

WEBVTT

NOTE duration:"00:54:54.2400000"

NOTE language:en-us

NOTE Confidence: 0.86057943

00:00:16.190 --> 00:00:17.470 All right, welcome everybody.

NOTE Confidence: 0.86057943

00:00:17.470 --> 00:00:19.070 We're going to get started.

NOTE Confidence: 0.86057943

00:00:19.070 --> 00:00:20.774 I am Lauren Tobias and I'd

NOTE Confidence: 0.86057943

00:00:20.774 --> 00:00:23.061 like to welcome you to our Yale

NOTE Confidence: 0.86057943

00:00:23.061 --> 00:00:24.509 Sleep Seminar this afternoon.

NOTE Confidence: 0.86057943

00:00:24.510 --> 00:00:26.085 A few brief announcements before

NOTE Confidence: 0.86057943

00:00:26.085 --> 00:00:28.030 we introduce the speaker for today,

NOTE Confidence: 0.86057943

00:00:28.030 --> 00:00:29.765 please first take a moment

NOTE Confidence: 0.86057943

00:00:29.765 --> 00:00:31.500 to ensure that you're muted.

NOTE Confidence: 0.86057943

00:00:31.500 --> 00:00:32.960 In order to receive CME

NOTE Confidence: 0.86057943

00:00:32.960 --> 00:00:33.836 credit for attendance,

NOTE Confidence: 0.86057943

00:00:33.840 --> 00:00:35.898 please see the chat room for instructions.

NOTE Confidence: 0.86057943

00:00:35.900 --> 00:00:36.617 You can chat.

NOTE Confidence: 0.86057943

00:00:36.617 --> 00:00:38.679 You can text the unique ID for this

NOTE Confidence: 0.86057943

00:00:38.679 --> 00:00:40.641 conference anytime until 3:15 and if

NOTE Confidence: 0.86057943

00:00:40.641 --> 00:00:42.929 you're not already registered with DLC Me,

NOTE Confidence: 0.86057943

00:00:42.930 --> 00:00:44.974 you will need to do that first.

NOTE Confidence: 0.86057943

00:00:44.980 --> 00:00:46.440 If you have any questions

NOTE Confidence: 0.86057943

00:00:46.440 --> 00:00:47.316 during the presentation,

NOTE Confidence: 0.86057943

00:00:47.320 --> 00:00:49.248 I encourage you to make use of the

NOTE Confidence: 0.86057943

00:00:49.248 --> 00:00:50.985 chat rooms throughout the hour and

NOTE Confidence: 0.86057943

00:00:50.985 --> 00:00:52.785 we will also encourage people to

NOTE Confidence: 0.86057943

00:00:52.841 --> 00:00:54.471 unmute themselves and ask their

NOTE Confidence: 0.86057943

00:00:54.471 --> 00:00:56.101 questions allowed at the end.

NOTE Confidence: 0.86057943

00:00:56.110 --> 00:00:57.660 We do have recorded versions

NOTE Confidence: 0.86057943

00:00:57.660 --> 00:00:59.601 of these lectures that are made

NOTE Confidence: 0.86057943

00:00:59.601 --> 00:01:01.261 available online within two weeks

NOTE Confidence: 0.86057943

00:01:01.261 --> 00:01:03.328 at the link provided in the chat.

NOTE Confidence: 0.86057943

00:01:03.330 --> 00:01:04.074 And finally,

NOTE Confidence: 0.86057943

00:01:04.074 --> 00:01:05.934 feel free to share announcements
NOTE Confidence: 0.86057943

00:01:05.934 --> 00:01:08.099 for weekly lecture series to anyone
NOTE Confidence: 0.86057943

00:01:08.099 --> 00:01:10.073 who you think might be interested.
NOTE Confidence: 0.86057943

00:01:10.080 --> 00:01:11.820 Or contact Debbie Lovejoy to
NOTE Confidence: 0.86057943

00:01:11.820 --> 00:01:13.980 be added to our email list.
NOTE Confidence: 0.86057943

00:01:13.980 --> 00:01:16.284 And before I turn it over to Janet
NOTE Confidence: 0.86057943

00:01:16.284 --> 00:01:18.600 Hilbert to introduce today's speaker,
NOTE Confidence: 0.86057943

00:01:18.600 --> 00:01:21.057 I just want to let everybody know
NOTE Confidence: 0.86057943

00:01:21.057 --> 00:01:23.209 about the talk for next week.
NOTE Confidence: 0.86057943

00:01:23.210 --> 00:01:25.520 It's one of our joint Yale Harvard
NOTE Confidence: 0.86057943

00:01:25.520 --> 00:01:26.972 conferences and the Speaker
NOTE Confidence: 0.86057943

00:01:26.972 --> 00:01:28.540 will be Jonathan Lipton,
NOTE Confidence: 0.86057943

00:01:28.540 --> 00:01:30.694 who is a persistent professor of
NOTE Confidence: 0.86057943

00:01:30.694 --> 00:01:32.130 neurology at Boston Children's
NOTE Confidence: 0.86057943

00:01:32.194 --> 00:01:34.249 Hospital and Harvard Medical School.
NOTE Confidence: 0.86057943

00:01:34.250 --> 00:01:36.462 And his talk is entitled exploring the

NOTE Confidence: 0.86057943

00:01:36.462 --> 00:01:38.376 cross talk between neuro development

NOTE Confidence: 0.86057943

00:01:38.376 --> 00:01:40.188 disorders and circadian clocks,

NOTE Confidence: 0.86057943

00:01:40.190 --> 00:01:43.900 so please plan to join us for that next week.

