

WEBVTT

NOTE duration:"00:42:04"

NOTE recognizability:0.933

NOTE language:en-us

NOTE Confidence: 0.9337924

00:00:11.850 --> 00:00:14.370 Hi everyone, my name is Brian Minor.

NOTE Confidence: 0.9337924

00:00:14.370 --> 00:00:16.570 I'm an assistant professor in

NOTE Confidence: 0.9337924

00:00:16.570 --> 00:00:18.330 geriatrics at Yale University.

NOTE Confidence: 0.9337924

00:00:18.330 --> 00:00:20.490 I've done training in internal medicine,

NOTE Confidence: 0.9337924

00:00:20.490 --> 00:00:22.040 geriatrics and Sleep Medicine and

NOTE Confidence: 0.9337924

00:00:22.040 --> 00:00:24.610 today I'm going to talk to you about

NOTE Confidence: 0.9337924

00:00:24.610 --> 00:00:26.210 sleep disturbances in older adults

NOTE Confidence: 0.9337924

00:00:26.210 --> 00:00:28.342 causes consequences and evaluation.

NOTE Confidence: 0.9337924

00:00:28.342 --> 00:00:31.976 So let me start by telling you

NOTE Confidence: 0.9337924

00:00:31.976 --> 00:00:34.728 how I ended up where I am today.

NOTE Confidence: 0.9337924

00:00:34.730 --> 00:00:37.448 I'm showing you this picture of these

NOTE Confidence: 0.9337924

00:00:37.448 --> 00:00:39.056 two people sitting on this bench,

NOTE Confidence: 0.9337924

00:00:39.060 --> 00:00:41.020 and this is outside the Adler clinic,

NOTE Confidence: 0.9337924

00:00:41.020 --> 00:00:45.294 where I see patients who have sleep
NOTE Confidence: 0.9337924

00:00:45.294 --> 00:00:48.126 problems in addition to a lot of other
NOTE Confidence: 0.9337924

00:00:48.126 --> 00:00:50.618 problems that come along with older age.
NOTE Confidence: 0.9337924

00:00:50.620 --> 00:00:53.068 And our mission at the Adler
NOTE Confidence: 0.9337924

00:00:53.068 --> 00:00:55.700 Center is to improve the health,
NOTE Confidence: 0.9337924

00:00:55.700 --> 00:00:57.565 quality of life and independence
NOTE Confidence: 0.9337924

00:00:57.565 --> 00:00:59.057 of all older people.
NOTE Confidence: 0.9337924

00:00:59.060 --> 00:01:01.058 And this is how I got interested in sleep,
NOTE Confidence: 0.9337924

00:01:01.060 --> 00:01:02.975 because sleep problems are actually
NOTE Confidence: 0.9337924

00:01:02.975 --> 00:01:05.380 detrimental to all of those things.
NOTE Confidence: 0.9337924

00:01:05.380 --> 00:01:08.894 They impair the independence of our patients,
NOTE Confidence: 0.9337924

00:01:08.900 --> 00:01:10.820 and of course they are problematic
NOTE Confidence: 0.9337924

00:01:10.820 --> 00:01:11.780 for our patients,
NOTE Confidence: 0.9337924

00:01:11.780 --> 00:01:14.336 but they're also problematic for families.
NOTE Confidence: 0.9337924

00:01:14.340 --> 00:01:16.860 So this got me very interested in thinking
NOTE Confidence: 0.9337924

00:01:16.860 --> 00:01:19.615 about how can I help people to sleep better,

NOTE Confidence: 0.9337924

00:01:19.620 --> 00:01:22.455 to help their independence and also help

NOTE Confidence: 0.9337924

00:01:22.455 --> 00:01:25.218 the people who are caring for them.

NOTE Confidence: 0.9337924

00:01:25.220 --> 00:01:26.680 And the fact is,

NOTE Confidence: 0.9337924

00:01:26.680 --> 00:01:27.775 among this population,

NOTE Confidence: 0.9337924

00:01:27.780 --> 00:01:29.790 sleep problems are very common

NOTE Confidence: 0.9337924

00:01:29.790 --> 00:01:30.594 and detrimental.

NOTE Confidence: 0.9337924

00:01:30.600 --> 00:01:32.814 So what I'm showing you now is a graph

NOTE Confidence: 0.9337924

00:01:32.814 --> 00:01:35.125 where along the X axis we see the number

NOTE Confidence: 0.9337924

00:01:35.125 --> 00:01:37.141 of chronic conditions and along the Y

NOTE Confidence: 0.9337924

00:01:37.141 --> 00:01:39.432 axis we see prevalence of sleep problems.

NOTE Confidence: 0.9337924

00:01:39.432 --> 00:01:42.344 And the message here is that sleep

NOTE Confidence: 0.9337924

00:01:42.344 --> 00:01:44.880 problems increase with multimorbidity.

NOTE Confidence: 0.9337924

00:01:44.880 --> 00:01:45.885 So with people,

NOTE Confidence: 0.9337924

00:01:45.885 --> 00:01:47.895 older adults who have at least

NOTE Confidence: 0.9337924

00:01:47.895 --> 00:01:49.520 three chronic conditions,

NOTE Confidence: 0.9337924

00:01:49.520 --> 00:01:51.890 nearly 70% of them will report
NOTE Confidence: 0.9337924

00:01:51.890 --> 00:01:53.075 a sleep problem.
NOTE Confidence: 0.9329585

00:01:55.360 --> 00:01:58.216 And as I said, these are also
NOTE Confidence: 0.9329585

00:01:58.216 --> 00:02:00.100 detrimental to these people.
NOTE Confidence: 0.9329585

00:02:00.100 --> 00:02:02.737 So there are a lot of things that we
NOTE Confidence: 0.9329585

00:02:02.737 --> 00:02:05.460 know to be associated with poor sleep.
NOTE Confidence: 0.9329585

00:02:05.460 --> 00:02:07.948 Today, I'm going to focus on the things
NOTE Confidence: 0.9329585

00:02:07.948 --> 00:02:10.395 that are important to me as I care
NOTE Confidence: 0.9329585

00:02:10.395 --> 00:02:12.539 for older people in the community.
NOTE Confidence: 0.9329585

00:02:12.540 --> 00:02:15.324 We know that sleep problems cause
NOTE Confidence: 0.9329585

00:02:15.324 --> 00:02:17.180 problems with physical function,
NOTE Confidence: 0.9329585

00:02:17.180 --> 00:02:17.880 hospitalization,
NOTE Confidence: 0.9329585

00:02:17.880 --> 00:02:21.380 depression and other mood disturbances,
NOTE Confidence: 0.9329585

00:02:21.380 --> 00:02:23.081 cognitive impairment and
NOTE Confidence: 0.9329585

00:02:23.081 --> 00:02:25.916 institutionalization in a nursing home.
NOTE Confidence: 0.9329585

00:02:25.920 --> 00:02:27.756 This is really important to people.

NOTE Confidence: 0.9329585

00:02:27.760 --> 00:02:29.356 This is something they want to avoid.

NOTE Confidence: 0.9329585

00:02:29.360 --> 00:02:30.800 This is something and their

NOTE Confidence: 0.9329585

00:02:30.800 --> 00:02:31.952 family wants to avoid.

NOTE Confidence: 0.9329585

00:02:31.960 --> 00:02:34.627 So this becomes then a very important

NOTE Confidence: 0.9329585

00:02:34.627 --> 00:02:37.360 problem to have better solutions for.

NOTE Confidence: 0.9329585

00:02:37.360 --> 00:02:38.718 And the fact is that I know,

NOTE Confidence: 0.9329585

00:02:38.720 --> 00:02:39.512 as a geriatrician,

NOTE Confidence: 0.9329585

00:02:39.512 --> 00:02:41.688 there are a lot of things that we

NOTE Confidence: 0.9329585

00:02:41.688 --> 00:02:43.332 might consider in people to help

NOTE Confidence: 0.9329585

00:02:43.332 --> 00:02:45.125 with sleep that we don't want

NOTE Confidence: 0.9329585

00:02:45.125 --> 00:02:46.640 to consider in this population.

NOTE Confidence: 0.9329585

00:02:46.640 --> 00:02:49.636 I'm showing you now the Beers criteria,

NOTE Confidence: 0.9329585

00:02:49.640 --> 00:02:51.990 which is published by the

NOTE Confidence: 0.9329585

00:02:51.990 --> 00:02:53.400 American Geriatric Society.

NOTE Confidence: 0.9329585

00:02:53.400 --> 00:02:55.620 And these are medications that

NOTE Confidence: 0.9329585

00:02:55.620 --> 00:02:56.952 are potentially inappropriate
NOTE Confidence: 0.9329585

00:02:56.952 --> 00:02:58.960 for use in older adults.
NOTE Confidence: 0.9329585

00:02:58.960 --> 00:03:01.600 These are all the things that you might
NOTE Confidence: 0.9329585

00:03:01.600 --> 00:03:04.078 go to when you have somebody who's
NOTE Confidence: 0.9329585

00:03:04.078 --> 00:03:05.759 having trouble sleeping at night,
NOTE Confidence: 0.9329585

00:03:05.760 --> 00:03:07.136 You have your benzodiazepines
NOTE Confidence: 0.9329585

00:03:07.136 --> 00:03:09.200 and below that you have your
NOTE Confidence: 0.9329585

00:03:09.261 --> 00:03:11.160 benzodiazepine like medications.
NOTE Confidence: 0.9329585

00:03:11.160 --> 00:03:13.356 We call these oftentimes Z drugs.
NOTE Confidence: 0.9329585

00:03:13.360 --> 00:03:15.496 So this is your Azopo clone
NOTE Confidence: 0.9329585

00:03:15.496 --> 00:03:16.920 or Zopodam or Zolplon.
NOTE Confidence: 0.9329585

00:03:16.920 --> 00:03:19.881 And the fact is there's a strong
NOTE Confidence: 0.9329585

00:03:19.881 --> 00:03:22.253 recommendation from the American Geriatric
NOTE Confidence: 0.9329585

00:03:22.253 --> 00:03:25.837 Society to avoid use of these medications.
NOTE Confidence: 0.9329585

00:03:25.840 --> 00:03:27.478 And if you want to know why,
NOTE Confidence: 0.9329585

00:03:27.480 --> 00:03:29.475 you look need look no further than

NOTE Confidence: 0.9329585

00:03:29.475 --> 00:03:31.204 the rationale which shows that

NOTE Confidence: 0.9329585

00:03:31.204 --> 00:03:32.844 these medications are associated

NOTE Confidence: 0.9329585

00:03:32.844 --> 00:03:34.074 with cognitive impairment,

NOTE Confidence: 0.9329585

00:03:34.080 --> 00:03:35.504 delirium falls,

NOTE Confidence: 0.9329585

00:03:35.504 --> 00:03:37.640 motor vehicle crashes.

NOTE Confidence: 0.9329585

00:03:37.640 --> 00:03:39.683 So a lot of the things that we're trying

NOTE Confidence: 0.9329585

00:03:39.683 --> 00:03:41.876 to avoid when we care for older adults,

NOTE Confidence: 0.93563205

00:03:44.710 --> 00:03:47.506 also on this list but not

NOTE Confidence: 0.93563205

00:03:47.506 --> 00:03:48.904 necessarily listed here,

NOTE Confidence: 0.93563205

00:03:48.910 --> 00:03:50.910 I've added them at the bottom are other

NOTE Confidence: 0.93563205

00:03:50.910 --> 00:03:52.906 things you might use to help with sleep.

NOTE Confidence: 0.93563205

00:03:52.910 --> 00:03:55.022 These are also on the beers criteria and

NOTE Confidence: 0.93563205

00:03:55.022 --> 00:03:56.989 these are things like amitriptyline,

NOTE Confidence: 0.93563205

00:03:56.990 --> 00:03:59.558 Doxepin and higher doses and antihistamines

NOTE Confidence: 0.93563205

00:03:59.558 --> 00:04:01.270 like diphenhydramine or Benadryl.

NOTE Confidence: 0.93563205

00:04:03.710 --> 00:04:06.468 Well, I knew what I couldn't do.
NOTE Confidence: 0.93563205

00:04:06.470 --> 00:04:08.270 And so as I told you,
NOTE Confidence: 0.93563205

00:04:08.270 --> 00:04:10.355 I decided to do specific
NOTE Confidence: 0.93563205

00:04:10.355 --> 00:04:12.023 training and Sleep Medicine.
NOTE Confidence: 0.93563205

00:04:12.030 --> 00:04:14.710 And so now in the next part of the talk,
NOTE Confidence: 0.93563205

00:04:14.710 --> 00:04:16.862 I'm going to tell you about some of
NOTE Confidence: 0.93563205

00:04:16.862 --> 00:04:19.324 the things that I learned and how I
NOTE Confidence: 0.93563205

00:04:19.324 --> 00:04:21.390 evaluate sleep complaints in older people.
NOTE Confidence: 0.93563205

00:04:21.390 --> 00:04:23.455 So we'll start first with
NOTE Confidence: 0.93563205

00:04:23.455 --> 00:04:25.107 basic concepts and sleep.
NOTE Confidence: 0.9261304

00:04:28.350 --> 00:04:31.318 So first I want to talk about why
NOTE Confidence: 0.9261304

00:04:31.318 --> 00:04:34.456 we sleep or or rather how we sleep.
NOTE Confidence: 0.9261304

00:04:34.460 --> 00:04:36.448 This is the two process model that's
NOTE Confidence: 0.9261304

00:04:36.448 --> 00:04:38.779 well known to people in Sleep Medicine.
NOTE Confidence: 0.9261304

00:04:38.780 --> 00:04:40.898 And the two processes we're showing
NOTE Confidence: 0.9261304

00:04:40.898 --> 00:04:42.860 here are the circadian process,

NOTE Confidence: 0.9261304

00:04:42.860 --> 00:04:44.080 that's the yellow line,

NOTE Confidence: 0.9261304

00:04:44.080 --> 00:04:46.321 the yellow arrows you see going along

NOTE Confidence: 0.9261304

00:04:46.321 --> 00:04:48.457 the bottom and the homeostatic process,

NOTE Confidence: 0.9261304

00:04:48.460 --> 00:04:50.434 which is the grayish arrows that are

NOTE Confidence: 0.9261304

00:04:50.434 --> 00:04:52.419 going along the top of this picture.

NOTE Confidence: 0.9261304

00:04:52.420 --> 00:04:54.960 So these two processes interact

NOTE Confidence: 0.9261304

00:04:54.960 --> 00:04:58.140 and at times oppose each other.

NOTE Confidence: 0.9261304

00:04:58.140 --> 00:04:59.538 And this is what allows us

NOTE Confidence: 0.9261304

00:04:59.538 --> 00:05:00.820 to maintain sleep at night,

NOTE Confidence: 0.9261304

00:05:00.820 --> 00:05:03.788 but also to maintain wake during the day.

NOTE Confidence: 0.9261304

00:05:03.790 --> 00:05:05.230 So let me take you through.

NOTE Confidence: 0.9261304

00:05:05.230 --> 00:05:06.130 So first,

NOTE Confidence: 0.9261304

00:05:06.130 --> 00:05:08.830 if we're thinking about daytime wakefulness,

NOTE Confidence: 0.9261304

00:05:08.830 --> 00:05:10.384 in the first part of the day,

NOTE Confidence: 0.9261304

00:05:10.390 --> 00:05:12.870 we are awake because we slept at night,

NOTE Confidence: 0.9261304

00:05:12.870 --> 00:05:15.425 which is to say our homeostatic Dr.

NOTE Confidence: 0.9261304

00:05:15.430 --> 00:05:15.986 is low.

