.005 She's been Pi on numerous clinical studies,

NOTE Confidence: 0.895208558

00:02:10.010 --> 00:02:10.564 including.

NOTE Confidence: 0.895208558

00:02:10.564 --> 00:02:11.672 Diverse studies,

NOTE Confidence: 0.895208558

00:02:11.672 --> 00:02:14.996 novel medications for patients with insomnia,

NOTE Confidence: 0.895208558

00:02:15.000 --> 00:02:16.965 assessment of sleep education programs

NOTE Confidence: 0.895208558

00:02:16.965 --> 00:02:19.356 and importantly for this talk home

NOTE Confidence: 0.895208558

00:02:19.356 --> 00:02:21.151 based early detection of disrupted

NOTE Confidence: 0.895208558

00:02:21.151 --> 00:02:23.457 sleep in children with risk factors

NOTE Confidence: 0.895208558

00:02:23.457 --> 00:02:25.077 for sleep disorder breathing.

NOTE Confidence: 0.895208558

00:02:25.080 --> 00:02:26.778 Her work has been published in

NOTE Confidence: 0.895208558

00:02:26.778 --> 00:02:27.910 diverse journals including Journal

NOTE Confidence: 0.895208558

00:02:27.961 --> 00:02:29.137 of Clinical Sleep Medicine,

NOTE Confidence: 0.895208558

00:02:29.140 --> 00:02:31.144 Respiratory Care, Chest Neurology,

NOTE Confidence: 0.895208558

00:02:31.144 --> 00:02:32.647 Lancet respiratory Medicine,

NOTE Confidence: 0.895208558

00:02:32.650 --> 00:02:34.880 Sleep Medicine Reviews and others.

NOTE Confidence: 0.895208558

00:02:34.880 --> 00:02:37.036 So I am really pleased that doctor

NOTE Confidence: 0.895208558

00:02:37.036 --> 00:02:39.188 Sullivan is joining us today to discuss

NOTE Confidence: 0.895208558

00:02:39.188 --> 00:02:41.340 I think an important and timely topic.

NOTE Confidence: 0.895208558

00:02:41.340 --> 00:02:42.200 The best of times.

NOTE Confidence: 0.895208558

00:02:42.200 --> 00:02:43.060 The worst of times.

NOTE Confidence: 0.895208558

00:02:43.060 --> 00:02:45.300 Advances in remote assessments in

NOTE Confidence: 0.895208558

00:02:45.300 --> 00:02:46.196 pediatric sleep.

NOTE Confidence: 0.895208558

00:02:46.200 --> 00:02:46.840 So welcome,

NOTE Confidence: 0.895208558

00:02:46.840 --> 00:02:47.480 doctor Sullivan.

NOTE Confidence: 0.897215905

00:02:48.750 --> 00:02:50.242 Thanks so much, Janet.

NOTE Confidence: 0.897215905

00:02:50.242 --> 00:02:52.166 And I'm, I'm so happy to be here.

NOTE Confidence: 0.897215905

00:02:52.170 --> 00:02:54.172 Thank you for inviting me and I

NOTE Confidence: 0.897215905

00:02:54.172 --> 00:02:56.040 look forward to having some time

NOTE Confidence: 0.897215905

00:02:56.040 --> 00:02:57.936 for discussion at the end because

NOTE Confidence: 0.897215905

00:02:57.936 --> 00:03:00.662 I think this is an area that often

NOTE Confidence: 0.897215905

00:03:00.662 --> 00:03:02.990 generates quite a bit of discussion.

NOTE Confidence: 0.897215905

00:03:02.990 --> 00:03:05.363 So without further ado here is the

NOTE Confidence: 0.897215905

00:03:05.363 --> 00:03:07.340 CME disclosure and accreditation,

NOTE Confidence: 0.897215905

00:03:07.340 --> 00:03:10.444 there is the number of the text number

NOTE Confidence: 0.897215905

00:03:10.450 --> 00:03:12.256 34106 and I think Janet promised

NOTE Confidence: 0.897215905

00:03:12.256 --> 00:03:14.378 to or Debbie promised to post this

NOTE Confidence: 0.897215905

00:03:14.378 --> 00:03:16.088 number a few additional times and

NOTE Confidence: 0.897215905

00:03:16.088 --> 00:03:18.075 I'll have it again at the end so

NOTE Confidence: 0.897215905

00:03:18.075 --> 00:03:19.905 that semi credit can be claimed.

NOTE Confidence: 0.897215905

00:03:19.910 --> 00:03:22.674 I do not have any qualifying COI,

NOTE Confidence: 0.897215905

00:03:22.674 --> 00:03:25.730 but I did want to point out that

NOTE Confidence: 0.897215905

00:03:25.814 --> 00:03:26.929 I do act as a.

NOTE Confidence: 0.897215905

00:03:26.930 --> 00:03:28.470 The consultant and work with

NOTE Confidence: 0.897215905

00:03:28.470 --> 00:03:29.394 fairly Life Sciences,

NOTE Confidence: 0.897215905

00:03:29.400 --> 00:03:31.250 as mentioned on the Project

NOTE Confidence: 0.897215905

00:03:31.250 --> 00:03:32.360 Baseline Health study,

NOTE Confidence: 0.897215905

00:03:32.360 --> 00:03:33.836 and the credit for the title of my talk,

NOTE Confidence: 0.897215905

00:03:33.840 --> 00:03:35.640 of course, is Charles Dickens.

NOTE Confidence: 0.897215905

00:03:35.640 --> 00:03:36.678 It was the best of times.

NOTE Confidence: 0.897215905

00:03:36.680 --> 00:03:37.778 It was the worst of times,

NOTE Confidence: 0.897215905

00:03:37.780 --> 00:03:40.318 the age of wisdom and the age of foolishness.

NOTE Confidence: 0.897215905

00:03:40.320 --> 00:03:41.718 It was the epoch of belief.

NOTE Confidence: 0.897215905

00:03:41.720 --> 00:03:43.328 It was the epoch of incredulity,

NOTE Confidence: 0.897215905

00:03:43.330 --> 00:03:45.600 incredulity, the season of light,

NOTE Confidence: 0.897215905

00:03:45.600 --> 00:03:46.912 the season of darkness.

NOTE Confidence: 0.897215905

00:03:46.912 --> 00:03:49.288 It was the spring of hope in

NOTE Confidence: 0.897215905

00:03:49.288 --> 00:03:50.628 the winter of despair.

NOTE Confidence: 0.897215905

00:03:50.630 --> 00:03:52.448 We'll loop back around to that.

NOTE Confidence: 0.897215905

00:03:52.450 --> 00:03:54.178 So I just to kind of set the

NOTE Confidence: 0.897215905

00:03:54.178 --> 00:03:55.930 stage a little bit for what

NOTE Confidence: 0.897215905

00:03:55.930 --> 00:03:57.808 we're going to be talking about.

NOTE Confidence: 0.897215905

00:03:57.810 --> 00:04:01.184 I wanted to point to this article

NOTE Confidence: 0.897215905

00:04:01.190 --> 00:04:03.254 published last December by a number

NOTE Confidence: 0.897215905

00:04:03.254 --> 00:04:05.279 of our pediatric Sleep Medicine

NOTE Confidence: 0.897215905

00:04:05.279 --> 00:04:07.607 colleagues entitled Uncharted Territory,

NOTE Confidence: 0.897215905

00:04:07.610 --> 00:04:09.110 The Challenges and Opportunities

NOTE Confidence: 0.897215905

00:04:09.110 --> 00:04:10.985 in Pediatric Sleep Medicine during

NOTE Confidence: 0.897215905

00:04:10.985 --> 00:04:12.949 the COVID-19 pandemic and beyond.

NOTE Confidence: 0.897215905

00:04:12.950 --> 00:04:15.995 And table one in this article is

NOTE Confidence: 0.897215905

00:04:15.995 --> 00:04:17.994 around opportunities and considerations

NOTE Confidence: 0.897215905

00:04:17.994 --> 00:04:20.438 for pediatric sleep labs.

NOTE Confidence: 0.897215905

00:04:20.440 --> 00:04:22.690 In the world after the pandemic

NOTE Confidence: 0.897215905

00:04:22.690 --> 00:04:24.607 and among the opportunities and

NOTE Confidence: 0.897215905

00:04:24.607 --> 00:04:25.983 considerations are listed the

NOTE Confidence: 0.897215905

00:04:25.983 --> 00:04:28.340 use of auto CPAP for children,

NOTE Confidence: 0.897215905

00:04:28.340 --> 00:04:29.820 which we'll touch on briefly,

NOTE Confidence: 0.897215905

00:04:29.820 --> 00:04:31.620 and home sleep studies for selected

NOTE Confidence: 0.897215905

00:04:31.620 --> 00:04:33.500 groups of children and adolescents.

NOTE Confidence: 0.897215905

00:04:33.500 --> 00:04:35.054 And I wanted to dive a little

NOTE Confidence: 0.897215905

00:04:35.054 --> 00:04:36.020 bit deeper into that.

NOTE Confidence: 0.897215905

00:04:36.020 --> 00:04:37.244 As you mentioned,

NOTE Confidence: 0.897215905

00:04:37.244 --> 00:04:37.652 Janet,

NOTE Confidence: 0.897215905

00:04:37.652 --> 00:04:40.420 I served as Vice Chair and the

NOTE Confidence: 0.897215905

00:04:40.420 --> 00:04:42.364 COVID-19 task force at the American

NOTE Confidence: 0.897215905

00:04:42.364 --> 00:04:43.660 Academy of Sleep Medicine.

NOTE Confidence: 0.897215905

00:04:43.660 --> 00:04:45.996 And we and we thought a lot about.

NOTE Confidence: 0.897215905

00:04:46.000 --> 00:04:50.565 How to adapt in real time as as the

NOTE Confidence: 0.897215905

00:04:50.565 --> 00:04:53.340 COVID-19 pandemic presented new challenges.

NOTE Confidence: 0.897215905

00:04:53.340 --> 00:04:54.309 But you know,

NOTE Confidence: 0.897215905

00:04:54.309 --> 00:04:55.601 with respect to that

NOTE Confidence: 0.897215905

00:04:55.601 --> 00:04:57.200 article from last December,

NOTE Confidence: 0.897215905

00:04:57.200 --> 00:04:59.244 we have to remember that the Academy

NOTE Confidence: 0.897215905

00:04:59.244 --> 00:05:01.402 has a position paper from 2017 that

NOTE Confidence: 0.897215905

00:05:01.402 --> 00:05:03.007 really pretty clearly states that

NOTE Confidence: 0.897215905

00:05:03.007 --> 00:05:05.491 the use of home sleep apnea testing

NOTE Confidence: 0.897215905

00:05:05.491 --> 00:05:07.669 is not recommended for the diagnosis

NOTE Confidence: 0.897215905

00:05:07.735 --> 00:05:10.057 of obstructive sleep apnea in children.

NOTE Confidence: 0.897215905

00:05:10.060 --> 00:05:11.220 Now bear in mind,

NOTE Confidence: 0.897215905

00:05:11.220 --> 00:05:12.960 even though the door seems fairly

NOTE Confidence: 0.897215905

00:05:13.023 --> 00:05:14.958 well closed from that perspective,

NOTE Confidence: 0.897215905

00:05:14.960 --> 00:05:16.420 it's left open a little.

NOTE Confidence: 0.897215905

00:05:16.420 --> 00:05:19.846 Track because this particular position paper,

NOTE Confidence: 0.897215905

00:05:19.850 --> 00:05:21.190 like money from the Academy,

NOTE Confidence: 0.897215905

00:05:21.190 --> 00:05:22.765 states that the ultimate judgment

NOTE Confidence: 0.897215905

00:05:22.765 --> 00:05:24.340 regarding any specific care must

NOTE Confidence: 0.897215905

00:05:24.387 --> 00:05:26.088 be made by the clinician in light

NOTE Confidence: 0.897215905

00:05:26.088 --> 00:05:27.241 of the individual circumstances

NOTE Confidence: 0.897215905

00:05:27.241 --> 00:05:28.729 presented by the patient,

NOTE Confidence: 0.897215905

00:05:28.730 --> 00:05:30.335 available diagnostic tools,

NOTE Confidence: 0.897215905

00:05:30.335 --> 00:05:33.010 accessible treatment options and resources.

NOTE Confidence: 0.897215905

00:05:33.010 --> 00:05:33.820 And on top of that,

NOTE Confidence: 0.897215905

00:05:33.820 --> 00:05:36.188 you see that same sort of thinking in

NOTE Confidence: 0.897215905

00:05:36.188 --> 00:05:38.664 the IRS guidelines that were published

NOTE Confidence: 0.897215905

00:05:38.664 --> 00:05:41.388 the year before that Academy position,

NOTE Confidence: 0.803315155

00:05:41.390 --> 00:05:42.978 which stated that alternative

NOTE Confidence: 0.803315155

00:05:42.978 --> 00:05:44.963 methods might be considered for

NOTE Confidence: 0.803315155

00:05:44.963 --> 00:05:47.256 use and when PSG is not available.

NOTE Confidence: 0.803315155

00:05:47.260 --> 00:05:49.250 And that home or respiratory

NOTE Confidence: 0.803315155

00:05:49.250 --> 00:05:51.661 polygraphy is feasible and has been

NOTE Confidence: 0.803315155

00:05:51.661 --> 00:05:54.139 used as an alternative to inland PSG.

NOTE Confidence: 0.803315155

00:05:54.140 --> 00:05:55.736 A couple of important things about

NOTE Confidence: 0.803315155

00:05:55.736 --> 00:05:57.088 this particular set of guidelines

NOTE Confidence: 0.803315155

00:05:57.088 --> 00:05:58.726 and which we which I would love

NOTE Confidence: 0.803315155

00:05:58.726 --> 00:06:00.176 to talk about in the discussion

NOTE Confidence: 0.803315155

00:06:00.176 --> 00:06:02.296 because I don't have a lot on it

NOTE Confidence: 0.803315155

00:06:02.296 --> 00:06:04.802 in this talk is the referencing of

NOTE Confidence: 0.803315155

00:06:04.802 --> 00:06:07.060 clinical validated clinical tools,

NOTE Confidence: 0.803315155

00:06:07.060 --> 00:06:09.478 questionnaires and that sort of thing

NOTE Confidence: 0.803315155

00:06:09.478 --> 00:06:11.895 in combination with home testing which

NOTE Confidence: 0.803315155

00:06:11.895 --> 00:06:14.485 I think is really a really interesting

NOTE Confidence: 0.803315155

00:06:14.485 --> 00:06:17.326 area for study and and the IRS guidelines.

NOTE Confidence: 0.803315155

00:06:17.330 --> 00:06:18.850 Mentioned both the PSQ,

NOTE Confidence: 0.803315155

00:06:18.850 --> 00:06:20.750 the Pediatric Sleep Questionnaire as

NOTE Confidence: 0.803315155

00:06:20.750 --> 00:06:22.888 well as the sleep clinical record.

NOTE Confidence: 0.803315155

00:06:22.890 --> 00:06:25.674 Now, what are the kind of core concerns

NOTE Confidence: 0.803315155

00:06:25.674 --> 00:06:27.768 related to home sleep testing?

NOTE Confidence: 0.803315155

00:06:27.770 --> 00:06:29.130 Home sleep apnea testing,

NOTE Confidence: 0.803315155

00:06:29.130 --> 00:06:30.570 excuse me, in children?

NOTE Confidence: 0.803315155

00:06:30.570 --> 00:06:32.090 Well, there's a number.

NOTE Confidence: 0.803315155

00:06:32.090 --> 00:06:34.726 This again is from the 2017 Academy

NOTE Confidence: 0.803315155

00:06:34.726 --> 00:06:36.816 publication that lists out ideal

NOTE Confidence: 0.803315155

00:06:36.816 --> 00:06:39.419 home sleep apnea testing parameters.

NOTE Confidence: 0.803315155

00:06:39.420 --> 00:06:41.640 Those include things like the ability

NOTE Confidence: 0.803315155

00:06:41.640 --> 00:06:43.490 to estimate total sleep time,

NOTE Confidence: 0.803315155

00:06:43.490 --> 00:06:45.342 arousal identification, I e.g,

NOTE Confidence: 0.803315155

00:06:45.342 --> 00:06:50.128 as well as a number of other typical sensors,

NOTE Confidence: 0.803315155

00:06:50.130 --> 00:06:53.739 and as you know, a lot of Level 3.

NOTE Confidence: 0.803315155

00:06:53.740 --> 00:06:58.198 Um home sleep apnea testing equipment

NOTE Confidence: 0.803315155

00:06:58.200 --> 00:07:01.590 types really don't have these the

NOTE Confidence: 0.803315155

00:07:01.590 --> 00:07:03.930 ability to measure these ideal parameters.

NOTE Confidence: 0.803315155

00:07:03.930 --> 00:07:05.950 So I think lack of EEG is one of the

NOTE Confidence: 0.803315155

00:07:06.015 --> 00:07:08.100 more important things that's missing.

NOTE Confidence: 0.803315155

00:07:08.100 --> 00:07:10.249 This is needed to score arousals and

NOTE Confidence: 0.803315155

00:07:10.249 --> 00:07:11.910 arousals of course are important

NOTE Confidence: 0.803315155

00:07:11.910 --> 00:07:13.950 in Pediatrics for our definition of

NOTE Confidence: 0.803315155

00:07:13.950 --> 00:07:15.979 hypopnea as well as central apneas.

NOTE Confidence: 0.803315155

00:07:15.980 --> 00:07:16.792 Very importantly,

NOTE Confidence: 0.803315155

00:07:16.792 --> 00:07:19.228 total recording time is not the

NOTE Confidence: 0.803315155

00:07:19.228 --> 00:07:21.567 same thing as total sleep time and

NOTE Confidence: 0.803315155

00:07:21.567 --> 00:07:23.770 on on many types of equipment.

NOTE Confidence: 0.803315155

00:07:23.770 --> 00:07:26.283 Used for Level 3 home sleep apnea

NOTE Confidence: 0.803315155

00:07:26.283 --> 00:07:28.690 test is just isn't available.

NOTE Confidence: 0.803315155

00:07:28.690 --> 00:07:30.500 You really can't readily identify

NOTE Confidence: 0.803315155

00:07:30.500 --> 00:07:32.310 hypoventilation which is another important

NOTE Confidence: 0.803315155

00:07:32.363 --> 00:07:34.053 characteristic for many children who

NOTE Confidence: 0.803315155

00:07:34.053 --> 00:07:35.743 may have sleep disorder breathing.

NOTE Confidence: 0.803315155

00:07:35.750 --> 00:07:37.358 And finally and importantly and where

NOTE Confidence: 0.803315155

00:07:37.358 --> 00:07:39.453 I will spend a little bit of time

NOTE Confidence: 0.803315155

00:07:39.453 --> 00:07:41.240 is that we really don't know what

NOTE Confidence: 0.803315155

00:07:41.240 --> 00:07:43.550 the correct cutoff should be on on

NOTE Confidence: 0.803315155

00:07:43.550 --> 00:07:45.410 these different types of equipment.

NOTE Confidence: 0.803315155

00:07:45.410 --> 00:07:47.060 And it might vary between brands

NOTE Confidence: 0.803315155

00:07:47.060 --> 00:07:49.144 and it might vary between the type

NOTE Confidence: 0.803315155

00:07:49.144 --> 00:07:50.992 of patient that that you're testing

NOTE Confidence: 0.803315155

00:07:50.992 --> 00:07:53.046 and we really don't have a sense

NOTE Confidence: 0.803315155

00:07:53.046 --> 00:07:54.606 of algorithms for use. When?

NOTE Confidence: 0.803315155

00:07:54.606 --> 00:07:55.914 What's the what?

NOTE Confidence: 0.803315155

00:07:55.914 --> 00:07:59.090 What's the right scenario to use it in?

NOTE Confidence: 0.803315155

00:07:59.090 --> 00:08:00.502 I think additional concerns

NOTE Confidence: 0.803315155

00:08:00.502 --> 00:08:01.208 include feasibility,

NOTE Confidence: 0.803315155

00:08:01.210 --> 00:08:03.070 especially run adequate signal acquisition.

NOTE Confidence: 0.803315155

00:08:03.070 --> 00:08:04.260 We'll talk a little bit about that.

NOTE Confidence: 0.803315155

00:08:04.260 --> 00:08:05.928 And then also for younger children,

NOTE Confidence: 0.803315155

00:08:05.930 --> 00:08:07.674 whether or not the equipment is is safe,

NOTE Confidence: 0.803315155

00:08:07.680 --> 00:08:09.936 there's a lot of wires and one could

NOTE Confidence: 0.803315155

00:08:09.936 --> 00:08:11.621 become wrapped around those wires

NOTE Confidence: 0.803315155

00:08:11.621 --> 00:08:13.391 could become wrapped around an

NOTE Confidence: 0.803315155

00:08:13.391 --> 00:08:15.210 individual and if if not attended.

NOTE Confidence: 0.803315155

00:08:15.210 --> 00:08:17.910 And then finally really incomplete

NOTE Confidence: 0.803315155

00:08:17.910 --> 00:08:20.070 to absent performance testing.

NOTE Confidence: 0.803315155

00:08:20.070 --> 00:08:22.110 I prefer the term terminology

NOTE Confidence: 0.803315155

00:08:22.110 --> 00:08:24.150 performance testing to validation and

NOTE Confidence: 0.803315155

00:08:24.219 --> 00:08:26.324 that's especially true for younger

NOTE Confidence: 0.803315155

00:08:26.324 --> 00:08:28.429 children and it's especially true.

NOTE Confidence: 0.803315155

00:08:28.430 --> 00:08:32.098 For those who have comorbidities that said,

NOTE Confidence: 0.803315155

00:08:32.100 --> 00:08:32.848 you know,

NOTE Confidence: 0.803315155

00:08:32.848 --> 00:08:35.840 by 2017 by the time of that publication,

NOTE Confidence: 0.803315155

00:08:35.840 --> 00:08:37.740 authors did acknowledge that there

NOTE Confidence: 0.803315155

00:08:37.740 --> 00:08:39.950 was some available data and that

NOTE Confidence: 0.803315155

00:08:39.950 --> 00:08:42.984 according to what they had the

NOTE Confidence: 0.803315155

00:08:42.984 --> 00:08:44.200 home sleep apnea testing.

NOTE Confidence: 0.845254715625

00:08:44.200 --> 00:08:46.765 These Level 3 tested tend to perform a little

NOTE Confidence: 0.845254715625

00:08:46.765 --> 00:08:49.146 bit better and more severe sleep apnea.

NOTE Confidence: 0.845254715625

00:08:49.150 --> 00:08:50.890 So given all of that,

NOTE Confidence: 0.845254715625

00:08:50.890 --> 00:08:52.570 that laundry list of concerns,

NOTE Confidence: 0.845254715625

00:08:52.570 --> 00:08:54.943 why would one ever want to consider

NOTE Confidence: 0.845254715625

00:08:54.943 --> 00:08:57.529 home sleep apnea testing and in a child?

NOTE Confidence: 0.845254715625

00:08:57.530 --> 00:08:59.130 While a number of reasons,

NOTE Confidence: 0.845254715625

00:08:59.130 --> 00:09:02.049 I think one we already mentioned briefly,

NOTE Confidence: 0.845254715625

00:09:02.050 --> 00:09:04.228 that was the sort of existential

NOTE Confidence: 0.845254715625

00:09:04.228 --> 00:09:06.770 circumstances brought on by the the pandemic,

NOTE Confidence: 0.845254715625

00:09:06.770 --> 00:09:09.968 but also in lab polysomnography is

NOTE Confidence: 0.845254715625

00:09:09.968 --> 00:09:13.389 expensive and itself it is imperfect,

NOTE Confidence: 0.845254715625

00:09:13.390 --> 00:09:15.820 it's a limited resource and I

NOTE Confidence: 0.845254715625

00:09:15.820 --> 00:09:17.440 think substantial disparities and

NOTE Confidence: 0.845254715625

00:09:17.508 --> 00:09:19.758 access exist and we really haven't.

