WEBVTT

NOTE duration:"00:53:09"

NOTE language:en-us

NOTE Confidence: 0.82528746

00:00:02.320 --> 00:00:05.110 And Sam, just so you're aware,

NOTE Confidence: 0.82528746

00:00:05.110 --> 00:00:06.918 you're going to get these little popups that,

NOTE Confidence: 0.82528746

00:00:06.920 --> 00:00:09.129 say, admit so and so, and you can

NOTE Confidence: 0.82528746

00:00:09.129 --> 00:00:10.670 ignore them and Debbie and I was good.

NOTE Confidence: 0.556057

00:00:16.190 --> 00:00:18.918 R. Alright guys,

NOTE Confidence: 0.556057

00:00:18.918 --> 00:00:21.956 I think we're going to get started.

NOTE Confidence: 0.556057

00:00:21.960 --> 00:00:23.472 Welcome, my name is Lauren Tobias

NOTE Confidence: 0.556057

00:00:23.472 --> 00:00:25.859 and I want to welcome you to rail

NOTE Confidence: 0.556057

00:00:25.859 --> 00:00:27.175 Speed seminar this afternoon.

NOTE Confidence: 0.556057

00:00:27.180 --> 00:00:29.550 I have a few announcements before

NOTE Confidence: 0.556057

00:00:29.550 --> 00:00:31.130 I introduce today's speaker.

NOTE Confidence: 0.556057

00:00:31.130 --> 00:00:32.957 Please take a moment to make sure

NOTE Confidence: 0.556057

00:00:32.957 --> 00:00:35.005 that you are muted in order to

NOTE Confidence: 0.556057

00:00:35.005 --> 00:00:36.515 get CME credit for attendance,

NOTE Confidence: 0.556057

00:00:36.520 --> 00:00:38.844 please see the chat room for instructions.

NOTE Confidence: 0.556057

00:00:38.850 --> 00:00:39.669 You can chat.

NOTE Confidence: 0.556057

00:00:39.669 --> 00:00:41.580 You can text the unique ID anytime

NOTE Confidence: 0.556057

00:00:41.641 --> 00:00:43.986 until 3:15 and if you're not already

NOTE Confidence: 0.556057

00:00:43.986 --> 00:00:45.796 registered with, you will see me.

NOTE Confidence: 0.556057

00:00:45.796 --> 00:00:47.990 You will need to do that first.

NOTE Confidence: 0.556057

00:00:47.990 --> 00:00:49.865 If you have any questions

NOTE Confidence: 0.556057

00:00:49.865 --> 00:00:50.990 during the presentation,

NOTE Confidence: 0.556057

00:00:50.990 --> 00:00:52.600 please feel free to make use of

NOTE Confidence: 0.556057

00:00:52.600 --> 00:00:54.522 the chat or unmute yourself at the

NOTE Confidence: 0.556057

00:00:54.522 --> 00:00:56.286 end to ask the question allowed.

NOTE Confidence: 0.556057

00:00:56.290 --> 00:00:58.999 We do have recorded versions of these

NOTE Confidence: 0.556057

00:00:58.999 --> 00:01:00.876 talks available online within two

NOTE Confidence: 0.556057

00:01:00.876 --> 00:01:03.460 weeks at the link provided in the chat.

NOTE Confidence: 0.556057

00:01:03.460 --> 00:01:04.126 And finally,

NOTE Confidence: 0.556057

00:01:04.126 --> 00:01:05.791 you can share our announcements

NOTE Confidence: 0.556057

00:01:05.791 --> 00:01:07.460 for Electro series with anyone

NOTE Confidence: 0.556057

00:01:07.460 --> 00:01:09.284 who you think might be interested,

NOTE Confidence: 0.556057

00:01:09.290 --> 00:01:10.950 or contact Debbie Lovejoy directly

NOTE Confidence: 0.556057

00:01:10.950 --> 00:01:12.990 to be added to the list.

NOTE Confidence: 0.556057

00:01:12.990 --> 00:01:15.838 I also want to let everybody know this

NOTE Confidence: 0.556057

00:01:15.838 --> 00:01:19.486 is our last seminar for this academic year.

NOTE Confidence: 0.556057

00:01:19.490 --> 00:01:21.296 I think we're going to be going

NOTE Confidence: 0.556057

00:01:21.296 --> 00:01:23.430 out with a wonderful talk today.

NOTE Confidence: 0.556057

00:01:23.430 --> 00:01:26.727 We are going to resume next year

NOTE Confidence: 0.556057

00:01:26.727 --> 00:01:29.922 and the first week in September

NOTE Confidence: 0.556057

00:01:29.922 --> 00:01:33.270 with a talk by Chandra Jackson.

NOTE Confidence: 0.556057

00:01:33.270 --> 00:01:35.614 Conjured Jackson on sleep.

NOTE Confidence: 0.556057

00:01:35.614 --> 00:01:36.802 This on health.

NOTE Confidence: 0.556057

00:01:36.802 --> 00:01:38.006 Disparities in Sleep Medicine,

NOTE Confidence: 0.556057

00:01:38.010 --> 00:01:40.131 which I think is really going to

NOTE Confidence: 0.556057

00:01:40.131 --> 00:01:42.687 be a fantastic talk and we will be

NOTE Confidence: 0.556057

00:01:42.687 --> 00:01:44.694 sending out the full schedule for

NOTE Confidence: 0.556057

00:01:44.694 --> 00:01:46.870 the conference in August and then.

NOTE Confidence: 0.556057

00:01:46.870 --> 00:01:49.790 Also, this is my last time leading this.

NOTE Confidence: 0.556057

00:01:49.790 --> 00:01:52.510 It's going to be taken over by Janet

NOTE Confidence: 0.556057

00:01:52.510 --> 00:01:55.255 Hilbert for the next academic year and

NOTE Confidence: 0.556057

00:01:55.255 --> 00:01:58.170 I'm thrilled that she's going to be doing.

NOTE Confidence: 0.556057

00:01:58.170 --> 00:02:00.000 I'm sure a fantastic job

NOTE Confidence: 0.556057

00:02:00.000 --> 00:02:01.098 putting together speakers,

NOTE Confidence: 0.556057

00:02:01.100 --> 00:02:03.036 so if anyone has any ideas for talks

NOTE Confidence: 0.556057

00:02:03.036 --> 00:02:04.751 or topics that they're interested in

NOTE Confidence: 0.556057

00:02:04.751 --> 00:02:06.840 seeing on the agenda for next year,

NOTE Confidence: 0.556057

00:02:06.840 --> 00:02:08.136 you can feel free to reach

NOTE Confidence: 0.556057

00:02:08.136 --> 00:02:09.310 out to Janet for that.

NOTE Confidence: 0.556057

00:02:09.310 --> 00:02:11.078 So I'm going to turn it over to

NOTE Confidence: 0.556057

00:02:11.078 --> 00:02:12.739 Melissa can air it to introduce

NOTE Confidence: 0.556057

00:02:12.739 --> 00:02:14.194 our speaker for this afternoon.

NOTE Confidence: 0.8669432

00:02:15.090 --> 00:02:16.512 Thanks Lauren Lauren.

NOTE Confidence: 0.8669432

00:02:16.512 --> 00:02:20.396 Thank you for all that you've done for this.

NOTE Confidence: 0.8669432

00:02:20.396 --> 00:02:21.978 I want to call it state sleep,

NOTE Confidence: 0.8669432

00:02:21.980 --> 00:02:23.912 but the sleep seminar it's been just

NOTE Confidence: 0.8669432

00:02:23.912 --> 00:02:26.022 this year and in the past several

NOTE Confidence: 0.8669432

00:02:26.022 --> 00:02:27.552 years since you've taken over,

NOTE Confidence: 0.8669432

00:02:27.560 --> 00:02:29.678 it's been such a rich seminar

NOTE Confidence: 0.8669432

00:02:29.678 --> 00:02:31.614 series and so much appreciation

NOTE Confidence: 0.8669432

00:02:31.614 --> 00:02:34.708 that I know many other people feel.

NOTE Confidence: 0.8669432

00:02:34.710 --> 00:02:37.059 And so then it is also my pleasure today

NOTE Confidence: 0.8669432

00:02:37.059 --> 00:02:39.386 to introduce Doctor Wissam, a Sir.

NOTE Confidence: 0.8669432

00:02:39.386 --> 00:02:41.570 We have had the delight of having him

NOTE Confidence: 0.8669432

00:02:41.638 --> 00:02:44.041 as a sleep fellow this year at Yale and

NOTE Confidence: 0.8669432

00:02:44.041 --> 00:02:46.544 are so proud of all that he's achieved.

NOTE Confidence: 0.8669432

00:02:46.550 --> 00:02:48.246 Doctor Mansour came initially

NOTE Confidence: 0.8669432

00:02:48.246 --> 00:02:50.790 went to medical school in Beirut,

NOTE Confidence: 0.8669432

00:02:50.790 --> 00:02:52.970 Lebanon at the Lebanese University.

NOTE Confidence: 0.8669432

00:02:52.970 --> 00:02:55.376 He was a diagnostic radiology resident,

NOTE Confidence: 0.8669432

00:02:55.380 --> 00:02:56.736 so he's got some skills there.

NOTE Confidence: 0.8669432

00:02:56.740 --> 00:02:58.484 If you ever if you ever need them,

NOTE Confidence: 0.8669432

00:02:58.490 --> 00:03:01.052 he then came to the state

NOTE Confidence: 0.8669432

00:03:01.052 --> 00:03:02.333 and internal medicine,

NOTE Confidence: 0.8669432

00:03:02.340 --> 00:03:03.531 pulmonary critical care.

NOTE Confidence: 0.8669432

00:03:03.531 --> 00:03:05.516 Anne was pulmonary critical care

NOTE Confidence: 0.8669432

00:03:05.516 --> 00:03:07.651 chief fellow at the Zucker School

NOTE Confidence: 0.8669432

00:03:07.651 --> 00:03:09.256 of Medicine and Staten Island.

NOTE Confidence: 0.8669432

00:03:09.260 --> 00:03:11.448 The Northwell Health Center,

NOTE Confidence: 0.8669432

00:03:11.448 --> 00:03:15.042 and then we were delighted truly to

NOTE Confidence: 0.8669432

00:03:15.042 --> 00:03:17.598 recruit him asleep fellow this year.

NOTE Confidence: 0.8669432

00:03:17.600 --> 00:03:20.708 During his other fellowship in his residency,

NOTE Confidence: 0.8669432

00:03:20.710 --> 00:03:22.150 he won many awards,

NOTE Confidence: 0.8669432

00:03:22.150 --> 00:03:23.590 including Service Excellence Award,

NOTE Confidence: 0.8669432

00:03:23.590 --> 00:03:25.070 fellow Teacher of the Year.

NOTE Confidence: 0.8669432

00:03:25.070 --> 00:03:26.672 I know it's no surprise to

NOTE Confidence: 0.8669432

00:03:26.672 --> 00:03:27.970 me looking over your CV,

NOTE Confidence: 0.8669432

00:03:27.970 --> 00:03:29.986 knowing the wonderful job you've done this,

NOTE Confidence: 0.8669432

00:03:29.990 --> 00:03:33.714 you're teaching and taking care of patients.

NOTE Confidence: 0.8669432

00:03:33.720 --> 00:03:35.835 It also has been my delight this year to

NOTE Confidence: 0.8669432

00:03:35.835 --> 00:03:37.859 work with Sam on his research project.

NOTE Confidence: 0.8669432

00:03:37.860 --> 00:03:39.477 He really came up with the project

NOTE Confidence: 0.8669432

00:03:39.477 --> 00:03:41.553 and let it on his own and I was

NOTE Confidence: 0.8669432

00:03:41.553 --> 00:03:43.231 just there for support and I think

NOTE Confidence: 0.8669432

00:03:43.231 --> 00:03:44.713 a reflection of that quality is

NOTE Confidence: 0.8669432

00:03:44.713 --> 00:03:46.544 that it's been selected for an oral

NOTE Confidence: 0.8669432

00:03:46.544 --> 00:03:48.058 presentation at sleep and I can't

NOTE Confidence: 0.8669432

00:03:48.058 --> 00:03:49.486 wait to hear that talk as well.

NOTE Confidence: 0.8669432

00:03:49.490 --> 00:03:51.410 So without further ado and a great deal

NOTE Confidence: 0.8669432

00:03:51.410 --> 00:03:53.219 of thanks for a great year together,

NOTE Confidence: 0.8669432

00:03:53.220 --> 00:03:55.082 I look forward to this talk on

NOTE Confidence: 0.8669432

00:03:55.082 --> 00:03:56.400 sleep in hospitalised patients.

NOTE Confidence: 0.797659732

00:03:59.420 --> 00:04:00.825 Thank you, thank you Doctor

NOTE Confidence: 0.797659732

00:04:00.825 --> 00:04:02.230 ignore for the kind introduction.

NOTE Confidence: 0.797659732

00:04:02.230 --> 00:04:05.630 So good afternoon everyone.

NOTE Confidence: 0.797659732

00:04:05.630 --> 00:04:07.849 My topic today or my goal today

NOTE Confidence: 0.797659732

00:04:07.849 --> 00:04:10.877 is to give you an overview about

NOTE Confidence: 0.797659732

00:04:10.877 --> 00:04:13.450 sleep in hospitalized patients. R.

NOTE Confidence: 0.797659732

00:04:13.450 --> 00:04:18.010 I have no disclosure related to this talk.

NOTE Confidence: 0.797659732

00:04:18.010 --> 00:04:20.628 And this is just a reminder about

NOTE Confidence: 0.797659732

00:04:20.628 --> 00:04:22.849 texting the ID number below.

NOTE Confidence: 0.797659732

00:04:22.850 --> 00:04:25.522 If you would like to receive CME credit

NOTE Confidence: 0.797659732

00:04:25.522 --> 00:04:28.481 for this talk and Debbie will be putting

NOTE Confidence: 0.797659732

00:04:28.481 --> 00:04:30.939 those numbers also in the chat box.

NOTE Confidence: 0.86614524875

00:04:33.060 --> 00:04:34.545 Throughout my talk,

NOTE Confidence: 0.86614524875

00:04:34.545 --> 00:04:38.432 I plan to go over sleep disturbances

NOTE Confidence: 0.86614524875

00:04:38.432 --> 00:04:41.256 in hospitalized patients discussing

NOTE Confidence: 0.86614524875

00:04:41.260 --> 00:04:44.080 the types of these disturbances.

NOTE Confidence: 0.86614524875

00:04:44.080 --> 00:04:47.013 Have an overview of what kind of

NOTE Confidence: 0.86614524875

00:04:47.013 --> 00:04:49.465 health effects these disturbances may

NOTE Confidence: 0.86614524875

00:04:49.465 --> 00:04:52.555 have go over certain factors that

NOTE Confidence: 0.86614524875

00:04:52.555 --> 00:04:56.070 may affect sleep in the hospital.

NOTE Confidence: 0.86614524875

00:04:56.070 --> 00:04:58.002 But giving an overview about certain

NOTE Confidence: 0.86614524875

00:04:58.002 --> 00:05:00.110 tools that we have available to

NOTE Confidence: 0.86614524875

00:05:00.110 --> 00:05:02.390 measure sleep in the hospital and

NOTE Confidence: 0.86614524875

00:05:02.390 --> 00:05:03.849 finally concluding with possible

NOTE Confidence: 0.86614524875

00:05:03.849 --> 00:05:05.745 intervention that we can use to

NOTE Confidence: 0.86614524875

00:05:05.745 --> 00:05:08.879 help our patients sleep better.

NOTE Confidence: 0.86614524875

00:05:08.880 --> 00:05:11.248 So I'll start us off with a case.

NOTE Confidence: 0.86614524875

00:05:11.250 --> 00:05:14.085 Our patient is a 75 year old male who

NOTE Confidence: 0.86614524875

00:05:14.085 --> 00:05:16.322 presents to the emergency room at 10:00

NOTE Confidence: 0.86614524875

00:05:16.322 --> 00:05:19.069 PM for a three day history of fever,

NOTE Confidence: 0.86614524875

00:05:19.070 --> 00:05:21.950 lethargy, cough and shortness of breath.

NOTE Confidence: 0.86614524875

00:05:21.950 --> 00:05:23.582 He had a past medical history

NOTE Confidence: 0.86614524875

00:05:23.582 --> 00:05:25.080 that was significant for asthma,

NOTE Confidence: 0.86614524875

00:05:25.080 --> 00:05:28.848 hypertension, A-fib, and stroke.

NOTE Confidence: 0.86614524875

00:05:28.850 --> 00:05:31.818 In the Ed, the patient was placed

NOTE Confidence: 0.86614524875

00:05:31.818 --> 00:05:34.309 in the critical care section.

NOTE Confidence: 0.86614524875

00:05:34.310 --> 00:05:35.538 Vitals every 15 minutes.

NOTE Confidence: 0.86614524875

00:05:35.538 --> 00:05:37.887 He was started on some Ivy fluids

NOTE Confidence: 0.86614524875

00:05:37.887 --> 00:05:39.667 for borderline blood pressure,

NOTE Confidence: 0.86614524875

00:05:39.670 --> 00:05:41.502 he required oxygen support

NOTE Confidence: 0.86614524875

00:05:41.502 --> 00:05:43.792 via high flow nasal cannula.

NOTE Confidence: 0.86614524875

00:05:43.800 --> 00:05:46.890 He was given nabs antibiotics.

NOTE Confidence: 0.86614524875

00:05:46.890 --> 00:05:48.696 Some blood work was sent and

NOTE Confidence: 0.86614524875

00:05:48.696 --> 00:05:50.779 RVP was sent and xrays world.