NOTE Confidence: 0.9261304

00:05:15.986 --> 00:05:17.654 So if you look at the

NOTE Confidence: 0.9261304

00:05:17.654 --> 00:05:19.427 slide and you see 9:00 AM,

NOTE Confidence: 0.9261304

00:05:19.430 --> 00:05:21.348 you see that very short Gray arrow.

NOTE Confidence: 0.9261304

00:05:21.350 --> 00:05:22.910 That's the homeostatic Dr.

NOTE Confidence: 0.9261304

00:05:22.910 --> 00:05:24.470 That's low because you

NOTE Confidence: 0.9261304

00:05:24.470 --> 00:05:26.430 slept well the night before.

NOTE Confidence: 0.9261304

00:05:26.430 --> 00:05:27.714 In the second part of the

NOTE Confidence: 0.9261304

00:05:27.714 --> 00:05:29.030 day and into the evening,

NOTE Confidence: 0.9261304

00:05:29.030 --> 00:05:31.285 we are awake because our

NOTE Confidence: 0.9261304

00:05:31.285 --> 00:05:33.089 circadian alertness is high.

NOTE Confidence: 0.9261304

00:05:33.090 --> 00:05:36.044 And this is opposing that sleep load,

NOTE Confidence: 0.9261304

00:05:36.050 --> 00:05:37.424 that homeostatic load.

NOTE Confidence: 0.9261304

00:05:37.424 --> 00:05:40.970 So if you look around after 3:00 PM,

NOTE Confidence: 0.9261304

00:05:40.970 --> 00:05:44.330 you can see the taller yellow arrows

NOTE Confidence: 0.9261304

00:05:44.330 --> 00:05:47.490 opposing those Gray homeostatic arrows.

NOTE Confidence: 0.9261304

00:05:47.490 --> 00:05:50.010 So that's why we're awake during the day.

NOTE Confidence: 0.9261304

00:05:50.010 --> 00:05:51.768 So then what happens at night?

NOTE Confidence: 0.9261304

00:05:51.770 --> 00:05:54.026 Well, at night we sleep because

NOTE Confidence: 0.9261304

00:05:54.026 --> 00:05:56.210 we have been awake all day.

NOTE Confidence: 0.9261304

00:05:56.210 --> 00:05:58.122 Again, that homeostatic Dr.

NOTE Confidence: 0.9261304

00:05:58.122 --> 00:05:59.832 is high and hopefully,

NOTE Confidence: 0.9261304

00:05:59.832 --> 00:06:02.088 as we'll get to a little

NOTE Confidence: 0.9261304

00:06:02.088 --> 00:06:03.840 bit later in the talk,

NOTE Confidence: 0.9261304

00:06:03.840 --> 00:06:05.682 you haven't napped during the day

NOTE Confidence: 0.9261304

00:06:05.682 --> 00:06:07.396 because napping will of course

NOTE Confidence: 0.9261304

00:06:07.396 --> 00:06:09.120 dissipate that homeostatic drive.

NOTE Confidence: 0.9261304

00:06:09.120 --> 00:06:12.080 So we get to that first part of the night

NOTE Confidence: 0.9261304

00:06:12.157 --> 00:06:14.757 and our drive to sleep is very high,

NOTE Confidence: 0.9261304

00:06:14.760 --> 00:06:16.510 and then in the second part of

NOTE Confidence: 0.9261304

00:06:16.510 --> 00:06:18.464 the night we are sleeping because
NOTE Confidence: 0.9261304

00:06:18.464 --> 00:06:20.359 the circadian alertness is low.
NOTE Confidence: 0.9261304

00:06:20.360 --> 00:06:22.260 So even though we're dissipating
NOTE Confidence: 0.9261304

00:06:22.260 --> 00:06:23.400 that homeostatic Dr.
NOTE Confidence: 0.9261304

00:06:23.400 --> 00:06:25.598 you see those Gray arrows getting shorter,
NOTE Confidence: 0.9261304

00:06:25.600 --> 00:06:28.558 Those yellow area arrows also decrease.
NOTE Confidence: 0.9261304

00:06:28.560 --> 00:06:30.918 So the circadian alertness is low.
NOTE Confidence: 0.9261304

00:06:30.920 --> 00:06:33.524 This allows us to continue to
NOTE Confidence: 0.9261304

00:06:33.524 --> 00:06:36.260 sleep even later into the night
NOTE Confidence: 0.9261304

00:06:36.260 --> 00:06:38.076 and the early morning.
NOTE Confidence: 0.9261304

00:06:38.080 --> 00:06:39.320 So that's how we sleep.
NOTE Confidence: 0.9261304

00:06:39.320 --> 00:06:41.196 Now let's talk about why we sleep,
NOTE Confidence: 0.9261304

00:06:41.200 --> 00:06:43.040 what are the different functions.
NOTE Confidence: 0.9261304

00:06:43.040 --> 00:06:44.642 This is a really interesting area
NOTE Confidence: 0.9261304

00:06:44.642 --> 00:06:46.008 of medicine that we're learning
NOTE Confidence: 0.9261304

00:06:46.008 --> 00:06:47.758 more and more about all the time.

NOTE Confidence: 0.9261304

00:06:47.760 --> 00:06:50.665 We know that sleep is important for

NOTE Confidence: 0.9261304

00:06:50.665 --> 00:06:53.519 hormone secretion and metabolic regulation.

NOTE Confidence: 0.9261304

00:06:53.520 --> 00:06:56.118 Sleep also helps our immune function,

NOTE Confidence: 0.9261304

00:06:56.120 --> 00:06:58.610 and recent studies with COVID have

NOTE Confidence: 0.9261304

00:06:58.610 --> 00:07:00.612 shown how people who are sleep

NOTE Confidence: 0.9261304

00:07:00.612 --> 00:07:02.077 deprived the night before they

NOTE Confidence: 0.9261304

00:07:02.077 --> 00:07:04.035 get the vaccine might not have as

NOTE Confidence: 0.9261304

00:07:04.035 --> 00:07:05.799 robust a response to the vaccine.

NOTE Confidence: 0.9261304

00:07:05.800 --> 00:07:09.760 So sleep definitely affects immune function.

NOTE Confidence: 0.9261304

00:07:09.760 --> 00:07:11.530 Sleep is also important for

NOTE Confidence: 0.9261304

00:07:11.530 --> 00:07:12.238 energy conservation,

NOTE Confidence: 0.9261304

00:07:12.240 --> 00:07:15.120 particularly in the brain.

NOTE Confidence: 0.9261304

00:07:15.120 --> 00:07:18.582 It's an important part of replenishment

NOTE Confidence: 0.9261304

00:07:18.582 --> 00:07:21.655 of brain macromolecules and it is

NOTE Confidence: 0.9261304

00:07:21.655 --> 00:07:23.880 responsible for removal of neurotoxic,

NOTE Confidence: 0.9261304

00:07:23.880 --> 00:07:25.120 neurotoxic waste,
NOTE Confidence: 0.9261304

00:07:25.120 --> 00:07:27.600 the so-called lymphatic system.
NOTE Confidence: 0.9261304

00:07:27.600 --> 00:07:29.707 This is a really exciting area of
NOTE Confidence: 0.9261304

00:07:29.707 --> 00:07:31.520 research that we're learning about.
NOTE Confidence: 0.9261304

00:07:31.520 --> 00:07:33.270 But the lymphatic system is
NOTE Confidence: 0.9261304

00:07:33.270 --> 00:07:35.020 thought to be active especially
NOTE Confidence: 0.93309

00:07:35.087 --> 00:07:36.379 at night during certain
NOTE Confidence: 0.93309

00:07:36.379 --> 00:07:37.994 parts of our sleep cycle.
NOTE Confidence: 0.93309

00:07:38.000 --> 00:07:40.120 And those lymphatics then
NOTE Confidence: 0.93309

00:07:40.120 --> 00:07:42.240 remove that neurotoxic waste,
NOTE Confidence: 0.93309

00:07:42.240 --> 00:07:43.905 which otherwise might build up
NOTE Confidence: 0.93309

00:07:43.905 --> 00:07:46.619 and put us at risk for things
NOTE Confidence: 0.93309

00:07:46.619 --> 00:07:48.086 like Alzheimer's disease.
NOTE Confidence: 0.93309

00:07:48.090 --> 00:07:51.234 Sleep is also important for cognitive
NOTE Confidence: 0.93309

00:07:51.234 --> 00:07:53.330 function and memory consolidation.
NOTE Confidence: 0.93309

00:07:53.330 --> 00:07:55.290 It's important for brain plasticity,

NOTE Confidence: 0.93309

00:07:55.290 --> 00:07:56.850 synaptogenesis and recovery,

NOTE Confidence: 0.93309

00:07:56.850 --> 00:07:59.970 and it's important for physical performance.

NOTE Confidence: 0.93309

00:07:59.970 --> 00:08:02.706 So I'm showing you here a story from

NOTE Confidence: 0.93309

00:08:02.706 --> 00:08:04.754 the MPA NBA showing you that even

NOTE Confidence: 0.93309

00:08:04.754 --> 00:08:06.295 they have realized how important

NOTE Confidence: 0.93309

00:08:06.295 --> 00:08:08.703 sleep is because they know it affects

NOTE Confidence: 0.93309

00:08:08.703 --> 00:08:10.439 the performance of their athletes.

NOTE Confidence: 0.93309

00:08:10.440 --> 00:08:12.012 And this is getting them very

NOTE Confidence: 0.93309

00:08:12.012 --> 00:08:13.626 interested in thinking about how do

NOTE Confidence: 0.93309

00:08:13.626 --> 00:08:15.174 they help their athletes sleep better

NOTE Confidence: 0.93309

00:08:15.174 --> 00:08:16.521 when they're going across multiple

NOTE Confidence: 0.93309

00:08:16.521 --> 00:08:18.355 time zones and they have these crazy

NOTE Confidence: 0.93309

00:08:18.360 --> 00:08:20.000 schedules that might prevent sleep.

NOTE Confidence: 0.9380937

00:08:22.760 --> 00:08:25.016 So a little bit more about

NOTE Confidence: 0.9380937

00:08:25.016 --> 00:08:26.520 basics of sleep here.

NOTE Confidence: 0.9380937

00:08:26.520 --> 00:08:28.800 I'm showing you sleep architecture,
NOTE Confidence: 0.9380937

00:08:28.800 --> 00:08:30.522 by which I mean the different stages
NOTE Confidence: 0.9380937

00:08:30.522 --> 00:08:32.900 of sleep that we go through and how we
NOTE Confidence: 0.9380937

00:08:32.900 --> 00:08:34.510 cycle through them throughout the night.
NOTE Confidence: 0.9380937

00:08:34.510 --> 00:08:36.344 So on the X axis you see
NOTE Confidence: 0.9380937

00:08:36.344 --> 00:08:37.590 time across the night.
NOTE Confidence: 0.9380937

00:08:37.590 --> 00:08:40.246 So perhaps we start at a a sort of
NOTE Confidence: 0.9380937

00:08:40.246 --> 00:08:41.786 normal bedtime around 11:00 PM.
NOTE Confidence: 0.9380937

00:08:41.790 --> 00:08:44.282 We end at 7:00 AM and then on the Y axis
NOTE Confidence: 0.9380937

00:08:44.282 --> 00:08:46.543 you see the different stages of sleep.
NOTE Confidence: 0.9380937

00:08:46.550 --> 00:08:49.052 So we start and wake The next stage under
NOTE Confidence: 0.9380937

00:08:49.052 --> 00:08:51.266 that by convention is our REM sleep,
NOTE Confidence: 0.9380937

00:08:51.270 --> 00:08:53.510 that's our rapid eye movement or dream sleep.
NOTE Confidence: 0.9380937

00:08:53.510 --> 00:08:55.400 And then below that you see the
NOTE Confidence: 0.9380937

00:08:55.400 --> 00:08:57.150 different non REM stages of sleep.
NOTE Confidence: 0.9380937

00:08:57.150 --> 00:08:58.790 Stage one and stage two,

NOTE Confidence: 0.9380937

00:08:58.790 --> 00:09:00.470 those are our lighter stages.

NOTE Confidence: 0.9380937

00:09:00.470 --> 00:09:02.086 And then stage 3,

NOTE Confidence: 0.9380937

00:09:02.086 --> 00:09:04.188 which is our slow wave sleep.

NOTE Confidence: 0.9380937

00:09:04.188 --> 00:09:06.260 It can also be called M3 sleep.

NOTE Confidence: 0.9380937

00:09:06.260 --> 00:09:09.459 This is thought to be our most

NOTE Confidence: 0.9380937

00:09:09.459 --> 00:09:11.194 physically restorative sleep and

NOTE Confidence: 0.9380937

00:09:11.194 --> 00:09:13.636 so we may start awake around

NOTE Confidence: 0.9380937

00:09:13.636 --> 00:09:16.620 11:00 PM and then we fall asleep.

NOTE Confidence: 0.9380937

00:09:16.620 --> 00:09:19.007 We go into lighter stages and then

NOTE Confidence: 0.9380937

00:09:19.007 --> 00:09:21.975 early on you in the night you see we

NOTE Confidence: 0.9380937

00:09:21.975 --> 00:09:24.820 have that very deep restorative M3 sleep.

NOTE Confidence: 0.9380937

00:09:24.820 --> 00:09:27.940 And then usually about 90 minutes into sleep,

NOTE Confidence: 0.9380937

00:09:27.940 --> 00:09:29.698 we have our first REM period,

NOTE Confidence: 0.9380937

00:09:29.700 --> 00:09:32.590 which you see with that red line at the top.

NOTE Confidence: 0.9380937

00:09:32.590 --> 00:09:34.150 That first REM period is short,

NOTE Confidence: 0.9380937

00:09:34.150 --> 00:09:36.040 and then we cycle through the
NOTE Confidence: 0.9380937

00:09:36.040 --> 00:09:37.255 stages again and then RAM.
NOTE Confidence: 0.9380937

00:09:37.255 --> 00:09:38.425 As you see in the 2nd,
NOTE Confidence: 0.9380937

00:09:38.430 --> 00:09:40.030 between cycle two and three,
NOTE Confidence: 0.9380937

00:09:40.030 --> 00:09:41.654 there's a brief arousal.
NOTE Confidence: 0.9380937

00:09:41.654 --> 00:09:45.132 This often happens to end RAM and to
NOTE Confidence: 0.9380937

00:09:45.132 --> 00:09:47.547 continuous cycling through the stages.
NOTE Confidence: 0.9380937

00:09:47.550 --> 00:09:49.167 Towards the end of the night when
NOTE Confidence: 0.9380937

00:09:49.167 --> 00:09:50.826 we're looking at cycle 4 and cycle 5,
NOTE Confidence: 0.9380937

00:09:50.830 --> 00:09:53.486 you can see really at this point we're
NOTE Confidence: 0.9380937

00:09:53.486 --> 00:09:56.051 done with our deep restorative sleep
NOTE Confidence: 0.9380937

00:09:56.051 --> 00:09:58.336 and we're cycling between longer
NOTE Confidence: 0.9380937

00:09:58.336 --> 00:10:00.866 stages of REM and our lighter sleep.
NOTE Confidence: 0.9380937

00:10:00.870 --> 00:10:03.210 And so I like to point this out to
NOTE Confidence: 0.9380937

00:10:03.210 --> 00:10:05.466 say sleep is not an 8 hour coma.
NOTE Confidence: 0.9380937

00:10:05.470 --> 00:10:07.588 Sleep is a process through which

NOTE Confidence: 0.9380937

00:10:07.588 --> 00:10:09.510 we go through different stages,

NOTE Confidence: 0.9380937

00:10:09.510 --> 00:10:10.581 lighter and deeper.