NOTE Confidence: 0.845254715625

00:09:19.760 --> 00:09:21.470 Um, probably been diligent enough

NOTE Confidence: 0.845254715625

00:09:21.470 --> 00:09:24.068 as a field to understand just how

NOTE Confidence: 0.845254715625

00:09:24.068 --> 00:09:25.720 widespread these disparities are.

NOTE Confidence: 0.845254715625

00:09:25.720 --> 00:09:27.240 I mean, it's shocking there.

NOTE Confidence: 0.845254715625

00:09:27.240 --> 00:09:29.074 I have one study quoted here that

NOTE Confidence: 0.845254715625

00:09:29.074 --> 00:09:31.357 up to 3/4 of children on mainly

NOTE Confidence: 0.845254715625

00:09:31.357 --> 00:09:33.152 public insurance who are referred

NOTE Confidence: 0.845254715625

00:09:33.152 --> 00:09:35.160 for PSG are lost to follow up.

NOTE Confidence: 0.845254715625

00:09:35.160 --> 00:09:37.896 And if the PSG is completed and positive,

NOTE Confidence: 0.845254715625

00:09:37.900 --> 00:09:39.580 it can take twice as long to

NOTE Confidence: 0.845254715625

00:09:39.580 --> 00:09:40.300 obtain treatment afterwards.

NOTE Confidence: 0.845254715625

00:09:40.300 --> 00:09:43.609 I think we have to be aware that this is

NOTE Confidence: 0.845254715625

00:09:43.609 --> 00:09:45.730 a test that just isn't easily available

NOTE Confidence: 0.845254715625

00:09:45.793 --> 00:09:47.713 for everyone and think about what

NOTE Confidence: 0.845254715625

00:09:47.713 --> 00:09:51.470 that means for our work as clinicians.

NOTE Confidence: 0.845254715625

00:09:51.470 --> 00:09:53.388 I also think that first night effects

NOTE Confidence: 0.845254715625

00:09:53.388 --> 00:09:55.674 of night to night variability exist and

NOTE Confidence: 0.845254715625

00:09:55.674 --> 00:09:57.786 in lab hymnography they also exist.

NOTE Confidence: 0.845254715625

00:09:57.790 --> 00:09:59.806 You know no matter what your

NOTE Confidence: 0.845254715625

00:09:59.806 --> 00:10:01.909 venue that that that can exist.

NOTE Confidence: 0.845254715625

00:10:01.910 --> 00:10:04.451 I think one advantage of home based

NOTE Confidence: 0.845254715625

00:10:04.451 --> 00:10:07.405 testing is that you may have the

NOTE Confidence: 0.845254715625

00:10:07.405 --> 00:10:09.645 opportunity to perform testing across

NOTE Confidence: 0.845254715625

00:10:09.645 --> 00:10:11.879 multiple nights and then finally.

NOTE Confidence: 0.845254715625

00:10:11.880 --> 00:10:12.900 You know, there are issues,

NOTE Confidence: 0.845254715625

00:10:12.900 --> 00:10:14.190 especially in adolescents,

NOTE Confidence: 0.845254715625

00:10:14.190 --> 00:10:16.340 around testing at suboptimal times.

NOTE Confidence: 0.845254715625

00:10:16.340 --> 00:10:16.982 Of course,

NOTE Confidence: 0.845254715625

00:10:16.982 --> 00:10:18.908 sleep Labs are expensive to operate

NOTE Confidence: 0.845254715625

00:10:18.908 --> 00:10:20.990 and they're staffed by shift workers.

NOTE Confidence: 0.845254715625

00:10:20.990 --> 00:10:23.474 And so sometimes early morning study

NOTE Confidence: 0.845254715625

00:10:23.474 --> 00:10:25.846 termination before that last episode of

NOTE Confidence: 0.845254715625

00:10:25.846 --> 00:10:28.121 RAM or in teenagers last two episodes

NOTE Confidence: 0.845254715625

00:10:28.121 --> 00:10:30.734 of RAM may result in key loss of data.

NOTE Confidence: 0.845254715625

00:10:30.740 --> 00:10:32.650 So it's important to consider.

NOTE Confidence: 0.845254715625

00:10:32.650 --> 00:10:34.855 And then we like we talked about I think

NOTE Confidence: 0.845254715625

00:10:34.855 --> 00:10:37.113 we are still dealing at least here on

NOTE Confidence: 0.845254715625

00:10:37.113 --> 00:10:39.056 the West Coast with pandemic driven

NOTE Confidence: 0.845254715625

00:10:39.056 --> 00:10:41.144 alterations and access to to care.

NOTE Confidence: 0.845254715625

00:10:41.150 --> 00:10:43.278 You know labs are open but we continue

NOTE Confidence: 0.845254715625

00:10:43.278 --> 00:10:45.753 to have quite a lot of staff shortages

NOTE Confidence: 0.845254715625

00:10:45.753 --> 00:10:47.861 and thinking about what that means for

NOTE Confidence: 0.845254715625

00:10:47.861 --> 00:10:50.038 how many beds we can operate is important.

NOTE Confidence: 0.845254715625

00:10:50.038 --> 00:10:52.194 We also you know in the especially

NOTE Confidence: 0.845254715625

00:10:52.194 --> 00:10:54.465 miss the pandemic and still have

NOTE Confidence: 0.845254715625

00:10:54.465 --> 00:10:56.460 to think about infection mitigation

NOTE Confidence: 0.845254715625

00:10:56.460 --> 00:10:58.698 procedures and and these things can also

NOTE Confidence: 0.845254715625

00:10:58.698 --> 00:11:02.160 increase the burden of disparities.

NOTE Confidence: 0.845254715625

00:11:02.160 --> 00:11:03.720 So, Umm, you know,

NOTE Confidence: 0.845254715625

00:11:03.720 --> 00:11:06.560 with that kind of context in mind,

NOTE Confidence: 0.845254715625

00:11:06.560 --> 00:11:08.324 the other point I want to make is that

NOTE Confidence: 0.845254715625

00:11:08.324 --> 00:11:10.270 it's it is important to acknowledge

NOTE Confidence: 0.845254715625

00:11:10.270 --> 00:11:11.293 heterogeneity and Pediatrics.

NOTE Confidence: 0.845254715625

00:11:11.300 --> 00:11:13.538 It's a lifetime within a lifetime

NOTE Confidence: 0.845254715625

00:11:13.538 --> 00:11:15.731 and the appropriateness of using home

NOTE Confidence: 0.845254715625

00:11:15.731 --> 00:11:17.633 sleep apnea testing may vary with

NOTE Confidence: 0.845254715625

00:11:17.633 --> 00:11:20.138 age or presentation or circumstance.

NOTE Confidence: 0.845254715625

00:11:20.140 --> 00:11:23.380 So I product put up a couple of

NOTE Confidence: 0.845254715625

00:11:23.380 --> 00:11:26.026 scenarios where I might take a moment

NOTE Confidence: 0.845254715625

00:11:26.026 --> 00:11:27.936 and consider home based testing.

NOTE Confidence: 0.845254715625

00:11:27.940 --> 00:11:29.500 These might be different than the

NOTE Confidence: 0.845254715625

00:11:29.500 --> 00:11:31.040 ones that you would consider,

NOTE Confidence: 0.845254715625

00:11:31.040 --> 00:11:32.250 but I think about it.

NOTE Confidence: 0.845254715625

00:11:32.250 --> 00:11:34.566 13 year old child with enormous

NOTE Confidence: 0.845254715625

00:11:34.566 --> 00:11:35.338 touching tonsils.

NOTE Confidence: 0.845254715625

00:11:35.340 --> 00:11:37.100 Nighttime and daytime symptoms

NOTE Confidence: 0.845254715625

00:11:37.100 --> 00:11:39.740 consistent with sleep apnea and a

NOTE Confidence: 0.833877261333333

00:11:39.809 --> 00:11:42.489 surgeon who despite the otolaryngology.

NOTE Confidence: 0.833877261333333

00:11:42.490 --> 00:11:44.800 Clinical practice guideline desires a

NOTE Confidence: 0.833877261333333

00:11:44.800 --> 00:11:47.855 positive sleep test and if the in lab

NOTE Confidence: 0.833877261333333

00:11:47.855 --> 00:11:51.050 testing queue were six or nine months and

NOTE Confidence: 0.833877261333333

00:11:51.050 --> 00:11:53.942 that child were was clearly symptomatic.

NOTE Confidence: 0.833877261333333

00:11:53.950 --> 00:11:55.686 You know maybe that would be a good

NOTE Confidence: 0.833877261333333

00:11:55.686 --> 00:11:57.577 situation in which a home sleep apnea test

NOTE Confidence: 0.833877261333333

00:11:57.577 --> 00:11:59.468 could be considered or a different surgeon.

NOTE Confidence: 0.833877261333333

00:11:59.470 --> 00:12:01.426 What about the 17 year old

NOTE Confidence: 0.833877261333333

00:12:01.426 --> 00:12:02.404 with daytime sleepiness,

NOTE Confidence: 0.833877261333333

00:12:02.410 --> 00:12:05.571 snoring and delayed sleep wake disorder?

NOTE Confidence: 0.833877261333333

00:12:05.571 --> 00:12:07.376 What about the seven-year old

NOTE Confidence: 0.833877261333333

00:12:07.376 --> 00:12:09.131 child with developmental delays who

NOTE Confidence: 0.833877261333333

00:12:09.131 --> 00:12:10.909 whose failed in lab testing and you

NOTE Confidence: 0.833877261333333

00:12:10.909 --> 00:12:12.338 would just like to get some?

NOTE Confidence: 0.833877261333333

00:12:12.340 --> 00:12:13.918 Idea of what might be going

NOTE Confidence: 0.833877261333333

00:12:13.918 --> 00:12:15.590 on for them and in sleep.

NOTE Confidence: 0.833877261333333

00:12:15.590 --> 00:12:17.530 So with that in mind,

NOTE Confidence: 0.833877261333333

00:12:17.530 --> 00:12:19.616 I wanted to review some of the

NOTE Confidence: 0.833877261333333

00:12:19.616 --> 00:12:21.621 recent data which might support or

NOTE Confidence: 0.833877261333333

00:12:21.621 --> 00:12:23.709 not support home sleep apnea testing

NOTE Confidence: 0.833877261333333

00:12:23.709 --> 00:12:26.108 or sleep polygraphy and Pediatrics.

NOTE Confidence: 0.833877261333333

00:12:26.110 --> 00:12:28.427 Overall when you look through these studies,

NOTE Confidence: 0.833877261333333

00:12:28.430 --> 00:12:30.214 I'm not going to go out study by

NOTE Confidence: 0.833877261333333

00:12:30.214 --> 00:12:32.319 study by study that the the studies

NOTE Confidence: 0.833877261333333

00:12:32.319 --> 00:12:33.279 are generally small,

NOTE Confidence: 0.833877261333333

00:12:33.280 --> 00:12:35.392 they're generally non randomized,

NOTE Confidence: 0.833877261333333

00:12:35.392 --> 00:12:37.794 they're generally you know open label,

NOTE Confidence: 0.833877261333333

00:12:37.794 --> 00:12:40.370 there's no game changers in these studies,

NOTE Confidence: 0.833877261333333

00:12:40.370 --> 00:12:43.218 but overall the volume is increasing and I

NOTE Confidence: 0.833877261333333

00:12:43.218 --> 00:12:46.048 think these studies do provide a rationale.

NOTE Confidence: 0.833877261333333

00:12:46.050 --> 00:12:47.892 Continue to consider each SAT and

NOTE Confidence: 0.833877261333333

00:12:47.892 --> 00:12:49.906 select cases and overall I look at

NOTE Confidence: 0.833877261333333

00:12:49.906 --> 00:12:51.607 this as kind of building a framework

NOTE Confidence: 0.833877261333333

00:12:51.668 --> 00:12:53.098 for incremental evidence and and

NOTE Confidence: 0.833877261333333

00:12:53.098 --> 00:12:55.184 you can see this just by going to

NOTE Confidence: 0.833877261333333

00:12:55.184 --> 00:12:56.710 pub Med and putting in the search

NOTE Confidence: 0.833877261333333

00:12:56.764 --> 00:12:58.269 term pediatric home sleep test.

NOTE Confidence: 0.833877261333333

00:12:58.270 --> 00:13:00.496 There certainly is an increase in studies

NOTE Confidence: 0.833877261333333

00:13:00.496 --> 00:13:02.889 that are available to to consider for review.

NOTE Confidence: 0.833877261333333

00:13:02.890 --> 00:13:05.596 The same with pediatric sleep polygraphy.

NOTE Confidence: 0.833877261333333

00:13:05.600 --> 00:13:08.688 So let's tackle a couple of those issues

NOTE Confidence: 0.833877261333333

00:13:08.688 --> 00:13:11.317 I mentioned earlier on like some some

NOTE Confidence: 0.833877261333333

00:13:11.317 --> 00:13:14.440 of like the really big areas of concern.

NOTE Confidence: 0.833877261333333

00:13:14.440 --> 00:13:16.060 I'm going to start with feasibility.

NOTE Confidence: 0.833877261333333

00:13:16.060 --> 00:13:16.831 In other words,

NOTE Confidence: 0.833877261333333

00:13:16.831 --> 00:13:17.859 is it reasonably possible?

NOTE Confidence: 0.833877261333333

00:13:17.860 --> 00:13:18.014 Well,

NOTE Confidence: 0.833877261333333

00:13:18.014 --> 00:13:19.400 when you look through a lot of these studies,

NOTE Confidence: 0.833877261333333

00:13:19.400 --> 00:13:20.730 I have some of the references here

NOTE Confidence: 0.833877261333333

00:13:20.730 --> 00:13:21.972 at the bottom of the slide and

NOTE Confidence: 0.833877261333333

00:13:21.972 --> 00:13:23.360 many more at the end of this talk.

NOTE Confidence: 0.833877261333333

00:13:23.360 --> 00:13:25.664 You know in most cases recordings

NOTE Confidence: 0.833877261333333

00:13:25.664 --> 00:13:27.520 were valid and interpretable.

NOTE Confidence: 0.833877261333333

00:13:27.520 --> 00:13:30.677 So 70% or more in general across

NOTE Confidence: 0.833877261333333

00:13:30.677 --> 00:13:33.032 these small studies and rather

NOTE Confidence: 0.833877261333333

00:13:33.032 --> 00:13:36.203 amazingly I'm starting at age 1 and.

NOTE Confidence: 0.833877261333333

00:13:36.210 --> 00:13:38.070 Generally speaking, these are an unhealthy.

NOTE Confidence: 0.833877261333333

00:13:38.070 --> 00:13:40.238 These are unhealthy or

NOTE Confidence: 0.833877261333333

00:13:40.238 --> 00:13:41.864 uncomplicated pediatric patients.

NOTE Confidence: 0.833877261333333

00:13:41.870 --> 00:13:43.019 By and large,

NOTE Confidence: 0.833877261333333

00:13:43.019 --> 00:13:45.317 failure of nasal cannula and failure

NOTE Confidence: 0.833877261333333

00:13:45.317 --> 00:13:48.192 of the SP O2 signal are the most

NOTE Confidence: 0.833877261333333

00:13:48.192 --> 00:13:50.170 common reasons for failed study.

NOTE Confidence: 0.833877261333333

00:13:50.170 --> 00:13:52.186 I think for sure the narrative

NOTE Confidence: 0.833877261333333

00:13:52.186 --> 00:13:54.289 in the literature is that it's

NOTE Confidence: 0.833877261333333

00:13:54.289 --> 00:13:56.690 quite helpful to have some sort of

NOTE Confidence: 0.833877261333333

00:13:56.690 --> 00:13:58.947 support for placement of the device.

NOTE Confidence: 0.833877261333333

00:13:58.950 --> 00:14:01.967 I'm rather amazed at this Canadian study.

NOTE Confidence: 0.833877261333333

00:14:01.970 --> 00:14:05.723 562 one year olds of that group 91%.

NOTE Confidence: 0.833877261333333

00:14:05.723 --> 00:14:07.855 Technically acceptable data on

NOTE Confidence: 0.833877261333333

00:14:07.855 --> 00:14:09.454 home sleep testing.

NOTE Confidence: 0.833877261333333

00:14:09.460 --> 00:14:09.743 However,

NOTE Confidence: 0.833877261333333

00:14:09.743 --> 00:14:12.007 that is a study where the tech went

NOTE Confidence: 0.833877261333333

00:14:12.007 --> 00:14:14.158 to the home to set up the device,

NOTE Confidence: 0.833877261333333

00:14:14.160 --> 00:14:17.538 which almost certainly makes a difference.

NOTE Confidence: 0.833877261333333

00:14:17.540 --> 00:14:19.252 I would say we have to be really

NOTE Confidence: 0.833877261333333

00:14:19.252 --> 00:14:20.508 cautious about thinking about

NOTE Confidence: 0.833877261333333

00:14:20.508 --> 00:14:22.060 children with certain comorbidities,

NOTE Confidence: 0.833877261333333

00:14:22.060 --> 00:14:23.990 as in particular neuromuscular disease,

NOTE Confidence: 0.833877261333333

00:14:23.990 --> 00:14:26.198 and in one very small pilot with six

NOTE Confidence: 0.833877261333333

00:14:26.198 --> 00:14:27.950 adolescents with neuromuscular disease,

NOTE Confidence: 0.833877261333333

00:14:27.950 --> 00:14:29.918 there was a 50% failure rate.

NOTE Confidence: 0.833877261333333

00:14:29.920 --> 00:14:31.256 And in hospitalized children

NOTE Confidence: 0.833877261333333

00:14:31.256 --> 00:14:32.258 with certain comorbidities,

NOTE Confidence: 0.87782276

00:14:32.260 --> 00:14:33.700 there's very, very limited data,

NOTE Confidence: 0.87782276

00:14:33.700 --> 00:14:36.718 but but pretty similar success rates.

NOTE Confidence: 0.87782276

00:14:36.720 --> 00:14:38.860 Here's a feasibility study

NOTE Confidence: 0.87782276

00:14:38.860 --> 00:14:41.000 from the COVID-19 pandemic.

NOTE Confidence: 0.87782276

00:14:41.000 --> 00:14:42.320 This is out of the UK.

NOTE Confidence: 0.87782276

00:14:42.320 --> 00:14:44.230 The study is a retrospective

NOTE Confidence: 0.87782276

00:14:44.230 --> 00:14:46.140 analysis of real world data.

NOTE Confidence: 0.87782276

00:14:46.140 --> 00:14:47.660 Kind of necessity is the

NOTE Confidence: 0.87782276

00:14:47.660 --> 00:14:49.180 mother of invention type data.

NOTE Confidence: 0.87782276

00:14:49.180 --> 00:14:52.738 From 2020 it was 137 children.

NOTE Confidence: 0.87782276

00:14:52.740 --> 00:14:54.490 What I like about this

NOTE Confidence: 0.87782276

00:14:54.490 --> 00:14:56.120 report is that you know,

NOTE Confidence: 0.87782276

00:14:56.120 --> 00:14:58.040 this was a real world problem

NOTE Confidence: 0.87782276

00:14:58.108 --> 00:15:00.394 that this the sleep lab needed

NOTE Confidence: 0.87782276

00:15:00.394 --> 00:15:02.369 encountered and needed to solve

NOTE Confidence: 0.87782276

00:15:02.369 --> 00:15:04.274 for and so they overnight

NOTE Confidence: 0.87782276

00:15:04.274 --> 00:15:06.390 transition to home based testing.

NOTE Confidence: 0.87782276

00:15:06.390 --> 00:15:08.160 Respiratory polygraphy for

NOTE Confidence: 0.87782276

00:15:08.160 --> 00:15:09.930 their patient population,

NOTE Confidence: 0.87782276

00:15:09.930 --> 00:15:11.586 they just didn't have another choice.

NOTE Confidence: 0.87782276

00:15:11.590 --> 00:15:13.782 And so they had children with a lot

NOTE Confidence: 0.87782276

00:15:13.782 --> 00:15:15.846 of different comorbidities and they

NOTE Confidence: 0.87782276

00:15:15.846 --> 00:15:17.994 also measured children who are on

NOTE Confidence: 0.87782276

00:15:17.994 --> 00:15:19.594 positive airway pressure therapy

NOTE Confidence: 0.87782276

00:15:19.594 --> 00:15:22.042 or ventilator therapy in whom they

NOTE Confidence: 0.87782276

00:15:22.042 --> 00:15:23.784 were measuring effectiveness of

NOTE Confidence: 0.87782276

00:15:23.784 --> 00:15:26.381 therapy using either oximetry or CO2

NOTE Confidence: 0.87782276

00:15:26.381 --> 00:15:28.967 monitoring and very real world results.

NOTE Confidence: 0.87782276

00:15:28.970 --> 00:15:31.413 About half the time they consider the

NOTE Confidence: 0.87782276

00:15:31.413 --> 00:15:33.840 home sleep apnea test to be successful

NOTE Confidence: 0.87782276

00:15:33.840 --> 00:15:36.245 when it was a diagnostic test autism.

NOTE Confidence: 0.87782276

00:15:36.245 --> 00:15:38.370 Predicted a lower success rate,

NOTE Confidence: 0.87782276

00:15:38.370 --> 00:15:40.498 so only 29% as did age under 5.

NOTE Confidence: 0.87782276

00:15:40.500 --> 00:15:42.300 And if you look at the table here,

NOTE Confidence: 0.87782276

00:15:42.300 --> 00:15:43.060 you can see that.

NOTE Confidence: 0.87782276

00:15:43.060 --> 00:15:45.092 So if you look at ASD, ADHD children,

NOTE Confidence: 0.87782276

00:15:45.092 --> 00:15:48.507 you get the median age of seven with

NOTE Confidence: 0.87782276

00:15:48.507 --> 00:15:50.803 an interquartile range of of 4 to 16.

NOTE Confidence: 0.87782276

00:15:50.810 --> 00:15:52.136 But they have a failure rate

NOTE Confidence: 0.87782276

00:15:52.136 --> 00:15:53.640 of 71% if you read it.

NOTE Confidence: 0.87782276

00:15:53.640 --> 00:15:54.552 That's all the way on the

NOTE Confidence: 0.87782276

00:15:54.552 --> 00:15:55.160 left in that column.

NOTE Confidence: 0.87782276

00:15:55.160 --> 00:15:56.879 If you read all the way over on the

NOTE Confidence: 0.87782276

00:15:56.879 --> 00:15:58.700 right hand side of possible sleep apnea,

NOTE Confidence: 0.87782276

00:15:58.700 --> 00:16:01.820 failure rate is 25% with the

NOTE Confidence: 0.87782276

00:16:01.820 --> 00:16:03.690 average aid immediate, sorry,

NOTE Confidence: 0.87782276

00:16:03.690 --> 00:16:05.550 median age of about five years

NOTE Confidence: 0.87782276

00:16:05.550 --> 00:16:07.220 and what's really interesting.

NOTE Confidence: 0.87782276

00:16:07.220 --> 00:16:08.264 So failure rates.

NOTE Confidence: 0.87782276

00:16:08.264 --> 00:16:10.352 Power and in these less complicated

NOTE Confidence: 0.87782276

00:16:10.352 --> 00:16:12.279 children who are getting evaluated

NOTE Confidence: 0.87782276

00:16:12.279 --> 00:16:13.795 for obstructive sleep apnea.

