

WEBVTT

NOTE duration:"00:59:42"

NOTE recognizability:0.844

NOTE language:en-us

NOTE Confidence: 0.88161944

00:00:00.000 --> 00:00:02.493 So I think we have some people already here.

NOTE Confidence: 0.88161944

00:00:02.500 --> 00:00:04.320 So good afternoon everybody

NOTE Confidence: 0.88161944

00:00:04.320 --> 00:00:06.595 and welcome to Yelp seminar.

NOTE Confidence: 0.88161944

00:00:06.600 --> 00:00:08.736 Today again, we're delighted to have

NOTE Confidence: 0.88161944

00:00:08.736 --> 00:00:11.079 one of our Norwalk sleep fellows

NOTE Confidence: 0.88161944

00:00:11.079 --> 00:00:13.204 this time Doctor Armand Marabia.

NOTE Confidence: 0.88161944

00:00:13.210 --> 00:00:15.220 And he discussing acute and

NOTE Confidence: 0.88161944

00:00:15.220 --> 00:00:16.426 chronic sleep deprivation,

NOTE Confidence: 0.88161944

00:00:16.430 --> 00:00:19.508 which is a really interesting topic.

NOTE Confidence: 0.88161944

00:00:19.510 --> 00:00:21.169 So anyway, before I turn this over,

NOTE Confidence: 0.88161944

00:00:21.170 --> 00:00:22.528 Doctor was going to be introducing him.

NOTE Confidence: 0.88161944

00:00:22.530 --> 00:00:24.170 I just want to give the usual reminders.

NOTE Confidence: 0.88161944

00:00:24.170 --> 00:00:25.970 So first, the sleep seminar lectures

NOTE Confidence: 0.88161944

00:00:25.970 --> 00:00:27.505 are available for CME credit  
NOTE Confidence: 0.88161944

00:00:27.505 --> 00:00:29.149 and to receive credit to text,  
NOTE Confidence: 0.88161944

00:00:29.150 --> 00:00:31.285 the ID for the lecturer to Yale  
NOTE Confidence: 0.88161944

00:00:31.285 --> 00:00:33.249 Cloud CME by 3:15 PM today.  
NOTE Confidence: 0.88161944

00:00:33.250 --> 00:00:35.203 The ID shows up on the slide and also  
NOTE Confidence: 0.88161944

00:00:35.203 --> 00:00:37.243 will show up in the chat recordings of  
NOTE Confidence: 0.88161944

00:00:37.243 --> 00:00:38.844 the lecture are available within two  
NOTE Confidence: 0.88161944

00:00:38.844 --> 00:00:41.035 weeks at the site noted in the chat.  
NOTE Confidence: 0.88161944

00:00:41.035 --> 00:00:43.795 And if you have questions during the talk.  
NOTE Confidence: 0.88161944

00:00:43.800 --> 00:00:45.570 Please use the chat feature.  
NOTE Confidence: 0.88161944

00:00:45.570 --> 00:00:47.610 We will moderate the questions at  
NOTE Confidence: 0.88161944

00:00:47.610 --> 00:00:50.633 the end and as usual will give you  
NOTE Confidence: 0.88161944

00:00:50.633 --> 00:00:53.370 permission to unmute yourself at the end.  
NOTE Confidence: 0.88161944

00:00:53.370 --> 00:00:55.200 So now I will turn the session over to Dr.  
NOTE Confidence: 0.88161944

00:00:55.200 --> 00:00:55.674 Ian Weir,  
NOTE Confidence: 0.88161944

00:00:55.674 --> 00:00:57.096 who who is the program director

NOTE Confidence: 0.88161944

00:00:57.096 --> 00:00:58.750 for the Newark Hospital Pulmonary

NOTE Confidence: 0.88161944

00:00:58.750 --> 00:01:00.635 Fellowship and the Norwalk Hospital

NOTE Confidence: 0.88161944

00:01:00.635 --> 00:01:02.791 Sleep Fellowship and he is going to

NOTE Confidence: 0.88161944

00:01:02.791 --> 00:01:04.141 introduce our speaker doctor Marabia.

NOTE Confidence: 0.840624688333333

00:01:05.320 --> 00:01:07.246 OK, great, thank you so much.

NOTE Confidence: 0.840624688333333

00:01:07.250 --> 00:01:09.386 I have the honor today to

NOTE Confidence: 0.840624688333333

00:01:09.386 --> 00:01:10.454 introduce Doctor Marabia.

NOTE Confidence: 0.840624688333333

00:01:10.460 --> 00:01:12.230 So Doctor Murray has been with

NOTE Confidence: 0.840624688333333

00:01:12.230 --> 00:01:14.139 us for now almost four years

NOTE Confidence: 0.840624688333333

00:01:14.139 --> 00:01:15.804 prior to coming to Norwalk.

NOTE Confidence: 0.840624688333333

00:01:15.810 --> 00:01:18.420 He went to undergraduate at NYU,

NOTE Confidence: 0.840624688333333

00:01:18.420 --> 00:01:20.466 then to Ross Medical School and

NOTE Confidence: 0.840624688333333

00:01:20.466 --> 00:01:22.606 then his residency was at Brooklyn

NOTE Confidence: 0.840624688333333

00:01:22.606 --> 00:01:24.730 Methodist Hospital and we were lucky

NOTE Confidence: 0.840624688333333

00:01:24.730 --> 00:01:27.428 to have him match into our pulmonary

NOTE Confidence: 0.840624688333333

00:01:27.428 --> 00:01:29.353 critical care and Sleep program.

NOTE Confidence: 0.840624688333333

00:01:29.360 --> 00:01:31.070 And so we've done two years

NOTE Confidence: 0.840624688333333

00:01:31.070 --> 00:01:32.210 of pulmonary at Norwalk.

NOTE Confidence: 0.840624688333333

00:01:32.210 --> 00:01:34.275 A year of critical care at Yale,

NOTE Confidence: 0.840624688333333

00:01:34.280 --> 00:01:36.330 and now he's finally finishing.

NOTE Confidence: 0.840624688333333

00:01:36.330 --> 00:01:38.770 From all that in,

NOTE Confidence: 0.840624688333333

00:01:38.770 --> 00:01:40.392 in sleep fellowship,

NOTE Confidence: 0.840624688333333

00:01:40.392 --> 00:01:42.804 he'll be then traveling to the

NOTE Confidence: 0.840624688333333

00:01:42.804 --> 00:01:44.452 beautiful state of Virginia

NOTE Confidence: 0.840624688333333

00:01:44.452 --> 00:01:46.702 where he'll be working in both

NOTE Confidence: 0.840624688333333

00:01:46.702 --> 00:01:48.889 critical care and Sleep Medicine.

NOTE Confidence: 0.840624688333333

00:01:48.890 --> 00:01:49.496 For ANOVA,

NOTE Confidence: 0.840624688333333

00:01:49.496 --> 00:01:51.617 I believe is the one of is

NOTE Confidence: 0.840624688333333

00:01:51.617 --> 00:01:53.699 the main institution there,

NOTE Confidence: 0.840624688333333

00:01:53.700 --> 00:01:55.806 and so in terms of what I can

NOTE Confidence: 0.840624688333333

00:01:55.806 --> 00:01:57.046 tell you about Doctor Mirabi,

NOTE Confidence: 0.840624688333333  
00:01:57.050 --> 00:01:58.620 always like to find some  
NOTE Confidence: 0.840624688333333  
00:01:58.620 --> 00:02:00.190 interesting facts and fun things.  
NOTE Confidence: 0.840624688333333  
00:02:00.190 --> 00:02:01.300 But you know,  
NOTE Confidence: 0.840624688333333  
00:02:01.300 --> 00:02:03.890 one of my sort of most memorable  
NOTE Confidence: 0.840624688333333  
00:02:03.972 --> 00:02:07.110 moments was during this COVID pandemic,  
NOTE Confidence: 0.840624688333333  
00:02:07.110 --> 00:02:09.078 and I and I got to really work  
NOTE Confidence: 0.840624688333333  
00:02:09.078 --> 00:02:10.610 very closely with the fellows,  
NOTE Confidence: 0.840624688333333  
00:02:10.610 --> 00:02:13.175 and we had our COVID unit of about 20.  
NOTE Confidence: 0.840624688333333  
00:02:13.180 --> 00:02:14.066 I'm sorry,  
NOTE Confidence: 0.840624688333333  
00:02:14.066 --> 00:02:16.281 30 to 40 intubated patients  
NOTE Confidence: 0.840624688333333  
00:02:16.281 --> 00:02:18.150 on ventilators with COVID,  
NOTE Confidence: 0.840624688333333  
00:02:18.150 --> 00:02:20.082 and I was just amazed about  
NOTE Confidence: 0.840624688333333  
00:02:20.082 --> 00:02:21.370 how Armand took it.  
NOTE Confidence: 0.840624688333333  
00:02:21.370 --> 00:02:23.010 He worked on a shift,  
NOTE Confidence: 0.840624688333333  
00:02:23.010 --> 00:02:25.428 took care of all those patients,  
NOTE Confidence: 0.840624688333333

00:02:25.430 --> 00:02:27.270 and with the faculty attendings,

NOTE Confidence: 0.840624688333333

00:02:27.270 --> 00:02:29.265 and was just an unbelievable

NOTE Confidence: 0.840624688333333

00:02:29.265 --> 00:02:31.677 resource and really saved so many

NOTE Confidence: 0.840624688333333

00:02:31.677 --> 00:02:34.064 lives and did such an amazing job.

NOTE Confidence: 0.840624688333333

00:02:34.070 --> 00:02:36.656 He's been involved in quality work.

NOTE Confidence: 0.840624688333333

00:02:36.660 --> 00:02:39.640 To help develop our entitled

NOTE Confidence: 0.840624688333333

00:02:39.640 --> 00:02:42.024 CO2 policy at Norwalk,

NOTE Confidence: 0.840624688333333

00:02:42.030 --> 00:02:43.941 he's been very involved in in the

NOTE Confidence: 0.840624688333333

00:02:43.941 --> 00:02:45.270 Sleep fellowship and teaching.

NOTE Confidence: 0.840624688333333

00:02:45.270 --> 00:02:47.400 Our fellow are the Fellows residents.

NOTE Confidence: 0.840624688333333

00:02:47.400 --> 00:02:49.015 So it's been an absolute

NOTE Confidence: 0.840624688333333

00:02:49.015 --> 00:02:50.307 pleasure to have him.

NOTE Confidence: 0.840624688333333

00:02:50.310 --> 00:02:51.940 As for these four years,

NOTE Confidence: 0.840624688333333

00:02:51.940 --> 00:02:53.804 I'm so proud of him and I know

NOTE Confidence: 0.840624688333333

00:02:53.804 --> 00:02:55.424 he's going to go to Virginia

NOTE Confidence: 0.840624688333333

00:02:55.424 --> 00:02:56.784 and be a superstar there,

NOTE Confidence: 0.840624688333333

00:02:56.790 --> 00:02:58.730 so it's with great honor.

NOTE Confidence: 0.840624688333333

00:02:58.730 --> 00:03:00.470 I want to introduce Doctor Moravia

NOTE Confidence: 0.840624688333333

00:03:00.470 --> 00:03:02.430 and we'll be talking about acute

NOTE Confidence: 0.840624688333333

00:03:02.430 --> 00:03:03.910 and chronic sleep deprivation,

NOTE Confidence: 0.840624688333333

00:03:03.910 --> 00:03:05.646 and he's going to have a lot of

NOTE Confidence: 0.840624688333333

00:03:05.646 --> 00:03:06.870 interesting fun facts for us so.

NOTE Confidence: 0.840624688333333

00:03:06.870 --> 00:03:07.860 Should be a great time.

NOTE Confidence: 0.840624688333333

00:03:07.860 --> 00:03:09.028 Thanks everybody for joining.

NOTE Confidence: 0.6633610025

00:03:09.950 --> 00:03:11.300 Thank you Doctor Weir for

NOTE Confidence: 0.6633610025

00:03:11.300 --> 00:03:12.110 that lovely introduction.

NOTE Confidence: 0.6633610025

00:03:12.110 --> 00:03:14.122 So good afternoon everyone.

NOTE Confidence: 0.6633610025

00:03:14.122 --> 00:03:16.226 I'm Roman. One of the fellows,

NOTE Confidence: 0.6633610025

00:03:16.226 --> 00:03:17.870 like Doctor Weir had mentioned so

NOTE Confidence: 0.6633610025

00:03:17.923 --> 00:03:19.547 I'm going to get started on the

NOTE Confidence: 0.6633610025

00:03:19.547 --> 00:03:21.587 talk so we're going to talk about

NOTE Confidence: 0.6633610025

00:03:21.587 --> 00:03:23.192 acute and chronic sleep deprivation.  
NOTE Confidence: 0.6633610025

00:03:23.200 --> 00:03:24.772 Make sure I can.  
NOTE Confidence: 0.6633610025

00:03:24.772 --> 00:03:26.737 This is our CME disclosure.  
NOTE Confidence: 0.6633610025

00:03:26.740 --> 00:03:28.990 In addition, slide the information  
NOTE Confidence: 0.6633610025

00:03:28.990 --> 00:03:30.340 is also available.  
NOTE Confidence: 0.6633610025

00:03:30.340 --> 00:03:31.228 Towards the end.  
NOTE Confidence: 0.868569661

00:03:35.350 --> 00:03:37.182 So I kind of got interested in this  
NOTE Confidence: 0.868569661

00:03:37.182 --> 00:03:38.780 topic of sleep deprivation because I  
NOTE Confidence: 0.868569661

00:03:38.780 --> 00:03:41.104 think if you look at the statistics they  
NOTE Confidence: 0.868569661

00:03:41.104 --> 00:03:43.365 are quite staggering in terms of how  
NOTE Confidence: 0.868569661

00:03:43.365 --> 00:03:45.754 prevalent it is and how many Americans  
NOTE Confidence: 0.868569661

00:03:45.754 --> 00:03:47.790 suffer from having sleep problems.  
NOTE Confidence: 0.868569661

00:03:47.790 --> 00:03:49.698 But what's more kind of appreciative  
NOTE Confidence: 0.868569661

00:03:49.698 --> 00:03:52.195 of this is what are the manifestations  
NOTE Confidence: 0.868569661

00:03:52.195 --> 00:03:54.511 of sleep deprivation and how it  
NOTE Confidence: 0.868569661

00:03:54.511 --> 00:03:56.490 involves almost every organ group,



NOTE Confidence: 0.868569661

00:03:56.490 --> 00:04:00.284 every type of cognitive to mood disorders,

NOTE Confidence: 0.868569661

00:04:00.290 --> 00:04:02.060 and really has an overall impact.

NOTE Confidence: 0.868569661

00:04:02.060 --> 00:04:05.956 Quality of life functioning and and you know,

NOTE Confidence: 0.868569661

00:04:05.960 --> 00:04:08.375 just just functioning on a daily basis,

NOTE Confidence: 0.868569661

00:04:08.380 --> 00:04:10.879 so I think it was important topic

NOTE Confidence: 0.868569661

00:04:10.880 --> 00:04:12.470 to kind of at least review.

NOTE Confidence: 0.868569661

00:04:12.470 --> 00:04:14.294 And there's a lot of pretty interesting

NOTE Confidence: 0.868569661

00:04:14.294 --> 00:04:15.813 things that I've I've come across while

NOTE Confidence: 0.868569661

00:04:15.813 --> 00:04:17.197 I was doing my research for this.

NOTE Confidence: 0.868569661

00:04:17.200 --> 00:04:18.550 I hope everyone else can benefit

NOTE Confidence: 0.868569661

00:04:18.550 --> 00:04:19.450 from that as well.

NOTE Confidence: 0.734260988

00:04:25.190 --> 00:04:27.493 So the objectives today will go and

NOTE Confidence: 0.734260988

00:04:27.493 --> 00:04:29.149 define insufficient sleep will go

NOTE Confidence: 0.734260988

00:04:29.149 --> 00:04:31.298 somewhere with some over some of the

NOTE Confidence: 0.734260988

00:04:31.298 --> 00:04:32.771 epidemiology data that's available.

NOTE Confidence: 0.734260988

00:04:32.771 --> 00:04:34.706 We'll talk about the different  
NOTE Confidence: 0.734260988

00:04:34.706 --> 00:04:36.997 effects of both the acute and  
NOTE Confidence: 0.734260988

00:04:36.997 --> 00:04:38.449 sleep deprivation of changes,  
NOTE Confidence: 0.734260988

00:04:38.450 --> 00:04:40.490 and then what we've seen in the sleep  
NOTE Confidence: 0.734260988

00:04:40.490 --> 00:04:41.749 architecture talk about recovery,  
NOTE Confidence: 0.734260988

00:04:41.750 --> 00:04:43.542 sleep and and and some of the  
NOTE Confidence: 0.734260988

00:04:43.542 --> 00:04:45.055 phenomenons we see as we record  
NOTE Confidence: 0.734260988

00:04:45.055 --> 00:04:46.658 some PSG data and then go over  
NOTE Confidence: 0.734260988

00:04:46.719 --> 00:04:48.364 some fun facts and then I'll kind  
NOTE Confidence: 0.734260988

00:04:48.364 --> 00:04:50.282 of end off with a familiar fatal  
NOTE Confidence: 0.734260988

00:04:50.282 --> 00:04:52.100 insomnia because I think it ties  
NOTE Confidence: 0.734260988

00:04:52.158 --> 00:04:53.800 in nicely and especially in the  
NOTE Confidence: 0.734260988

00:04:53.800 --> 00:04:55.330 early portions of the disease.  
NOTE Confidence: 0.734260988

00:04:55.330 --> 00:04:56.945 Process and how it can  
NOTE Confidence: 0.734260988

00:04:56.945 --> 00:04:57.914 mimic insufficient sleep.  
NOTE Confidence: 0.77675784

00:05:00.830 --> 00:05:01.440 So.

NOTE Confidence: 0.896739194285714  
00:05:03.780 --> 00:05:05.950 So when you really define  
NOTE Confidence: 0.896739194285714  
00:05:05.950 --> 00:05:07.890 insufficient sleep, it's it's.  
NOTE Confidence: 0.896739194285714  
00:05:07.890 --> 00:05:10.030 It's really hard to.  
NOTE Confidence: 0.896739194285714  
00:05:10.030 --> 00:05:12.394 Say, is there a quantity reduction  
NOTE Confidence: 0.896739194285714  
00:05:12.394 --> 00:05:15.530 or is there a particular number?  
NOTE Confidence: 0.896739194285714  
00:05:15.530 --> 00:05:17.630 Because there is such a wide range  
NOTE Confidence: 0.896739194285714  
00:05:17.630 --> 00:05:20.103 of what is needed and what is normal  
NOTE Confidence: 0.896739194285714  
00:05:20.103 --> 00:05:22.410 for a person in the population,  
NOTE Confidence: 0.896739194285714  
00:05:22.410 --> 00:05:24.860 but it's defined as having insufficient sleep  
NOTE Confidence: 0.896739194285714  
00:05:24.860 --> 00:05:27.667 and that could be both the total sleep time,  
NOTE Confidence: 0.896739194285714  
00:05:27.670 --> 00:05:29.679 which will be the duration or the  
NOTE Confidence: 0.896739194285714  
00:05:29.679 --> 00:05:31.704 quality of sleep that's going to  
NOTE Confidence: 0.896739194285714  
00:05:31.704 --> 00:05:33.180 result in decrease alertness,  
NOTE Confidence: 0.896739194285714  
00:05:33.180 --> 00:05:35.210 performance and lead to any  
NOTE Confidence: 0.896739194285714  
00:05:35.210 --> 00:05:36.834 type of health issues,  
NOTE Confidence: 0.896739194285714

00:05:36.840 --> 00:05:38.530 and acute deprivation is going  
NOTE Confidence: 0.896739194285714

00:05:38.530 --> 00:05:40.660 to be defined as having these.  
NOTE Confidence: 0.896739194285714

00:05:40.660 --> 00:05:41.984 Reductions within a time  
NOTE Confidence: 0.896739194285714

00:05:41.984 --> 00:05:43.970 frame of one to two days,  
NOTE Confidence: 0.896739194285714

00:05:43.970 --> 00:05:45.660 whereas chronic becomes more of  
NOTE Confidence: 0.896739194285714

00:05:45.660 --> 00:05:47.350 a habitual process where you  
NOTE Confidence: 0.896739194285714

00:05:47.414 --> 00:05:49.580 getting less than the amount needed  
NOTE Confidence: 0.896739194285714

00:05:49.580 --> 00:05:51.341 for this optimal functioning on  
NOTE Confidence: 0.896739194285714

00:05:51.341 --> 00:05:52.889 a on an almost nightly basis.  
NOTE Confidence: 0.862458438181818

00:05:56.360 --> 00:05:58.649 So if we look at the ICSD  
NOTE Confidence: 0.862458438181818

00:05:58.649 --> 00:06:00.380 definition and the criteria,  
NOTE Confidence: 0.862458438181818

00:06:00.380 --> 00:06:02.390 one thing I did want to point out is you  
NOTE Confidence: 0.862458438181818

00:06:02.445 --> 00:06:04.510 can see all these alternative names here.  
NOTE Confidence: 0.862458438181818

00:06:04.510 --> 00:06:06.283 So behaviorally induced  
NOTE Confidence: 0.862458438181818

00:06:06.283 --> 00:06:08.056 insufficient sleep syndrome,  
NOTE Confidence: 0.862458438181818

00:06:08.060 --> 00:06:09.680 insufficient nocturnal sleep,

NOTE Confidence: 0.862458438181818  
00:06:09.680 --> 00:06:11.300 chronic sleep deprivation,  
NOTE Confidence: 0.862458438181818  
00:06:11.300 --> 00:06:13.841 sleep restriction, they kind of go hand  
NOTE Confidence: 0.862458438181818  
00:06:13.841 --> 00:06:16.897 in hand in terms of the presentation,  
NOTE Confidence: 0.862458438181818  
00:06:16.900 --> 00:06:18.360 but they're essentially, you know,  
NOTE Confidence: 0.862458438181818  
00:06:18.360 --> 00:06:20.960 different ways of of saying the same thing,  
NOTE Confidence: 0.862458438181818  
00:06:20.960 --> 00:06:23.290 and one of the kind of hallmarks of of this  
NOTE Confidence: 0.862458438181818  
00:06:23.346 --> 00:06:25.460 is when you're when you're defining is.  
NOTE Confidence: 0.862458438181818  
00:06:25.460 --> 00:06:27.560 Is having symptoms of daytime  
NOTE Confidence: 0.862458438181818  
00:06:27.560 --> 00:06:29.660 sleepiness and that's important because  
NOTE Confidence: 0.862458438181818  
00:06:29.729 --> 00:06:31.773 you can have someone who sleeps 5  
NOTE Confidence: 0.862458438181818  
00:06:31.773 --> 00:06:34.361 hours and does not have any symptoms  
NOTE Confidence: 0.862458438181818  
00:06:34.361 --> 00:06:36.005 of excessive daytime sleepiness,  
NOTE Confidence: 0.862458438181818  
00:06:36.010 --> 00:06:38.485 so you would not be able to call that  
NOTE Confidence: 0.862458438181818  
00:06:38.485 --> 00:06:39.905 insufficient sleep and you could  
NOTE Confidence: 0.862458438181818  
00:06:39.905 --> 00:06:41.860 because you can have long you know,  
NOTE Confidence: 0.862458438181818

00:06:41.860 --> 00:06:42.570 short sleepers,  
NOTE Confidence: 0.862458438181818

00:06:42.570 --> 00:06:43.280 long sleepers,  
NOTE Confidence: 0.862458438181818

00:06:43.280 --> 00:06:46.140 but it has to have some type of  
NOTE Confidence: 0.862458438181818

00:06:46.140 --> 00:06:46.778 daytime sleepiness,  
NOTE Confidence: 0.862458438181818

00:06:46.778 --> 00:06:49.242 symptoms and most of the time this is  
NOTE Confidence: 0.862458438181818

00:06:49.242 --> 00:06:51.484 going to be due to shortening of the  
NOTE Confidence: 0.862458438181818

00:06:51.484 --> 00:06:53.361 duration of sleep that's that's occurring  
NOTE Confidence: 0.862458438181818

00:06:53.361 --> 00:06:56.180 on most days for at least three months.  
NOTE Confidence: 0.862458438181818

00:06:56.180 --> 00:06:57.872 And then of course there's other  
NOTE Confidence: 0.862458438181818

00:06:57.872 --> 00:06:59.752 criteria in terms of how we're  
NOTE Confidence: 0.862458438181818

00:06:59.752 --> 00:07:01.136 measuring the curtailed time,  
NOTE Confidence: 0.862458438181818

00:07:01.140 --> 00:07:02.720 whether that's through sleep  
NOTE Confidence: 0.862458438181818

00:07:02.720 --> 00:07:04.300 logs or tiger fee,  
NOTE Confidence: 0.862458438181818

00:07:04.300 --> 00:07:05.472 but overall you know.  
NOTE Confidence: 0.862458438181818

00:07:05.472 --> 00:07:07.230 And obviously you have to exclude  
NOTE Confidence: 0.862458438181818

00:07:07.285 --> 00:07:09.117 that it's not going to be a result

NOTE Confidence: 0.862458438181818

00:07:09.117 --> 00:07:11.067 of other entities as mentioned here.