NOTE Confidence: 0.86057943

00:01:43.900 --> 00:01:45.013 And with that,

NOTE Confidence: 0.86057943

00:01:45.013 --> 00:01:47.610 I'll turn it over to Doctor Hilbert.

NOTE Confidence: 0.86057943

00:01:47.610 --> 00:01:49.460 OK, thank you doctor Tobias.

NOTE Confidence: 0.86057943

00:01:49.460 --> 00:01:51.686 So it is my pleasure to

NOTE Confidence: 0.86057943

00:01:51.686 --> 00:01:53.170 introduce Doctor Yvonne Chu,

NOTE Confidence: 0.86057943

00:01:53.170 --> 00:01:54.698 our speaker for today.

NOTE Confidence: 0.86057943

00:01:54.698 --> 00:01:56.990 Doctor Chu is a postdoctoral fellow

NOTE Confidence: 0.86057943

00:01:57.064 --> 00:01:59.110 in Sleep Medicine here at Yale.

NOTE Confidence: 0.86057943

00:01:59.110 --> 00:02:01.230 She did her undergraduate work

NOTE Confidence: 0.86057943

00:02:01.230 --> 00:02:03.350 at Cornell University and she

NOTE Confidence: 0.86057943

00:02:03.424 --> 00:02:05.895 received her MD degree from U Conn.

NOTE Confidence: 0.86057943

00:02:05.900 --> 00:02:07.950 She completed her internal medicine

NOTE Confidence: 0.86057943

00:02:07.950 --> 00:02:09.590 residency at Boston Medical
NOTE Confidence: 0.86057943

00:02:09.590 --> 00:02:11.750 Center and then she stayed on in
NOTE Confidence: 0.86057943

00:02:11.750 --> 00:02:13.618 Boston for another two years at
NOTE Confidence: 0.86057943

00:02:13.618 --> 00:02:15.658 BOS at Brigham and Women's where
NOTE Confidence: 0.86057943

00:02:15.658 --> 00:02:17.963 she investigated the genetic and
NOTE Confidence: 0.86057943

00:02:17.963 --> 00:02:20.668 molecular aspects of cell migration.
NOTE Confidence: 0.86057943

00:02:20.670 --> 00:02:23.015 She then came back to Connecticut Ann.
NOTE Confidence: 0.86057943

00:02:23.020 --> 00:02:25.030 She wasn't attending hospitalist at Yale.
NOTE Confidence: 0.86057943

00:02:25.030 --> 00:02:27.710 New Haven Hospital for the next few years.
NOTE Confidence: 0.86057943

00:02:27.710 --> 00:02:29.957 We were very fortunate to have her
NOTE Confidence: 0.86057943

00:02:29.957 --> 00:02:32.463 match with us and sleep and not only
NOTE Confidence: 0.86057943

00:02:32.463 --> 00:02:35.080 has she been a superb clinical fellow,
NOTE Confidence: 0.86057943

00:02:35.080 --> 00:02:36.530 she's really contributed to the
NOTE Confidence: 0.86057943

00:02:36.530 --> 00:02:37.980 sleep program and she's been
NOTE Confidence: 0.86057943

00:02:38.028 --> 00:02:39.429 very productive academically.
NOTE Confidence: 0.86057943

00:02:39.430 --> 00:02:41.440 She leads a quality improvement team,

NOTE Confidence: 0.86057943

00:02:41.440 --> 00:02:43.228 really focused on improving the process

NOTE Confidence: 0.86057943

00:02:43.228 --> 00:02:45.460 of care for our pregnant patients,

NOTE Confidence: 0.86057943

00:02:45.460 --> 00:02:47.826 who will refer to us at the

NOTE Confidence: 0.86057943

00:02:47.826 --> 00:02:50.148 sleep center and as part of that,

NOTE Confidence: 0.86057943

00:02:50.150 --> 00:02:51.830 she surveyed Obi-wan practitioners.

NOTE Confidence: 0.86057943

00:02:51.830 --> 00:02:53.510 Throughout the region regarding

NOTE Confidence: 0.86057943

00:02:53.510 --> 00:02:55.310 their screening practices in their

NOTE Confidence: 0.86057943

00:02:55.310 --> 00:02:56.825 knowledge base and that work,

NOTE Confidence: 0.86057943

00:02:56.830 --> 00:02:59.434 she's going to be presenting at the

NOTE Confidence: 0.86057943

00:02:59.434 --> 00:03:01.551 research meeting in April as well

NOTE Confidence: 0.86057943

00:03:01.551 --> 00:03:03.728 as at the sleep Meeting in June.