NOTE Confidence: 0.87782276

00:16:13.800 --> 00:16:15.564 But what was really interesting to me

NOTE Confidence: 0.87782276

00:16:15.564 --> 00:16:17.637 is that from a parental point of view,

NOTE Confidence: 0.87782276

00:16:17.640 --> 00:16:20.100 it's the parents who have

NOTE Confidence: 0.87782276

00:16:20.100 --> 00:16:21.576 children with developmental,

NOTE Confidence: 0.87782276

00:16:21.580 --> 00:16:21.945 neuro,

NOTE Confidence: 0.87782276

00:16:21.945 --> 00:16:23.405 behavioral or developmental disorders

NOTE Confidence: 0.87782276

00:16:23.405 --> 00:16:25.583 who had a great preference for

NOTE Confidence: 0.87782276

00:16:25.583 --> 00:16:27.341 the home based study compared to

NOTE Confidence: 0.87782276

00:16:27.341 --> 00:16:28.617 parents of typically developing

NOTE Confidence: 0.87782276

00:16:28.617 --> 00:16:30.645 children who were referred for OSA.

NOTE Confidence: 0.87782276

00:16:30.650 --> 00:16:32.010 They had a greater preference

NOTE Confidence: 0.87782276

00:16:32.010 --> 00:16:33.098 for the INLAB study.

NOTE Confidence: 0.87782276

00:16:33.100 --> 00:16:35.176 So it's kind of a inverse,

NOTE Confidence: 0.87782276

00:16:35.180 --> 00:16:37.493 inverse relationship with

NOTE Confidence: 0.87782276

00:16:37.493 --> 00:16:39.806 success rates actually.

NOTE Confidence: 0.87782276

00:16:39.810 --> 00:16:41.282 And here's another study,

NOTE Confidence: 0.87782276

00:16:41.282 --> 00:16:43.800 you know looking at feasibility and in

NOTE Confidence: 0.87782276

00:16:43.800 --> 00:16:46.270 this one this is 40 children aged 2 to 10.

NOTE Confidence: 0.87782276

00:16:46.270 --> 00:16:48.188 I want to say the average age

NOTE Confidence: 0.87782276

00:16:48.188 --> 00:16:50.353 was five and these are children

NOTE Confidence: 0.87782276

00:16:50.353 --> 00:16:52.049 referred from general practitioners

NOTE Confidence: 0.87782276

00:16:52.049 --> 00:16:54.309 or ENT was suspected OSA.

NOTE Confidence: 0.87782276

00:16:54.310 --> 00:16:57.145 And what I love about this study is the

NOTE Confidence: 0.87782276

00:16:57.145 --> 00:16:59.610 authors presented their data in phases,

NOTE Confidence: 0.87782276

00:16:59.610 --> 00:17:01.746 kind of six months chunks of time and

NOTE Confidence: 0.87782276

00:17:01.746 --> 00:17:03.327 what happened is very real world.

NOTE Confidence: 0.87782276

00:17:03.330 --> 00:17:04.854 What happened is they weren't getting

NOTE Confidence: 0.87782276

00:17:04.854 --> 00:17:06.350 very good results from their home

NOTE Confidence: 0.87782276

00:17:06.350 --> 00:17:07.646 based test and so they started

NOTE Confidence: 0.87782276

00:17:07.646 --> 00:17:08.787 to deploy additional information

NOTE Confidence: 0.87782276

00:17:08.787 --> 00:17:09.780 out to patients.

NOTE Confidence: 0.87782276

00:17:09.780 --> 00:17:11.537 And families on what they could do

NOTE Confidence: 0.87782276

00:17:11.537 --> 00:17:13.577 to help make the studies of success.

NOTE Confidence: 0.87782276

00:17:13.580 --> 00:17:14.910 And I have some images there on

NOTE Confidence: 0.87782276

00:17:14.910 --> 00:17:16.257 the right hand side of the screen

NOTE Confidence: 0.87782276

00:17:16.257 --> 00:17:17.172 to kind of show that.

NOTE Confidence: 0.87782276

00:17:17.180 --> 00:17:19.040 And in fact it helped.

NOTE Confidence: 0.87782276

00:17:19.040 --> 00:17:21.270 So that by the end of the study with these

NOTE Confidence: 0.880836994285714

00:17:21.329 --> 00:17:22.789 pragmatic instructions on how to

NOTE Confidence: 0.880836994285714

00:17:22.789 --> 00:17:24.843 tape things and how to put the

NOTE Confidence: 0.880836994285714

00:17:24.843 --> 00:17:26.439 how to secure the nasal cannula,

NOTE Confidence: 0.880836994285714

00:17:26.440 --> 00:17:28.855 they were getting about a 2/3 success

NOTE Confidence: 0.880836994285714

00:17:28.855 --> 00:17:31.419 rate with with their home based test.

NOTE Confidence: 0.880836994285714

00:17:31.420 --> 00:17:34.402 They did survey parents and 94% felt

NOTE Confidence: 0.880836994285714

00:17:34.402 --> 00:17:36.859 that the home sleep apnea test was

NOTE Confidence: 0.880836994285714

00:17:36.859 --> 00:17:39.186 either easy or medium hard to use.

NOTE Confidence: 0.880836994285714

00:17:39.190 --> 00:17:40.417 But once again.

NOTE Confidence: 0.880836994285714

00:17:40.417 --> 00:17:43.280 Air flow and asymmetry were the main

NOTE Confidence: 0.880836994285714

00:17:43.364 --> 00:17:46.826 obstacles to obtaining a quality recordings.

NOTE Confidence: 0.880836994285714

00:17:46.830 --> 00:17:48.310 So what about if, like,

NOTE Confidence: 0.880836994285714

00:17:48.310 --> 00:17:50.710 just sending out a slip of paper or

NOTE Confidence: 0.880836994285714

00:17:50.710 --> 00:17:52.249 some instructions is not adequate?

NOTE Confidence: 0.880836994285714

00:17:52.249 --> 00:17:53.814 What about a hybrid model?

NOTE Confidence: 0.880836994285714

00:17:53.820 --> 00:17:56.118 There's one study that was just

NOTE Confidence: 0.880836994285714

00:17:56.118 --> 00:17:58.810 published this summer in July on this

NOTE Confidence: 0.880836994285714

00:17:58.810 --> 00:18:01.645 exact sort of a model from Australia.

NOTE Confidence: 0.880836994285714

00:18:01.650 --> 00:18:04.800 This was again retrospective analysis,

NOTE Confidence: 0.880836994285714

00:18:04.800 --> 00:18:06.865 230 children the age was 5 to

NOTE Confidence: 0.880836994285714

00:18:06.865 --> 00:18:08.908 18 with the mean age of 10.

NOTE Confidence: 0.880836994285714

00:18:08.910 --> 00:18:10.286 And this is interesting,

NOTE Confidence: 0.880836994285714

00:18:10.286 --> 00:18:12.006 about 1/4 of those children

NOTE Confidence: 0.880836994285714

00:18:12.006 --> 00:18:13.590 did have comorbidities,

NOTE Confidence: 0.880836994285714

00:18:13.590 --> 00:18:14.630 although importantly,

NOTE Confidence: 0.880836994285714

00:18:14.630 --> 00:18:16.190 neuromuscular disease again.

NOTE Confidence: 0.880836994285714

00:18:16.190 --> 00:18:18.404 Was excluded from this from this

NOTE Confidence: 0.880836994285714

00:18:18.404 --> 00:18:20.487 group and these children had a

NOTE Confidence: 0.880836994285714

00:18:20.487 --> 00:18:22.384 level two study and they had a

NOTE Confidence: 0.880836994285714

00:18:22.384 --> 00:18:24.444 nurse perform setup either at the

NOTE Confidence: 0.880836994285714

00:18:24.444 --> 00:18:26.442 clinic and then the child would

NOTE Confidence: 0.880836994285714

00:18:26.442 --> 00:18:28.134 drive home with their family or

NOTE Confidence: 0.880836994285714

00:18:28.134 --> 00:18:30.218 they had a mobile van come out to

NOTE Confidence: 0.880836994285714

00:18:30.218 --> 00:18:32.278 the home and do a setup at home.

NOTE Confidence: 0.880836994285714

00:18:32.280 --> 00:18:32.878 Either way,

NOTE Confidence: 0.880836994285714

00:18:32.878 --> 00:18:34.373 there was a telehealth consultation

NOTE Confidence: 0.880836994285714

00:18:34.373 --> 00:18:36.327 with the sleep nurse just prior to

NOTE Confidence: 0.880836994285714

00:18:36.327 --> 00:18:37.833 bedtime so that the parent could

NOTE Confidence: 0.880836994285714

00:18:37.882 --> 00:18:39.702 go through a checklist of all the

NOTE Confidence: 0.880836994285714

00:18:39.702 --> 00:18:41.573 technical aspects of the portable PSG.

NOTE Confidence: 0.880836994285714

00:18:41.573 --> 00:18:43.739 Parents were encouraged to spend the

NOTE Confidence: 0.880836994285714

00:18:43.739 --> 00:18:46.207 night in the same room with their child.

NOTE Confidence: 0.880836994285714

00:18:46.210 --> 00:18:49.493 And and what these authors found was

NOTE Confidence: 0.880836994285714

00:18:49.493 --> 00:18:51.190 technically successful studies 90%

NOTE Confidence: 0.880836994285714

00:18:51.190 --> 00:18:53.458 of the time and six or more hours of

NOTE Confidence: 0.880836994285714

00:18:53.458 --> 00:18:55.050 sleep about 90% of the time as well.

NOTE Confidence: 0.880836994285714

00:18:55.050 --> 00:18:57.378 And I have here a total sleep time

NOTE Confidence: 0.880836994285714

00:18:57.378 --> 00:18:59.939 from that report you can see on the Y

NOTE Confidence: 0.880836994285714

00:18:59.939 --> 00:19:02.216 axis and mean sleep time was almost 8

NOTE Confidence: 0.880836994285714

00:19:02.216 --> 00:19:04.080 hours and the median was over 8 hours.

NOTE Confidence: 0.880836994285714

00:19:04.080 --> 00:19:06.733 So that that's that's quite a lot

NOTE Confidence: 0.880836994285714

00:19:06.733 --> 00:19:08.846 of opportunity to collect quality

NOTE Confidence: 0.880836994285714

00:19:08.846 --> 00:19:11.522 data and I think overall this

NOTE Confidence: 0.880836994285714

00:19:11.522 --> 00:19:13.755 indicates that with ingenuity and

NOTE Confidence: 0.880836994285714

00:19:13.755 --> 00:19:16.240 with some hands on support perhaps.

NOTE Confidence: 0.880836994285714

00:19:16.240 --> 00:19:17.800 Unbiased testing is possible,

NOTE Confidence: 0.880836994285714

00:19:17.800 --> 00:19:20.080 and parental reports also sort

NOTE Confidence: 0.880836994285714

00:19:20.080 --> 00:19:22.855 of corroborated that this was an

NOTE Confidence: 0.880836994285714

00:19:22.855 --> 00:19:24.695 acceptable and even convenient

NOTE Confidence: 0.880836994285714

00:19:24.695 --> 00:19:28.205 way to to get testing done.

NOTE Confidence: 0.880836994285714

00:19:28.210 --> 00:19:29.878 So I'm going to leave feasibility

NOTE Confidence: 0.880836994285714

00:19:29.878 --> 00:19:31.897 aside and talk a little bit about

NOTE Confidence: 0.880836994285714

00:19:31.897 --> 00:19:34.196 accuracy and whether or not we can how

NOTE Confidence: 0.880836994285714

00:19:34.196 --> 00:19:36.236 do we even think about the results of

NOTE Confidence: 0.880836994285714

00:19:36.236 --> 00:19:39.420 home based testing and in children?

NOTE Confidence: 0.880836994285714

00:19:39.420 --> 00:19:42.165 So this is a study that looked at like

NOTE Confidence: 0.880836994285714

00:19:42.165 --> 00:19:44.725 like if we had to back calculate what

NOTE Confidence: 0.880836994285714

00:19:44.725 --> 00:19:47.115 a home test result or respiratory

NOTE Confidence: 0.880836994285714

00:19:47.115 --> 00:19:49.420 polygraphy test would be like,

NOTE Confidence: 0.880836994285714

00:19:49.420 --> 00:19:50.380 what would that look like?

NOTE Confidence: 0.880836994285714

00:19:50.380 --> 00:19:50.728 So,

NOTE Confidence: 0.880836994285714

00:19:50.728 --> 00:19:52.816 so in this study the researchers

NOTE Confidence: 0.880836994285714

00:19:52.816 --> 00:19:54.280 took PSG based data,

NOTE Confidence: 0.880836994285714

00:19:54.280 --> 00:19:56.182 they removed all the data that

NOTE Confidence: 0.880836994285714

00:19:56.182 --> 00:19:57.674 wouldn't be available on respiratory

NOTE Confidence: 0.880836994285714

00:19:57.674 --> 00:19:59.276 polygraphy and then they took a

NOTE Confidence: 0.880836994285714

00:19:59.276 --> 00:20:01.302 look at how would that change the

NOTE Confidence: 0.880836994285714

00:20:01.302 --> 00:20:03.714 results of the of the analysis.

NOTE Confidence: 0.880836994285714

00:20:03.720 --> 00:20:07.208 Children who are aged 2 to 16 clinically

NOTE Confidence: 0.880836994285714

00:20:07.208 --> 00:20:09.650 referred for OSA were included.

NOTE Confidence: 0.880836994285714

00:20:09.650 --> 00:20:11.855 And oops sorry about that and the

NOTE Confidence: 0.880836994285714

00:20:11.855 --> 00:20:14.791 and what they found is that there was

NOTE Confidence: 0.880836994285714

00:20:14.791 --> 00:20:16.706 a rest respiratory polygraphy had

NOTE Confidence: 0.804464615833334

00:20:16.773 --> 00:20:19.448 a sensitivity of of 82.5% and a

NOTE Confidence: 0.804464615833334

00:20:19.448 --> 00:20:22.700 specificity of 90% if you used a cutoff

NOTE Confidence: 0.804464615833334

00:20:22.700 --> 00:20:26.410 of a PSG drive HI of one or greater.

NOTE Confidence: 0.804464615833334

00:20:26.410 --> 00:20:28.612 Now this is important because what

NOTE Confidence: 0.804464615833334

00:20:28.612 --> 00:20:31.462 I want to what I want to kind of

NOTE Confidence: 0.804464615833334

00:20:31.462 --> 00:20:33.358 review based on the reports that

NOTE Confidence: 0.804464615833334

00:20:33.358 --> 00:20:35.478 we have in the literature is that

NOTE Confidence: 0.804464615833334

00:20:35.478 --> 00:20:38.259 the HI cut off to use on the home

NOTE Confidence: 0.804464615833334

00:20:38.259 --> 00:20:40.197 based device is not always clear.

NOTE Confidence: 0.804464615833334

00:20:40.200 --> 00:20:43.038 This was a study published in

NOTE Confidence: 0.804464615833334

00:20:43.040 --> 00:20:45.410 2017 comparing home sleep apnea

NOTE Confidence: 0.804464615833334

00:20:45.410 --> 00:20:47.306 testing versus laboratory based

NOTE Confidence: 0.804464615833334

00:20:47.306 --> 00:20:49.360 polysomnography for the diagnosis of

NOTE Confidence: 0.804464615833334

00:20:49.360 --> 00:20:51.260 obstructive sleep apnea in children.

NOTE Confidence: 0.804464615833334

00:20:51.260 --> 00:20:53.164 And one of the things I like about

NOTE Confidence: 0.804464615833334

00:20:53.164 --> 00:20:55.098 this test is that they are they are.

NOTE Confidence: 0.804464615833334

00:20:55.100 --> 00:20:57.252 This study is that they included

NOTE Confidence: 0.804464615833334

00:20:57.252 --> 00:20:59.268 children all the way down to age of

NOTE Confidence: 0.804464615833334

00:20:59.268 --> 00:21:01.156 two and then all the way up to 17.

NOTE Confidence: 0.804464615833334

00:21:01.160 --> 00:21:03.560 Very typical for studies of this

NOTE Confidence: 0.804464615833334

00:21:03.560 --> 00:21:06.200 nature is a very small #33 children

NOTE Confidence: 0.804464615833334

00:21:06.200 --> 00:21:08.360 are reported upon and they did a three

NOTE Confidence: 0.804464615833334

00:21:08.413 --> 00:21:10.525 night pilot and the the type of testing.

NOTE Confidence: 0.804464615833334

00:21:10.530 --> 00:21:10.831 Equipment.

NOTE Confidence: 0.804464615833334

00:21:10.831 --> 00:21:12.637 They used risen blood of gold.

NOTE Confidence: 0.804464615833334

00:21:12.640 --> 00:21:15.448 So the first night that got in lab

NOTE Confidence: 0.804464615833334

00:21:15.448 --> 00:21:17.196 polysomnography and then they did

NOTE Confidence: 0.804464615833334

00:21:17.196 --> 00:21:19.146 two nights of home based testing

NOTE Confidence: 0.804464615833334

00:21:19.146 --> 00:21:21.297 and what they found number one.

NOTE Confidence: 0.804464615833334

00:21:21.300 --> 00:21:22.476 So a couple of interesting findings.

NOTE Confidence: 0.804464615833334

00:21:22.480 --> 00:21:24.346 Number one that the home sleep

NOTE Confidence: 0.804464615833334

00:21:24.346 --> 00:21:26.531 apnea test were 2/3 of them

NOTE Confidence: 0.804464615833334

00:21:26.531 --> 00:21:27.839 were successful recordings.

NOTE Confidence: 0.804464615833334

00:21:27.840 --> 00:21:30.780 And the second thing is that for

NOTE Confidence: 0.804464615833334

00:21:30.780 --> 00:21:33.379 this particular study and for this

NOTE Confidence: 0.804464615833334

00:21:33.379 --> 00:21:35.479 particular equipment you needed to

NOTE Confidence: 0.804464615833334

00:21:35.479 --> 00:21:38.437 use an HMI cutoff on the home base

NOTE Confidence: 0.804464615833334

00:21:38.437 --> 00:21:40.788 test of 0.75 to be able to predict

NOTE Confidence: 0.804464615833334

00:21:40.788 --> 00:21:42.759 the diagnosis of sleep apnea made by.

NOTE Confidence: 0.804464615833334

00:21:42.760 --> 00:21:45.802 CSG and that improved a little

NOTE Confidence: 0.804464615833334

00:21:45.802 --> 00:21:47.830 bit in older children.

NOTE Confidence: 0.804464615833334

00:21:47.830 --> 00:21:49.942 So it was a the performance of this

NOTE Confidence: 0.804464615833334

00:21:49.942 --> 00:21:51.717 particular of that cut off did not

NOTE Confidence: 0.804464615833334

00:21:51.717 --> 00:21:53.450 work as well in younger children.

NOTE Confidence: 0.804464615833334

00:21:53.450 --> 00:21:55.564 And so up here these Roc curves,

NOTE Confidence: 0.804464615833334

00:21:55.570 --> 00:21:59.242 it's the one on the right that is the one

NOTE Confidence: 0.804464615833334

00:21:59.242 --> 00:22:02.490 that describes children aged 6 or older.

NOTE Confidence: 0.804464615833334

00:22:02.490 --> 00:22:05.859 And you can see there that if you use

NOTE Confidence: 0.804464615833334

00:22:05.859 --> 00:22:09.494 a home based AH set HDI of 0.75 you

NOTE Confidence: 0.804464615833334

00:22:09.494 --> 00:22:12.920 get you have a very sensitive test.

NOTE Confidence: 0.804464615833334

00:22:12.920 --> 00:22:17.720 And your and your Type 1 error is is .4.

NOTE Confidence: 0.804464615833334

00:22:17.720 --> 00:22:19.330 Well what's really interesting is

NOTE Confidence: 0.804464615833334

00:22:19.330 --> 00:22:21.860 that if you look at other studies,

NOTE Confidence: 0.804464615833334

00:22:21.860 --> 00:22:24.004 they do not suggest that you use a

NOTE Confidence: 0.804464615833334

00:22:24.004 --> 00:22:25.879 lower threshold on your home based test.

NOTE Confidence: 0.804464615833334

00:22:25.880 --> 00:22:27.600 They you might need to use a higher

NOTE Confidence: 0.804464615833334

00:22:27.600 --> 00:22:28.977 threshold on your home base test.

NOTE Confidence: 0.804464615833334

00:22:28.980 --> 00:22:32.060 So this was a study.

NOTE Confidence: 0.804464615833334

00:22:32.060 --> 00:22:35.469 Of 35 children again typical small study

NOTE Confidence: 0.804464615833334

00:22:35.469 --> 00:22:38.648 using apnea link mean age was older,

NOTE Confidence: 0.804464615833334

00:22:38.650 --> 00:22:40.841 it was 11 and sleep to sort

NOTE Confidence: 0.804464615833334

00:22:40.841 --> 00:22:42.570 of breathing was diagnosed.

NOTE Confidence: 0.804464615833334

00:22:42.570 --> 00:22:44.908 And just about half of of these

NOTE Confidence: 0.804464615833334

00:22:44.908 --> 00:22:47.072 children they did do manually manual

NOTE Confidence: 0.804464615833334

00:22:47.072 --> 00:22:49.244 scoring of the apnea link data

NOTE Confidence: 0.804464615833334

00:22:49.244 --> 00:22:51.232 and determined that actually an

NOTE Confidence: 0.804464615833334

00:22:51.232 --> 00:22:53.921 apnea link HI of greater than five

NOTE Confidence: 0.804464615833334

00:22:53.921 --> 00:22:56.524 events had a sensitivity in 94% of

NOTE Confidence: 0.804464615833334

00:22:56.524 --> 00:22:59.431 specificity of 61% to detect any

NOTE Confidence: 0.804464615833334

00:22:59.431 --> 00:23:02.166 sleep disorder breathing on PSG.

NOTE Confidence: 0.804464615833334

00:23:02.170 --> 00:23:03.142 So another words,

NOTE Confidence: 0.804464615833334

00:23:03.142 --> 00:23:05.410 the home based test generated a higher

NOTE Confidence: 0.804464615833334

00:23:05.468 --> 00:23:07.547 HDI than the in lab test and you can

NOTE Confidence: 0.804464615833334

00:23:07.547 --> 00:23:10.108 see this here on the bland Altman that

NOTE Confidence: 0.804464615833334

00:23:10.108 --> 00:23:14.468 there's there's quite a lot of biasing.

NOTE Confidence: 0.804464615833334

00:23:14.470 --> 00:23:17.140 Above to have a higher a higher HIV test at

NOTE Confidence: 0.740502265454545

00:23:17.209 --> 00:23:19.020 home. And and how much higher?

NOTE Confidence: 0.740502265454545

00:23:19.020 --> 00:23:20.349 About about four.

NOTE Confidence: 0.740502265454545

00:23:20.349 --> 00:23:23.007 So an HI of about four.

NOTE Confidence: 0.740502265454545

00:23:23.010 --> 00:23:25.200 So what gets even more difficult

NOTE Confidence: 0.740502265454545

00:23:25.200 --> 00:23:28.002 about this area is it seems that

NOTE Confidence: 0.740502265454545

00:23:28.002 --> 00:23:30.107 performance of home based testing

NOTE Confidence: 0.740502265454545

00:23:30.110 --> 00:23:32.420 relative to a set threshold could vary

NOTE Confidence: 0.740502265454545

00:23:32.420 --> 00:23:34.742 depending on the age of the patient

NOTE Confidence: 0.740502265454545

00:23:34.742 --> 00:23:36.650 and also depending on the severity

NOTE Confidence: 0.740502265454545

00:23:36.710 --> 00:23:38.630 of the sleep disorder breathing.