NOTE Confidence: 0.835844127

00:07:13.620 --> 00:07:14.804 So one distinction that

NOTE Confidence: 0.835844127

00:07:14.804 --> 00:07:16.580 I kind of wanted to make,

NOTE Confidence: 0.835844127

00:07:16.580 --> 00:07:19.002 especially as you delve into some of

NOTE Confidence: 0.835844127

00:07:19.002 --> 00:07:21.732 the data is is really differentiating

NOTE Confidence: 0.835844127

00:07:21.732 --> 00:07:24.272 between insomnia and insufficient sleep.

NOTE Confidence: 0.835844127

00:07:24.280 --> 00:07:25.960 So when you have insomnia,

NOTE Confidence: 0.835844127

00:07:25.960 --> 00:07:28.600 you can end up having overall you know,

NOTE Confidence: 0.835844127

00:07:28.600 --> 00:07:31.470 sleep deprivation, but when you when you

NOTE Confidence: 0.835844127

00:07:31.470 --> 00:07:34.260 qualify this into different categories,

NOTE Confidence: 0.835844127

00:07:34.260 --> 00:07:36.660 there are distinctions that are needed.

NOTE Confidence: 0.835844127

00:07:36.660 --> 00:07:38.428 So insomnia really refers

NOTE Confidence: 0.835844127

00:07:38.428 --> 00:07:40.638 to the inability to sleep,

NOTE Confidence: 0.835844127

00:07:40.640 --> 00:07:42.096 and that could be both in terms

NOTE Confidence: 0.835844127

00:07:42.096 --> 00:07:43.528 of the total length of sleep.

NOTE Confidence: 0.835844127

00:07:43.530 --> 00:07:45.594 Which are getting or the quality of sleep.  
NOTE Confidence: 0.835844127

00:07:45.600 --> 00:07:47.696 But there is the opportunity to sleep there.  
NOTE Confidence: 0.835844127

00:07:47.700 --> 00:07:49.948 So most insomniacs we know will be in  
NOTE Confidence: 0.835844127

00:07:49.948 --> 00:07:52.199 bed for prolonged periods of time,  
NOTE Confidence: 0.835844127

00:07:52.200 --> 00:07:53.304 tossing and turning.  
NOTE Confidence: 0.835844127

00:07:53.304 --> 00:07:55.144 So they are giving themselves  
NOTE Confidence: 0.835844127

00:07:55.144 --> 00:07:56.440 the opportunity to sleep,  
NOTE Confidence: 0.835844127

00:07:56.440 --> 00:07:59.408 but but it's the actual issue with either  
NOTE Confidence: 0.835844127

00:07:59.408 --> 00:08:01.620 falling asleep or maintaining sleep.  
NOTE Confidence: 0.835844127

00:08:01.620 --> 00:08:03.300 Whereas insufficient sleep really  
NOTE Confidence: 0.835844127

00:08:03.300 --> 00:08:04.560 is a shortening,  
NOTE Confidence: 0.835844127

00:08:04.560 --> 00:08:07.232 it's it's more of a behavioral component  
NOTE Confidence: 0.835844127

00:08:07.232 --> 00:08:09.344 where you're decreasing the length of  
NOTE Confidence: 0.835844127

00:08:09.344 --> 00:08:11.839 total sleep that you're allowing yourself,  
NOTE Confidence: 0.835844127

00:08:11.840 --> 00:08:13.807 or there's other issues that are causing.  
NOTE Confidence: 0.835844127

00:08:13.810 --> 00:08:15.190 Arousals and we'll get into that



NOTE Confidence: 0.835844127

00:08:15.190 --> 00:08:16.710 into a little bit more detail,

NOTE Confidence: 0.835844127

00:08:16.710 --> 00:08:18.348 so this kind of little picture

NOTE Confidence: 0.835844127

00:08:18.348 --> 00:08:20.343 here shows a lot of the sleep

NOTE Confidence: 0.835844127

00:08:20.343 --> 00:08:22.296 deprivation is going to be a little

NOTE Confidence: 0.835844127

00:08:22.359 --> 00:08:23.989 bit of behavioral by choice,

NOTE Confidence: 0.835844127

00:08:23.990 --> 00:08:26.694 whereas insomnia is is more of the inability.

NOTE Confidence: 0.91959369625

00:08:30.080 --> 00:08:32.136 So how much sleep do we really need?

NOTE Confidence: 0.91959369625

00:08:32.140 --> 00:08:34.204 And that's kind of a a hallmark question

NOTE Confidence: 0.91959369625

00:08:34.204 --> 00:08:36.364 to ask because as we are taking care

NOTE Confidence: 0.91959369625

00:08:36.364 --> 00:08:38.519 of patients in our clinical practices,

NOTE Confidence: 0.91959369625

00:08:38.520 --> 00:08:39.759 you know we often ask them what

NOTE Confidence: 0.91959369625

00:08:39.759 --> 00:08:40.858 time are you going to bed?

NOTE Confidence: 0.91959369625

00:08:40.860 --> 00:08:42.309 How long does it take you to fall asleep?

NOTE Confidence: 0.91959369625

00:08:42.310 --> 00:08:44.074 What time are you waking up in the morning?

NOTE Confidence: 0.91959369625

00:08:44.080 --> 00:08:45.064 Are you feeling refreshed?

NOTE Confidence: 0.91959369625

00:08:45.064 --> 00:08:46.294 Are you still feeling sleepy?  
NOTE Confidence: 0.91959369625

00:08:46.300 --> 00:08:47.276 Are you feeling tired?  
NOTE Confidence: 0.91959369625

00:08:47.276 --> 00:08:48.740 You know what's your app worth?  
NOTE Confidence: 0.91959369625

00:08:48.740 --> 00:08:49.840 So that's you know,  
NOTE Confidence: 0.91959369625

00:08:49.840 --> 00:08:52.398 we get that kind of objective data from then.  
NOTE Confidence: 0.91959369625

00:08:52.400 --> 00:08:54.356 But how do we interpret that?  
NOTE Confidence: 0.91959369625

00:08:54.360 --> 00:08:55.551 And and really,  
NOTE Confidence: 0.91959369625

00:08:55.551 --> 00:08:58.330 there isn't any great data to suggest  
NOTE Confidence: 0.91959369625

00:08:58.410 --> 00:09:01.105 a finite number of hours or minutes.  
NOTE Confidence: 0.91959369625

00:09:01.110 --> 00:09:03.330 We'll, we'll lead to you know,  
NOTE Confidence: 0.91959369625

00:09:03.330 --> 00:09:04.950 this being a normal quantity  
NOTE Confidence: 0.91959369625

00:09:04.950 --> 00:09:06.570 of sleep for that individual,  
NOTE Confidence: 0.91959369625

00:09:06.570 --> 00:09:08.894 so there's a few substitutes that that  
NOTE Confidence: 0.91959369625

00:09:08.894 --> 00:09:11.483 can be used to determine what is the  
NOTE Confidence: 0.91959369625

00:09:11.483 --> 00:09:14.209 amount of sleep and a person will need,  
NOTE Confidence: 0.91959369625

00:09:14.210 --> 00:09:16.450 and that may become the normal for them.

NOTE Confidence: 0.91959369625

00:09:16.450 --> 00:09:18.594 So if you allow someone to kind of

NOTE Confidence: 0.91959369625

00:09:18.594 --> 00:09:20.838 sleep and then wake up spontaneously,

NOTE Confidence: 0.91959369625

00:09:20.840 --> 00:09:23.768 that duration may constitute what the

NOTE Confidence: 0.91959369625

00:09:23.768 --> 00:09:27.068 normal sleep quantity is for that person.

NOTE Confidence: 0.91959369625

00:09:27.070 --> 00:09:29.289 Also, if you have them sleep at

NOTE Confidence: 0.91959369625

00:09:29.289 --> 00:09:31.151 different durations, so one day.

NOTE Confidence: 0.91959369625

00:09:31.151 --> 00:09:34.665 One day they sleep six hours 789 et cetera.

NOTE Confidence: 0.91959369625

00:09:34.665 --> 00:09:37.150 And then in the morning you're again

NOTE Confidence: 0.91959369625

00:09:37.223 --> 00:09:39.938 asking them for subjective information.

NOTE Confidence: 0.91959369625

00:09:39.940 --> 00:09:41.160 How alert do they feel?

NOTE Confidence: 0.91959369625

00:09:41.160 --> 00:09:41.760 How refreshed,

NOTE Confidence: 0.91959369625

00:09:41.760 --> 00:09:43.860 whether sleep and then you know how

NOTE Confidence: 0.91959369625

00:09:43.860 --> 00:09:46.126 are they able to carry out the day

NOTE Confidence: 0.91959369625

00:09:46.126 --> 00:09:48.414 feeling alert when they have these kind

NOTE Confidence: 0.91959369625

00:09:48.414 --> 00:09:50.174 of boring and monotonous situations?

NOTE Confidence: 0.91959369625

00:09:50.180 --> 00:09:52.455 Are they nodding off during you know?

NOTE Confidence: 0.91959369625

00:09:52.460 --> 00:09:54.854 Zoom conferences and things of that nature

NOTE Confidence: 0.91959369625

00:09:54.854 --> 00:09:57.079 or they've dozing off during meetings,

NOTE Confidence: 0.91959369625

00:09:57.080 --> 00:09:59.663 but there is a little bit of a consensus

NOTE Confidence: 0.91959369625

00:09:59.663 --> 00:10:01.999 that that suggests that most adults.

NOTE Confidence: 0.91959369625

00:10:02.000 --> 00:10:04.142 Report that if they are able to

NOTE Confidence: 0.91959369625

00:10:04.142 --> 00:10:06.099 get anywhere from 6 to 8 and some

NOTE Confidence: 0.91959369625

00:10:06.099 --> 00:10:08.070 will say 6 to 9 hours of sleep,

NOTE Confidence: 0.91959369625

00:10:08.070 --> 00:10:09.690 that's considered kind of the the

NOTE Confidence: 0.91959369625

00:10:09.690 --> 00:10:11.850 norm in terms of a population study.

NOTE Confidence: 0.91959369625

00:10:11.850 --> 00:10:13.926 But we know that there's long

NOTE Confidence: 0.91959369625

00:10:13.926 --> 00:10:15.310 sleepers and short sleepers.

NOTE Confidence: 0.91959369625

00:10:15.310 --> 00:10:16.875 People who function really well

NOTE Confidence: 0.91959369625

00:10:16.875 --> 00:10:19.000 with less than six hours of sleep

NOTE Confidence: 0.91959369625

00:10:19.000 --> 00:10:20.757 and then others who need 10 hours

NOTE Confidence: 0.91959369625

00:10:20.757 --> 00:10:23.640 of sleep to kind of have their

NOTE Confidence: 0.91959369625

00:10:23.640 --> 00:10:25.930 day going and feeling alert.

NOTE Confidence: 0.91959369625

00:10:25.930 --> 00:10:28.436 So this is one of the slides

NOTE Confidence: 0.91959369625

00:10:28.436 --> 00:10:31.998 that kind of looks at what is

NOTE Confidence: 0.91959369625

00:10:31.998 --> 00:10:34.206 considered the recommended sleep

NOTE Confidence: 0.91959369625

00:10:34.206 --> 00:10:35.886 duration for different age groups,

NOTE Confidence: 0.91959369625

00:10:35.890 --> 00:10:38.642 and it starts with a newborn and progresses

NOTE Confidence: 0.91959369625

00:10:38.642 --> 00:10:41.230 all the way through an older adult.

NOTE Confidence: 0.91959369625

00:10:41.230 --> 00:10:42.706 But you can see that there's

NOTE Confidence: 0.91959369625

00:10:42.706 --> 00:10:44.050 there's such a wide range.

NOTE Confidence: 0.91959369625

00:10:44.050 --> 00:10:46.430 There's there's a recommended portion.

NOTE Confidence: 0.91959369625

00:10:46.430 --> 00:10:49.328 Then there's also maybe appropriate portion,

NOTE Confidence: 0.91959369625

00:10:49.330 --> 00:10:50.790 and then there's not recommended,

NOTE Confidence: 0.91959369625

00:10:50.790 --> 00:10:52.668 so you can see you know,

NOTE Confidence: 0.91959369625

00:10:52.670 --> 00:10:54.364 even starting over the newborn 14 to

NOTE Confidence: 0.91959369625

00:10:54.364 --> 00:10:56.348 17 hours is kind of the recommended.

NOTE Confidence: 0.91959369625

00:10:56.350 --> 00:10:56.757 Time,  
NOTE Confidence: 0.91959369625

00:10:56.757 --> 00:10:59.199 but from 11 hours all the  
NOTE Confidence: 0.91959369625

00:10:59.199 --> 00:11:01.910 19 hours may be appropriate,  
NOTE Confidence: 0.91959369625

00:11:01.910 --> 00:11:05.508 so the entire range may be appropriate  
NOTE Confidence: 0.91959369625

00:11:05.510 --> 00:11:07.659 and and then obviously outside of that  
NOTE Confidence: 0.91959369625

00:11:07.659 --> 00:11:09.927 meeting you know can be less or or more,  
NOTE Confidence: 0.91959369625

00:11:09.930 --> 00:11:11.262 but this this this.  
NOTE Confidence: 0.91959369625

00:11:11.262 --> 00:11:13.260 This range really kind of exceeds  
NOTE Confidence: 0.91959369625

00:11:13.331 --> 00:11:15.487 and goes to all the way through  
NOTE Confidence: 0.91959369625

00:11:15.487 --> 00:11:16.411 the different age  
NOTE Confidence: 0.854263014285714

00:11:16.479 --> 00:11:18.660 groups, even into the older adults  
NOTE Confidence: 0.854263014285714

00:11:18.660 --> 00:11:21.331 and we see a gradual decline in  
NOTE Confidence: 0.854263014285714

00:11:21.331 --> 00:11:23.887 what the recommended sleep time is,  
NOTE Confidence: 0.854263014285714

00:11:23.890 --> 00:11:25.384 what a lot of this variation  
NOTE Confidence: 0.854263014285714

00:11:25.384 --> 00:11:27.120 and what may be appropriate.  
NOTE Confidence: 0.854263014285714

00:11:27.120 --> 00:11:31.184 Continues to make it difficult for us to

NOTE Confidence: 0.854263014285714

00:11:31.184 --> 00:11:34.289 finitely define what someone may need,

NOTE Confidence: 0.854263014285714

00:11:34.290 --> 00:11:36.495 so this is good for a reference,

NOTE Confidence: 0.854263014285714

00:11:36.500 --> 00:11:38.467 but it's going to be very individualized

NOTE Confidence: 0.854263014285714

00:11:38.467 --> 00:11:39.989 when it comes to patients.

NOTE Confidence: 0.878672079

00:11:43.490 --> 00:11:45.250 So some of the epidemiology

NOTE Confidence: 0.878672079

00:11:45.250 --> 00:11:47.010 data and what's out there.

NOTE Confidence: 0.878672079

00:11:47.010 --> 00:11:49.306 So more than 1/3 of of adults in

NOTE Confidence: 0.878672079

00:11:49.306 --> 00:11:52.244 the US report that they have issues

NOTE Confidence: 0.878672079

00:11:52.244 --> 00:11:54.529 falling asleep or staying asleep,

NOTE Confidence: 0.878672079

00:11:54.530 --> 00:11:56.768 or they're not getting enough sleep.

NOTE Confidence: 0.878672079

00:11:56.770 --> 00:11:58.576 The initial slide had mentioned 70%

NOTE Confidence: 0.878672079

00:11:58.580 --> 00:12:00.590 having some type of sleep problem,

NOTE Confidence: 0.878672079

00:12:00.590 --> 00:12:02.440 and it's almost you know,

NOTE Confidence: 0.878672079

00:12:02.440 --> 00:12:05.114 40% of males having some insomnia complaints.

NOTE Confidence: 0.878672079

00:12:05.120 --> 00:12:07.125 30% of female having insomnia

NOTE Confidence: 0.878672079

00:12:07.125 --> 00:12:08.610 complaints and and this is where it's  
NOTE Confidence: 0.878672079

00:12:08.610 --> 00:12:09.789 really important to kind of hone out.  
NOTE Confidence: 0.878672079

00:12:09.790 --> 00:12:11.950 Is it really due to insufficient  
NOTE Confidence: 0.878672079

00:12:11.950 --> 00:12:13.030 sleep from rehearsal?  
NOTE Confidence: 0.878672079

00:12:13.030 --> 00:12:14.770 Aspect is more insomnia,  
NOTE Confidence: 0.878672079

00:12:14.770 --> 00:12:17.929 but there is some data that suggests  
NOTE Confidence: 0.878672079

00:12:17.929 --> 00:12:20.665 that if 1/3 of adults report  
NOTE Confidence: 0.878672079

00:12:20.665 --> 00:12:23.110 having less than 7 hours of sleep,  
NOTE Confidence: 0.878672079

00:12:23.110 --> 00:12:24.845 they had slightly more difficulty  
NOTE Confidence: 0.878672079

00:12:24.845 --> 00:12:26.580 with concentration compared to their  
NOTE Confidence: 0.878672079

00:12:26.635 --> 00:12:27.950 counters that that we're getting  
NOTE Confidence: 0.878672079

00:12:27.950 --> 00:12:30.059 anywhere from 7 to 9 hours of sleep,  
NOTE Confidence: 0.878672079

00:12:30.060 --> 00:12:31.908 and you can see the difference  
NOTE Confidence: 0.878672079

00:12:31.908 --> 00:12:34.211 between 29 and in the group that  
NOTE Confidence: 0.878672079

00:12:34.211 --> 00:12:35.876 was getting Leslie versus 19.  
NOTE Confidence: 0.878672079

00:12:35.876 --> 00:12:39.096 So it seems that less than 7 hours and



NOTE Confidence: 0.878672079

00:12:39.096 --> 00:12:41.973 better through the of the population and

NOTE Confidence: 0.878672079

00:12:41.973 --> 00:12:44.698 adults have some concentration issues.

NOTE Confidence: 0.878672079

00:12:44.700 --> 00:12:46.796 Now there is groups that are more prone,

NOTE Confidence: 0.878672079

00:12:46.800 --> 00:12:49.698 so if you're Hispanic, black Americans,

NOTE Confidence: 0.878672079

00:12:49.700 --> 00:12:50.954 American Indian Alaskans,

NOTE Confidence: 0.878672079

00:12:50.954 --> 00:12:52.987 Native Hawaiians, and Pacific Islanders,

NOTE Confidence: 0.878672079

00:12:52.987 --> 00:12:55.381 this group tends to have higher

NOTE Confidence: 0.878672079

00:12:55.381 --> 00:12:57.198 complaints of insufficient sleep.

NOTE Confidence: 0.878672079

00:12:57.200 --> 00:12:59.952 So that's this is kind of something to

NOTE Confidence: 0.878672079

00:12:59.952 --> 00:13:02.697 consider when we see our patient population.

NOTE Confidence: 0.878672079

00:13:02.700 --> 00:13:02.960 Then,

NOTE Confidence: 0.878672079

00:13:02.960 --> 00:13:04.780 as well as we'll talk about the

NOTE Confidence: 0.878672079

00:13:04.780 --> 00:13:06.921 kind of U shaped curve in terms of

NOTE Confidence: 0.878672079

00:13:06.921 --> 00:13:08.927 what you know more and and less

NOTE Confidence: 0.878672079

00:13:08.927 --> 00:13:10.739 sleeping and what that results in.

NOTE Confidence: 0.878672079

00:13:10.740 --> 00:13:12.515 But is also thought that  
NOTE Confidence: 0.878672079

00:13:12.515 --> 00:13:13.580 blacks versus whites,  
NOTE Confidence: 0.878672079

00:13:13.580 --> 00:13:15.932 the black population has higher prevalence  
NOTE Confidence: 0.878672079

00:13:15.932 --> 00:13:18.549 of short and long sleep duration,  
NOTE Confidence: 0.878672079

00:13:18.550 --> 00:13:20.650 and especially those with  
NOTE Confidence: 0.878672079

00:13:20.650 --> 00:13:22.225 low socioeconomic statuses.  
NOTE Confidence: 0.878672079

00:13:22.230 --> 00:13:24.316 In terms of the prevalence of getting  
NOTE Confidence: 0.878672079

00:13:24.316 --> 00:13:26.148 less than six hours of sleep,  
NOTE Confidence: 0.878672079

00:13:26.150 --> 00:13:26.372 again,  
NOTE Confidence: 0.878672079

00:13:26.372 --> 00:13:27.926 a lot of studies will use six  
NOTE Confidence: 0.878672079

00:13:27.926 --> 00:13:29.407 hours is kind of the cut off,  
NOTE Confidence: 0.878672079

00:13:29.410 --> 00:13:31.885 some will define it as less than 7 hours.  
NOTE Confidence: 0.878672079

00:13:31.890 --> 00:13:35.418 The six hours is generally an  
NOTE Confidence: 0.878672079

00:13:35.418 --> 00:13:37.620 acceptable total sleep time for for,  
NOTE Confidence: 0.878672079

00:13:37.620 --> 00:13:39.930 for nocturnal sleeping is considered.  
NOTE Confidence: 0.878672079

00:13:39.930 --> 00:13:41.967 That's probably the on the lower end,

NOTE Confidence: 0.878672079

00:13:41.970 --> 00:13:45.057 but we see that as as as time has

NOTE Confidence: 0.878672079

00:13:45.057 --> 00:13:48.125 progressed from the 70s till the early 2000s,

NOTE Confidence: 0.878672079

00:13:48.130 --> 00:13:51.338 more of the population is getting less sweet,

NOTE Confidence: 0.878672079

00:13:51.340 --> 00:13:53.665 and so the prevalence overall

NOTE Confidence: 0.878672079

00:13:53.665 --> 00:13:55.525 sleep deprivation has increased

NOTE Confidence: 0.878672079

00:13:55.525 --> 00:13:57.190 over this time frame.

NOTE Confidence: 0.878672079

00:13:57.190 --> 00:13:59.871 And then there's also a meta analysis

NOTE Confidence: 0.878672079

00:13:59.871 --> 00:14:02.787 that looked at children or almost 700,000.

NOTE Confidence: 0.878672079

00:14:02.787 --> 00:14:04.572 Children in over 20 countries

NOTE Confidence: 0.878672079

00:14:04.572 --> 00:14:06.619 and what they found is again,

NOTE Confidence: 0.878672079

00:14:06.620 --> 00:14:09.038 this is reported data and from

NOTE Confidence: 0.878672079

00:14:09.038 --> 00:14:11.496 from the studies then what they

NOTE Confidence: 0.878672079

00:14:11.496 --> 00:14:14.156 found is that over the last century

NOTE Confidence: 0.878672079

00:14:14.156 --> 00:14:17.012 per year children are getting .75

NOTE Confidence: 0.878672079

00:14:17.012 --> 00:14:18.820 minutes less of sleep.

NOTE Confidence: 0.878672079

00:14:18.820 --> 00:14:21.214 So over over over a span of a century,  
NOTE Confidence: 0.878672079

00:14:21.220 --> 00:14:22.568 that's 75 minutes overall,  
NOTE Confidence: 0.878672079

00:14:22.568 --> 00:14:25.371 which you know which is an hour and  
NOTE Confidence: 0.878672079

00:14:25.371 --> 00:14:27.495 15 minutes less that children are  
NOTE Confidence: 0.878672079

00:14:27.495 --> 00:14:29.859 getting and we we wonder if this is,  
NOTE Confidence: 0.878672079

00:14:29.860 --> 00:14:32.940 you know, playing a role in higher diagnosis.  
NOTE Confidence: 0.878672079

00:14:32.940 --> 00:14:35.780 And more prevalence of ADHD.  
NOTE Confidence: 0.878672079

00:14:35.780 --> 00:14:37.720 You know more antidepressants  
NOTE Confidence: 0.878672079

00:14:37.720 --> 00:14:39.660 being used in children?  
NOTE Confidence: 0.878672079

00:14:39.660 --> 00:14:41.815 Increased prevalence of of psychiatric  
NOTE Confidence: 0.878672079

00:14:41.815 --> 00:14:44.799 illnesses that were that were also seeing?  
NOTE Confidence: 0.878672079

00:14:44.800 --> 00:14:46.115 Because we know that there  
NOTE Confidence: 0.878672079

00:14:46.115 --> 00:14:47.430 is great data to suggest  
NOTE Confidence: 0.88569550875

00:14:47.488 --> 00:14:49.396 that when there is sleep deprivation,  
NOTE Confidence: 0.88569550875

00:14:49.400 --> 00:14:51.464 a lot of these mood factors  
NOTE Confidence: 0.88569550875

00:14:51.464 --> 00:14:52.496 and psychiatric illnesses.

NOTE Confidence: 0.88569550875

00:14:52.500 --> 00:14:54.060 Prevalence is also goes up.

NOTE Confidence: 0.884107234814815

00:14:56.610 --> 00:14:58.998 So sleep deprivation really like like

NOTE Confidence: 0.884107234814815

00:14:58.998 --> 00:15:01.521 we mentioned earlier is is can be

NOTE Confidence: 0.884107234814815

00:15:01.521 --> 00:15:03.530 an issue with both the quantity of

NOTE Confidence: 0.884107234814815

00:15:03.599 --> 00:15:05.944 sleep and then the quality of sleep.