NOTE Confidence: 0.844364248571429

00:05:52.930 --> 00:05:55.926 To Fast forward his care six hours

NOTE Confidence: 0.844364248571429

00:05:55.926 --> 00:05:58.699 later after after the easy work up,

NOTE Confidence: 0.844364248571429

00:05:58.700 --> 00:06:00.796 he was sent to the ICU with a

NOTE Confidence: 0.844364248571429

00:06:00.796 --> 00:06:02.784 diagnosis of sepsis and acute

NOTE Confidence: 0.844364248571429

00:06:02.784 --> 00:06:04.185 hypoxic respiratory failure.

NOTE Confidence: 0.844364248571429

00:06:04.190 --> 00:06:06.848 Secondary to a community acquired pneumonia.

NOTE Confidence: 0.844364248571429

00:06:06.850 --> 00:06:08.830 He was physically in the

NOTE Confidence: 0.844364248571429

00:06:08.830 --> 00:06:10.810 ICU at around 4:00 AM.

NOTE Confidence: 0.844364248571429

00:06:10.810 --> 00:06:12.382 After he was transferred,

NOTE Confidence: 0.844364248571429

00:06:12.382 --> 00:06:14.347 he had an initial assessment

NOTE Confidence: 0.844364248571429

00:06:14.347 --> 00:06:16.048 by the nursing staff.

NOTE Confidence: 0.844364248571429

00:06:16.050 --> 00:06:17.855 The overnight house staff came

NOTE Confidence: 0.844364248571429

00:06:17.855 --> 00:06:21.025 in and did their HMP at 5:00 AM.

NOTE Confidence: 0.844364248571429

00:06:21.025 --> 00:06:22.845 Phlebotomy came through blood

NOTE Confidence: 0.844364248571429

00:06:22.850 --> 00:06:24.365 5:30 in morning X-ray that

NOTE Confidence: 0.844364248571429

00:06:24.365 --> 00:06:26.384 routine morning X ray and I see

NOTE Confidence: 0.844364248571429

00:06:26.384 --> 00:06:28.152 you was done and the 6:00 AM his

NOTE Confidence: 0.844364248571429

00:06:28.217 --> 00:06:30.197 scheduled nap treatment was given.

NOTE Confidence: 0.788549545555555

00:06:32.210 --> 00:06:35.521 So at 7:00 AM, Brown started in

NOTE Confidence: 0.788549545555555

00:06:35.521 --> 00:06:38.290 the ICU and the team went into

NOTE Confidence: 0.788549545555555

00:06:38.290 --> 00:06:40.985 the room to check on the patient

NOTE Confidence: 0.788549545555555

00:06:40.985 --> 00:06:43.750 and ask him how his night was.

NOTE Confidence: 0.788549545555555

00:06:43.750 --> 00:06:45.934 I'm just giving this case and I know

NOTE Confidence: 0.788549545555555

00:06:45.934 --> 00:06:48.665 a lot of what was done is important

NOTE Confidence: 0.788549545555555

00:06:48.665 --> 00:06:50.920 to provide patients with timely care.

NOTE Confidence: 0.788549545555555

00:06:50.920 --> 00:06:53.349 However, I wanted to show you some

NOTE Confidence: 0.788549545555555

00:06:53.349 --> 00:06:55.450 times where our patients might start

NOTE Confidence: 0.788549545555555

00:06:55.450 --> 00:06:58.736 off if we only take a look at their

NOTE Confidence: 0.788549545555555

00:06:58.736 --> 00:07:00.280 homeostatic and sleep deprivation.

NOTE Confidence: 0.788549545555555

00:07:00.280 --> 00:07:02.800 So in that morning the patient already

NOTE Confidence: 0.788549545555555

00:07:02.868 --> 00:07:04.500 started with this significantly

NOTE Confidence: 0.788549545555555

00:07:04.500 --> 00:07:06.540 high amount of sleep deprivation

NOTE Confidence: 0.788549545555555

00:07:06.540 --> 00:07:08.430 with a lot of sleep pressure.

NOTE Confidence: 0.879925324444444

00:07:11.840 --> 00:07:13.300 So the sleep disturbances

NOTE Confidence: 0.879925324444444

00:07:13.300 --> 00:07:15.125 in the hospital can be.

NOTE Confidence: 0.692501653333333

00:07:17.200 --> 00:07:18.808 Gross weight classified

NOTE Confidence: 0.692501653333333

00:07:18.808 --> 00:07:20.416 into three categories.

NOTE Confidence: 0.692501653333333

00:07:20.420 --> 00:07:22.472 Poor sleep quality,

NOTE Confidence: 0.692501653333333

00:07:22.472 --> 00:07:25.208 reduced sleep quantity and

NOTE Confidence: 0.692501653333333

00:07:25.208 --> 00:07:26.576 circadian misalignment.

NOTE Confidence: 0.838059028823529

00:07:29.530 --> 00:07:31.810 Her sleep quality was tested

NOTE Confidence: 0.838059028823529

00:07:31.810 --> 00:07:34.590 in both hospital wards and ICU

NOTE Confidence: 0.838059028823529

00:07:34.590 --> 00:07:37.074 and the largest study was done.

NOTE Confidence: 0.838059028823529

00:07:37.080 --> 00:07:38.054 The Netherlands,

NOTE Confidence: 0.838059028823529

00:07:38.054 --> 00:07:40.489 looking at around 1500 patients,

NOTE Confidence: 0.838059028823529

00:07:40.490 --> 00:07:43.040 and this was a subjective consensus

NOTE Confidence: 0.838059028823529

00:07:43.040 --> 00:07:45.979 sleep diary that was given to the

NOTE Confidence: 0.838059028823529

00:07:45.979 --> 00:07:48.688 patient so that they report their own.

NOTE Confidence: 0.838059028823529

00:07:48.690 --> 00:07:50.625 Subjective feeling of how their

NOTE Confidence: 0.838059028823529

00:07:50.625 --> 00:07:52.902 sleep was and they compared it

NOTE Confidence: 0.838059028823529

00:07:52.902 --> 00:07:54.911 to how their sleep was 3030

NOTE Confidence: 0.838059028823529

00:07:54.911 --> 00:07:58.116 days ago prior to admission.

NOTE Confidence: 0.838059028823529

00:07:58.120 --> 00:08:00.976 It did show that patients felt that their

NOTE Confidence: 0.838059028823529

00:08:00.976 --> 00:08:03.518 sleep latency was longer in the hospital.

NOTE Confidence: 0.838059028823529

00:08:03.520 --> 00:08:05.816 They had longer periods of wake after sleep.

NOTE Confidence: 0.838059028823529

00:08:05.820 --> 00:08:08.892 Answered, they had a total reduction

NOTE Confidence: 0.838059028823529

00:08:08.892 --> 00:08:10.936 in the total sleep time and the

NOTE Confidence: 0.838059028823529

00:08:10.936 --> 00:08:12.499 reduction in sleep efficiency.

NOTE Confidence: 0.755463312857143

00:08:14.960 --> 00:08:20.035 ICU studies had more objective data present.

NOTE Confidence: 0.755463312857143

00:08:20.040 --> 00:08:22.428 And they usually were done in

NOTE Confidence: 0.755463312857143

00:08:22.428 --> 00:08:25.320 a small group of patients where

NOTE Confidence: 0.755463312857143

00:08:25.320 --> 00:08:28.062 PSG's were performed and looking at

NOTE Confidence: 0.755463312857143

00:08:28.062 --> 00:08:31.020 hypno grams from from the patients,

NOTE Confidence: 0.755463312857143

00:08:31.020 --> 00:08:35.376 the top hypnogram is that of a normal adult

NOTE Confidence: 0.755463312857143

00:08:35.376 --> 00:08:40.420 showing sleep phases which are in Gray.

NOTE Confidence: 0.755463312857143

00:08:40.420 --> 00:08:43.520 Interrupted with short periods of

NOTE Confidence: 0.755463312857143

00:08:43.520 --> 00:08:45.152 wakefulness, those are in white,

NOTE Confidence: 0.755463312857143

00:08:45.152 --> 00:08:47.363 and if you compare it to the four

NOTE Confidence: 0.755463312857143

00:08:47.363 --> 00:08:48.928 patients that are below that,

NOTE Confidence: 0.755463312857143

00:08:48.930 --> 00:08:51.198 you can see the significant increase

NOTE Confidence: 0.755463312857143

00:08:51.198 --> 00:08:54.001 in number of arousers our ICU patients

NOTE Confidence: 0.755463312857143

00:08:54.001 --> 00:08:56.437 have the decreased efficiency in sleep,

NOTE Confidence: 0.755463312857143

00:08:56.440 --> 00:08:58.690 the increased N1 and N2 sleep,

NOTE Confidence: 0.755463312857143

00:08:58.690 --> 00:09:00.530 and almost complete absence of

NOTE Confidence: 0.755463312857143

00:09:00.530 --> 00:09:03.040 N3 and REM sleep in the ICU.

NOTE Confidence: 0.890484628

00:09:05.740 --> 00:09:08.800 In terms of sleep quantity,

NOTE Confidence: 0.890484628

00:09:08.800 --> 00:09:11.383 there has been few studies done in

NOTE Confidence: 0.890484628

00:09:11.383 --> 00:09:13.620 the medical words using actigraphy

NOTE Confidence: 0.890484628

00:09:13.620 --> 00:09:16.255 for patients for admitted patients,

NOTE Confidence: 0.890484628

00:09:16.260 --> 00:09:19.092 and it did show that the average in

NOTE Confidence: 0.890484628

00:09:19.092 --> 00:09:21.785 hospital total sleep time was around one

NOTE Confidence: 0.890484628

00:09:21.785 --> 00:09:24.339 hour less than that reported at home,

NOTE Confidence: 0.890484628

00:09:24.340 --> 00:09:25.885 suggesting a limit.

NOTE Confidence: 0.890484628

00:09:25.885 --> 00:09:28.460 A limitation in the quantity

NOTE Confidence: 0.890484628

00:09:28.460 --> 00:09:31.119 of sleep in medical words.

NOTE Confidence: 0.890484628

00:09:31.120 --> 00:09:33.152 As for the ICU.

NOTE Confidence: 0.890484628

00:09:33.152 --> 00:09:36.340 No, studies were slightly more objective.

NOTE Confidence: 0.890484628

00:09:36.340 --> 00:09:38.923 Looking at PSG data and if you

NOTE Confidence: 0.890484628

00:09:38.923 --> 00:09:41.943 look at this example of five ICU

NOTE Confidence: 0.890484628

00:09:41.943 --> 00:09:44.673 patients and you see their sleep,

NOTE Confidence: 0.890484628

00:09:44.680 --> 00:09:46.570 which is shaded in black,

NOTE Confidence: 0.890484628

00:09:46.570 --> 00:09:49.251 you can see that they were sleeping

NOTE Confidence: 0.890484628

00:09:49.251 --> 00:09:51.679 all over the 24 hour period.

NOTE Confidence: 0.890484628

00:09:51.680 --> 00:09:53.680 So despite not having adequate

NOTE Confidence: 0.890484628

00:09:53.680 --> 00:09:56.160 quantity of sleep during the night,

NOTE Confidence: 0.890484628

00:09:56.160 --> 00:09:58.498 if we take the whole 24 hour,

NOTE Confidence: 0.890484628

00:09:58.500 --> 00:10:00.450 maybe their sleep quantity is not.

NOTE Confidence: 0.890484628

00:10:00.450 --> 00:10:03.218 That is not that bad and this leads

NOTE Confidence: 0.890484628

00:10:03.218 --> 00:10:07.098 us to the idea that maybe ICU patients

NOTE Confidence: 0.890484628

00:10:07.098 --> 00:10:09.965 are more qualitatively sleep deprived

NOTE Confidence: 0.890484628

00:10:09.965 --> 00:10:13.560 rather than quantitatively sleep deprived.

NOTE Confidence: 0.890484628

00:10:13.560 --> 00:10:15.708 They can get this into consideration.

NOTE Confidence: 0.890484628

00:10:15.710 --> 00:10:19.224 I'm going to move to the third

NOTE Confidence: 0.890484628

00:10:19.224 --> 00:10:21.532 important sleep disruption and

NOTE Confidence: 0.890484628

00:10:21.532 --> 00:10:23.647 it's circadian misalignment.

NOTE Confidence: 0.890484628

00:10:23.650 --> 00:10:25.764 Two studies have been put forth to

NOTE Confidence: 0.890484628

00:10:25.764 --> 00:10:28.322 look whether or not our ICU patients

NOTE Confidence: 0.890484628

00:10:28.322 --> 00:10:30.302 do suffer from circadian misalignment.

NOTE Confidence: 0.890484628

00:10:30.310 --> 00:10:33.065 Looking at the main markers

NOTE Confidence: 0.890484628

00:10:33.065 --> 00:10:34.718 of circadian rhythm,

NOTE Confidence: 0.890484628

00:10:34.720 --> 00:10:37.625 which are melatonin and core

NOTE Confidence: 0.890484628

00:10:37.625 --> 00:10:38.787 body temperature?

NOTE Confidence: 0.890484628

00:10:38.790 --> 00:10:41.730 The first study looked at 13 ICU

NOTE Confidence: 0.890484628

00:10:41.730 --> 00:10:43.934 patients and they measured their

NOTE Confidence: 0.890484628

00:10:43.934 --> 00:10:46.164 melatonin levels every four hours.

NOTE Confidence: 0.890484628

00:10:46.170 --> 00:10:50.200 This graph that you see shows

NOTE Confidence: 0.890484628

00:10:50.200 --> 00:10:53.329 the bars of which we think those

NOTE Confidence: 0.890484628

00:10:53.329 --> 00:10:56.241 patients should have slept 2 hours

NOTE Confidence: 0.890484628

00:10:56.241 --> 00:10:58.217 after their melatonin peak.

NOTE Confidence: 0.890484628

00:10:58.220 --> 00:11:02.668 And that is compared to the black bar.

NOTE Confidence: 0.890484628

00:11:02.670 --> 00:11:05.290 Limited with with with their

NOTE Confidence: 0.890484628

00:11:05.290 --> 00:11:07.386 two blue lines showing,

NOTE Confidence: 0.890484628

00:11:07.390 --> 00:11:09.900 where would they ideally have

NOTE Confidence: 0.890484628

00:11:09.900 --> 00:11:12.890 slap between 7 between 11:00 PM

NOTE Confidence: 0.890484628

00:11:12.890 --> 00:11:14.835 and 7:00 in the morning?

NOTE Confidence: 0.890484628

00:11:14.840 --> 00:11:15.690 And as you can see,

NOTE Confidence: 0.890484628

00:11:15.690 --> 00:11:18.074 most patients had relatively

NOTE Confidence: 0.890484628

00:11:18.074 --> 00:11:20.458 advanced circadian rhythm and

NOTE Confidence: 0.890484628

00:11:20.458 --> 00:11:23.300 two patients had more.

NOTE Confidence: 0.792602795882353

00:11:27.780 --> 00:11:30.370 I'm sorry I had a more advance to them and

NOTE Confidence: 0.792602795882353

00:11:30.432 --> 00:11:32.959 other patients had them or delate delate.

NOTE Confidence: 0.83962802

00:11:35.090 --> 00:11:37.330 Looking at core body temperature,

NOTE Confidence: 0.83962802

00:11:37.330 --> 00:11:41.050 similar findings were noted and that

NOTE Confidence: 0.83962802

00:11:41.050 --> 00:11:43.530 triangles represent each patient

NOTE Confidence: 0.83962802

00:11:43.530 --> 00:11:45.320 core body temperature during the

NOTE Confidence: 0.83962802

00:11:45.320 --> 00:11:48.392 study and it shows you that the core

NOTE Confidence: 0.83962802

00:11:48.392 --> 00:11:50.008 body temperature was distributed

NOTE Confidence: 0.83962802

00:11:50.008 --> 00:11:52.586 along the whole 24 hours in the ICU.

NOTE Confidence: 0.83962802

00:11:52.590 --> 00:11:55.175 Patients, rather than being where

NOTE Confidence: 0.83962802

00:11:55.175 --> 00:11:58.211 most healthy normal subjects would be

NOTE Confidence: 0.83962802

00:11:58.211 --> 00:12:00.680 between 4:30 in the morning and 6:45.

NOTE Confidence: 0.854936288

00:12:03.370 --> 00:12:05.456 So now that we we have proof

NOTE Confidence: 0.854936288

00:12:05.456 --> 00:12:07.588 that our patients in the ICU are

NOTE Confidence: 0.854936288

00:12:07.588 --> 00:12:09.340 or in the hospital in general,

NOTE Confidence: 0.854936288

00:12:09.340 --> 00:12:10.447 I'll sleep deprived.

NOTE Confidence: 0.854936288

00:12:10.447 --> 00:12:13.553 It's important to look at what are the

NOTE Confidence: 0.854936288

00:12:13.553 --> 00:12:16.259 health effects of these sleep disturbances?

NOTE Confidence: 0.854936288

00:12:16.260 --> 00:12:18.465 Most available studies in the

NOTE Confidence: 0.854936288

00:12:18.465 --> 00:12:20.670 in this in this area.

NOTE Confidence: 0.854936288

00:12:20.670 --> 00:12:23.320 Actually looked at healthy subjects

NOTE Confidence: 0.854936288

00:12:23.320 --> 00:12:26.110 who were put under sleep deprivation

NOTE Confidence: 0.854936288

00:12:26.110 --> 00:12:27.970 or sleep restriction protocol,

NOTE Confidence: 0.854936288

00:12:27.970 --> 00:12:29.914 so we don't really have a lot of

NOTE Confidence: 0.854936288

00:12:29.914 --> 00:12:31.713 studies of patients who were sick

NOTE Confidence: 0.854936288

00:12:31.713 --> 00:12:33.585 who were then sleep deprived and

NOTE Confidence: 0.854936288

00:12:33.642 --> 00:12:35.736 looking how that organ systems react.