NOTE Confidence: 0.740502265454545

00:23:38.630 --> 00:23:40.863 So here's the study also looking at

NOTE Confidence: 0.740502265454545

00:23:40.863 --> 00:23:42.617 apnea link compared to polysomnography

NOTE Confidence: 0.740502265454545

00:23:42.617 --> 00:23:44.447 in both children and adolescents

NOTE Confidence: 0.740502265454545

00:23:44.447 --> 00:23:47.056 and you can see there's so little

NOTE Confidence: 0.740502265454545

00:23:47.056 --> 00:23:48.508 bit bigger study population,

NOTE Confidence: 0.740502265454545

00:23:48.510 --> 00:23:50.580 60 children and you can see

NOTE Confidence: 0.740502265454545

00:23:50.580 --> 00:23:51.960 here some of their.

NOTE Confidence: 0.740502265454545

00:23:51.960 --> 00:23:53.350 Subject Characteristics

NOTE Confidence: 0.740502265454545

00:23:53.350 --> 00:23:56.825 these children tended to be.

NOTE Confidence: 0.740502265454545

00:23:56.830 --> 00:23:58.540 But actually they broke it down

NOTE Confidence: 0.740502265454545

00:23:58.540 --> 00:24:00.443 into younger children up to 10 years

NOTE Confidence: 0.740502265454545

00:24:00.443 --> 00:24:02.081 of age and then pre adolescent and

NOTE Confidence: 0.740502265454545

00:24:02.140 --> 00:24:03.856 adolescent children and they they also

NOTE Confidence: 0.740502265454545

00:24:03.856 --> 00:24:06.448 had a few greater than 18 year olds.

NOTE Confidence: 0.740502265454545

00:24:06.448 --> 00:24:08.035 20% of these kids were obese

NOTE Confidence: 0.740502265454545

00:24:08.035 --> 00:24:09.260 and they have pretty substantial

NOTE Confidence: 0.740502265454545

00:24:09.312 --> 00:24:10.389 sleep disorder breathing.

NOTE Confidence: 0.740502265454545

00:24:10.390 --> 00:24:12.613 So the mean HI and PSG was 11 but

NOTE Confidence: 0.740502265454545

00:24:12.613 --> 00:24:14.656 with the with very big confidence

NOTE Confidence: 0.740502265454545

00:24:14.656 --> 00:24:17.064 interval and on the home sleep apnea

NOTE Confidence: 0.740502265454545

00:24:17.064 --> 00:24:19.524 testing it was it was 10.3 and what

NOTE Confidence: 0.740502265454545

00:24:19.524 --> 00:24:21.680 they found in this study is that

NOTE Confidence: 0.740502265454545

00:24:21.753 --> 00:24:24.337 they needed to use an apnea link HI

NOTE Confidence: 0.740502265454545

00:24:24.337 --> 00:24:26.959 threshold if they wanted to diagnose.

NOTE Confidence: 0.740502265454545

00:24:26.960 --> 00:24:28.724 Any sleep apnea is defined by

NOTE Confidence: 0.740502265454545

00:24:28.724 --> 00:24:30.992 one an HIV one or higher on PSG

NOTE Confidence: 0.740502265454545

00:24:30.992 --> 00:24:33.570 of 3.5 on the apnea link.

NOTE Confidence: 0.740502265454545

00:24:33.570 --> 00:24:35.474 But if they wanted to go for a

NOTE Confidence: 0.740502265454545

00:24:35.474 --> 00:24:36.916 moderate to severe pediatric sleep

NOTE Confidence: 0.740502265454545

00:24:36.916 --> 00:24:38.858 apnea if if we although we don't

NOTE Confidence: 0.740502265454545

00:24:38.858 --> 00:24:40.088 have perfect consensus about that,

NOTE Confidence: 0.740502265454545

00:24:40.090 --> 00:24:42.202 if we use a cutoff of greater than

NOTE Confidence: 0.740502265454545

00:24:42.202 --> 00:24:44.100 five events per hour on the 8 the

NOTE Confidence: 0.740502265454545

00:24:44.100 --> 00:24:45.915 PSG HI that then they could use

NOTE Confidence: 0.740502265454545

00:24:45.915 --> 00:24:47.825 an apnea link threshold of 5.5.

NOTE Confidence: 0.740502265454545

00:24:47.825 --> 00:24:50.000 And what's interesting is that

NOTE Confidence: 0.740502265454545

00:24:50.000 --> 00:24:52.476 the authors pointed out that if

NOTE Confidence: 0.740502265454545

00:24:52.476 --> 00:24:54.793 you just look at the children who

NOTE Confidence: 0.740502265454545

00:24:54.793 --> 00:24:56.677 are aged under 10 years,

NOTE Confidence: 0.740502265454545

00:24:56.680 --> 00:24:58.100 the performance in terms of.

NOTE Confidence: 0.740502265454545

00:24:58.100 --> 00:25:00.055 Such as sensitivity and specificity

NOTE Confidence: 0.740502265454545

00:25:00.055 --> 00:25:02.010 of using up those thresholds

NOTE Confidence: 0.740502265454545

00:25:02.079 --> 00:25:03.669 is a little bit different,

NOTE Confidence: 0.740502265454545

00:25:03.670 --> 00:25:07.990 and arguably not quite as good.

NOTE Confidence: 0.740502265454545

00:25:07.990 --> 00:25:09.830 Especially in terms of specificity.

NOTE Confidence: 0.740502265454545

00:25:09.830 --> 00:25:11.405 So this is the sort of thing

NOTE Confidence: 0.740502265454545

00:25:11.405 --> 00:25:12.710 where like you may decide,

NOTE Confidence: 0.740502265454545

00:25:12.710 --> 00:25:14.376 well you know this test might be

NOTE Confidence: 0.740502265454545

00:25:14.376 --> 00:25:16.034 able to rule in somewhere that

NOTE Confidence: 0.740502265454545

00:25:16.034 --> 00:25:17.810 I have prior suspicion of having

NOTE Confidence: 0.740502265454545

00:25:17.810 --> 00:25:19.170 sleep disorder breathing,

NOTE Confidence: 0.740502265454545

00:25:19.170 --> 00:25:21.501 but it might not be so successful

NOTE Confidence: 0.740502265454545

00:25:21.501 --> 00:25:24.490 it it it ruling them out.

NOTE Confidence: 0.740502265454545

00:25:24.490 --> 00:25:26.576 Now as I think about it from

NOTE Confidence: 0.740502265454545

00:25:26.576 --> 00:25:27.329 a clinical perspective,

NOTE Confidence: 0.740502265454545

00:25:27.330 --> 00:25:29.325 sort of the group of patients that

NOTE Confidence: 0.740502265454545

00:25:29.325 --> 00:25:31.676 I might like to approach 1st and

NOTE Confidence: 0.740502265454545

00:25:31.676 --> 00:25:33.466 thinking about home based testing

NOTE Confidence: 0.740502265454545

00:25:33.466 --> 00:25:35.606 might be #1 post pubertal adolescent

NOTE Confidence: 0.740502265454545

00:25:35.606 --> 00:25:38.290 and #2A child who's overweight or obese.

NOTE Confidence: 0.740502265454545

00:25:38.290 --> 00:25:40.383 So I wanted to point out this

NOTE Confidence: 0.740502265454545

00:25:40.383 --> 00:25:42.469 particular study also from last year

NOTE Confidence: 0.740502265454545

00:25:42.469 --> 00:25:44.344 looking at portable sleep monitoring

NOTE Confidence: 0.740502265454545

00:25:44.344 --> 00:25:46.568 to diagnosis obstructive sleep apnea.

NOTE Confidence: 0.740502265454545

00:25:46.570 --> 00:25:49.030 This study did use apnea link.

NOTE Confidence: 0.740502265454545

00:25:49.030 --> 00:25:51.361 They did the apnea link one night

NOTE Confidence: 0.740502265454545

00:25:51.361 --> 00:25:52.643 alongside probably sonography in

NOTE Confidence: 0.740502265454545

00:25:52.643 --> 00:25:54.197 the lab and then a second night

NOTE Confidence: 0.740502265454545

00:25:54.197 --> 00:25:55.969 at home which was the HST night.

NOTE Confidence: 0.740502265454545

00:25:55.970 --> 00:25:57.790 And what you find is that you

NOTE Confidence: 0.740502265454545

00:25:57.790 --> 00:25:59.809 know kind of like what I've been

NOTE Confidence: 0.740502265454545

00:25:59.810 --> 00:26:01.255 arguing based on the literature

NOTE Confidence: 0.740502265454545

00:26:01.255 --> 00:26:02.700 is that there's over diagnosis,

NOTE Confidence: 0.740502265454545

00:26:02.700 --> 00:26:04.380 there's overestimate and underestimate

NOTE Confidence: 0.740502265454545

00:26:04.380 --> 00:26:06.900 of home based testing compared to

NOTE Confidence: 0.805218232727273

00:26:06.966 --> 00:26:08.910 PSG, which makes this a really.

NOTE Confidence: 0.805218232727273

00:26:08.910 --> 00:26:11.142 Really a little bit more nuanced to be

NOTE Confidence: 0.805218232727273

00:26:11.142 --> 00:26:13.517 able to adopt into clinical thinking.

NOTE Confidence: 0.805218232727273

00:26:13.520 --> 00:26:15.424 But what these authors pointed out is

NOTE Confidence: 0.805218232727273

00:26:15.424 --> 00:26:17.204 that overall in this particular group

NOTE Confidence: 0.805218232727273

00:26:17.204 --> 00:26:19.325 there was a high degree of diagnostic

NOTE Confidence: 0.805218232727273

00:26:19.379 --> 00:26:21.475 agreement so as as if what you wanted

NOTE Confidence: 0.805218232727273

00:26:21.475 --> 00:26:23.520 to understand was whether or not your

NOTE Confidence: 0.805218232727273

00:26:23.520 --> 00:26:25.941 child you know yes no binary just

NOTE Confidence: 0.805218232727273

00:26:25.941 --> 00:26:28.419 does the does your adolescent have

NOTE Confidence: 0.805218232727273

00:26:28.419 --> 00:26:30.565 sleep disorder breathing home based

NOTE Confidence: 0.805218232727273

00:26:30.565 --> 00:26:33.185 testing might be might be appropriately

NOTE Confidence: 0.805218232727273

00:26:33.185 --> 00:26:35.915 appropriately used to answer that question.

NOTE Confidence: 0.805218232727273

00:26:35.920 --> 00:26:39.376 But overall again that portable monitoring.

NOTE Confidence: 0.805218232727273

00:26:39.380 --> 00:26:41.310 They tend to underestimate PSG

NOTE Confidence: 0.805218232727273

00:26:41.310 --> 00:26:43.011 in terms of HIV.

NOTE Confidence: 0.805218232727273

00:26:43.011 --> 00:26:46.798 Well, what about watch Pat I again,

NOTE Confidence: 0.805218232727273

00:26:46.800 --> 00:26:48.024 I'm I'm not sure what you

NOTE Confidence: 0.805218232727273

00:26:48.024 --> 00:26:48.840 guys are using there,

NOTE Confidence: 0.805218232727273

00:26:48.840 --> 00:26:50.622 but in our neck of the woods we saw

NOTE Confidence: 0.805218232727273

00:26:50.622 --> 00:26:52.115 just a huge increase in watchpad

NOTE Confidence: 0.805218232727273

00:26:52.115 --> 00:26:53.778 over the course of the pandemic

NOTE Confidence: 0.805218232727273

00:26:53.778 --> 00:26:55.638 because of the disposability option.

NOTE Confidence: 0.805218232727273

00:26:55.640 --> 00:26:57.920 And so I wanted to point out that

NOTE Confidence: 0.805218232727273

00:26:57.920 --> 00:27:00.024 there are two studies in Pediatrics

NOTE Confidence: 0.805218232727273

00:27:00.024 --> 00:27:02.214 looking at this and one from.

NOTE Confidence: 0.805218232727273

00:27:02.220 --> 00:27:04.918 2018, actually both of them are from 2018.

NOTE Confidence: 0.805218232727273

00:27:04.918 --> 00:27:07.708 And then very interestingly just

NOTE Confidence: 0.805218232727273

00:27:07.708 --> 00:27:11.080 last month there's a a review of

NOTE Confidence: 0.805218232727273

00:27:11.080 --> 00:27:12.740 peripheral arterial tonometry devices,

NOTE Confidence: 0.805218232727273

00:27:12.740 --> 00:27:15.230 a systematic review across the boards

NOTE Confidence: 0.805218232727273

00:27:15.294 --> 00:27:16.989 for both Pediatrics and adults.

NOTE Confidence: 0.805218232727273

00:27:16.990 --> 00:27:19.468 There are only 74 pediatric patients

NOTE Confidence: 0.805218232727273

00:27:19.468 --> 00:27:22.201 that that that the systemic review

NOTE Confidence: 0.805218232727273

00:27:22.201 --> 00:27:25.219 reported upon they call the results

NOTE Confidence: 0.805218232727273

00:27:25.219 --> 00:27:28.440 excellent based on these two studies again

NOTE Confidence: 0.805218232727273

00:27:28.440 --> 00:27:31.678 mainly adolescents and I would point out.

NOTE Confidence: 0.805218232727273

00:27:31.678 --> 00:27:35.521 That these issues of what's the correct

NOTE Confidence: 0.805218232727273

00:27:35.521 --> 00:27:38.106 threshold to use are not fully resolved.

NOTE Confidence: 0.805218232727273

00:27:38.106 --> 00:27:41.314 So you know I think that's like a little

NOTE Confidence: 0.805218232727273

00:27:41.314 --> 00:27:44.277 bit of a positive perspective to say that

NOTE Confidence: 0.805218232727273

00:27:44.277 --> 00:27:46.965 that results for watchpad are excellent.

NOTE Confidence: 0.805218232727273

00:27:46.970 --> 00:27:49.238 But I do think that there could be a

NOTE Confidence: 0.805218232727273

00:27:49.238 --> 00:27:51.593 role and some utility depending on as

NOTE Confidence: 0.805218232727273

00:27:51.593 --> 00:27:54.118 long as you're framing the the clinical

NOTE Confidence: 0.805218232727273

00:27:54.118 --> 00:27:56.634 question correctly and you know the I

NOTE Confidence: 0.805218232727273

00:27:56.634 --> 00:27:59.290 think the the one of the two studies

NOTE Confidence: 0.805218232727273

00:27:59.369 --> 00:28:02.588 from from 2018 pointed out that an HIV.

NOTE Confidence: 0.805218232727273

00:28:02.590 --> 00:28:03.502 On the PAT,

NOTE Confidence: 0.805218232727273

00:28:03.502 --> 00:28:05.582 if you use a cutoff of 3.5

NOTE Confidence: 0.805218232727273

00:28:05.582 --> 00:28:07.346 events an hour on the PAT device,

NOTE Confidence: 0.805218232727273

00:28:07.350 --> 00:28:10.582 that can provide a about 77% sensitivity

NOTE Confidence: 0.805218232727273

00:28:10.582 --> 00:28:13.558 and 78% specificity compared to PSG.

NOTE Confidence: 0.838437093

00:28:16.720 --> 00:28:18.544 Leaving that topic behind,

NOTE Confidence: 0.838437093

00:28:18.544 --> 00:28:21.280 just a few words on reproducibility.

NOTE Confidence: 0.838437093

00:28:21.280 --> 00:28:24.336 So this was a study that evaluated night

NOTE Confidence: 0.838437093

00:28:24.336 --> 00:28:26.498 tonight variability of the Type 3 device.

NOTE Confidence: 0.838437093

00:28:26.500 --> 00:28:28.978 That's the Knox T3 HI again,

NOTE Confidence: 0.838437093

00:28:28.980 --> 00:28:31.116 small study, 30 children in adolescence,

NOTE Confidence: 0.838437093

00:28:31.120 --> 00:28:33.228 median age is a little bit older, 14.

NOTE Confidence: 0.838437093

00:28:33.228 --> 00:28:39.532 And you know, so a couple of interesting

NOTE Confidence: 0.838437093

00:28:39.532 --> 00:28:41.795 things #137% of participants had an

NOTE Confidence: 0.838437093

00:28:41.795 --> 00:28:43.570 HIV difference of greater than two

NOTE Confidence: 0.838437093

00:28:43.570 --> 00:28:45.320 events per greater than or equal to.

NOTE Confidence: 0.838437093

00:28:45.320 --> 00:28:47.476 Two events per hour between the nights

NOTE Confidence: 0.838437093

00:28:47.476 --> 00:28:49.953 it what 1 interesting finding is that

NOTE Confidence: 0.838437093

00:28:49.953 --> 00:28:52.617 if you were going after trying to

NOTE Confidence: 0.838437093

00:28:52.617 --> 00:28:54.807 identify cases of moderate to severe

NOTE Confidence: 0.838437093

00:28:54.807 --> 00:28:58.038 sleep apnea these were rarely missed but

NOTE Confidence: 0.838437093

00:28:58.038 --> 00:29:00.465 20% of patients did change diagnostic

NOTE Confidence: 0.838437093

00:29:00.465 --> 00:29:03.075 category between the nights and 50% of

NOTE Confidence: 0.838437093

00:29:03.075 --> 00:29:05.450 patients change severity care category.

NOTE Confidence: 0.838437093

00:29:05.450 --> 00:29:07.368 So diagnostic category would be like yes,

NOTE Confidence: 0.838437093

00:29:07.370 --> 00:29:09.554 no and then you know half the patients

NOTE Confidence: 0.838437093

00:29:09.554 --> 00:29:11.549 are shifting between severity category.

NOTE Confidence: 0.838437093

00:29:11.550 --> 00:29:13.846 So again it speaks to sort of limitations

NOTE Confidence: 0.838437093

00:29:13.846 --> 00:29:16.117 of home based testing to be able to.

NOTE Confidence: 0.838437093

00:29:16.120 --> 00:29:18.184 To get to that level of details to

NOTE Confidence: 0.838437093

00:29:18.184 --> 00:29:20.642 be able to say I'm confident that

NOTE Confidence: 0.838437093

00:29:20.642 --> 00:29:22.517 you have moderate obstructive sleep

NOTE Confidence: 0.838437093

00:29:22.585 --> 00:29:24.945 apnea again in children if if we say

NOTE Confidence: 0.838437093

00:29:24.945 --> 00:29:27.196 we're going to define that as an HI

NOTE Confidence: 0.838437093

00:29:27.196 --> 00:29:29.090 between 5:00 and 10:00 for example.

NOTE Confidence: 0.838437093

00:29:29.090 --> 00:29:29.400 Well,

NOTE Confidence: 0.838437093

00:29:29.400 --> 00:29:32.190 let's take a step back and ask the question,

NOTE Confidence: 0.838437093

00:29:32.190 --> 00:29:35.670 are there any event are are are there

NOTE Confidence: 0.838437093

00:29:35.670 --> 00:29:37.763 a sort of types of testing equipment

NOTE Confidence: 0.838437093

00:29:37.763 --> 00:29:39.439 that are approved for children?

NOTE Confidence: 0.838437093

00:29:39.440 --> 00:29:40.130 There are some.

NOTE Confidence: 0.838437093

00:29:40.130 --> 00:29:42.870 This is not meant to be a comprehensive list,

NOTE Confidence: 0.838437093

00:29:42.870 --> 00:29:45.486 but I will point out that Knox T3

NOTE Confidence: 0.838437093

00:29:45.490 --> 00:29:48.059 does have approval from 2009 and ages

NOTE Confidence: 0.838437093

00:29:48.059 --> 00:29:51.159 2 plus the watch PAT got approval on

NOTE Confidence: 0.838437093

00:29:51.160 --> 00:29:53.888 2016 for age 12 plus they also have

NOTE Confidence: 0.838437093

00:29:53.888 --> 00:29:56.960 a weight limitation of a 29.5 kilos.

NOTE Confidence: 0.838437093

00:29:56.960 --> 00:29:59.260 So no or greater.

NOTE Confidence: 0.838437093

00:29:59.260 --> 00:30:02.144 And then some to screen plus does

NOTE Confidence: 0.838437093

00:30:02.144 --> 00:30:05.370 have did in 2020 have an expansion to

NOTE Confidence: 0.838437093

00:30:05.370 --> 00:30:08.799 ages 2 plus and they have a number

NOTE Confidence: 0.838437093

00:30:08.799 --> 00:30:10.477 of different kind of configurations

NOTE Confidence: 0.838437093

00:30:10.477 --> 00:30:13.008 and one of those is a home suggesting

NOTE Confidence: 0.838437093

00:30:13.008 --> 00:30:13.669 configuration.

NOTE Confidence: 0.864747365714286

00:30:15.730 --> 00:30:18.768 So lots of unknowns in this space.

NOTE Confidence: 0.864747365714286

00:30:18.770 --> 00:30:21.706 We we don't and I think these unknowns

NOTE Confidence: 0.864747365714286

00:30:21.706 --> 00:30:23.870 limit sort of widespread use,

NOTE Confidence: 0.864747365714286

00:30:23.870 --> 00:30:25.210 at least in my mind.

NOTE Confidence: 0.864747365714286

00:30:25.210 --> 00:30:27.426 One is that we really don't know the

NOTE Confidence: 0.864747365714286

00:30:27.426 --> 00:30:29.369 minimum age for utility and safety.

NOTE Confidence: 0.864747365714286

00:30:29.370 --> 00:30:32.270 We don't have, you know,

NOTE Confidence: 0.864747365714286

00:30:32.270 --> 00:30:34.384 clear protocols and what do you do?

NOTE Confidence: 0.864747365714286

00:30:34.390 --> 00:30:36.805 We mentioned that oximetry and air flow

NOTE Confidence: 0.864747365714286

00:30:36.805 --> 00:30:39.809 are the two most common missing signals.

NOTE Confidence: 0.864747365714286

00:30:39.810 --> 00:30:42.288 Do you repeat, do you advance?

NOTE Confidence: 0.864747365714286

00:30:42.290 --> 00:30:44.124 What are the best pathways for parental

NOTE Confidence: 0.864747365714286

00:30:44.124 --> 00:30:45.359 training and involvement in sensor?

NOTE Confidence: 0.864747365714286

00:30:45.360 --> 00:30:47.140 Basement, what are the different

NOTE Confidence: 0.864747365714286

00:30:47.140 --> 00:30:49.691 pathways in terms of in person versus

NOTE Confidence: 0.864747365714286

00:30:49.691 --> 00:30:51.791 remote support leading up to the

NOTE Confidence: 0.864747365714286

00:30:51.791 --> 00:30:54.148 test and and even during the test,

NOTE Confidence: 0.864747365714286

00:30:54.150 --> 00:30:56.187 what are the best indications for testing?

NOTE Confidence: 0.864747365714286

00:30:56.190 --> 00:30:57.972 What's the base subgroup of pediatric

NOTE Confidence: 0.864747365714286

00:30:57.972 --> 00:31:00.368 patients for whom you might think about this?

NOTE Confidence: 0.864747365714286

00:31:00.370 --> 00:31:02.882 What are the optimal cut offs for the

NOTE Confidence: 0.864747365714286

00:31:02.882 --> 00:31:04.967 home based HIV and very importantly

NOTE Confidence: 0.864747365714286

00:31:04.967 --> 00:31:07.626 what are the device brand or equipment

NOTE Confidence: 0.864747365714286

00:31:07.626 --> 00:31:09.666 differences that might exist.