NOTE Confidence: 0.884107234814815

00:15:05.950 --> 00:15:09.135 So this is a little bit interesting

NOTE Confidence: 0.884107234814815

00:15:09.135 --> 00:15:11.005 that we again when you define

NOTE Confidence: 0.884107234814815

00:15:11.005 --> 00:15:12.910 what is normal for one person.

NOTE Confidence: 0.884107234814815

00:15:12.910 --> 00:15:15.574 So if someone sleeps 8 hours a day and

NOTE Confidence: 0.884107234814815

00:15:15.574 --> 00:15:18.485 the next day they get 8 hours is a norm.

NOTE Confidence: 0.884107234814815

00:15:18.490 --> 00:15:20.646 If one day they sleep 7 hours,

NOTE Confidence: 0.884107234814815

00:15:20.650 --> 00:15:22.930 is that going to result in them having

NOTE Confidence: 0.884107234814815

00:15:22.930 --> 00:15:25.436 any type of change in their performance

NOTE Confidence: 0.884107234814815

00:15:25.436 --> 00:15:27.311 in terms of daytime sleepiness?

NOTE Confidence: 0.884107234814815

00:15:27.320 --> 00:15:29.684 Et cetera, but what they really

NOTE Confidence: 0.884107234814815

00:15:29.684 --> 00:15:32.707 found is that if you reduce that  
NOTE Confidence: 0.884107234814815

00:15:32.707 --> 00:15:34.967 total number of sleep hours,  
NOTE Confidence: 0.884107234814815

00:15:34.970 --> 00:15:37.913 as long as it's not fall below 6 hours,  
NOTE Confidence: 0.884107234814815

00:15:37.920 --> 00:15:40.944 there was no clear change in terms of  
NOTE Confidence: 0.884107234814815

00:15:40.944 --> 00:15:43.380 performance or subjective sleepiness,  
NOTE Confidence: 0.884107234814815

00:15:43.380 --> 00:15:45.907 and that's kind of where the six  
NOTE Confidence: 0.884107234814815

00:15:45.907 --> 00:15:48.894 hour mark or six hour total sleep  
NOTE Confidence: 0.884107234814815

00:15:48.894 --> 00:15:51.169 time may become relevant here.  
NOTE Confidence: 0.884107234814815

00:15:51.170 --> 00:15:53.660 Similarly, if when you start to  
NOTE Confidence: 0.884107234814815

00:15:53.660 --> 00:15:55.320 look at vigilance testing,  
NOTE Confidence: 0.884107234814815

00:15:55.320 --> 00:15:57.768 there is a a decrease in in in your.  
NOTE Confidence: 0.884107234814815

00:15:57.770 --> 00:16:00.140 Performance if you're sleeping less  
NOTE Confidence: 0.884107234814815

00:16:00.140 --> 00:16:02.616 than your normal time, but again,  
NOTE Confidence: 0.884107234814815

00:16:02.616 --> 00:16:04.632 if you maintain it above 6 hours.  
NOTE Confidence: 0.884107234814815

00:16:04.640 --> 00:16:06.656 So if you're maintaining between 6:00 to  
NOTE Confidence: 0.884107234814815

00:16:06.656 --> 00:16:08.957 9:00 hours your your you can adapt to that,

NOTE Confidence: 0.884107234814815

00:16:08.960 --> 00:16:10.525 so you'll have this decrease

NOTE Confidence: 0.884107234814815

00:16:10.525 --> 00:16:12.540 in in in in response times,

NOTE Confidence: 0.884107234814815

00:16:12.540 --> 00:16:14.772 but you can adapt to that and and as

NOTE Confidence: 0.884107234814815

00:16:14.772 --> 00:16:16.861 long as you remain over 6 hours you

NOTE Confidence: 0.884107234814815

00:16:16.861 --> 00:16:19.196 are able to cope with that just fine.

NOTE Confidence: 0.884107234814815

00:16:19.200 --> 00:16:22.800 So something to kind of add to

NOTE Confidence: 0.884107234814815

00:16:22.800 --> 00:16:25.520 where the six hour is is is coming

NOTE Confidence: 0.884107234814815

00:16:25.520 --> 00:16:27.889 from for the lower threshold.

NOTE Confidence: 0.884107234814815

00:16:27.890 --> 00:16:30.194 Now the quality of sleep is is also

NOTE Confidence: 0.884107234814815

00:16:30.194 --> 00:16:32.610 going to be playing a big role here,

NOTE Confidence: 0.884107234814815

00:16:32.610 --> 00:16:35.354 so we know even from our sleep

NOTE Confidence: 0.884107234814815

00:16:35.354 --> 00:16:37.333 disorder breathing that a number

NOTE Confidence: 0.884107234814815

00:16:37.333 --> 00:16:39.511 of arousals that are occurring and

NOTE Confidence: 0.884107234814815

00:16:39.511 --> 00:16:41.862 how we quantify those can lead

NOTE Confidence: 0.884107234814815

00:16:41.862 --> 00:16:44.083 to these complaints of excessive

NOTE Confidence: 0.884107234814815

00:16:44.083 --> 00:16:46.007 daytime sleepiness and performance.  
NOTE Confidence: 0.884107234814815

00:16:46.010 --> 00:16:47.658 Now sleep disorder breathing  
NOTE Confidence: 0.884107234814815

00:16:47.658 --> 00:16:50.130 could be a very poor correlation  
NOTE Confidence: 0.884107234814815

00:16:50.202 --> 00:16:51.950 in terms of the actual Hird.  
NOTE Confidence: 0.884107234814815

00:16:51.950 --> 00:16:53.250 Whatever you want to look  
NOTE Confidence: 0.884107234814815

00:16:53.250 --> 00:16:54.290 at and the symptoms.  
NOTE Confidence: 0.884107234814815

00:16:54.290 --> 00:16:55.800 But there is data suggest  
NOTE Confidence: 0.884107234814815

00:16:55.800 --> 00:16:57.990 that as few as five arousals.  
NOTE Confidence: 0.884107234814815

00:16:57.990 --> 00:17:01.014 Per hour can lead to daytime sleepiness and  
NOTE Confidence: 0.884107234814815

00:17:01.014 --> 00:17:04.219 and and decrease in performance overall,  
NOTE Confidence: 0.884107234814815

00:17:04.220 --> 00:17:08.068 so this was a study done where 11 young  
NOTE Confidence: 0.884107234814815

00:17:08.068 --> 00:17:11.400 adults and probably not the most ethnic  
NOTE Confidence: 0.884107234814815

00:17:11.400 --> 00:17:13.740 ethnically combining study at this point.  
NOTE Confidence: 0.884107234814815

00:17:13.740 --> 00:17:16.260 But they had eleven young subjects  
NOTE Confidence: 0.884107234814815

00:17:16.260 --> 00:17:18.976 who were subject to brief awakenings  
NOTE Confidence: 0.884107234814815

00:17:18.976 --> 00:17:22.204 through an audiometer that kept kind of



NOTE Confidence: 0.884107234814815  
00:17:22.204 --> 00:17:24.563 waking them up so they were connected  
NOTE Confidence: 0.884107234814815  
00:17:24.563 --> 00:17:28.000 to EG and for two consecutive nights.  
NOTE Confidence: 0.884107234814815  
00:17:28.000 --> 00:17:29.620 They had these frequent arousals  
NOTE Confidence: 0.884107234814815  
00:17:29.620 --> 00:17:31.996 and then two nights where they had  
NOTE Confidence: 0.884107234814815  
00:17:31.996 --> 00:17:33.731 undisturbed recovery sleep and what  
NOTE Confidence: 0.884107234814815  
00:17:33.731 --> 00:17:35.812 they really found is that the the  
NOTE Confidence: 0.884107234814815  
00:17:35.812 --> 00:17:37.962 the the the nights that they were  
NOTE Confidence: 0.884107234814815  
00:17:37.962 --> 00:17:40.650 having these persistent arousals.  
NOTE Confidence: 0.884107234814815  
00:17:40.650 --> 00:17:42.526 They had a severe reduction in their  
NOTE Confidence: 0.884107234814815  
00:17:42.526 --> 00:17:44.486 slow wave slow wave where they're deep  
NOTE Confidence: 0.884107234814815  
00:17:44.486 --> 00:17:46.451 sleep and their REM sleep and then  
NOTE Confidence: 0.884107234814815  
00:17:46.451 --> 00:17:48.059 overall their total sleep time was  
NOTE Confidence: 0.884107234814815  
00:17:48.059 --> 00:17:51.370 cut down by one hour and they tested  
NOTE Confidence: 0.884107234814815  
00:17:51.370 --> 00:17:53.870 them again for their performance,  
NOTE Confidence: 0.884107234814815  
00:17:53.870 --> 00:17:55.374 their mood, their assessed,  
NOTE Confidence: 0.884107234814815

00:17:55.374 --> 00:17:56.878 they're having daytime sleepiness  
NOTE Confidence: 0.884107234814815

00:17:56.878 --> 00:17:59.026 and all that seemed to have gotten  
NOTE Confidence: 0.884107234814815

00:17:59.026 --> 00:18:00.361 worse so they had more  
NOTE Confidence: 0.785354391238095

00:18:00.420 --> 00:18:02.055 sleepiness. You know, irritability.  
NOTE Confidence: 0.785354391238095

00:18:02.055 --> 00:18:04.470 There were not as sharp in terms  
NOTE Confidence: 0.785354391238095

00:18:04.534 --> 00:18:06.382 of their response time and their  
NOTE Confidence: 0.785354391238095

00:18:06.382 --> 00:18:08.713 their level of of decrease was very  
NOTE Confidence: 0.785354391238095

00:18:08.713 --> 00:18:11.128 similar to that of someone who's who's  
NOTE Confidence: 0.785354391238095

00:18:11.130 --> 00:18:13.384 getting a total sleep over a chronic  
NOTE Confidence: 0.785354391238095

00:18:13.384 --> 00:18:15.548 period of time of 40 to 64 hours.  
NOTE Confidence: 0.785354391238095

00:18:15.550 --> 00:18:17.920 So there's there's good data suggest  
NOTE Confidence: 0.785354391238095

00:18:17.920 --> 00:18:20.394 that when you have interruptions that  
NOTE Confidence: 0.785354391238095

00:18:20.394 --> 00:18:23.666 can that can lead to symptoms of sleep  
NOTE Confidence: 0.785354391238095

00:18:23.745 --> 00:18:26.979 deprivation and then affect your performance.  
NOTE Confidence: 0.785354391238095

00:18:26.980 --> 00:18:28.678 So this was an older slide,  
NOTE Confidence: 0.785354391238095

00:18:28.680 --> 00:18:30.970 but I think it it's a great way to kind

NOTE Confidence: 0.785354391238095  
00:18:31.036 --> 00:18:33.292 of see what happens if you're on call  
NOTE Confidence: 0.785354391238095  
00:18:33.292 --> 00:18:35.068 and you're getting frequently paged  
NOTE Confidence: 0.785354391238095  
00:18:35.068 --> 00:18:37.360 or you're getting you know messages  
NOTE Confidence: 0.785354391238095  
00:18:37.360 --> 00:18:39.479 that you have to respond to when you  
NOTE Confidence: 0.785354391238095  
00:18:39.479 --> 00:18:41.246 look at the normal sleep architecture  
NOTE Confidence: 0.785354391238095  
00:18:41.246 --> 00:18:43.500 on the on the the graph above,  
NOTE Confidence: 0.785354391238095  
00:18:43.500 --> 00:18:45.292 you can see the the cycling through  
NOTE Confidence: 0.785354391238095  
00:18:45.292 --> 00:18:46.060 the different stages.  
NOTE Confidence: 0.785354391238095  
00:18:46.060 --> 00:18:48.016 You can see that there's REM  
NOTE Confidence: 0.785354391238095  
00:18:48.016 --> 00:18:49.812 periods that are getting enlarged  
NOTE Confidence: 0.785354391238095  
00:18:49.812 --> 00:18:51.917 so good sleep architecture here,  
NOTE Confidence: 0.785354391238095  
00:18:51.920 --> 00:18:54.328 whereas if you see that if you're  
NOTE Confidence: 0.785354391238095  
00:18:54.328 --> 00:18:56.139 constantly getting paged and awakened  
NOTE Confidence: 0.785354391238095  
00:18:56.140 --> 00:18:57.799 you're really having and this is again.  
NOTE Confidence: 0.785354391238095  
00:18:57.800 --> 00:18:58.770 You know older slide with  
NOTE Confidence: 0.785354391238095

00:18:58.770 --> 00:18:59.546 stage three and four,  
NOTE Confidence: 0.785354391238095

00:18:59.550 --> 00:19:01.398 but you're really having a reduction  
NOTE Confidence: 0.785354391238095

00:19:01.398 --> 00:19:03.840 in your slow wave sleep and then your  
NOTE Confidence: 0.785354391238095

00:19:03.840 --> 00:19:05.900 REM periods are also being cut down,  
NOTE Confidence: 0.785354391238095

00:19:05.900 --> 00:19:08.342 and that's probably a reason why  
NOTE Confidence: 0.785354391238095

00:19:08.342 --> 00:19:10.887 you're having a change in your  
NOTE Confidence: 0.785354391238095

00:19:10.887 --> 00:19:13.389 alertness and and your response time.  
NOTE Confidence: 0.785354391238095

00:19:13.390 --> 00:19:14.430 And then of course,  
NOTE Confidence: 0.785354391238095

00:19:14.430 --> 00:19:16.586 if this is someone who's on call and  
NOTE Confidence: 0.785354391238095

00:19:16.586 --> 00:19:18.476 then has to go from morning rounds,  
NOTE Confidence: 0.785354391238095

00:19:18.480 --> 00:19:20.406 they're not going to be feeling  
NOTE Confidence: 0.785354391238095

00:19:20.406 --> 00:19:21.048 very refreshed.  
NOTE Confidence: 0.785354391238095

00:19:21.050 --> 00:19:22.520 That alertness may not be there,  
NOTE Confidence: 0.785354391238095

00:19:22.520 --> 00:19:26.131 and I have data later on coming to go over  
NOTE Confidence: 0.785354391238095

00:19:26.131 --> 00:19:29.619 the exactly what the some of the changes are.  
NOTE Confidence: 0.785354391238095

00:19:29.620 --> 00:19:33.256 So there I I wanted to just kind of.

NOTE Confidence: 0.785354391238095  
00:19:33.260 --> 00:19:35.689 Go over some of the the different  
NOTE Confidence: 0.785354391238095  
00:19:35.689 --> 00:19:37.702 changes and different structures that  
NOTE Confidence: 0.785354391238095  
00:19:37.702 --> 00:19:39.957 happen in acute sleep deprivation.  
NOTE Confidence: 0.785354391238095  
00:19:39.960 --> 00:19:42.907 There's cognitive as being one of the  
NOTE Confidence: 0.785354391238095  
00:19:42.907 --> 00:19:45.876 the prominent ones where alertness and  
NOTE Confidence: 0.785354391238095  
00:19:45.876 --> 00:19:48.072 vigilant testing can really be affected.  
NOTE Confidence: 0.785354391238095  
00:19:48.072 --> 00:19:50.638 So even within that one to two day period,  
NOTE Confidence: 0.785354391238095  
00:19:50.640 --> 00:19:53.416 you can have leaders who are going  
NOTE Confidence: 0.785354391238095  
00:19:53.416 --> 00:19:54.700 to take much longer to respond,  
NOTE Confidence: 0.785354391238095  
00:19:54.700 --> 00:19:55.738 respond to stimuli.  
NOTE Confidence: 0.785354391238095  
00:19:55.738 --> 00:19:57.814 They're really going to have poor  
NOTE Confidence: 0.785354391238095  
00:19:57.814 --> 00:19:59.867 performance when it comes to doing  
NOTE Confidence: 0.785354391238095  
00:19:59.867 --> 00:20:01.517 tasks that require sustained attention,  
NOTE Confidence: 0.785354391238095  
00:20:01.520 --> 00:20:03.784 so especially if you if we're looking at  
NOTE Confidence: 0.785354391238095  
00:20:03.784 --> 00:20:05.976 occupation of patients who are working with.  
NOTE Confidence: 0.785354391238095

00:20:05.980 --> 00:20:09.050 Heavy machinery or dangerous machinery,  
NOTE Confidence: 0.785354391238095

00:20:09.050 --> 00:20:11.240 if they're really having sleep deprivation,  
NOTE Confidence: 0.785354391238095

00:20:11.240 --> 00:20:13.438 they're at higher risk of making errors.  
NOTE Confidence: 0.785354391238095

00:20:13.440 --> 00:20:15.760 If you look at kind of logical reasoning.  
NOTE Confidence: 0.785354391238095

00:20:15.760 --> 00:20:16.708 Even complex,  
NOTE Confidence: 0.785354391238095

00:20:16.708 --> 00:20:18.130 just subtraction tasks.  
NOTE Confidence: 0.785354391238095

00:20:18.130 --> 00:20:20.110 All these will be affected,  
NOTE Confidence: 0.785354391238095

00:20:20.110 --> 00:20:22.840 and then being able to carry out  
NOTE Confidence: 0.785354391238095

00:20:22.840 --> 00:20:24.010 multiple tasks simultaneously,  
NOTE Confidence: 0.785354391238095

00:20:24.010 --> 00:20:25.750 or something that's complex.  
NOTE Confidence: 0.785354391238095

00:20:25.750 --> 00:20:27.925 A complex nature all all  
NOTE Confidence: 0.785354391238095

00:20:27.925 --> 00:20:29.430 becomes affected here.  
NOTE Confidence: 0.785354391238095

00:20:29.430 --> 00:20:33.174 Now there's also imaging data to suggest that  
NOTE Confidence: 0.785354391238095

00:20:33.174 --> 00:20:36.978 when you do have acute sleep deprivation.  
NOTE Confidence: 0.785354391238095

00:20:36.980 --> 00:20:38.426 If you look at functional Mris,  
NOTE Confidence: 0.785354391238095

00:20:38.430 --> 00:20:41.118 there is decreased activity in the frontal,

NOTE Confidence: 0.785354391238095  
00:20:41.120 --> 00:20:42.527 parietal attention networks,  
NOTE Confidence: 0.785354391238095  
00:20:42.527 --> 00:20:46.229 and so you see that there really is  
NOTE Confidence: 0.785354391238095  
00:20:46.229 --> 00:20:48.893 a even a organic change that we can.  
NOTE Confidence: 0.785354391238095  
00:20:48.900 --> 00:20:51.455 We can clearly see on imaging there.  
NOTE Confidence: 0.785354391238095  
00:20:51.460 --> 00:20:53.848 Now there's data that that have  
NOTE Confidence: 0.785354391238095  
00:20:53.848 --> 00:20:55.975 looked at police officers that  
NOTE Confidence: 0.785354391238095  
00:20:55.975 --> 00:20:57.819 looked at healthcare workers  
NOTE Confidence: 0.885054912307692  
00:20:57.820 --> 00:21:00.372 and and and what they found is that  
NOTE Confidence: 0.885054912307692  
00:21:00.372 --> 00:21:02.844 when you had medical interns working,  
NOTE Confidence: 0.885054912307692  
00:21:02.844 --> 00:21:05.916 these frequent shifts for more than 24 hours,  
NOTE Confidence: 0.885054912307692  
00:21:05.920 --> 00:21:08.032 there was a higher prevalence of  
NOTE Confidence: 0.885054912307692  
00:21:08.032 --> 00:21:09.844 diagnostic errors. And and and,  
NOTE Confidence: 0.885054912307692  
00:21:09.844 --> 00:21:12.420 and negligent mistakes that were being made.  
NOTE Confidence: 0.885054912307692  
00:21:12.420 --> 00:21:14.553 And as you as we kind of keep it  
NOTE Confidence: 0.885054912307692  
00:21:14.553 --> 00:21:16.259 within the healthcare network,  
NOTE Confidence: 0.885054912307692

00:21:16.260 --> 00:21:18.720 we see that even GI physicians,  
NOTE Confidence: 0.885054912307692

00:21:18.720 --> 00:21:21.448 if they were on call the night before,  
NOTE Confidence: 0.885054912307692

00:21:21.450 --> 00:21:23.722 and they had to perform some type of  
NOTE Confidence: 0.885054912307692

00:21:23.722 --> 00:21:26.241 an emergent procedure the next day if  
NOTE Confidence: 0.885054912307692

00:21:26.241 --> 00:21:28.131 they were doing routine colonoscopies,  
NOTE Confidence: 0.885054912307692

00:21:28.140 --> 00:21:30.828 they actually had a lower detection  
NOTE Confidence: 0.885054912307692

00:21:30.828 --> 00:21:33.582 rate for adenomas compared to those who  
NOTE Confidence: 0.885054912307692

00:21:33.582 --> 00:21:36.380 were not on call or were not awakened.  
NOTE Confidence: 0.885054912307692

00:21:36.380 --> 00:21:39.388 So there is, you know this this this.  
NOTE Confidence: 0.885054912307692

00:21:39.390 --> 00:21:42.340 Definable entity of having cognitive  
NOTE Confidence: 0.885054912307692

00:21:42.340 --> 00:21:45.290 impairment when you have acute  
NOTE Confidence: 0.885054912307692

00:21:45.384 --> 00:21:47.499 acute sleep deprivation.  
NOTE Confidence: 0.885054912307692

00:21:47.500 --> 00:21:49.640 In terms of the mood this is,  
NOTE Confidence: 0.885054912307692

00:21:49.640 --> 00:21:51.320 you know, no news to most of us  
NOTE Confidence: 0.885054912307692

00:21:51.378 --> 00:21:53.219 that you're gonna have a poor mood.  
NOTE Confidence: 0.885054912307692

00:21:53.220 --> 00:21:55.404 You can be very irritable along with



NOTE Confidence: 0.885054912307692  
00:21:55.404 --> 00:21:57.466 the daytime sleepiness, low energy,  
NOTE Confidence: 0.885054912307692  
00:21:57.466 --> 00:21:59.718 decreased libido, poor judgment.  
NOTE Confidence: 0.885054912307692  
00:21:59.720 --> 00:22:01.128 You're kind of a little bit more energy,  
NOTE Confidence: 0.885054912307692  
00:22:01.130 --> 00:22:02.738 psychological dysfunction and and  
NOTE Confidence: 0.885054912307692  
00:22:02.738 --> 00:22:05.579 and one of the good things about  
NOTE Confidence: 0.885054912307692  
00:22:05.579 --> 00:22:07.709 the mood manifestations is that as  
NOTE Confidence: 0.885054912307692  
00:22:07.709 --> 00:22:10.325 soon as your your sleep is restored  
NOTE Confidence: 0.885054912307692  
00:22:10.325 --> 00:22:12.539 or that acute deprivation is is,  
NOTE Confidence: 0.885054912307692  
00:22:12.540 --> 00:22:13.760 you're paid back your sleep,  
NOTE Confidence: 0.885054912307692  
00:22:13.760 --> 00:22:14.970 that there,  
NOTE Confidence: 0.885054912307692  
00:22:14.970 --> 00:22:18.600 the mood component improves quite quickly.  
NOTE Confidence: 0.885054912307692  
00:22:18.600 --> 00:22:21.246 Now Microsleep is is is an interesting  
NOTE Confidence: 0.885054912307692  
00:22:21.246 --> 00:22:23.877 concept that I kind of came across.  
NOTE Confidence: 0.885054912307692  
00:22:23.880 --> 00:22:26.352 This is intrusions of sleep within  
NOTE Confidence: 0.885054912307692  
00:22:26.352 --> 00:22:28.000 your periods of wakefulness,  
NOTE Confidence: 0.885054912307692

00:22:28.000 --> 00:22:29.855 and they last for a few seconds,  
NOTE Confidence: 0.885054912307692

00:22:29.860 --> 00:22:32.190 especially if you're not being  
NOTE Confidence: 0.885054912307692

00:22:32.190 --> 00:22:34.054 constantly stimulated or you're  
NOTE Confidence: 0.885054912307692

00:22:34.054 --> 00:22:36.756 doing something that may now require  
NOTE Confidence: 0.885054912307692

00:22:36.756 --> 00:22:38.916 a persistent need for attention.  
NOTE Confidence: 0.885054912307692

00:22:38.920 --> 00:22:40.817 So one of the great examples that  
NOTE Confidence: 0.885054912307692

00:22:40.817 --> 00:22:43.144 I saw is that if you're driving  
NOTE Confidence: 0.885054912307692

00:22:43.144 --> 00:22:45.310 in your sleep deprived and you're  
NOTE Confidence: 0.885054912307692

00:22:45.384 --> 00:22:47.700 driving on the highway at 60 mph,  
NOTE Confidence: 0.885054912307692

00:22:47.700 --> 00:22:49.450 if you have 3 seconds.  
NOTE Confidence: 0.885054912307692

00:22:49.450 --> 00:22:50.230 Microsoft period,  
NOTE Confidence: 0.885054912307692

00:22:50.230 --> 00:22:53.738 your car will travel 250 feet so you  
NOTE Confidence: 0.885054912307692

00:22:53.738 --> 00:22:56.420 can imagine in 250 feet if there if  
NOTE Confidence: 0.885054912307692

00:22:56.420 --> 00:22:57.960 there's any changes in the road.  
NOTE Confidence: 0.885054912307692

00:22:57.960 --> 00:23:00.210 If it curves or a car in front of you stops,  
NOTE Confidence: 0.885054912307692

00:23:00.210 --> 00:23:02.786 you're really going to have a poor

NOTE Confidence: 0.885054912307692

00:23:02.786 --> 00:23:05.138 response time in terms of responding

NOTE Confidence: 0.885054912307692

00:23:05.138 --> 00:23:07.420 to that change and and This is why

NOTE Confidence: 0.885054912307692

00:23:07.420 --> 00:23:09.223 we see that with sleep deprivation

NOTE Confidence: 0.885054912307692

00:23:09.223 --> 00:23:10.339 there is much,

NOTE Confidence: 0.885054912307692

00:23:10.340 --> 00:23:13.250 much higher incidences of of car

NOTE Confidence: 0.885054912307692

00:23:13.250 --> 00:23:15.760 motor vehicle accidents and injury

NOTE Confidence: 0.885054912307692

00:23:15.760 --> 00:23:17.296 and then same thing with vigilance,

NOTE Confidence: 0.885054912307692

00:23:17.300 --> 00:23:18.401 testing and performance.