NOTE Confidence: 0.854936288

00:12:35.740 --> 00:12:37.039 That being said,

NOTE Confidence: 0.854936288

00:12:37.039 --> 00:12:40.960 you can and and as we would imagine,

NOTE Confidence: 0.854936288

00:12:40.960 --> 00:12:43.914 the health effects of short term sleep

NOTE Confidence: 0.854936288

00:12:43.914 --> 00:12:45.680 deprivation involves multiple organs,

NOTE Confidence: 0.854936288

00:12:45.680 --> 00:12:48.624 and I'm going to go through a few

NOTE Confidence: 0.854936288

00:12:48.624 --> 00:12:50.898 interesting studies in each organ system.

NOTE Confidence: 0.8491743975

00:12:53.260 --> 00:12:56.375 We all know that BI directional relationship

NOTE Confidence: 0.8491743975

00:12:56.375 --> 00:13:01.570 between like immunity and sleep deprivation.

NOTE Confidence: 0.8491743975

00:13:01.570 --> 00:13:04.402 And a lot of reports have come forth

NOTE Confidence: 0.8491743975

00:13:04.402 --> 00:13:06.565 noting that sleep deprivation for

NOTE Confidence: 0.8491743975

00:13:06.565 --> 00:13:09.313 24 hours leads to a significant

NOTE Confidence: 0.8491743975

00:13:09.313 --> 00:13:11.700 increase in neutrophil count and

NOTE Confidence: 0.8491743975

00:13:11.700 --> 00:13:13.950 increase in their innate immunity

NOTE Confidence: 0.8491743975

00:13:13.950 --> 00:13:15.750 was interesting about this study.

NOTE Confidence: 0.8491743975

00:13:15.750 --> 00:13:17.976 Is they looked at the subpopulation

NOTE Confidence: 0.8491743975

00:13:17.976 --> 00:13:19.089 of those neutrophils?

NOTE Confidence: 0.8491743975

00:13:19.090 --> 00:13:21.694 And they even looked at the function

NOTE Confidence: 0.8491743975

00:13:21.694 --> 00:13:23.994 of those neutrophils and how quickly

NOTE Confidence: 0.8491743975

00:13:23.994 --> 00:13:26.214 they went into a respiratory burst.

NOTE Confidence: 0.8491743975

00:13:26.220 --> 00:13:27.536 Looking at the graph,

NOTE Confidence: 0.8491743975

00:13:27.536 --> 00:13:29.510 you can see that the neutrophils

NOTE Confidence: 0.8491743975

00:13:29.576 --> 00:13:31.820 in patients who were totally sleep

NOTE Confidence: 0.8491743975

00:13:31.820 --> 00:13:34.460 deprived noted in the black line.

NOTE Confidence: 0.8491743975

00:13:34.460 --> 00:13:37.904 Had a much lower intensity of

NOTE Confidence: 0.8491743975

00:13:37.904 --> 00:13:40.829 respiratory burst compared to that

NOTE Confidence: 0.8491743975

00:13:40.829 --> 00:13:43.997 of patients who had normal sleep.

NOTE Confidence: 0.8491743975

00:13:44.000 --> 00:13:46.051 And this leads us to the idea

NOTE Confidence: 0.8491743975

00:13:46.051 --> 00:13:48.428 that maybe this increase in the

NOTE Confidence: 0.8491743975

00:13:48.428 --> 00:13:50.332 inflammatory response after sleep

NOTE Confidence: 0.8491743975

00:13:50.332 --> 00:13:52.610 deprivation is actually ineffective,

NOTE Confidence: 0.8491743975

00:13:52.610 --> 00:13:55.010 and those neutrophils in hospital patients

NOTE Confidence: 0.8491743975

00:13:55.010 --> 00:13:57.690 are not really going to do their job.

NOTE Confidence: 0.841154181428571

00:14:00.900 --> 00:14:04.305 Probably the most important neuro

NOTE Confidence: 0.841154181428571

00:14:04.305 --> 00:14:06.555 psychological effect that's been studied

NOTE Confidence: 0.841154181428571

00:14:06.555 --> 00:14:09.067 in the ICU or in the hospital has

NOTE Confidence: 0.841154181428571

00:14:09.067 --> 00:14:10.992 been delirium given its association

NOTE Confidence: 0.841154181428571

00:14:10.992 --> 00:14:12.900 with increased length of stay.

NOTE Confidence: 0.841154181428571

00:14:12.900 --> 00:14:15.428 Long term cognitive impairment

NOTE Confidence: 0.841154181428571

00:14:15.428 --> 00:14:17.956 increased one year mortality.

NOTE Confidence: 0.841154181428571

00:14:17.960 --> 00:14:20.720 A lot of researchers have looked

NOTE Confidence: 0.841154181428571

00:14:20.720 --> 00:14:23.019 into the pathophysiology of delirium

NOTE Confidence: 0.841154181428571

00:14:23.019 --> 00:14:25.637 and try to link it with sleep.

NOTE Confidence: 0.841154181428571

00:14:25.640 --> 00:14:27.674 Now it's important to note that

NOTE Confidence: 0.841154181428571

00:14:27.674 --> 00:14:29.030 sleep deprivation and delirium

NOTE Confidence: 0.841154181428571

00:14:29.092 --> 00:14:30.898 do share a lot of their clinical.

NOTE Confidence: 0.841154181428571

00:14:30.900 --> 00:14:34.710 An physiologic presentation of patients,

NOTE Confidence: 0.841154181428571

00:14:34.710 --> 00:14:36.572 so it does make sense for us

NOTE Confidence: 0.841154181428571

00:14:36.572 --> 00:14:37.620 to think about it.

NOTE Confidence: 0.841154181428571

00:14:37.620 --> 00:14:39.136 What's more interesting is

NOTE Confidence: 0.841154181428571

00:14:39.136 --> 00:14:42.249 that if we look at some of the

NOTE Confidence: 0.841154181428571

00:14:42.249 --> 00:14:44.151 proposed mechanisms for delirium,

NOTE Confidence: 0.841154181428571

00:14:44.151 --> 00:14:47.700 we can see that most 2 popular

NOTE Confidence: 0.841154181428571

00:14:47.797 --> 00:14:50.285 hypothesis are an imbalance

NOTE Confidence: 0.841154181428571

00:14:50.285 --> 00:14:52.773 in the neuro transmitters,

NOTE Confidence: 0.841154181428571

00:14:52.780 --> 00:14:54.150 where patients with the Lilium

NOTE Confidence: 0.841154181428571

00:14:54.150 --> 00:14:56.100 are thought to have a reduction.

NOTE Confidence: 0.841154181428571

00:14:56.100 --> 00:14:58.062 Reduction Institute choline

NOTE Confidence: 0.841154181428571

00:14:58.062 --> 00:15:00.678 and then increasing dopamine.

NOTE Confidence: 0.841154181428571

00:15:00.680 --> 00:15:03.374 And this also may happen to

NOTE Confidence: 0.841154181428571

00:15:03.374 --> 00:15:05.170 patients with sleep disturbances.

NOTE Confidence: 0.841154181428571

00:15:05.170 --> 00:15:07.966 And the other interesting theory was

NOTE Confidence: 0.841154181428571

00:15:07.966 --> 00:15:09.830 an abnormal tryptophan metabolism,

NOTE Confidence: 0.841154181428571

00:15:09.830 --> 00:15:11.775 where patients who had hyperactive

NOTE Confidence: 0.841154181428571

00:15:11.775 --> 00:15:14.162 delirium were found to have very

NOTE Confidence: 0.841154181428571

00:15:14.162 --> 00:15:15.666 high levels of melatonin,

NOTE Confidence: 0.841154181428571

00:15:15.670 --> 00:15:17.640 as opposed to patients hyperactive

NOTE Confidence: 0.841154181428571

00:15:17.640 --> 00:15:20.040 delirium who were found to have

NOTE Confidence: 0.841154181428571

00:15:20.040 --> 00:15:21.870 very low levels of melatonin.

NOTE Confidence: 0.841154181428571

00:15:21.870 --> 00:15:25.190 So some authors suggested that

NOTE Confidence: 0.841154181428571

00:15:25.190 --> 00:15:27.182 abnormal tryptophan metabolism

NOTE Confidence: 0.841154181428571

00:15:27.182 --> 00:15:29.904 favoring either multiple metatone

NOTE Confidence: 0.841154181428571

00:15:29.904 --> 00:15:33.169 production order production of DMT.

NOTE Confidence: 0.841154181428571

00:15:33.170 --> 00:15:34.960 Is actually what leads to

NOTE Confidence: 0.841154181428571

00:15:34.960 --> 00:15:36.392 delirium in our patients.

NOTE Confidence: 0.841154181428571

00:15:36.400 --> 00:15:38.560 And we all know how melatonin is linked

NOTE Confidence: 0.841154181428571

00:15:38.560 --> 00:15:40.616 to circadian rhythm and sleep in general.

NOTE Confidence: 0.85033951

00:15:43.920 --> 00:15:47.520 In terms of studies done on lung function,

NOTE Confidence: 0.85033951

00:15:47.520 --> 00:15:49.190 again, most of these studies

NOTE Confidence: 0.85033951

00:15:49.190 --> 00:15:50.860 were done on healthy patients,

NOTE Confidence: 0.85033951

00:15:50.860 --> 00:15:53.436 but it did show that sleep deprivation

NOTE Confidence: 0.85033951

00:15:53.436 --> 00:15:55.878 for even healthy patients results the

NOTE Confidence: 0.85033951

00:15:55.878 --> 00:15:58.410 next day in a blunted ventilatory

NOTE Confidence: 0.85033951

00:15:58.410 --> 00:16:00.709 response to hypoxia and hypercapnia.

NOTE Confidence: 0.85033951

00:16:00.710 --> 00:16:02.845 And impaired respiratory muscle endurance

NOTE Confidence: 0.85033951

00:16:02.845 --> 00:16:06.070 and a decrease in the junior clauses.

NOTE Confidence: 0.85033951

00:16:06.070 --> 00:16:09.634 Respons hinting towards increase in the

NOTE Confidence: 0.85033951

00:16:09.634 --> 00:16:12.674 upper airway resistance studies in COPD.

NOTE Confidence: 0.85033951

00:16:12.674 --> 00:16:15.098 Patients have shown that sleep deprivation

NOTE Confidence: 0.85033951

00:16:15.098 --> 00:16:17.418 would lead to reduced FEV one.

NOTE Confidence: 0.85033951

00:16:17.420 --> 00:16:20.196 And a study that was done in the

NOTE Confidence: 0.85033951

00:16:20.196 --> 00:16:22.919 hospital for CPD patients in acute

NOTE Confidence: 0.85033951

00:16:22.919 --> 00:16:24.863 respiratory failure showed that

NOTE Confidence: 0.85033951

00:16:24.863 --> 00:16:27.079 those who had poor sleep.

NOTE Confidence: 0.85033951

00:16:27.080 --> 00:16:29.060 And the hospital had a higher

NOTE Confidence: 0.85033951

00:16:29.060 --> 00:16:31.098 risk of progressing to needing

NOTE Confidence: 0.85033951

00:16:31.098 --> 00:16:32.408 mechanical ventilation.

NOTE Confidence: 0.861016748333333

00:16:36.980 --> 00:16:39.758 In terms of the cardiovascular impact,

NOTE Confidence: 0.861016748333333

00:16:39.760 --> 00:16:41.280 we know that sleep deprivation,

NOTE Confidence: 0.861016748333333

00:16:41.280 --> 00:16:42.552 even short term,

NOTE Confidence: 0.861016748333333

00:16:42.552 --> 00:16:45.096 results in increases in blood pressure.

NOTE Confidence: 0.861016748333333

00:16:45.100 --> 00:16:47.085 What is interesting and this

NOTE Confidence: 0.861016748333333

00:16:47.085 --> 00:16:49.786 data was provided to us mostly

NOTE Confidence: 0.861016748333333

00:16:49.786 --> 00:16:51.679 in postoperative patients.

NOTE Confidence: 0.861016748333333

00:16:51.680 --> 00:16:53.577 Is that as you see on the

NOTE Confidence: 0.861016748333333

00:16:53.577 --> 00:16:54.790 program to your left,

NOTE Confidence: 0.861016748333333

00:16:54.790 --> 00:16:57.674 a typical pre operative night for patients

NOTE Confidence: 0.861016748333333

00:16:57.674 --> 00:17:00.748 would have an almost normal hypnogram.

NOTE Confidence: 0.861016748333333

00:17:00.750 --> 00:17:03.330 With an acceptable amount of friends,

NOTE Confidence: 0.861016748333333

00:17:03.330 --> 00:17:04.578 sleep in it.

NOTE Confidence: 0.861016748333333

00:17:04.578 --> 00:17:07.490 On the operative night that patient had

NOTE Confidence: 0.861016748333333

00:17:07.574 --> 00:17:10.486 PSG done and it showed almost complete

NOTE Confidence: 0.861016748333333

00:17:10.486 --> 00:17:13.338 absence of N3 sleep or REM sleep.

NOTE Confidence: 0.861016748333333

00:17:13.340 --> 00:17:15.070 What was more interesting is

NOTE Confidence: 0.861016748333333

00:17:15.070 --> 00:17:17.569 that on the third on day three

NOTE Confidence: 0.861016748333333

00:17:17.569 --> 00:17:19.639 post up looking at their PSG,

NOTE Confidence: 0.861016748333333

00:17:19.640 --> 00:17:21.936 you can see that they go back

NOTE Confidence: 0.861016748333333

00:17:21.936 --> 00:17:24.200 to a almost normal pattern,

NOTE Confidence: 0.861016748333333

00:17:24.200 --> 00:17:26.699 but with a significant increase in the

NOTE Confidence: 0.861016748333333

00:17:26.699 --> 00:17:29.628 amount of RAM those patients experience.

NOTE Confidence: 0.861016748333333

00:17:29.630 --> 00:17:31.748 Now looking at one patient and

NOTE Confidence: 0.861016748333333

00:17:31.748 --> 00:17:33.889 what happens during the REM sleep,

NOTE Confidence: 0.861016748333333

00:17:33.890 --> 00:17:36.935 you can see to write the significant

NOTE Confidence: 0.861016748333333

00:17:36.935 --> 00:17:38.777 hard date variability during

NOTE Confidence: 0.861016748333333

00:17:38.777 --> 00:17:41.087 that period and the hypoxemia,

NOTE Confidence: 0.861016748333333

00:17:41.090 --> 00:17:44.350 especially in vulnerable patients.

NOTE Confidence: 0.861016748333333

00:17:44.350 --> 00:17:46.894 I would think that we might see a

NOTE Confidence: 0.861016748333333

00:17:46.894 --> 00:17:48.575 similar pattern in patients who

NOTE Confidence: 0.861016748333333

00:17:48.575 --> 00:17:50.525 are downgraded from the ICU or

NOTE Confidence: 0.861016748333333

00:17:50.525 --> 00:17:52.767 who have been recently extubated

NOTE Confidence: 0.861016748333333

00:17:52.767 --> 00:17:54.619 with sedation being stopped.

NOTE Confidence: 0.903897215384615

00:17:58.380 --> 00:18:01.124 So now looking at the factors that

NOTE Confidence: 0.903897215384615

00:18:01.124 --> 00:18:03.538 may influence sleep in the hospital,

NOTE Confidence: 0.903897215384615

00:18:03.540 --> 00:18:06.412 and as you can see there are multiple

NOTE Confidence: 0.903897215384615

00:18:06.412 --> 00:18:08.757 they interact with each other and you

NOTE Confidence: 0.903897215384615

00:18:08.757 --> 00:18:11.579 can list them into 2 broad categories.

NOTE Confidence: 0.903897215384615

00:18:11.580 --> 00:18:15.588 Environmental factors such as sound light,

NOTE Confidence: 0.903897215384615

00:18:15.590 --> 00:18:17.069 certain circadian cues,

NOTE Confidence: 0.903897215384615

00:18:17.069 --> 00:18:20.027 as more patient related and illness

NOTE Confidence: 0.903897215384615

00:18:20.027 --> 00:18:22.273 specific factors such as bedside

NOTE Confidence: 0.903897215384615

00:18:22.273 --> 00:18:24.368 care and the illness itself.

NOTE Confidence: 0.903897215384615

00:18:24.370 --> 00:18:27.346 With all the treatment that that comes with.

NOTE Confidence: 0.874705417

00:18:29.500 --> 00:18:31.670 I will start with discussing

NOTE Confidence: 0.874705417

00:18:31.670 --> 00:18:33.840 some of the circadian cues.

NOTE Confidence: 0.80760183375

00:18:36.130 --> 00:18:37.984 To understand better how a change

NOTE Confidence: 0.80760183375

00:18:37.984 --> 00:18:40.131 in the pattern of circadian cues

NOTE Confidence: 0.80760183375

00:18:40.131 --> 00:18:41.827 may influence our patients,

NOTE Confidence: 0.80760183375

00:18:41.830 --> 00:18:43.845 one should understand this Akkadian

NOTE Confidence: 0.80760183375

00:18:43.845 --> 00:18:45.860 rhythm at the cellular level.

NOTE Confidence: 0.80760183375

00:18:45.860 --> 00:18:48.086 Without going into much of details,

NOTE Confidence: 0.80760183375

00:18:48.090 --> 00:18:50.162 our peripheral cells do

NOTE Confidence: 0.80760183375

00:18:50.162 --> 00:18:51.716 use transcription factors,

NOTE Confidence: 0.80760183375

00:18:51.720 --> 00:18:53.770 which are female and cloud.

NOTE Confidence: 0.80760183375

00:18:53.770 --> 00:18:57.005 To transcribe proteins which are

NOTE Confidence: 0.80760183375

00:18:57.005 --> 00:19:00.588 poor and cry, and those proteins

NOTE Confidence: 0.80760183375

00:19:00.588 --> 00:19:03.318 do suppress their own expression.

NOTE Confidence: 0.80760183375

00:19:03.320 --> 00:19:05.192 So after some time they go

NOTE Confidence: 0.80760183375

00:19:05.192 --> 00:19:06.440 back into the nucleus,

NOTE Confidence: 0.80760183375

00:19:06.440 --> 00:19:09.296 they bind to clock and bmal.