NOTE Confidence: 0.86057943

00:03:03.730 --> 00:03:05.285 She also authored a manuscript

NOTE Confidence: 0.86057943

00:03:05.285 --> 00:03:06.840 on obstructive sleep apnea and

NOTE Confidence: 0.86057943

00:03:06.893 --> 00:03:08.219 polycystic ovary syndrome.

NOTE Confidence: 0.8456684

00:03:08.220 --> 00:03:09.940 That's been very well received.

NOTE Confidence: 0.8456684

00:03:09.940 --> 00:03:11.728 So today she's going to be
NOTE Confidence: 0.8456684

00:03:11.728 --> 00:03:12.920 discussing understanding the link
NOTE Confidence: 0.8456684

00:03:12.970 --> 00:03:14.558 between obstructive sleep apnea
NOTE Confidence: 0.8456684

00:03:14.558 --> 00:03:16.146 and polycystic ovarian syndrome.
NOTE Confidence: 0.8456684

00:03:16.150 --> 00:03:17.530 So welcome Doctor Chu.
NOTE Confidence: 0.83983445

00:03:18.760 --> 00:03:20.650 Thank you for that introduction.
NOTE Confidence: 0.83983445

00:03:20.650 --> 00:03:22.150 Doctor Helbert welcome and
NOTE Confidence: 0.83983445

00:03:22.150 --> 00:03:23.275 good afternoon everyone.
NOTE Confidence: 0.83983445

00:03:23.280 --> 00:03:26.150 My talk today is on understanding the
NOTE Confidence: 0.83983445

00:03:26.150 --> 00:03:28.426 link between obstructive sleep apnea
NOTE Confidence: 0.83983445

00:03:28.426 --> 00:03:30.370 and polycystic ovarian syndrome.
NOTE Confidence: 0.83983445

00:03:30.370 --> 00:03:31.228 Before we begin,
NOTE Confidence: 0.83983445

00:03:31.228 --> 00:03:32.944 just a couple of housekeeping flies.
NOTE Confidence: 0.83983445

00:03:32.950 --> 00:03:35.278 I have no disclosures to make.
NOTE Confidence: 0.83983445

00:03:35.280 --> 00:03:36.900 And agree Cordier attendance
NOTE Confidence: 0.83983445

00:03:36.900 --> 00:03:38.925 and receive CME credit please.

NOTE Confidence: 0.83983445

00:03:38.930 --> 00:03:40.898 Texas ID number 21618.

NOTE Confidence: 0.83983445

00:03:40.898 --> 00:03:43.850 It will also appear in the

NOTE Confidence: 0.83983445

00:03:43.958 --> 00:03:46.068 in the text chat box.

NOTE Confidence: 0.83983445

00:03:46.070 --> 00:03:47.918 So here are the learning objectives.

NOTE Confidence: 0.83983445

00:03:47.920 --> 00:03:49.780 By the end of this hour,

NOTE Confidence: 0.83983445

00:03:49.780 --> 00:03:51.823 my hope is for the audience to be able

NOTE Confidence: 0.83983445

00:03:51.823 --> 00:03:54.098 to recognize the clinical presentation,

NOTE Confidence: 0.83983445

00:03:54.100 --> 00:03:56.250 diagnosis and complications of PCOS.

NOTE Confidence: 0.83983445

00:03:56.250 --> 00:03:57.351 Describe the prevalence

NOTE Confidence: 0.83983445

00:03:57.351 --> 00:03:59.186 of comorbid OSA and PCOS.

NOTE Confidence: 0.83983445

00:03:59.190 --> 00:04:01.020 Discuss the role of ***

NOTE Confidence: 0.83983445

00:04:01.020 --> 00:04:02.457 hormones in regulating,

NOTE Confidence: 0.83983445

00:04:02.457 --> 00:04:02.936 breathing,

NOTE Confidence: 0.83983445

00:04:02.936 --> 00:04:05.810 and to understand how this regulation

NOTE Confidence: 0.83983445

00:04:05.885 --> 00:04:08.709 of these hormones may play a role in

NOTE Confidence: 0.83983445

00:04:08.709 --> 00:04:10.548 the pathogenesis of OSA and PCOS.

NOTE Confidence: 0.83983445

00:04:10.550 --> 00:04:12.800 To understand how insulin resistance

NOTE Confidence: 0.83983445

00:04:12.800 --> 00:04:16.086 is a shared feature of these two

NOTE Confidence: 0.83983445

00:04:16.086 --> 00:04:18.486 disorders and finally to understand

NOTE Confidence: 0.83983445

00:04:18.486 --> 00:04:20.411 how treatment may modulate

NOTE Confidence: 0.83983445

00:04:20.411 --> 00:04:22.829 the outcomes of OSA in PCOS.