NOTE Confidence: 0.885054912307692

00:23:18.401 --> 00:23:19.869 There is much more.

NOTE Confidence: 0.885054912307692

00:23:19.870 --> 00:23:22.390 Inconsistent results and unreliable results.

NOTE Confidence: 0.885054912307692

00:23:22.390 --> 00:23:25.252 So not only are they not accurate,

NOTE Confidence: 0.885054912307692

00:23:25.252 --> 00:23:26.820 they're also not consistent,

NOTE Confidence: 0.885054912307692

00:23:26.820 --> 00:23:28.696 so it's kind of very staggered and

NOTE Confidence: 0.885054912307692

00:23:28.696 --> 00:23:30.880 and and in very different places.

NOTE Confidence: 0.885054912307692

00:23:30.880 --> 00:23:31.163 Now,

NOTE Confidence: 0.885054912307692

00:23:31.163 --> 00:23:32.861 if you take these same patients  
NOTE Confidence: 0.885054912307692

00:23:32.861 --> 00:23:34.890 who have sleep deprivation and do  
NOTE Confidence: 0.885054912307692

00:23:34.890 --> 00:23:36.378 a psychomotor vigilance testing  
NOTE Confidence: 0.885054912307692

00:23:36.378 --> 00:23:38.059 and what they're doing is,  
NOTE Confidence: 0.885054912307692

00:23:38.060 --> 00:23:39.560 they're every six to 10 seconds.  
NOTE Confidence: 0.885054912307692

00:23:39.560 --> 00:23:42.108 They're sending some type of a visual  
NOTE Confidence: 0.885054912307692

00:23:42.108 --> 00:23:44.252 stimuli at random 6 to 10 intervals  
NOTE Confidence: 0.885054912307692

00:23:44.252 --> 00:23:46.519 over a span of 6 to 10 minutes,  
NOTE Confidence: 0.885054912307692

00:23:46.520 --> 00:23:48.389 and what they're what they're asking you  
NOTE Confidence: 0.885054912307692

00:23:48.389 --> 00:23:50.498 to record your response time when you do.  
NOTE Confidence: 0.885054912307692

00:23:50.500 --> 00:23:52.130 Acknowledge a stimulus has been  
NOTE Confidence: 0.885054912307692

00:23:52.130 --> 00:23:54.160 reported and So what they found,  
NOTE Confidence: 0.885054912307692

00:23:54.160 --> 00:23:55.516 what they found is that when  
NOTE Confidence: 0.885054912307692

00:23:55.516 --> 00:23:56.420 you have the sleep  
NOTE Confidence: 0.863014560909091

00:23:56.472 --> 00:23:58.280 deprivation, not only is there a  
NOTE Confidence: 0.863014560909091

00:23:58.280 --> 00:23:59.948 delay by more than 500 milliseconds

NOTE Confidence: 0.863014560909091  
00:23:59.948 --> 00:24:02.210 of of responding to the stimuli,  
NOTE Confidence: 0.863014560909091  
00:24:02.210 --> 00:24:03.500 but there's much more errors.  
NOTE Confidence: 0.863014560909091  
00:24:03.500 --> 00:24:05.525 You're so you're not accurately  
NOTE Confidence: 0.863014560909091  
00:24:05.525 --> 00:24:06.740 reporting the stimuli,  
NOTE Confidence: 0.863014560909091  
00:24:06.740 --> 00:24:08.010 but you're also having a  
NOTE Confidence: 0.863014560909091  
00:24:08.010 --> 00:24:09.280 delay in your response time.  
NOTE Confidence: 0.74303883  
00:24:11.430 --> 00:24:13.710 Now, chronic sleep deprivation.  
NOTE Confidence: 0.74303883  
00:24:13.710 --> 00:24:16.356 Again, this is a little bit more  
NOTE Confidence: 0.74303883  
00:24:16.356 --> 00:24:19.038 difficult to define in terms of changes,  
NOTE Confidence: 0.74303883  
00:24:19.040 --> 00:24:21.798 but again, there is great data to  
NOTE Confidence: 0.74303883  
00:24:21.798 --> 00:24:24.604 suggest that as the the the almost  
NOTE Confidence: 0.74303883  
00:24:24.604 --> 00:24:27.600 daily basis of having less than needed  
NOTE Confidence: 0.74303883  
00:24:27.600 --> 00:24:29.930 sleep for optimal function occurs,  
NOTE Confidence: 0.74303883  
00:24:29.930 --> 00:24:31.610 you can take all those effects  
NOTE Confidence: 0.74303883  
00:24:31.610 --> 00:24:32.450 from sleep deprivation,  
NOTE Confidence: 0.74303883

00:24:32.450 --> 00:24:34.214 including the mood etcetera.  
NOTE Confidence: 0.74303883

00:24:34.214 --> 00:24:36.860 Functioning and kind of enhance that  
NOTE Confidence: 0.74303883

00:24:36.936 --> 00:24:39.745 even further, and so you're really going  
NOTE Confidence: 0.74303883

00:24:39.745 --> 00:24:41.670 to have poor alertness persistent.  
NOTE Confidence: 0.74303883

00:24:41.670 --> 00:24:43.106 Daytime sleepiness you're in.  
NOTE Confidence: 0.74303883

00:24:43.106 --> 00:24:45.760 Your cognitive function is going to decline.  
NOTE Confidence: 0.74303883

00:24:45.760 --> 00:24:47.783 He spoke about the increased risk of  
NOTE Confidence: 0.74303883

00:24:47.783 --> 00:24:49.819 accidents and deaths and that kind of goes,  
NOTE Confidence: 0.74303883

00:24:49.820 --> 00:24:50.640 you know, hand in hand,  
NOTE Confidence: 0.74303883

00:24:50.640 --> 00:24:51.930 we know there's great data suggests  
NOTE Confidence: 0.74303883

00:24:51.930 --> 00:24:53.128 when you have sleep, disorder,  
NOTE Confidence: 0.74303883

00:24:53.128 --> 00:24:55.156 breathing, and and obviously that goes  
NOTE Confidence: 0.74303883

00:24:55.156 --> 00:24:57.498 on for years before being diagnosed,  
NOTE Confidence: 0.74303883

00:24:57.500 --> 00:24:59.047 a lot of the times they're at  
NOTE Confidence: 0.74303883

00:24:59.047 --> 00:25:00.619 higher risk of having accidents.  
NOTE Confidence: 0.74303883

00:25:00.620 --> 00:25:01.376 And then, of course,

NOTE Confidence: 0.74303883

00:25:01.376 --> 00:25:03.033 there's going to be a lot of negative

NOTE Confidence: 0.74303883

00:25:03.033 --> 00:25:04.699 effects on your on your physical health,

NOTE Confidence: 0.74303883

00:25:04.700 --> 00:25:05.909 so you know,

NOTE Confidence: 0.74303883

00:25:05.909 --> 00:25:07.521 excessive daytime sleepiness is

NOTE Confidence: 0.74303883

00:25:07.521 --> 00:25:10.297 reported as one of the most common

NOTE Confidence: 0.74303883

00:25:10.297 --> 00:25:12.162 reasons for having car crashes.

NOTE Confidence: 0.74303883

00:25:12.170 --> 00:25:14.564 And over half of the fatal truck

NOTE Confidence: 0.74303883

00:25:14.564 --> 00:25:17.478 crashes in the US and then occupational

NOTE Confidence: 0.74303883

00:25:17.478 --> 00:25:18.920 errors over a long period of time.

NOTE Confidence: 0.74303883

00:25:18.920 --> 00:25:21.194 There's a cohort study that looked

NOTE Confidence: 0.74303883

00:25:21.194 --> 00:25:23.486 at police officers almost 5000 police

NOTE Confidence: 0.74303883

00:25:23.486 --> 00:25:25.616 officers and found that you know,

NOTE Confidence: 0.74303883

00:25:25.620 --> 00:25:28.288 within their subjective responses,

NOTE Confidence: 0.74303883

00:25:28.288 --> 00:25:31.590 at least 40% of them had some

NOTE Confidence: 0.74303883

00:25:31.590 --> 00:25:32.890 type of sleeping disorder.

NOTE Confidence: 0.74303883

00:25:32.890 --> 00:25:34.145 The most common again was  
NOTE Confidence: 0.74303883

00:25:34.145 --> 00:25:35.149 sleep apnea in them.  
NOTE Confidence: 0.74303883

00:25:35.150 --> 00:25:35.830 But again,  
NOTE Confidence: 0.74303883

00:25:35.830 --> 00:25:37.870 all these sleeping issues overall can  
NOTE Confidence: 0.74303883

00:25:37.870 --> 00:25:40.080 result in having sleep deprivation,  
NOTE Confidence: 0.74303883

00:25:40.080 --> 00:25:42.848 and then have both.  
NOTE Confidence: 0.74303883

00:25:42.848 --> 00:25:47.000 Neurocognitive and and amongst other changes.  
NOTE Confidence: 0.74303883

00:25:47.000 --> 00:25:48.980 So when you look at cardiovascular  
NOTE Confidence: 0.74303883

00:25:48.980 --> 00:25:51.039 morbidity and things of that nature,  
NOTE Confidence: 0.74303883

00:25:51.040 --> 00:25:54.305 I think this concern may  
NOTE Confidence: 0.74303883

00:25:54.305 --> 00:25:56.264 be some motivational.  
NOTE Confidence: 0.74303883

00:25:56.270 --> 00:25:58.314 Pointers that we can use towards our  
NOTE Confidence: 0.74303883

00:25:58.314 --> 00:25:59.993 patients who are having symptoms  
NOTE Confidence: 0.74303883

00:25:59.993 --> 00:26:02.237 of sleep deprivation may have the  
NOTE Confidence: 0.74303883

00:26:02.237 --> 00:26:04.014 daytime sleepiness and this may help  
NOTE Confidence: 0.74303883

00:26:04.014 --> 00:26:05.769 them get a little bit more motivated,



NOTE Confidence: 0.74303883

00:26:05.769 --> 00:26:07.563 especially if they have a lot

NOTE Confidence: 0.74303883

00:26:07.563 --> 00:26:08.460 of medical comorbidities.

NOTE Confidence: 0.74303883

00:26:08.460 --> 00:26:10.482 So there is an American Heart

NOTE Confidence: 0.74303883

00:26:10.482 --> 00:26:12.262 Association has recognized that when

NOTE Confidence: 0.74303883

00:26:12.262 --> 00:26:14.147 when patients have sleep restriction

NOTE Confidence: 0.74303883

00:26:14.150 --> 00:26:16.430 that it does have an adverse effects on

NOTE Confidence: 0.74303883

00:26:16.430 --> 00:26:18.509 their their cardio metabolic profiles,

NOTE Confidence: 0.74303883

00:26:18.510 --> 00:26:21.486 so they tend to have higher blood pressures.

NOTE Confidence: 0.74303883

00:26:21.490 --> 00:26:24.010 They're having poor dietary habits,

NOTE Confidence: 0.74303883

00:26:24.010 --> 00:26:25.790 so they have more glucose,

NOTE Confidence: 0.74303883

00:26:25.790 --> 00:26:27.670 higher glucose, or insulin.

NOTE Confidence: 0.74303883

00:26:27.670 --> 00:26:28.140 Resistance,

NOTE Confidence: 0.74303883

00:26:28.140 --> 00:26:31.360 they tend to have less physical activity,

NOTE Confidence: 0.74303883

00:26:31.360 --> 00:26:33.558 more weight gain, and then they're smoking.

NOTE Confidence: 0.74303883

00:26:33.560 --> 00:26:34.864 Cessation rates are much,

NOTE Confidence: 0.74303883

00:26:34.864 --> 00:26:35.516 much lower,  
NOTE Confidence: 0.74303883

00:26:35.520 --> 00:26:38.590 and so a lot of the data for each one  
NOTE Confidence: 0.74303883

00:26:38.680 --> 00:26:41.433 of these particular entities had a  
NOTE Confidence: 0.74303883

00:26:41.433 --> 00:26:44.053 hazard ratio anywhere from 1.07 to 1.12,  
NOTE Confidence: 0.74303883

00:26:44.053 --> 00:26:46.159 so shows that much much higher  
NOTE Confidence: 0.74303883

00:26:46.159 --> 00:26:48.220 incidence of having these entities  
NOTE Confidence: 0.74303883

00:26:48.220 --> 00:26:50.680 occur when you have sleep deprivation,  
NOTE Confidence: 0.74303883

00:26:50.680 --> 00:26:53.588 and then the normal population there is  
NOTE Confidence: 0.74303883

00:26:53.588 --> 00:26:55.458 recorded increase in inflammatory markers.  
NOTE Confidence: 0.74303883

00:26:55.460 --> 00:26:56.820 CRP is one of them,  
NOTE Confidence: 0.74303883

00:26:56.820 --> 00:26:58.479 but you're a lot of the interleukins.  
NOTE Confidence: 0.74303883

00:26:58.480 --> 00:27:00.094 Are are elevated,  
NOTE Confidence: 0.74303883

00:27:00.094 --> 00:27:03.322 there is decreased response to vaccination.  
NOTE Confidence: 0.74303883

00:27:03.330 --> 00:27:05.622 So if you're looking at titers  
NOTE Confidence: 0.74303883

00:27:05.622 --> 00:27:06.386 after vaccinations,  
NOTE Confidence: 0.74303883

00:27:06.390 --> 00:27:08.735 those that have sleep deprivation tend to

NOTE Confidence: 0.74303883

00:27:08.735 --> 00:27:10.848 have less amounting over mean response,

NOTE Confidence: 0.74303883

00:27:10.850 --> 00:27:13.052 and then they have looked at

NOTE Confidence: 0.74303883

00:27:13.052 --> 00:27:14.520 population studies and and

NOTE Confidence: 0.773001392352941

00:27:14.595 --> 00:27:17.269 seeing what is the all caused mortality?

NOTE Confidence: 0.773001392352941

00:27:17.270 --> 00:27:19.853 And it really comes out to a U shaped

NOTE Confidence: 0.773001392352941

00:27:19.853 --> 00:27:22.040 curve where people were getting less than

NOTE Confidence: 0.773001392352941

00:27:22.040 --> 00:27:24.483 six hours or more than 10 hours tend

NOTE Confidence: 0.773001392352941

00:27:24.483 --> 00:27:26.569 to have a higher all caused mortality,

NOTE Confidence: 0.773001392352941

00:27:26.570 --> 00:27:28.680 whereas in between that time.

NOTE Confidence: 0.773001392352941

00:27:28.680 --> 00:27:30.696 It's it's more normalized.

NOTE Confidence: 0.773001392352941

00:27:30.696 --> 00:27:32.919 Again, that's that reflects

NOTE Confidence: 0.773001392352941

00:27:32.919 --> 00:27:34.638 the general population.

NOTE Confidence: 0.773001392352941

00:27:34.640 --> 00:27:36.642 It's not going to be something that's

NOTE Confidence: 0.773001392352941

00:27:36.642 --> 00:27:38.571 applied to every single person as we

NOTE Confidence: 0.773001392352941

00:27:38.571 --> 00:27:40.630 know there is short and long sleepers.

NOTE Confidence: 0.744306263

00:27:43.630 --> 00:27:47.074 So sleep rebound. It's it's another  
NOTE Confidence: 0.744306263

00:27:47.074 --> 00:27:49.370 interesting phenomenon that occurs,  
NOTE Confidence: 0.744306263

00:27:49.370 --> 00:27:52.387 and this really refers to when you're  
NOTE Confidence: 0.744306263

00:27:52.387 --> 00:27:55.318 you're you're paying back your sleep debt.  
NOTE Confidence: 0.744306263

00:27:55.320 --> 00:27:58.024 It's much easier to do so after an  
NOTE Confidence: 0.744306263

00:27:58.024 --> 00:28:00.543 acute phase where it's one to two  
NOTE Confidence: 0.744306263

00:28:00.543 --> 00:28:02.750 days and you haven't slept well.  
NOTE Confidence: 0.744306263

00:28:02.750 --> 00:28:03.714 Whether you're on call,  
NOTE Confidence: 0.744306263

00:28:03.714 --> 00:28:05.718 you know we all have things that need  
NOTE Confidence: 0.744306263

00:28:05.718 --> 00:28:07.902 to get done traveling, et cetera.  
NOTE Confidence: 0.744306263

00:28:07.902 --> 00:28:12.004 But once you do get that sleep.  
NOTE Confidence: 0.744306263

00:28:12.010 --> 00:28:13.510 The appropriate amount of sleep and  
NOTE Confidence: 0.744306263

00:28:13.510 --> 00:28:15.228 you're able to repay that debt back.  
NOTE Confidence: 0.744306263

00:28:15.230 --> 00:28:19.136 A lot of the acute effects do get better,  
NOTE Confidence: 0.744306263

00:28:19.140 --> 00:28:21.606 so a lot of the things that we spoke  
NOTE Confidence: 0.744306263

00:28:21.606 --> 00:28:23.490 about in the acute sleep deprivation

NOTE Confidence: 0.744306263

00:28:23.490 --> 00:28:26.115 in terms of mood and response time.

NOTE Confidence: 0.744306263

00:28:26.120 --> 00:28:28.700 All that gets better relatively quickly,

NOTE Confidence: 0.744306263

00:28:28.700 --> 00:28:30.485 and just similar to what we saw

NOTE Confidence: 0.744306263

00:28:30.485 --> 00:28:32.466 in terms of the sleep architecture

NOTE Confidence: 0.744306263

00:28:32.466 --> 00:28:34.776 changes when you're having the acute

NOTE Confidence: 0.744306263

00:28:34.776 --> 00:28:36.580 sleep interruptions you're having less

NOTE Confidence: 0.744306263

00:28:36.580 --> 00:28:39.144 of the slow wave and the REM sleep.

NOTE Confidence: 0.744306263

00:28:39.144 --> 00:28:41.280 So as you rebound and get more sleep,

NOTE Confidence: 0.744306263

00:28:41.280 --> 00:28:42.620 you're able to fall asleep.

NOTE Confidence: 0.744306263

00:28:42.620 --> 00:28:44.365 Masterseal sleep onset latency is

NOTE Confidence: 0.744306263

00:28:44.365 --> 00:28:46.721 is short and you're able to get

NOTE Confidence: 0.744306263

00:28:46.721 --> 00:28:48.347 more slow wave or deep sleep.

NOTE Confidence: 0.744306263

00:28:48.350 --> 00:28:50.138 You're going to be paying back

NOTE Confidence: 0.744306263

00:28:50.138 --> 00:28:51.849 your your REM deficit as well,

NOTE Confidence: 0.744306263

00:28:51.850 --> 00:28:54.730 so we tend to see more slow wave and

NOTE Confidence: 0.744306263

00:28:54.730 --> 00:28:57.678 REM sleep as as the rebound periods  
NOTE Confidence: 0.744306263

00:28:57.678 --> 00:29:00.900 occur from from acute sleep deprivation.  
NOTE Confidence: 0.744306263

00:29:00.900 --> 00:29:01.698 Like I said,  
NOTE Confidence: 0.744306263

00:29:01.698 --> 00:29:03.294 a lot of the cognitive impairments  
NOTE Confidence: 0.744306263

00:29:03.294 --> 00:29:04.996 that were that were often seeing  
NOTE Confidence: 0.744306263

00:29:05.000 --> 00:29:06.980 from acute supervision gets, gets,  
NOTE Confidence: 0.744306263

00:29:06.980 --> 00:29:09.540 gets better and and so does the mood.  
NOTE Confidence: 0.744306263

00:29:09.540 --> 00:29:11.298 And so I think this is.  
NOTE Confidence: 0.744306263

00:29:11.300 --> 00:29:14.506 This is some of the subjective things  
NOTE Confidence: 0.744306263

00:29:14.506 --> 00:29:17.730 that we can bring to our patients and  
NOTE Confidence: 0.744306263

00:29:17.804 --> 00:29:20.834 and especially if they're coming in  
NOTE Confidence: 0.744306263

00:29:20.834 --> 00:29:23.356 complaining of daytime sleepiness in  
NOTE Confidence: 0.744306263

00:29:23.356 --> 00:29:25.836 our pediatric patients about irritability.  
NOTE Confidence: 0.744306263

00:29:25.840 --> 00:29:27.420 Their performance in school,  
NOTE Confidence: 0.744306263

00:29:27.420 --> 00:29:29.395 whether they're having behavioral issues,  
NOTE Confidence: 0.744306263

00:29:29.400 --> 00:29:30.412 acting out, you know,

NOTE Confidence: 0.744306263

00:29:30.412 --> 00:29:31.677 in their in the classroom.

NOTE Confidence: 0.744306263

00:29:31.680 --> 00:29:33.668 Are there in their in their schools?

NOTE Confidence: 0.744306263

00:29:33.670 --> 00:29:34.818 You know, we we,

NOTE Confidence: 0.744306263

00:29:34.818 --> 00:29:36.836 we have some evidence to suggest that

NOTE Confidence: 0.744306263

00:29:36.836 --> 00:29:39.450 if they are able to kind of go back

NOTE Confidence: 0.744306263

00:29:39.450 --> 00:29:42.509 and and and increase their total sleep time,

NOTE Confidence: 0.744306263

00:29:42.510 --> 00:29:45.030 some of these things can be

NOTE Confidence: 0.744306263

00:29:45.030 --> 00:29:48.540 reversed for improvement purposes.

NOTE Confidence: 0.744306263

00:29:48.540 --> 00:29:51.193 So how do we really evaluate our

NOTE Confidence: 0.744306263

00:29:51.193 --> 00:29:53.515 patients when we're we're assessing

NOTE Confidence: 0.744306263

00:29:53.515 --> 00:29:55.177 for sleep deprivation?

NOTE Confidence: 0.744306263

00:29:55.180 --> 00:29:55.668 It's it.

NOTE Confidence: 0.744306263

00:29:55.668 --> 00:29:58.061 It kind of goes hand in hand with what

NOTE Confidence: 0.744306263

00:29:58.061 --> 00:30:00.305 we're doing for our initial evaluations,

NOTE Confidence: 0.744306263

00:30:00.310 --> 00:30:02.080 whether we're assessing for sleep,

NOTE Confidence: 0.744306263

00:30:02.080 --> 00:30:02.910 disorder, breathing,  
NOTE Confidence: 0.744306263

00:30:02.910 --> 00:30:03.325 insomnia,  
NOTE Confidence: 0.744306263

00:30:03.325 --> 00:30:06.230 but few things that you know you  
NOTE Confidence: 0.744306263

00:30:06.303 --> 00:30:08.831 really want to hone in on is what  
NOTE Confidence: 0.744306263

00:30:08.831 --> 00:30:10.460 their habitual sleep time is.  
NOTE Confidence: 0.744306263

00:30:10.460 --> 00:30:12.638 If they're clearly telling you they're  
NOTE Confidence: 0.744306263

00:30:12.638 --> 00:30:14.770 having symptoms of daytime sleepiness,  
NOTE Confidence: 0.744306263

00:30:14.770 --> 00:30:16.185 but they're only getting less  
NOTE Confidence: 0.744306263

00:30:16.185 --> 00:30:18.474 than six hours of sleep, at least.  
NOTE Confidence: 0.744306263

00:30:18.474 --> 00:30:20.659 Then putting sleep deprivation or  
NOTE Confidence: 0.744306263

00:30:20.659 --> 00:30:21.970 insufficient behaviorally induced  
NOTE Confidence: 0.744306263

00:30:22.032 --> 00:30:24.162 insufficient sleep is going to be  
NOTE Confidence: 0.744306263

00:30:24.162 --> 00:30:25.582 on your differential there.  
NOTE Confidence: 0.744306263

00:30:25.590 --> 00:30:25.772 Yes,  
NOTE Confidence: 0.744306263

00:30:25.772 --> 00:30:27.046 you still want to make sure there's  
NOTE Confidence: 0.744306263

00:30:27.046 --> 00:30:28.240 no sleep disorder, breathing,



NOTE Confidence: 0.744306263

00:30:28.240 --> 00:30:29.590 and other things,

NOTE Confidence: 0.744306263

00:30:29.590 --> 00:30:31.840 but if you're having daytime

NOTE Confidence: 0.744306263

00:30:31.840 --> 00:30:34.006 sleepiness with less than six hours,

NOTE Confidence: 0.744306263

00:30:34.010 --> 00:30:35.830 it it becomes part of a differential.