NOTE Confidence: 0.80760183375

00:19:09.300 --> 00:19:11.664 Rendering them ineffective and

NOTE Confidence: 0.80760183375

00:19:11.664 --> 00:19:14.619 hence their production will start.

NOTE Confidence: 0.80760183375

00:19:14.620 --> 00:19:16.400 After some time those proteins

NOTE Confidence: 0.80760183375

00:19:16.400 --> 00:19:18.567 get decorated by email and clock

NOTE Confidence: 0.80760183375

00:19:18.567 --> 00:19:20.835 or up and ready again and they

NOTE Confidence: 0.80760183375

00:19:20.835 --> 00:19:22.489 start producing these proteins.

NOTE Confidence: 0.880276569090909

00:19:24.640 --> 00:19:27.704 This cellular cycle gets a lot of influence

NOTE Confidence: 0.880276569090909

00:19:27.704 --> 00:19:30.899 from the outside and this is how we

NOTE Confidence: 0.880276569090909

00:19:30.899 --> 00:19:33.719 maintain in trainment with the environment.

NOTE Confidence: 0.880276569090909

00:19:33.720 --> 00:19:36.294 Light for example, and it's probably

NOTE Confidence: 0.880276569090909

00:19:36.294 --> 00:19:38.899 the most important slide paper in

NOTE Confidence: 0.880276569090909

00:19:38.899 --> 00:19:41.483 trains clocks, cellular clocks in

NOTE Confidence: 0.880276569090909

00:19:41.483 --> 00:19:43.256 the suprachiasmatic nucleus.

NOTE Confidence: 0.880276569090909

00:19:43.260 --> 00:19:46.648 And those neurons send a neurologic or

NOTE Confidence: 0.880276569090909

00:19:46.648 --> 00:19:49.659 a chemical signals to other cells in

NOTE Confidence: 0.880276569090909

00:19:49.659 --> 00:19:53.080 the body to keep them in in the rhythm.

NOTE Confidence: 0.880276569090909

00:19:53.080 --> 00:19:55.450 Other rhythmic and training cues are

NOTE Confidence: 0.880276569090909

00:19:55.528 --> 00:19:58.764 also present, maybe not as strong,

NOTE Confidence: 0.880276569090909

00:19:58.764 --> 00:20:01.619 but those include times of

NOTE Confidence: 0.880276569090909

00:20:01.619 --> 00:20:04.688 feeding changes in temperature,

NOTE Confidence: 0.880276569090909

00:20:04.690 --> 00:20:08.560 sleep wake schedules, and exercise.

NOTE Confidence: 0.880276569090909

00:20:08.560 --> 00:20:10.534 Why do we think this is important?

NOTE Confidence: 0.880276569090909

00:20:10.540 --> 00:20:13.951 Well, we all know that cells have a diurnal

NOTE Confidence: 0.880276569090909

00:20:13.951 --> 00:20:16.266 variability in terms of their function.

NOTE Confidence: 0.880276569090909

00:20:16.270 --> 00:20:19.798 And the changes of circadian gene

NOTE Confidence: 0.880276569090909

00:20:19.798 --> 00:20:22.320 expression well dictate what kind of

NOTE Confidence: 0.880276569090909

00:20:22.320 --> 00:20:24.715 genes the cell will express during

NOTE Confidence: 0.880276569090909

00:20:24.715 --> 00:20:27.025 that specific part of the day,

NOTE Confidence: 0.880276569090909

00:20:27.030 --> 00:20:31.496 and it will also dictate cellular Physiology.

NOTE Confidence: 0.880276569090909

00:20:31.500 --> 00:20:36.120 So while our most talked about circadian

NOTE Confidence: 0.880276569090909

00:20:36.120 --> 00:20:40.960 disruption would be that of sleep wake cycle.

NOTE Confidence: 0.880276569090909

00:20:40.960 --> 00:20:43.006 It is important to note that.

NOTE Confidence: 0.882086075294118

00:20:45.510 --> 00:20:49.580 As I gave it is also have a direct influence

NOTE Confidence: 0.882086075294118

00:20:49.677 --> 00:20:53.009 on the function of organs and cells.

NOTE Confidence: 0.882086075294118

00:20:53.010 --> 00:20:56.052 And that this arrangement of these

NOTE Confidence: 0.882086075294118

00:20:56.052 --> 00:20:59.078 affective side capers may lead mainly

NOTE Confidence: 0.882086075294118

00:20:59.078 --> 00:21:01.350 to a complete desynchronization

NOTE Confidence: 0.882086075294118

00:21:01.350 --> 00:21:04.190 between our central master clock

NOTE Confidence: 0.882086075294118

00:21:04.277 --> 00:21:07.157 and our peripheral cells and organs.

NOTE Confidence: 0.882086075294118

00:21:07.160 --> 00:21:09.904 Leading each organ functioning on its own

NOTE Confidence: 0.882086075294118

00:21:09.904 --> 00:21:12.669 time and having different expressions.

NOTE Confidence: 0.835201813

00:21:15.220 --> 00:21:17.684 So going going a little bit deeper

NOTE Confidence: 0.835201813

00:21:17.684 --> 00:21:20.148 into their cues, and as I mentioned,

NOTE Confidence: 0.835201813

00:21:20.148 --> 00:21:22.260 light is probably the most important

NOTE Confidence: 0.835201813

00:21:22.328 --> 00:21:24.166 slide paper data from hospitals,

NOTE Confidence: 0.835201813

00:21:24.166 --> 00:21:26.840 whether words or I see you have

NOTE Confidence: 0.835201813

00:21:26.915 --> 00:21:28.935 shown a similar pattern where

NOTE Confidence: 0.835201813

00:21:28.935 --> 00:21:31.520 patients are exposed to a relatively

NOTE Confidence: 0.835201813

00:21:31.520 --> 00:21:33.970 dim light throughout the day.

NOTE Confidence: 0.835201813

00:21:33.970 --> 00:21:36.055 And an acceptably dim light

NOTE Confidence: 0.835201813

00:21:36.055 --> 00:21:37.856 throughout the night. However,

NOTE Confidence: 0.835201813

00:21:37.856 --> 00:21:42.224 this light is interrupted by peaks of life,

NOTE Confidence: 0.835201813

00:21:42.230 --> 00:21:44.718 and this is just an example of office

NOTE Confidence: 0.835201813

00:21:44.718 --> 00:21:46.699 study that was done in the ICU,

NOTE Confidence: 0.835201813

00:21:46.700 --> 00:21:50.277 and you can see longer than black,

NOTE Confidence: 0.835201813

00:21:50.280 --> 00:21:53.742 the median of light exposure levels

NOTE Confidence: 0.835201813

00:21:53.742 --> 00:21:56.879 and the interquartile range in Gray,

NOTE Confidence: 0.835201813

00:21:56.880 --> 00:22:00.200 and what's important to note is that the

NOTE Confidence: 0.835201813

00:22:00.200 --> 00:22:03.460 light during the night was acceptably them.

NOTE Confidence: 0.835201813

00:22:03.460 --> 00:22:05.777 However, during the day and at around.

NOTE Confidence: 0.835201813

00:22:05.780 --> 00:22:07.180 Between 9:00 AM and 11:00,

NOTE Confidence: 0.835201813

00:22:07.180 --> 00:22:09.652 which was the peak exposure that

NOTE Confidence: 0.835201813

00:22:09.652 --> 00:22:12.648 light did not go above 140 lots.

NOTE Confidence: 0.835201813

00:22:12.650 --> 00:22:15.632 Just to put that into perspective

NOTE Confidence: 0.835201813

00:22:15.632 --> 00:22:17.620 of what we experienced,

NOTE Confidence: 0.835201813

00:22:17.620 --> 00:22:20.604 the sunny day is 30,000 lux and

NOTE Confidence: 0.835201813

00:22:20.604 --> 00:22:22.728 office slide that has no windows

NOTE Confidence: 0.835201813

00:22:22.728 --> 00:22:25.406 would be 500 lux O our hospital

NOTE Confidence: 0.835201813

00:22:25.406 --> 00:22:27.174 patients are significantly under

NOTE Confidence: 0.835201813

00:22:27.174 --> 00:22:29.608 exposed to light during the day.

NOTE Confidence: 0.868508789

00:22:32.300 --> 00:22:34.150 What I found also interesting

NOTE Confidence: 0.868508789

00:22:34.150 --> 00:22:36.480 is that the light patterns in

NOTE Confidence: 0.868508789

00:22:36.480 --> 00:22:38.530 the hospital don't really differ

NOTE Confidence: 0.868508789

00:22:38.530 --> 00:22:40.170 between morning and night.

NOTE Confidence: 0.868508789

00:22:40.170 --> 00:22:42.042 So a study looking at the

NOTE Confidence: 0.868508789

00:22:42.042 --> 00:22:43.290 difference of certain habits,

NOTE Confidence: 0.868508789

00:22:43.290 --> 00:22:46.076 such as using lights in the room,

NOTE Confidence: 0.868508789

00:22:46.080 --> 00:22:47.420 leaving the TV on,

NOTE Confidence: 0.868508789

00:22:47.420 --> 00:22:49.095 having the window shade clothes

NOTE Confidence: 0.868508789

00:22:49.095 --> 00:22:50.928 was really not significantly

NOTE Confidence: 0.868508789

00:22:50.928 --> 00:22:52.356 different to morning,

NOTE Confidence: 0.868508789

00:22:52.360 --> 00:22:54.048 noon or night time.

NOTE Confidence: 0.832533792

00:22:56.060 --> 00:22:58.720 So back to our patient.

NOTE Confidence: 0.832533792

00:22:58.720 --> 00:23:01.880 That afternoon the patient decompensated.

NOTE Confidence: 0.832533792

00:23:01.880 --> 00:23:03.836 He required intubation,

NOTE Confidence: 0.832533792

00:23:03.836 --> 00:23:05.140 mechanical ventilation.

NOTE Confidence: 0.832533792

00:23:05.140 --> 00:23:07.445 He was started on sedation

NOTE Confidence: 0.832533792

00:23:07.445 --> 00:23:09.750 restrained and the gastric tube

NOTE Confidence: 0.832533792

00:23:09.834 --> 00:23:12.379 was placed for continuous feeds.

NOTE Confidence: 0.832533792

00:23:12.380 --> 00:23:14.277 Just to give you guys an idea,

NOTE Confidence: 0.832533792

00:23:14.280 --> 00:23:16.740 this was the light profile for

NOTE Confidence: 0.832533792

00:23:16.740 --> 00:23:18.812 the ICU patient between 8:00

NOTE Confidence: 0.832533792

00:23:18.812 --> 00:23:20.894 PM and 8:00 in the morning,

NOTE Confidence: 0.832533792

00:23:20.900 --> 00:23:23.300 and as you can see the light level

NOTE Confidence: 0.832533792

00:23:23.300 --> 00:23:24.989 exposure has been pretty them

NOTE Confidence: 0.832533792

00:23:24.989 --> 00:23:27.023 throughout the night with a peak

NOTE Confidence: 0.832533792

00:23:27.023 --> 00:23:28.953 and light exposure at around 3:00

NOTE Confidence: 0.832533792

00:23:28.953 --> 00:23:31.134 AM to 4:00 AM and this correlated

NOTE Confidence: 0.832533792

00:23:31.134 --> 00:23:33.042 to the patient undergoing a path.

NOTE Confidence: 0.762247901111111

00:23:35.890 --> 00:23:37.522 Another important circadian

NOTE Confidence: 0.762247901111111

00:23:37.522 --> 00:23:40.786 queue is the timing of meals.

NOTE Confidence: 0.762247901111111

00:23:40.790 --> 00:23:42.404 And it is important for us

NOTE Confidence: 0.762247901111111

00:23:42.404 --> 00:23:44.180 to know that the GI system,

NOTE Confidence: 0.762247901111111

00:23:44.180 --> 00:23:46.155 including the anchors and liver

NOTE Confidence: 0.762247901111111

00:23:46.155 --> 00:23:49.960 function in a in a circadian rhythm and

NOTE Confidence: 0.762247901111111

00:23:49.960 --> 00:23:52.360 exposing patients to continuous feeds

NOTE Confidence: 0.762247901111111

00:23:52.360 --> 00:23:56.365 like we usually do in the ICU or small

NOTE Confidence: 0.762247901111111

00:23:56.365 --> 00:23:59.328 fields with an additional feed at 2:00 AM,

NOTE Confidence: 0.762247901111111

00:23:59.330 --> 00:24:00.705 which is also a common

NOTE Confidence: 0.762247901111111

00:24:00.705 --> 00:24:01.805 arrangement in the ICU.

NOTE Confidence: 0.762247901111111

00:24:01.810 --> 00:24:04.000 Well, the result in a significant

NOTE Confidence: 0.762247901111111

00:24:04.000 --> 00:24:05.974 disruption in that cycle and

NOTE Confidence: 0.762247901111111

00:24:05.974 --> 00:24:07.762 put patients into complete

NOTE Confidence: 0.762247901111111

00:24:07.762 --> 00:24:09.550 distinction between their central

NOTE Confidence: 0.762247901111111

00:24:09.550 --> 00:24:11.260 rhythm and the peripheral.

NOTE Confidence: 0.762247901111111

00:24:11.260 --> 00:24:12.550 Peripheral cellular.

NOTE Confidence: 0.7851161

00:24:15.350 --> 00:24:17.690 So, after discussing circadian cues,

NOTE Confidence: 0.7851161

00:24:17.690 --> 00:24:20.306 I want to move on to discuss another

NOTE Confidence: 0.7851161

00:24:20.306 --> 00:24:21.441 important disruptive environmental

NOTE Confidence: 0.7851161

00:24:21.441 --> 00:24:24.050 factor in the hospital, which is.

NOTE Confidence: 0.7851161

00:24:24.050 --> 00:24:26.325 And sound can come from

NOTE Confidence: 0.7851161

00:24:26.325 --> 00:24:27.690 many different sources,

NOTE Confidence: 0.7851161

00:24:27.690 --> 00:24:30.630 most commonly reported or alarms,

NOTE Confidence: 0.7851161

00:24:30.630 --> 00:24:32.775 and how staff conversation in

NOTE Confidence: 0.7851161

00:24:32.775 --> 00:24:35.396 addition to some outside knows such

NOTE Confidence: 0.7851161

00:24:35.396 --> 00:24:37.784 as street cars or health partners.

NOTE Confidence: 0.88773755

00:24:41.150 --> 00:24:43.302 WHO sound recommendation for

NOTE Confidence: 0.88773755

00:24:43.302 --> 00:24:45.992 someone to have good sleep?

NOTE Confidence: 0.88773755

00:24:46.000 --> 00:24:49.094 Is to have a continuous background noise

NOTE Confidence: 0.88773755

00:24:49.094 --> 00:24:52.429 of less than 30 a weighted decibels?

NOTE Confidence: 0.88773755

00:24:52.430 --> 00:24:56.768 And to have noise events not higher than 45,

NOTE Confidence: 0.88773755

00:24:56.770 --> 00:24:59.486 a weighted decibels and the definition of

NOTE Confidence: 0.88773755

00:24:59.486 --> 00:25:02.466 noise events may value from study to study,

NOTE Confidence: 0.88773755

00:25:02.470 --> 00:25:05.422 but it's basically an increase in

NOTE Confidence: 0.88773755

00:25:05.422 --> 00:25:08.808 the noise from the from the back.

NOTE Confidence: 0.88773755

00:25:08.810 --> 00:25:11.634 Looking at what we do in our hospital,

NOTE Confidence: 0.88773755

00:25:11.640 --> 00:25:14.958 John Hopkins did an extensive study looking

NOTE Confidence: 0.88773755

00:25:14.958 --> 00:25:18.216 at what happens on medical wards and

NOTE Confidence: 0.88773755

00:25:18.216 --> 00:25:21.478 what's the sound level in patients rooms.

NOTE Confidence: 0.88773755

00:25:21.480 --> 00:25:24.147 As you can see in this graph,

NOTE Confidence: 0.88773755

00:25:24.150 --> 00:25:26.175 plotting the different rooms on

NOTE Confidence: 0.88773755

00:25:26.175 --> 00:25:29.434 the X axis and the level of sound

NOTE Confidence: 0.88773755

00:25:29.434 --> 00:25:31.354 exposure on the Y axis.

NOTE Confidence: 0.88773755

00:25:31.360 --> 00:25:35.096 You can see that the average sun exposure,

NOTE Confidence: 0.88773755

00:25:35.100 --> 00:25:37.405 which is plotted and straight

NOTE Confidence: 0.88773755

00:25:37.405 --> 00:25:39.249 black lines and squares.

NOTE Confidence: 0.88773755

00:25:39.250 --> 00:25:43.366 Was between 50 and 60 decibels.

NOTE Confidence: 0.88773755

00:25:43.370 --> 00:25:47.018 The red line represents the peak.

NOTE Confidence: 0.88773755

00:25:47.020 --> 00:25:50.976 I allowed threshold for The Who and

NOTE Confidence: 0.88773755

00:25:50.976 --> 00:25:53.064 the blue line represents the background

NOTE Confidence: 0.88773755

00:25:53.064 --> 00:25:55.804 threshold and you can see that our numbers

NOTE Confidence: 0.88773755

00:25:55.804 --> 00:25:57.470 are significantly higher than that.

NOTE Confidence: 0.818481255714286

00:25:59.530 --> 00:26:01.655 ICU studies were no different

NOTE Confidence: 0.818481255714286

00:26:01.655 --> 00:26:03.355 against showing a significantly

NOTE Confidence: 0.818481255714286

00:26:03.355 --> 00:26:05.389 high level of sound exposure.