NOTE Confidence: 0.83983445

00:04:22.830 --> 00:04:24.814 So I want us to think back and

NOTE Confidence: 0.83983445

00:04:24.814 --> 00:04:26.910 I'm sure we can all recall a case

NOTE Confidence: 0.83983445

00:04:26.910 --> 00:04:29.044 in which we saw a young woman

NOTE Confidence: 0.83983445

00:04:29.044 --> 00:04:30.794 with PCOS present for evaluation

NOTE Confidence: 0.83983445

00:04:30.794 --> 00:04:32.212 of sleep disordered breathing.

NOTE Confidence: 0.83983445

00:04:32.212 --> 00:04:35.060 I will share with you a case I

NOTE Confidence: 0.83983445

00:04:35.136 --> 00:04:37.356 saw during the first couple of

NOTE Confidence: 0.83983445

00:04:37.356 --> 00:04:38.836 weeks of my fellowship.

NOTE Confidence: 0.83983445

00:04:38.840 --> 00:04:41.745 Let's give our patient the name SK.

NOTE Confidence: 0.83983445

00:04:41.750 --> 00:04:44.585 She's a 38 year old woman who

NOTE Confidence: 0.83983445

00:04:44.585 --> 00:04:47.538 presented with snoring for 20 years and

NOTE Confidence: 0.83983445

00:04:47.538 --> 00:04:50.490 recently worsened after a £15 weight gain.

NOTE Confidence: 0.83983445

00:04:50.490 --> 00:04:52.980 Also with symptoms of gassing awakenings,

NOTE Confidence: 0.83983445

00:04:52.980 --> 00:04:54.644 excessive daytime sleepiness with

NOTE Confidence: 0.83983445

00:04:54.644 --> 00:04:57.140 an effort score of 10 nocturia,

NOTE Confidence: 0.83983445

00:04:57.140 --> 00:04:58.388 and morning headaches.

NOTE Confidence: 0.83983445

00:04:58.388 --> 00:05:00.468 Her past medical history includes

NOTE Confidence: 0.83983445

00:05:00.468 --> 00:05:01.890 class 3 obesity,

NOTE Confidence: 0.83983445

00:05:01.890 --> 00:05:05.066 PCOS that was diagnosed at age 15 and

NOTE Confidence: 0.83983445

00:05:05.066 --> 00:05:08.707 has been untreated as well as depression.

NOTE Confidence: 0.83983445

00:05:08.710 --> 00:05:11.489 Esskay physical exam was notable for an

NOTE Confidence: 0.83983445

00:05:11.489 --> 00:05:13.569 elevated systolic blood pressure 131,

NOTE Confidence: 0.83983445

00:05:13.570 --> 00:05:16.594 elevated BMI of 46.5 and in large

NOTE Confidence: 0.83983445

00:05:16.594 --> 00:05:19.081 neck circumference of 19 1/2 inches

NOTE Confidence: 0.83983445

00:05:19.081 --> 00:05:21.664 as well as amount party of three.

NOTE Confidence: 0.83983445

00:05:21.670 --> 00:05:26.087 The remainder of her exam was unremarkable.

NOTE Confidence: 0.83983445

00:05:26.090 --> 00:05:29.576 Eskape Labs were notable for mild

NOTE Confidence: 0.83983445

00:05:29.576 --> 00:05:31.900 transaminated elevated total cholesterol.

NOTE Confidence: 0.83983445

00:05:31.900 --> 00:05:33.295 Would decrease HDL,

NOTE Confidence: 0.83983445

00:05:33.295 --> 00:05:35.155 increases LDL and increase

NOTE Confidence: 0.83983445

00:05:35.155 --> 00:05:38.115 triglycerides her a one see was also

NOTE Confidence: 0.83983445

00:05:38.115 --> 00:05:40.353 increased in the pre diabetic range.

NOTE Confidence: 0.83983445

00:05:40.360 --> 00:05:43.648 The rest of her labs including

NOTE Confidence: 0.83983445

00:05:43.648 --> 00:05:46.610 her serum bicarbonate were normal.

NOTE Confidence: 0.83983445

00:05:46.610 --> 00:05:48.385 Given the high pretest probability

NOTE Confidence: 0.83983445

00:05:48.385 --> 00:05:50.904 for OSA SK underwent home sleep apnea

NOTE Confidence: 0.83983445

00:05:50.904 --> 00:05:52.944 testing and this is her hypnogram.

NOTE Confidence: 0.83983445

00:05:52.950 --> 00:05:53.952 At the bottom,

NOTE Confidence: 0.83983445

00:05:53.952 --> 00:05:56.290 we can see she slept mostly on

NOTE Confidence: 0.83983445

00:05:56.371 --> 00:05:58.226 her right and left sides.