NOTE Confidence: 0.744306263

00:30:35.830 --> 00:30:38.046 Here you also want to look for any

NOTE Confidence: 0.744306263

00:30:38.046 --> 00:30:40.104 shift work shift workers in your

NOTE Confidence: 0.744306263

00:30:40.104 --> 00:30:41.184 in your population,

NOTE Confidence: 0.744306263

00:30:41.190 --> 00:30:43.434 because as you're kind of going

NOTE Confidence: 0.744306263

00:30:43.434 --> 00:30:44.930 back and forth between

NOTE Confidence: 0.928119781428571

00:30:45.004 --> 00:30:46.460 trying to keep their.

NOTE Confidence: 0.928119781428571

00:30:46.460 --> 00:30:48.441 Normal hours for their family and then

NOTE Confidence: 0.928119781428571

00:30:48.441 --> 00:30:50.573 they have to work certain amount of

NOTE Confidence: 0.928119781428571

00:30:50.573 --> 00:30:52.796 days that constant shift and and changes

NOTE Confidence: 0.928119781428571

00:30:52.796 --> 00:30:54.764 in their sleeping pattern can result

NOTE Confidence: 0.928119781428571

00:30:54.764 --> 00:30:56.420 in them having insufficient sleep.

NOTE Confidence: 0.928119781428571

00:30:56.420 --> 00:30:58.095 And then you really want  
NOTE Confidence: 0.928119781428571

00:30:58.095 --> 00:30:59.700 to rule out insomnia.  
NOTE Confidence: 0.928119781428571

00:30:59.700 --> 00:31:02.460 Movement disorders like we spoke about,  
NOTE Confidence: 0.928119781428571

00:31:02.460 --> 00:31:04.566 and that's where the insomnia component  
NOTE Confidence: 0.928119781428571

00:31:04.566 --> 00:31:07.990 is going to help you determine.  
NOTE Confidence: 0.928119781428571

00:31:07.990 --> 00:31:09.760 What the treatment modality will be?  
NOTE Confidence: 0.928119781428571

00:31:09.760 --> 00:31:11.818 Because for insomnia we know about the  
NOTE Confidence: 0.928119781428571

00:31:11.818 --> 00:31:14.117 things that we need to focus on and  
NOTE Confidence: 0.928119781428571

00:31:14.117 --> 00:31:15.810 we'll get into the treatment next,  
NOTE Confidence: 0.928119781428571

00:31:15.810 --> 00:31:17.890 which will be slightly different.  
NOTE Confidence: 0.928119781428571

00:31:17.890 --> 00:31:20.606 You also want to look at circadian  
NOTE Confidence: 0.928119781428571

00:31:20.606 --> 00:31:21.727 rhythm disorders sometimes.  
NOTE Confidence: 0.928119781428571

00:31:21.727 --> 00:31:22.738 If they are,  
NOTE Confidence: 0.928119781428571

00:31:22.738 --> 00:31:24.760 we know in the adolescent population  
NOTE Confidence: 0.928119781428571

00:31:24.824 --> 00:31:26.396 they can have a delay phase,  
NOTE Confidence: 0.928119781428571

00:31:26.400 --> 00:31:28.717 and then they have to wake up

NOTE Confidence: 0.928119781428571

00:31:28.717 --> 00:31:31.150 early for school and that may be

NOTE Confidence: 0.928119781428571

00:31:31.150 --> 00:31:32.950 something that's that's driving their

NOTE Confidence: 0.928119781428571

00:31:32.950 --> 00:31:34.970 their overall sleep deprivation.

NOTE Confidence: 0.928119781428571

00:31:34.970 --> 00:31:36.615 So if they're going to bed later

NOTE Confidence: 0.928119781428571

00:31:36.615 --> 00:31:38.299 and they just can't fall asleep.

NOTE Confidence: 0.928119781428571

00:31:38.300 --> 00:31:40.130 Earlier than they have to get

NOTE Confidence: 0.928119781428571

00:31:40.130 --> 00:31:41.350 up in the morning.

NOTE Confidence: 0.928119781428571

00:31:41.350 --> 00:31:43.096 They're going to be cutting their

NOTE Confidence: 0.928119781428571

00:31:43.096 --> 00:31:45.125 total sleep time less so they can

NOTE Confidence: 0.928119781428571

00:31:45.125 --> 00:31:46.745 have an overlap between a delayed

NOTE Confidence: 0.928119781428571

00:31:46.745 --> 00:31:48.708 phase disorder and and and then

NOTE Confidence: 0.928119781428571

00:31:48.708 --> 00:31:50.348 resulting in insufficient sleep from

NOTE Confidence: 0.928119781428571

00:31:50.350 --> 00:31:52.950 behaviorally not getting enough sleep.

NOTE Confidence: 0.928119781428571

00:31:52.950 --> 00:31:54.950 Mental illnesses are also going

NOTE Confidence: 0.928119781428571

00:31:54.950 --> 00:31:57.760 to be a big component if you're

NOTE Confidence: 0.928119781428571

00:31:57.760 --> 00:31:58.966 having mood disorders,  
NOTE Confidence: 0.928119781428571

00:31:58.970 --> 00:32:00.870 they're more likely having insomnia,  
NOTE Confidence: 0.928119781428571

00:32:00.870 --> 00:32:02.594 especially if they're depressed.  
NOTE Confidence: 0.928119781428571

00:32:02.594 --> 00:32:03.887 But there are.  
NOTE Confidence: 0.928119781428571

00:32:03.890 --> 00:32:05.725 There are spectrums of depression  
NOTE Confidence: 0.928119781428571

00:32:05.725 --> 00:32:08.528 where they have less of of a need for.  
NOTE Confidence: 0.928119781428571

00:32:08.530 --> 00:32:09.880 Or you know, manic phases.  
NOTE Confidence: 0.928119781428571

00:32:09.880 --> 00:32:12.771 They're not sleeping as much and so  
NOTE Confidence: 0.928119781428571

00:32:12.771 --> 00:32:15.639 kind of becomes a vicious cycle of,  
NOTE Confidence: 0.928119781428571

00:32:15.640 --> 00:32:16.156 you know,  
NOTE Confidence: 0.928119781428571

00:32:16.156 --> 00:32:16.672 being manic,  
NOTE Confidence: 0.928119781428571

00:32:16.672 --> 00:32:18.220 not wanting to get enough sleep  
NOTE Confidence: 0.928119781428571

00:32:18.271 --> 00:32:19.846 and then becoming sleep deprived,  
NOTE Confidence: 0.928119781428571

00:32:19.850 --> 00:32:22.260 which further drives the mania.  
NOTE Confidence: 0.928119781428571

00:32:22.260 --> 00:32:23.616 Medications are also important.  
NOTE Confidence: 0.928119781428571

00:32:23.616 --> 00:32:26.060 There are medications that make you sleepy.

NOTE Confidence: 0.928119781428571  
00:32:26.060 --> 00:32:27.710 And then there's also kind of  
NOTE Confidence: 0.928119781428571  
00:32:27.710 --> 00:32:29.120 stimulants that are being used.  
NOTE Confidence: 0.928119781428571  
00:32:29.120 --> 00:32:32.062 We're seeing a lot more ADHD medications  
NOTE Confidence: 0.928119781428571  
00:32:32.062 --> 00:32:35.188 being used in the younger population,  
NOTE Confidence: 0.928119781428571  
00:32:35.190 --> 00:32:37.066 and so the timing of the medication  
NOTE Confidence: 0.928119781428571  
00:32:37.066 --> 00:32:38.729 if they're taking their stimulant.  
NOTE Confidence: 0.928119781428571  
00:32:38.730 --> 00:32:40.800 Much later in the evening portion,  
NOTE Confidence: 0.928119781428571  
00:32:40.800 --> 00:32:42.054 that's going to make it harder  
NOTE Confidence: 0.928119781428571  
00:32:42.054 --> 00:32:42.890 for them to sleep,  
NOTE Confidence: 0.928119781428571  
00:32:42.890 --> 00:32:45.434 and then again reduce their total sleep time  
NOTE Confidence: 0.928119781428571  
00:32:45.434 --> 00:32:47.936 and then can lead to sleep deprivation.  
NOTE Confidence: 0.928119781428571  
00:32:47.940 --> 00:32:51.756 Sleep state misperception is another one.  
NOTE Confidence: 0.928119781428571  
00:32:51.760 --> 00:32:54.550 Kind of goes hand in hand with some  
NOTE Confidence: 0.928119781428571  
00:32:54.550 --> 00:32:56.895 of the insomnia by our DOXIL insomnia,  
NOTE Confidence: 0.928119781428571  
00:32:56.900 --> 00:32:59.060 where they may report that they're you know,  
NOTE Confidence: 0.928119781428571

00:32:59.060 --> 00:33:00.460 only getting a few hours of sleep,  
NOTE Confidence: 0.928119781428571

00:33:00.460 --> 00:33:02.836 but then when you give them a tiger fee  
NOTE Confidence: 0.928119781428571

00:33:02.836 --> 00:33:05.614 or you actually put them in the sleep lab,  
NOTE Confidence: 0.928119781428571

00:33:05.620 --> 00:33:07.310 you know there's a misperception  
NOTE Confidence: 0.928119781428571

00:33:07.310 --> 00:33:09.763 in terms of what is reported and  
NOTE Confidence: 0.928119781428571

00:33:09.763 --> 00:33:11.857 what the actual sleep time is.  
NOTE Confidence: 0.928119781428571

00:33:11.860 --> 00:33:13.799 Sleep Diaries are are are going to  
NOTE Confidence: 0.928119781428571

00:33:13.799 --> 00:33:16.340 be kind of important here and again,  
NOTE Confidence: 0.928119781428571

00:33:16.340 --> 00:33:17.120 they're subjective.  
NOTE Confidence: 0.928119781428571

00:33:17.120 --> 00:33:19.769 They're prone to having a degree of  
NOTE Confidence: 0.928119781428571

00:33:19.769 --> 00:33:21.745 of error in terms of how much is.  
NOTE Confidence: 0.928119781428571

00:33:21.750 --> 00:33:22.659 Accurately being recalled,  
NOTE Confidence: 0.928119781428571

00:33:22.659 --> 00:33:25.142 but there are a great way of starting  
NOTE Confidence: 0.928119781428571

00:33:25.142 --> 00:33:26.960 to assess the total sleep time  
NOTE Confidence: 0.928119781428571

00:33:26.960 --> 00:33:28.998 that someone is getting, and again,  
NOTE Confidence: 0.928119781428571

00:33:28.998 --> 00:33:31.510 if they persist in less than six hours,

NOTE Confidence: 0.928119781428571  
00:33:31.510 --> 00:33:33.462 you can start thinking.  
NOTE Confidence: 0.928119781428571  
00:33:33.462 --> 00:33:35.902 Is this more behaviorally induced  
NOTE Confidence: 0.928119781428571  
00:33:35.902 --> 00:33:36.390 insufficient  
NOTE Confidence: 0.783218610363636  
00:33:36.462 --> 00:33:38.980 sleep? While you're excluding other causes,  
NOTE Confidence: 0.783218610363636  
00:33:38.980 --> 00:33:40.852 your your Pittsburgh sleep quality index  
NOTE Confidence: 0.783218610363636  
00:33:40.852 --> 00:33:43.260 will help you assess if they are really  
NOTE Confidence: 0.783218610363636  
00:33:43.260 --> 00:33:45.230 having issues with their quality of life.  
NOTE Confidence: 0.783218610363636  
00:33:45.230 --> 00:33:48.149 Sleep quality as you're kind of delve  
NOTE Confidence: 0.783218610363636  
00:33:48.149 --> 00:33:50.304 into your differential and then you  
NOTE Confidence: 0.783218610363636  
00:33:50.304 --> 00:33:52.768 can use actigraphy to really assess  
NOTE Confidence: 0.783218610363636  
00:33:52.768 --> 00:33:55.024 as a surrogate of how much total  
NOTE Confidence: 0.783218610363636  
00:33:55.024 --> 00:33:56.260 sleep time they may be getting.  
NOTE Confidence: 0.915858850588235  
00:33:58.550 --> 00:34:00.944 So how do we? How do we improve the  
NOTE Confidence: 0.915858850588235  
00:34:00.944 --> 00:34:02.986 the total sleep time that's going  
NOTE Confidence: 0.915858850588235  
00:34:02.986 --> 00:34:05.992 to be the main therapy in terms of  
NOTE Confidence: 0.915858850588235

00:34:05.992 --> 00:34:08.365 sleep deprivation is just being able  
NOTE Confidence: 0.915858850588235

00:34:08.365 --> 00:34:10.983 to give yourself more time to sleep.  
NOTE Confidence: 0.915858850588235

00:34:10.990 --> 00:34:13.692 Now that's kind of easier said than  
NOTE Confidence: 0.915858850588235

00:34:13.692 --> 00:34:16.295 being done and and there really isn't  
NOTE Confidence: 0.915858850588235

00:34:16.295 --> 00:34:19.059 a lot of great evidence to suggest  
NOTE Confidence: 0.915858850588235

00:34:19.059 --> 00:34:21.645 that one therapy or one combination  
NOTE Confidence: 0.915858850588235

00:34:21.645 --> 00:34:24.407 of therapies work better than another.  
NOTE Confidence: 0.915858850588235

00:34:24.410 --> 00:34:26.354 It kind of logically makes sense  
NOTE Confidence: 0.915858850588235

00:34:26.354 --> 00:34:27.650 that if you're asleep.  
NOTE Confidence: 0.915858850588235

00:34:27.650 --> 00:34:29.778 The price you should be getting more sleep  
NOTE Confidence: 0.915858850588235

00:34:29.778 --> 00:34:32.058 and so you should just get more sleep.  
NOTE Confidence: 0.915858850588235

00:34:32.060 --> 00:34:33.900 Now you know you say that to a  
NOTE Confidence: 0.915858850588235

00:34:33.900 --> 00:34:35.488 patient and you know there will  
NOTE Confidence: 0.915858850588235

00:34:35.488 --> 00:34:37.096 be a million and one excuses.  
NOTE Confidence: 0.915858850588235

00:34:37.100 --> 00:34:37.908 Oh well, you know.  
NOTE Confidence: 0.915858850588235

00:34:37.908 --> 00:34:39.774 Have kids take care of I have work I



NOTE Confidence: 0.915858850588235  
00:34:39.774 --> 00:34:41.603 have to balance this and I want to watch  
NOTE Confidence: 0.915858850588235  
00:34:41.603 --> 00:34:43.751 you know a little bit of TV so you know what.  
NOTE Confidence: 0.915858850588235  
00:34:43.751 --> 00:34:45.718 What can we use to kind of motivate  
NOTE Confidence: 0.915858850588235  
00:34:45.718 --> 00:34:47.958 our patients when we're trying to help  
NOTE Confidence: 0.915858850588235  
00:34:47.958 --> 00:34:50.385 them increase their total sleep time  
NOTE Confidence: 0.915858850588235  
00:34:50.385 --> 00:34:53.250 and what works what does not work.  
NOTE Confidence: 0.915858850588235  
00:34:53.250 --> 00:34:55.311 And one thing is that we really want to  
NOTE Confidence: 0.915858850588235  
00:34:55.311 --> 00:34:57.738 try to avoid medications and these patients.  
NOTE Confidence: 0.915858850588235  
00:34:57.740 --> 00:34:58.988 We don't want to give them  
NOTE Confidence: 0.915858850588235  
00:34:58.988 --> 00:35:00.312 a sleep aid and say, well,  
NOTE Confidence: 0.915858850588235  
00:35:00.312 --> 00:35:01.522 I know you're only getting  
NOTE Confidence: 0.915858850588235  
00:35:01.522 --> 00:35:02.490 six hours of sleep,  
NOTE Confidence: 0.915858850588235  
00:35:02.490 --> 00:35:03.570 but this will help you get,  
NOTE Confidence: 0.915858850588235  
00:35:03.570 --> 00:35:05.616 you know fall asleep delivered faster  
NOTE Confidence: 0.915858850588235  
00:35:05.616 --> 00:35:08.530 and give you 30 extra minutes etcetera.  
NOTE Confidence: 0.915858850588235

00:35:08.530 --> 00:35:11.818 So it's it's really going to come down  
NOTE Confidence: 0.915858850588235

00:35:11.818 --> 00:35:14.162 to having the opportunity to go to sleep  
NOTE Confidence: 0.915858850588235

00:35:14.162 --> 00:35:16.682 and so you you want to tell them that  
NOTE Confidence: 0.915858850588235

00:35:16.682 --> 00:35:18.689 you want to dedicate this much time,  
NOTE Confidence: 0.915858850588235

00:35:18.690 --> 00:35:20.328 you know to go to sleep and  
NOTE Confidence: 0.915858850588235

00:35:20.328 --> 00:35:21.500 and and stay asleep.  
NOTE Confidence: 0.915858850588235

00:35:21.500 --> 00:35:23.789 Most patients who have both acute and.  
NOTE Confidence: 0.915858850588235

00:35:23.790 --> 00:35:25.665 Chronic sleep deprivation is don't  
NOTE Confidence: 0.915858850588235

00:35:25.665 --> 00:35:27.712 really have an issue falling asleep,  
NOTE Confidence: 0.915858850588235

00:35:27.712 --> 00:35:28.796 so they're sleep onset.  
NOTE Confidence: 0.915858850588235

00:35:28.800 --> 00:35:31.100 Latency tends to be normal  
NOTE Confidence: 0.915858850588235

00:35:31.100 --> 00:35:32.066 versus your insomniacs,  
NOTE Confidence: 0.915858850588235

00:35:32.066 --> 00:35:34.320 which you know they can have their  
NOTE Confidence: 0.915858850588235

00:35:34.376 --> 00:35:36.042 own set of issues with the the  
NOTE Confidence: 0.915858850588235

00:35:36.042 --> 00:35:38.040 sleep on set and sleep maintenance.  
NOTE Confidence: 0.915858850588235

00:35:38.040 --> 00:35:39.798 But sticking to a regular schedule,

NOTE Confidence: 0.915858850588235  
00:35:39.800 --> 00:35:42.320 so you really wanna start to  
NOTE Confidence: 0.915858850588235  
00:35:42.320 --> 00:35:44.000 normalize their sleep schedule,  
NOTE Confidence: 0.915858850588235  
00:35:44.000 --> 00:35:45.596 have a have a consistent sleep  
NOTE Confidence: 0.915858850588235  
00:35:45.596 --> 00:35:47.000 time and wake up time.  
NOTE Confidence: 0.915858850588235  
00:35:47.000 --> 00:35:48.188 Give themselves adequate number  
NOTE Confidence: 0.915858850588235  
00:35:48.188 --> 00:35:49.376 of hours of sleep.  
NOTE Confidence: 0.915858850588235  
00:35:49.380 --> 00:35:51.028 So if they're getting sick so you can  
NOTE Confidence: 0.915858850588235  
00:35:51.028 --> 00:35:52.730 try to increase it by one hour and  
NOTE Confidence: 0.915858850588235  
00:35:52.730 --> 00:35:54.499 then see if that makes a difference.  
NOTE Confidence: 0.915858850588235  
00:35:54.500 --> 00:35:56.236 And and oftentimes if you say well,  
NOTE Confidence: 0.915858850588235  
00:35:56.240 --> 00:35:57.570 one hour may not be a lot.  
NOTE Confidence: 0.915858850588235  
00:35:57.570 --> 00:35:59.082 But if you look at it over a week,  
NOTE Confidence: 0.915858850588235  
00:35:59.090 --> 00:35:59.476 that's seven.  
NOTE Confidence: 0.915858850588235  
00:35:59.476 --> 00:36:01.020 If you look at it over a year,  
NOTE Confidence: 0.915858850588235  
00:36:01.020 --> 00:36:02.952 this becomes hundreds of hours of sleep  
NOTE Confidence: 0.915858850588235

00:36:02.952 --> 00:36:05.667 and and if you've been doing that for years,  
NOTE Confidence: 0.915858850588235

00:36:05.670 --> 00:36:07.902 you can imagine that your sleep that has  
NOTE Confidence: 0.915858850588235

00:36:07.902 --> 00:36:09.857 accumulated for such a long period of time.  
NOTE Confidence: 0.915858850588235

00:36:09.860 --> 00:36:11.696 Sleep hygiene is going to be  
NOTE Confidence: 0.915858850588235

00:36:11.696 --> 00:36:13.310 also another component you know.  
NOTE Confidence: 0.915858850588235

00:36:13.310 --> 00:36:15.380 We often are engaged with technology,  
NOTE Confidence: 0.915858850588235

00:36:15.380 --> 00:36:17.930 so if you're on your phone, you know.  
NOTE Confidence: 0.915858850588235

00:36:17.930 --> 00:36:19.390 Engaging in social media,  
NOTE Confidence: 0.915858850588235

00:36:19.390 --> 00:36:19.727 etcetera.  
NOTE Confidence: 0.915858850588235

00:36:19.727 --> 00:36:22.086 You may not even realize how much  
NOTE Confidence: 0.915858850588235

00:36:22.086 --> 00:36:24.460 time has gone by and that has cut  
NOTE Confidence: 0.915858850588235

00:36:24.460 --> 00:36:26.589 down to your time that you could  
NOTE Confidence: 0.915858850588235

00:36:26.589 --> 00:36:28.857 have been sleeping so kind of doing  
NOTE Confidence: 0.835469216666667

00:36:28.860 --> 00:36:30.558 some little bit of stimulus control,  
NOTE Confidence: 0.835469216666667

00:36:30.560 --> 00:36:33.311 being able to relax yourself down before  
NOTE Confidence: 0.835469216666667

00:36:33.311 --> 00:36:35.770 sleeping so that you're actually able

NOTE Confidence: 0.835469216666667  
00:36:35.770 --> 00:36:37.702 to fall asleep relatively quickly.  
NOTE Confidence: 0.835469216666667  
00:36:37.702 --> 00:36:39.868 We'll we'll be part of it.  
NOTE Confidence: 0.835469216666667  
00:36:39.870 --> 00:36:43.391 Nice saw me there can be overlaps  
NOTE Confidence: 0.835469216666667  
00:36:43.391 --> 00:36:46.009 between sleep deprivation and insomnia  
NOTE Confidence: 0.835469216666667  
00:36:46.010 --> 00:36:47.528 and and that's where you're CBT.  
NOTE Confidence: 0.835469216666667  
00:36:47.530 --> 00:36:50.490 I and other things that we do during  
NOTE Confidence: 0.835469216666667  
00:36:50.490 --> 00:36:52.630 insomnia management can can play a role.  
NOTE Confidence: 0.835469216666667  
00:36:52.630 --> 00:36:53.686 We spoke about kind of adequate  
NOTE Confidence: 0.835469216666667  
00:36:53.686 --> 00:36:55.270 time to sleep, so really allocating  
NOTE Confidence: 0.835469216666667  
00:36:55.270 --> 00:36:57.020 yourself on that that period.  
NOTE Confidence: 0.835469216666667  
00:36:57.020 --> 00:36:58.310 And one interesting thing is,  
NOTE Confidence: 0.835469216666667  
00:36:58.310 --> 00:37:00.374 especially as as you have young  
NOTE Confidence: 0.835469216666667  
00:37:00.374 --> 00:37:02.720 kids in the in the home with  
NOTE Confidence: 0.835469216666667  
00:37:02.720 --> 00:37:04.170 the frequent arousals at night,  
NOTE Confidence: 0.835469216666667  
00:37:04.170 --> 00:37:06.554 having partners to kind of switch off so  
NOTE Confidence: 0.835469216666667

00:37:06.554 --> 00:37:09.216 that the total sleep time may be adequate.

NOTE Confidence: 0.835469216666667

00:37:09.220 --> 00:37:10.532 This is where daytime.

NOTE Confidence: 0.835469216666667

00:37:10.532 --> 00:37:12.841 Gaps or they called cat naps may

NOTE Confidence: 0.835469216666667

00:37:12.841 --> 00:37:15.001 help so that over a period of 24

NOTE Confidence: 0.835469216666667

00:37:15.001 --> 00:37:17.502 hours you're able to at least provide

NOTE Confidence: 0.835469216666667

00:37:17.502 --> 00:37:19.247 yourself with more total sleep

NOTE Confidence: 0.835469216666667

00:37:19.247 --> 00:37:21.029 time that may not be cumulative,

NOTE Confidence: 0.835469216666667

00:37:21.030 --> 00:37:22.800 but at least it's additive and

NOTE Confidence: 0.835469216666667

00:37:22.800 --> 00:37:23.685 that's much better,

NOTE Confidence: 0.835469216666667

00:37:23.690 --> 00:37:25.838 so adequacy will be much better

NOTE Confidence: 0.835469216666667

00:37:25.838 --> 00:37:27.270 than overall sleep deprivation.