NOTE Confidence: 0.9380937

00:10:10.581 --> 00:10:12.723 We cycle throughout the night and

NOTE Confidence: 0.9380937

00:10:12.723 --> 00:10:14.587 arousals from sleep may be normal.

NOTE Confidence: 0.9374309

00:10:17.630 --> 00:10:19.784 Here's another thing we know just

NOTE Confidence: 0.9374309

00:10:19.784 --> 00:10:21.670 about basics of normal sleep.

NOTE Confidence: 0.9374309

00:10:21.670 --> 00:10:23.560 I'm showing you sleep duration

NOTE Confidence: 0.9374309

00:10:23.560 --> 00:10:25.072 recommendations from the National

NOTE Confidence: 0.9374309

00:10:25.072 --> 00:10:27.036 Sleep Medicine Foundation and you

NOTE Confidence: 0.9374309

00:10:27.036 --> 00:10:28.807 can see there's quite a bit of

NOTE Confidence: 0.9374309

00:10:28.807 --> 00:10:30.130 variability across the lifespan.

NOTE Confidence: 0.9374309

00:10:30.130 --> 00:10:32.930 A newborn may be expected to sleep.

NOTE Confidence: 0.9374309

00:10:32.930 --> 00:10:35.610 That sweet spot is 14 to 17 hours a day

NOTE Confidence: 0.9374309

00:10:35.679 --> 00:10:38.287 that you see in that royal blue color.

NOTE Confidence: 0.9374309

00:10:38.290 --> 00:10:40.068 And so now let's focus on the

NOTE Confidence: 0.9374309

00:10:40.068 --> 00:10:42.460 other side of the screen and let's
NOTE Confidence: 0.9374309

00:10:42.460 --> 00:10:45.370 see that between our young adult,
NOTE Confidence: 0.9374309

00:10:45.370 --> 00:10:48.289 our middle-aged adult and our older adult,
NOTE Confidence: 0.9374309

00:10:48.290 --> 00:10:49.994 the sleep duration recommendation
NOTE Confidence: 0.9374309

00:10:49.994 --> 00:10:53.198 is about the same 7 to 8 hours
NOTE Confidence: 0.9374309

00:10:53.198 --> 00:10:54.640 in that royal blue color.
NOTE Confidence: 0.9374309

00:10:54.640 --> 00:10:56.380 And then in the teal color,
NOTE Confidence: 0.9374309

00:10:56.380 --> 00:10:58.580 you see that five or six hours on
NOTE Confidence: 0.9374309

00:10:58.580 --> 00:11:00.641 one side versus 9 hours on the
NOTE Confidence: 0.9374309

00:11:00.641 --> 00:11:02.940 other side may also be appropriate.
NOTE Confidence: 0.9374309

00:11:02.940 --> 00:11:05.558 So this recommendation of 7 to 8
NOTE Confidence: 0.9374309

00:11:05.558 --> 00:11:07.701 hours comes because we know that
NOTE Confidence: 0.9374309

00:11:07.701 --> 00:11:10.421 older adults who sleep for 7 to 8
NOTE Confidence: 0.9374309

00:11:10.421 --> 00:11:12.576 hours report better mental health,
NOTE Confidence: 0.9374309

00:11:12.580 --> 00:11:14.630 better physical health and better
NOTE Confidence: 0.9374309

00:11:14.630 --> 00:11:15.860 quality of life.

NOTE Confidence: 0.9374309

00:11:15.860 --> 00:11:17.680 But I do want to introduce the

NOTE Confidence: 0.9374309

00:11:17.680 --> 00:11:19.538 fact that there is variation here.

NOTE Confidence: 0.9374309

00:11:19.540 --> 00:11:22.144 There is a difference in terms of

NOTE Confidence: 0.9374309

00:11:22.150 --> 00:11:23.830 sleep need or in in this case,

NOTE Confidence: 0.9374309

00:11:23.830 --> 00:11:25.550 in terms of sleep duration.

NOTE Confidence: 0.9374309

00:11:25.550 --> 00:11:28.130 So shorter or longer times may

NOTE Confidence: 0.9374309

00:11:28.130 --> 00:11:28.990 be appropriate.

NOTE Confidence: 0.9374309

00:11:28.990 --> 00:11:31.366 But I also want to point out that

NOTE Confidence: 0.9374309

00:11:31.366 --> 00:11:33.887 very short or very long durations of

NOTE Confidence: 0.9374309

00:11:33.887 --> 00:11:36.610 sleep may signal that there's a sleep

NOTE Confidence: 0.9374309

00:11:36.610 --> 00:11:38.590 problem and that further history,

NOTE Confidence: 0.9374309

00:11:38.590 --> 00:11:40.470 physical and workup, is warranted.

NOTE Confidence: 0.9328168

00:11:44.550 --> 00:11:46.070 Now in the next part,

NOTE Confidence: 0.9328168

00:11:46.070 --> 00:11:48.870 since I've introduced you to basic concepts,

NOTE Confidence: 0.9328168

00:11:48.870 --> 00:11:51.606 I want to start to talk about what is

NOTE Confidence: 0.9328168

00:11:51.606 --> 00:11:55.750 unique about sleep in older adults.
NOTE Confidence: 0.9328168

00:11:55.750 --> 00:11:59.060 Here I'm showing you sleep
NOTE Confidence: 0.9328168

00:11:59.060 --> 00:12:01.708 architecture across different ages.
NOTE Confidence: 0.9328168

00:12:01.710 --> 00:12:04.720 And So what we know is that our time in
NOTE Confidence: 0.9328168

00:12:04.797 --> 00:12:08.269 different sleep stages does change as we age.
NOTE Confidence: 0.9328168

00:12:08.270 --> 00:12:09.086 This is normal.
NOTE Confidence: 0.9328168

00:12:09.086 --> 00:12:10.990 This has nothing to do with disease.
NOTE Confidence: 0.9328168

00:12:10.990 --> 00:12:13.854 This is just how for all of us,
NOTE Confidence: 0.9328168

00:12:13.860 --> 00:12:15.820 sleep will change as we get older.
NOTE Confidence: 0.9328168

00:12:15.820 --> 00:12:17.350 And so if we think about
NOTE Confidence: 0.9328168

00:12:17.350 --> 00:12:18.660 comparing a 10 year old,
NOTE Confidence: 0.9328168

00:12:18.660 --> 00:12:21.404 you see that down on the Y axis
NOTE Confidence: 0.9328168

00:12:21.404 --> 00:12:23.260 there versus a 55 year old.
NOTE Confidence: 0.9328168

00:12:23.260 --> 00:12:25.870 What I want to point out is that time
NOTE Confidence: 0.9328168

00:12:25.870 --> 00:12:28.467 in stage REM or in slow wave sleep
NOTE Confidence: 0.9328168

00:12:28.467 --> 00:12:30.890 will be much greater in younger ages

NOTE Confidence: 0.9328168

00:12:30.890 --> 00:12:34.064 than it is when we're in our fifties,

NOTE Confidence: 0.9328168

00:12:34.064 --> 00:12:35.690 60s and 70s.

NOTE Confidence: 0.9328168

00:12:35.690 --> 00:12:38.722 And there's a change so that we now

NOTE Confidence: 0.9328168

00:12:38.722 --> 00:12:41.687 spend more time in stage one and stage

NOTE Confidence: 0.9328168

00:12:41.687 --> 00:12:45.248 two sleep as we get to our 50s and older.

NOTE Confidence: 0.9328168

00:12:45.250 --> 00:12:48.193 So what this means is if we compare that

NOTE Confidence: 0.9328168

00:12:48.193 --> 00:12:51.087 sleep histogram that I showed you before,

NOTE Confidence: 0.9328168

00:12:51.090 --> 00:12:53.034 where we cycle through the different

NOTE Confidence: 0.9328168

00:12:53.034 --> 00:12:54.330 stages throughout the night,

NOTE Confidence: 0.9328168

00:12:54.330 --> 00:12:55.890 On the top you see the young adult,

NOTE Confidence: 0.9328168

00:12:55.890 --> 00:12:57.354 which is similar to the picture

NOTE Confidence: 0.9328168

00:12:57.354 --> 00:12:58.780 that I showed you already.

NOTE Confidence: 0.9328168

00:12:58.780 --> 00:13:00.060 So now let's compare what

NOTE Confidence: 0.9328168

00:13:00.060 --> 00:13:01.340 happens in the older adult,

NOTE Confidence: 0.9328168

00:13:01.340 --> 00:13:02.738 which you see at the bottom.

NOTE Confidence: 0.9328168

00:13:02.740 --> 00:13:05.396 And what you will notice is many more

NOTE Confidence: 0.9328168

00:13:05.396 --> 00:13:07.979 spikes to that awake stage of sleep.

NOTE Confidence: 0.9328168

00:13:07.980 --> 00:13:09.978 So arousals from sleep are much

NOTE Confidence: 0.9328168

00:13:09.978 --> 00:13:12.060 more common as we get older,

NOTE Confidence: 0.9328168

00:13:12.060 --> 00:13:14.706 and that causes a shift away from

NOTE Confidence: 0.9328168

00:13:14.706 --> 00:13:16.939 deeper stages towards lighter stages.

NOTE Confidence: 0.9328168

00:13:16.940 --> 00:13:17.468 But again,

NOTE Confidence: 0.9328168

00:13:17.468 --> 00:13:19.316 I want to point out these are

NOTE Confidence: 0.9328168

00:13:19.316 --> 00:13:21.084 arousals that are brief and the

NOTE Confidence: 0.9328168

00:13:21.084 --> 00:13:22.534 normal expectation is that they

NOTE Confidence: 0.9328168

00:13:22.597 --> 00:13:24.179 should be brief and that we are

NOTE Confidence: 0.9328168

00:13:24.179 --> 00:13:26.060 able to go back to sleep quickly.

NOTE Confidence: 0.9357978

00:13:28.640 --> 00:13:30.480 Here's another way that sleep

NOTE Confidence: 0.9357978

00:13:30.480 --> 00:13:32.908 may change with age. And again,

NOTE Confidence: 0.9357978

00:13:32.908 --> 00:13:35.278 this is another normal feature.

NOTE Confidence: 0.9357978

00:13:35.280 --> 00:13:37.352 So we may have something as we

NOTE Confidence: 0.9357978

00:13:37.352 --> 00:13:39.318 get older called a phase advance,

NOTE Confidence: 0.9357978

00:13:39.320 --> 00:13:41.120 which really means a preference to

NOTE Confidence: 0.9357978

00:13:41.120 --> 00:13:43.478 go to bed earlier and get up earlier.

NOTE Confidence: 0.9357978

00:13:43.480 --> 00:13:45.292 So now what I'm showing you

NOTE Confidence: 0.9357978

00:13:45.292 --> 00:13:47.086 in this picture is melatonin

NOTE Confidence: 0.9357978

00:13:47.086 --> 00:13:49.138 concentration over the night.

NOTE Confidence: 0.9357978

00:13:49.140 --> 00:13:51.534 And if we focus on the blue line first,

NOTE Confidence: 0.9357978

00:13:51.540 --> 00:13:53.654 this is our sort of normal or

NOTE Confidence: 0.9357978

00:13:53.654 --> 00:13:55.647 usual sleep phase where in the

NOTE Confidence: 0.9357978

00:13:55.647 --> 00:13:57.337 early evening around 8:00 PM,

NOTE Confidence: 0.9357978

00:13:57.340 --> 00:14:00.259 we have our dim light melatonin onset.

NOTE Confidence: 0.9357978

00:14:00.260 --> 00:14:02.104 Melatonin increases after that

NOTE Confidence: 0.9357978

00:14:02.104 --> 00:14:04.870 and then dissipates as we get

NOTE Confidence: 0.9357978

00:14:04.948 --> 00:14:07.098 towards 8:00 in the morning.

NOTE Confidence: 0.9357978

00:14:07.100 --> 00:14:09.500 So what is a normal feature for many

NOTE Confidence: 0.9357978

00:14:09.500 --> 00:14:11.638 older people is to have an advanced
NOTE Confidence: 0.9357978

00:14:11.638 --> 00:14:13.420 phase and that's shown in red.
NOTE Confidence: 0.9357978

00:14:13.420 --> 00:14:16.927 And so what's driving that is an
NOTE Confidence: 0.9357978

00:14:16.927 --> 00:14:19.510 earlier release of melatonin,
NOTE Confidence: 0.9357978

00:14:19.510 --> 00:14:21.670 so that melatonin onset comes on
NOTE Confidence: 0.9357978

00:14:21.670 --> 00:14:23.670 earlier and it dissipates earlier.
NOTE Confidence: 0.9357978

00:14:23.670 --> 00:14:24.686 And as a result,
NOTE Confidence: 0.9357978

00:14:24.686 --> 00:14:26.989 there may be a preference to go to bed
NOTE Confidence: 0.9357978

00:14:26.989 --> 00:14:30.510 earlier and therefore wake up earlier.
NOTE Confidence: 0.9357978

00:14:30.510 --> 00:14:32.876 The other thing that we know that
NOTE Confidence: 0.9357978

00:14:32.876 --> 00:14:35.287 changes with circadian rhythm and age is
NOTE Confidence: 0.9357978

00:14:35.287 --> 00:14:37.710 that there's a decreased amplitude of sleep,
NOTE Confidence: 0.9357978

00:14:37.710 --> 00:14:38.680 wake rhythm,
NOTE Confidence: 0.9357978

00:14:38.680 --> 00:14:41.590 body temperature and many different hormones.
NOTE Confidence: 0.9357978

00:14:41.590 --> 00:14:42.710 So the amplitude I'm
NOTE Confidence: 0.9357978

00:14:42.710 --> 00:14:44.110 showing you in this picture,

NOTE Confidence: 0.9357978

00:14:44.110 --> 00:14:45.562 that's the difference between

NOTE Confidence: 0.9357978

00:14:45.562 --> 00:14:48.020 the peak and the through of the

NOTE Confidence: 0.9357978

00:14:48.020 --> 00:14:49.300 concentration of different hormones,

NOTE Confidence: 0.9357978

00:14:49.300 --> 00:14:52.415 or even the difference in body temperature.

NOTE Confidence: 0.9357978

00:14:52.420 --> 00:14:55.888 So that difference that amplitude will

NOTE Confidence: 0.9357978

00:14:55.888 --> 00:14:59.219 naturally decrease as we get older.

NOTE Confidence: 0.9357978

00:14:59.220 --> 00:15:01.145 And then another thing that can be

NOTE Confidence: 0.9357978

00:15:01.145 --> 00:15:03.037 a normal feature of aging is the

NOTE Confidence: 0.9357978

00:15:03.037 --> 00:15:04.555 loss of ability to phase shift.

NOTE Confidence: 0.9357978

00:15:04.560 --> 00:15:05.163 So Simply put,

NOTE Confidence: 0.9357978

00:15:05.163 --> 00:15:06.570 this is what you need to do

NOTE Confidence: 0.9357978

00:15:06.624 --> 00:15:08.159 when you're changing time zones.

NOTE Confidence: 0.9357978

00:15:08.160 --> 00:15:10.000 You need to train your body to go

NOTE Confidence: 0.9357978

00:15:10.000 --> 00:15:11.848 to bed at a different time and

NOTE Confidence: 0.9357978

00:15:11.848 --> 00:15:13.520 wake up at a different time.