NOTE Confidence: 0.864747365714286

00:31:09.670 --> 00:31:11.950 This area is really just kind

NOTE Confidence: 0.864747365714286

00:31:11.950 --> 00:31:13.134 of like don't ask,

NOTE Confidence: 0.864747365714286

00:31:13.134 --> 00:31:14.406 don't tell right now in the

NOTE Confidence: 0.864747365714286

00:31:14.406 --> 00:31:15.629 literature I think it's really.

NOTE Confidence: 0.864747365714286

00:31:15.630 --> 00:31:17.062 Important to understand that

NOTE Confidence: 0.864747365714286

00:31:17.062 --> 00:31:18.494 and understand the specific

NOTE Confidence: 0.864747365714286

00:31:18.494 --> 00:31:19.968 characteristics of of your device

NOTE Confidence: 0.864747365714286

00:31:19.968 --> 00:31:21.606 and then finally how do you handle

NOTE Confidence: 0.864747365714286

00:31:21.658 --> 00:31:23.378 false positives and false negatives.

NOTE Confidence: 0.864747365714286

00:31:23.380 --> 00:31:26.468 So you know it's clear that there are

NOTE Confidence: 0.864747365714286

00:31:26.468 --> 00:31:28.750 both and so really thinking through

NOTE Confidence: 0.864747365714286

00:31:28.750 --> 00:31:30.640 an overall framework and algorithm

NOTE Confidence: 0.864747365714286

00:31:30.705 --> 00:31:32.753 in order to be able to navigate a

NOTE Confidence: 0.864747365714286

00:31:32.753 --> 00:31:34.782 variety of scenarios is is quite an

NOTE Confidence: 0.864747365714286

00:31:34.782 --> 00:31:36.654 important thing and and I I think

NOTE Confidence: 0.864747365714286

00:31:36.654 --> 00:31:38.103 it's a field we haven't done that

NOTE Confidence: 0.864747365714286

00:31:38.103 --> 00:31:39.560 it certainly at the center level

NOTE Confidence: 0.864747365714286

00:31:39.560 --> 00:31:41.564 some of that work can be engaged in

NOTE Confidence: 0.864747365714286

00:31:41.564 --> 00:31:43.836 and then I wanted to point out this

NOTE Confidence: 0.864747365714286

00:31:43.836 --> 00:31:46.019 study this was published in 2021.

NOTE Confidence: 0.864747365714286

00:31:46.019 --> 00:31:48.364 Some methods paper about pediatric

NOTE Confidence: 0.864747365714286

00:31:48.364 --> 00:31:50.240 home respiratory polygraphy study

NOTE Confidence: 0.864747365714286

00:31:50.304 --> 00:31:52.109 for the diagnosis of obstructive

NOTE Confidence: 0.864747365714286

00:31:52.109 --> 00:31:54.988 sleep apnea and the main goal of that

NOTE Confidence: 0.864747365714286

00:31:54.988 --> 00:31:57.004 study is to establish the diagnostic

NOTE Confidence: 0.864747365714286

00:31:57.004 --> 00:31:58.699 and therapeutic decision validity

NOTE Confidence: 0.864747365714286

00:31:58.699 --> 00:32:00.511 of simplified home respiratory

NOTE Confidence: 0.864747365714286

00:32:00.511 --> 00:32:02.408 polygraphy approach compared to PSG

NOTE Confidence: 0.864747365714286

00:32:02.408 --> 00:32:03.860 among children at risk for OSA.

NOTE Confidence: 0.864747365714286

00:32:03.860 --> 00:32:06.905 This is exactly the question at hand.

NOTE Confidence: 0.864747365714286

00:32:06.910 --> 00:32:08.772 And then secondary outcome is to look

NOTE Confidence: 0.864747365714286

00:32:08.772 --> 00:32:10.881 at the cost effectiveness of home

NOTE Confidence: 0.864747365714286

00:32:10.881 --> 00:32:12.971 respiratory polygraphy versus in lab

NOTE Confidence: 0.864747365714286

00:32:12.971 --> 00:32:15.057 cost effectiveness for outcome like that.

NOTE Confidence: 0.864747365714286

00:32:15.060 --> 00:32:16.271 One of the things that I think

NOTE Confidence: 0.864747365714286

00:32:16.271 --> 00:32:16.790 is really special.

NOTE Confidence: 0.864747365714286

00:32:16.790 --> 00:32:18.738 About this particular methods

NOTE Confidence: 0.864747365714286

00:32:18.738 --> 00:32:20.686 methodological approach is focusing

NOTE Confidence: 0.864747365714286

00:32:20.686 --> 00:32:23.824 on the outcome for the patient rather

NOTE Confidence: 0.864747365714286

00:32:23.824 --> 00:32:26.354 than looking at HIV equivalents which

NOTE Confidence: 0.864747365714286

00:32:26.354 --> 00:32:28.895 at best might be a leading indicator,

NOTE Confidence: 0.864747365714286

00:32:28.900 --> 00:32:30.678 really looking at what did it mean

NOTE Confidence: 0.864747365714286

00:32:30.678 --> 00:32:32.808 in terms of clinical outcome for

NOTE Confidence: 0.864747365714286

00:32:32.808 --> 00:32:34.548 that particular pediatric patient.

NOTE Confidence: 0.864747365714286

00:32:34.550 --> 00:32:38.104 And so I think that I think that

NOTE Confidence: 0.864747365714286

00:32:38.104 --> 00:32:40.312 is the appropriate way to approach

NOTE Confidence: 0.864747365714286

00:32:40.312 --> 00:32:42.070 these sorts of questions.

NOTE Confidence: 0.864747365714286

00:32:42.070 --> 00:32:42.853 And the other,

NOTE Confidence: 0.864747365714286

00:32:42.853 --> 00:32:44.419 the other things I like about

NOTE Confidence: 0.864747365714286

00:32:44.419 --> 00:32:45.640 this particular study,

NOTE Confidence: 0.864747365714286

00:32:45.640 --> 00:32:47.056 number one is the age range.

NOTE Confidence: 0.864747365714286

00:32:47.060 --> 00:32:50.164 2 to 14 and then finally the sample

NOTE Confidence: 0.864747365714286

00:32:50.164 --> 00:32:52.236 size estimates are are quite

NOTE Confidence: 0.864747365714286

00:32:52.236 --> 00:32:54.476 ambitious at 320 children and I

NOTE Confidence: 0.864747365714286

00:32:54.476 --> 00:32:56.698 think I think that would be helpful.

NOTE Confidence: 0.864747365714286

00:32:56.700 --> 00:32:58.940 I wanted to point out that while

NOTE Confidence: 0.864747365714286

00:32:58.940 --> 00:33:01.183 we struggle with home sleep apnea

NOTE Confidence: 0.864747365714286

00:33:01.183 --> 00:33:03.208 testing and Pediatrics you know

NOTE Confidence: 0.864747365714286

00:33:03.208 --> 00:33:04.946 technology is zipping ahead and

NOTE Confidence: 0.864747365714286

00:33:04.946 --> 00:33:06.955 I so I wanted to point out

NOTE Confidence: 0.85843010375

00:33:06.960 --> 00:33:09.544 a couple of of papers in this space.

NOTE Confidence: 0.85843010375

00:33:09.550 --> 00:33:12.035 This is a paper looking at cloud

NOTE Confidence: 0.85843010375

00:33:12.035 --> 00:33:13.604 algorithm driven oximetry based

NOTE Confidence: 0.85843010375

00:33:13.604 --> 00:33:15.799 diagnosis of obstructive sleep apnea.

NOTE Confidence: 0.85843010375

00:33:15.800 --> 00:33:17.900 This is using a smartphone.

NOTE Confidence: 0.85843010375

00:33:17.900 --> 00:33:20.032 A Bluetooth smart tone,

NOTE Confidence: 0.85843010375

00:33:20.032 --> 00:33:22.697 a smartphone oximeter in habitually

NOTE Confidence: 0.85843010375

00:33:22.697 --> 00:33:25.538 snoring children again ages 2 to 15,

NOTE Confidence: 0.85843010375

00:33:25.540 --> 00:33:27.588 but the mean was six years of age

NOTE Confidence: 0.85843010375

00:33:27.588 --> 00:33:29.874 and it's a big sample of 432 children

NOTE Confidence: 0.85843010375

00:33:29.874 --> 00:33:32.256 and what they found using this

NOTE Confidence: 0.85843010375

00:33:32.256 --> 00:33:34.439 this Bluetooth based oximeters and

NOTE Confidence: 0.85843010375

00:33:34.439 --> 00:33:37.064 accuracy at all estimated HIS of 79%

NOTE Confidence: 0.85843010375

00:33:37.064 --> 00:33:39.080 and a false negative rate for the

NOTE Confidence: 0.85843010375

00:33:39.148 --> 00:33:41.558 diagnosis of sleep apnea 4.7% which.

NOTE Confidence: 0.85843010375

00:33:41.558 --> 00:33:44.072 You know, gives one pause considering

NOTE Confidence: 0.85843010375

00:33:44.072 --> 00:33:46.840 the types of performance data that we

NOTE Confidence: 0.85843010375

00:33:46.840 --> 00:33:49.899 saw for home sleep apnea testing overall.

NOTE Confidence: 0.85843010375

00:33:49.900 --> 00:33:52.282 And then there's this study looking

NOTE Confidence: 0.85843010375

00:33:52.282 --> 00:33:54.934 at a software generated HI derived

NOTE Confidence: 0.85843010375

00:33:54.934 --> 00:33:56.260 from Photoplethysmography signal.

NOTE Confidence: 0.85843010375

00:33:56.260 --> 00:33:58.414 So this this utilizes cardio pulmonary

NOTE Confidence: 0.85843010375

00:33:58.414 --> 00:34:00.519 coupling analysis from the PPG signal.

NOTE Confidence: 0.85843010375

00:34:00.520 --> 00:34:03.394 And and these researchers use the

NOTE Confidence: 0.85843010375

00:34:03.394 --> 00:34:05.706 chat database which includes 1244

NOTE Confidence: 0.85843010375

00:34:05.706 --> 00:34:08.478 habitually snoring children aged 5 to 10.

NOTE Confidence: 0.85843010375

00:34:08.480 --> 00:34:11.184 And they were able to calculate HI with

NOTE Confidence: 0.85843010375

00:34:11.184 --> 00:34:13.824 91 and 98% agreement of HI classes.

NOTE Confidence: 0.85843010375

00:34:13.824 --> 00:34:16.320 So they class of lesson one,

NOTE Confidence: 0.85843010375

00:34:16.320 --> 00:34:17.127 one to five,

NOTE Confidence: 0.85843010375

00:34:17.127 --> 00:34:19.010 five to 10 and greater than and

NOTE Confidence: 0.85843010375

00:34:19.072 --> 00:34:20.050 greater than 10.

NOTE Confidence: 0.85843010375

00:34:20.050 --> 00:34:22.724 So again I think being open minded

NOTE Confidence: 0.85843010375

00:34:22.724 --> 00:34:25.130 to advancement of technologies is,

NOTE Confidence: 0.85843010375

00:34:25.130 --> 00:34:26.635 is something we have to keep our

NOTE Confidence: 0.85843010375

00:34:26.635 --> 00:34:28.290 finger on the pulse of this and

NOTE Confidence: 0.85843010375

00:34:28.290 --> 00:34:29.250 that's no pun intended.

NOTE Confidence: 0.85843010375

00:34:29.250 --> 00:34:32.519 This next study is around Pulse transit

NOTE Confidence: 0.85843010375

00:34:32.519 --> 00:34:36.088 time which again if you add pulse

NOTE Confidence: 0.85843010375

00:34:36.088 --> 00:34:38.683 transit time to respiratory polygraphy,

NOTE Confidence: 0.85843010375

00:34:38.690 --> 00:34:40.765 can that add anything overall

NOTE Confidence: 0.85843010375

00:34:40.765 --> 00:34:42.425 to the device performance,

NOTE Confidence: 0.85843010375

00:34:42.430 --> 00:34:44.614 the home based test device performance

NOTE Confidence: 0.85843010375

00:34:44.614 --> 00:34:46.678 and for the diagnosis of sleep

NOTE Confidence: 0.85843010375

00:34:46.678 --> 00:34:48.568 apnea and you can see here that

NOTE Confidence: 0.85843010375

00:34:48.570 --> 00:34:50.316 that generally speaking.

NOTE Confidence: 0.85843010375

00:34:50.316 --> 00:34:53.226 The respiratory polygraphy and and

NOTE Confidence: 0.85843010375

00:34:53.226 --> 00:34:55.471 polysomnography results are fairly

NOTE Confidence: 0.85843010375

00:34:55.471 --> 00:34:57.976 similar with no significant difference,

NOTE Confidence: 0.85843010375

00:34:57.980 --> 00:35:00.950 although close with the total hypopneas.

NOTE Confidence: 0.864163130909091

00:35:03.180 --> 00:35:06.174 So leaving diagnostic testing I wanted

NOTE Confidence: 0.864163130909091

00:35:06.174 --> 00:35:09.088 to very briefly touch on empiric APAP.

NOTE Confidence: 0.864163130909091

00:35:09.088 --> 00:35:11.426 This talk is not really devoted to

NOTE Confidence: 0.864163130909091

00:35:11.426 --> 00:35:14.039 that but it I think it's I think it's

NOTE Confidence: 0.864163130909091

00:35:14.039 --> 00:35:16.549 relevant it was brought up again and

NOTE Confidence: 0.864163130909091

00:35:16.549 --> 00:35:18.439 and the considerations article from

NOTE Confidence: 0.864163130909091

00:35:18.440 --> 00:35:20.296 last December and I so I wanted to

NOTE Confidence: 0.864163130909091

00:35:20.296 --> 00:35:22.079 point out a couple of papers here.

NOTE Confidence: 0.864163130909091

00:35:22.080 --> 00:35:23.739 This is a paper looking at auto

NOTE Confidence: 0.864163130909091

00:35:23.739 --> 00:35:25.445 titrating CPAP for the treatment of

NOTE Confidence: 0.864163130909091

00:35:25.445 --> 00:35:27.015 obstructive sleep apnea in children.

NOTE Confidence: 0.864163130909091

00:35:27.020 --> 00:35:28.598 What's interesting about this I use

NOTE Confidence: 0.864163130909091

00:35:28.598 --> 00:35:30.236 this sometime in my own practice

NOTE Confidence: 0.864163130909091

00:35:30.236 --> 00:35:31.850 I typically use it in typically.

NOTE Confidence: 0.864163130909091

00:35:31.850 --> 00:35:32.530 Developing children.

NOTE Confidence: 0.864163130909091

00:35:32.530 --> 00:35:34.570 But what was interesting about this

NOTE Confidence: 0.864163130909091

00:35:34.570 --> 00:35:36.539 report is that these children did,

NOTE Confidence: 0.864163130909091

00:35:36.540 --> 00:35:39.179 they did have a pretty broad spectrum

NOTE Confidence: 0.864163130909091

00:35:39.179 --> 00:35:40.828 of pediatric patients including

NOTE Confidence: 0.864163130909091

00:35:40.828 --> 00:35:42.620 some with cerebral palsy,

NOTE Confidence: 0.864163130909091

00:35:42.620 --> 00:35:43.732 musculoskeletal problems,

NOTE Confidence: 0.864163130909091

00:35:43.732 --> 00:35:45.400 other neurological problems,

NOTE Confidence: 0.864163130909091

00:35:45.400 --> 00:35:47.216 chromosomal abnormalities and the

NOTE Confidence: 0.864163130909091

00:35:47.216 --> 00:35:49.940 children were a little bit older

NOTE Confidence: 0.864163130909091

00:35:50.016 --> 00:35:52.384 at 13 years and but what they found

NOTE Confidence: 0.864163130909091

00:35:52.384 --> 00:35:54.699 is that the compared to titration

NOTE Confidence: 0.864163130909091

00:35:54.699 --> 00:35:56.764 based pressures that using the

NOTE Confidence: 0.864163130909091

00:35:56.764 --> 00:35:58.492 P90 these were Phillips devices.

NOTE Confidence: 0.864163130909091

00:35:58.492 --> 00:36:00.809 You can see over there on the

NOTE Confidence: 0.864163130909091

00:36:00.809 --> 00:36:01.929 left using the P90.

NOTE Confidence: 0.864163130909091

00:36:01.930 --> 00:36:04.793 It was a pre performed pretty well

NOTE Confidence: 0.864163130909091

00:36:04.793 --> 00:36:07.716 in this group of older children

NOTE Confidence: 0.864163130909091

00:36:07.716 --> 00:36:10.135 or adolescent age children in

NOTE Confidence: 0.864163130909091

00:36:10.135 --> 00:36:10.960 terms of treatment.

NOTE Confidence: 0.864163130909091

00:36:10.960 --> 00:36:13.518 And then I wanted to point out this study.

NOTE Confidence: 0.864163130909091

00:36:13.520 --> 00:36:15.130 This was published by my

NOTE Confidence: 0.864163130909091

00:36:15.130 --> 00:36:16.096 colleagues at Stanford,

NOTE Confidence: 0.864163130909091

00:36:16.100 --> 00:36:18.200 Carolina Corey and and Marian Tablazo.

NOTE Confidence: 0.864163130909091

00:36:18.200 --> 00:36:19.588 It's a smaller study.

NOTE Confidence: 0.864163130909091

00:36:19.588 --> 00:36:22.226 They looked at 19 children and again

NOTE Confidence: 0.864163130909091

00:36:22.226 --> 00:36:24.661 these these children had fairly

NOTE Confidence: 0.864163130909091

00:36:24.661 --> 00:36:26.609 pronounced sleep disorder breathing

NOTE Confidence: 0.864163130909091

00:36:26.679 --> 00:36:29.640 with a PSGOHI of 12.3 per hour.

NOTE Confidence: 0.864163130909091

00:36:29.640 --> 00:36:33.064 But what you could see is the titrated.

NOTE Confidence: 0.864163130909091

00:36:33.070 --> 00:36:35.590 Pap pressure was fairly similar

NOTE Confidence: 0.864163130909091

00:36:35.590 --> 00:36:38.662 to the pressures reported on an

NOTE Confidence: 0.864163130909091

00:36:38.662 --> 00:36:40.890 auto titrating CPAP with this

NOTE Confidence: 0.864163130909091

00:36:40.890 --> 00:36:42.570 with with some differences,

NOTE Confidence: 0.864163130909091

00:36:42.570 --> 00:36:44.430 relatively small amount of differences.

NOTE Confidence: 0.83028299856

00:36:47.300 --> 00:36:48.959 I'm going to take a breath there

NOTE Confidence: 0.83028299856

00:36:48.959 --> 00:36:50.388 and I'm going to switch again

NOTE Confidence: 0.83028299856

00:36:50.388 --> 00:36:52.355 and I want to talk a little bit

NOTE Confidence: 0.83028299856

00:36:52.355 --> 00:36:53.799 about actigraphy and wearables.

NOTE Confidence: 0.83028299856

00:36:53.800 --> 00:36:55.529 Again, this kind of falls into the

NOTE Confidence: 0.83028299856

00:36:55.529 --> 00:36:57.200 space of home based assessment.

NOTE Confidence: 0.83028299856

00:36:57.200 --> 00:37:00.026 Well, why would I even need to go there?

NOTE Confidence: 0.83028299856

00:37:00.030 --> 00:37:02.150 One reason is that again,

NOTE Confidence: 0.83028299856

00:37:02.150 --> 00:37:04.670 Actigraphy is recommended in the

NOTE Confidence: 0.83028299856

00:37:04.670 --> 00:37:07.190 evaluation of certain sleep disorders.

NOTE Confidence: 0.83028299856

00:37:07.190 --> 00:37:09.130 It's suggested.

NOTE Confidence: 0.83028299856

00:37:09.130 --> 00:37:12.625 So it actually the Academy and its

NOTE Confidence: 0.83028299856

00:37:12.625 --> 00:37:13.869 practice guide clinical practice

NOTE Confidence: 0.83028299856

00:37:13.869 --> 00:37:15.538 guidelines suggest the use of actigraphy

NOTE Confidence: 0.83028299856

00:37:15.538 --> 00:37:17.290 for the assessment of pediatric insomnia.

NOTE Confidence: 0.83028299856

00:37:17.290 --> 00:37:20.320 Disorder and circadian rhythm disorders.

NOTE Confidence: 0.83028299856

00:37:20.320 --> 00:37:23.632 And in this I actually particularly

NOTE Confidence: 0.83028299856

00:37:23.632 --> 00:37:26.654 like this paper because it explicitly

NOTE Confidence: 0.83028299856

00:37:26.654 --> 00:37:29.096 calls out that actigraphy has pretty

NOTE Confidence: 0.83028299856

00:37:29.096 --> 00:37:31.474 wide mean differences with sleep logs

NOTE Confidence: 0.83028299856

00:37:31.474 --> 00:37:34.599 and with PSG for wake after sleep onset,

NOTE Confidence: 0.83028299856

00:37:34.600 --> 00:37:35.800 for total sleep time,

NOTE Confidence: 0.83028299856

00:37:35.800 --> 00:37:37.000 for sleep onset latency,

NOTE Confidence: 0.83028299856

00:37:37.000 --> 00:37:40.458 and there's very few studies in Pediatrics.

NOTE Confidence: 0.83028299856

00:37:40.460 --> 00:37:41.012 Nonetheless,

NOTE Confidence: 0.83028299856

00:37:41.012 --> 00:37:43.772 the paper does promulgate clinical

NOTE Confidence: 0.83028299856

00:37:43.772 --> 00:37:45.980 significance thresholds for maximum

NOTE Confidence: 0.83028299856

00:37:46.047 --> 00:37:49.035 allowable differences in the 95th percentile.

NOTE Confidence: 0.83028299856

00:37:49.040 --> 00:37:50.956 Confidence intervals between Echography

NOTE Confidence: 0.83028299856

00:37:50.956 --> 00:37:53.830 versus PSG for total sleep time,

NOTE Confidence: 0.83028299856

00:37:53.830 --> 00:37:54.424 sleep onset,

NOTE Confidence: 0.83028299856

00:37:54.424 --> 00:37:56.503 latency and and wake after sleep onset

NOTE Confidence: 0.83028299856

00:37:56.503 --> 00:37:58.536 and you can see there's fairly big.

NOTE Confidence: 0.83028299856

00:37:58.540 --> 00:38:00.360 You know, the windows are fairly wide.

NOTE Confidence: 0.83028299856

00:38:00.360 --> 00:38:02.544 It's 50 minutes or 40 minutes

NOTE Confidence: 0.83028299856

00:38:02.544 --> 00:38:04.000 depending on the metric.

NOTE Confidence: 0.83028299856

00:38:04.000 --> 00:38:04.284 Well,

NOTE Confidence: 0.83028299856

00:38:04.284 --> 00:38:06.556 there are a number of papers that have

NOTE Confidence: 0.83028299856

00:38:06.556 --> 00:38:09.130 come out in recent years looking at

NOTE Confidence: 0.83028299856

00:38:09.130 --> 00:38:10.811 consumer consumer sleep wearables you

NOTE Confidence: 0.83028299856

00:38:10.811 --> 00:38:11.957 know which I think is fascinating.

NOTE Confidence: 0.83028299856

00:38:11.960 --> 00:38:13.496 I get questions all the time

NOTE Confidence: 0.83028299856

00:38:13.496 --> 00:38:15.249 on this from from my patients.

NOTE Confidence: 0.83028299856

00:38:15.250 --> 00:38:17.236 Maybe that's because I'm Silicon Valley,

NOTE Confidence: 0.83028299856

00:38:17.240 --> 00:38:19.256 I'm not sure you guys can tell me.