NOTE Confidence: 0.835469216666667

00:37:27.270 --> 00:37:29.688 Another thing for pertaining to more

NOTE Confidence: 0.835469216666667

00:37:29.688 --> 00:37:32.354 of the shift workers is is taking

NOTE Confidence: 0.835469216666667

00:37:32.354 --> 00:37:34.720 a nap before their shift can reduce

NOTE Confidence: 0.835469216666667

00:37:34.720 --> 00:37:36.545 some of the cognitive impairments,

NOTE Confidence: 0.835469216666667

00:37:36.550 --> 00:37:38.405 and some of those errors that we've

NOTE Confidence: 0.835469216666667  
00:37:38.405 --> 00:37:40.267 spoken about and then other stuff is,  
NOTE Confidence: 0.835469216666667  
00:37:40.270 --> 00:37:41.414 is really maintaining healthy.  
NOTE Confidence: 0.835469216666667  
00:37:41.414 --> 00:37:43.130 8 exercise you want to make  
NOTE Confidence: 0.835469216666667  
00:37:43.181 --> 00:37:44.756 sure there's nothing else that's  
NOTE Confidence: 0.835469216666667  
00:37:44.760 --> 00:37:46.036 contributing there as well,  
NOTE Confidence: 0.835469216666667  
00:37:46.036 --> 00:37:47.950 and there is little bit of  
NOTE Confidence: 0.835469216666667  
00:37:48.018 --> 00:37:49.378 evidence that it's not.  
NOTE Confidence: 0.835469216666667  
00:37:49.380 --> 00:37:50.940 It's not like there's our  
NOTE Confidence: 0.835469216666667  
00:37:50.940 --> 00:37:51.876 randomized control trials.  
NOTE Confidence: 0.835469216666667  
00:37:51.880 --> 00:37:54.336 Look at bright light exposure in the morning.  
NOTE Confidence: 0.835469216666667  
00:37:54.340 --> 00:37:55.873 It kind of makes sense that you  
NOTE Confidence: 0.835469216666667  
00:37:55.873 --> 00:37:57.681 are going to be more alert as  
NOTE Confidence: 0.835469216666667  
00:37:57.681 --> 00:37:58.777 you're having bright light,  
NOTE Confidence: 0.835469216666667  
00:37:58.780 --> 00:38:00.720 and so you're allowing yourself  
NOTE Confidence: 0.835469216666667  
00:38:00.720 --> 00:38:02.660 to entrain the circadian rhythm.  
NOTE Confidence: 0.835469216666667

00:38:02.660 --> 00:38:03.744 So when you combine,  
NOTE Confidence: 0.835469216666667

00:38:03.744 --> 00:38:05.699 it's going to be a combination of  
NOTE Confidence: 0.835469216666667

00:38:05.699 --> 00:38:07.325 all these things to really help  
NOTE Confidence: 0.835469216666667

00:38:07.325 --> 00:38:09.098 you increase the total sleep time,  
NOTE Confidence: 0.835469216666667

00:38:09.100 --> 00:38:10.860 but a lot of this is going to  
NOTE Confidence: 0.835469216666667

00:38:10.860 --> 00:38:12.128 be motivation of the patient.  
NOTE Confidence: 0.835469216666667

00:38:12.130 --> 00:38:14.590 To generate with the with the  
NOTE Confidence: 0.835469216666667

00:38:14.590 --> 00:38:16.230 assistant of their provider.  
NOTE Confidence: 0.835469216666667

00:38:16.230 --> 00:38:18.070 To allow themselves the opportunity  
NOTE Confidence: 0.835469216666667

00:38:18.070 --> 00:38:19.542 to get more sleep,  
NOTE Confidence: 0.835469216666667

00:38:19.550 --> 00:38:21.878 and then if they are having issues with  
NOTE Confidence: 0.835469216666667

00:38:21.878 --> 00:38:23.868 falling asleep or maintaining sleep now,  
NOTE Confidence: 0.835469216666667

00:38:23.870 --> 00:38:26.360 you've kind of shifted gears from  
NOTE Confidence: 0.835469216666667

00:38:26.360 --> 00:38:28.020 just insufficient sleep towards  
NOTE Confidence: 0.835469216666667

00:38:28.084 --> 00:38:30.148 more towards an insomnia and that  
NOTE Confidence: 0.835469216666667

00:38:30.148 --> 00:38:32.490 that becomes its own separate well.



NOTE Confidence: 0.835469216666667

00:38:32.490 --> 00:38:35.082 So I wanted to just kind of change

NOTE Confidence: 0.835469216666667

00:38:35.082 --> 00:38:38.309 gears and and go over some of the fun facts.

NOTE Confidence: 0.835469216666667

00:38:38.310 --> 00:38:40.502 And as I was kind of going through

NOTE Confidence: 0.835469216666667

00:38:40.502 --> 00:38:41.933 sleep deprivation and and looking

NOTE Confidence: 0.835469216666667

00:38:41.933 --> 00:38:43.583 at some of the prevalence data,

NOTE Confidence: 0.835469216666667

00:38:43.590 --> 00:38:45.030 what happens to it?

NOTE Confidence: 0.835469216666667

00:38:45.030 --> 00:38:47.190 There's some cool things that kind

NOTE Confidence: 0.835469216666667

00:38:47.257 --> 00:38:49.084 of came across which made sense,

NOTE Confidence: 0.835469216666667

00:38:49.084 --> 00:38:51.170 and then at the same time it's,

NOTE Confidence: 0.835469216666667

00:38:51.170 --> 00:38:51.756 you know,

NOTE Confidence: 0.835469216666667

00:38:51.756 --> 00:38:53.221 just kind of some information

NOTE Confidence: 0.835469216666667

00:38:53.221 --> 00:38:54.968 that we can carry with us.

NOTE Confidence: 0.835469216666667

00:38:54.970 --> 00:38:57.842 And so one of the fun facts is

NOTE Confidence: 0.835469216666667

00:38:57.842 --> 00:39:00.606 that about 12% of of people will

NOTE Confidence: 0.835469216666667

00:39:00.606 --> 00:39:02.726 dream in black and white.

NOTE Confidence: 0.835469216666667

00:39:02.730 --> 00:39:05.082 And this before the invention of color  
NOTE Confidence: 0.835469216666667

00:39:05.082 --> 00:39:07.320 television, this was closer to 75%.  
NOTE Confidence: 0.835469216666667

00:39:07.320 --> 00:39:08.580 So help us reflect,  
NOTE Confidence: 0.835469216666667

00:39:08.580 --> 00:39:10.921 you know how much of our dreams  
NOTE Confidence: 0.835469216666667

00:39:10.921 --> 00:39:13.159 or or or or subconscious things  
NOTE Confidence: 0.835469216666667

00:39:13.159 --> 00:39:14.278 come from our  
NOTE Confidence: 0.900221285

00:39:14.351 --> 00:39:16.787 environment and things that we do.  
NOTE Confidence: 0.900221285

00:39:16.790 --> 00:39:19.605 And so if you're you know, watching  
NOTE Confidence: 0.900221285

00:39:19.605 --> 00:39:21.555 or you're engaging in certain things,  
NOTE Confidence: 0.900221285

00:39:21.560 --> 00:39:22.960 your your daily life and all that  
NOTE Confidence: 0.900221285

00:39:22.960 --> 00:39:24.480 stuff will get tied into your sleep.  
NOTE Confidence: 0.900221285

00:39:24.480 --> 00:39:26.340 So this is where stressors and  
NOTE Confidence: 0.900221285

00:39:26.340 --> 00:39:28.230 anxiety really play a role in  
NOTE Confidence: 0.900221285

00:39:28.230 --> 00:39:29.976 your sleep quality and and and.  
NOTE Confidence: 0.900221285

00:39:29.980 --> 00:39:32.056 And this is just one example  
NOTE Confidence: 0.900221285

00:39:32.060 --> 00:39:34.064 of the environmental factors.

NOTE Confidence: 0.900221285

00:39:34.064 --> 00:39:37.600 Tying into our our sleep as well.

NOTE Confidence: 0.900221285

00:39:37.600 --> 00:39:39.088 So men tend to have longer

NOTE Confidence: 0.900221285

00:39:39.088 --> 00:39:40.080 circadian clocks than women.

NOTE Confidence: 0.900221285

00:39:40.080 --> 00:39:42.160 It's also by it's just by 6 minutes,

NOTE Confidence: 0.900221285

00:39:42.160 --> 00:39:43.330 but that's kind of interesting.

NOTE Confidence: 0.900221285

00:39:43.330 --> 00:39:44.356 You know they can stay up.

NOTE Confidence: 0.900221285

00:39:44.360 --> 00:39:45.236 I guess a little bit longer.

NOTE Confidence: 0.900221285

00:39:45.240 --> 00:39:47.494 They'll be a little bit more delayed.

NOTE Confidence: 0.900221285

00:39:47.500 --> 00:39:49.020 I think sleep boosting immunity.

NOTE Confidence: 0.900221285

00:39:49.020 --> 00:39:50.298 We're pretty well aware of that.

NOTE Confidence: 0.900221285

00:39:50.300 --> 00:39:51.036 So really,

NOTE Confidence: 0.900221285

00:39:51.036 --> 00:39:52.876 if you're chronically sleep deprived,

NOTE Confidence: 0.900221285

00:39:52.880 --> 00:39:53.930 it's through.

NOTE Confidence: 0.863471668333333

00:39:56.390 --> 00:39:57.682 Community compromised that you're

NOTE Confidence: 0.863471668333333

00:39:57.682 --> 00:40:00.070 you're going to sepsis and then you die.

NOTE Confidence: 0.863471668333333

00:40:00.070 --> 00:40:02.638 From that perspective,  
NOTE Confidence: 0.863471668333333

00:40:02.640 --> 00:40:03.904 15% of population sleepwalks  
NOTE Confidence: 0.863471668333333

00:40:03.904 --> 00:40:05.168 the National League Foundation,  
NOTE Confidence: 0.863471668333333

00:40:05.170 --> 00:40:06.528 which I you know I don't see.  
NOTE Confidence: 0.863471668333333

00:40:06.530 --> 00:40:08.330 We don't that we see that much sleeping,  
NOTE Confidence: 0.863471668333333

00:40:08.330 --> 00:40:09.110 sleepwalking, parasomnias,  
NOTE Confidence: 0.863471668333333

00:40:09.110 --> 00:40:11.060 but they are quite prevalent  
NOTE Confidence: 0.863471668333333

00:40:11.060 --> 00:40:13.280 and this includes the the the  
NOTE Confidence: 0.863471668333333

00:40:13.280 --> 00:40:14.270 the pediatric population,  
NOTE Confidence: 0.863471668333333

00:40:14.270 --> 00:40:16.524 which is what the group that is  
NOTE Confidence: 0.863471668333333

00:40:16.524 --> 00:40:18.653 more prone to having this they  
NOTE Confidence: 0.863471668333333

00:40:18.653 --> 00:40:20.774 knew a new bed can increase your  
NOTE Confidence: 0.863471668333333

00:40:20.774 --> 00:40:22.328 sleep time by 42 minutes,  
NOTE Confidence: 0.863471668333333

00:40:22.330 --> 00:40:23.410 so that's kind of interesting.  
NOTE Confidence: 0.863471668333333

00:40:23.410 --> 00:40:25.090 It may be more of a placebo effect.  
NOTE Confidence: 0.863471668333333

00:40:25.090 --> 00:40:26.742 Maybe it's more comfortable.

NOTE Confidence: 0.863471668333333  
00:40:26.742 --> 00:40:28.394 Mattress it's you understanding.  
NOTE Confidence: 0.863471668333333  
00:40:28.400 --> 00:40:28.910 Oh I'm,  
NOTE Confidence: 0.863471668333333  
00:40:28.910 --> 00:40:30.185 I'm getting this more comfortable  
NOTE Confidence: 0.863471668333333  
00:40:30.185 --> 00:40:32.158 bed so it's going to help me sleep  
NOTE Confidence: 0.863471668333333  
00:40:32.158 --> 00:40:34.059 better and so you're able to stay more  
NOTE Confidence: 0.863471668333333  
00:40:34.059 --> 00:40:35.676 or or you're just enjoying the fact  
NOTE Confidence: 0.863471668333333  
00:40:35.680 --> 00:40:37.380 that it's a new bed so you want to kind of,  
NOTE Confidence: 0.863471668333333  
00:40:37.380 --> 00:40:37.878 you know,  
NOTE Confidence: 0.863471668333333  
00:40:37.878 --> 00:40:40.212 enjoy this new entity but a new bed can  
NOTE Confidence: 0.863471668333333  
00:40:40.212 --> 00:40:42.193 increase your sleep time by you know.  
NOTE Confidence: 0.863471668333333  
00:40:42.200 --> 00:40:45.140 So several several minutes there.  
NOTE Confidence: 0.863471668333333  
00:40:45.140 --> 00:40:46.935 One thing that we sometimes  
NOTE Confidence: 0.863471668333333  
00:40:46.935 --> 00:40:48.730 hear is is you know,  
NOTE Confidence: 0.863471668333333  
00:40:48.730 --> 00:40:50.560 I I I sleep in one position and I sleep  
NOTE Confidence: 0.863471668333333  
00:40:50.612 --> 00:40:52.400 like that throughout the entire night.  
NOTE Confidence: 0.863471668333333

00:40:52.400 --> 00:40:54.784 I don't wake up at all so no one  
NOTE Confidence: 0.863471668333333

00:40:54.784 --> 00:40:55.696 sleeps throughout the night.  
NOTE Confidence: 0.863471668333333

00:40:55.700 --> 00:40:56.432 There's we,  
NOTE Confidence: 0.863471668333333

00:40:56.432 --> 00:40:58.608 we know that there's several arousals  
NOTE Confidence: 0.863471668333333

00:40:58.608 --> 00:41:00.378 that occur during the night,  
NOTE Confidence: 0.863471668333333

00:41:00.380 --> 00:41:02.109 but most most people are doing that  
NOTE Confidence: 0.863471668333333

00:41:02.109 --> 00:41:04.188 are not able even able to recall that.  
NOTE Confidence: 0.863471668333333

00:41:04.190 --> 00:41:06.758 That could be a toss a little turn,  
NOTE Confidence: 0.863471668333333

00:41:06.760 --> 00:41:07.434 you know,  
NOTE Confidence: 0.863471668333333

00:41:07.434 --> 00:41:09.456 very brief arousal that may not  
NOTE Confidence: 0.863471668333333

00:41:09.456 --> 00:41:11.989 even be registered as an arousal  
NOTE Confidence: 0.863471668333333

00:41:11.989 --> 00:41:13.777 in the morning consciously.  
NOTE Confidence: 0.863471668333333

00:41:13.780 --> 00:41:16.360 So another interesting fact is that.  
NOTE Confidence: 0.863471668333333

00:41:16.360 --> 00:41:18.838 Our our sense of smell is really  
NOTE Confidence: 0.863471668333333

00:41:18.838 --> 00:41:20.644 decreased during sleep and this  
NOTE Confidence: 0.863471668333333

00:41:20.644 --> 00:41:22.654 was one of the reasons smoke

NOTE Confidence: 0.863471668333333  
00:41:22.654 --> 00:41:23.910 detectors were created.  
NOTE Confidence: 0.863471668333333  
00:41:23.910 --> 00:41:25.830 Is that if there's a fire or or  
NOTE Confidence: 0.863471668333333  
00:41:25.830 --> 00:41:27.498 carbon dioxide and other things that  
NOTE Confidence: 0.863471668333333  
00:41:27.498 --> 00:41:29.190 that are occurring at night time  
NOTE Confidence: 0.863471668333333  
00:41:29.249 --> 00:41:31.286 because of this decrease in your smell,  
NOTE Confidence: 0.863471668333333  
00:41:31.290 --> 00:41:33.462 that's going to help you become  
NOTE Confidence: 0.863471668333333  
00:41:33.462 --> 00:41:36.215 alerted to to the the fire  
NOTE Confidence: 0.863471668333333  
00:41:36.215 --> 00:41:38.123 that's maybe happening there.  
NOTE Confidence: 0.863471668333333  
00:41:38.130 --> 00:41:39.610 In terms of sleep deprivation,  
NOTE Confidence: 0.863471668333333  
00:41:39.610 --> 00:41:41.514 we know you know how long can  
NOTE Confidence: 0.863471668333333  
00:41:41.514 --> 00:41:43.190 someone go without without sleep.  
NOTE Confidence: 0.863471668333333  
00:41:43.190 --> 00:41:45.446 So an average person can survive about 10  
NOTE Confidence: 0.863471668333333  
00:41:45.446 --> 00:41:47.589 days without sleep and then at that point,  
NOTE Confidence: 0.863471668333333  
00:41:47.590 --> 00:41:50.194 not only are they having all those  
NOTE Confidence: 0.863471668333333  
00:41:50.194 --> 00:41:52.750 cognitive behavior and mood issues going on,  
NOTE Confidence: 0.863471668333333

00:41:52.750 --> 00:41:54.694 but they start to have immune  
NOTE Confidence: 0.863471668333333

00:41:54.694 --> 00:41:56.353 issues and there's multi organ  
NOTE Confidence: 0.863471668333333

00:41:56.353 --> 00:41:58.411 failure starts to go down and they  
NOTE Confidence: 0.863471668333333

00:41:58.411 --> 00:42:00.210 they die from severe sepsis.  
NOTE Confidence: 0.863471668333333

00:42:00.210 --> 00:42:02.634 There is a Guinness World Record  
NOTE Confidence: 0.863471668333333

00:42:02.634 --> 00:42:05.889 of 449 hours so that was 18 days,  
NOTE Confidence: 0.863471668333333

00:42:05.890 --> 00:42:07.560 21 hours and 40 minutes.  
NOTE Confidence: 0.863471668333333

00:42:07.560 --> 00:42:10.092 And the the recording was stopped  
NOTE Confidence: 0.863471668333333

00:42:10.092 --> 00:42:13.556 at that time due to risk of having  
NOTE Confidence: 0.863471668333333

00:42:13.556 --> 00:42:16.380 further health issues at that point.  
NOTE Confidence: 0.863471668333333

00:42:16.380 --> 00:42:19.476 So the last thing I'll kind of end off  
NOTE Confidence: 0.863471668333333

00:42:19.476 --> 00:42:23.179 our talk with is is fatal familial insomnia.  
NOTE Confidence: 0.863471668333333

00:42:23.180 --> 00:42:24.615 And the reason I kind of tagged  
NOTE Confidence: 0.863471668333333

00:42:24.615 --> 00:42:25.838 this towards the end of it is,  
NOTE Confidence: 0.863471668333333

00:42:25.840 --> 00:42:28.507 is there such a wide range of  
NOTE Confidence: 0.863471668333333

00:42:28.507 --> 00:42:31.260 onset for fatal familial insomnia?



NOTE Confidence: 0.863471668333333

00:42:31.260 --> 00:42:32.361 There's sporadic cases.

NOTE Confidence: 0.863471668333333

00:42:32.361 --> 00:42:34.196 Obviously it's not a sonal,

NOTE Confidence: 0.863471668333333

00:42:34.200 --> 00:42:35.313 autosomal dominant brown

NOTE Confidence: 0.863471668333333

00:42:35.313 --> 00:42:36.797 disease of the brain,

NOTE Confidence: 0.863471668333333

00:42:36.800 --> 00:42:38.768 so it's going to have a

NOTE Confidence: 0.863471668333333

00:42:38.768 --> 00:42:40.080 lot of familial patterns,

NOTE Confidence: 0.815429676

00:42:40.080 --> 00:42:42.972 but the early portions or early

NOTE Confidence: 0.815429676

00:42:42.972 --> 00:42:44.900 disease states were familiar,

NOTE Confidence: 0.815429676

00:42:44.900 --> 00:42:46.980 family fatal familial insomnia

NOTE Confidence: 0.815429676

00:42:46.980 --> 00:42:49.580 is going to mimic sleep

NOTE Confidence: 0.815429676

00:42:49.580 --> 00:42:51.840 deprivation and insomnia overlap.

NOTE Confidence: 0.815429676

00:42:51.840 --> 00:42:53.835 So I thought it might be an

NOTE Confidence: 0.815429676

00:42:53.835 --> 00:42:55.470 interesting thing to add on here.

NOTE Confidence: 0.815429676

00:42:55.470 --> 00:42:57.030 So like I said, it's a pre disease.

NOTE Confidence: 0.815429676

00:42:57.030 --> 00:42:59.060 It's it's a protein that has a

NOTE Confidence: 0.815429676

00:42:59.060 --> 00:43:00.667 mutation and sleep issues really  
NOTE Confidence: 0.815429676

00:43:00.667 --> 00:43:02.689 start very gradual and and they're  
NOTE Confidence: 0.815429676

00:43:02.689 --> 00:43:05.271 going to start to mimic this acute  
NOTE Confidence: 0.815429676

00:43:05.271 --> 00:43:06.743 and chronic sleep deprivation.  
NOTE Confidence: 0.815429676

00:43:06.750 --> 00:43:07.875 The onset is anywhere from  
NOTE Confidence: 0.815429676

00:43:07.875 --> 00:43:09.210 the age of 13 to 60,  
NOTE Confidence: 0.815429676

00:43:09.210 --> 00:43:11.177 with an average being around 50 years  
NOTE Confidence: 0.815429676

00:43:11.177 --> 00:43:13.132 of age and the the pathophysiology  
NOTE Confidence: 0.815429676

00:43:13.132 --> 00:43:14.887 is a little bit unclear.  
NOTE Confidence: 0.815429676

00:43:14.890 --> 00:43:17.165 But what they believe is that this  
NOTE Confidence: 0.815429676

00:43:17.165 --> 00:43:19.265 protein mutation is going to lead  
NOTE Confidence: 0.815429676

00:43:19.265 --> 00:43:21.422 to poor decrease glucose intake in  
NOTE Confidence: 0.815429676

00:43:21.422 --> 00:43:23.324 the thalamus and then the single  
NOTE Confidence: 0.815429676

00:43:23.324 --> 00:43:25.278 cortex which is our areas that.  
NOTE Confidence: 0.815429676

00:43:25.280 --> 00:43:27.045 Control some of the sleep  
NOTE Confidence: 0.815429676

00:43:27.045 --> 00:43:28.104 and alertness portions,

NOTE Confidence: 0.815429676

00:43:28.110 --> 00:43:29.905 and so you're really depriving

NOTE Confidence: 0.815429676

00:43:29.905 --> 00:43:31.341 those cells they're undergoing

NOTE Confidence: 0.815429676

00:43:31.341 --> 00:43:33.008 kind of atrophy and and and,

NOTE Confidence: 0.815429676

00:43:33.010 --> 00:43:34.474 and possibly dying,

NOTE Confidence: 0.815429676

00:43:34.474 --> 00:43:36.914 and so you're knocking those

NOTE Confidence: 0.815429676

00:43:36.914 --> 00:43:39.418 centers out and then as they're

NOTE Confidence: 0.815429676

00:43:39.418 --> 00:43:40.564 sleep deprivation increases,

NOTE Confidence: 0.815429676

00:43:40.570 --> 00:43:42.999 the increases are not able to sleep,

NOTE Confidence: 0.815429676

00:43:43.000 --> 00:43:45.192 and they're going to have you know some

NOTE Confidence: 0.815429676

00:43:45.192 --> 00:43:47.088 issues with the commercial insomnia,

NOTE Confidence: 0.815429676

00:43:47.090 --> 00:43:49.568 but both sleep onset and maintenance,

NOTE Confidence: 0.815429676

00:43:49.570 --> 00:43:51.398 leading to both hallucinations,

NOTE Confidence: 0.815429676

00:43:51.398 --> 00:43:54.140 the confusional state and then death

NOTE Confidence: 0.815429676

00:43:54.211 --> 00:43:57.163 usually occurs anywhere from 6 to 36 months,

NOTE Confidence: 0.815429676

00:43:57.170 --> 00:43:58.549 so you can see you know it's.

NOTE Confidence: 0.815429676

00:43:58.550 --> 00:44:01.161 So the fatal disease on the average  
NOTE Confidence: 0.815429676

00:44:01.161 --> 00:44:04.035 survival was about 18 months from this  
NOTE Confidence: 0.815429676

00:44:04.035 --> 00:44:06.140 symptom initiation and there really  
NOTE Confidence: 0.815429676

00:44:06.140 --> 00:44:08.567 isn't any great treatment options,  
NOTE Confidence: 0.815429676

00:44:08.570 --> 00:44:12.084 it becomes more of a palliative approach.  
NOTE Confidence: 0.815429676

00:44:12.090 --> 00:44:14.490 There are studies have looked at  
NOTE Confidence: 0.815429676

00:44:14.490 --> 00:44:16.449 using sleep AIDS barbiturates but  
NOTE Confidence: 0.815429676

00:44:16.449 --> 00:44:18.479 has not panned out in terms of  
NOTE Confidence: 0.815429676

00:44:18.479 --> 00:44:20.549 being able to increase sleep time  
NOTE Confidence: 0.815429676

00:44:20.550 --> 00:44:22.470 or giving giving them more deeper  
NOTE Confidence: 0.815429676

00:44:22.470 --> 00:44:24.692 REM sleep and and allowing their  
NOTE Confidence: 0.815429676

00:44:24.692 --> 00:44:26.887 overall progression to be delayed.  
NOTE Confidence: 0.815429676

00:44:26.890 --> 00:44:29.040 So it's it's, it's quite.  
NOTE Confidence: 0.815429676

00:44:29.040 --> 00:44:33.055 The deadly disease if it once  
NOTE Confidence: 0.815429676

00:44:33.055 --> 00:44:34.539 it is diagnosed there.  
NOTE Confidence: 0.815429676

00:44:34.540 --> 00:44:35.872 Now back in 1998,

NOTE Confidence: 0.815429676

00:44:35.872 --> 00:44:37.870 there was 40 families that were

NOTE Confidence: 0.815429676

00:44:37.938 --> 00:44:40.176 known to have a genetic mutation,

NOTE Confidence: 0.815429676

00:44:40.180 --> 00:44:42.097 and so you know it's not a social dominance.