NOTE Confidence: 0.9357978

00:15:13.520 --> 00:15:15.360 And we know that as we get older,
NOTE Confidence: 0.9357978

00:15:15.360 --> 00:15:18.594 this shift becomes harder or takes longer.
NOTE Confidence: 0.9333979

00:15:21.160 --> 00:15:23.383 Now I want to talk about napping in older
NOTE Confidence: 0.9333979

00:15:23.383 --> 00:15:25.565 adults because this is a place where I
NOTE Confidence: 0.9333979

00:15:25.565 --> 00:15:27.557 think the literature can be very confusing.
NOTE Confidence: 0.9333979

00:15:27.560 --> 00:15:29.480 So let's go through this.
NOTE Confidence: 0.9333979

00:15:29.480 --> 00:15:32.694 So first, napping is common in older
NOTE Confidence: 0.9333979

00:15:32.694 --> 00:15:35.190 people and it gets more frequent with age.
NOTE Confidence: 0.9333979

00:15:35.190 --> 00:15:39.054 So 25 to 46% of adults greater
NOTE Confidence: 0.9333979

00:15:39.054 --> 00:15:42.349 than 65 years old may nap.
NOTE Confidence: 0.9333979

00:15:42.350 --> 00:15:44.464 And we have seen from the literature
NOTE Confidence: 0.9333979

00:15:44.464 --> 00:15:46.139 that napping might be associated
NOTE Confidence: 0.9333979

00:15:46.139 --> 00:15:47.904 with lots of negative outcomes.
NOTE Confidence: 0.9333979

00:15:47.910 --> 00:15:49.605 Falls, dementia, depression,
NOTE Confidence: 0.9333979

00:15:49.605 --> 00:15:52.430 diabetes, impaired quality of life.
NOTE Confidence: 0.9333979

00:15:52.430 --> 00:15:54.230 So there's a long list.

NOTE Confidence: 0.9333979

00:15:54.230 --> 00:15:56.330 However, some literature shows that napping

NOTE Confidence: 0.9333979

00:15:56.330 --> 00:15:58.709 might be associated with positive outcomes,

NOTE Confidence: 0.9333979

00:15:58.710 --> 00:16:01.010 like reduce cardiovascular risk

NOTE Confidence: 0.9333979

00:16:01.010 --> 00:16:03.310 or improved cognitive performance.

NOTE Confidence: 0.9333979

00:16:03.310 --> 00:16:04.766 So how do we,

NOTE Confidence: 0.9333979

00:16:04.766 --> 00:16:06.950 how do we rectify this difference

NOTE Confidence: 0.9333979

00:16:07.036 --> 00:16:09.826 that we're seeing in the literature?

NOTE Confidence: 0.9333979

00:16:09.830 --> 00:16:12.413 I want to take you through that to let

NOTE Confidence: 0.9333979

00:16:12.413 --> 00:16:14.748 you know whether when you're taking

NOTE Confidence: 0.9333979

00:16:14.748 --> 00:16:17.605 care of patients or seeing people in

NOTE Confidence: 0.9333979

00:16:17.605 --> 00:16:20.023 the community to figure out whether

NOTE Confidence: 0.9333979

00:16:20.023 --> 00:16:23.330 napping might be harmful or helpful.

NOTE Confidence: 0.9333979

00:16:23.330 --> 00:16:23.938 So first,

NOTE Confidence: 0.9333979

00:16:23.938 --> 00:16:25.762 we know from the literature that

NOTE Confidence: 0.9333979

00:16:25.762 --> 00:16:27.607 napping one to two times per week

NOTE Confidence: 0.9333979

00:16:27.610 --> 00:16:30.622 is associated with a lower incidence
NOTE Confidence: 0.9333979

00:16:30.622 --> 00:16:32.128 of cardiovascular events.
NOTE Confidence: 0.9333979

00:16:32.130 --> 00:16:32.410 However,
NOTE Confidence: 0.9333979

00:16:32.410 --> 00:16:33.530 in this same study,
NOTE Confidence: 0.9333979

00:16:33.530 --> 00:16:36.372 they showed no association more for more
NOTE Confidence: 0.9333979

00:16:36.372 --> 00:16:38.808 frequent napping or for nap duration,
NOTE Confidence: 0.9333979

00:16:38.810 --> 00:16:40.466 which is to say the total
NOTE Confidence: 0.9333979

00:16:40.466 --> 00:16:41.570 time that you're napping.
NOTE Confidence: 0.9333979

00:16:41.570 --> 00:16:44.786 So it does seem to suggest that lower
NOTE Confidence: 0.9333979

00:16:44.786 --> 00:16:46.769 frequency napping may be helpful,
NOTE Confidence: 0.9333979

00:16:46.770 --> 00:16:48.978 especially when we're looking
NOTE Confidence: 0.9333979

00:16:48.978 --> 00:16:50.634 at cardiovascular events.
NOTE Confidence: 0.9333979

00:16:50.640 --> 00:16:52.915 The other thing we know from the
NOTE Confidence: 0.9333979

00:16:52.915 --> 00:16:55.559 literature is that for persons age 75 to 94,
NOTE Confidence: 0.9333979

00:16:55.560 --> 00:16:58.585 a short nighttime sleep duration
NOTE Confidence: 0.9333979

00:16:58.585 --> 00:17:01.610 is associated with daytime naps

NOTE Confidence: 0.9333979

00:17:01.708 --> 00:17:04.640 being protective for mortality.

NOTE Confidence: 0.9333979

00:17:04.640 --> 00:17:05.008 However,

NOTE Confidence: 0.9333979

00:17:05.008 --> 00:17:07.216 for those people who might have

NOTE Confidence: 0.9333979

00:17:07.216 --> 00:17:08.749 long nighttime sleep duration

NOTE Confidence: 0.9333979

00:17:08.749 --> 00:17:10.197 greater than 9 hours,

NOTE Confidence: 0.9333979

00:17:10.200 --> 00:17:11.960 naps were associated with

NOTE Confidence: 0.9333979

00:17:11.960 --> 00:17:13.280 increased mortality risk.

NOTE Confidence: 0.9333979

00:17:13.280 --> 00:17:16.136 So here we're seeing that if the

NOTE Confidence: 0.9333979

00:17:16.136 --> 00:17:18.491 overnight sleep duration is long and

NOTE Confidence: 0.9333979

00:17:18.491 --> 00:17:21.310 that person requires a nap during the day,

NOTE Confidence: 0.9333979

00:17:21.310 --> 00:17:24.010 that is the napping that we think is is

NOTE Confidence: 0.9333979

00:17:24.010 --> 00:17:25.990 associated with more adverse outcomes.

NOTE Confidence: 0.93041867

00:17:28.510 --> 00:17:30.190 So if we look at napping,

NOTE Confidence: 0.93041867

00:17:30.190 --> 00:17:31.898 cardiovascular disease and mortality,

NOTE Confidence: 0.93041867

00:17:31.898 --> 00:17:34.460 I'll show you how we put

NOTE Confidence: 0.93041867

00:17:34.532 --> 00:17:36.597 together all of these results.

NOTE Confidence: 0.93041867

00:17:36.600 --> 00:17:39.196 So along the X axis, we have nap time,

NOTE Confidence: 0.93041867

00:17:39.196 --> 00:17:41.983 nap duration and along the Y axis here

NOTE Confidence: 0.93041867

00:17:41.983 --> 00:17:44.557 we have rate of cardiovascular incidence,

NOTE Confidence: 0.93041867

00:17:44.560 --> 00:17:46.016 rate of cardiovascular disease.

NOTE Confidence: 0.93041867

00:17:46.016 --> 00:17:48.920 And this is what we call a J curve.

NOTE Confidence: 0.93041867

00:17:48.920 --> 00:17:51.485 So in the beginning when we go from zero

NOTE Confidence: 0.93041867

00:17:51.485 --> 00:17:55.064 to 30, we see that risk of incident

NOTE Confidence: 0.93041867

00:17:55.064 --> 00:17:57.080 cardiovascular disease going down.

NOTE Confidence: 0.93041867

00:17:57.080 --> 00:17:59.498 And then after about 30 minutes

NOTE Confidence: 0.93041867

00:17:59.498 --> 00:18:01.680 the risk starts to go up.

NOTE Confidence: 0.93041867

00:18:01.680 --> 00:18:04.668 So here, shorter naps are better

NOTE Confidence: 0.93041867

00:18:04.668 --> 00:18:07.506 and longer naps suggest increased

NOTE Confidence: 0.93041867

00:18:07.506 --> 00:18:10.498 risk for cardiovascular disease.

NOTE Confidence: 0.93041867

00:18:10.500 --> 00:18:13.270 Now I'm showing you the

NOTE Confidence: 0.93041867

00:18:13.270 --> 00:18:14.378 mortality association.

NOTE Confidence: 0.93041867

00:18:14.380 --> 00:18:17.107 And so here what you can see is that

NOTE Confidence: 0.93041867

00:18:17.107 --> 00:18:19.419 there's a pretty linear association.

NOTE Confidence: 0.93041867

00:18:19.420 --> 00:18:21.694 However, when we get to about

NOTE Confidence: 0.93041867

00:18:21.694 --> 00:18:23.859 60 minutes on the X axis,

NOTE Confidence: 0.93041867

00:18:23.860 --> 00:18:27.660 that's when our 95% confidence

NOTE Confidence: 0.93041867

00:18:27.660 --> 00:18:29.980 interval goes above 1.

NOTE Confidence: 0.93041867

00:18:29.980 --> 00:18:32.428 So that's suggesting that NAP 60

NOTE Confidence: 0.93041867

00:18:32.428 --> 00:18:34.817 minutes and longer are significantly

NOTE Confidence: 0.93041867

00:18:34.817 --> 00:18:38.217 associated with increased mortality risk.

NOTE Confidence: 0.93041867

00:18:38.220 --> 00:18:40.972 So the bottom line here is napping for

NOTE Confidence: 0.93041867

00:18:40.972 --> 00:18:43.997 more than an hour is probably worse

NOTE Confidence: 0.93041867

00:18:43.997 --> 00:18:46.257 and associated with adverse outcomes.

NOTE Confidence: 0.93041867

00:18:46.260 --> 00:18:48.066 Weather napping is helpful or harmful

NOTE Confidence: 0.93041867

00:18:48.066 --> 00:18:50.260 has to do with a lot of things.

NOTE Confidence: 0.93041867

00:18:50.260 --> 00:18:52.808 It has to do with the frequency

NOTE Confidence: 0.93041867

00:18:52.808 --> 00:18:53.900 and the duration,
NOTE Confidence: 0.93041867

00:18:53.900 --> 00:18:55.876 and it has to do with the total
NOTE Confidence: 0.93041867

00:18:55.876 --> 00:18:56.900 overnight sleep duration.
NOTE Confidence: 0.9346753

00:18:59.210 --> 00:19:01.858 So next I want to talk about another
NOTE Confidence: 0.9346753

00:19:01.858 --> 00:19:04.117 important topic when we're thinking about
NOTE Confidence: 0.9346753

00:19:04.117 --> 00:19:06.502 sleep in older people. The fact is,
NOTE Confidence: 0.9346753

00:19:06.502 --> 00:19:08.490 as we age and we collect conditions,
NOTE Confidence: 0.9346753

00:19:08.490 --> 00:19:10.114 we also collect medications,
NOTE Confidence: 0.9346753

00:19:10.114 --> 00:19:11.738 and medications can affect
NOTE Confidence: 0.9346753

00:19:11.738 --> 00:19:13.888 sleep in many different ways.
NOTE Confidence: 0.9346753

00:19:13.890 --> 00:19:15.288 So here on the left side,
NOTE Confidence: 0.9346753

00:19:15.290 --> 00:19:17.945 what I'm showing you is
NOTE Confidence: 0.9346753

00:19:17.945 --> 00:19:19.536 the different domains.
NOTE Confidence: 0.9346753

00:19:19.536 --> 00:19:23.218 So we have domains of daytime drowsiness,
NOTE Confidence: 0.9346753

00:19:23.220 --> 00:19:25.460 we have medications that might be activating,
NOTE Confidence: 0.9346753

00:19:25.460 --> 00:19:28.106 we have medications that may exacerbate

NOTE Confidence: 0.9346753

00:19:28.106 --> 00:19:30.666 underlying primary sleep disorders or we

NOTE Confidence: 0.9346753

00:19:30.666 --> 00:19:32.856 have medications that may disrupt symptoms.

NOTE Confidence: 0.9346753

00:19:32.860 --> 00:19:34.660 And so I've I've given you

NOTE Confidence: 0.9346753

00:19:34.660 --> 00:19:35.860 some common examples here.

NOTE Confidence: 0.9346753

00:19:35.860 --> 00:19:37.276 But a medication that

NOTE Confidence: 0.9346753

00:19:37.276 --> 00:19:38.338 causes daytime drowsiness,

NOTE Confidence: 0.9346753

00:19:38.340 --> 00:19:41.574 such as an opiate or a benzodiazepine

NOTE Confidence: 0.9346753

00:19:41.574 --> 00:19:44.060 or even an an antihistamine,

NOTE Confidence: 0.9346753

00:19:44.060 --> 00:19:46.660 if that causes daytime drowsiness,

NOTE Confidence: 0.9346753

00:19:46.660 --> 00:19:48.641 it may then be harder for people

NOTE Confidence: 0.9346753

00:19:48.641 --> 00:19:49.940 to sleep at night.

NOTE Confidence: 0.9346753

00:19:49.940 --> 00:19:51.852 Whereas an activating medication,

NOTE Confidence: 0.9346753

00:19:51.852 --> 00:19:53.764 something like a steroid,

NOTE Confidence: 0.9346753

00:19:53.770 --> 00:19:55.357 certain antidepressants or

NOTE Confidence: 0.9346753

00:19:55.357 --> 00:19:58.531 methylphenidate may make it harder to

NOTE Confidence: 0.9346753

00:19:58.531 --> 00:20:01.088 initiate or maintain sleep at night.
NOTE Confidence: 0.9346753

00:20:01.090 --> 00:20:03.330 And then another one that I really
NOTE Confidence: 0.9346753

00:20:03.330 --> 00:20:05.489 like to focus on in my teaching
NOTE Confidence: 0.9346753

00:20:05.490 --> 00:20:08.155 is these medications that can
NOTE Confidence: 0.9346753

00:20:08.155 --> 00:20:10.287 exacerbate primary sleep disorders.
NOTE Confidence: 0.9346753

00:20:10.290 --> 00:20:12.094 And the commonest examples
NOTE Confidence: 0.9346753

00:20:12.094 --> 00:20:13.447 here are antidepressants.
NOTE Confidence: 0.9346753

00:20:13.450 --> 00:20:16.810 So these could be SSRI type antidepressants
NOTE Confidence: 0.9346753

00:20:16.810 --> 00:20:18.680 or even TCA antidepressants.
NOTE Confidence: 0.9346753

00:20:18.680 --> 00:20:20.955 These medications are known to
NOTE Confidence: 0.9346753

00:20:20.955 --> 00:20:23.280 cause restless leg syndrome or
NOTE Confidence: 0.9346753

00:20:23.280 --> 00:20:25.510 periodic leg movements during sleep,
NOTE Confidence: 0.9346753

00:20:25.510 --> 00:20:28.702 and they're also known to cause
NOTE Confidence: 0.9346753

00:20:28.702 --> 00:20:31.310 REM behavior disorder or RBD.
NOTE Confidence: 0.9346753

00:20:31.310 --> 00:20:33.010 Another very common problem that
NOTE Confidence: 0.9346753

00:20:33.010 --> 00:20:35.329 we run into is people taking

NOTE Confidence: 0.9346753

00:20:35.329 --> 00:20:37.176 Ambien or other benzodiazepine

NOTE Confidence: 0.9346753

00:20:37.176 --> 00:20:39.906 like medications those Z drugs.

NOTE Confidence: 0.9346753

00:20:39.910 --> 00:20:41.350 Those can cause parasomnia

NOTE Confidence: 0.9346753

00:20:41.350 --> 00:20:42.790 as things like sleepwalking,

NOTE Confidence: 0.9346753

00:20:42.790 --> 00:20:43.804 sleep eating,

NOTE Confidence: 0.9346753

00:20:43.804 --> 00:20:44.818 sleep driving.