NOTE Confidence: 0.83028299856

00:38:19.260 --> 00:38:22.036 And so just a couple words of caution

NOTE Confidence: 0.83028299856

00:38:22.036 --> 00:38:24.219 risk Warren consumer devices are

NOTE Confidence: 0.83028299856

00:38:24.220 --> 00:38:26.428 you know largely not validated in

NOTE Confidence: 0.83028299856

00:38:26.428 --> 00:38:27.900 patient or clinical populations

NOTE Confidence: 0.83028299856

00:38:27.962 --> 00:38:30.104 are generally validated at all or

NOTE Confidence: 0.83028299856

00:38:30.104 --> 00:38:32.100 performance tested in healthy sleepers.

NOTE Confidence: 0.83028299856

00:38:32.100 --> 00:38:33.684 The training data sets for sleep

NOTE Confidence: 0.83028299856

00:38:33.684 --> 00:38:34.740 disorders typically do not.

NOTE Confidence: 0.83028299856

00:38:34.740 --> 00:38:35.284 Include children,

NOTE Confidence: 0.83028299856

00:38:35.284 --> 00:38:37.188 these are not cleared by the FDA,

NOTE Confidence: 0.83028299856

00:38:37.190 --> 00:38:38.715 these devices and they can't

NOTE Confidence: 0.83028299856

00:38:38.715 --> 00:38:39.630 be manually scored.

NOTE Confidence: 0.83028299856

00:38:39.630 --> 00:38:42.798 They use the black box although

NOTE Confidence: 0.83028299856

00:38:42.798 --> 00:38:44.910 almost algorithm almost universally.

NOTE Confidence: 0.83028299856

00:38:44.910 --> 00:38:46.980 And I will point out that a little bit

NOTE Confidence: 0.83028299856

00:38:46.980 --> 00:38:49.620 of data that we have does definitely

NOTE Confidence: 0.83028299856

00:38:49.620 --> 00:38:51.188 demonstrate that proportional biases

NOTE Confidence: 0.83028299856

00:38:51.253 --> 00:38:53.325 exist and these can vary by disorder.

NOTE Confidence: 0.83028299856

00:38:53.330 --> 00:38:54.443 So I'll show you a little bit

NOTE Confidence: 0.83028299856

00:38:54.443 --> 00:38:55.150 of data about that.

NOTE Confidence: 0.83028299856

00:38:55.150 --> 00:38:55.522 Nonetheless,

NOTE Confidence: 0.83028299856

00:38:55.522 --> 00:38:57.754 they are very widespread among my

NOTE Confidence: 0.83028299856

00:38:57.754 --> 00:38:59.820 patients and in the market generally

NOTE Confidence: 0.83028299856

00:38:59.820 --> 00:39:02.268 and they do have a couple of advantages

NOTE Confidence: 0.83028299856

00:39:02.268 --> 00:39:05.184 like a tiger fee they can they can measure.

NOTE Confidence: 0.83028299856

00:39:05.190 --> 00:39:07.080 Possible nights over different circumstances.

NOTE Confidence: 0.83028299856

00:39:07.080 --> 00:39:08.826 And they may have certain advantages

NOTE Confidence: 0.83028299856

00:39:08.826 --> 00:39:10.530 over sea flags in children,

NOTE Confidence: 0.83028299856

00:39:10.530 --> 00:39:12.615 especially in adolescents who may

NOTE Confidence: 0.83028299856

00:39:12.615 --> 00:39:14.980 have recall bias or missing us.

NOTE Confidence: 0.83028299856

00:39:14.980 --> 00:39:15.534 You know,

NOTE Confidence: 0.83028299856

00:39:15.534 --> 00:39:18.380 as a parent of two teens and a preteen,

NOTE Confidence: 0.83028299856

00:39:18.380 --> 00:39:20.534 trying to encourage them to fill

NOTE Confidence: 0.83028299856

00:39:20.534 --> 00:39:23.019 out a sleep log every morning

NOTE Confidence: 0.83028299856

00:39:23.020 --> 00:39:24.360 could be a little challenging.

NOTE Confidence: 0.83028299856

00:39:24.360 --> 00:39:25.524 So, you know,

NOTE Confidence: 0.83028299856

00:39:25.524 --> 00:39:27.852 different different elements of of value.

NOTE Confidence: 0.83028299856

00:39:27.860 --> 00:39:29.630 And I constructed this earlier in

NOTE Confidence: 0.83028299856

00:39:29.630 --> 00:39:31.559 the year based on studies looking

NOTE Confidence: 0.83028299856

00:39:31.559 --> 00:39:33.269 at these consumer wearables that

NOTE Confidence: 0.83028299856

00:39:33.269 --> 00:39:35.338 did have a ground source of.

NOTE Confidence: 0.83028299856

00:39:35.340 --> 00:39:36.584 Truth that included hymnography

NOTE Confidence: 0.83028299856

00:39:36.584 --> 00:39:38.722 and that's not the only way to

NOTE Confidence: 0.83028299856

00:39:38.722 --> 00:39:40.410 do it but but I think that's a

NOTE Confidence: 0.83028299856

00:39:40.410 --> 00:39:41.947 pretty important truth measure and

NOTE Confidence: 0.83028299856

00:39:41.947 --> 00:39:43.849 so looking at these studies they

NOTE Confidence: 0.864786568333333

00:39:43.850 --> 00:39:45.815 all have certain trends in

NOTE Confidence: 0.864786568333333

00:39:45.815 --> 00:39:47.880 common so and the devices that

NOTE Confidence: 0.864786568333333

00:39:47.880 --> 00:39:49.550 were studied were Fitbit charge,

NOTE Confidence: 0.864786568333333

00:39:49.550 --> 00:39:51.030 the Ulta, the Ora Ring,

NOTE Confidence: 0.864786568333333

00:39:51.030 --> 00:39:52.824 the polar restore and wearable device

NOTE Confidence: 0.864786568333333

00:39:52.824 --> 00:39:55.236 and and most and then all of these

NOTE Confidence: 0.864786568333333

00:39:55.236 --> 00:39:56.964 there was also actigraph or active

NOTE Confidence: 0.864786568333333

00:39:57.027 --> 00:39:58.791 watch some some measure of actigraphy

NOTE Confidence: 0.864786568333333

00:39:58.791 --> 00:40:01.146 is a real world alternative measure.

NOTE Confidence: 0.864786568333333

00:40:01.146 --> 00:40:04.086 And all of these studies,

NOTE Confidence: 0.864786568333333

00:40:04.090 --> 00:40:06.748 the wearable devices tend to underestimate

NOTE Confidence: 0.864786568333333

00:40:06.748 --> 00:40:09.545 turtle sleep time and overestimate wake

NOTE Confidence: 0.864786568333333

00:40:09.545 --> 00:40:12.407 after sleep onset where measure the

NOTE Confidence: 0.864786568333333

00:40:12.407 --> 00:40:15.027 sensitivity for sleep tends to be high.

NOTE Confidence: 0.864786568333333

00:40:15.030 --> 00:40:16.074 Again, these are going

NOTE Confidence: 0.864786568333333

00:40:16.074 --> 00:40:17.118 to be typical sleepers,

NOTE Confidence: 0.864786568333333

00:40:17.120 --> 00:40:18.944 so that's not surprising.

NOTE Confidence: 0.864786568333333

00:40:18.944 --> 00:40:21.224 And the specificity for sleep,

NOTE Confidence: 0.864786568333333

00:40:21.230 --> 00:40:23.273 in other words wake detection is is quite a

NOTE Confidence: 0.864786568333333

00:40:23.273 --> 00:40:25.349 bit lower and you can see that over here.

NOTE Confidence: 0.864786568333333

00:40:25.350 --> 00:40:26.650 So sensitivities for sleep tend

NOTE Confidence: 0.864786568333333

00:40:26.650 --> 00:40:28.762 to be right around 90% plus minus,

NOTE Confidence: 0.864786568333333

00:40:28.762 --> 00:40:30.792 sometimes a little bit lower

NOTE Confidence: 0.864786568333333

00:40:30.792 --> 00:40:32.010 for actigraphy like.

NOTE Confidence: 0.864786568333333

00:40:32.010 --> 00:40:34.845 And the peasant pesonen study and then

NOTE Confidence: 0.864786568333333

00:40:34.845 --> 00:40:36.448 specificity meaning wake detection

NOTE Confidence: 0.864786568333333

00:40:36.448 --> 00:40:38.695 tends to be quite a bit lower.

NOTE Confidence: 0.864786568333333

00:40:38.700 --> 00:40:42.584 So in the polar device from 31 to 98%,

NOTE Confidence: 0.864786568333333

00:40:42.584 --> 00:40:46.132 that's a really big range up to 88 to

NOTE Confidence: 0.864786568333333

00:40:46.132 --> 00:40:48.780 90% in in one of the Fitbit studies.

NOTE Confidence: 0.864786568333333

00:40:48.780 --> 00:40:51.508 And all of those fall within the range.

NOTE Confidence: 0.864786568333333

00:40:51.510 --> 00:40:52.918 By the way if you look at the,

NOTE Confidence: 0.864786568333333

00:40:52.920 --> 00:40:55.720 let me go back, if you look at sort of.

NOTE Confidence: 0.864786568333333

00:40:55.720 --> 00:40:57.756 The underestimate overestimate bounds.

NOTE Confidence: 0.864786568333333

00:40:57.756 --> 00:41:00.301 They're falling within the range

NOTE Confidence: 0.864786568333333

00:41:00.301 --> 00:41:02.489 that that generally speaking,

NOTE Confidence: 0.864786568333333

00:41:02.490 --> 00:41:04.765 that's that's been established by

NOTE Confidence: 0.864786568333333

00:41:04.765 --> 00:41:06.585 the academies clinical practice

NOTE Confidence: 0.864786568333333

00:41:06.585 --> 00:41:08.020 guideline for actigraphy.

NOTE Confidence: 0.864786568333333

00:41:08.020 --> 00:41:10.532 So my kind of my own conclusion from

NOTE Confidence: 0.864786568333333

00:41:10.532 --> 00:41:13.201 this is that consumer sleep trackers

NOTE Confidence: 0.864786568333333

00:41:13.201 --> 00:41:16.153 can perform pretty imperfectly for sure,

NOTE Confidence: 0.864786568333333

00:41:16.160 --> 00:41:17.904 but as about as well as actigraphy for

NOTE Confidence: 0.864786568333333

00:41:17.904 --> 00:41:19.639 sleep wake in children and adolescents.

NOTE Confidence: 0.864786568333333

00:41:19.640 --> 00:41:21.240 This is not to.

NOTE Confidence: 0.864786568333333

00:41:21.240 --> 00:41:23.640 Please don't confuse that with staging,

NOTE Confidence: 0.864786568333333

00:41:23.640 --> 00:41:25.656 which I think is a different kettle of fish.

NOTE Confidence: 0.864786568333333

00:41:25.660 --> 00:41:27.568 I do think it's important to

NOTE Confidence: 0.864786568333333

00:41:27.568 --> 00:41:29.210 be aware of proportional bias,

NOTE Confidence: 0.864786568333333

00:41:29.210 --> 00:41:31.898 which means that depending on like

NOTE Confidence: 0.864786568333333

00:41:31.898 --> 00:41:34.997 if your measure is total sleep time

NOTE Confidence: 0.864786568333333

00:41:34.997 --> 00:41:37.435 or like actually in this study you

NOTE Confidence: 0.864786568333333

00:41:37.435 --> 00:41:39.868 can see this is true for staging

NOTE Confidence: 0.864786568333333

00:41:39.868 --> 00:41:42.070 if you're measure is light sleep

NOTE Confidence: 0.864786568333333

00:41:42.070 --> 00:41:45.710 that the more the more.

NOTE Confidence: 0.864786568333333

00:41:45.710 --> 00:41:46.080 Sleep,

NOTE Confidence: 0.864786568333333

00:41:46.080 --> 00:41:48.300 you have measured in that category

NOTE Confidence: 0.864786568333333

00:41:48.300 --> 00:41:50.775 on your ground truth measure that

NOTE Confidence: 0.864786568333333

00:41:50.775 --> 00:41:52.925 the that your wearable detection

NOTE Confidence: 0.864786568333333

00:41:52.925 --> 00:41:55.471 changes based on how much is is

NOTE Confidence: 0.864786568333333

00:41:55.471 --> 00:41:56.763 present on that recording.

NOTE Confidence: 0.864786568333333

00:41:56.770 --> 00:41:59.242 And so this is a big deal because

NOTE Confidence: 0.864786568333333

00:41:59.242 --> 00:42:01.695 it really limits our ability to be

NOTE Confidence: 0.864786568333333

00:42:01.695 --> 00:42:04.249 able to use wearables in the field.

NOTE Confidence: 0.864786568333333

00:42:04.250 --> 00:42:04.964 By the way,

NOTE Confidence: 0.864786568333333

00:42:04.964 --> 00:42:06.392 a trigger fee is not necessarily

NOTE Confidence: 0.864786568333333

00:42:06.392 --> 00:42:07.938 better or worse than the consumer

NOTE Confidence: 0.864786568333333

00:42:07.938 --> 00:42:09.541 wearables in this space and that's

NOTE Confidence: 0.864786568333333

00:42:09.541 --> 00:42:11.016 shown in this particular study,

NOTE Confidence: 0.864786568333333

00:42:11.020 --> 00:42:12.615 which again demonstrates this one

NOTE Confidence: 0.864786568333333

00:42:12.615 --> 00:42:13.891 demonstrates proportional bias even

NOTE Confidence: 0.864786568333333

00:42:13.891 --> 00:42:15.428 with total sleep time and sleep.

NOTE Confidence: 0.864786568333333

00:42:15.430 --> 00:42:15.817 Efficiency.

NOTE Confidence: 0.864786568333333

00:42:15.817 --> 00:42:16.978 Not just staging,

NOTE Confidence: 0.864786568333333

00:42:16.978 --> 00:42:20.066 but the the column on the left is

NOTE Confidence: 0.864786568333333

00:42:20.066 --> 00:42:22.096 that evaluation of where consumer,

NOTE Confidence: 0.864786568333333

00:42:22.100 --> 00:42:22.384 wearable,

NOTE Confidence: 0.864786568333333

00:42:22.384 --> 00:42:24.372 Fitbit and the consumer and the column

NOTE Confidence: 0.864786568333333

00:42:24.372 --> 00:42:26.745 on the right is looking at active graphs.

NOTE Confidence: 0.864786568333333

00:42:26.750 --> 00:42:29.389 You can see the biases are relatively

NOTE Confidence: 0.864786568333333

00:42:29.389 --> 00:42:31.978 similar between the two types of devices.

NOTE Confidence: 0.864786568333333

00:42:31.980 --> 00:42:35.035 And this is just to remind us

NOTE Confidence: 0.864786568333333

00:42:35.035 --> 00:42:37.100 all that we have to be really,

NOTE Confidence: 0.864786568333333

00:42:37.100 --> 00:42:39.656 really cautious and how we approach

NOTE Confidence: 0.864786568333333

00:42:39.656 --> 00:42:41.360 consumer wearables because their

NOTE Confidence: 0.864786568333333

00:42:41.423 --> 00:42:43.208 training data sets or validation

NOTE Confidence: 0.864786568333333

00:42:43.208 --> 00:42:44.993 data sets do not include

NOTE Confidence: 0.874644873181818

00:42:45.057 --> 00:42:46.059 sleep disorders.

NOTE Confidence: 0.874644873181818

00:42:46.060 --> 00:42:47.820 This paper is an exception.

NOTE Confidence: 0.874644873181818

00:42:47.820 --> 00:42:50.268 This paper actually went after sleep

NOTE Confidence: 0.874644873181818

00:42:50.268 --> 00:42:52.519 disorders in their validation data set.

NOTE Confidence: 0.874644873181818

00:42:52.520 --> 00:42:52.990 Unfortunately,

NOTE Confidence: 0.874644873181818

00:42:52.990 --> 00:42:56.280 most of the sleepers were adult sleepers,

NOTE Confidence: 0.874644873181818

00:42:56.280 --> 00:42:58.440 but they did include some children.

NOTE Confidence: 0.874644873181818

00:42:58.440 --> 00:42:59.968 The other thing to point out about this,

NOTE Confidence: 0.874644873181818

00:42:59.970 --> 00:43:01.674 which I think is something to look for.

NOTE Confidence: 0.874644873181818

00:43:01.680 --> 00:43:03.510 If you're interested in reviewing this

NOTE Confidence: 0.874644873181818

00:43:03.510 --> 00:43:05.233 literature is that Cohen's Kappa that

NOTE Confidence: 0.874644873181818

00:43:05.233 --> 00:43:07.033 defines and you can see that up here.

NOTE Confidence: 0.874644873181818

00:43:07.040 --> 00:43:09.931 This Kappa value here which you can

NOTE Confidence: 0.874644873181818

00:43:09.931 --> 00:43:12.370 see it looks different than the

NOTE Confidence: 0.874644873181818

00:43:12.370 --> 00:43:14.810 accuracy measure and the Cohens Kappa

NOTE Confidence: 0.874644873181818

00:43:14.810 --> 00:43:16.502 describes a level of agreement for

NOTE Confidence: 0.874644873181818

00:43:16.502 --> 00:43:18.126 categorical data between 2 scores and

NOTE Confidence: 0.874644873181818

00:43:18.126 --> 00:43:19.902 so typically one would be like one is

NOTE Confidence: 0.874644873181818

00:43:19.951 --> 00:43:21.871 the wearable and the other is a ground

NOTE Confidence: 0.874644873181818

00:43:21.871 --> 00:43:24.200 truth measure like like like PSG but

NOTE Confidence: 0.874644873181818

00:43:24.200 --> 00:43:26.602 but the kappas generally more robust

NOTE Confidence: 0.874644873181818

00:43:26.602 --> 00:43:29.530 than accuracy because it includes the

NOTE Confidence: 0.874644873181818

00:43:29.530 --> 00:43:31.780 possibility of agreement by chance.

NOTE Confidence: 0.874644873181818

00:43:31.780 --> 00:43:34.330 Which which which is important and

NOTE Confidence: 0.874644873181818

00:43:34.330 --> 00:43:36.983 generally speaking capus between .6 and

NOTE Confidence: 0.874644873181818

00:43:36.983 --> 00:43:38.759 .8 indicates substantial agreement.

NOTE Confidence: 0.874644873181818

00:43:38.760 --> 00:43:40.180 Moderate agreement would be

NOTE Confidence: 0.874644873181818

00:43:40.180 --> 00:43:42.700 .4 to .6 and .8 to one.

NOTE Confidence: 0.874644873181818

00:43:42.700 --> 00:43:44.980 It would be near perfect agreement.

NOTE Confidence: 0.874644873181818

00:43:44.980 --> 00:43:45.690 Then finally,

NOTE Confidence: 0.874644873181818

00:43:45.690 --> 00:43:48.175 I wanted to point out this paper.

NOTE Confidence: 0.874644873181818

00:43:48.180 --> 00:43:51.100 This is just from this summer in July.

NOTE Confidence: 0.874644873181818

00:43:51.100 --> 00:43:52.555 It is a.

NOTE Confidence: 0.874644873181818

00:43:52.555 --> 00:43:54.495 Review of sleep wearables

NOTE Confidence: 0.874644873181818

00:43:54.495 --> 00:43:55.950 and disease outcomes.

NOTE Confidence: 0.874644873181818

00:43:55.950 --> 00:43:57.775 Now this is really interesting

NOTE Confidence: 0.874644873181818

00:43:57.775 --> 00:43:59.600 I mentioned before is wearables

NOTE Confidence: 0.874644873181818

00:43:59.663 --> 00:44:01.343 are they're everywhere and of

NOTE Confidence: 0.874644873181818

00:44:01.343 --> 00:44:03.482 course it doesn't take very long

NOTE Confidence: 0.874644873181818

00:44:03.482 --> 00:44:05.882 before they turn up and chronic

NOTE Confidence: 0.874644873181818

00:44:05.882 --> 00:44:07.082 disease management evaluations.

NOTE Confidence: 0.874644873181818

00:44:07.090 --> 00:44:09.372 And so in the peer reviewed literature

NOTE Confidence: 0.874644873181818

00:44:09.372 --> 00:44:11.990 we see sort of consumer wearables as

NOTE Confidence: 0.874644873181818

00:44:11.990 --> 00:44:14.650 predictors of clinical disease outcomes.

NOTE Confidence: 0.874644873181818

00:44:14.650 --> 00:44:16.126 And and much like when we're

NOTE Confidence: 0.874644873181818

00:44:16.126 --> 00:44:17.423 talking about home sleep apnea

NOTE Confidence: 0.874644873181818

00:44:17.423 --> 00:44:19.007 testing where maybe it's not just

NOTE Confidence: 0.874644873181818

00:44:19.007 --> 00:44:20.549 about comparing 1 to one the HIV,

NOTE Confidence: 0.874644873181818

00:44:20.550 --> 00:44:22.382 maybe we need what we need to do

NOTE Confidence: 0.874644873181818

00:44:22.382 --> 00:44:23.768 is incorporate into our thinking.

NOTE Confidence: 0.874644873181818

00:44:23.770 --> 00:44:27.898 How how use of these devices impacts outcome,

NOTE Confidence: 0.874644873181818

00:44:27.900 --> 00:44:29.587 that's a little bit what this paper

NOTE Confidence: 0.874644873181818

00:44:29.587 --> 00:44:31.468 is about and what's really amazing,

NOTE Confidence: 0.874644873181818

00:44:31.470 --> 00:44:33.845 whether it's whether it's asthma

NOTE Confidence: 0.874644873181818

00:44:33.845 --> 00:44:36.220 or whether it's seizure disorder

NOTE Confidence: 0.874644873181818

00:44:36.299 --> 00:44:38.639 or whether it's quality of life,

NOTE Confidence: 0.874644873181818

00:44:38.640 --> 00:44:40.746 these wearables are being worn and

NOTE Confidence: 0.874644873181818

00:44:40.746 --> 00:44:42.780 in a third, if you can believe it,

NOTE Confidence: 0.874644873181818

00:44:42.780 --> 00:44:43.456 this isn't.

NOTE Confidence: 0.874644873181818

00:44:43.456 --> 00:44:45.146 This is specifically for Pediatrics

NOTE Confidence: 0.874644873181818

00:44:45.146 --> 00:44:46.850 for children and adolescents.

NOTE Confidence: 0.874644873181818

00:44:46.850 --> 00:44:49.670 A third of these reports include

NOTE Confidence: 0.874644873181818

00:44:49.670 --> 00:44:51.080 sleep based metrics,

NOTE Confidence: 0.874644873181818

00:44:51.080 --> 00:44:52.350 which is pretty surprising based

NOTE Confidence: 0.874644873181818

00:44:52.350 --> 00:44:53.870 on that based on on the.

NOTE Confidence: 0.874644873181818

00:44:53.870 --> 00:44:56.012 Yeah, it's it's a fairly imperfect

NOTE Confidence: 0.874644873181818

00:44:56.012 --> 00:44:57.880 and exact assessment of sleep.

NOTE Confidence: 0.874644873181818

00:44:57.880 --> 00:44:59.470 So the conclusion of these authors

NOTE Confidence: 0.874644873181818

00:44:59.470 --> 00:45:01.232 is that while Fitbit devices may

NOTE Confidence: 0.874644873181818

00:45:01.232 --> 00:45:02.867 be beneficial for those interested

NOTE Confidence: 0.874644873181818

00:45:02.867 --> 00:45:04.240 in improving physical health,

NOTE Confidence: 0.874644873181818

00:45:04.240 --> 00:45:06.075 discretion is advised for those

NOTE Confidence: 0.874644873181818

00:45:06.075 --> 00:45:07.910 seeking to collect accurate and

NOTE Confidence: 0.874644873181818

00:45:07.972 --> 00:45:09.780 or medically necessitated data.