NOTE Confidence: 0.83983445

00:05:58.230 --> 00:06:00.370 This is consistent with her

NOTE Confidence: 0.83983445
00:06:00.370 --> 00:06:02.510 preference to avoid back sleeping.
NOTE Confidence: 0.83983445
00:06:02.510 --> 00:06:04.625 There were clusters of obstructive
NOTE Confidence: 0.83983445
00:06:04.625 --> 00:06:06.317 apneas in red here.
NOTE Confidence: 0.83983445
00:06:06.320 --> 00:06:09.184 As well as Hypotony is here in pink.
NOTE Confidence: 0.83983445
00:06:09.190 --> 00:06:12.319 On the top we can see associated
NOTE Confidence: 0.83983445
00:06:12.319 --> 00:06:13.213 the saturation.
NOTE Confidence: 0.83983445
00:06:13.220 --> 00:06:14.708 Her respiratory event Index
NOTE Confidence: 0.83983445
00:06:14.708 --> 00:06:17.410 came out to be 66 an hour,
NOTE Confidence: 0.83983445
00:06:17.410 --> 00:06:19.455 which is consistent with severe
NOTE Confidence: 0.83983445
00:06:19.455 --> 00:06:22.101 OSA along with a mean sad of
NOTE Confidence: 0.83983445
00:06:22.101 --> 00:06:25.420 92% and nature of 73%.
NOTE Confidence: 0.83983445
00:06:25.420 --> 00:06:27.667 Here's a closer view in a four
NOTE Confidence: 0.83983445
00:06:27.667 --> 00:06:30.159 minute window we see classic back
NOTE Confidence: 0.83983445
00:06:30.159 --> 00:06:32.099 to back obstructive respiratory
NOTE Confidence: 0.83983445
00:06:32.099 --> 00:06:34.110 events with associated cyclic.
NOTE Confidence: 0.83983445

00:06:34.110 --> 00:06:37.566 See saturation and heart rate variability.
NOTE Confidence: 0.83983445

00:06:37.570 --> 00:06:39.796 There is snoring scene in between
NOTE Confidence: 0.83983445

00:06:39.796 --> 00:06:42.245 the apneas and hypoxemia and during
NOTE Confidence: 0.83983445

00:06:42.245 --> 00:06:44.485 her recovery breath her oxygen
NOTE Confidence: 0.83983445

00:06:44.485 --> 00:06:45.829 saturation largely recovered
NOTE Confidence: 0.8190977

00:06:45.897 --> 00:06:47.367 back up to the mid 90s.
NOTE Confidence: 0.8023731

00:06:50.020 --> 00:06:52.519 Our impression was that SK at 38
NOTE Confidence: 0.8023731

00:06:52.519 --> 00:06:55.346 year old woman has severe OSA as
NOTE Confidence: 0.8023731

00:06:55.346 --> 00:06:57.854 supported by her symptoms of snoring,
NOTE Confidence: 0.8023731

00:06:57.860 --> 00:06:58.644 gasping awakenings,
NOTE Confidence: 0.8023731

00:06:58.644 --> 00:06:59.820 nocturia morning headaches,
NOTE Confidence: 0.8023731

00:06:59.820 --> 00:07:01.948 and excessive daytime sleepiness.
NOTE Confidence: 0.8023731

00:07:01.948 --> 00:07:04.076 Along with comorbid depression,
NOTE Confidence: 0.8023731

00:07:04.080 --> 00:07:05.892 an elevated blood pressure.
NOTE Confidence: 0.8023731

00:07:05.892 --> 00:07:08.610 And supported by her physical exam.
NOTE Confidence: 0.8023731

00:07:08.610 --> 00:07:11.361 Findings of the increased BMI in large

NOTE Confidence: 0.8023731

00:07:11.361 --> 00:07:13.719 neck circumference in a crowded airway.

NOTE Confidence: 0.8023731

00:07:13.720 --> 00:07:15.545 Anne supported by laboratory findings

NOTE Confidence: 0.8023731

00:07:15.545 --> 00:07:17.370 of insulin resistance and metabolic

NOTE Confidence: 0.8023731

00:07:17.427 --> 00:07:19.077 syndrome and then trans ammonite.

NOTE Confidence: 0.8023731

00:07:19.080 --> 00:07:21.120 If that was suggestive of possible

NOTE Confidence: 0.8023731

00:07:21.120 --> 00:07:23.000 non alcoholic fatty liver disease.

NOTE Confidence: 0.8023731

00:07:23.000 --> 00:07:25.779 And finally this is confirmed with the

NOTE Confidence: 0.8023731

00:07:25.779 --> 00:07:28.710 home sleep apnea test with an REI of 66.

NOTE Confidence: 0.7868535

00:07:33.330 --> 00:07:36.042 Now, being a new fellow in training at

NOTE Confidence: 0.7868535

00:07:36.042 --> 00:07:38.916 the time, I didn't think much about the

NOTE Confidence: 0.7868535

00:07:38.916 --> 00:07:41.343 patients PCOS that ending I was working

NOTE Confidence: 0.7868535

00:07:41.343 --> 00:07:43.840 with ask me what role does PCOS play?