NOTE Confidence: 0.9346753

00:20:44.818 --> 00:20:47.353 So those are definitely medications

NOTE Confidence: 0.9346753

00:20:47.353 --> 00:20:50.360 that we commonly see disrupting sleep.

NOTE Confidence: 0.9346753

00:20:50.360 --> 00:20:52.583 And then finally you you may be on a

NOTE Confidence: 0.9346753

00:20:52.583 --> 00:20:54.356 medication that's causing you to cough,

NOTE Confidence: 0.9346753

00:20:54.360 --> 00:20:55.424 for example,

NOTE Confidence: 0.9346753

00:20:55.424 --> 00:20:57.552 lisinopril that's causing nocturia

NOTE Confidence: 0.9346753

00:20:57.552 --> 00:20:59.680 like a diuretic medication.

NOTE Confidence: 0.9346753

00:20:59.680 --> 00:21:01.682 Or you might be on a medication

NOTE Confidence: 0.9346753

00:21:01.682 --> 00:21:03.296 like for diabetes that's causing

NOTE Confidence: 0.9346753

00:21:03.296 --> 00:21:05.360 you to be hypoglycemic at night.
NOTE Confidence: 0.9346753

00:21:05.360 --> 00:21:06.960 So that's another way that
NOTE Confidence: 0.9346753

00:21:06.960 --> 00:21:08.240 medications can disrupt sleep.
NOTE Confidence: 0.9317402

00:21:10.410 --> 00:21:12.874 And so again, I want to highlight this
NOTE Confidence: 0.9317402

00:21:12.874 --> 00:21:15.810 because I want you to remember going forward,
NOTE Confidence: 0.9317402

00:21:15.810 --> 00:21:18.183 if you have a patient with restless
NOTE Confidence: 0.9317402

00:21:18.183 --> 00:21:20.728 leg syndrome or REM behavior disorder,
NOTE Confidence: 0.9317402

00:21:20.730 --> 00:21:22.186 the first thing you want to do
NOTE Confidence: 0.9317402

00:21:22.186 --> 00:21:23.818 is look to the medication list
NOTE Confidence: 0.9317402

00:21:23.818 --> 00:21:25.403 to look for an antidepressant.
NOTE Confidence: 0.9317402

00:21:25.410 --> 00:21:27.570 And I also think this is good practice
NOTE Confidence: 0.9317402

00:21:27.570 --> 00:21:29.335 for taking care of older adults
NOTE Confidence: 0.9317402

00:21:29.335 --> 00:21:31.087 in general with a sleep problem.
NOTE Confidence: 0.9317402

00:21:31.090 --> 00:21:32.390 You should always look at
NOTE Confidence: 0.9317402

00:21:32.390 --> 00:21:33.170 the medication list.
NOTE Confidence: 0.9335792

00:21:35.760 --> 00:21:38.488 So next I want to talk about psychosocial

NOTE Confidence: 0.9335792

00:21:38.488 --> 00:21:40.784 and behavioral factors that may be

NOTE Confidence: 0.9335792

00:21:40.784 --> 00:21:42.714 especially important in older people.

NOTE Confidence: 0.9335792

00:21:42.720 --> 00:21:44.757 So these are things like substance use.

NOTE Confidence: 0.9335792

00:21:44.760 --> 00:21:47.196 This could be use of alcohol,

NOTE Confidence: 0.9335792

00:21:47.200 --> 00:21:48.679 nicotine or caffeine.

NOTE Confidence: 0.9335792

00:21:48.679 --> 00:21:51.508 The fact is, as we get older,

NOTE Confidence: 0.9335792

00:21:51.508 --> 00:21:53.193 our body's ability to break

NOTE Confidence: 0.9335792

00:21:53.193 --> 00:21:54.839 down these medications,

NOTE Confidence: 0.9335792

00:21:54.840 --> 00:21:56.488 to metabolize them changes.

NOTE Confidence: 0.9335792

00:21:56.488 --> 00:22:00.834 And so we may not be able to drink the

NOTE Confidence: 0.9335792

00:22:00.834 --> 00:22:03.912 same amount of alcohol or caffeine in

NOTE Confidence: 0.9335792

00:22:03.912 --> 00:22:06.910 our 30s and 40s and inner 80s and 90s.

NOTE Confidence: 0.9335792

00:22:06.910 --> 00:22:08.584 That same amount may have more

NOTE Confidence: 0.9335792

00:22:08.584 --> 00:22:10.310 of an effect on our body.

NOTE Confidence: 0.9335792

00:22:10.310 --> 00:22:12.459 And I think it's common knowledge among

NOTE Confidence: 0.9335792

00:22:12.459 --> 00:22:14.468 people that we take care of that.

NOTE Confidence: 0.9335792

00:22:14.470 --> 00:22:16.510 Alcohol may help you fall asleep,

NOTE Confidence: 0.9335792

00:22:16.510 --> 00:22:17.900 but they may not necessarily

NOTE Confidence: 0.9335792

00:22:17.900 --> 00:22:20.032 know that it may wake us up in

NOTE Confidence: 0.9335792

00:22:20.032 --> 00:22:21.628 the middle of the night as well.

NOTE Confidence: 0.9335792

00:22:21.630 --> 00:22:23.830 So substance use is definitely

NOTE Confidence: 0.9335792

00:22:23.830 --> 00:22:26.550 important to ask older adults about,

NOTE Confidence: 0.9335792

00:22:26.550 --> 00:22:29.346 especially if they have sleep problems.

NOTE Confidence: 0.9335792

00:22:29.350 --> 00:22:30.814 The next thing I want to

NOTE Confidence: 0.9335792

00:22:30.814 --> 00:22:31.790 bring up is caregiving.

NOTE Confidence: 0.9335792

00:22:31.790 --> 00:22:34.118 The fact is that one in five caregivers

NOTE Confidence: 0.9335792

00:22:34.118 --> 00:22:36.190 in this country is 65 or older,

NOTE Confidence: 0.9335792

00:22:36.190 --> 00:22:38.857 so they may have things related to

NOTE Confidence: 0.9335792

00:22:38.857 --> 00:22:41.268 that caregiver role that caused them

NOTE Confidence: 0.9335792

00:22:41.268 --> 00:22:43.662 to have trouble sleeping at night,

NOTE Confidence: 0.9335792

00:22:43.670 --> 00:22:45.616 and that may be things that are

NOTE Confidence: 0.9335792

00:22:45.616 --> 00:22:47.069 directly disruptive to their care.

NOTE Confidence: 0.9335792

00:22:47.070 --> 00:22:50.040 But it may be the burden itself of a

NOTE Confidence: 0.9335792

00:22:50.040 --> 00:22:52.550 caregiving that's causing sleep problems.

NOTE Confidence: 0.9335792

00:22:52.550 --> 00:22:55.322 Bereavement is sadly very common in this

NOTE Confidence: 0.9335792

00:22:55.322 --> 00:22:58.636 age group and that may impact their sleep.

NOTE Confidence: 0.9335792

00:22:58.640 --> 00:23:00.712 And then I want to talk a little

NOTE Confidence: 0.9335792

00:23:00.712 --> 00:23:02.551 bit about social social isolation

NOTE Confidence: 0.9335792

00:23:02.551 --> 00:23:04.636 and loss of physical function.

NOTE Confidence: 0.9335792

00:23:04.640 --> 00:23:07.335 These are very common in this older

NOTE Confidence: 0.9335792

00:23:07.335 --> 00:23:10.271 age group and so these can also

NOTE Confidence: 0.9335792

00:23:10.271 --> 00:23:12.815 have direct impacts on sleep through

NOTE Confidence: 0.9335792

00:23:12.903 --> 00:23:15.498 their effect on circadian rhythm.

NOTE Confidence: 0.9335792

00:23:15.500 --> 00:23:17.775 So people who are isolated or may

NOTE Confidence: 0.9335792

00:23:17.775 --> 00:23:19.940 have problems with physical function.

NOTE Confidence: 0.9335792

00:23:19.940 --> 00:23:21.938 They may have poor sleep hygiene,

NOTE Confidence: 0.9335792

00:23:21.940 --> 00:23:24.844 but they may also have inadequate
NOTE Confidence: 0.9335792

00:23:24.844 --> 00:23:26.296 exposure to zeitgebers.
NOTE Confidence: 0.9335792

00:23:26.300 --> 00:23:29.527 These are cues from the environment that
NOTE Confidence: 0.9335792

00:23:29.527 --> 00:23:33.099 help us maintain a normal circadian rhythm.
NOTE Confidence: 0.9335792

00:23:33.100 --> 00:23:35.396 And so you can see in this picture
NOTE Confidence: 0.9335792

00:23:35.396 --> 00:23:37.378 here I'm showing you the sun.
NOTE Confidence: 0.9335792

00:23:37.380 --> 00:23:39.100 This is our photic zeitgeber.
NOTE Confidence: 0.9335792

00:23:39.100 --> 00:23:41.108 This sends direct messaging
NOTE Confidence: 0.9335792

00:23:41.108 --> 00:23:43.880 through the eye to the SSC,
NOTE Confidence: 0.9335792

00:23:43.880 --> 00:23:45.980 and that's the suprachiasmatic nucleus.
NOTE Confidence: 0.9335792

00:23:45.980 --> 00:23:49.018 That's our master clock in our brain
NOTE Confidence: 0.9335792

00:23:49.020 --> 00:23:50.460 that controls time in our brain.
NOTE Confidence: 0.9335792

00:23:50.460 --> 00:23:51.860 But as you can see,
NOTE Confidence: 0.9335792

00:23:51.860 --> 00:23:54.030 it also controls the clock in all
NOTE Confidence: 0.9335792

00:23:54.030 --> 00:23:56.139 of our different peripheral organs.
NOTE Confidence: 0.9335792

00:23:56.140 --> 00:23:58.564 So that master clock gets signals

NOTE Confidence: 0.9335792

00:23:58.564 --> 00:24:01.630 from the sun in order to help

NOTE Confidence: 0.9335792

00:24:01.630 --> 00:24:03.900 us maintain a normal schedule.

NOTE Confidence: 0.9335792

00:24:03.900 --> 00:24:05.993 So you can see that people who

NOTE Confidence: 0.9335792

00:24:05.993 --> 00:24:08.125 are isolated or have poor physical

NOTE Confidence: 0.9335792

00:24:08.125 --> 00:24:10.075 function may not get adequate

NOTE Confidence: 0.9335792

00:24:10.075 --> 00:24:11.680 exposure to that site gaper.

NOTE Confidence: 0.9335792

00:24:11.680 --> 00:24:12.180 But also,

NOTE Confidence: 0.9335792

00:24:12.180 --> 00:24:14.764 I want to show you on the bottom that

NOTE Confidence: 0.9335792

00:24:14.764 --> 00:24:16.816 there are also nonphotic site gapers.

NOTE Confidence: 0.9335792

00:24:16.820 --> 00:24:19.580 These are things like physical activity,

NOTE Confidence: 0.9335792

00:24:19.580 --> 00:24:20.304 social time,

NOTE Confidence: 0.9335792

00:24:20.304 --> 00:24:21.028 and meals.

NOTE Confidence: 0.9335792

00:24:21.028 --> 00:24:23.634 These are also cues that help us

NOTE Confidence: 0.9335792

00:24:23.634 --> 00:24:25.444 maintain a normal sleepwake rhythm

NOTE Confidence: 0.9335792

00:24:25.444 --> 00:24:28.130 and that may be lost in people

NOTE Confidence: 0.9335792

00:24:28.130 --> 00:24:30.464 who are socially isolated or have
NOTE Confidence: 0.9335792

00:24:30.464 --> 00:24:32.600 problems with physical function and
NOTE Confidence: 0.9335792

00:24:32.600 --> 00:24:34.775 therefore problems getting out of
NOTE Confidence: 0.9335792

00:24:34.775 --> 00:24:37.458 the home to those social activities.
NOTE Confidence: 0.9335792

00:24:37.460 --> 00:24:39.740 So another thing that is unique
NOTE Confidence: 0.9335792

00:24:39.740 --> 00:24:41.260 about sleep in older
NOTE Confidence: 0.937666678214285

00:24:41.340 --> 00:24:43.620 people is that nearly every sleep
NOTE Confidence: 0.937666678214285

00:24:43.620 --> 00:24:46.591 disorder we see in the sleep clinic
NOTE Confidence: 0.937666678214285

00:24:46.591 --> 00:24:48.876 increases in prevalence with age.
NOTE Confidence: 0.937666678214285

00:24:48.880 --> 00:24:50.705 So these are things like
NOTE Confidence: 0.937666678214285

00:24:50.705 --> 00:24:51.800 obstructive sleep apnea,
NOTE Confidence: 0.937666678214285

00:24:51.800 --> 00:24:53.644 restless leg syndrome, insomnia,
NOTE Confidence: 0.937666678214285

00:24:53.644 --> 00:24:55.949 REM sleep behavior disorder and
NOTE Confidence: 0.937666678214285

00:24:55.949 --> 00:24:58.117 advanced sleep wake phase disorder.
NOTE Confidence: 0.937666678214285

00:24:58.120 --> 00:25:00.280 I haven't listed every single one,
NOTE Confidence: 0.937666678214285

00:25:00.280 --> 00:25:02.765 but these are some of the more

NOTE Confidence: 0.937666678214285
00:25:02.765 --> 00:25:05.161 prevalent ones that I want to talk
NOTE Confidence: 0.937666678214285
00:25:05.161 --> 00:25:07.039 about in the next few slides.
NOTE Confidence: 0.937666678214285
00:25:07.040 --> 00:25:08.720 So obstructive sleep apnea.
NOTE Confidence: 0.937666678214285
00:25:08.720 --> 00:25:11.617 I'm showing you in this picture in
NOTE Confidence: 0.937666678214285
00:25:11.617 --> 00:25:13.879 the bottom corner that very simply,
NOTE Confidence: 0.937666678214285
00:25:13.880 --> 00:25:16.540 this is obstruction of the airway during
NOTE Confidence: 0.937666678214285
00:25:16.540 --> 00:25:19.488 sleep that impairs the passage of oxygen
NOTE Confidence: 0.937666678214285
00:25:19.488 --> 00:25:22.278 from the upper airway to the lungs.
NOTE Confidence: 0.937666678214285
00:25:22.280 --> 00:25:24.840 And the most common feature we think of,
NOTE Confidence: 0.937666678214285
00:25:24.840 --> 00:25:25.876 as you can see in the picture,
NOTE Confidence: 0.937666678214285
00:25:25.880 --> 00:25:26.856 is snoring.
NOTE Confidence: 0.937666678214285
00:25:26.856 --> 00:25:30.272 That's a sign that people are having
NOTE Confidence: 0.937666678214285
00:25:30.280 --> 00:25:32.408 friction of flow through the airway and
NOTE Confidence: 0.937666678214285
00:25:32.408 --> 00:25:34.812 it could be a sound that people make
NOTE Confidence: 0.937666678214285
00:25:34.812 --> 00:25:37.079 once they open up their airway again.
NOTE Confidence: 0.937666678214285

00:25:37.080 --> 00:25:40.080 So that's obstructive sleep apnea.
NOTE Confidence: 0.937666678214285

00:25:40.080 --> 00:25:40.959 This, the prevalence,
NOTE Confidence: 0.937666678214285

00:25:40.959 --> 00:25:43.217 as I mentioned, increases with age.
NOTE Confidence: 0.937666678214285

00:25:43.217 --> 00:25:43.676 However,
NOTE Confidence: 0.937666678214285

00:25:43.676 --> 00:25:45.512 it is frequently undiagnosed
NOTE Confidence: 0.937666678214285

00:25:45.512 --> 00:25:47.931 in older people and so I want
NOTE Confidence: 0.937666678214285

00:25:47.931 --> 00:25:49.640 to tell you why that is.
NOTE Confidence: 0.937666678214285

00:25:49.640 --> 00:25:51.525 It's because it may present
NOTE Confidence: 0.937666678214285

00:25:51.525 --> 00:25:53.033 differently in this group.
NOTE Confidence: 0.937666678214285

00:25:53.040 --> 00:25:55.750 There's less snoring or pauses
NOTE Confidence: 0.937666678214285

00:25:55.750 --> 00:25:58.552 in breathing and there are more
NOTE Confidence: 0.937666678214285

00:25:58.552 --> 00:26:00.264 sleep related complaints among
NOTE Confidence: 0.937666678214285

00:26:00.264 --> 00:26:02.638 older people who have sleep apnea.
NOTE Confidence: 0.937666678214285

00:26:02.640 --> 00:26:04.950 And So what that means is that
NOTE Confidence: 0.937666678214285

00:26:04.950 --> 00:26:07.670 they might report more insomnia,
NOTE Confidence: 0.937666678214285

00:26:07.670 --> 00:26:10.145 or daytime sleepiness or even

NOTE Confidence: 0.937666678214285

00:26:10.145 --> 00:26:11.630 urination at night.