NOTE Confidence: 0.815429676

00:44:42.100 --> 00:44:44.095 It's going to be occurring in the

NOTE Confidence: 0.815429676

00:44:44.095 --> 00:44:45.960 in the various generations now,

NOTE Confidence: 0.815429676

00:44:45.960 --> 00:44:48.410 but in 2016 they also had about

NOTE Confidence: 0.815429676

00:44:48.410 --> 00:44:50.673 24 sporadic cases and and then you

NOTE Confidence: 0.815429676

00:44:50.673 --> 00:44:52.434 can see in this functional PET

NOTE Confidence: 0.815429676

00:44:52.434 --> 00:44:54.583 scanning that you know if you look

NOTE Confidence: 0.815429676

00:44:54.583 --> 00:44:56.722 at control patients versus those in

NOTE Confidence: 0.815429676

00:44:56.722 --> 00:44:58.936 the early portions of their disease

NOTE Confidence: 0.815429676

00:44:58.936 --> 00:45:01.204 process versus a laid you really

NOTE Confidence: 0.815429676

00:45:01.204 --> 00:45:02.912 having decreased uptake in the

NOTE Confidence: 0.815429676

00:45:02.912 --> 00:45:04.628 installments in the in the singular.

NOTE Confidence: 0.815429676

00:45:04.630 --> 00:45:05.110 Regions,

NOTE Confidence: 0.815429676

00:45:05.110 --> 00:45:07.990 and that's going to be really  
NOTE Confidence: 0.815429676

00:45:07.990 --> 00:45:10.462 leading to your inability to sleep  
NOTE Confidence: 0.815429676

00:45:10.462 --> 00:45:12.763 and then moving forward towards  
NOTE Confidence: 0.815429676

00:45:12.763 --> 00:45:14.727 the the fatal component,  
NOTE Confidence: 0.815429676

00:45:14.730 --> 00:45:18.080 so that's what I have so far and I'll be  
NOTE Confidence: 0.815429676

00:45:18.166 --> 00:45:21.290 happy to take any questions at this point.  
NOTE Confidence: 0.8428526715

00:45:26.470 --> 00:45:29.530 So that was a fantastic discussion  
NOTE Confidence: 0.8428526715

00:45:29.530 --> 00:45:33.146 on very important topic and I love  
NOTE Confidence: 0.8428526715

00:45:33.146 --> 00:45:35.611 your approach about looking at  
NOTE Confidence: 0.8428526715

00:45:35.611 --> 00:45:38.192 chronic versus acute and and kind  
NOTE Confidence: 0.8428526715

00:45:38.192 --> 00:45:41.817 of honing in on some ways for sleep  
NOTE Confidence: 0.8428526715

00:45:41.817 --> 00:45:43.600 extension do is anybody well let's  
NOTE Confidence: 0.8428526715

00:45:43.600 --> 00:45:45.330 I'm going to look into the chat,  
NOTE Confidence: 0.8428526715

00:45:45.330 --> 00:45:48.711 but otherwise feel free to unmute  
NOTE Confidence: 0.8428526715

00:45:48.711 --> 00:45:51.516 yourself and ask a question.  
NOTE Confidence: 0.8428526715

00:45:51.520 --> 00:45:52.808 Let me just take a look at

NOTE Confidence: 0.8428526715

00:45:52.808 --> 00:45:53.900 some of the chat here.

NOTE Confidence: 0.8352489

00:45:57.620 --> 00:46:01.913 So, so this is a common thing we're asked by.

NOTE Confidence: 0.8352489

00:46:01.920 --> 00:46:04.090 I've had actually patients ask me this.

NOTE Confidence: 0.8352489

00:46:04.090 --> 00:46:06.916 This is my. Are you aware of studies that

NOTE Confidence: 0.8352489

00:46:06.916 --> 00:46:09.459 compare 7 hours of sleep compared to two

NOTE Confidence: 0.8352489

00:46:09.459 --> 00:46:12.057 periods of four and three hours of sleep

NOTE Confidence: 0.8352489

00:46:12.057 --> 00:46:14.900 using PBT or other alertness measures?

NOTE Confidence: 0.810226047272727

00:46:15.940 --> 00:46:17.886 So I don't think they're they're been

NOTE Confidence: 0.810226047272727

00:46:17.886 --> 00:46:20.084 data to kind of cause you to or or

NOTE Confidence: 0.810226047272727

00:46:20.084 --> 00:46:22.069 allow you to have sleep restrictions.

NOTE Confidence: 0.810226047272727

00:46:22.070 --> 00:46:24.513 At that point. We know that sleepiness

NOTE Confidence: 0.810226047272727

00:46:24.513 --> 00:46:25.960 symptoms can definitely occur,

NOTE Confidence: 0.810226047272727

00:46:25.960 --> 00:46:28.732 but there as there is data that have looked

NOTE Confidence: 0.810226047272727

00:46:28.732 --> 00:46:31.457 at patients who have fragmented sleep,

NOTE Confidence: 0.810226047272727

00:46:31.460 --> 00:46:33.693 and we know that even six hours

NOTE Confidence: 0.810226047272727

00:46:33.693 --> 00:46:35.271 of consolidated sleep is going  
NOTE Confidence: 0.810226047272727

00:46:35.271 --> 00:46:37.210 to be better than four hours plus  
NOTE Confidence: 0.810226047272727

00:46:37.210 --> 00:46:39.120 two hours of fragmented sleep.  
NOTE Confidence: 0.810226047272727

00:46:39.120 --> 00:46:41.542 But I'm not aware of anything that  
NOTE Confidence: 0.810226047272727

00:46:41.542 --> 00:46:43.320 compares them head-to-head in terms of,  
NOTE Confidence: 0.810226047272727

00:46:43.320 --> 00:46:45.942 you know, having less daytime sleepiness  
NOTE Confidence: 0.810226047272727

00:46:45.942 --> 00:46:48.070 complaints or affecting their mood.  
NOTE Confidence: 0.810226047272727

00:46:48.070 --> 00:46:49.596 But you you can imagine your sleep  
NOTE Confidence: 0.810226047272727

00:46:49.596 --> 00:46:50.880 architecture is going to be affected,  
NOTE Confidence: 0.810226047272727

00:46:50.880 --> 00:46:53.428 especially if you're cutting your sleep less.  
NOTE Confidence: 0.810226047272727

00:46:53.430 --> 00:46:55.630 You're going to be having less deep sleep  
NOTE Confidence: 0.810226047272727

00:46:55.630 --> 00:46:57.929 or slow wave sleep and less REM sleep.  
NOTE Confidence: 0.810226047272727

00:46:57.930 --> 00:46:58.170 Yeah,  
NOTE Confidence: 0.922231704

00:46:58.180 --> 00:46:59.390 this is an interesting question,  
NOTE Confidence: 0.922231704

00:46:59.390 --> 00:47:01.846 probably about maybe eight years ago or so.  
NOTE Confidence: 0.922231704

00:47:01.850 --> 00:47:04.202 I had a very smart adolescent who was



NOTE Confidence: 0.922231704

00:47:04.202 --> 00:47:06.568 telling me that why do we have to have

NOTE Confidence: 0.922231704

00:47:06.568 --> 00:47:08.956 you know 7-8 hours of wall at one spot?

NOTE Confidence: 0.922231704

00:47:08.960 --> 00:47:11.948 What about splitting it up and and he said

NOTE Confidence: 0.922231704

00:47:11.948 --> 00:47:14.647 that I guess Albert Einstein was famous

NOTE Confidence: 0.922231704

00:47:14.647 --> 00:47:17.660 for sleeping just a few hours at a time.

NOTE Confidence: 0.922231704

00:47:17.660 --> 00:47:18.584 That you wouldn't sleep

NOTE Confidence: 0.922231704

00:47:18.584 --> 00:47:19.970 for a long period of time.

NOTE Confidence: 0.922231704

00:47:19.970 --> 00:47:21.833 And but, uh, I don't know if anyone I've

NOTE Confidence: 0.922231704

00:47:21.833 --> 00:47:23.735 at the time I was interested in that.

NOTE Confidence: 0.922231704

00:47:23.740 --> 00:47:26.170 And I looked and at that time there was no

NOTE Confidence: 0.922231704

00:47:26.232 --> 00:47:28.548 specific research data on that question.

NOTE Confidence: 0.922231704

00:47:28.550 --> 00:47:29.174 I don't.

NOTE Confidence: 0.922231704

00:47:29.174 --> 00:47:31.930 I'm not sure if anything has been looked at,

NOTE Confidence: 0.922231704

00:47:31.930 --> 00:47:34.493 you know since that time, but you know,

NOTE Confidence: 0.922231704

00:47:34.493 --> 00:47:36.829 it is kind of difficult for most people

NOTE Confidence: 0.922231704

00:47:36.829 --> 00:47:39.529 to kind of break up their sleep like that,  
NOTE Confidence: 0.922231704

00:47:39.530 --> 00:47:41.708 whereas you know standard because you  
NOTE Confidence: 0.922231704

00:47:41.708 --> 00:47:43.981 also have that circadian aspect, right?  
NOTE Confidence: 0.922231704

00:47:43.981 --> 00:47:46.438 So you have a circadian aspect may  
NOTE Confidence: 0.922231704

00:47:46.438 --> 00:47:48.938 make it more difficult to sleep.  
NOTE Confidence: 0.922231704

00:47:48.940 --> 00:47:50.800 At a different time period,  
NOTE Confidence: 0.922231704

00:47:50.800 --> 00:47:52.599 so that could also play a role,  
NOTE Confidence: 0.922231704

00:47:52.600 --> 00:47:53.878 but that is an interesting thought.  
NOTE Confidence: 0.922231704

00:47:53.880 --> 00:47:55.362 I'm not aware of anything specifically  
NOTE Confidence: 0.922231704

00:47:55.362 --> 00:47:56.620 that has looked at that,  
NOTE Confidence: 0.922231704

00:47:56.620 --> 00:47:59.350 but there may certainly be.  
NOTE Confidence: 0.922231704

00:47:59.350 --> 00:48:00.510 OK, we have, uh,  
NOTE Confidence: 0.922231704

00:48:00.510 --> 00:48:03.790 do you know if men are more likely to be  
NOTE Confidence: 0.922231704

00:48:03.790 --> 00:48:06.950 delayed or women more likely to be advanced?  
NOTE Confidence: 0.922231704

00:48:06.950 --> 00:48:08.448 And I'm not gonna touch that one.  
NOTE Confidence: 0.922231704

00:48:08.450 --> 00:48:11.915 I assume it means these circadian rhythm,

NOTE Confidence: 0.922231704

00:48:11.920 --> 00:48:12.920 although you can interpret

NOTE Confidence: 0.922231704

00:48:12.920 --> 00:48:13.920 it many different ways.

NOTE Confidence: 0.832920774285714

00:48:14.330 --> 00:48:17.332 So I think I just found that the

NOTE Confidence: 0.832920774285714

00:48:17.332 --> 00:48:19.342 circadian overall is slightly increased

NOTE Confidence: 0.832920774285714

00:48:19.342 --> 00:48:21.989 in males by by a few minutes,

NOTE Confidence: 0.832920774285714

00:48:21.990 --> 00:48:23.684 so they're going to vary by age.

NOTE Confidence: 0.832920774285714

00:48:23.690 --> 00:48:26.480 I don't know if they vary

NOTE Confidence: 0.832920774285714

00:48:26.480 --> 00:48:28.106 extremely by gender themselves.

NOTE Confidence: 0.832920774285714

00:48:28.106 --> 00:48:31.200 I think as you kind of progress in age,

NOTE Confidence: 0.832920774285714

00:48:31.200 --> 00:48:33.150 that's you're going to be shifting

NOTE Confidence: 0.832920774285714

00:48:33.150 --> 00:48:34.569 more towards an advanced.

NOTE Confidence: 0.832920774285714

00:48:34.570 --> 00:48:36.035 Sorry for more from an

NOTE Confidence: 0.832920774285714

00:48:36.035 --> 00:48:37.500 delayed phase to an advanced.

NOTE Confidence: 0.832920774285714

00:48:37.500 --> 00:48:38.816 Delay advanced fees afterwards,

NOTE Confidence: 0.832920774285714

00:48:38.816 --> 00:48:41.498 but I'm not quite sure if one has

NOTE Confidence: 0.832920774285714

00:48:41.498 --> 00:48:43.108 more prominence over the other.  
NOTE Confidence: 0.879873105714286

00:48:44.360 --> 00:48:46.200 Yeah, I I. I never even knew that  
NOTE Confidence: 0.879873105714286

00:48:46.200 --> 00:48:47.999 fact that before you presented it.  
NOTE Confidence: 0.879873105714286

00:48:48.000 --> 00:48:49.720 So that's very, very interesting,  
NOTE Confidence: 0.879873105714286

00:48:49.720 --> 00:48:52.225 you know, sort of gender  
NOTE Confidence: 0.879873105714286

00:48:52.225 --> 00:48:54.229 differences in circadian biology.  
NOTE Confidence: 0.879873105714286

00:48:54.230 --> 00:48:56.060 OK, any ideas for motivating people  
NOTE Confidence: 0.879873105714286

00:48:56.060 --> 00:48:58.401 to make sleep a higher priority when  
NOTE Confidence: 0.879873105714286

00:48:58.401 --> 00:49:00.513 they feel that they're too busy?  
NOTE Confidence: 0.908666898888889

00:49:02.010 --> 00:49:03.145 I think this is where  
NOTE Confidence: 0.908666898888889

00:49:03.145 --> 00:49:04.053 you're really gonna say.  
NOTE Confidence: 0.908666898888889

00:49:04.060 --> 00:49:06.085 You know it's it's it's  
NOTE Confidence: 0.908666898888889

00:49:06.085 --> 00:49:07.300 quantity versus quality,  
NOTE Confidence: 0.908666898888889

00:49:07.300 --> 00:49:09.478 and so if you're our are,  
NOTE Confidence: 0.908666898888889

00:49:09.480 --> 00:49:10.860 you know you're busy you're you're  
NOTE Confidence: 0.908666898888889

00:49:10.860 --> 00:49:12.420 trying to do all these things,

NOTE Confidence: 0.908666898888889  
00:49:12.420 --> 00:49:13.968 but you may be less efficient  
NOTE Confidence: 0.908666898888889  
00:49:13.968 --> 00:49:15.540 with the time that you have.  
NOTE Confidence: 0.908666898888889  
00:49:15.540 --> 00:49:18.592 So if you have two hours of  
NOTE Confidence: 0.908666898888889  
00:49:18.592 --> 00:49:20.440 of really inefficient time,  
NOTE Confidence: 0.908666898888889  
00:49:20.440 --> 00:49:22.001 that may be worse than an hour  
NOTE Confidence: 0.908666898888889  
00:49:22.001 --> 00:49:23.979 and a half of very efficient time,  
NOTE Confidence: 0.908666898888889  
00:49:23.980 --> 00:49:26.932 so I think it really if you motivate them,  
NOTE Confidence: 0.908666898888889  
00:49:26.932 --> 00:49:28.673 you want to tell them that you're  
NOTE Confidence: 0.908666898888889  
00:49:28.673 --> 00:49:30.102 going to be cognitively improve.  
NOTE Confidence: 0.908666898888889  
00:49:30.102 --> 00:49:31.674 You're going to be more alert.  
NOTE Confidence: 0.908666898888889  
00:49:31.680 --> 00:49:33.680 You're going to have less chances of making.  
NOTE Confidence: 0.908666898888889  
00:49:33.680 --> 00:49:36.536 Issues with tasks are able to clearly  
NOTE Confidence: 0.908666898888889  
00:49:36.536 --> 00:49:38.301 multifunction and multitask better  
NOTE Confidence: 0.908666898888889  
00:49:38.301 --> 00:49:40.209 with without sleep deprivation,  
NOTE Confidence: 0.908666898888889  
00:49:40.210 --> 00:49:42.514 so that's going to help you function better,  
NOTE Confidence: 0.908666898888889

00:49:42.520 --> 00:49:44.096 and that and and then and most of  
NOTE Confidence: 0.908666898888889

00:49:44.096 --> 00:49:45.797 the time you're busy because you're  
NOTE Confidence: 0.908666898888889

00:49:45.797 --> 00:49:47.362 trying to achieve certain things,  
NOTE Confidence: 0.908666898888889

00:49:47.370 --> 00:49:49.715 and so if you motivate them that  
NOTE Confidence: 0.908666898888889

00:49:49.715 --> 00:49:51.975 this will help yield a better  
NOTE Confidence: 0.908666898888889

00:49:51.975 --> 00:49:52.752 overall performance,  
NOTE Confidence: 0.908666898888889

00:49:52.752 --> 00:49:55.044 and that may help them motivate  
NOTE Confidence: 0.908666898888889

00:49:55.050 --> 00:49:55.838 to get more sleep.  
NOTE Confidence: 0.899994689333333

00:49:56.820 --> 00:49:58.689 Yeah, this is always the tough thing  
NOTE Confidence: 0.899994689333333

00:49:58.689 --> 00:50:01.132 to do right when you have someone who  
NOTE Confidence: 0.899994689333333

00:50:01.132 --> 00:50:03.035 has insufficient sleep and they tell  
NOTE Confidence: 0.899994689333333

00:50:03.035 --> 00:50:04.862 you that all these things going on  
NOTE Confidence: 0.899994689333333

00:50:04.862 --> 00:50:06.380 and you know trying to convince them  
NOTE Confidence: 0.899994689333333

00:50:06.380 --> 00:50:07.660 they're gonna feel so much better.  
NOTE Confidence: 0.899994689333333

00:50:07.660 --> 00:50:10.260 And generally what I what I do is I try  
NOTE Confidence: 0.899994689333333

00:50:10.329 --> 00:50:13.059 to say try to aim for at least 30 minutes

NOTE Confidence: 0.899994689333333

00:50:13.131 --> 00:50:15.993 more sleep per per night and and that's in.

NOTE Confidence: 0.899994689333333

00:50:16.000 --> 00:50:18.682 Some studies show that that may be enough to

NOTE Confidence: 0.899994689333333

00:50:18.682 --> 00:50:22.436 make an important difference in in patients,

NOTE Confidence: 0.899994689333333

00:50:22.440 --> 00:50:23.826 but it's one of those things.

NOTE Confidence: 0.899994689333333

00:50:23.830 --> 00:50:25.015 Just like anything,

NOTE Confidence: 0.899994689333333

00:50:25.015 --> 00:50:27.385 whether it's weight loss or stopping.

NOTE Confidence: 0.899994689333333

00:50:27.390 --> 00:50:29.610 Smoking or they just it really.

NOTE Confidence: 0.899994689333333

00:50:29.610 --> 00:50:31.435 It requires a lot of

NOTE Confidence: 0.899994689333333

00:50:31.435 --> 00:50:33.260 motivation and and so forth,

NOTE Confidence: 0.899994689333333

00:50:33.260 --> 00:50:34.452 but there's no magical.

NOTE Confidence: 0.899994689333333

00:50:34.452 --> 00:50:36.925 That's why one of the things we were

NOTE Confidence: 0.899994689333333

00:50:36.925 --> 00:50:39.095 talking about was looking at the studies

NOTE Confidence: 0.899994689333333

00:50:39.095 --> 00:50:41.565 about sleep extension and any sort of

NOTE Confidence: 0.899994689333333

00:50:41.565 --> 00:50:43.405 evidence based strategies for sleep

NOTE Confidence: 0.899994689333333

00:50:43.405 --> 00:50:46.450 extension that could be applied to a

NOTE Confidence: 0.899994689333333

00:50:46.450 --> 00:50:48.680 population or an individual subject.  
NOTE Confidence: 0.8999946893333333

00:50:48.680 --> 00:50:50.300 And you know the studies that  
NOTE Confidence: 0.8999946893333333

00:50:50.300 --> 00:50:51.810 we looked at right there.  
NOTE Confidence: 0.8999946893333333

00:50:51.810 --> 00:50:53.766 Many of them show that they're  
NOTE Confidence: 0.8999946893333333

00:50:53.766 --> 00:50:55.948 very effective in in in a  
NOTE Confidence: 0.8999946893333333

00:50:55.948 --> 00:50:57.568 research population of motivated.  
NOTE Confidence: 0.8999946893333333

00:50:57.570 --> 00:50:59.726 Patients to increase their total sleep time  
NOTE Confidence: 0.8999946893333333

00:50:59.726 --> 00:51:01.980 by just giving them more opportunities.  
NOTE Confidence: 0.8999946893333333

00:51:01.980 --> 00:51:04.218 Sleep in a very controlled environment.  
NOTE Confidence: 0.8999946893333333

00:51:04.220 --> 00:51:06.117 But how do you translate that into  
NOTE Confidence: 0.8999946893333333

00:51:06.117 --> 00:51:08.305 kind of the real world setting where  
NOTE Confidence: 0.8999946893333333

00:51:08.305 --> 00:51:10.663 we have all of the distractions that  
NOTE Confidence: 0.8999946893333333

00:51:10.663 --> 00:51:12.875 people have and I wish somebody would,  
NOTE Confidence: 0.8999946893333333

00:51:12.880 --> 00:51:13.394 you know,  
NOTE Confidence: 0.8999946893333333

00:51:13.394 --> 00:51:15.450 come up with an app that kind of  
NOTE Confidence: 0.8999946893333333

00:51:15.514 --> 00:51:17.422 helps track your sleep and give



NOTE Confidence: 0.899994689333333

00:51:17.422 --> 00:51:19.718 you pointers and and it can show

NOTE Confidence: 0.899994689333333

00:51:19.718 --> 00:51:21.632 that it helps with sleep extension,

NOTE Confidence: 0.899994689333333

00:51:21.640 --> 00:51:24.320 but we haven't really seen that just yet,

NOTE Confidence: 0.899994689333333

00:51:24.320 --> 00:51:26.126 so that may be a great opportunity

NOTE Confidence: 0.899994689333333

00:51:26.126 --> 00:51:27.430 for for future research.

NOTE Confidence: 0.79024300775

00:51:28.150 --> 00:51:30.950 Uh, also depends on the outcome of interest.

NOTE Confidence: 0.79024300775

00:51:30.950 --> 00:51:31.979 You know, I know a lot of

NOTE Confidence: 0.79024300775

00:51:31.979 --> 00:51:33.250 times I'll talk to, you know,

NOTE Confidence: 0.79024300775

00:51:33.250 --> 00:51:35.290 either college students or graduate students,

NOTE Confidence: 0.79024300775

00:51:35.290 --> 00:51:36.851 and you know an outcome of interest

NOTE Confidence: 0.79024300775

00:51:36.851 --> 00:51:38.260 is for example, academic performance.

NOTE Confidence: 0.79024300775

00:51:38.260 --> 00:51:40.480 And there's a whole literature on

NOTE Confidence: 0.79024300775

00:51:40.480 --> 00:51:42.326 academic performance in terms of either

NOTE Confidence: 0.79024300775

00:51:42.326 --> 00:51:43.904 how much sleep that the individuals

NOTE Confidence: 0.79024300775

00:51:43.955 --> 00:51:45.979 get or how variable sleep gets and how

NOTE Confidence: 0.79024300775

00:51:45.979 --> 00:51:47.936 that actually improves test scores.  
NOTE Confidence: 0.79024300775

00:51:47.936 --> 00:51:51.046 And you know GPA, and so you know.  
NOTE Confidence: 0.79024300775

00:51:51.046 --> 00:51:52.516 Sometimes when you present enough  
NOTE Confidence: 0.79024300775

00:51:52.516 --> 00:51:54.536 data in the sphere that people are  
NOTE Confidence: 0.79024300775

00:51:54.536 --> 00:51:56.669 interested in that can break that shrink.  
NOTE Confidence: 0.79024300775

00:51:56.670 --> 00:51:58.550 But I agree, it's it's a really hard.  
NOTE Confidence: 0.79024300775

00:51:58.550 --> 00:52:00.165 Problem because people feel like  
NOTE Confidence: 0.79024300775

00:52:00.165 --> 00:52:01.134 they're functioning OK.  
NOTE Confidence: 0.79024300775

00:52:01.140 --> 00:52:02.450 Going back to David Dinges's  
NOTE Confidence: 0.79024300775

00:52:02.450 --> 00:52:03.760 old work that you know,  
NOTE Confidence: 0.79024300775

00:52:03.760 --> 00:52:06.637 you can show clear cut worsening Pvt.  
NOTE Confidence: 0.79024300775

00:52:06.640 --> 00:52:09.880 But people don't perceive that necessarily.  
NOTE Confidence: 0.79024300775

00:52:09.880 --> 00:52:10.756 So it really takes.  
NOTE Confidence: 0.79024300775

00:52:10.756 --> 00:52:12.070 I think a lot of education.  
NOTE Confidence: 0.907445902

00:52:13.580 --> 00:52:16.100 Alright, absolutely great, great  
NOTE Confidence: 0.907445902

00:52:16.100 --> 00:52:18.760 comments. Let's see here but but.