NOTE Confidence: 0.874644873181818

00:45:09.780 --> 00:45:11.649 And I think you know it's important

NOTE Confidence: 0.874644873181818

00:45:11.649 --> 00:45:13.356 to have these sorts of assessments

NOTE Confidence: 0.874644873181818

00:45:13.356 --> 00:45:15.681 and as as the field evolves and then

NOTE Confidence: 0.874644873181818

00:45:15.681 --> 00:45:17.953 finally before we open it up to questions,

NOTE Confidence: 0.874644873181818

00:45:17.960 --> 00:45:18.420 I just.

NOTE Confidence: 0.836723257777778

00:45:20.690 --> 00:45:23.260 I wanted to to take a second and sigh and

NOTE Confidence: 0.836723257777778

00:45:23.329 --> 00:45:26.025 and talk a little bit about what's missing.

NOTE Confidence: 0.836723257777778

00:45:26.030 --> 00:45:28.154 You know, it's in the title

NOTE Confidence: 0.836723257777778

00:45:28.154 --> 00:45:29.570 home sleep apnea test.

NOTE Confidence: 0.836723257777778

00:45:29.570 --> 00:45:32.036 It's look, it's a very directed,

NOTE Confidence: 0.836723257777778

00:45:32.040 --> 00:45:33.652 very focused assessment that

NOTE Confidence: 0.836723257777778

00:45:33.652 --> 00:45:36.070 can be performed in the home.

NOTE Confidence: 0.836723257777778

00:45:36.070 --> 00:45:37.942 But actually with polysomnography,

NOTE Confidence: 0.836723257777778

00:45:37.942 --> 00:45:40.750 these tests are so rich and

NOTE Confidence: 0.836723257777778

00:45:40.831 --> 00:45:43.470 there's so much data to be gained

NOTE Confidence: 0.836723257777778

00:45:43.470 --> 00:45:45.574 beyond simply an AHI metric.

NOTE Confidence: 0.836723257777778

00:45:45.574 --> 00:45:47.984 For me, I'm really interested

NOTE Confidence: 0.836723257777778

00:45:47.984 --> 00:45:49.430 in craniofacial development.

NOTE Confidence: 0.836723257777778

00:45:49.430 --> 00:45:51.038 And oral breathing is a very

NOTE Confidence: 0.836723257777778

00:45:51.038 --> 00:45:52.678 important part of that and we

NOTE Confidence: 0.836723257777778

00:45:52.678 --> 00:45:54.220 measure oral breathing in the lab

NOTE Confidence: 0.836723257777778

00:45:54.220 --> 00:45:56.288 we ended in addition to the nasal

NOTE Confidence: 0.836723257777778

00:45:56.288 --> 00:45:57.783 pressure transducer in the nose,

NOTE Confidence: 0.836723257777778

00:45:57.790 --> 00:46:00.282 we use an oral scoop and directly

NOTE Confidence: 0.836723257777778

00:46:00.282 --> 00:46:02.357 measure oral breathing and we can

NOTE Confidence: 0.836723257777778

00:46:02.357 --> 00:46:04.229 calculate the percent of time spent

NOTE Confidence: 0.836723257777778

00:46:04.229 --> 00:46:06.612 in oral breathing across the night

NOTE Confidence: 0.836723257777778

00:46:06.612 --> 00:46:08.617 and that's that's an important,

NOTE Confidence: 0.836723257777778

00:46:08.620 --> 00:46:10.556 that's a value to us and we don't,

NOTE Confidence: 0.836723257777778

00:46:10.560 --> 00:46:12.372 we're not able to do that

NOTE Confidence: 0.836723257777778

00:46:12.372 --> 00:46:14.000 simply on the home test.

NOTE Confidence: 0.836723257777778

00:46:14.000 --> 00:46:16.240 And then again, of course,

NOTE Confidence: 0.836723257777778

00:46:16.240 --> 00:46:18.753 polysomnography allows us to be able to

NOTE Confidence: 0.836723257777778

00:46:18.753 --> 00:46:21.049 measure things like respiratory effort,

NOTE Confidence: 0.836723257777778

00:46:21.050 --> 00:46:22.355 both inspiratory effort

NOTE Confidence: 0.836723257777778

00:46:22.355 --> 00:46:23.660 and expiratory effort.

NOTE Confidence: 0.836723257777778

00:46:23.660 --> 00:46:25.580 And if you spend the time to measure

NOTE Confidence: 0.836723257777778

00:46:25.580 --> 00:46:27.177 this and look at the signals,

NOTE Confidence: 0.836723257777778

00:46:27.180 --> 00:46:29.556 they can tell you something about

NOTE Confidence: 0.836723257777778

00:46:29.556 --> 00:46:31.503 that patterns of breathing and

NOTE Confidence: 0.836723257777778

00:46:31.503 --> 00:46:34.842 about and about how sleep may be

NOTE Confidence: 0.836723257777778

00:46:34.842 --> 00:46:36.870 affected by breathing abnormalities.

NOTE Confidence: 0.836723257777778

00:46:36.870 --> 00:46:39.606 And then finally, and these are sea lions.

NOTE Confidence: 0.836723257777778

00:46:39.610 --> 00:46:41.590 I took this photo last fall.

NOTE Confidence: 0.836723257777778

00:46:41.590 --> 00:46:43.648 These are sea lions in Santa Cruz

NOTE Confidence: 0.836723257777778

00:46:43.648 --> 00:46:45.938 out at one of the public docks.

NOTE Confidence: 0.836723257777778

00:46:45.940 --> 00:46:47.340 And I took one look at these

NOTE Confidence: 0.836723257777778

00:46:47.340 --> 00:46:48.735 guys and thought, Oh my goodness,

NOTE Confidence: 0.836723257777778

00:46:48.735 --> 00:46:50.325 this looks like a couple of

NOTE Confidence: 0.836723257777778

00:46:50.330 --> 00:46:51.800 my patience when I'm watching

NOTE Confidence: 0.836723257777778

00:46:51.800 --> 00:46:53.270 the video on play sonography.

NOTE Confidence: 0.836723257777778

00:46:53.270 --> 00:46:53.765 And in fact,

NOTE Confidence: 0.836723257777778

00:46:53.765 --> 00:46:55.489 I did go home and do a Google search

NOTE Confidence: 0.836723257777778

00:46:55.489 --> 00:46:57.043 to sea lions have sleep apnea.

NOTE Confidence: 0.836723257777778

00:46:57.050 --> 00:46:58.828 I would encourage you to do that,

NOTE Confidence: 0.836723257777778

00:46:58.830 --> 00:46:59.810 especially if you're getting bored.

NOTE Confidence: 0.836723257777778

00:46:59.810 --> 00:47:01.030 You could do it now,

NOTE Confidence: 0.836723257777778

00:47:01.030 --> 00:47:02.806 but you know a picture can

NOTE Confidence: 0.836723257777778

00:47:02.806 --> 00:47:03.990 be worth 1000 words.

NOTE Confidence: 0.836723257777778

00:47:03.990 --> 00:47:05.445 I have had children who

NOTE Confidence: 0.836723257777778

00:47:05.445 --> 00:47:06.900 sleep with their neck and.

NOTE Confidence: 0.836723257777778

00:47:06.900 --> 00:47:08.130 Extension and they're back arched

NOTE Confidence: 0.836723257777778

00:47:08.130 --> 00:47:09.930 and it does make a difference.

NOTE Confidence: 0.836723257777778

00:47:09.930 --> 00:47:10.647 It makes you,

NOTE Confidence: 0.836723257777778

00:47:10.647 --> 00:47:12.320 it makes you question whether or not

NOTE Confidence: 0.836723257777778

00:47:12.376 --> 00:47:14.146 this child might have reflux disease,

NOTE Confidence: 0.836723257777778

00:47:14.150 --> 00:47:16.033 whether or not they might be positioning

NOTE Confidence: 0.836723257777778

00:47:16.033 --> 00:47:17.672 their airway in such a position in

NOTE Confidence: 0.836723257777778

00:47:17.672 --> 00:47:19.769 order to open it up to improve breathing.

NOTE Confidence: 0.836723257777778

00:47:19.770 --> 00:47:20.862 It's important to remember

NOTE Confidence: 0.836723257777778

00:47:20.862 --> 00:47:22.227 that when we have pyrography,

NOTE Confidence: 0.836723257777778

00:47:22.230 --> 00:47:23.628 we look at all the signals,

NOTE Confidence: 0.836723257777778

00:47:23.630 --> 00:47:26.398 not just the HIV.

NOTE Confidence: 0.836723257777778

00:47:26.398 --> 00:47:29.280 So in conclusion I think you know

NOTE Confidence: 0.836723257777778

00:47:29.280 --> 00:47:31.175 remote sleep assessment and Pediatrics

NOTE Confidence: 0.836723257777778

00:47:31.175 --> 00:47:33.730 depending on where you fall on this

NOTE Confidence: 0.836723257777778

00:47:33.730 --> 00:47:35.789 spectrum it can be the the best.

NOTE Confidence: 0.836723257777778

00:47:35.790 --> 00:47:38.364 It can be a source of wisdom of light

NOTE Confidence: 0.836723257777778

00:47:38.364 --> 00:47:40.472 of hope for how we can democratize

NOTE Confidence: 0.836723257777778

00:47:40.472 --> 00:47:42.382 sleep evaluation for children be

NOTE Confidence: 0.836723257777778

00:47:42.382 --> 00:47:44.880 able to be more patient focused and

NOTE Confidence: 0.836723257777778

00:47:44.880 --> 00:47:47.371 at the and and on the other hand

NOTE Confidence: 0.836723257777778

00:47:47.371 --> 00:47:49.321 you might you might be thinking

NOTE Confidence: 0.836723257777778

00:47:49.321 --> 00:47:51.524 right now this is the work I'm

NOTE Confidence: 0.836723257777778

00:47:51.524 --> 00:47:53.054 completely incredulous and this is

NOTE Confidence: 0.836723257777778

00:47:53.054 --> 00:47:55.207 this is this is darkness and despair.

NOTE Confidence: 0.836723257777778

00:47:55.210 --> 00:47:56.806 Think of everything that I've lost.

NOTE Confidence: 0.836723257777778

00:47:56.810 --> 00:47:58.616 And small Chris.

NOTE Confidence: 0.836723257777778

00:47:58.616 --> 00:48:02.228 So now you you might have,

NOTE Confidence: 0.836723257777778

00:48:02.230 --> 00:48:03.605 you might have guessed by

NOTE Confidence: 0.836723257777778

00:48:03.605 --> 00:48:04.155 Janice introduction.

NOTE Confidence: 0.815793046

00:48:04.160 --> 00:48:06.000 I'm not a spring chicken,

NOTE Confidence: 0.815793046

00:48:06.000 --> 00:48:08.320 so this is a band from the 90s.

NOTE Confidence: 0.815793046

00:48:08.320 --> 00:48:09.496 I do have a point here.

NOTE Confidence: 0.815793046

00:48:09.500 --> 00:48:10.358 If you know who it is,

NOTE Confidence: 0.815793046

00:48:10.360 --> 00:48:12.409 please put it in the chat.

NOTE Confidence: 0.815793046

00:48:12.409 --> 00:48:14.623 I'll think of some prize to

NOTE Confidence: 0.815793046

00:48:14.623 --> 00:48:17.297 send out to Janet to give you,

NOTE Confidence: 0.815793046

00:48:17.300 --> 00:48:20.240 if you know who it is.

NOTE Confidence: 0.815793046

00:48:20.240 --> 00:48:22.800 The band is Diamond Rio.

NOTE Confidence: 0.815793046

00:48:22.800 --> 00:48:24.717 And this song is me in the middle there.

NOTE Confidence: 0.815793046

00:48:24.720 --> 00:48:26.012 They're indelible 1991 classic.

NOTE Confidence: 0.815793046

00:48:26.012 --> 00:48:27.950 I think that's what the field

NOTE Confidence: 0.815793046

00:48:28.005 --> 00:48:29.697 of Sleep Medicine will be doing.

NOTE Confidence: 0.815793046

00:48:29.700 --> 00:48:30.900 When it comes to remote

NOTE Confidence: 0.815793046

00:48:30.900 --> 00:48:31.620 assessment and Pediatrics,

NOTE Confidence: 0.815793046

00:48:31.620 --> 00:48:33.084 I think we've got to meet

NOTE Confidence: 0.815793046

00:48:33.084 --> 00:48:34.060 somewhere in the middle.

NOTE Confidence: 0.815793046

00:48:34.060 --> 00:48:35.436 This is William Mayo,

NOTE Confidence: 0.815793046

00:48:35.436 --> 00:48:38.439 who's who has a quote that I just love,

NOTE Confidence: 0.815793046

00:48:38.440 --> 00:48:40.078 that the glory of medicine is that

NOTE Confidence: 0.815793046

00:48:40.078 --> 00:48:41.071 it's constantly moving forward

NOTE Confidence: 0.815793046

00:48:41.071 --> 00:48:42.517 and there's always more to learn.

NOTE Confidence: 0.815793046

00:48:42.520 --> 00:48:44.014 And this is very much the way I feel,

NOTE Confidence: 0.815793046

00:48:44.020 --> 00:48:46.200 I feel about this area.

NOTE Confidence: 0.815793046

00:48:46.200 --> 00:48:47.860 I think we've all learned

NOTE Confidence: 0.815793046

00:48:47.860 --> 00:48:49.520 a lot from the pandemic.

NOTE Confidence: 0.815793046

00:48:49.520 --> 00:48:50.256 And importantly,

NOTE Confidence: 0.815793046

00:48:50.256 --> 00:48:51.728 that necessity really is

NOTE Confidence: 0.815793046

00:48:51.728 --> 00:48:53.200 the mother of invention.

NOTE Confidence: 0.815793046

00:48:53.200 --> 00:48:55.138 We clearly need larger studies that

NOTE Confidence: 0.815793046

00:48:55.138 --> 00:48:57.457 are focused not just on HI equivalents

NOTE Confidence: 0.815793046

00:48:57.457 --> 00:48:59.072 but also on outcomes equivalents

NOTE Confidence: 0.815793046

00:48:59.072 --> 00:49:01.447 and I think we were resources time,

NOTE Confidence: 0.815793046

00:49:01.450 --> 00:49:03.140 money clinic or staff availability

NOTE Confidence: 0.815793046

00:49:03.140 --> 00:49:04.830 or strained and an appropriate

NOTE Confidence: 0.815793046

00:49:04.883 --> 00:49:06.260 clinical circumstances and

NOTE Confidence: 0.815793046

00:49:06.260 --> 00:49:07.637 with appropriate patients.

NOTE Confidence: 0.815793046

00:49:07.640 --> 00:49:09.440 I I do think that there one could

NOTE Confidence: 0.815793046

00:49:09.440 --> 00:49:10.988 argue that there's a role for

NOTE Confidence: 0.815793046

00:49:10.988 --> 00:49:12.554 home sleep apnea testing as part

NOTE Confidence: 0.815793046

00:49:12.607 --> 00:49:14.469 of a multi step pathway but it's

NOTE Confidence: 0.815793046

00:49:14.469 --> 00:49:16.172 really important to select both

NOTE Confidence: 0.815793046

00:49:16.172 --> 00:49:17.976 patients and devices wisely.

NOTE Confidence: 0.815793046

00:49:17.980 --> 00:49:19.876 I definitely would like to reiterate

NOTE Confidence: 0.815793046

00:49:19.876 --> 00:49:22.308 that I don't think that home sleep

NOTE Confidence: 0.815793046

00:49:22.308 --> 00:49:23.784 apnea testing is extensively.

NOTE Confidence: 0.815793046

00:49:23.790 --> 00:49:26.870 Conclusively validated for all children.

NOTE Confidence: 0.815793046

00:49:26.870 --> 00:49:28.310 But then again,

NOTE Confidence: 0.815793046

00:49:28.310 --> 00:49:30.422 even the academies 2017 statement

NOTE Confidence: 0.815793046

00:49:30.422 --> 00:49:32.438 would would support the notion that

NOTE Confidence: 0.815793046

00:49:32.438 --> 00:49:34.709 it's not contraindicated altogether.

NOTE Confidence: 0.815793046

00:49:34.710 --> 00:49:36.190 So I'm emerging technologies

NOTE Confidence: 0.815793046

00:49:36.190 --> 00:49:38.410 may be able to assist us,

NOTE Confidence: 0.815793046

00:49:38.410 --> 00:49:39.950 but it's really I,

NOTE Confidence: 0.815793046

00:49:39.950 --> 00:49:41.490 in my mind anyway,

NOTE Confidence: 0.815793046

00:49:41.490 --> 00:49:44.213 unlikely to replace the need for ongoing

NOTE Confidence: 0.815793046

00:49:44.213 --> 00:49:46.390 clinical judgment and perceptiveness.

NOTE Confidence: 0.815793046

00:49:46.390 --> 00:49:47.053 Some final thoughts.

NOTE Confidence: 0.815793046

00:49:47.053 --> 00:49:48.961 I think we need to better define who's

NOTE Confidence: 0.815793046

00:49:48.961 --> 00:49:50.229 appropriate for this technology,

NOTE Confidence: 0.815793046

00:49:50.230 --> 00:49:51.578 these types of technologies,

NOTE Confidence: 0.815793046

00:49:51.578 --> 00:49:54.260 and understand the role of remote assessment.

NOTE Confidence: 0.815793046

00:49:54.260 --> 00:49:55.708 In combination with validated

NOTE Confidence: 0.815793046

00:49:55.708 --> 00:49:56.794 questionnaires in particular,

NOTE Confidence: 0.815793046

00:49:56.800 --> 00:49:59.376 remember that ERS statement from 2016,

NOTE Confidence: 0.815793046

00:49:59.376 --> 00:50:01.752 I really feel like a potential

NOTE Confidence: 0.815793046

00:50:01.752 --> 00:50:04.137 pathway forward might be being able

NOTE Confidence: 0.815793046

00:50:04.137 --> 00:50:06.387 to combine our different sources of

NOTE Confidence: 0.815793046

00:50:06.387 --> 00:50:09.299 truth to be able to really provide

NOTE Confidence: 0.815793046

00:50:09.299 --> 00:50:10.939 a rigorous clinical assessment.

NOTE Confidence: 0.815793046

00:50:10.940 --> 00:50:14.068 And I and I feel like too that one

NOTE Confidence: 0.815793046

00:50:14.068 --> 00:50:15.648 can argue that defining success

NOTE Confidence: 0.815793046

00:50:15.648 --> 00:50:17.361 or failure based on clinical

NOTE Confidence: 0.815793046

00:50:17.361 --> 00:50:19.056 outcomes rather than simply that

NOTE Confidence: 0.815793046

00:50:19.056 --> 00:50:21.178 score of HIV is pretty important.

NOTE Confidence: 0.815793046

00:50:21.180 --> 00:50:23.294 I it is my opinion that integration

NOTE Confidence: 0.815793046

00:50:23.294 --> 00:50:25.010 does not mean replacement.

NOTE Confidence: 0.815793046

00:50:25.010 --> 00:50:25.416 Nonetheless,

NOTE Confidence: 0.815793046

00:50:25.416 --> 00:50:27.852 I think that scaling and sustainability

NOTE Confidence: 0.815793046

00:50:27.852 --> 00:50:29.551 models that reward excellent

NOTE Confidence: 0.815793046

00:50:29.551 --> 00:50:31.641 clinical care and excellent outcomes

NOTE Confidence: 0.815793046

00:50:31.641 --> 00:50:33.793 rather than procedures per se is

NOTE Confidence: 0.815793046

00:50:33.793 --> 00:50:35.481 where we need to go as a field.

NOTE Confidence: 0.815793046

00:50:35.490 --> 00:50:37.362 And and so I I will stop there

NOTE Confidence: 0.815793046

00:50:37.362 --> 00:50:38.801 with those final thoughts and

NOTE Confidence: 0.815793046

00:50:38.801 --> 00:50:40.625 I have a bunch of references.

NOTE Confidence: 0.815793046

00:50:40.630 --> 00:50:42.250 I'm happy to share these slides

NOTE Confidence: 0.815793046

00:50:42.250 --> 00:50:44.167 and I'm just going to put up

NOTE Confidence: 0.815793046

00:50:44.167 --> 00:50:45.600 the same disclosure number again

NOTE Confidence: 0.815793046

00:50:45.600 --> 00:50:46.900 and I'll stop talking.

NOTE Confidence: 0.771423955

00:50:48.450 --> 00:50:49.740 Thank you, doctor.

NOTE Confidence: 0.771423955

00:50:49.740 --> 00:50:52.320 Salon, that was really a wonderful

NOTE Confidence: 0.771423955

00:50:52.320 --> 00:50:54.344 overview really terrific and I'm,

NOTE Confidence: 0.771423955

00:50:54.344 --> 00:50:55.529 I totally agree with you.

NOTE Confidence: 0.771423955

00:50:55.530 --> 00:50:58.746 I, you know we, we all love polysomnography.

NOTE Confidence: 0.771423955

00:50:58.750 --> 00:51:00.230 We get tons of data.

NOTE Confidence: 0.771423955

00:51:00.230 --> 00:51:01.814 I think is a field you know we just

NOTE Confidence: 0.771423955

00:51:01.814 --> 00:51:03.198 steal everything down to the HIV.

NOTE Confidence: 0.771423955

00:51:03.200 --> 00:51:04.192 That's probably a mistake.

NOTE Confidence: 0.771423955

00:51:04.192 --> 00:51:05.954 And there's so much more we can

NOTE Confidence: 0.771423955

00:51:05.954 --> 00:51:07.280 get by integrating the video and

NOTE Confidence: 0.771423955

00:51:07.280 --> 00:51:09.047 some of the other signals you know.

NOTE Confidence: 0.771423955

00:51:09.050 --> 00:51:10.258 But I hear you.

NOTE Confidence: 0.771423955

00:51:10.258 --> 00:51:12.070 You know necessity is the mother

NOTE Confidence: 0.771423955

00:51:12.141 --> 00:51:13.960 of invention and with the pandemic

NOTE Confidence: 0.771423955

00:51:13.960 --> 00:51:16.241 so many of us in the adult world

NOTE Confidence: 0.771423955

00:51:16.241 --> 00:51:17.810 have been using HST's and patients

NOTE Confidence: 0.771423955

00:51:17.810 --> 00:51:18.810 we never would have before.

NOTE Confidence: 0.771423955

00:51:18.810 --> 00:51:19.474 So some.

NOTE Confidence: 0.771423955

00:51:19.474 --> 00:51:21.134 Sort of complicated pulmonary sleep

NOTE Confidence: 0.771423955

00:51:21.134 --> 00:51:23.345 overlap and using a capping those people

NOTE Confidence: 0.771423955

00:51:23.345 --> 00:51:25.300 with oximetry and you know what it,

NOTE Confidence: 0.771423955

00:51:25.300 --> 00:51:25.830 it works.

NOTE Confidence: 0.771423955

00:51:25.830 --> 00:51:27.685 And so sometimes we actually find it

NOTE Confidence: 0.771423955

00:51:27.685 --> 00:51:29.477 works because we're forced into it.

NOTE Confidence: 0.771423955

00:51:29.480 --> 00:51:31.174 And I will say with in the

NOTE Confidence: 0.771423955

00:51:31.174 --> 00:51:31.900 adult medicine world,

NOTE Confidence: 0.771423955

00:51:31.900 --> 00:51:33.484 part of the part of the reason many

NOTE Confidence: 0.771423955

00:51:33.484 --> 00:51:35.466 of us were forced into HST was the

NOTE Confidence: 0.771423955

00:51:35.466 --> 00:51:36.946 insurance change and the fact that

NOTE Confidence: 0.771423955

00:51:36.946 --> 00:51:38.570 all of a sudden this is the test

NOTE Confidence: 0.771423955

00:51:38.570 --> 00:51:39.878 that was going to be required,

NOTE Confidence: 0.771423955

00:51:39.880 --> 00:51:40.216 you know,

NOTE Confidence: 0.771423955

00:51:40.216 --> 00:51:41.392 and that's true and a lot of

NOTE Confidence: 0.771423955

00:51:41.392 --> 00:51:42.760 it at least to the adult world.