NOTE Confidence: 0.937666678214285

00:26:11.630 --> 00:26:14.180 Those are probably more commonly

NOTE Confidence: 0.937666678214285

00:26:14.180 --> 00:26:17.285 experienced and reported than things like

NOTE Confidence: 0.937666678214285

00:26:17.285 --> 00:26:20.135 snoring or witness pauses and breathing.

NOTE Confidence: 0.937666678214285

00:26:20.140 --> 00:26:22.732 The other things that I want to point

NOTE Confidence: 0.937666678214285

00:26:22.732 --> 00:26:25.074 out here are that obesity does not

NOTE Confidence: 0.937666678214285

00:26:25.074 --> 00:26:27.559 appear to be a major risk factor

NOTE Confidence: 0.937666678214285

00:26:27.559 --> 00:26:29.935 for sleep apnea and older people,

NOTE Confidence: 0.937666678214285

00:26:29.940 --> 00:26:32.741 and that as opposed to a middle-aged

NOTE Confidence: 0.937666678214285

00:26:32.741 --> 00:26:35.146 population where men have sleep

NOTE Confidence: 0.937666678214285

00:26:35.146 --> 00:26:37.070 apnea apnea more frequently

NOTE Confidence: 0.937666678214285

00:26:37.145 --> 00:26:39.175 when we get to our older ages,

NOTE Confidence: 0.937666678214285

00:26:39.180 --> 00:26:40.670 the prevalence among men and

NOTE Confidence: 0.937666678214285

00:26:40.670 --> 00:26:42.739 women of sleep apnea is the same.

NOTE Confidence: 0.9359237

00:26:46.100 --> 00:26:48.333 I think it's important if we're think

NOTE Confidence: 0.9359237

00:26:48.333 --> 00:26:50.234 specifically about sleep in older adults

NOTE Confidence: 0.9359237

00:26:50.234 --> 00:26:52.016 to talk about REM behavior disorder.

NOTE Confidence: 0.9359237

00:26:52.020 --> 00:26:54.946 The majority of these cases occur in

NOTE Confidence: 0.9359237

00:26:54.946 --> 00:26:57.738 people in their 6th or 7th decade.

NOTE Confidence: 0.9359237

00:26:57.740 --> 00:27:00.236 And REM sleep behavior disorder is

NOTE Confidence: 0.9359237

00:27:00.236 --> 00:27:02.586 often associated with an underlying

NOTE Confidence: 0.9359237

00:27:02.586 --> 00:27:04.407 neurodegenerative disorder that

NOTE Confidence: 0.9359237

00:27:04.407 --> 00:27:07.442 could be something like Parkinson's

NOTE Confidence: 0.9359237

00:27:07.442 --> 00:27:10.505 disease or Lewy body disease or

NOTE Confidence: 0.9359237

00:27:10.505 --> 00:27:11.933 other alpha synucleinopathies.

NOTE Confidence: 0.9359237

00:27:11.940 --> 00:27:14.900 And So what happens to cause this disorder

NOTE Confidence: 0.9359237

00:27:14.900 --> 00:27:17.937 is that there is a loss of REM atonia.

NOTE Confidence: 0.9359237

00:27:17.940 --> 00:27:19.740 So during our REM sleep,

NOTE Confidence: 0.9359237

00:27:19.740 --> 00:27:21.480 the only muscles that should have

NOTE Confidence: 0.9359237

00:27:21.480 --> 00:27:23.914 any tone or eye muscles and our

NOTE Confidence: 0.9359237

00:27:23.914 --> 00:27:25.534 diaphragm and that's protective.

NOTE Confidence: 0.9359237

00:27:25.540 --> 00:27:27.740 It keeps us from acting out our dreams.

NOTE Confidence: 0.9359237

00:27:27.740 --> 00:27:29.630 So people with REM behavior disorder

NOTE Confidence: 0.9359237

00:27:29.630 --> 00:27:31.700 have a loss of that atonia.

NOTE Confidence: 0.9359237

00:27:31.700 --> 00:27:35.038 And so you may see these symptoms acting

NOTE Confidence: 0.9359237

00:27:35.038 --> 00:27:37.404 out dreams and they may be injurious

NOTE Confidence: 0.9359237

00:27:37.404 --> 00:27:39.906 to the person or the bed partner.

NOTE Confidence: 0.9359237

00:27:39.910 --> 00:27:42.507 And then I mentioned recall and timing.

NOTE Confidence: 0.9359237

00:27:42.510 --> 00:27:45.317 First recall is that the person often

NOTE Confidence: 0.9359237

00:27:45.317 --> 00:27:47.968 wakes from the dream doing that

NOTE Confidence: 0.9359237

00:27:47.968 --> 00:27:50.698 activity that they were dreaming about

NOTE Confidence: 0.9359237

00:27:50.698 --> 00:27:53.626 and so they oftentimes remember it.

NOTE Confidence: 0.9359237

00:27:53.630 --> 00:27:55.028 And then in terms of timing,

NOTE Confidence: 0.9359237

00:27:55.030 --> 00:27:56.906 if you'll remember from our sleep histogram,

NOTE Confidence: 0.9359237

00:27:56.910 --> 00:27:59.059 most REM sleep occurs later on in

NOTE Confidence: 0.9359237

00:27:59.059 --> 00:28:01.430 the night and in the early morning.

NOTE Confidence: 0.9359237

00:28:01.430 --> 00:28:03.458 So therefore we think these symptoms
NOTE Confidence: 0.9359237

00:28:03.458 --> 00:28:06.074 are this acting out of dreams tends to
NOTE Confidence: 0.9359237

00:28:06.074 --> 00:28:08.310 happen more during that time of night.
NOTE Confidence: 0.9247265

00:28:10.470 --> 00:28:12.550 This is diagnosed through
NOTE Confidence: 0.9247265

00:28:12.550 --> 00:28:14.630 polysomnography which I'm going
NOTE Confidence: 0.9247265

00:28:14.630 --> 00:28:17.510 to talk about in a few slides.
NOTE Confidence: 0.9247265

00:28:17.510 --> 00:28:19.640 And treatment for this disorder
NOTE Confidence: 0.9247265

00:28:19.640 --> 00:28:21.344 includes both non pharmacologic
NOTE Confidence: 0.9247265

00:28:21.344 --> 00:28:23.429 and pharmacologic treatments.
NOTE Confidence: 0.9247265

00:28:23.430 --> 00:28:25.974 So non pharmacologic treatments are focused
NOTE Confidence: 0.9247265

00:28:25.974 --> 00:28:28.770 on making the bed environment safer,
NOTE Confidence: 0.9247265

00:28:28.770 --> 00:28:32.070 removing dangerous things from the bedside,
NOTE Confidence: 0.9247265

00:28:32.070 --> 00:28:34.145 removing things that a person
NOTE Confidence: 0.9247265

00:28:34.145 --> 00:28:36.719 might injure him or herself with
NOTE Confidence: 0.9247265

00:28:36.719 --> 00:28:38.880 during a dream enactment and
NOTE Confidence: 0.9247265

00:28:38.880 --> 00:28:40.290 then pharmacologic treatments.

NOTE Confidence: 0.9247265

00:28:40.290 --> 00:28:43.110 The mainstays of therapy are melatonin

NOTE Confidence: 0.9247265

00:28:43.180 --> 00:28:45.048 and clonazepam and melatonin.

NOTE Confidence: 0.9247265

00:28:45.050 --> 00:28:46.250 This is in higher doses,

NOTE Confidence: 0.9247265

00:28:46.250 --> 00:28:48.626 6 milligrams and above is becoming

NOTE Confidence: 0.9247265

00:28:48.626 --> 00:28:51.620 favored because it has a better side

NOTE Confidence: 0.9247265

00:28:51.620 --> 00:28:53.404 effect profile than clonazepam,

NOTE Confidence: 0.9247265

00:28:53.410 --> 00:28:54.830 especially in older adults where

NOTE Confidence: 0.9247265

00:28:54.830 --> 00:28:56.682 we might be worried about over

NOTE Confidence: 0.9247265

00:28:56.682 --> 00:28:58.210 sedation and cognitive impairment.

NOTE Confidence: 0.9339495

00:29:01.170 --> 00:29:02.850 So, restless leg syndrome.

NOTE Confidence: 0.9339495

00:29:02.850 --> 00:29:05.370 This becomes more common with age.

NOTE Confidence: 0.9339495

00:29:05.370 --> 00:29:06.980 And so I just want to review

NOTE Confidence: 0.9339495

00:29:06.980 --> 00:29:08.310 how this is diagnosed.

NOTE Confidence: 0.9339495

00:29:08.310 --> 00:29:10.390 This is a clinical diagnosis,

NOTE Confidence: 0.9339495

00:29:10.390 --> 00:29:14.863 so a person might report an urge to move.

NOTE Confidence: 0.9339495

00:29:14.870 --> 00:29:17.510 And this is worse during inactivity.
NOTE Confidence: 0.9339495

00:29:17.510 --> 00:29:18.498 So it comes on.
NOTE Confidence: 0.9339495

00:29:18.498 --> 00:29:19.980 Perhaps when they're sitting in a
NOTE Confidence: 0.9339495

00:29:20.039 --> 00:29:21.908 chair for a prolonged period of time,
NOTE Confidence: 0.9339495

00:29:21.910 --> 00:29:24.950 or maybe they're on the couch watching TV,
NOTE Confidence: 0.9339495

00:29:24.950 --> 00:29:26.630 it is relieved by movement.
NOTE Confidence: 0.9339495

00:29:26.630 --> 00:29:28.052 So they'll tell you that they
NOTE Confidence: 0.9339495

00:29:28.052 --> 00:29:29.549 have to get up and walk,
NOTE Confidence: 0.9339495

00:29:29.550 --> 00:29:30.950 get up and move.
NOTE Confidence: 0.9339495

00:29:30.950 --> 00:29:32.350 But this is fleeting.
NOTE Confidence: 0.9339495

00:29:32.350 --> 00:29:35.150 As soon as they are inactive again,
NOTE Confidence: 0.9339495

00:29:35.150 --> 00:29:37.986 the sensation will return and
NOTE Confidence: 0.9339495

00:29:37.986 --> 00:29:40.122 then finally there is a circadian
NOTE Confidence: 0.9339495

00:29:40.122 --> 00:29:41.910 component to this diagnosis.
NOTE Confidence: 0.9339495

00:29:41.910 --> 00:29:44.025 These symptoms really should come
NOTE Confidence: 0.9339495

00:29:44.025 --> 00:29:47.229 on or be worse in the evening.

NOTE Confidence: 0.9339495

00:29:47.230 --> 00:29:50.990 So if a person has those four criteria,

NOTE Confidence: 0.9339495

00:29:50.990 --> 00:29:52.855 they meet a clinical diagnosis

NOTE Confidence: 0.9339495

00:29:52.855 --> 00:29:54.347 of restless leg syndrome.

NOTE Confidence: 0.9339495

00:29:54.350 --> 00:29:56.198 And what I'm showing you on the

NOTE Confidence: 0.9339495

00:29:56.198 --> 00:29:58.549 bottom here is that urge to move can

NOTE Confidence: 0.9339495

00:29:58.549 --> 00:30:00.390 be described in many different ways.

NOTE Confidence: 0.9339495

00:30:00.390 --> 00:30:03.228 A crawling and itching, A throbbing,

NOTE Confidence: 0.9339495

00:30:03.230 --> 00:30:06.184 a pulling in energy in the legs.

NOTE Confidence: 0.9339495

00:30:06.190 --> 00:30:08.864 So I usually like when I'm asking

NOTE Confidence: 0.9339495

00:30:08.864 --> 00:30:11.264 people about this to start with

NOTE Confidence: 0.9339495

00:30:11.264 --> 00:30:13.604 telling me do they have any

NOTE Confidence: 0.9339495

00:30:13.604 --> 00:30:15.797 bothersome feelings in their legs?

NOTE Confidence: 0.9339495

00:30:15.800 --> 00:30:18.880 And then I allow them to describe those.

NOTE Confidence: 0.9339495

00:30:18.880 --> 00:30:21.448 And if they can't come up with a

NOTE Confidence: 0.9339495

00:30:21.448 --> 00:30:22.735 specific characteristics that I

NOTE Confidence: 0.9339495

00:30:22.735 --> 00:30:24.493 provide them some options like these
NOTE Confidence: 0.9339495

00:30:24.493 --> 00:30:26.994 that I'm showing on the bottom to to
NOTE Confidence: 0.9339495

00:30:26.994 --> 00:30:29.353 fill us in on what they're actually
NOTE Confidence: 0.9339495

00:30:29.353 --> 00:30:31.957 sensing so that we can make a diagnosis.
NOTE Confidence: 0.9436528

00:30:34.440 --> 00:30:36.636 So next I'll talk about insomnia.
NOTE Confidence: 0.9436528

00:30:36.640 --> 00:30:38.524 So these the diagnosis
NOTE Confidence: 0.9436528

00:30:38.524 --> 00:30:40.879 here is based on symptoms,
NOTE Confidence: 0.9436528

00:30:40.880 --> 00:30:43.232 difficulty initiating sleep,
NOTE Confidence: 0.9436528

00:30:43.232 --> 00:30:45.584 difficulty maintaining sleep
NOTE Confidence: 0.9436528

00:30:45.584 --> 00:30:48.720 or early morning awakening.
NOTE Confidence: 0.9436528

00:30:48.720 --> 00:30:50.640 And these symptoms lead
NOTE Confidence: 0.9436528

00:30:50.640 --> 00:30:52.560 to a daytime impairment.
NOTE Confidence: 0.9436528

00:30:52.560 --> 00:30:55.080 This could be fatigue or low energy,
NOTE Confidence: 0.9436528

00:30:55.080 --> 00:30:57.648 could be cognitive or mood problems
NOTE Confidence: 0.9436528

00:30:57.648 --> 00:30:59.360 or impaired social functioning.
NOTE Confidence: 0.9436528

00:30:59.360 --> 00:31:01.880 So that's how we differentiate

NOTE Confidence: 0.9436528

00:31:01.880 --> 00:31:04.400 insomnia symptoms from insomnia disorder.

NOTE Confidence: 0.9436528

00:31:04.400 --> 00:31:08.400 The disorder is when the criteria #2 are met.