NOTE Confidence: 0.874558960625

00:26:07.790 --> 00:26:10.118 What was also interesting in this study is

NOTE Confidence: 0.874558960625

00:26:10.118 --> 00:26:12.608 that they looked at sound peaks that occur,

NOTE Confidence: 0.874558960625

00:26:12.610 --> 00:26:14.770 and I see an environment and these were,

NOTE Confidence: 0.874558960625

00:26:14.770 --> 00:26:16.695 by the way sensors placed next to

NOTE Confidence: 0.874558960625

00:26:16.695 --> 00:26:18.420 patients heads. So that's exactly

NOTE Confidence: 0.874558960625

00:26:18.420 --> 00:26:20.370 what the patient is heating.

NOTE Confidence: 0.874558960625

00:26:20.370 --> 00:26:23.484 And you can see that noise

NOTE Confidence: 0.874558960625

00:26:23.484 --> 00:26:26.670 peaks that exceed 85 decibels.

NOTE Confidence: 0.874558960625

00:26:26.670 --> 00:26:29.268 Were plotted in bars in Gray,

NOTE Confidence: 0.874558960625

00:26:29.270 --> 00:26:32.198 and the noise peaks that exceeded

NOTE Confidence: 0.874558960625

00:26:32.198 --> 00:26:34.150 100 decibels were plotted,

NOTE Confidence: 0.874558960625

00:26:34.150 --> 00:26:36.242 and bars in black.

NOTE Confidence: 0.874558960625

00:26:36.242 --> 00:26:38.857 And throughout the whole day,

NOTE Confidence: 0.874558960625

00:26:38.860 --> 00:26:40.415 you can see a significantly

NOTE Confidence: 0.874558960625

00:26:40.415 --> 00:26:41.970 high number of noise events,

NOTE Confidence: 0.874558960625

00:26:41.970 --> 00:26:42.765 but more interestingly,

NOTE Confidence: 0.874558960625

00:26:42.765 --> 00:26:45.189 if you look in the middle of the graph,

NOTE Confidence: 0.874558960625

00:26:45.190 --> 00:26:47.284 which is the period between probably

NOTE Confidence: 0.874558960625

00:26:47.284 --> 00:26:49.738 12:00 AM to 6:00 in the morning,

NOTE Confidence: 0.874558960625

00:26:49.740 --> 00:26:52.080 you can see that patients had

NOTE Confidence: 0.874558960625

00:26:52.080 --> 00:26:54.585 at least at least five noise

NOTE Confidence: 0.874558960625

00:26:54.585 --> 00:26:56.759 events per hour of their sleep.

NOTE Confidence: 0.862502605

00:26:58.800 --> 00:27:01.158 Just to put this into perspective

NOTE Confidence: 0.862502605

00:27:01.158 --> 00:27:03.640 again and comparing it to loudness

NOTE Confidence: 0.862502605

00:27:03.640 --> 00:27:06.545 chart so the average background in our

NOTE Confidence: 0.862502605

00:27:06.545 --> 00:27:09.180 hospital units is similar to that of

NOTE Confidence: 0.862502605

00:27:09.180 --> 00:27:11.603 someone sleeping next to a dishwasher

NOTE Confidence: 0.862502605

00:27:11.603 --> 00:27:14.207 or someone sleeping next to someone

NOTE Confidence: 0.862502605

00:27:14.207 --> 00:27:16.859 who's having a conversation with him.

NOTE Confidence: 0.862502605

00:27:16.860 --> 00:27:18.420 Looking at the peaks,

NOTE Confidence: 0.862502605

00:27:18.420 --> 00:27:20.370 it's similar to someone who's

NOTE Confidence: 0.862502605

00:27:20.370 --> 00:27:22.225 sleeping on a highway next to

NOTE Confidence: 0.862502605

00:27:22.225 --> 00:27:24.150 traffic or even in the subway.

NOTE Confidence: 0.866012097916667

00:27:28.170 --> 00:27:30.155 Another important factor of sound

NOTE Confidence: 0.866012097916667

00:27:30.155 --> 00:27:33.078 in addition to the idea of peaks

NOTE Confidence: 0.866012097916667

00:27:33.078 --> 00:27:35.238 probably being more disruptive than

NOTE Confidence: 0.866012097916667

00:27:35.238 --> 00:27:37.998 background is the source of the sound.

NOTE Confidence: 0.866012097916667

00:27:38.000 --> 00:27:42.149 And some work was done in to that end.

NOTE Confidence: 0.866012097916667

00:27:42.150 --> 00:27:43.880 And they looked at different,

NOTE Confidence: 0.866012097916667

00:27:43.880 --> 00:27:47.680 so this work was done again on healthy

NOTE Confidence: 0.866012097916667

00:27:47.680 --> 00:27:50.589 subjects and they were subjected.

NOTE Confidence: 0.866012097916667

00:27:50.590 --> 00:27:51.730 Over the night of sleep,

NOTE Confidence: 0.866012097916667

00:27:51.730 --> 00:27:54.010 two different sounds that people may

NOTE Confidence: 0.866012097916667

00:27:54.010 --> 00:27:56.979 experience in the ICU and different sounds.

NOTE Confidence: 0.866012097916667

00:27:56.980 --> 00:27:59.572 And they looked at that e.g and determine

NOTE Confidence: 0.866012097916667

00:27:59.572 --> 00:28:02.162 whether or not the patient had an arousal

NOTE Confidence: 0.866012097916667

00:28:02.162 --> 00:28:04.547 in response to that sound and at what

NOTE Confidence: 0.866012097916667

00:28:04.547 --> 00:28:07.720 level that we even had an arousal.

NOTE Confidence: 0.866012097916667

00:28:07.720 --> 00:28:10.304 And on the graph on top you can

NOTE Confidence: 0.866012097916667

00:28:10.304 --> 00:28:12.878 see the different colors represent

NOTE Confidence: 0.866012097916667

00:28:12.878 --> 00:28:15.338 a different sound source.

NOTE Confidence: 0.866012097916667

00:28:15.340 --> 00:28:18.812 And when the when the color is

NOTE Confidence: 0.866012097916667

00:28:18.812 --> 00:28:20.300 completely completely shaded.

NOTE Confidence: 0.866012097916667

00:28:20.300 --> 00:28:22.508 This is when the patient had their houses,

NOTE Confidence: 0.866012097916667

00:28:22.510 --> 00:28:25.574 so you can see that different sound sources

NOTE Confidence: 0.866012097916667

00:28:25.574 --> 00:28:28.300 had different impact in terms of arousers,

NOTE Confidence: 0.866012097916667

00:28:28.300 --> 00:28:30.658 and they concluded that electronic sounds,

NOTE Confidence: 0.866012097916667

00:28:30.660 --> 00:28:33.048 such as alarms were actually more

NOTE Confidence: 0.866012097916667

00:28:33.048 --> 00:28:35.590 arousing to patients than other sounds,

NOTE Confidence: 0.866012097916667

00:28:35.590 --> 00:28:37.690 such as people talking.

NOTE Confidence: 0.890959776666667

00:28:40.640 --> 00:28:43.340 Again, going back to our patient,

NOTE Confidence: 0.890959776666667

00:28:43.340 --> 00:28:45.020 this was his sound exposure.

NOTE Confidence: 0.890959776666667

00:28:45.020 --> 00:28:48.300 During the night you can see that the

NOTE Confidence: 0.890959776666667

00:28:48.300 --> 00:28:50.659 average background noise was around 48,

NOTE Confidence: 0.890959776666667

00:28:50.660 --> 00:28:52.488 which is again higher

NOTE Confidence: 0.890959776666667

00:28:52.488 --> 00:28:53.859 than the recommendation.

NOTE Confidence: 0.890959776666667

00:28:53.860 --> 00:28:57.702 You can see multiple peaks and the

NOTE Confidence: 0.890959776666667

00:28:57.702 --> 00:29:01.238 average of the peaks was around 8/4 hour.

NOTE Confidence: 0.890959776666667

00:29:01.240 --> 00:29:02.420 And again, as a reminder,

NOTE Confidence: 0.890959776666667

00:29:02.420 --> 00:29:04.605 sound peaks are probably more

NOTE Confidence: 0.890959776666667

00:29:04.605 --> 00:29:06.353 associated with arousals from

NOTE Confidence: 0.890959776666667

00:29:06.353 --> 00:29:08.748 sleep than continuous backgrounds.

NOTE Confidence: 0.882683161666667

00:29:11.480 --> 00:29:13.762 So that moves us to the 4th

NOTE Confidence: 0.882683161666667

00:29:13.762 --> 00:29:16.079 component of the sleep disruptors,

NOTE Confidence: 0.882683161666667

00:29:16.080 --> 00:29:17.550 and this is bedside care.

NOTE Confidence: 0.891679665833333

00:29:19.700 --> 00:29:23.095 In a study looking at how much

NOTE Confidence: 0.891679665833333

00:29:23.095 --> 00:29:25.246 activity occurs in patients

NOTE Confidence: 0.891679665833333

00:29:25.246 --> 00:29:28.000 who 50 patients were sampled

NOTE Confidence: 0.891679665833333

00:29:28.000 --> 00:29:30.520 from the three different ICU's

NOTE Confidence: 0.891679665833333

00:29:30.520 --> 00:29:32.320 in a New Jersey hospital.

NOTE Confidence: 0.891679665833333

00:29:32.320 --> 00:29:34.665 And if you look at the bars,

NOTE Confidence: 0.891679665833333

00:29:34.670 --> 00:29:36.038 you can see that.

NOTE Confidence: 0.891679665833333

00:29:36.038 --> 00:29:39.180 From 7:00 AM to 6:00 in the morning,

NOTE Confidence: 0.891679665833333

00:29:39.180 --> 00:29:41.025 almost every hour the patient

NOTE Confidence: 0.891679665833333

00:29:41.025 --> 00:29:42.870 had an interaction with someone,

NOTE Confidence: 0.891679665833333

00:29:42.870 --> 00:29:44.795 and within one hour sometimes

NOTE Confidence: 0.891679665833333

00:29:44.795 --> 00:29:46.720 it happened 4 four times.

NOTE Confidence: 0.732203030666667

00:29:49.330 --> 00:29:53.446 Another interesting findings in those isues.

NOTE Confidence: 0.732203030666667

00:29:53.450 --> 00:29:55.562 And each bar from this represents

NOTE Confidence: 0.732203030666667

00:29:55.562 --> 00:29:57.450 a different different type of ISU,

NOTE Confidence: 0.732203030666667

00:29:57.450 --> 00:30:01.209 but it's probably consistent across all four.

NOTE Confidence: 0.732203030666667

00:30:01.210 --> 00:30:03.586 Was the timing of the path.

NOTE Confidence: 0.732203030666667

00:30:03.590 --> 00:30:05.862 So most of our patients received a bath

NOTE Confidence: 0.732203030666667

00:30:05.862 --> 00:30:08.120 at around 4:00 or five in the morning.

NOTE Confidence: 0.863777276

00:30:11.820 --> 00:30:13.200 Going back to our patient,

NOTE Confidence: 0.863777276

00:30:13.200 --> 00:30:15.570 this was the number of entrances

NOTE Confidence: 0.863777276

00:30:15.570 --> 00:30:17.620 and exits from his room.

NOTE Confidence: 0.863777276

00:30:17.620 --> 00:30:19.460 And as you can and this is from

NOTE Confidence: 0.863777276

00:30:19.460 --> 00:30:21.337 8:00 PM to 8:00 in the morning,

NOTE Confidence: 0.863777276

00:30:21.340 --> 00:30:22.560 and as you can imagine,

NOTE Confidence: 0.863777276

00:30:22.560 --> 00:30:24.840 this number is significantly high,

NOTE Confidence: 0.863777276

00:30:24.840 --> 00:30:27.780 reaching 238 entries for one nine.

NOTE Confidence: 0.876000671333333

00:30:33.180 --> 00:30:36.285 Last but not least is the impact of the

NOTE Confidence: 0.876000671333333

00:30:36.285 --> 00:30:38.838 illness itself on the patients sleep,

NOTE Confidence: 0.876000671333333

00:30:38.840 --> 00:30:41.636 and that illness can can result

NOTE Confidence: 0.876000671333333

00:30:41.636 --> 00:30:43.820 in sleep disruption because of.

NOTE Confidence: 0.876000671333333

00:30:43.820 --> 00:30:46.630 Neurological involvement like brain damage,

NOTE Confidence: 0.876000671333333

00:30:46.630 --> 00:30:48.402 multi organ failure, pain,

NOTE Confidence: 0.876000671333333

00:30:48.402 --> 00:30:51.588 anxiety from the illness or it can

NOTE Confidence: 0.876000671333333

00:30:51.588 --> 00:30:54.288 result from disruption due to treatments

NOTE Confidence: 0.876000671333333

00:30:54.288 --> 00:30:57.590 such as using a mechanical ventilator,

NOTE Confidence: 0.876000671333333

00:30:57.590 --> 00:30:59.378 certain certain medications.

NOTE Confidence: 0.844096228333333

00:31:01.610 --> 00:31:04.010 Looking at the endless by itself,

NOTE Confidence: 0.844096228333333

00:31:04.010 --> 00:31:06.530 it's important to note that different

NOTE Confidence: 0.844096228333333

00:31:06.530 --> 00:31:09.234 illnesses may result in different impact

NOTE Confidence: 0.844096228333333

00:31:09.234 --> 00:31:12.078 in different impact on patients sleep.

NOTE Confidence: 0.844096228333333

00:31:12.080 --> 00:31:16.161 This study compared 11 ICU patients who

NOTE Confidence: 0.844096228333333

00:31:16.161 --> 00:31:19.550 had sepsis to 11 ICU patients who did

NOTE Confidence: 0.844096228333333

00:31:19.550 --> 00:31:22.799 not have substance and it looked at the

NOTE Confidence: 0.844096228333333

00:31:22.799 --> 00:31:25.337 influence of sepsis and inflammation on

NOTE Confidence: 0.844096228333333

00:31:25.413 --> 00:31:28.509 the expression of circadian rhythm genes.

NOTE Confidence: 0.844096228333333

00:31:28.510 --> 00:31:31.774 The sepsis patients were persisted on

NOTE Confidence: 0.844096228333333

00:31:31.774 --> 00:31:35.130 this figure in red and as you can see,

NOTE Confidence: 0.844096228333333

00:31:35.130 --> 00:31:37.734 the expression of the cry one

NOTE Confidence: 0.844096228333333

00:31:37.734 --> 00:31:39.470 protein was significantly decreased

NOTE Confidence: 0.844096228333333

00:31:39.537 --> 00:31:41.337 in patients who had sepsis.

NOTE Confidence: 0.88305972

00:31:43.550 --> 00:31:47.254 And it really lost its variation with time.

NOTE Confidence: 0.769778177

00:31:50.240 --> 00:31:53.265 Another study looked at injecting

NOTE Confidence: 0.769778177

00:31:53.265 --> 00:31:56.290 endotoxin to human healthy volunteers.

NOTE Confidence: 0.769778177

00:31:56.290 --> 00:31:59.740 Yes, this was IRB approve.

NOTE Confidence: 0.769778177

00:31:59.740 --> 00:32:02.796 And they looked at the expression of these

NOTE Confidence: 0.769778177

00:32:02.796 --> 00:32:05.007 circadian genes in their local sites.

NOTE Confidence: 0.769778177

00:32:05.010 --> 00:32:07.890 Following the injection of the endotoxin,

NOTE Confidence: 0.769778177

00:32:07.890 --> 00:32:09.136 as you can see to your left,

NOTE Confidence: 0.769778177

00:32:09.140 --> 00:32:12.402 there was a significant reduction in the

NOTE Confidence: 0.769778177

00:32:12.402 --> 00:32:15.060 expression of multiple circadian genes.

NOTE Confidence: 0.769778177

00:32:15.060 --> 00:32:17.392 And this reduction persisted

NOTE Confidence: 0.769778177

00:32:17.392 --> 00:32:19.724 for around 24 hours.

NOTE Confidence: 0.769778177

00:32:19.730 --> 00:32:21.806 But what was more interesting is

NOTE Confidence: 0.769778177

00:32:21.806 --> 00:32:24.329 that looking at the melatonin level,

NOTE Confidence: 0.769778177

00:32:24.330 --> 00:32:26.610 the melatonin secretion was not

NOTE Confidence: 0.769778177

00:32:26.610 --> 00:32:28.890 really impacted by this injection.

NOTE Confidence: 0.769778177

00:32:28.890 --> 00:32:32.140 And that's an important idea.

NOTE Confidence: 0.769778177

00:32:32.140 --> 00:32:34.156 To have us wonder whether or

NOTE Confidence: 0.769778177

00:32:34.156 --> 00:32:35.947 not impact on peripheral cells

NOTE Confidence: 0.769778177

00:32:35.947 --> 00:32:38.197 is different than the impact on

NOTE Confidence: 0.769778177

00:32:38.197 --> 00:32:39.830 the central circadian rhythm,

NOTE Confidence: 0.769778177

00:32:39.830 --> 00:32:43.502 and hence leading to an internal

NOTE Confidence: 0.769778177

00:32:43.502 --> 00:32:46.010 desynchronization between circadian rhythms.

NOTE Confidence: 0.8334401075

00:32:48.480 --> 00:32:50.188 Another very important factor,

NOTE Confidence: 0.8334401075

00:32:50.188 --> 00:32:52.750 but probably too wide for us

NOTE Confidence: 0.8334401075

00:32:52.827 --> 00:32:54.999 to dive into during this talk,

NOTE Confidence: 0.8334401075

00:32:55.000 --> 00:32:56.980 is the effect of medications we

NOTE Confidence: 0.8334401075

00:32:56.980 --> 00:32:58.949 use in the hospital on sleep.

NOTE Confidence: 0.8334401075

00:32:58.950 --> 00:33:01.926 I'm just putting this to show you to

NOTE Confidence: 0.8334401075

00:33:01.926 --> 00:33:05.675 give you an idea of how much different

NOTE Confidence: 0.8334401075

00:33:05.675 --> 00:33:08.210 medication classes can impact sleep,

NOTE Confidence: 0.8334401075

00:33:08.210 --> 00:33:10.350 its architecture and quality.