NOTE Confidence: 0.7868535

00:07:43.840 --> 00:07:45.898 How does this support the diagnosis

NOTE Confidence: 0.7868535

00:07:45.898 --> 00:07:48.982 of OSA and how do we explain her

NOTE Confidence: 0.7868535

00:07:48.982 --> 00:07:50.215 various metabolic derangements

NOTE Confidence: 0.7868535

00:07:50.215 --> 00:07:52.618 in light of her PCOS an OSA?

NOTE Confidence: 0.7868535

00:07:52.620 --> 00:07:57.356 This led me to consider what is the

NOTE Confidence: 0.7868535

00:07:57.356 --> 00:08:00.028 relationship between OSA and PCOS.

NOTE Confidence: 0.7868535

00:08:00.030 --> 00:08:02.190 We will begin by discussing

NOTE Confidence: 0.7868535

00:08:02.190 --> 00:08:03.486 the clinical presentation,

NOTE Confidence: 0.7868535

00:08:03.490 --> 00:08:07.010 diagnosis and comorbidities of PCOS.

NOTE Confidence: 0.7868535

00:08:07.010 --> 00:08:09.626 PCOS is common with a strong

NOTE Confidence: 0.7868535

00:08:09.626 --> 00:08:10.498 genetic predisposition.

NOTE Confidence: 0.7868535

00:08:10.500 --> 00:08:13.412 It was first described in 1935 by

NOTE Confidence: 0.7868535

00:08:13.412 --> 00:08:16.991 sign in Leventhal as a condition of

NOTE Confidence: 0.7868535

00:08:16.991 --> 00:08:19.235 oligo operation and hyperandrogenism.

NOTE Confidence: 0.7868535

00:08:19.240 --> 00:08:23.230 Most it is the most common endocrinopathy

NOTE Confidence: 0.7868535

00:08:23.230 --> 00:08:28.230 affecting 7 to 13% of women internationally.

NOTE Confidence: 0.7868535

00:08:28.230 --> 00:08:30.505 Twin studies suggest strong familial

NOTE Confidence: 0.7868535

00:08:30.505 --> 00:08:33.179 contribution in PCOS development and this

NOTE Confidence: 0.7868535

00:08:33.179 --> 00:08:35.489 comes from data in over 1300 identical

NOTE Confidence: 0.7868535

00:08:35.489 --> 00:08:37.780 Twins and their Singleton siblings.

NOTE Confidence: 0.7868535

00:08:37.780 --> 00:08:38.248 Essentially,

NOTE Confidence: 0.7868535

00:08:38.248 --> 00:08:41.524 it's one of the identical Twins has

NOTE Confidence: 0.7868535

00:08:41.524 --> 00:08:44.552 PCOS or other twin is about twice

NOTE Confidence: 0.7868535

00:08:44.552 --> 00:08:47.264 as likely to have PCOS compared

NOTE Confidence: 0.7868535

00:08:47.264 --> 00:08:49.740 to their Singleton siblings.

NOTE Confidence: 0.7868535

00:08:49.740 --> 00:08:52.134 I'm going genetic studies are examining

NOTE Confidence: 0.7868535

00:08:52.134 --> 00:08:54.615 the specific genes involved in the

NOTE Confidence: 0.7868535

00:08:54.615 --> 00:08:56.660 biosynthesis and metabolism of androgens,

NOTE Confidence: 0.7868535

00:08:56.660 --> 00:08:59.288 pelicula, Genesis and secretion,

NOTE Confidence: 0.7868535

00:08:59.288 --> 00:09:01.916 and action of insulin.

NOTE Confidence: 0.7868535

00:09:01.920 --> 00:09:04.218 The broader dam criteria is the

NOTE Confidence: 0.7868535

00:09:04.218 --> 00:09:05.750 most inclusive and preferred

NOTE Confidence: 0.7868535

00:09:05.817 --> 00:09:07.669 diagnostic criteria for PCOS.

NOTE Confidence: 0.7868535

00:09:07.670 --> 00:09:10.575 This chart here shows the three most

NOTE Confidence: 0.7868535

00:09:10.575 --> 00:09:13.091 popular criteria used in the diagnosis
NOTE Confidence: 0.7868535

00:09:13.091 --> 00:09:15.479 of PCOS and they're to Rotterdam,
NOTE Confidence: 0.7868535

00:09:15.480 --> 00:09:18.890 NIH and androgen excess criteria.
NOTE Confidence: 0.7868535

00:09:18.890 --> 00:09:22.226 The main features of PCOS are outlined here.
NOTE Confidence: 0.7868535

00:09:22.230 --> 00:09:24.320 They are clinical or biochemical
NOTE Confidence: 0.7868535

00:09:24.320 --> 00:09:25.574 evidence of hyperandrogenism,
NOTE Confidence: 0.7868535