NOTE Confidence: 0.92922646

00:31:10.880 --> 00:31:13.008 And then I also want to talk about

NOTE Confidence: 0.92922646

00:31:13.008 --> 00:31:14.680 advanced sleep wake phase disorder,

NOTE Confidence: 0.92922646

00:31:14.680 --> 00:31:17.100 which I alluded to earlier

NOTE Confidence: 0.92922646

00:31:17.100 --> 00:31:19.520 in the in this presentation.

NOTE Confidence: 0.92922646

00:31:19.520 --> 00:31:21.536 So this is someone who has

NOTE Confidence: 0.92922646

00:31:21.536 --> 00:31:22.880 an advanced sleep phase,

NOTE Confidence: 0.92922646

00:31:22.880 --> 00:31:26.695 but now this is causing a complaint.

NOTE Confidence: 0.92922646

00:31:26.700 --> 00:31:28.780 Oftentimes the complaint comes

NOTE Confidence: 0.92922646

00:31:28.780 --> 00:31:32.639 from the bed partner or the spouse,

NOTE Confidence: 0.92922646

00:31:32.639 --> 00:31:34.418 the significant other,

NOTE Confidence: 0.92922646

00:31:34.420 --> 00:31:37.836 because they don't like the fact that

NOTE Confidence: 0.92922646

00:31:37.836 --> 00:31:40.884 around 7:00 or 8:00 at night their

NOTE Confidence: 0.92922646

00:31:40.884 --> 00:31:43.260 partner doesn't want to go out and do things.

NOTE Confidence: 0.92922646

00:31:43.260 --> 00:31:45.738 But it can also cause problems
NOTE Confidence: 0.92922646

00:31:45.738 --> 00:31:46.977 for the patient.
NOTE Confidence: 0.92922646

00:31:46.980 --> 00:31:49.326 And that's when we would differentiate
NOTE Confidence: 0.92922646

00:31:49.326 --> 00:31:51.310 between advanced sleep wake phase,
NOTE Confidence: 0.92922646

00:31:51.310 --> 00:31:53.470 an advanced sleep wake disorder.
NOTE Confidence: 0.92922646

00:31:53.470 --> 00:31:56.053 So somebody with this disorder might say
NOTE Confidence: 0.92922646

00:31:56.053 --> 00:31:59.108 that they wake up too early in the morning.
NOTE Confidence: 0.92922646

00:31:59.110 --> 00:32:00.610 Again, if they're going to bed
NOTE Confidence: 0.92922646

00:32:00.610 --> 00:32:02.070 around 8:00 in the morning,
NOTE Confidence: 0.92922646

00:32:02.070 --> 00:32:02.754 in the evening,
NOTE Confidence: 0.92922646

00:32:02.754 --> 00:32:04.672 they may wake up at 3:00 or 4:00
NOTE Confidence: 0.92922646

00:32:04.672 --> 00:32:05.467 in the morning.
NOTE Confidence: 0.9256431

00:32:08.070 --> 00:32:11.490 The other thing they may tell you is that
NOTE Confidence: 0.9256431

00:32:11.490 --> 00:32:14.782 they miss out on early evening activities
NOTE Confidence: 0.9256431

00:32:14.782 --> 00:32:18.240 because of when that sleep need occurs.
NOTE Confidence: 0.9256431

00:32:18.240 --> 00:32:20.774 So the treatment for this is the

NOTE Confidence: 0.9256431

00:32:20.774 --> 00:32:22.768 mainstays would really be timed

NOTE Confidence: 0.9256431

00:32:22.768 --> 00:32:24.436 light exposure and melatonin.

NOTE Confidence: 0.9256431

00:32:24.440 --> 00:32:27.744 So you would try to have early evening

NOTE Confidence: 0.9256431

00:32:27.744 --> 00:32:30.300 light exposure which would delay the

NOTE Confidence: 0.9256431

00:32:30.300 --> 00:32:33.480 sleep phase or melatonin in the morning,

NOTE Confidence: 0.9256431

00:32:33.480 --> 00:32:35.839 which would also delay the sleep phase.

NOTE Confidence: 0.9256431

00:32:35.840 --> 00:32:37.940 And it's important to tell these

NOTE Confidence: 0.9256431

00:32:37.940 --> 00:32:40.319 people to avoid early morning light.

NOTE Confidence: 0.9256431

00:32:40.320 --> 00:32:42.555 And that's because early morning

NOTE Confidence: 0.9256431

00:32:42.555 --> 00:32:44.790 light will advance them further

NOTE Confidence: 0.9256431

00:32:44.863 --> 00:32:47.095 and you're trying to delay them.

NOTE Confidence: 0.9256431

00:32:47.100 --> 00:32:48.852 The other thing you want to tell them

NOTE Confidence: 0.9256431

00:32:48.852 --> 00:32:50.817 is to avoid napping during the day.

NOTE Confidence: 0.9256431

00:32:50.820 --> 00:32:53.340 Again, you want to avoid dissipating

NOTE Confidence: 0.9256431

00:32:53.340 --> 00:32:55.659 that sleep drive during the day.

NOTE Confidence: 0.9256431

00:32:55.660 --> 00:32:57.220 So when they go to bed at night,
NOTE Confidence: 0.9256431

00:32:57.220 --> 00:32:59.818 they have a higher homeostatic Dr.
NOTE Confidence: 0.9256431

00:32:59.820 --> 00:33:02.058 and can hopefully stay asleep longer.
NOTE Confidence: 0.9323052

00:33:05.090 --> 00:33:07.920 So if I were to sum up everything I've shown
NOTE Confidence: 0.9323052

00:33:07.991 --> 00:33:10.567 you so far about sleep and older adults,
NOTE Confidence: 0.9323052

00:33:10.570 --> 00:33:12.448 I would show you this slide,
NOTE Confidence: 0.9323052

00:33:12.450 --> 00:33:14.802 which is to say that sleep problems
NOTE Confidence: 0.9323052

00:33:14.802 --> 00:33:17.130 in older adults are multifactorial.
NOTE Confidence: 0.9323052

00:33:17.130 --> 00:33:19.755 There are often multiple things
NOTE Confidence: 0.9323052

00:33:19.755 --> 00:33:21.330 going on simultaneously.
NOTE Confidence: 0.9323052

00:33:21.330 --> 00:33:23.015 I've shown you how there
NOTE Confidence: 0.9323052

00:33:23.015 --> 00:33:24.363 are changes in sleep,
NOTE Confidence: 0.9323052

00:33:24.370 --> 00:33:26.974 in the architecture that happen as we
NOTE Confidence: 0.9323052

00:33:26.974 --> 00:33:29.713 age that causes to have lighter sleep
NOTE Confidence: 0.9323052

00:33:29.713 --> 00:33:33.530 and perhaps more easily aroused from sleep.
NOTE Confidence: 0.9323052

00:33:33.530 --> 00:33:35.770 These people tend or as we get older,

NOTE Confidence: 0.9323052

00:33:35.770 --> 00:33:38.030 we collect chronic conditions,

NOTE Confidence: 0.9323052

00:33:38.030 --> 00:33:39.725 we collect medications,

NOTE Confidence: 0.9323052

00:33:39.730 --> 00:33:41.350 and those can affect our

NOTE Confidence: 0.9323052

00:33:41.350 --> 00:33:42.970 sleep in many different ways.

NOTE Confidence: 0.9323052

00:33:42.970 --> 00:33:45.210 There are psychosocial and

NOTE Confidence: 0.9323052

00:33:45.210 --> 00:33:47.042 behavioral factors, substance use,

NOTE Confidence: 0.9323052

00:33:47.042 --> 00:33:49.178 caregiving that I alluded to before

NOTE Confidence: 0.9323052

00:33:49.178 --> 00:33:51.408 that can cause sleep disturbance,

NOTE Confidence: 0.9323052

00:33:51.410 --> 00:33:53.146 and finally sleep disorders.

NOTE Confidence: 0.9323052

00:33:53.146 --> 00:33:55.316 Nearly all of these become

NOTE Confidence: 0.9323052

00:33:55.316 --> 00:33:57.490 more common as we get older.

NOTE Confidence: 0.9323052

00:33:57.490 --> 00:33:59.418 And so when you are taking care of

NOTE Confidence: 0.9323052

00:33:59.418 --> 00:34:01.466 an older adult with a sleep problem,

NOTE Confidence: 0.9323052

00:34:01.470 --> 00:34:03.129 you want to think of this slide

NOTE Confidence: 0.9323052

00:34:03.129 --> 00:34:05.015 and think of all of the different

NOTE Confidence: 0.9323052

00:34:05.015 --> 00:34:06.415 things that you might modify
NOTE Confidence: 0.9323052

00:34:06.415 --> 00:34:07.828 in order to help sleep,
NOTE Confidence: 0.9323052

00:34:07.830 --> 00:34:09.455 and maybe you might attack
NOTE Confidence: 0.9323052

00:34:09.455 --> 00:34:10.430 these things simultaneously.
NOTE Confidence: 0.9371349

00:34:14.590 --> 00:34:17.263 So in the last part of the talk today,
NOTE Confidence: 0.9371349

00:34:17.270 --> 00:34:19.314 I want to talk about how we
NOTE Confidence: 0.9371349

00:34:19.314 --> 00:34:20.910 should evaluate sleep complaints.
NOTE Confidence: 0.9371349

00:34:23.190 --> 00:34:25.630 So first, let's focus on
NOTE Confidence: 0.9371349

00:34:25.630 --> 00:34:27.582 taking a sleep history.
NOTE Confidence: 0.9371349

00:34:27.590 --> 00:34:29.920 And when you're doing this,
NOTE Confidence: 0.9371349

00:34:29.920 --> 00:34:32.560 it's important to be very specific.
NOTE Confidence: 0.9371349

00:34:32.560 --> 00:34:34.060 So when somebody tells you
NOTE Confidence: 0.9371349

00:34:34.060 --> 00:34:35.560 they have a sleep problem,
NOTE Confidence: 0.9371349

00:34:35.560 --> 00:34:37.480 you need to get more information.
NOTE Confidence: 0.9371349

00:34:37.480 --> 00:34:39.448 You want to know what time
NOTE Confidence: 0.9371349

00:34:39.448 --> 00:34:40.760 they're getting into bed,

NOTE Confidence: 0.9371349

00:34:40.760 --> 00:34:43.640 how long it's taking them to fall asleep,

NOTE Confidence: 0.9371349

00:34:43.640 --> 00:34:46.251 and you want to know what time

NOTE Confidence: 0.9371349

00:34:46.251 --> 00:34:48.638 they're getting out of bed for good.

NOTE Confidence: 0.9371349

00:34:48.640 --> 00:34:50.928 And so this can help us get a

NOTE Confidence: 0.9371349

00:34:50.928 --> 00:34:53.320 sense of their duration of sleep

NOTE Confidence: 0.9371349

00:34:53.320 --> 00:34:55.160 if there's variability in that.

NOTE Confidence: 0.9371349

00:34:55.160 --> 00:34:57.248 So it can give you a lot of information

NOTE Confidence: 0.9371349

00:34:57.248 --> 00:34:58.691 that's informing A differential of

NOTE Confidence: 0.9371349

00:34:58.691 --> 00:35:00.880 what might be causing a sleep problem.

NOTE Confidence: 0.9371349

00:35:00.880 --> 00:35:03.480 You want to know if awakenings are happening,

NOTE Confidence: 0.9371349

00:35:03.480 --> 00:35:05.796 if they're brief or they're prolonged.

NOTE Confidence: 0.9371349

00:35:05.800 --> 00:35:07.192 You want to know if they're

NOTE Confidence: 0.9371349

00:35:07.192 --> 00:35:08.120 napping during the day.

NOTE Confidence: 0.9371349

00:35:08.120 --> 00:35:08.412 Again,

NOTE Confidence: 0.9371349

00:35:08.412 --> 00:35:11.760 if you get a sense of a long sleep duration,

NOTE Confidence: 0.9371349

00:35:11.760 --> 00:35:13.280 you know long sleep overnight
NOTE Confidence: 0.9371349

00:35:13.280 --> 00:35:14.800 and napping during the day,
NOTE Confidence: 0.9371349

00:35:14.800 --> 00:35:17.278 that suggests napping that's associated with
NOTE Confidence: 0.9371349

00:35:17.278 --> 00:35:19.919 adverse outcomes and needs further work up.
NOTE Confidence: 0.9371349

00:35:19.920 --> 00:35:21.712 And then finally, you want to know
NOTE Confidence: 0.9371349

00:35:21.712 --> 00:35:23.239 about their overall sleep duration.
NOTE Confidence: 0.9371349

00:35:23.240 --> 00:35:23.568 Again,
NOTE Confidence: 0.9371349

00:35:23.568 --> 00:35:26.192 the sweet spot is 7 to 8 hours.
NOTE Confidence: 0.9371349

00:35:26.200 --> 00:35:28.198 Realizing that five to six hours
NOTE Confidence: 0.9371349

00:35:28.198 --> 00:35:30.951 on one end or up to 9 hours on
NOTE Confidence: 0.9371349

00:35:30.951 --> 00:35:33.240 the other end may be appropriate.
NOTE Confidence: 0.9371349

00:35:33.240 --> 00:35:35.914 And then you might ask about symptoms.
NOTE Confidence: 0.9371349

00:35:35.920 --> 00:35:37.106 So snoring,
NOTE Confidence: 0.9371349

00:35:37.106 --> 00:35:40.664 gasping pauses and breathing or nocturia.
NOTE Confidence: 0.9371349

00:35:40.670 --> 00:35:41.972 And these can all be signs
NOTE Confidence: 0.9371349

00:35:41.972 --> 00:35:42.623 of untreated sleep.

NOTE Confidence: 0.9371349

00:35:42.630 --> 00:35:45.830 Apnea like discomfort preventing sleep,

NOTE Confidence: 0.9371349

00:35:45.830 --> 00:35:48.546 which is suggestive of restless leg syndrome,

NOTE Confidence: 0.9371349

00:35:48.550 --> 00:35:50.870 sleepwalking or dream enactment

NOTE Confidence: 0.9371349

00:35:50.870 --> 00:35:53.190 could suggest a parasomnia.

NOTE Confidence: 0.9371349

00:35:53.190 --> 00:35:55.230 And dream enactment is our

NOTE Confidence: 0.9371349

00:35:55.230 --> 00:35:56.862 REM sleep behavior disorder,

NOTE Confidence: 0.9371349

00:35:56.870 --> 00:36:00.150 vivid dreams or nightmares, anxiety,

NOTE Confidence: 0.9371349

00:36:00.150 --> 00:36:01.454 rumination, or mind raising.

NOTE Confidence: 0.9371349

00:36:01.454 --> 00:36:02.106 And finally,

NOTE Confidence: 0.9371349

00:36:02.110 --> 00:36:05.158 you want to ask about inadvertent

NOTE Confidence: 0.9371349

00:36:05.158 --> 00:36:07.190 dosing or drowsy driving.

NOTE Confidence: 0.9242315

00:36:09.550 --> 00:36:11.070 So in the sleep world,

NOTE Confidence: 0.9242315

00:36:11.070 --> 00:36:13.070 we commonly use this measure,

NOTE Confidence: 0.9242315

00:36:13.070 --> 00:36:17.938 the Insomnia Severity Index and this is a

NOTE Confidence: 0.9242315

00:36:17.938 --> 00:36:19.823 validated measure for insomnia disorder.