NOTE Confidence: 0.90163965

00:33:13.000 --> 00:33:15.471 Now moving to available tools that may

NOTE Confidence: 0.90163965

00:33:15.471 --> 00:33:18.716 allow us to measure sleep in the hospital.

NOTE Confidence: 0.90163965

00:33:18.720 --> 00:33:21.360 PSG is probably the gold standard

NOTE Confidence: 0.90163965

00:33:21.360 --> 00:33:23.041 for sleep measurement, however,

NOTE Confidence: 0.90163965

00:33:23.041 --> 00:33:25.207 in the hospital setting it is

NOTE Confidence: 0.90163965

00:33:25.207 --> 00:33:27.000 a labor intensive procedure.

NOTE Confidence: 0.90163965

00:33:27.000 --> 00:33:28.431 It's pretty costly.

NOTE Confidence: 0.90163965

00:33:28.431 --> 00:33:31.293 It's very difficult to tolerate by

NOTE Confidence: 0.90163965

00:33:31.293 --> 00:33:33.588 patients for 24 hours specially,

NOTE Confidence: 0.90163965

00:33:33.590 --> 00:33:36.140 especially in non ICU patients

NOTE Confidence: 0.90163965

00:33:36.140 --> 00:33:37.670 who are active.

NOTE Confidence: 0.90163965

00:33:37.670 --> 00:33:40.001 And another important point is that the

NOTE Confidence: 0.90163965

00:33:40.001 --> 00:33:41.739 traditional scoring may be difficult.

NOTE Confidence: 0.90163965

00:33:41.740 --> 00:33:42.516 In critically.

NOTE Confidence: 0.90163965

00:33:42.516 --> 00:33:44.844 I'll patients who may lose K

NOTE Confidence: 0.90163965

00:33:44.844 --> 00:33:47.043 complexes spindles due to the illness

NOTE Confidence: 0.90163965

00:33:47.043 --> 00:33:48.743 or due to certain medications.

NOTE Confidence: 0.767857046

00:33:51.770 --> 00:33:54.610 Actigraphy has also been tried.

NOTE Confidence: 0.767857046

00:33:54.610 --> 00:33:57.004 It's an it has an acceptable correlation.

NOTE Confidence: 0.767857046

00:33:57.010 --> 00:34:00.000 PSG based on previous studies.

NOTE Confidence: 0.767857046

00:34:00.000 --> 00:34:02.200 It is of low cost.

NOTE Confidence: 0.767857046

00:34:02.200 --> 00:34:05.592 It could be used for multiple nights and

NOTE Confidence: 0.767857046

00:34:05.592 --> 00:34:08.820 it's very well tolerated by patients.

NOTE Confidence: 0.767857046

00:34:08.820 --> 00:34:11.565 The problem with actigraphy is

NOTE Confidence: 0.767857046

00:34:11.565 --> 00:34:14.310 that it may overestimate steam.

NOTE Confidence: 0.767857046

00:34:14.310 --> 00:34:16.254 And especially in patients who are

NOTE Confidence: 0.767857046

00:34:16.254 --> 00:34:18.629 inactive and I see patients who are

NOTE Confidence: 0.767857046

00:34:18.629 --> 00:34:21.310 sedated since activity is a major factor

NOTE Confidence: 0.767857046

00:34:21.310 --> 00:34:25.150 in the algorithm of these devices.

NOTE Confidence: 0.767857046

00:34:25.150 --> 00:34:27.055 And it doesn't really provide

NOTE Confidence: 0.767857046

00:34:27.055 --> 00:34:28.579 any sleep staging data.

NOTE Confidence: 0.92084394

00:34:30.920 --> 00:34:33.240 To make things even easier, some sleep

NOTE Confidence: 0.92084394

00:34:33.240 --> 00:34:35.390 questionnaires have been put forth,

NOTE Confidence: 0.92084394

00:34:35.390 --> 00:34:38.294 and the most commonly uses the

NOTE Confidence: 0.92084394

00:34:38.294 --> 00:34:40.230 Richard Scampbell Sleep Questionnaire.

NOTE Confidence: 0.92084394

00:34:40.230 --> 00:34:43.818 It was, it did have a

NOTE Confidence: 0.92084394

00:34:43.818 --> 00:34:46.210 content validity against PSG.

NOTE Confidence: 0.92084394

00:34:46.210 --> 00:34:48.700 In the relatively small study.

NOTE Confidence: 0.92084394

00:34:48.700 --> 00:34:50.528 But the questionnaire asks

NOTE Confidence: 0.92084394

00:34:50.528 --> 00:34:52.813 patients about their sleep depth,

NOTE Confidence: 0.92084394

00:34:52.820 --> 00:34:54.624 latency, number of awakenings.

NOTE Confidence: 0.92084394

00:34:54.624 --> 00:34:57.330 How much time it took them

NOTE Confidence: 0.92084394

00:34:57.415 --> 00:34:59.000 to go back to sleep?

NOTE Confidence: 0.92084394

00:34:59.000 --> 00:35:01.130 Their assessment of their sleep

NOTE Confidence: 0.92084394

00:35:01.130 --> 00:35:04.708 quality and whether or not there was an

NOTE Confidence: 0.92084394

00:35:04.708 --> 00:35:06.850 intervening factor disrupting their sleep.

NOTE Confidence: 0.92084394

00:35:06.850 --> 00:35:09.720 And one example of that was noise,

NOTE Confidence: 0.92084394

00:35:09.720 --> 00:35:12.191 and they give them a visual analog

NOTE Confidence: 0.92084394

00:35:12.191 --> 00:35:15.237 which is from zero to 10 or zero to 100,

NOTE Confidence: 0.92084394

00:35:15.240 --> 00:35:18.568 with 0 being the worst and 10 or

NOTE Confidence: 0.92084394

00:35:18.568 --> 00:35:21.389 100 being the best qualities.

NOTE Confidence: 0.91242216

00:35:24.340 --> 00:35:27.086 Now, now that we know the impact

NOTE Confidence: 0.91242216

00:35:27.086 --> 00:35:28.398 of these sleep disruptions,

NOTE Confidence: 0.91242216

00:35:28.400 --> 00:35:30.518 that type of these sleep disruptions

NOTE Confidence: 0.91242216

00:35:30.518 --> 00:35:33.541 some ways for us to evaluate how our

NOTE Confidence: 0.91242216

00:35:33.541 --> 00:35:35.857 patients in the hospital are sleeping.

NOTE Confidence: 0.91242216

00:35:35.860 --> 00:35:38.919 It's important to see whether or not.

NOTE Confidence: 0.91242216

00:35:38.920 --> 00:35:40.498 Interventions may help.

NOTE Confidence: 0.853126316666667

00:35:43.660 --> 00:35:46.000 Looking at our patient, for example,

NOTE Confidence: 0.853126316666667

00:35:46.000 --> 00:35:48.616 or a patient with an illness in general.

NOTE Confidence: 0.853126316666667

00:35:48.620 --> 00:35:50.360 There are certain factors that

NOTE Confidence: 0.853126316666667

00:35:50.360 --> 00:35:52.480 we cannot really run away from.

NOTE Confidence: 0.853126316666667

00:35:52.480 --> 00:35:54.600 Our patients need timely care.

NOTE Confidence: 0.853126316666667

00:35:54.600 --> 00:35:56.172 They need certain medications.

NOTE Confidence: 0.853126316666667

00:35:56.172 --> 00:35:58.939 Even though a lot of the stuff

NOTE Confidence: 0.853126316666667

00:35:58.939 --> 00:36:01.242 that we do can be adjusted chilly

NOTE Confidence: 0.853126316666667

00:36:01.242 --> 00:36:03.479 in the non emergent setting.

NOTE Confidence: 0.853126316666667

00:36:03.480 --> 00:36:05.835 But possibly the most Inter

NOTE Confidence: 0.853126316666667

00:36:05.835 --> 00:36:08.160 Venable point in all of those

NOTE Confidence: 0.853126316666667

00:36:08.160 --> 00:36:09.885 factors would be the environment.

NOTE Confidence: 0.886878048571429

00:36:13.110 --> 00:36:15.614 Some studies have looked at the use of

NOTE Confidence: 0.886878048571429

00:36:15.614 --> 00:36:17.718 bright light therapy during the day,

NOTE Confidence: 0.886878048571429

00:36:17.720 --> 00:36:19.432 and as I mentioned,

NOTE Confidence: 0.886878048571429

00:36:19.432 --> 00:36:22.705 light has a very very important role

NOTE Confidence: 0.886878048571429

00:36:22.705 --> 00:36:25.189 in maintaining circadian rhythm.

NOTE Confidence: 0.886878048571429

00:36:25.190 --> 00:36:27.032 And one of the initial pilot

NOTE Confidence: 0.886878048571429

00:36:27.032 --> 00:36:27.953 studies was done,

NOTE Confidence: 0.886878048571429

00:36:27.960 --> 00:36:29.884 or postoperative patients who

NOTE Confidence: 0.886878048571429

00:36:29.884 --> 00:36:32.770 were exposed to light for around

NOTE Confidence: 0.886878048571429

00:36:32.848 --> 00:36:35.508 2 hours in the morning for three

NOTE Confidence: 0.886878048571429

00:36:35.508 --> 00:36:37.387 days after their surgery.

NOTE Confidence: 0.886878048571429

00:36:37.387 --> 00:36:41.809 And that resulted in decreased delirium.

NOTE Confidence: 0.886878048571429

00:36:41.810 --> 00:36:43.604 In their patients who were exposed

NOTE Confidence: 0.886878048571429

00:36:43.604 --> 00:36:45.509 to light compared to the control.

NOTE Confidence: 0.857228952105263

00:36:47.620 --> 00:36:49.008 In addition to that,

NOTE Confidence: 0.857228952105263

00:36:49.008 --> 00:36:50.743 few other studies have shown

NOTE Confidence: 0.857228952105263

00:36:50.743 --> 00:36:52.269 that bright light therapy

NOTE Confidence: 0.857228952105263

00:36:52.269 --> 00:36:54.495 during the day in the hospital.

NOTE Confidence: 0.857228952105263

00:36:54.500 --> 00:36:56.888 Would result in improvement

NOTE Confidence: 0.857228952105263

00:36:56.888 --> 00:36:59.276 and subjective sleep quality.

NOTE Confidence: 0.857228952105263

00:36:59.280 --> 00:37:01.952 Expose agitation episodes in

NOTE Confidence: 0.857228952105263

00:37:01.952 --> 00:37:04.327 mechanically ventilated patients and

NOTE Confidence: 0.857228952105263

00:37:04.327 --> 00:37:06.529 one study even showed a reduction

NOTE Confidence: 0.857228952105263

00:37:06.529 --> 00:37:09.019 in mortality in patients post AM I.

NOTE Confidence: 0.857228952105263

00:37:09.020 --> 00:37:11.165 And that study randomized compared

NOTE Confidence: 0.857228952105263

00:37:11.165 --> 00:37:13.733 patients who were placed in adult

NOTE Confidence: 0.857228952105263

00:37:13.733 --> 00:37:16.155 room versus those in a sunny room.

NOTE Confidence: 0.857228952105263

00:37:16.160 --> 00:37:17.752 However, this mortality benefit

NOTE Confidence: 0.857228952105263

00:37:17.752 --> 00:37:19.344 has not been reproduced.

NOTE Confidence: 0.92785196

00:37:22.060 --> 00:37:23.280 So how can we really?

NOTE Confidence: 0.92785196

00:37:23.280 --> 00:37:26.997 How can we intervene in our patients?

NOTE Confidence: 0.92785196

00:37:27.000 --> 00:37:29.506 It is important to realize that this

NOTE Confidence: 0.92785196

00:37:29.506 --> 00:37:31.190 is a multidisciplinary approach.

NOTE Confidence: 0.92785196

00:37:31.190 --> 00:37:34.298 And protocols should be put with a

NOTE Confidence: 0.92785196

00:37:34.298 --> 00:37:37.474 cluster care in mind from various

NOTE Confidence: 0.92785196

00:37:37.474 --> 00:37:39.810 staff members and providers.

NOTE Confidence: 0.92785196

00:37:39.810 --> 00:37:44.070 Controlling sounds would be the easiest.

NOTE Confidence: 0.92785196

00:37:44.070 --> 00:37:46.575 There has been suggestions of

NOTE Confidence: 0.92785196

00:37:46.575 --> 00:37:49.080 using tally alarms where nursing

NOTE Confidence: 0.92785196

00:37:49.168 --> 00:37:51.633 staff or providers can actually

NOTE Confidence: 0.92785196

00:37:51.633 --> 00:37:54.590 carry those tally alarms with them,

NOTE Confidence: 0.92785196

00:37:54.590 --> 00:37:56.336 and instead of the alarm beeping

NOTE Confidence: 0.92785196

00:37:56.336 --> 00:37:58.650 next to a patient like a mechanical

NOTE Confidence: 0.92785196

00:37:58.650 --> 00:38:00.822 ventilator patient who can do nothing,

NOTE Confidence: 0.92785196

00:38:00.830 --> 00:38:02.302 absolutely nothing about the

NOTE Confidence: 0.92785196

00:38:02.302 --> 00:38:04.510 alarm except waking up to it.

NOTE Confidence: 0.92785196

00:38:04.510 --> 00:38:06.430 Actually having the alarms beep

NOTE Confidence: 0.92785196

00:38:06.430 --> 00:38:09.135 next to the staff who will actually

NOTE Confidence: 0.92785196

00:38:09.135 --> 00:38:11.253 be able to respond to it.

NOTE Confidence: 0.92785196

00:38:11.260 --> 00:38:13.232 Providing daytime light has

NOTE Confidence: 0.92785196

00:38:13.232 --> 00:38:15.204 been showing some promise,

NOTE Confidence: 0.92785196

00:38:15.210 --> 00:38:18.096 not completely consistent across all studies,

NOTE Confidence: 0.92785196

00:38:18.100 --> 00:38:20.380 but it is showing some promise

NOTE Confidence: 0.92785196

00:38:20.380 --> 00:38:23.264 preventing overnight light exposure,

NOTE Confidence: 0.92785196

00:38:23.264 --> 00:38:26.148 specially from unnecessary procedures.

NOTE Confidence: 0.92785196

00:38:26.150 --> 00:38:28.715 Rescheduling certain routine

NOTE Confidence: 0.92785196

00:38:28.715 --> 00:38:31.280 patient care requirements.

NOTE Confidence: 0.92785196

00:38:31.280 --> 00:38:32.660 It's very important to

NOTE Confidence: 0.92785196

00:38:32.660 --> 00:38:33.695 reassure these patients,

NOTE Confidence: 0.92785196

00:38:33.700 --> 00:38:36.058 as we mentioned that anxiety and

NOTE Confidence: 0.92785196

00:38:36.058 --> 00:38:38.602 controlling their pain is a very

NOTE Confidence: 0.92785196

00:38:38.602 --> 00:38:40.398 important factor in reducing

NOTE Confidence: 0.92785196

00:38:40.398 --> 00:38:41.296 sleep disruption.

NOTE Confidence: 0.92785196

00:38:41.300 --> 00:38:43.584 Changing our nutrition strategies.

NOTE Confidence: 0.92785196

00:38:43.584 --> 00:38:46.439 And avoiding continuous meals and

NOTE Confidence: 0.92785196

00:38:46.439 --> 00:38:49.186 mobilizing patients as soon as possible.

NOTE Confidence: 0.871519646666667

00:38:51.510 --> 00:38:52.434 For that purpose,

NOTE Confidence: 0.871519646666667

00:38:52.434 --> 00:38:54.282 some work has been put forth,

NOTE Confidence: 0.871519646666667

00:38:54.290 --> 00:38:57.670 and this is some work done by the Yale team.

NOTE Confidence: 0.871519646666667

00:38:57.670 --> 00:39:00.141 And this is the evaluating the use

NOTE Confidence: 0.871519646666667

00:39:00.141 --> 00:39:02.971 of a nap time during the night

NOTE Confidence: 0.871519646666667

00:39:02.971 --> 00:39:05.412 or arrest time and the rest time

NOTE Confidence: 0.871519646666667

00:39:05.412 --> 00:39:07.170 was basically for four hours for

NOTE Confidence: 0.871519646666667

00:39:07.237 --> 00:39:09.175 ICU patients between 12:00 in the

NOTE Confidence: 0.871519646666667

00:39:09.175 --> 00:39:11.410 morning and four four in the morning.

NOTE Confidence: 0.871519646666667

00:39:11.410 --> 00:39:14.570 And what they basically did is they try

NOTE Confidence: 0.871519646666667

00:39:14.570 --> 00:39:17.506 to reschedule or unnecessary patient care.

NOTE Confidence: 0.871519646666667

00:39:17.506 --> 00:39:21.097 And a nurse was like the gatekeeper

NOTE Confidence: 0.871519646666667

00:39:21.097 --> 00:39:25.504 to make sure that this protocol is as

NOTE Confidence: 0.871519646666667

00:39:25.504 --> 00:39:28.519 well implemented for the patients.

NOTE Confidence: 0.871519646666667

00:39:28.520 --> 00:39:31.670 If you look at the impact of the protocol,

NOTE Confidence: 0.871519646666667

00:39:31.670 --> 00:39:34.250 those figures show the control

NOTE Confidence: 0.871519646666667

00:39:34.250 --> 00:39:37.494 subjects and squares and the patients

NOTE Confidence: 0.871519646666667

00:39:37.494 --> 00:39:40.339 one went protocols in circles.

NOTE Confidence: 0.871519646666667

00:39:40.340 --> 00:39:44.130 Looking to your left is.