NOTE Confidence: 0.771423955

00:51:42.760 --> 00:51:45.656 So my thought for you is I think

NOTE Confidence: 0.771423955

00:51:45.656 --> 00:51:46.340 a Sleep Medicine,

NOTE Confidence: 0.771423955

00:51:46.340 --> 00:51:47.488 adult Sleep Medicine physicians

NOTE Confidence: 0.771423955

00:51:47.488 --> 00:51:49.210 were much more comfortable with HT

NOTE Confidence: 0.771423955

00:51:49.261 --> 00:51:50.695 because we've been using it more.

NOTE Confidence: 0.771423955

00:51:50.700 --> 00:51:52.499 We've been forced into it and in

NOTE Confidence: 0.771423955

00:51:52.499 --> 00:51:54.529 the in the pediatric community,

NOTE Confidence: 0.771423955

00:51:54.530 --> 00:51:55.990 are people getting more familiar

NOTE Confidence: 0.771423955

00:51:55.990 --> 00:51:58.094 with using HT or is it still

NOTE Confidence: 0.771423955

00:51:58.094 --> 00:52:00.138 kind of not being used and what's

NOTE Confidence: 0.771423955

00:52:00.138 --> 00:52:01.669 happening if you have any idea,

NOTE Confidence: 0.771423955

00:52:01.670 --> 00:52:02.610 I know you're in California,

NOTE Confidence: 0.771423955

00:52:02.610 --> 00:52:04.660 but what's happening with insurance

NOTE Confidence: 0.771423955

00:52:04.660 --> 00:52:06.300 for for pediatric studies?

NOTE Confidence: 0.859963886

00:52:07.450 --> 00:52:08.830 Yeah. Thank you for that, Janet.

NOTE Confidence: 0.859963886

00:52:08.830 --> 00:52:10.230 There's a lot there.

NOTE Confidence: 0.859963886

00:52:10.230 --> 00:52:11.330 I definitely agree with you.

NOTE Confidence: 0.859963886

00:52:11.330 --> 00:52:12.485 I I practice with adults

NOTE Confidence: 0.859963886

00:52:12.485 --> 00:52:13.409 and children as well.

NOTE Confidence: 0.859963886

00:52:13.410 --> 00:52:15.410 I'm because I'm interested in

NOTE Confidence: 0.859963886

00:52:15.410 --> 00:52:17.010 craniofacial growth and characteristics.

NOTE Confidence: 0.859963886

00:52:17.010 --> 00:52:18.294 I often see multiple

NOTE Confidence: 0.859963886

00:52:18.294 --> 00:52:19.899 generations in the same family.

NOTE Confidence: 0.859963886

00:52:19.900 --> 00:52:21.088 So I might be seeing grandparents,

NOTE Confidence: 0.859963886

00:52:21.090 --> 00:52:22.572 parents and children.

NOTE Confidence: 0.859963886

00:52:22.572 --> 00:52:26.549 And it definitely helps to sort of have

NOTE Confidence: 0.859963886

00:52:26.549 --> 00:52:29.997 that Scooby sense on on where HST fits.

NOTE Confidence: 0.859963886

00:52:30.000 --> 00:52:31.170 And yeah, we have our guidelines,

NOTE Confidence: 0.859963886

00:52:31.170 --> 00:52:32.380 but the clinical Scooby sense

NOTE Confidence: 0.859963886

00:52:32.380 --> 00:52:34.250 of of what are the limitations,

NOTE Confidence: 0.859963886

00:52:34.250 --> 00:52:35.524 what do you need to worry about,

NOTE Confidence: 0.859963886

00:52:35.530 --> 00:52:37.245 what what's not being reported

NOTE Confidence: 0.859963886

00:52:37.245 --> 00:52:38.617 and I feel like.

NOTE Confidence: 0.859963886

00:52:38.620 --> 00:52:40.339 Um, at least in my neck of the woods.

NOTE Confidence: 0.859963886

00:52:40.340 --> 00:52:42.480 Folks on the adult side of Sleep

NOTE Confidence: 0.859963886

00:52:42.480 --> 00:52:44.300 Medicine seem to have a little more

NOTE Confidence: 0.859963886

00:52:44.300 --> 00:52:46.264 comfort with that and and know what

NOTE Confidence: 0.859963886

00:52:46.264 --> 00:52:48.219 boundaries are pushing when they're pushing.

NOTE Confidence: 0.859963886

00:52:48.220 --> 00:52:48.804 You know,

NOTE Confidence: 0.859963886

00:52:48.804 --> 00:52:50.556 just not knowing what you don't

NOTE Confidence: 0.859963886

00:52:50.556 --> 00:52:52.398 know is always a big danger.

NOTE Confidence: 0.859963886

00:52:52.400 --> 00:52:54.656 I do think, at least in my area,

NOTE Confidence: 0.859963886

00:52:54.660 --> 00:52:56.308 there's not very much.

NOTE Confidence: 0.831185667142857

00:52:59.130 --> 00:53:01.629 Sort of acceptance of home based testing.

NOTE Confidence: 0.831185667142857

00:53:01.630 --> 00:53:03.967 I I I see it more and that's why I wove in

NOTE Confidence: 0.831185667142857

00:53:03.967 --> 00:53:05.934 a little bit around consumer wearables #1.

NOTE Confidence: 0.831185667142857

00:53:05.940 --> 00:53:07.669 My patients all come in right there.

NOTE Confidence: 0.831185667142857

00:53:07.670 --> 00:53:09.340 They all want me to take a look at their

NOTE Confidence: 0.831185667142857

00:53:09.387 --> 00:53:11.019 apps with their consumer wearable data.

NOTE Confidence: 0.831185667142857

00:53:11.020 --> 00:53:13.750 No, what does this mean?

NOTE Confidence: 0.831185667142857

00:53:13.750 --> 00:53:16.560 But I also see that like as a ticker fee

NOTE Confidence: 0.831185667142857

00:53:16.637 --> 00:53:19.535 replacement we I think there is more

NOTE Confidence: 0.831185667142857

00:53:19.535 --> 00:53:22.150 acceptance there than with home based testing

NOTE Confidence: 0.831185667142857

00:53:22.150 --> 00:53:25.009 again and that that's my local feedback.

NOTE Confidence: 0.831185667142857

00:53:25.010 --> 00:53:26.684 It's interesting because I was approached

NOTE Confidence: 0.831185667142857

00:53:26.684 --> 00:53:28.839 a couple of years ago about doing some.

NOTE Confidence: 0.831185667142857

00:53:28.840 --> 00:53:32.464 Work for a different coverage determination

NOTE Confidence: 0.831185667142857

00:53:32.464 --> 00:53:36.287 area for public insurance to look at

NOTE Confidence: 0.831185667142857

00:53:36.287 --> 00:53:38.915 coming up with guidelines for home

NOTE Confidence: 0.831185667142857

00:53:38.915 --> 00:53:41.581 home based testing in Pediatrics

NOTE Confidence: 0.831185667142857

00:53:41.581 --> 00:53:44.256 for for a government payer.

NOTE Confidence: 0.831185667142857

00:53:44.260 --> 00:53:46.764 And I think that probably is coming one

NOTE Confidence: 0.831185667142857

00:53:46.764 --> 00:53:49.509 way or another because of the expense

NOTE Confidence: 0.831185667142857

00:53:49.509 --> 00:53:52.235 of and and limited limitation other

NOTE Confidence: 0.831185667142857

00:53:52.235 --> 00:53:54.687 limitations related to polysomnography.

NOTE Confidence: 0.831185667142857

00:53:54.690 --> 00:53:58.794 So I do think it would serve the field

NOTE Confidence: 0.831185667142857

00:53:58.794 --> 00:54:01.146 to to drive research in this space

NOTE Confidence: 0.831185667142857

00:54:01.146 --> 00:54:03.467 and and to drive that discussion a

NOTE Confidence: 0.831185667142857

00:54:03.467 --> 00:54:06.534 little bit so that it's not sort of a

NOTE Confidence: 0.831185667142857

00:54:06.534 --> 00:54:08.610 matter of payers making the decision.

NOTE Confidence: 0.831185667142857

00:54:08.610 --> 00:54:10.176 This is not payers making decisions

NOTE Confidence: 0.831185667142857

00:54:10.176 --> 00:54:12.304 is not really a good way to practice

NOTE Confidence: 0.831185667142857

00:54:12.304 --> 00:54:14.125 medicine like we all know and I

NOTE Confidence: 0.831185667142857

00:54:14.125 --> 00:54:15.487 think the more we can engage.

NOTE Confidence: 0.831185667142857

00:54:15.490 --> 00:54:17.785 And like here's the data and this This is

NOTE Confidence: 0.831185667142857

00:54:17.785 --> 00:54:20.088 why this particular group of individuals

NOTE Confidence: 0.831185667142857

00:54:20.088 --> 00:54:22.760 definitely needs and lab probably sonography.

NOTE Confidence: 0.831185667142857

00:54:22.760 --> 00:54:24.056 Like we need to be able to tell

NOTE Confidence: 0.831185667142857

00:54:24.056 --> 00:54:25.080 that story with the science.

NOTE Confidence: 0.831185667142857

00:54:25.080 --> 00:54:26.480 And so I do think engaging a

NOTE Confidence: 0.831185667142857

00:54:26.480 --> 00:54:28.039 little bit is an important thing.

NOTE Confidence: 0.831185667142857

00:54:28.040 --> 00:54:29.552 But I'd love to hear from you

NOTE Confidence: 0.831185667142857

00:54:29.552 --> 00:54:30.500 guys what's happening there.

NOTE Confidence: 0.831185667142857

00:54:30.500 --> 00:54:32.651 I can say here in the peace lab at

NOTE Confidence: 0.831185667142857

00:54:32.651 --> 00:54:34.303 Stanford they're they're not sending

NOTE Confidence: 0.831185667142857

00:54:34.303 --> 00:54:36.337 out any home sleep apnea testing.

NOTE Confidence: 0.831185667142857

00:54:36.340 --> 00:54:37.900 So if I want to get home sleep

NOTE Confidence: 0.831185667142857

00:54:37.900 --> 00:54:39.138 apnea testing and an adolescent,

NOTE Confidence: 0.831185667142857

00:54:39.140 --> 00:54:39.377 which,

NOTE Confidence: 0.831185667142857

00:54:39.377 --> 00:54:41.036 which I don't commonly do but even

NOTE Confidence: 0.831185667142857

00:54:41.036 --> 00:54:43.079 when if I needed to consider that that

NOTE Confidence: 0.831185667142857

00:54:43.079 --> 00:54:44.818 would be done through the adult lab.

NOTE Confidence: 0.88478355125

00:54:45.510 --> 00:54:48.310 So I have a I have a question.

NOTE Confidence: 0.88478355125

00:54:48.310 --> 00:54:49.318 Sure. Doctor Krieger,

NOTE Confidence: 0.631887465

00:54:49.330 --> 00:54:51.910 Dr krieger. Hello, Shannon.

NOTE Confidence: 0.864277928

00:54:51.920 --> 00:54:53.650 That was a great presentation.

NOTE Confidence: 0.864277928

00:54:53.650 --> 00:54:57.007 So in in the last three or four years,

NOTE Confidence: 0.864277928

00:54:57.010 --> 00:54:59.410 there's been a lot of stuff

NOTE Confidence: 0.864277928

00:54:59.410 --> 00:55:01.598 in the adult literature about

NOTE Confidence: 0.864277928

00:55:01.598 --> 00:55:03.606 racial bias and oximeters.

NOTE Confidence: 0.864277928

00:55:03.610 --> 00:55:05.645 Has that been studied in

NOTE Confidence: 0.864277928

00:55:05.645 --> 00:55:06.866 the pediatric population?

NOTE Confidence: 0.864277928

00:55:06.870 --> 00:55:10.104 I'm only aware of one study in

NOTE Confidence: 0.864277928

00:55:10.104 --> 00:55:11.900 premature babies and that's it.

NOTE Confidence: 0.901197454375

00:55:13.500 --> 00:55:15.633 Not to my knowledge and I think it's a

NOTE Confidence: 0.901197454375

00:55:15.633 --> 00:55:17.758 huge deal and not just for Pediatrics,

NOTE Confidence: 0.901197454375

00:55:17.760 --> 00:55:19.979 but as you said across the boards,

NOTE Confidence: 0.901197454375

00:55:19.980 --> 00:55:21.572 I think that Fitzgerald,

NOTE Confidence: 0.901197454375

00:55:21.572 --> 00:55:23.960 so they're so skin tone because

NOTE Confidence: 0.901197454375

00:55:24.035 --> 00:55:26.772 these because a lot of oximetry but

NOTE Confidence: 0.901197454375

00:55:26.772 --> 00:55:28.914 also other wearable type sensors

NOTE Confidence: 0.901197454375

00:55:28.914 --> 00:55:31.602 rely on a light signal getting

NOTE Confidence: 0.901197454375

00:55:31.602 --> 00:55:32.922 transmitted through the skin.

NOTE Confidence: 0.901197454375

00:55:32.922 --> 00:55:34.399 Depending on what your skin tone is,

NOTE Confidence: 0.901197454375

00:55:34.400 --> 00:55:36.616 you may have changes in the way the

NOTE Confidence: 0.901197454375

00:55:36.616 --> 00:55:38.892 signal is reported and to my knowledge

NOTE Confidence: 0.901197454375

00:55:38.892 --> 00:55:41.418 there is no literature on that in

NOTE Confidence: 0.901197454375

00:55:41.418 --> 00:55:43.818 Pediatrics and still kind of underdeveloped.

NOTE Confidence: 0.901197454375

00:55:43.820 --> 00:55:45.855 There are still emerging literature

NOTE Confidence: 0.901197454375

00:55:45.855 --> 00:55:47.890 even in the adult world,

NOTE Confidence: 0.901197454375

00:55:47.890 --> 00:55:49.577 but I think it's a huge issue.

NOTE Confidence: 0.854083463529412

00:55:50.840 --> 00:55:53.000 I do have one question in the chat so

NOTE Confidence: 0.854083463529412

00:55:53.000 --> 00:55:55.356 far on how do you report oral breathing

NOTE Confidence: 0.5138897272

00:55:55.370 --> 00:55:58.270 breath. Yeah, so I'm breathing.

NOTE Confidence: 0.5138897272

00:55:58.270 --> 00:55:59.970 So there is no standardized

NOTE Confidence: 0.5138897272

00:55:59.970 --> 00:56:01.670 way to do it unfortunately.

NOTE Confidence: 0.5138897272

00:56:01.670 --> 00:56:05.170 So we provide if if that's measured,

NOTE Confidence: 0.5138897272

00:56:05.170 --> 00:56:06.315 we can provide that window

NOTE Confidence: 0.5138897272

00:56:06.315 --> 00:56:07.460 just like I showed you.

NOTE Confidence: 0.5138897272

00:56:07.460 --> 00:56:11.009 That actually gives you a subjective sense,

NOTE Confidence: 0.5138897272

00:56:11.010 --> 00:56:13.557 not an index, but a subjective sense of how

NOTE Confidence: 0.5138897272

00:56:13.557 --> 00:56:15.946 common oral breathing was across the night.

NOTE Confidence: 0.5138897272

00:56:15.950 --> 00:56:18.902 And I have at least one colleague who has

NOTE Confidence: 0.5138897272

00:56:18.902 --> 00:56:20.900 traditionally reported out an estimate I.

NOTE Confidence: 0.5138897272

00:56:20.900 --> 00:56:23.966 I observed oral breathing for approximately

NOTE Confidence: 0.5138897272

00:56:23.970 --> 00:56:25.284 75% of the study or that kind of thing.

NOTE Confidence: 0.5138897272

00:56:25.290 --> 00:56:27.450 I to me and that's sort of a situation

NOTE Confidence: 0.5138897272

00:56:27.450 --> 00:56:29.360 the picture is worth 1000 words.

NOTE Confidence: 0.5138897272

00:56:29.360 --> 00:56:31.432 I think what's interesting about it is

NOTE Confidence: 0.5138897272

00:56:31.432 --> 00:56:33.779 to know that it exists at all because

NOTE Confidence: 0.5138897272

00:56:33.780 --> 00:56:36.831 you know it can be hard without an oral

NOTE Confidence: 0.5138897272

00:56:36.831 --> 00:56:39.436 scoop to assess for oral breathing,

NOTE Confidence: 0.5138897272

00:56:39.440 --> 00:56:40.735 especially if your video might be a

NOTE Confidence: 0.5138897272

00:56:40.735 --> 00:56:41.901 little blurry or the patients turned

NOTE Confidence: 0.5138897272

00:56:41.901 --> 00:56:43.245 away from you and you can't really

NOTE Confidence: 0.5138897272

00:56:43.282 --> 00:56:44.344 see clearly in the video because

NOTE Confidence: 0.5138897272

00:56:44.344 --> 00:56:45.720 of course we have nasal pressure

NOTE Confidence: 0.5138897272

00:56:45.720 --> 00:56:48.030 transducer and then we have a sum

NOTE Confidence: 0.5138897272

00:56:48.030 --> 00:56:49.800 signal for for oral and nasal,

NOTE Confidence: 0.5138897272

00:56:49.800 --> 00:56:50.637 so those those.

NOTE Confidence: 0.5138897272

00:56:50.637 --> 00:56:52.590 She alone don't don't provide the most

NOTE Confidence: 0.5138897272

00:56:52.647 --> 00:56:54.507 sensitive signal for oral breathing.

NOTE Confidence: 0.848960263846154

00:56:55.230 --> 00:56:56.310 Great, thank you. Yeah, we try

NOTE Confidence: 0.848960263846154

00:56:56.310 --> 00:56:57.670 to look at the video and it's,

NOTE Confidence: 0.848960263846154

00:56:57.670 --> 00:56:59.320 it's very difficult to tell.

NOTE Confidence: 0.798390408333333

00:57:01.400 --> 00:57:02.876 Move the sheets a little bit,

NOTE Confidence: 0.798390408333333

00:57:02.880 --> 00:57:04.764 you know, yeah, I do.

NOTE Confidence: 0.798390408333333

00:57:04.764 --> 00:57:06.608 I mean, I will say that's a pitch

NOTE Confidence: 0.798390408333333

00:57:06.608 --> 00:57:08.301 to looking at all the data that

NOTE Confidence: 0.798390408333333

00:57:08.301 --> 00:57:09.711 you're provided when you're when

NOTE Confidence: 0.798390408333333

00:57:09.711 --> 00:57:11.199 you're reading applies tomography.

NOTE Confidence: 0.798390408333333

00:57:11.200 --> 00:57:13.419 I do think it's on the field.

NOTE Confidence: 0.798390408333333

00:57:13.420 --> 00:57:15.390 Overall, but especially in Pediatrics

NOTE Confidence: 0.798390408333333

00:57:15.390 --> 00:57:18.183 to make the case that what we're

NOTE Confidence: 0.798390408333333

00:57:18.183 --> 00:57:20.439 measuring has value because if we,

NOTE Confidence: 0.798390408333333

00:57:20.440 --> 00:57:21.970 you know, dump it all down,

NOTE Confidence: 0.798390408333333

00:57:21.970 --> 00:57:23.776 if we like lump it all together

NOTE Confidence: 0.798390408333333

00:57:23.776 --> 00:57:25.153 that the only thing really

NOTE Confidence: 0.798390408333333

00:57:25.153 --> 00:57:27.043 coming out of this study is the

NOTE Confidence: 0.798390408333333

00:57:27.043 --> 00:57:28.974 HI or maybe the HI and the PMI.

NOTE Confidence: 0.798390408333333

00:57:28.980 --> 00:57:30.620 We've missed an opportunity to

NOTE Confidence: 0.798390408333333

00:57:30.620 --> 00:57:33.298 to tell the story of why the why

NOTE Confidence: 0.798390408333333

00:57:33.298 --> 00:57:35.230 these studies are so important and

NOTE Confidence: 0.798390408333333

00:57:35.230 --> 00:57:37.360 how they're clinically helpful.

NOTE Confidence: 0.798390408333333

00:57:37.360 --> 00:57:39.369 So I do think again I think

NOTE Confidence: 0.798390408333333

00:57:39.369 --> 00:57:40.919 it's important for the field.

NOTE Confidence: 0.798390408333333

00:57:40.920 --> 00:57:42.194 My my opinion is that it's important

NOTE Confidence: 0.798390408333333

00:57:42.194 --> 00:57:43.480 for the field to be part of that.

NOTE Confidence: 0.798390408333333

00:57:43.480 --> 00:57:44.160 Conversation.

NOTE Confidence: 0.8185398

00:57:45.130 --> 00:57:46.362 Alright, terrific. I'm not

NOTE Confidence: 0.8185398

00:57:46.362 --> 00:57:48.210 seeing anything else in the chat.

NOTE Confidence: 0.8185398

00:57:48.210 --> 00:57:49.960 Anybody need to unmute themselves,

NOTE Confidence: 0.8185398

00:57:49.960 --> 00:57:52.270 we have, we're just at time now.

NOTE Confidence: 0.75740575

00:57:54.140 --> 00:57:56.737 Yeah, here I'm in a PC sandwich.

NOTE Confidence: 0.75740575

00:57:56.740 --> 00:58:00.238 Critical care sandwich. Be the salami

NOTE Confidence: 0.75740575

00:58:00.238 --> 00:58:01.750 in the middle of the sandwich here.

NOTE Confidence: 0.688948648333333

00:58:02.140 --> 00:58:03.284 All right. Well, anyway,

NOTE Confidence: 0.688948648333333

00:58:03.284 --> 00:58:03.856 Doctor Sullivan,

NOTE Confidence: 0.688948648333333

00:58:03.860 --> 00:58:04.980 this is really fabulous.

NOTE Confidence: 0.688948648333333

00:58:04.980 --> 00:58:06.100 Thank you so much.

NOTE Confidence: 0.688948648333333

00:58:06.100 --> 00:58:08.060 You may get some questions by e-mail.

NOTE Confidence: 0.688948648333333

00:58:08.060 --> 00:58:09.530 I'm not sure, but really

NOTE Confidence: 0.688948648333333

00:58:09.530 --> 00:58:10.706 appreciate your time today

NOTE Confidence: 0.688948648333333

00:58:10.706 --> 00:58:12.079 and all your expertise.

NOTE Confidence: 0.688948648333333

00:58:12.080 --> 00:58:13.238 And thanks everybody.

NOTE Confidence: 0.820991294

00:58:13.250 --> 00:58:14.210 Thank you for having me.

NOTE Confidence: 0.820991294

00:58:14.210 --> 00:58:15.414 And I'm happy to get any questions.

NOTE Confidence: 0.820991294

00:58:15.420 --> 00:58:17.004 And again, I'll PDF out this

NOTE Confidence: 0.820991294

00:58:17.004 --> 00:58:18.292 this deck to you, Janet,

NOTE Confidence: 0.820991294

00:58:18.292 --> 00:58:20.148 so you feel free to send it around.

NOTE Confidence: 0.545722968333333

00:58:20.910 --> 00:58:22.930 Thank you. All right. Great day, everybody.

NOTE Confidence: 0.9231598175

00:58:22.940 --> 00:58:25.000 Bye, bye. Bye, bye.