00:09:25.580 --> 00:09:26.722 oligo, menorrhea,
NOTE Confidence: 0.7868535

00:09:26.722 --> 00:09:29.577 and polycystic ovaries on ultrasound.
NOTE Confidence: 0.7868535

00:09:29.580 --> 00:09:31.372 I will go through each of these in
NOTE Confidence: 0.7868535

00:09:31.372 --> 00:09:33.260 detail in the subsequent slides here.
NOTE Confidence: 0.7868535

00:09:33.260 --> 00:09:35.092 I just want you to know that you
NOTE Confidence: 0.7868535

00:09:35.092 --> 00:09:36.840 can have a combination of any two
NOTE Confidence: 0.7868535

00:09:36.840 --> 00:09:38.732 of two out of these three features
NOTE Confidence: 0.7868535

00:09:38.732 --> 00:09:40.544 to make the diagnosis of PCOS
NOTE Confidence: 0.7868535

00:09:40.544 --> 00:09:43.440 using the Rotterdam criteria.
NOTE Confidence: 0.7868535

00:09:43.440 --> 00:09:45.435 Now several of my upcoming slides will

NOTE Confidence: 0.7868535

00:09:45.435 --> 00:09:47.667 be referring to recommendations based on

NOTE Confidence: 0.7868535

00:09:47.667 --> 00:09:49.423 international evidence based guidelines

NOTE Confidence: 0.7868535

00:09:49.423 --> 00:09:52.009 for the assessment and management of PCOS.

NOTE Confidence: 0.7868535

00:09:52.010 --> 00:09:54.968 It was published in 1920 eighteen.

NOTE Confidence: 0.7868535

00:09:54.970 --> 00:09:56.895 Among the experts is that on this

NOTE Confidence: 0.7868535

00:09:56.895 --> 00:09:58.681 committee are the American Society

NOTE Confidence: 0.7868535

00:09:58.681 --> 00:10:00.926 for Reproductive Medicine and American

NOTE Confidence: 0.7868535

00:10:00.926 --> 00:10:02.760 Pediatric Society Endocrine Society.

NOTE Confidence: 0.7868535

00:10:02.760 --> 00:10:03.118 Now,

NOTE Confidence: 0.7868535

00:10:03.118 --> 00:10:05.266 here are their standardized goods used

NOTE Confidence: 0.7868535

00:10:05.266 --> 00:10:07.917 to indicate the societies grade for the

NOTE Confidence: 0.7868535

00:10:07.917 --> 00:10:10.179 recommendations here from one to four,

NOTE Confidence: 0.7868535

00:10:10.180 --> 00:10:12.502 with four being a strong recommendation

NOTE Confidence: 0.7868535

00:10:12.502 --> 00:10:15.393 in terms of the quality of evidence we

NOTE Confidence: 0.7868535

00:10:15.393 --> 00:10:18.547 see from 4 to one here with four here

NOTE Confidence: 0.7868535

00:10:18.547 --> 00:10:20.517 up there indicating very confident
NOTE Confidence: 0.7868535

00:10:20.517 --> 00:10:25.040 in the level of of the evidence.
NOTE Confidence: 0.7868535

00:10:25.040 --> 00:10:27.749 The first of the three key features
NOTE Confidence: 0.7868535

00:10:27.749 --> 00:10:28.910 of PCOS hyperandrogenism,
NOTE Confidence: 0.7868535

00:10:28.910 --> 00:10:30.845 which can be determined clinically
NOTE Confidence: 0.7868535

00:10:30.845 --> 00:10:32.006 or biochemically clinically.
NOTE Confidence: 0.7868535

00:10:32.010 --> 00:10:33.940 We can look for hirsutism,
NOTE Confidence: 0.7868535

00:10:33.940 --> 00:10:35.880 acne, male pattern, hair log,
NOTE Confidence: 0.7868535

00:10:35.880 --> 00:10:38.880 and this is the strong recommendation.
NOTE Confidence: 0.7868535

00:10:38.880 --> 00:10:40.810 Biochemically, we can use Calculator,
NOTE Confidence: 0.7868535

00:10:40.810 --> 00:10:43.498 free testosterone or the free androgen index,
NOTE Confidence: 0.7868535

00:10:43.500 --> 00:10:45.425 which is the total testosterone
NOTE Confidence: 0.7868535

00:10:45.425 --> 00:10:46.965 levels divided by this,
NOTE Confidence: 0.7868535

00:10:46.970 --> 00:10:48.890 the *** hormone binding globulin,
NOTE Confidence: 0.7868535

00:10:48.890 --> 00:10:51.585 and this also has a strong recommendation,
NOTE Confidence: 0.7868535

00:10:51.590 --> 00:10:55.097 but limited competence is level of evidence.

NOTE Confidence: 0.7868535

00:10:55.100 --> 00:10:56.564 Standardized visual scales are

NOTE Confidence: 0.7868535

00:10:56.564 --> 00:10:58.028 preferred when assessing hirsutism,

NOTE Confidence: 0.7868535

00:10:58.030 --> 00:11:00.220 and this is what a strong

NOTE Confidence: 0.7868535

00:11:00.220 --> 00:11:01.315 recommendation here is.