NOTE Confidence: 0.871519646666667

00:39:44.130 --> 00:39:47.364 Is the number of entrances into the

NOTE Confidence: 0.871519646666667

00:39:47.364 --> 00:39:50.625 room before 12:00 AM and looking to

NOTE Confidence: 0.871519646666667

00:39:50.625 --> 00:39:53.295 your right is what happened after

NOTE Confidence: 0.871519646666667

00:39:53.386 --> 00:39:56.333 12:00 AM till 4:00 AM and you can

NOTE Confidence: 0.871519646666667

00:39:56.333 --> 00:39:58.559 see a significant reduction in the

NOTE Confidence: 0.871519646666667

00:39:58.559 --> 00:40:00.315 intervention group in the number

NOTE Confidence: 0.871519646666667

00:40:00.315 --> 00:40:01.960 of entrances into the room.

NOTE Confidence: 0.871519646666667

00:40:01.960 --> 00:40:04.405 A significant reduction in the

NOTE Confidence: 0.871519646666667

00:40:04.405 --> 00:40:07.290 background noise and more importantly a

NOTE Confidence: 0.871519646666667

00:40:07.290 --> 00:40:09.866 reduction in the number of sound peaks.

NOTE Confidence: 0.871519646666667

00:40:09.870 --> 00:40:12.516 During that, during that period of rest.

NOTE Confidence: 0.859941221428571

00:40:17.040 --> 00:40:20.160 Other hospitals have adopted promoting sleep

NOTE Confidence: 0.859941221428571

00:40:20.160 --> 00:40:23.848 hygiene and having a care bundle for it,

NOTE Confidence: 0.859941221428571

00:40:23.850 --> 00:40:26.580 in which all the hospital staff

NOTE Confidence: 0.859941221428571

00:40:26.580 --> 00:40:28.970 are involved in. So for example,

NOTE Confidence: 0.859941221428571

00:40:28.970 --> 00:40:31.350 physicians have a main role in avoiding

NOTE Confidence: 0.859941221428571

00:40:31.419 --> 00:40:33.339 unnecessary diagnostic studies,

NOTE Confidence: 0.859941221428571

00:40:33.340 --> 00:40:35.452 so maybe our patient did not need that

NOTE Confidence: 0.859941221428571

00:40:35.452 --> 00:40:37.430 repeat chest X ray early in the morning.

NOTE Confidence: 0.859941221428571

00:40:37.430 --> 00:40:40.280 Maybe his nebuliser could have been

NOTE Confidence: 0.859941221428571

00:40:40.280 --> 00:40:44.690 pushed a little bit. Avoidance of.

NOTE Confidence: 0.859941221428571

00:40:44.690 --> 00:40:47.470 Letting patients having anxiety.

NOTE Confidence: 0.859941221428571

00:40:47.470 --> 00:40:49.555 Communicating well with

NOTE Confidence: 0.859941221428571

00:40:49.555 --> 00:40:52.170 patients and reassuring them.

NOTE Confidence: 0.859941221428571

00:40:52.170 --> 00:40:54.634 The nursing staff has a vital role

NOTE Confidence: 0.859941221428571

00:40:54.634 --> 00:40:57.285 in terms of being gatekeepers for

NOTE Confidence: 0.859941221428571

00:40:57.285 --> 00:40:59.810 implementing the bundle and avoiding

NOTE Confidence: 0.859941221428571

00:40:59.810 --> 00:41:02.811 any non urgent bedside care such as

NOTE Confidence: 0.859941221428571

00:41:02.811 --> 00:41:06.728 the path that we noted in our patient.

NOTE Confidence: 0.859941221428571

00:41:06.730 --> 00:41:09.142 Respiratory therapists have a

NOTE Confidence: 0.859941221428571

00:41:09.142 --> 00:41:11.554 role in avoiding unnecessary

NOTE Confidence: 0.859941221428571

00:41:11.554 --> 00:41:13.640 suctioning during the night,

NOTE Confidence: 0.859941221428571

00:41:13.640 --> 00:41:15.415 and even though I didn't

NOTE Confidence: 0.859941221428571

00:41:15.415 --> 00:41:17.190 go into depth about it,

NOTE Confidence: 0.859941221428571

00:41:17.190 --> 00:41:19.815 but alerting and adjusting settings

NOTE Confidence: 0.859941221428571

00:41:19.815 --> 00:41:22.440 to avoid ventilator asynchrony is

NOTE Confidence: 0.859941221428571

00:41:22.525 --> 00:41:25.309 key in avoiding patients having sleep

NOTE Confidence: 0.859941221428571

00:41:25.309 --> 00:41:27.860 disruptions at night in the ICU.

NOTE Confidence: 0.859941221428571

00:41:27.860 --> 00:41:31.340 Pharmacists also have a role

NOTE Confidence: 0.859941221428571

00:41:31.340 --> 00:41:34.124 in changing ordering protocols.

NOTE Confidence: 0.859941221428571

00:41:34.130 --> 00:41:39.156 Nutrition have a major role in avoiding.

NOTE Confidence: 0.859941221428571

00:41:39.160 --> 00:41:41.923 It was two fields and maybe using a more

NOTE Confidence: 0.859941221428571

00:41:41.923 --> 00:41:44.149 daytime restricting feeding protocol.

NOTE Confidence: 0.859941221428571

00:41:44.150 --> 00:41:47.700 Physical therapy with early mobilization.

NOTE Confidence: 0.859941221428571

00:41:47.700 --> 00:41:49.470 Hospital administration with

NOTE Confidence: 0.859941221428571

00:41:49.470 --> 00:41:51.240 implementing certain policies.

NOTE Confidence: 0.859941221428571

00:41:51.240 --> 00:41:54.270 Maybe the alarm monitors may be

NOTE Confidence: 0.859941221428571

00:41:54.270 --> 00:41:56.290 increasing staffing during the

NOTE Confidence: 0.859941221428571

00:41:56.375 --> 00:41:58.817 day to allow for taking paths,

NOTE Confidence: 0.859941221428571

00:41:58.820 --> 00:42:00.784 increasing availability of other

NOTE Confidence: 0.859941221428571

00:42:00.784 --> 00:42:03.239 services such as trash pickup

NOTE Confidence: 0.859941221428571

00:42:03.239 --> 00:42:05.727 during the day instead of 4:00 AM.

NOTE Confidence: 0.850765268

00:42:07.970 --> 00:42:11.890 Avoiding any maintenance work overnight.

NOTE Confidence: 0.850765268

00:42:11.890 --> 00:42:14.662 And there's also a role for ancillary

NOTE Confidence: 0.850765268

00:42:14.662 --> 00:42:17.153 testing services may be increasing staffing

NOTE Confidence: 0.850765268

00:42:17.153 --> 00:42:20.023 during day shifts to avoid very early

NOTE Confidence: 0.850765268

00:42:20.093 --> 00:42:22.690 on need for phlebotomy or chest xrays.

NOTE Confidence: 0.774550785789474

00:42:26.020 --> 00:42:29.476 I wanna I wanna end with this code

NOTE Confidence: 0.774550785789474

00:42:29.476 --> 00:42:32.357 from Doctor Rhonda Ouch who was

NOTE Confidence: 0.774550785789474

00:42:32.357 --> 00:42:37.092 actually an ICU patient in 2017 and

NOTE Confidence: 0.774550785789474

00:42:37.092 --> 00:42:40.378 she wrote a book about her experience

NOTE Confidence: 0.774550785789474

00:42:40.378 --> 00:42:43.456 in the ICU and this is probably the

NOTE Confidence: 0.774550785789474

00:42:43.456 --> 00:42:45.486 most resonating take home message.

NOTE Confidence: 0.774550785789474

00:42:45.490 --> 00:42:47.754 So she said that the absence of even

NOTE Confidence: 0.774550785789474

00:42:47.754 --> 00:42:49.990 a full minute of silence combined

NOTE Confidence: 0.774550785789474

00:42:49.990 --> 00:42:52.396 with a constant pain made sleeping

NOTE Confidence: 0.774550785789474

00:42:52.467 --> 00:42:54.723 difficult for me every other moment.

NOTE Confidence: 0.774550785789474

00:42:54.723 --> 00:42:56.327 An alarm would sound.

NOTE Confidence: 0.774550785789474

00:42:56.330 --> 00:42:58.178 A monitor would be.

NOTE Confidence: 0.774550785789474

00:42:58.178 --> 00:43:00.488 There was near constant noise

NOTE Confidence: 0.774550785789474

00:43:00.488 --> 00:43:03.222 activity and the whole cold school

NOTE Confidence: 0.774550785789474

00:43:03.222 --> 00:43:06.678 called all over the PA system.

NOTE Confidence: 0.774550785789474

00:43:06.680 --> 00:43:09.119 With this I would like to end my talk.

NOTE Confidence: 0.774550785789474

00:43:09.120 --> 00:43:11.736 A big thanks to my mentor,

NOTE Confidence: 0.774550785789474

00:43:11.740 --> 00:43:12.913 doctor Melissa Kynar,

NOTE Confidence: 0.774550785789474

00:43:12.913 --> 00:43:15.259 who has guided me throughout this

NOTE Confidence: 0.774550785789474

00:43:15.259 --> 00:43:17.965 whole year and was kind enough to

NOTE Confidence: 0.774550785789474

00:43:17.965 --> 00:43:20.960 share her work with me and some

NOTE Confidence: 0.774550785789474

00:43:20.960 --> 00:43:24.346 of the slides I showed and big.

NOTE Confidence: 0.774550785789474

00:43:24.346 --> 00:43:27.447 Another big thank you to the Sleep

NOTE Confidence: 0.774550785789474

00:43:27.447 --> 00:43:29.244 Medicine team including faculty,

NOTE Confidence: 0.774550785789474

00:43:29.244 --> 00:43:32.016 staff and Michael Fellows for what

NOTE Confidence: 0.774550785789474

00:43:32.016 --> 00:43:34.900 was really an amazing guy right here.

NOTE Confidence: 0.774550785789474

00:43:34.900 --> 00:43:36.644 Thank you very much and if you guys

NOTE Confidence: 0.774550785789474

00:43:36.644 --> 00:43:38.467 have any questions please feel free.

NOTE Confidence: 0.822772131764706

00:43:43.820 --> 00:43:45.794 Thanks everyone, yes if you want to

NOTE Confidence: 0.822772131764706

00:43:45.794 --> 00:43:47.693 put questions in the chat or just

NOTE Confidence: 0.822772131764706

00:43:47.693 --> 00:43:49.409 unmute and ask, go right ahead.

NOTE Confidence: 0.875103829444444

00:44:07.060 --> 00:44:09.792 This is a in where I had a question that was

NOTE Confidence: 0.875103829444444

00:44:09.792 --> 00:44:12.095 a great presentation and really you know,

NOTE Confidence: 0.875103829444444

00:44:12.100 --> 00:44:14.392 great job in talking about all

NOTE Confidence: 0.875103829444444

00:44:14.392 --> 00:44:16.048 the basic science, Physiology.

NOTE Confidence: 0.875103829444444

00:44:16.048 --> 00:44:19.604 Everything kind of put into a very

NOTE Confidence: 0.875103829444444

00:44:19.604 --> 00:44:21.837 complicated hospitalization with a lot

NOTE Confidence: 0.875103829444444

00:44:21.837 --> 00:44:24.123 of different external factors going on.

NOTE Confidence: 0.875103829444444

00:44:24.130 --> 00:44:26.218 You know the one thing I kind of

NOTE Confidence: 0.875103829444444

00:44:26.218 --> 00:44:28.157 struggle with with this topic is you

NOTE Confidence: 0.875103829444444

00:44:28.157 --> 00:44:30.540 know what has been proven to kind of

NOTE Confidence: 0.875103829444444

00:44:30.540 --> 00:44:32.466 change patient centered outcomes I mean.

NOTE Confidence: 0.875103829444444

00:44:32.470 --> 00:44:34.402 We have a lot of theoretical

NOTE Confidence: 0.875103829444444

00:44:34.402 --> 00:44:36.590 evidence that you know these things

NOTE Confidence: 0.875103829444444

00:44:36.590 --> 00:44:38.665 could help and sleep deprivation.

NOTE Confidence: 0.875103829444444

00:44:38.670 --> 00:44:41.286 The harms of deprivation and and so forth,

NOTE Confidence: 0.875103829444444

00:44:41.290 --> 00:44:44.258 but hasn't there been any sort of evidence

NOTE Confidence: 0.875103829444444

00:44:44.258 --> 00:44:47.678 in the last few years or so that have

NOTE Confidence: 0.875103829444444

00:44:47.678 --> 00:44:50.159 looked at specific interventions on,

NOTE Confidence: 0.875103829444444

00:44:50.160 --> 00:44:51.640 you know, changing the environment,

NOTE Confidence: 0.875103829444444

00:44:51.640 --> 00:44:52.690 let's say in the ICU,

NOTE Confidence: 0.875103829444444

00:44:52.690 --> 00:44:54.714 where you know my main interest is and

NOTE Confidence: 0.875103829444444

00:44:54.714 --> 00:44:56.829 and can that really have a dramatic,

NOTE Confidence: 0.875103829444444

00:44:56.830 --> 00:44:58.924 heavy, significant impact

NOTE Confidence: 0.875103829444444

00:44:58.924 --> 00:45:02.414 on mortality length of stay?

NOTE Confidence: 0.875103829444444

00:45:02.420 --> 00:45:04.710 So we admission rates, etc.

NOTE Confidence: 0.875103829444444

00:45:04.710 --> 00:45:06.579 I know that there there's been some

NOTE Confidence: 0.875103829444444

00:45:06.579 --> 00:45:08.378 data looking in non ICU patients

NOTE Confidence: 0.875103829444444

00:45:08.378 --> 00:45:10.262 on heart failure and getting those

NOTE Confidence: 0.875103829444444

00:45:10.262 --> 00:45:11.513 patients diagnosed and getting

NOTE Confidence: 0.875103829444444

00:45:11.513 --> 00:45:13.564 them on PAP therapy and that could

NOTE Confidence: 0.875103829444444

00:45:13.570 --> 00:45:15.198 potentially reduce readmission rates.

NOTE Confidence: 0.875103829444444

00:45:15.198 --> 00:45:16.419 But have you?

NOTE Confidence: 0.875103829444444

00:45:16.420 --> 00:45:18.166 Have you seen anything that you

NOTE Confidence: 0.875103829444444

00:45:18.166 --> 00:45:19.909 know says by shadow of doubt?

NOTE Confidence: 0.875103829444444

00:45:19.910 --> 00:45:21.590 You know we should be doing this 'cause

NOTE Confidence: 0.875103829444444

00:45:21.590 --> 00:45:23.202 this is going to have a meaningful

NOTE Confidence: 0.875103829444444

00:45:23.202 --> 00:45:24.633 outcome and what are the future

NOTE Confidence: 0.875103829444444

00:45:24.633 --> 00:45:26.313 needs for the research in the field?

NOTE Confidence: 0.875103829444444

00:45:26.320 --> 00:45:27.420 So a lot of questions,

NOTE Confidence: 0.875103829444444

00:45:27.420 --> 00:45:29.395 but you could do your best.

NOTE Confidence: 0.875103829444444

00:45:29.395 --> 00:45:29.990 That's

NOTE Confidence: 0.730940492

00:45:30.000 --> 00:45:31.340 OK. Thank you doctor weird.

NOTE Confidence: 0.730940492

00:45:31.340 --> 00:45:33.146 So I think that. For now,

NOTE Confidence: 0.730940492

00:45:33.150 --> 00:45:36.685 just probably more experience in this topic,

NOTE Confidence: 0.730940492

00:45:36.690 --> 00:45:39.210 but from from what I was seeing is

NOTE Confidence: 0.730940492

00:45:39.210 --> 00:45:42.127 this is a pretty young field like most

NOTE Confidence: 0.730940492

00:45:42.127 --> 00:45:45.028 of the studies are very, very recent.

NOTE Confidence: 0.730940492

00:45:45.028 --> 00:45:48.451 There is this difficulty in it really

NOTE Confidence: 0.730940492

00:45:48.451 --> 00:45:50.979 assessing sleep in these patients,

NOTE Confidence: 0.730940492

00:45:50.980 --> 00:45:53.295 really assessing whether or not

NOTE Confidence: 0.730940492

00:45:53.295 --> 00:45:55.147 our interventions are helping,

NOTE Confidence: 0.730940492

00:45:55.150 --> 00:45:58.282 and most of the studies that we have have

NOTE Confidence: 0.730940492

00:45:58.282 --> 00:46:00.946 been pretty pretty down size too small.

NOTE Confidence: 0.730940492

00:46:00.950 --> 00:46:01.740 Sample size.

NOTE Confidence: 0.730940492

00:46:01.740 --> 00:46:03.320 Now that being said.

NOTE Confidence: 0.730940492

00:46:03.320 --> 00:46:05.651 One of the interventions which I felt

NOTE Confidence: 0.730940492

00:46:05.651 --> 00:46:08.256 was gaining a lot of popularity was

NOTE Confidence: 0.730940492

00:46:08.256 --> 00:46:10.566 bright light exposure during the day,

NOTE Confidence: 0.730940492

00:46:10.570 --> 00:46:13.412 even though it did not show this

NOTE Confidence: 0.730940492

00:46:13.412 --> 00:46:16.020 benefit in all patient groups.

NOTE Confidence: 0.730940492

00:46:16.020 --> 00:46:18.096 But it shows some trend towards

NOTE Confidence: 0.730940492

00:46:18.096 --> 00:46:20.080 decreasing delirium in our patients,

NOTE Confidence: 0.730940492

00:46:20.080 --> 00:46:21.916 and we know how delirium can

NOTE Confidence: 0.730940492

00:46:21.916 --> 00:46:22.834 impact those patients.

NOTE Confidence: 0.730940492

00:46:22.840 --> 00:46:25.570 It did show a trend tower patients

NOTE Confidence: 0.730940492

00:46:25.570 --> 00:46:26.740 having improved subjective

NOTE Confidence: 0.730940492

00:46:26.808 --> 00:46:29.440 sleep quality and reduction in

NOTE Confidence: 0.730940492

00:46:29.440 --> 00:46:33.040 hospital stay and length of stay.