NOTE Confidence: 0.9242315

00:36:19.830 --> 00:36:22.770 So it does map onto a DSM diagnosis
NOTE Confidence: 0.9242315

00:36:22.770 --> 00:36:25.590 of insomnia, which can be helpful.
NOTE Confidence: 0.9242315

00:36:25.590 --> 00:36:27.655 You can do this in the beginning
NOTE Confidence: 0.9242315

00:36:27.655 --> 00:36:28.839 of evaluating somebody and
NOTE Confidence: 0.9242315

00:36:28.839 --> 00:36:30.309 you can follow it over time.
NOTE Confidence: 0.9242315

00:36:30.310 --> 00:36:32.510 And so you see the first three questions
NOTE Confidence: 0.9242315

00:36:32.510 --> 00:36:34.228 are related to insomnia symptoms.
NOTE Confidence: 0.9133403

00:36:36.440 --> 00:36:39.192 And then the next questions are what map
NOTE Confidence: 0.9133403

00:36:39.192 --> 00:36:43.720 onto a DSM diagnosis of insomnia disorder.
NOTE Confidence: 0.9133403

00:36:43.720 --> 00:36:46.320 And we can further break this score down
NOTE Confidence: 0.9133403

00:36:46.320 --> 00:36:48.718 into scores above 8 which are abnormal.
NOTE Confidence: 0.9133403

00:36:48.720 --> 00:36:50.676 Or we can look at mild,
NOTE Confidence: 0.9133403

00:36:50.680 --> 00:36:52.520 moderate, and severe based on
NOTE Confidence: 0.9133403

00:36:52.520 --> 00:36:54.360 the score for this questionnaire.
NOTE Confidence: 0.938451209090909

00:36:57.400 --> 00:36:59.515 Another questionnaire that we commonly
NOTE Confidence: 0.938451209090909

00:36:59.515 --> 00:37:02.070 use is the Epworth Sleepiness Scale.

NOTE Confidence: 0.938451209090909
00:37:02.070 --> 00:37:03.954 And this asks people to rate
NOTE Confidence: 0.938451209090909
00:37:03.954 --> 00:37:06.141 their chance of dozing or falling
NOTE Confidence: 0.938451209090909
00:37:06.141 --> 00:37:07.865 asleep in different situations.
NOTE Confidence: 0.938451209090909
00:37:07.870 --> 00:37:11.349 So that might be things like reading,
NOTE Confidence: 0.938451209090909
00:37:11.350 --> 00:37:12.520 talking to people,
NOTE Confidence: 0.938451209090909
00:37:12.520 --> 00:37:14.470 or even while they're driving.
NOTE Confidence: 0.938451209090909
00:37:14.470 --> 00:37:16.829 So this range is 0 to 4,
NOTE Confidence: 0.938451209090909
00:37:16.830 --> 00:37:20.092 zero to 24 and a clinically significant
NOTE Confidence: 0.938451209090909
00:37:20.092 --> 00:37:23.080 score is thought to be 10 or above.
NOTE Confidence: 0.938451209090909
00:37:23.080 --> 00:37:24.700 And then severity is further
NOTE Confidence: 0.938451209090909
00:37:24.700 --> 00:37:25.996 broken down into moderate,
NOTE Confidence: 0.938451209090909
00:37:26.000 --> 00:37:27.960 which is 10 to 15 or severe,
NOTE Confidence: 0.938451209090909
00:37:27.960 --> 00:37:29.720 which is 16 to 24.
NOTE Confidence: 0.93930745
00:37:32.400 --> 00:37:34.885 Many of you probably know that the
NOTE Confidence: 0.93930745
00:37:34.885 --> 00:37:37.275 gold standard for objective sleep
NOTE Confidence: 0.93930745

00:37:37.275 --> 00:37:39.159 evaluation is polysomnography.

NOTE Confidence: 0.93930745

00:37:39.160 --> 00:37:40.834 And so here on the left you see what

NOTE Confidence: 0.93930745

00:37:40.834 --> 00:37:42.543 we do with a person when they come

NOTE Confidence: 0.93930745

00:37:42.543 --> 00:37:44.370 to our sleep lab and all of the

NOTE Confidence: 0.93930745

00:37:44.370 --> 00:37:46.324 different things we hook them up to.

NOTE Confidence: 0.93930745

00:37:46.324 --> 00:37:48.736 And this is the gold standard

NOTE Confidence: 0.93930745

00:37:48.736 --> 00:37:51.468 because it's a very sensitive and

NOTE Confidence: 0.93930745

00:37:51.468 --> 00:37:54.228 also specific way to determine what

NOTE Confidence: 0.93930745

00:37:54.311 --> 00:37:57.280 sleep disorders might be present in

NOTE Confidence: 0.93930745

00:37:57.280 --> 00:37:58.980 somebody who has sleep complaints.

NOTE Confidence: 0.93930745

00:37:58.980 --> 00:38:00.780 So on the top, if you look on the right,

NOTE Confidence: 0.93930745

00:38:00.780 --> 00:38:03.597 we have the EEG and that's helping us

NOTE Confidence: 0.93930745

00:38:03.597 --> 00:38:06.897 to see what stage of sleep people are in.

NOTE Confidence: 0.93930745

00:38:06.900 --> 00:38:10.275 We have eye movements that can be used to

NOTE Confidence: 0.93930745

00:38:10.275 --> 00:38:12.856 determine when somebody's in REM sleep.

NOTE Confidence: 0.93930745

00:38:12.860 --> 00:38:14.897 Chin tone is also useful for that.

NOTE Confidence: 0.93930745

00:38:14.900 --> 00:38:17.252 We have leg movements to see if people

NOTE Confidence: 0.93930745

00:38:17.252 --> 00:38:19.378 have periodic leg movements during sleep

NOTE Confidence: 0.93930745

00:38:19.380 --> 00:38:21.668 and then the next set of sensors tell

NOTE Confidence: 0.93930745

00:38:21.668 --> 00:38:24.004 us whether they might have sleep apnea.

NOTE Confidence: 0.93930745

00:38:24.004 --> 00:38:26.416 So and that could be central

NOTE Confidence: 0.93930745

00:38:26.416 --> 00:38:28.799 events or obstructive events.

NOTE Confidence: 0.93930745

00:38:28.800 --> 00:38:30.675 And along with those events

NOTE Confidence: 0.93930745

00:38:30.675 --> 00:38:32.640 we also get pulse oximetry.

NOTE Confidence: 0.93930745

00:38:32.640 --> 00:38:35.508 We do look at EKG and that allows

NOTE Confidence: 0.93930745

00:38:35.508 --> 00:38:37.680 us to see rhythm and heart rate.

NOTE Confidence: 0.93930745

00:38:37.680 --> 00:38:40.530 So that's our gold standard

NOTE Confidence: 0.93930745

00:38:40.530 --> 00:38:42.240 evaluation for sleep.

NOTE Confidence: 0.93930745

00:38:42.240 --> 00:38:44.960 And so I as I've told you before,

NOTE Confidence: 0.93930745

00:38:44.960 --> 00:38:46.688 we have all of these different

NOTE Confidence: 0.93930745

00:38:46.688 --> 00:38:48.970 sensors that allow us to get very

NOTE Confidence: 0.93930745

00:38:48.970 --> 00:38:50.394 detailed information about sleep.
NOTE Confidence: 0.92607546

00:38:52.850 --> 00:38:57.530 We also have now a home sleep apnea test.
NOTE Confidence: 0.92607546

00:38:57.530 --> 00:38:59.798 And notice I'm referring to it as not a
NOTE Confidence: 0.92607546

00:38:59.798 --> 00:39:02.005 home sleep study or a home sleep test.
NOTE Confidence: 0.92607546

00:39:02.010 --> 00:39:04.887 This is a home sleep apnea test.
NOTE Confidence: 0.92607546

00:39:04.890 --> 00:39:07.214 And that is because this is a
NOTE Confidence: 0.92607546

00:39:07.214 --> 00:39:09.565 test really for sleep apnea and
NOTE Confidence: 0.92607546

00:39:09.565 --> 00:39:11.690 not for other sleep disorders.
NOTE Confidence: 0.92607546

00:39:11.690 --> 00:39:14.406 So what we miss out on here,
NOTE Confidence: 0.92607546

00:39:14.410 --> 00:39:15.766 you see the grayed out areas.
NOTE Confidence: 0.92607546

00:39:15.770 --> 00:39:18.050 We don't have EE G so we can't
NOTE Confidence: 0.92607546

00:39:18.050 --> 00:39:20.070 tell whether people are asleep and
NOTE Confidence: 0.92607546

00:39:20.070 --> 00:39:22.538 what stage of sleep they're in and
NOTE Confidence: 0.92607546

00:39:22.538 --> 00:39:24.524 we can't look at leg movements.
NOTE Confidence: 0.92607546

00:39:24.530 --> 00:39:28.050 But this is a very good test for sleep apnea.
NOTE Confidence: 0.92607546

00:39:28.050 --> 00:39:30.762 If your suspicion for sleep apnea

NOTE Confidence: 0.92607546

00:39:30.762 --> 00:39:32.570 is already quite high.

NOTE Confidence: 0.92607546

00:39:32.570 --> 00:39:35.442 If your suspicion is high and you have

NOTE Confidence: 0.92607546

00:39:35.442 --> 00:39:37.849 a negative home sleep apnea test,

NOTE Confidence: 0.92607546

00:39:37.850 --> 00:39:40.718 then we would probably move to

NOTE Confidence: 0.92607546

00:39:40.718 --> 00:39:42.493 the more sensitive and specific

NOTE Confidence: 0.92607546

00:39:42.493 --> 00:39:44.119 test which is the in lab.

NOTE Confidence: 0.92607546

00:39:44.120 --> 00:39:45.120 Polysomnogram

NOTE Confidence: 0.92901045

00:39:47.600 --> 00:39:50.771 actigraphy is something that we may also

NOTE Confidence: 0.92901045

00:39:50.771 --> 00:39:53.544 use for objective estimates of sleep.

NOTE Confidence: 0.92901045

00:39:53.544 --> 00:39:57.120 So this is not detecting sleep directly,

NOTE Confidence: 0.92901045

00:39:57.120 --> 00:40:00.120 it is detecting sleep through movement.

NOTE Confidence: 0.92901045

00:40:00.120 --> 00:40:03.084 So this is commonly a watch

NOTE Confidence: 0.92901045

00:40:03.084 --> 00:40:04.566 that has accelerometer.

NOTE Confidence: 0.92901045

00:40:04.570 --> 00:40:07.375 An accelerometer in it which will

NOTE Confidence: 0.92901045

00:40:07.375 --> 00:40:09.000 detect patients movements and use

NOTE Confidence: 0.92901045

00:40:09.000 --> 00:40:10.712 those to estimate when they're
NOTE Confidence: 0.92901045

00:40:10.712 --> 00:40:12.487 sleeping and when they're awake.
NOTE Confidence: 0.92901045

00:40:12.490 --> 00:40:15.991 And so this is a very good and well
NOTE Confidence: 0.92901045

00:40:15.991 --> 00:40:18.368 validated way to evaluate sleep.
NOTE Confidence: 0.92901045

00:40:18.370 --> 00:40:20.370 I think particularly if you're
NOTE Confidence: 0.92901045

00:40:20.370 --> 00:40:21.570 looking at duration,
NOTE Confidence: 0.92901045

00:40:21.570 --> 00:40:25.058 this is shown to to to correlate
NOTE Confidence: 0.92901045

00:40:25.058 --> 00:40:26.972 very well with total sleep duration
NOTE Confidence: 0.92901045

00:40:26.972 --> 00:40:29.299 on our gold standard polysomnogram.
NOTE Confidence: 0.92901045

00:40:29.300 --> 00:40:31.932 And the other benefit of actigraphy is
NOTE Confidence: 0.92901045

00:40:31.932 --> 00:40:34.559 you can have multiple nights of sleep
NOTE Confidence: 0.92901045

00:40:34.559 --> 00:40:38.020 and this is done in the home environment.
NOTE Confidence: 0.92901045

00:40:38.020 --> 00:40:40.252 So what I'm showing you here in this picture,
NOTE Confidence: 0.92901045

00:40:40.260 --> 00:40:42.696 if we look at that blue interval,
NOTE Confidence: 0.92901045

00:40:42.700 --> 00:40:46.340 this is once the data is scored,
NOTE Confidence: 0.92901045

00:40:46.340 --> 00:40:47.825 it's showing you when that

NOTE Confidence: 0.92901045

00:40:47.825 --> 00:40:49.013 sleep period is occurring.

NOTE Confidence: 0.92901045

00:40:49.020 --> 00:40:50.860 So you can get a sense of duration,

NOTE Confidence: 0.92901045

00:40:50.860 --> 00:40:53.184 but also habitual sleep patterns and how

NOTE Confidence: 0.92901045

00:40:53.184 --> 00:40:56.097 they may be changing from night to night.

NOTE Confidence: 0.92901045

00:40:56.100 --> 00:40:58.910 So this may or may not be used in a

NOTE Confidence: 0.92901045

00:40:58.997 --> 00:41:01.811 clinical setting in the sleep lab to

NOTE Confidence: 0.92901045

00:41:01.811 --> 00:41:04.508 look at sleep and it's certainly very

NOTE Confidence: 0.92901045

00:41:04.508 --> 00:41:06.740 commonly used in sleep research studies.

NOTE Confidence: 0.93490666

00:41:09.760 --> 00:41:11.848 So the key points that I want to

NOTE Confidence: 0.93490666

00:41:11.848 --> 00:41:14.096 bring up from the series of talks

NOTE Confidence: 0.93490666

00:41:14.096 --> 00:41:16.251 about sleep in older people first,

NOTE Confidence: 0.93490666

00:41:16.251 --> 00:41:18.215 sleep is fundamentally important

NOTE Confidence: 0.93490666

00:41:18.215 --> 00:41:20.502 for health, quality of life

NOTE Confidence: 0.93490666

00:41:20.502 --> 00:41:22.238 and independence of everybody,

NOTE Confidence: 0.93490666

00:41:22.240 --> 00:41:25.440 including our older adults.

NOTE Confidence: 0.93490666

00:41:25.440 --> 00:41:27.894 And that you should be specific
NOTE Confidence: 0.93490666

00:41:27.894 --> 00:41:29.530 when eliciting sleep patterns
NOTE Confidence: 0.93490666

00:41:29.602 --> 00:41:31.279 and daytime consequences.
NOTE Confidence: 0.93490666

00:41:31.280 --> 00:41:33.779 So you may need to seek collateral
NOTE Confidence: 0.93490666

00:41:33.779 --> 00:41:35.908 information in this circumstance to
NOTE Confidence: 0.93490666

00:41:35.908 --> 00:41:38.368 understand when people are sleeping,
NOTE Confidence: 0.93490666

00:41:38.370 --> 00:41:40.578 how long they're sleeping and what
NOTE Confidence: 0.93490666

00:41:40.578 --> 00:41:42.938 that pattern is like or whether
NOTE Confidence: 0.93490666

00:41:42.938 --> 00:41:44.978 there are any symptoms occurring
NOTE Confidence: 0.93490666

00:41:44.978 --> 00:41:47.255 during sleep that may better be
NOTE Confidence: 0.93490666

00:41:47.255 --> 00:41:49.183 reported by a bed partner Treatment.
NOTE Confidence: 0.93490666

00:41:49.183 --> 00:41:51.527 I would say you want to start with
NOTE Confidence: 0.93490666

00:41:51.527 --> 00:41:54.040 a thorough history and workup and
NOTE Confidence: 0.93490666

00:41:54.040 --> 00:41:56.390 identify important domains that may
NOTE Confidence: 0.93490666

00:41:56.390 --> 00:41:59.450 be contributing to a sleep problem.
NOTE Confidence: 0.93490666

00:41:59.450 --> 00:42:00.815 And that's it.

NOTE Confidence: 0.93490666

00:42:00.815 --> 00:42:04.000 Thank you very much for your attention.