NOTE Confidence: 0.862863312666667  
00:52:23.120 --> 00:52:24.857 Let me see if I'm just go down and  
NOTE Confidence: 0.862863312666667  
00:52:24.857 --> 00:52:26.437 make sure I got everything here.  
NOTE Confidence: 0.727038762  
00:52:26.870 --> 00:52:28.946 There's one more that says the  
NOTE Confidence: 0.727038762  
00:52:28.946 --> 00:52:30.602 medical intern in the 24 hour  
NOTE Confidence: 0.727038762  
00:52:30.602 --> 00:52:31.928 call was interesting, so I can.  
NOTE Confidence: 0.727038762  
00:52:31.928 --> 00:52:33.360 I can send a link to the article  
NOTE Confidence: 0.727038762  
00:52:33.360 --> 00:52:35.080 that I that I used to the group  
NOTE Confidence: 0.727038762  
00:52:35.080 --> 00:52:36.769 chat group after the presentation.  
NOTE Confidence: 0.644940166083333  
00:52:37.530 --> 00:52:41.758 OK, yeah that that the medical literature  
NOTE Confidence: 0.644940166083333  
00:52:41.758 --> 00:52:44.960 is very interesting regarding to.  
NOTE Confidence: 0.644940166083333  
00:52:44.960 --> 00:52:47.272 To you know, in terms of what data  
NOTE Confidence: 0.644940166083333  
00:52:47.272 --> 00:52:49.576 they had or there's one study that  
NOTE Confidence: 0.644940166083333  
00:52:49.576 --> 00:52:51.957 showed that if you know where the  
NOTE Confidence: 0.644940166083333  
00:52:51.957 --> 00:52:54.597 interns were up for more than 24 hours,  
NOTE Confidence: 0.644940166083333  
00:52:54.600 --> 00:52:56.604 there was more mistakes.  
NOTE Confidence: 0.644940166083333

00:52:56.604 --> 00:52:59.109 There was more medical errors  
NOTE Confidence: 0.644940166083333

00:52:59.109 --> 00:53:01.796 and that led to the restriction  
NOTE Confidence: 0.644940166083333

00:53:01.796 --> 00:53:03.968 on the work hours for interns,  
NOTE Confidence: 0.644940166083333

00:53:03.968 --> 00:53:07.299 and that's why you know a lot of residency  
NOTE Confidence: 0.644940166083333

00:53:07.299 --> 00:53:09.414 programs had a completely revamp.  
NOTE Confidence: 0.644940166083333

00:53:09.420 --> 00:53:12.356 How they were doing things in terms of  
NOTE Confidence: 0.644940166083333

00:53:12.356 --> 00:53:14.572 ICU intern call, but subsequent studies.  
NOTE Confidence: 0.644940166083333

00:53:14.572 --> 00:53:16.292 Actually showed that it didn't  
NOTE Confidence: 0.644940166083333

00:53:16.292 --> 00:53:18.447 make a difference if they chose,  
NOTE Confidence: 0.644940166083333

00:53:18.450 --> 00:53:20.266 uh, you know, uh,  
NOTE Confidence: 0.644940166083333

00:53:20.266 --> 00:53:22.604 the standard versus modified schedule.  
NOTE Confidence: 0.644940166083333

00:53:22.604 --> 00:53:25.526 So there's a lot of conflicting  
NOTE Confidence: 0.644940166083333

00:53:25.526 --> 00:53:27.930 sort of data on on that.  
NOTE Confidence: 0.644940166083333

00:53:27.930 --> 00:53:28.764 And you know,  
NOTE Confidence: 0.644940166083333

00:53:28.764 --> 00:53:31.479 the one thing that in terms of work hours,  
NOTE Confidence: 0.644940166083333

00:53:31.480 --> 00:53:34.096 you know when we went from the unlimited

NOTE Confidence: 0.644940166083333  
00:53:34.096 --> 00:53:36.425 work hours to the 80 hour work week?  
NOTE Confidence: 0.644940166083333  
00:53:36.430 --> 00:53:36.952 You know,  
NOTE Confidence: 0.644940166083333  
00:53:36.952 --> 00:53:39.040 pretty much the data did show that you  
NOTE Confidence: 0.644940166083333  
00:53:39.100 --> 00:53:41.170 know trainees were getting more sleep,  
NOTE Confidence: 0.644940166083333  
00:53:41.170 --> 00:53:42.748 but it wasn't a huge boost,  
NOTE Confidence: 0.644940166083333  
00:53:42.750 --> 00:53:44.670 but there was definitely some some  
NOTE Confidence: 0.644940166083333  
00:53:44.670 --> 00:53:45.310 some boost.  
NOTE Confidence: 0.644940166083333  
00:53:45.310 --> 00:53:45.665 There,  
NOTE Confidence: 0.644940166083333  
00:53:45.665 --> 00:53:46.375 and, uh,  
NOTE Confidence: 0.644940166083333  
00:53:46.375 --> 00:53:48.860 so certainly you know from a training  
NOTE Confidence: 0.644940166083333  
00:53:48.933 --> 00:53:51.021 perspective via our work week is  
NOTE Confidence: 0.644940166083333  
00:53:51.021 --> 00:53:53.159 is helpful to allow for sleep,  
NOTE Confidence: 0.644940166083333  
00:53:53.160 --> 00:53:55.071 but also it turns out that you  
NOTE Confidence: 0.644940166083333  
00:53:55.071 --> 00:53:57.237 know there's not as much of robust  
NOTE Confidence: 0.644940166083333  
00:53:57.237 --> 00:53:58.837 improvement because now you have  
NOTE Confidence: 0.644940166083333

00:53:58.837 --> 00:54:00.803 time to go to the bank or to do  
NOTE Confidence: 0.644940166083333

00:54:00.803 --> 00:54:02.310 this or socialize or whatever.  
NOTE Confidence: 0.644940166083333

00:54:02.310 --> 00:54:04.160 So there's always these sort  
NOTE Confidence: 0.644940166083333

00:54:04.160 --> 00:54:05.480 of competing interest.  
NOTE Confidence: 0.644940166083333

00:54:05.480 --> 00:54:08.536 And then there's the one question about this.  
NOTE Confidence: 0.644940166083333

00:54:08.540 --> 00:54:10.700 The Vinci approach to sleep.  
NOTE Confidence: 0.644940166083333

00:54:10.700 --> 00:54:11.876 I don't know what that means.  
NOTE Confidence: 0.644940166083333

00:54:11.880 --> 00:54:15.706 Have you heard of that before Arman?  
NOTE Confidence: 0.644940166083333

00:54:15.706 --> 00:54:16.459 I  
NOTE Confidence: 0.885528791111111

00:54:16.470 --> 00:54:18.330 think that was a comment  
NOTE Confidence: 0.885528791111111

00:54:18.330 --> 00:54:19.818 to a previous comment.  
NOTE Confidence: 0.885528791111111

00:54:19.820 --> 00:54:20.805 I'm not sure if that's  
NOTE Confidence: 0.885528791111111

00:54:20.805 --> 00:54:21.396 an actual question.  
NOTE Confidence: 0.885528791111111

00:54:21.400 --> 00:54:23.380 Is there a question?  
NOTE Confidence: 0.885528791111111

00:54:23.380 --> 00:54:24.210 That might. That might be  
NOTE Confidence: 0.714186760857143

00:54:24.220 --> 00:54:28.189 no, no. I was just mentioning that.

NOTE Confidence: 0.714186760857143  
00:54:28.190 --> 00:54:30.490 That that the intermittent  
NOTE Confidence: 0.714186760857143  
00:54:30.490 --> 00:54:33.380 sleep strategy that's used for,  
NOTE Confidence: 0.714186760857143  
00:54:33.380 --> 00:54:34.830 for example, for performers  
NOTE Confidence: 0.909044508333333  
00:54:34.840 --> 00:54:36.976 that have to go long distances,  
NOTE Confidence: 0.909044508333333  
00:54:36.980 --> 00:54:39.896 they're on sailboat races where they've  
NOTE Confidence: 0.909044508333333  
00:54:39.896 --> 00:54:43.210 been able to do reasonably well with.  
NOTE Confidence: 0.917797568333333  
00:54:44.660 --> 00:54:47.690 As far as alertness with short bursts  
NOTE Confidence: 0.917797568333333  
00:54:47.690 --> 00:54:50.366 of like 45 minutes of sleep every  
NOTE Confidence: 0.917797568333333  
00:54:50.366 --> 00:54:53.860 three hours or something like that.  
NOTE Confidence: 0.917797568333333  
00:54:53.860 --> 00:54:57.400 OK interesting yeah.  
NOTE Confidence: 0.917797568333333  
00:54:57.400 --> 00:54:59.338 Got it, I have but I.  
NOTE Confidence: 0.917797568333333  
00:54:59.340 --> 00:55:02.040 I wonder if anybody could comment on this.  
NOTE Confidence: 0.917797568333333  
00:55:02.040 --> 00:55:03.750 I've always been intrigued by  
NOTE Confidence: 0.749274564285714  
00:55:04.660 --> 00:55:06.708 the the recovery from  
NOTE Confidence: 0.749274564285714  
00:55:06.708 --> 00:55:08.244 acute sleep deprivation.  
NOTE Confidence: 0.797171075

00:55:08.900 --> 00:55:11.063 I think of. I'm from San Diego,  
NOTE Confidence: 0.797171075

00:55:11.063 --> 00:55:12.890 so I think of Randy Gardner,  
NOTE Confidence: 0.797171075

00:55:12.890 --> 00:55:16.310 who in the 1960s set the record as  
NOTE Confidence: 0.797171075

00:55:16.310 --> 00:55:18.450 a 17 year old high school student.  
NOTE Confidence: 0.797171075

00:55:18.450 --> 00:55:21.376 I think he had 11 days in a row and  
NOTE Confidence: 0.797171075

00:55:21.376 --> 00:55:23.590 actually Dement was able to study him and  
NOTE Confidence: 0.89423575

00:55:23.600 --> 00:55:26.710 recover his sleep after 11 days.  
NOTE Confidence: 0.89423575

00:55:26.710 --> 00:55:29.810 On the first night he slept for 16 hours.  
NOTE Confidence: 0.89423575

00:55:29.810 --> 00:55:31.576 On the second night he slept for  
NOTE Confidence: 0.862775331818182

00:55:31.590 --> 00:55:34.317 about 9 1/2 hours and by and by the  
NOTE Confidence: 0.862775331818182

00:55:34.317 --> 00:55:37.930 third night he was not not sleeping any  
NOTE Confidence: 0.862775331818182

00:55:37.930 --> 00:55:40.120 longer and it appeared that you know  
NOTE Confidence: 0.854806906

00:55:40.130 --> 00:55:42.180 he was back back home.  
NOTE Confidence: 0.923082538888889

00:55:42.430 --> 00:55:44.520 I wonder if anybody has  
NOTE Confidence: 0.923082538888889

00:55:44.520 --> 00:55:46.192 any comments about that.  
NOTE Confidence: 0.923082538888889

00:55:46.200 --> 00:55:47.139 Yeah, that's interesting.



NOTE Confidence: 0.923082538888889

00:55:47.139 --> 00:55:48.704 Umm, what do they teach

NOTE Confidence: 0.923082538888889

00:55:48.704 --> 00:55:50.190 you about recovery sleep?

NOTE Confidence: 0.825217817777778

00:55:50.520 --> 00:55:52.270 So your your your total sleep time

NOTE Confidence: 0.825217817777778

00:55:52.270 --> 00:55:53.867 is definitely going to be increased

NOTE Confidence: 0.825217817777778

00:55:53.867 --> 00:55:55.197 or sleep latency is decreased.

NOTE Confidence: 0.825217817777778

00:55:55.200 --> 00:55:56.388 More slow, more RAM,

NOTE Confidence: 0.825217817777778

00:55:56.388 --> 00:55:59.004 but it's it's not going to be enough

NOTE Confidence: 0.825217817777778

00:55:59.004 --> 00:56:01.314 unless you have really change your

NOTE Confidence: 0.825217817777778

00:56:01.314 --> 00:56:03.479 circadian rhythm and gone differently.

NOTE Confidence: 0.825217817777778

00:56:03.480 --> 00:56:05.258 If you're once you start paying back,

NOTE Confidence: 0.825217817777778

00:56:05.260 --> 00:56:06.820 it's not going to be.

NOTE Confidence: 0.825217817777778

00:56:06.820 --> 00:56:07.690 You know it's not going

NOTE Confidence: 0.825217817777778

00:56:07.690 --> 00:56:08.560 to be your your everyday.

NOTE Confidence: 0.825217817777778

00:56:08.560 --> 00:56:10.816 You'll be sleeping multiple hours more

NOTE Confidence: 0.825217817777778

00:56:10.816 --> 00:56:13.010 eventually as you normalize your sleep,

NOTE Confidence: 0.825217817777778

00:56:13.010 --> 00:56:14.794 you're going to start to pay back that  
NOTE Confidence: 0.825217817777778

00:56:14.794 --> 00:56:16.580 debt very slowly, so it's a sharp.  
NOTE Confidence: 0.825217817777778

00:56:16.580 --> 00:56:17.300 Decline your initially.  
NOTE Confidence: 0.825217817777778

00:56:17.300 --> 00:56:18.925 You're going to replace some  
NOTE Confidence: 0.825217817777778

00:56:18.925 --> 00:56:20.225 of that deprivation quickly,  
NOTE Confidence: 0.825217817777778

00:56:20.230 --> 00:56:22.134 but then after that starts to taper  
NOTE Confidence: 0.825217817777778

00:56:22.134 --> 00:56:23.530 pretty pretty quickly afterwards.  
NOTE Confidence: 0.825217817777778

00:56:23.530 --> 00:56:24.585 As long as you're getting  
NOTE Confidence: 0.825217817777778

00:56:24.585 --> 00:56:25.429 sufficient hours of sleep.  
NOTE Confidence: 0.825408630952381

00:56:26.170 --> 00:56:29.218 Yeah, I think the study showed that slow  
NOTE Confidence: 0.825408630952381

00:56:29.218 --> 00:56:32.268 wave sleep is sort of preferred that  
NOTE Confidence: 0.825408630952381

00:56:32.268 --> 00:56:34.930 that that it's actually increased very.  
NOTE Confidence: 0.825408630952381

00:56:34.930 --> 00:56:37.065 You know, sort of at first during  
NOTE Confidence: 0.825408630952381

00:56:37.065 --> 00:56:38.930 the recovery sleep and then R.E.M.  
NOTE Confidence: 0.825408630952381

00:56:38.930 --> 00:56:40.574 Rebound actually happens.  
NOTE Confidence: 0.825408630952381

00:56:40.574 --> 00:56:45.110 You know 24 to 36 hours later you'll have a

NOTE Confidence: 0.825408630952381

00:56:45.110 --> 00:56:49.160 REM rebound period to replace that REM sleep.

NOTE Confidence: 0.825408630952381

00:56:49.160 --> 00:56:50.180 And, uh, but you're right.

NOTE Confidence: 0.825408630952381

00:56:50.180 --> 00:56:53.295 I think that patients or subjects can

NOTE Confidence: 0.825408630952381

00:56:53.295 --> 00:56:55.559 actually recuperate fairly quickly after

NOTE Confidence: 0.825408630952381

00:56:55.559 --> 00:56:58.115 a long period of sleep deprivation,

NOTE Confidence: 0.825408630952381

00:56:58.120 --> 00:57:01.936 usually within three days or so.

NOTE Confidence: 0.825408630952381

00:57:01.940 --> 00:57:04.268 And and that's you know the other interesting

NOTE Confidence: 0.825408630952381

00:57:04.268 --> 00:57:06.397 data on acute sleep deprivation is,

NOTE Confidence: 0.825408630952381

00:57:06.400 --> 00:57:07.456 uh, you know,

NOTE Confidence: 0.825408630952381

00:57:07.456 --> 00:57:09.216 they've looked at patients that

NOTE Confidence: 0.825408630952381

00:57:09.216 --> 00:57:11.170 are subjects that are more than

NOTE Confidence: 0.825408630952381

00:57:11.170 --> 00:57:12.952 24 hours or actually more than

NOTE Confidence: 0.825408630952381

00:57:13.017 --> 00:57:15.015 30 hours of of sleep deprivation,

NOTE Confidence: 0.825408630952381

00:57:15.020 --> 00:57:16.956 and they put him in a drive simulator,

NOTE Confidence: 0.825408630952381

00:57:16.960 --> 00:57:19.162 and basically they performed equally to

NOTE Confidence: 0.825408630952381

00:57:19.162 --> 00:57:21.899 those people who were legally intoxicated.

NOTE Confidence: 0.825408630952381

00:57:21.900 --> 00:57:23.886 So the thought is that after

NOTE Confidence: 0.825408630952381

00:57:23.886 --> 00:57:25.720 about 30 hours of sleep,

NOTE Confidence: 0.825408630952381

00:57:25.720 --> 00:57:27.016 total sleep deprivation you,

NOTE Confidence: 0.825408630952381

00:57:27.016 --> 00:57:28.960 it's it's like your own legally

NOTE Confidence: 0.825408630952381

00:57:29.019 --> 00:57:30.529 intoxicated in terms of the

NOTE Confidence: 0.825408630952381

00:57:30.529 --> 00:57:32.210 least of your performance on a.

NOTE Confidence: 0.825408630952381

00:57:32.210 --> 00:57:35.690 On a drive simulator and then you know,

NOTE Confidence: 0.825408630952381

00:57:35.690 --> 00:57:37.662 with chronic chronic partial

NOTE Confidence: 0.825408630952381

00:57:37.662 --> 00:57:38.648 sleep deprivation,

NOTE Confidence: 0.825408630952381

00:57:38.650 --> 00:57:40.378 you know the way I describe it to

NOTE Confidence: 0.825408630952381

00:57:40.378 --> 00:57:42.124 patients is that I say it's sort of

NOTE Confidence: 0.825408630952381

00:57:42.124 --> 00:57:43.606 like having a credit card balance

NOTE Confidence: 0.825408630952381

00:57:43.606 --> 00:57:45.370 and just paying the minimum payment.

NOTE Confidence: 0.825408630952381

00:57:45.370 --> 00:57:47.524 You just continue to accumulate that

NOTE Confidence: 0.825408630952381

00:57:47.524 --> 00:57:49.775 and accumulate that and and then

NOTE Confidence: 0.825408630952381  
00:57:49.775 --> 00:57:51.660 there was actually some interesting  
NOTE Confidence: 0.825408630952381  
00:57:51.660 --> 00:57:53.750 studies looking on recovery sleep.  
NOTE Confidence: 0.825408630952381  
00:57:53.750 --> 00:57:54.629 So for example,  
NOTE Confidence: 0.825408630952381  
00:57:54.629 --> 00:57:56.387 let's say you work Monday through  
NOTE Confidence: 0.825408630952381  
00:57:56.387 --> 00:57:58.172 Friday and you're sleep deprived  
NOTE Confidence: 0.825408630952381  
00:57:58.172 --> 00:57:59.249 Monday through Friday.  
NOTE Confidence: 0.825408630952381  
00:57:59.250 --> 00:58:00.778 And then you try to make it up  
NOTE Confidence: 0.825408630952381  
00:58:00.778 --> 00:58:02.248 on the weekend on Saturday.  
NOTE Confidence: 0.825408630952381  
00:58:02.250 --> 00:58:02.922 And Sunday,  
NOTE Confidence: 0.825408630952381  
00:58:02.922 --> 00:58:05.610 can you sort of normalize with that sleep  
NOTE Confidence: 0.825408630952381  
00:58:05.682 --> 00:58:08.157 deprivation Monday through Friday with,  
NOTE Confidence: 0.825408630952381  
00:58:08.160 --> 00:58:08.902 you know,  
NOTE Confidence: 0.825408630952381  
00:58:08.902 --> 00:58:10.757 sleep extension on the weekends.  
NOTE Confidence: 0.825408630952381  
00:58:10.760 --> 00:58:12.727 And it turns out that it definitely  
NOTE Confidence: 0.825408630952381  
00:58:12.727 --> 00:58:14.400 helps compared to people who are  
NOTE Confidence: 0.825408630952381

00:58:14.400 --> 00:58:16.213 sleep deprived 7 days of the week,  
NOTE Confidence: 0.825408630952381

00:58:16.220 --> 00:58:18.100 but you don't actually get to that level.  
NOTE Confidence: 0.825408630952381

00:58:18.100 --> 00:58:19.486 That if you're well rested for  
NOTE Confidence: 0.825408630952381

00:58:19.486 --> 00:58:21.168 seven days of the week and they  
NOTE Confidence: 0.825408630952381

00:58:21.168 --> 00:58:22.584 looked at PT testing and other  
NOTE Confidence: 0.825408630952381

00:58:22.584 --> 00:58:24.119 type of neurocognitive testing.  
NOTE Confidence: 0.825408630952381

00:58:24.120 --> 00:58:26.892 So trying to catch up on the weekends like  
NOTE Confidence: 0.825408630952381

00:58:26.892 --> 00:58:29.632 many of us will try to do can be helpful,  
NOTE Confidence: 0.825408630952381

00:58:29.640 --> 00:58:30.950 but not really get you  
NOTE Confidence: 0.825408630952381

00:58:30.950 --> 00:58:32.260 back to a fully rested.  
NOTE Confidence: 0.825408630952381

00:58:32.260 --> 00:58:34.960 Tested state so it's better to to to have,  
NOTE Confidence: 0.825408630952381

00:58:34.960 --> 00:58:35.408 you know,  
NOTE Confidence: 0.825408630952381

00:58:35.408 --> 00:58:37.200 sort of normal sleep period that you need.  
NOTE Confidence: 0.825408630952381

00:58:37.200 --> 00:58:39.056 You know seven days a week rather than  
NOTE Confidence: 0.825408630952381

00:58:39.056 --> 00:58:40.787 trying to catch up and then lastly,  
NOTE Confidence: 0.825408630952381

00:58:40.790 --> 00:58:43.566 naps are something that a lot of people

NOTE Confidence: 0.825408630952381

00:58:43.566 --> 00:58:46.462 use to kind of help manage sleep deprivation.

NOTE Confidence: 0.825408630952381

00:58:46.462 --> 00:58:49.290 And there's a whole science behind naps,

NOTE Confidence: 0.825408630952381

00:58:49.290 --> 00:58:49.528 right?

NOTE Confidence: 0.825408630952381

00:58:49.528 --> 00:58:51.194 And This is why we tell our

NOTE Confidence: 0.825408630952381

00:58:51.194 --> 00:58:52.547 patients don't nap past 7:00 PM.

NOTE Confidence: 0.825408630952381

00:58:52.550 --> 00:58:54.830 But since past 3:00 PM,

NOTE Confidence: 0.825408630952381

00:58:54.830 --> 00:58:57.116 try to keep your naps to 30 minutes or

NOTE Confidence: 0.825408630952381

00:58:57.116 --> 00:58:59.412 less so you don't end up getting into

NOTE Confidence: 0.825408630952381

00:58:59.412 --> 00:59:01.449 slow wave sleep and becoming groggy

NOTE Confidence: 0.825408630952381

00:59:01.450 --> 00:59:03.025 and you know there are some jobs.

NOTE Confidence: 0.825408630952381

00:59:03.030 --> 00:59:05.328 Would actually encourage people to nap

NOTE Confidence: 0.825408630952381

00:59:05.328 --> 00:59:07.910 during work during you know protected

NOTE Confidence: 0.825408630952381

00:59:07.910 --> 00:59:09.878 time for optimizing performance.

NOTE Confidence: 0.825408630952381

00:59:09.880 --> 00:59:11.944 So anyway, very interesting.

NOTE Confidence: 0.825408630952381

00:59:11.944 --> 00:59:15.040 Do we have any last questions?

NOTE Confidence: 0.137284965

00:59:15.040 --> 00:59:16.190 Oh, there's.  
NOTE Confidence: 0.835190098333333  
00:59:20.380 --> 00:59:22.645 Let's see, so there's one  
NOTE Confidence: 0.835190098333333  
00:59:22.645 --> 00:59:24.484 less you have to balance.  
NOTE Confidence: 0.835190098333333  
00:59:24.484 --> 00:59:25.868 Reducing sleep debt for  
NOTE Confidence: 0.835190098333333  
00:59:25.868 --> 00:59:27.000 shifting circadian rhythm.  
NOTE Confidence: 0.835190098333333  
00:59:27.000 --> 00:59:28.278 If you're prone to the delay,  
NOTE Confidence: 0.835190098333333  
00:59:28.280 --> 00:59:31.088 that was just one comment that Theresa had.  
NOTE Confidence: 0.835190098333333  
00:59:31.090 --> 00:59:33.706 OK. Well, thank you so much.  
NOTE Confidence: 0.835190098333333  
00:59:33.710 --> 00:59:35.150 I think we're perfectly on time.  
NOTE Confidence: 0.835190098333333  
00:59:35.150 --> 00:59:37.019 We're gonna finish now and have a  
NOTE Confidence: 0.835190098333333  
00:59:37.019 --> 00:59:38.908 great rest of the week everyone.  
NOTE Confidence: 0.87147827875  
00:59:40.000 --> 00:59:41.000 Thanks everybody for joining.  
NOTE Confidence: 0.87147827875  
00:59:41.000 --> 00:59:42.000 Have a great week.