NOTE Confidence: 0.730940492

00:46:33.040 --> 00:46:34.752 So there is this.

NOTE Confidence: 0.730940492

00:46:34.752 --> 00:46:35.608 Trend on,

NOTE Confidence: 0.730940492

00:46:35.610 --> 00:46:38.361 not sure about other data that was

NOTE Confidence: 0.730940492

00:46:38.361 --> 00:46:40.736 able to actually show that those

NOTE Confidence: 0.730940492

00:46:40.736 --> 00:46:43.326 sleep under high jeans or in app

NOTE Confidence: 0.730940492

00:46:43.411 --> 00:46:45.779 protocol would actually influence

NOTE Confidence: 0.730940492

00:46:45.779 --> 00:46:48.739 direct big outcomes like mortality.

NOTE Confidence: 0.730940492

00:46:48.740 --> 00:46:50.078 In our patients.

NOTE Confidence: 0.8493532

00:46:52.780 --> 00:46:56.270 So Sam, that was an absolutely

NOTE Confidence: 0.9293036

00:46:56.270 --> 00:46:59.168 brilliant, brilliant presentation.

NOTE Confidence: 0.9293036

00:46:59.170 --> 00:47:01.650 Did we learn anything from

NOTE Confidence: 0.9293036

00:47:01.650 --> 00:47:03.850 patients who were admitted to

NOTE Confidence: 0.9293036

00:47:03.850 --> 00:47:06.270 hospital with COVID about sleep?

NOTE Confidence: 0.8935459

00:47:08.250 --> 00:47:11.136 I I personally have not come

NOTE Confidence: 0.8935459

00:47:11.136 --> 00:47:15.289 across any study. You mean and

NOTE Confidence: 0.8935459

00:47:15.289 --> 00:47:16.468 during that hospitalization,

NOTE Confidence: 0.8935459

00:47:16.470 --> 00:47:18.420 right during their hospitalization?

NOTE Confidence: 0.907655013333333

00:47:18.430 --> 00:47:19.378 That's correct. Yeah

NOTE Confidence: 0.8708362355

00:47:19.410 --> 00:47:22.119 yeah, I personally did not come across

NOTE Confidence: 0.8708362355

00:47:22.119 --> 00:47:24.898 any study looking at the patterns of

NOTE Confidence: 0.8708362355

00:47:24.898 --> 00:47:27.220 sleep in patients admitted for COVID.

NOTE Confidence: 0.8708362355

00:47:27.220 --> 00:47:29.004 I'm not sure if anyone else did or

NOTE Confidence: 0.8708362355

00:47:29.004 --> 00:47:30.737 would like to share that experience.

NOTE Confidence: 0.875640631333333

00:47:39.010 --> 00:47:40.238 I'll just say, anecdotally,

NOTE Confidence: 0.875640631333333

00:47:40.238 --> 00:47:42.443 it's hard to sleep with a high

NOTE Confidence: 0.875640631333333

00:47:42.443 --> 00:47:44.046 flow nasal cannula on 24/7,

NOTE Confidence: 0.875640631333333

00:47:44.046 --> 00:47:46.422 so for the patients that we

NOTE Confidence: 0.875640631333333

00:47:46.422 --> 00:47:48.809 see as pulmonary critical care,

NOTE Confidence: 0.875640631333333

00:47:48.810 --> 00:47:51.110 you know there seems to be a lot of sleep

NOTE Confidence: 0.875640631333333

00:47:51.167 --> 00:47:53.300 deprivation prolonged hospitalization.

NOTE Confidence: 0.875640631333333

00:47:53.300 --> 00:47:54.630 I imagine there's REM deprivation

NOTE Confidence: 0.875640631333333

00:47:54.630 --> 00:47:55.960 and those type of things,

NOTE Confidence: 0.875640631333333

00:47:55.960 --> 00:47:57.040 but that's a great question.

NOTE Confidence: 0.875640631333333

00:47:57.040 --> 00:47:58.978 Like, has anyone really looked at?

NOTE Confidence: 0.875640631333333

00:47:58.980 --> 00:48:00.240 You know, for these patients that are

NOTE Confidence: 0.875640631333333

00:48:00.240 --> 00:48:01.730 being in the hospital for a long time,

NOTE Confidence: 0.875640631333333

00:48:01.730 --> 00:48:03.038 especially with the high flow out?

NOTE Confidence: 0.875640631333333

00:48:03.040 --> 00:48:06.688 Jen and prolonged you know requirements,

NOTE Confidence: 0.875640631333333

00:48:06.690 --> 00:48:08.573 but yeah, they a lot of times

NOTE Confidence: 0.875640631333333

00:48:08.573 --> 00:48:10.148 they'll say that they're exhausted

NOTE Confidence: 0.875640631333333

00:48:10.148 --> 00:48:12.254 and they and they can't sleep.

NOTE Confidence: 0.875640631333333

00:48:12.260 --> 00:48:14.150 But I don't think we have at

NOTE Confidence: 0.875640631333333

00:48:14.150 --> 00:48:15.530 least any objective evidence.

NOTE Confidence: 0.87052468375

00:48:15.760 --> 00:48:18.049 Yeah, and I think the other factor

NOTE Confidence: 0.87052468375

00:48:18.049 --> 00:48:20.648 that might need to be looked at is the

NOTE Confidence: 0.87052468375

00:48:20.650 --> 00:48:24.650 is interaction with family members.

NOTE Confidence: 0.87052468375

00:48:24.650 --> 00:48:26.479 I mean obviously during Kovit,

NOTE Confidence: 0.87052468375

00:48:26.479 --> 00:48:28.894 family members were seldom allowed

NOTE Confidence: 0.87052468375

00:48:28.894 --> 00:48:32.740 to come and be next to the patient,

NOTE Confidence: 0.87052468375

00:48:32.740 --> 00:48:34.104 and that's something that

NOTE Confidence: 0.87052468375

00:48:34.104 --> 00:48:35.922 I'm guessing had a terrible,

NOTE Confidence: 0.87052468375

00:48:35.922 --> 00:48:37.916 terrible effect on anxiety,

NOTE Confidence: 0.87052468375

00:48:37.916 --> 00:48:40.240 stress, an inability to sleep.

NOTE Confidence: 0.892741411111111

00:48:48.980 --> 00:48:52.536 I agree, I am very intentionally not

NOTE Confidence: 0.892741411111111

00:48:52.536 --> 00:48:57.288 asking questions, but I would comment.

NOTE Confidence: 0.892741411111111

00:48:57.290 --> 00:48:59.266 To your question in I think Sam hit

NOTE Confidence: 0.892741411111111

00:48:59.266 --> 00:49:01.394 the nail on the head is that that

NOTE Confidence: 0.892741411111111

00:49:01.394 --> 00:49:03.206 what really limits the field asleep

NOTE Confidence: 0.892741411111111

00:49:03.206 --> 00:49:05.294 measurement an it's my continuous hope

NOTE Confidence: 0.892741411111111

00:49:05.294 --> 00:49:07.278 that these newer and better wearables

NOTE Confidence: 0.892741411111111

00:49:07.278 --> 00:49:09.522 that are getting ever smaller and ever

NOTE Confidence: 0.892741411111111

00:49:09.522 --> 00:49:11.286 more comfortable are going to sort of

NOTE Confidence: 0.892741411111111

00:49:11.286 --> 00:49:13.459 be a way forward eventually so that we

NOTE Confidence: 0.892741411111111

00:49:13.459 --> 00:49:17.125 can prove I have a very small study that

NOTE Confidence: 0.892741411111111

00:49:17.125 --> 00:49:19.710 was retrospective and has limitations.

NOTE Confidence: 0.892741411111111

00:49:19.710 --> 00:49:22.965 But loss of stage and two features

NOTE Confidence: 0.892741411111111

00:49:22.965 --> 00:49:25.869 was associated with death in ICU and

NOTE Confidence: 0.892741411111111

00:49:25.869 --> 00:49:28.143 generally speaking in that study also

NOTE Confidence: 0.892741411111111

00:49:28.143 --> 00:49:30.309 showed changes in length of stay.

NOTE Confidence: 0.892741411111111

00:49:30.310 --> 00:49:31.875 It's a very particular patient

NOTE Confidence: 0.892741411111111

00:49:31.875 --> 00:49:33.440 population that we looked at,

NOTE Confidence: 0.892741411111111

00:49:33.440 --> 00:49:34.480 but I think it's there.

NOTE Confidence: 0.892741411111111

00:49:34.480 --> 00:49:36.916 I just think it's the challenges in

NOTE Confidence: 0.892741411111111

00:49:36.916 --> 00:49:39.393 measuring and as Sam showed so nicely

NOTE Confidence: 0.892741411111111

00:49:39.393 --> 00:49:41.979 it's so complicated and so how do you?

NOTE Confidence: 0.892741411111111

00:49:41.980 --> 00:49:45.210 How do you pull one piece out of the web?

NOTE Confidence: 0.892741411111111

00:49:45.210 --> 00:49:45.660 Yeah.

NOTE Confidence: 0.8780747

00:49:48.990 --> 00:49:51.090 Alright, other questions.

NOTE Confidence: 0.79552436

00:49:54.930 --> 00:49:57.219 Hi, thank you, thank

NOTE Confidence: 0.87038202

00:49:57.230 --> 00:49:58.170 you for that great talk.

NOTE Confidence: 0.87038202

00:49:58.170 --> 00:49:59.556 This is Lori Schechter. I'm from

NOTE Confidence: 0.846972769090909

00:49:59.570 --> 00:50:00.232 Columbia University.

NOTE Confidence: 0.846972769090909

00:50:00.232 --> 00:50:02.549 It's a first time joining in on

NOTE Confidence: 0.846972769090909

00:50:02.549 --> 00:50:04.208 this session is really interesting.

NOTE Confidence: 0.846972769090909

00:50:04.210 --> 00:50:06.580 Appreciate being able to be here.

NOTE Confidence: 0.846972769090909

00:50:07.080 --> 00:50:07.840 Quick question

NOTE Confidence: 0.87597995

00:50:07.850 --> 00:50:09.290 for you mentioned briefly about some

NOTE Confidence: 0.874410984285714

00:50:09.300 --> 00:50:10.905 of the methodological

NOTE Confidence: 0.874410984285714

00:50:10.905 --> 00:50:13.045 limitations of using actigraphy.

NOTE Confidence: 0.874410984285714

00:50:13.050 --> 00:50:17.200 In patients to track sleep and

NOTE Confidence: 0.906030643333333

00:50:17.210 --> 00:50:17.960 I was wondering if you could

NOTE Confidence: 0.888085545

00:50:17.970 --> 00:50:19.098 just if you could just talk

NOTE Confidence: 0.856312876666667

00:50:19.110 --> 00:50:21.006 about that for another second and

NOTE Confidence: 0.7504969375

00:50:21.690 --> 00:50:25.530 you know, aside from questionnaires,

NOTE Confidence: 0.7504969375

00:50:25.530 --> 00:50:28.870 what would be some potential

NOTE Confidence: 0.7504969375

00:50:28.870 --> 00:50:30.861 alternatives right now,

NOTE Confidence: 0.7504969375

00:50:30.861 --> 00:50:33.700 aside from PSG as well. Sure,

NOTE Confidence: 0.838297875555556

00:50:33.730 --> 00:50:37.797 so that the limitation of actigraphy is

NOTE Confidence: 0.838297875555556

00:50:37.797 --> 00:50:40.390 mostly in hospital patients who are who

NOTE Confidence: 0.838297875555556

00:50:40.390 --> 00:50:42.708 lack a lot of activity during the day.

NOTE Confidence: 0.838297875555556

00:50:42.710 --> 00:50:44.726 So even though they're away if they're

NOTE Confidence: 0.838297875555556

00:50:44.726 --> 00:50:47.274 sitting in bed still, the acting

NOTE Confidence: 0.838297875555556

00:50:47.274 --> 00:50:51.186 actigraphy may report that as sleep.

NOTE Confidence: 0.838297875555556

00:50:51.190 --> 00:50:53.245 And more, especially in patients

NOTE Confidence: 0.838297875555556

00:50:53.245 --> 00:50:56.525 who are sedated in the ICU who are

NOTE Confidence: 0.838297875555556

00:50:56.525 --> 00:50:58.817 not really doing much of activity,

NOTE Confidence: 0.838297875555556

00:50:58.820 --> 00:51:02.240 and so actigraphy may overestimate

NOTE Confidence: 0.838297875555556

00:51:02.240 --> 00:51:03.808 sleep in those patients.

NOTE Confidence: 0.838297875555556

00:51:03.808 --> 00:51:06.160 It probably would have a better

NOTE Confidence: 0.838297875555556

00:51:06.230 --> 00:51:08.816 correlation in patients on the wards.

NOTE Confidence: 0.838297875555556

00:51:08.820 --> 00:51:10.792 Who are more active,

NOTE Confidence: 0.838297875555556

00:51:10.792 --> 00:51:13.257 leaving their room doing stuff?

NOTE Confidence: 0.838297875555556

00:51:13.260 --> 00:51:16.088 As for as far as other potential

NOTE Confidence: 0.838297875555556

00:51:16.088 --> 00:51:19.237 devices that we can use in the future,

NOTE Confidence: 0.838297875555556

00:51:19.240 --> 00:51:21.052 so I know doctor clout mentioned

NOTE Confidence: 0.838297875555556

00:51:21.052 --> 00:51:21.656 the variables.

NOTE Confidence: 0.838297875555556

00:51:21.660 --> 00:51:24.864 I saw only one study where they use the

NOTE Confidence: 0.838297875555556

00:51:24.864 --> 00:51:28.120 two and they try to compare it to PSG.

NOTE Confidence: 0.838297875555556

00:51:28.120 --> 00:51:31.395 It didn't have a great correlation and

NOTE Confidence: 0.838297875555556

00:51:31.395 --> 00:51:33.880 I'm sorry they didn't compare to PSG.

NOTE Confidence: 0.838297875555556

00:51:33.880 --> 00:51:35.635 They compared actually too subjective

NOTE Confidence: 0.838297875555556

00:51:35.635 --> 00:51:38.411 sleep and it had a moderate correlation

NOTE Confidence: 0.838297875555556

00:51:38.411 --> 00:51:40.786 with what the patients reported.

NOTE Confidence: 0.838297875555556

00:51:40.790 --> 00:51:43.202 Another possible thing that we may

NOTE Confidence: 0.838297875555556

00:51:43.202 --> 00:51:46.165 use in the future is the technology

NOTE Confidence: 0.838297875555556

00:51:46.165 --> 00:51:48.715 called old 3 issue product where

NOTE Confidence: 0.838297875555556

00:51:48.715 --> 00:51:51.352 they use a single DDG and then

NOTE Confidence: 0.838297875555556

00:51:51.352 --> 00:51:53.138 they kind of dissect that,

NOTE Confidence: 0.838297875555556

00:51:53.138 --> 00:51:55.644 EG into very tiny 3 second three

NOTE Confidence: 0.838297875555556

00:51:55.644 --> 00:51:58.460 second parts and they give you a number

NOTE Confidence: 0.838297875555556

00:51:58.460 --> 00:52:01.010 based on the activity that's going on,

NOTE Confidence: 0.838297875555556

00:52:01.010 --> 00:52:03.615 and that number correlates well

NOTE Confidence: 0.838297875555556

00:52:03.615 --> 00:52:06.220 with wakefulness or being asleep.

NOTE Confidence: 0.838297875555556

00:52:06.220 --> 00:52:08.638 This this may be easier to

NOTE Confidence: 0.838297875555556

00:52:08.638 --> 00:52:11.040 do compared to full montage,

NOTE Confidence: 0.838297875555556

00:52:11.040 --> 00:52:12.798 but this has not been studied

NOTE Confidence: 0.838297875555556

00:52:12.798 --> 00:52:13.970 in the inpatient setting.

NOTE Confidence: 0.838297875555556

00:52:13.970 --> 00:52:14.394 The data,

NOTE Confidence: 0.838297875555556

00:52:14.394 --> 00:52:15.878 the data that we have are all

NOTE Confidence: 0.838297875555556

00:52:15.878 --> 00:52:17.310 in the outpatient setting.

NOTE Confidence: 0.931976385

00:52:20.610 --> 00:52:21.040 Thank you.

NOTE Confidence: 0.8496981475

00:52:33.550 --> 00:52:35.296 Alright, well that well thank you

NOTE Confidence: 0.8496981475

00:52:35.296 --> 00:52:37.340 so much Sam that was wonderful.

NOTE Confidence: 0.8496981475

00:52:37.340 --> 00:52:38.642 He represented the

NOTE Confidence: 0.8496981475

00:52:38.642 --> 00:52:40.378 complexity of the challenges.

NOTE Confidence: 0.8496981475

00:52:40.380 --> 00:52:42.072 The field really well and what

NOTE Confidence: 0.8496981475

00:52:42.072 --> 00:52:44.078 a great way to end the year.

NOTE Confidence: 0.8496981475

00:52:44.080 --> 00:52:45.538 For those of you who joined a little late,

NOTE Confidence: 0.8496981475

00:52:45.540 --> 00:52:47.396 this is the final session of the year

NOTE Confidence: 0.8496981475

00:52:47.396 --> 00:52:49.178 and so also a congratulations to

NOTE Confidence: 0.8496981475

00:52:49.178 --> 00:52:51.074 Doctor Tobias for all the lecture.

NOTE Confidence: 0.8496981475

00:52:51.080 --> 00:52:52.949 Wonderful lecture she put together this year.

NOTE Confidence: 0.891289121666667

00:52:56.230 --> 00:52:58.960 Thanks everybody, have a great

NOTE Confidence: 0.891289121666667

00:52:58.960 --> 00:53:00.150 summer. And I'll see you in

NOTE Confidence: 0.869384686

00:53:00.160 --> 00:53:03.670 the fall. Thank you. Bye bye.