NOTE Confidence: 0.7868535

00:11:01.320 --> 00:11:02.784 The Fehrman Galway score,

NOTE Confidence: 0.7868535

00:11:02.784 --> 00:11:04.980 which was first introduced in 1961.

NOTE Confidence: 0.8191623

00:11:04.980 --> 00:11:06.978 Each of the nine body areas

NOTE Confidence: 0.8191623

00:11:06.978 --> 00:11:09.010 is most sensitive to androgen,

NOTE Confidence: 0.8191623

00:11:09.010 --> 00:11:11.778 is assigned a score from 0 being know

NOTE Confidence: 0.8191623

00:11:11.778 --> 00:11:14.066 her to floor, being lost, a pair,

NOTE Confidence: 0.8191623

00:11:14.066 --> 00:11:16.710 a score of 1 to 7 indicates focal

NOTE Confidence: 0.8191623

00:11:16.710 --> 00:11:19.260 hirsutism and is considered normal.

NOTE Confidence: 0.8191623

00:11:19.260 --> 00:11:21.822 Ace score of eight or more is

NOTE Confidence: 0.8191623

00:11:21.822 --> 00:11:22.920 considered generalized hirsutism.

NOTE Confidence: 0.8191623

00:11:22.920 --> 00:11:24.388 Ann is considered abnormal.

NOTE Confidence: 0.8191623

00:11:24.388 --> 00:11:27.539 It is important to note there are racial
NOTE Confidence: 0.8191623

00:11:27.539 --> 00:11:29.744 considerations when using this score.
NOTE Confidence: 0.8191623

00:11:29.750 --> 00:11:32.004 East Asian women have lower her citizen
NOTE Confidence: 0.8191623

00:11:32.004 --> 00:11:33.829 score cutoff whereas Middle Eastern,
NOTE Confidence: 0.8191623

00:11:33.830 --> 00:11:36.475 Hispanic and Mediterranean women have
NOTE Confidence: 0.8191623

00:11:36.475 --> 00:11:39.120 slightly higher hirsutism score cutoff.
NOTE Confidence: 0.8191623

00:11:39.120 --> 00:11:41.460 The next key feature is a
NOTE Confidence: 0.8191623

00:11:41.460 --> 00:11:43.020 legal menorrhea or amenorrhea.
NOTE Confidence: 0.8191623

00:11:43.020 --> 00:11:44.855 All common area is irregular
NOTE Confidence: 0.8191623

00:11:44.855 --> 00:11:46.690 menstrual cycle and an International
NOTE Confidence: 0.8191623

00:11:46.749 --> 00:11:48.285 Society most strongly recommends
NOTE Confidence: 0.8191623

00:11:48.285 --> 00:11:50.589 the use of this following criteria.
NOTE Confidence: 0.8191623

00:11:50.590 --> 00:11:52.265 A regular menstrual cycles are
NOTE Confidence: 0.8191623

00:11:52.265 --> 00:11:53.940 considered normal in the first
NOTE Confidence: 0.8191623

00:11:54.000 --> 00:11:56.156 year post monarchy as part of the
NOTE Confidence: 0.8191623

00:11:56.156 --> 00:11:57.457 pooper role transition between

NOTE Confidence: 0.8191623

00:11:57.457 --> 00:11:59.389 one to three years post monarchy.

NOTE Confidence: 0.8191623

00:11:59.390 --> 00:12:01.301 Less than 21 days or greater than

NOTE Confidence: 0.8191623

00:12:01.301 --> 00:12:03.291 45 days is consider a regular

NOTE Confidence: 0.8191623

00:12:03.291 --> 00:12:05.126 beyond three years post menarche

NOTE Confidence: 0.8191623

00:12:05.126 --> 00:12:07.537 all the way up to Perry Menopause.

NOTE Confidence: 0.8191623

00:12:07.540 --> 00:12:09.724 Less than 21 days or prison 35 days

NOTE Confidence: 0.8191623

00:12:09.724 --> 00:12:12.049 or less than eight cycles per year

NOTE Confidence: 0.8191623

00:12:12.049 --> 00:12:14.176 is considered a regular and then

NOTE Confidence: 0.8191623

00:12:14.176 --> 00:12:16.619 beyond the first year post meta arkie

NOTE Confidence: 0.8191623

00:12:16.619 --> 00:12:18.824 greater than 90 days for anyone

NOTE Confidence: 0.8191623

00:12:18.824 --> 00:12:20.704 cycle considering regular and then.

NOTE Confidence: 0.8191623

00:12:20.710 --> 00:12:23.706 Primary amenorrhea by age 15 or no

NOTE Confidence: 0.8191623

00:12:23.706 --> 00:12:27.428 menses by beyond three years post the Larkey,

NOTE Confidence: 0.8191623

00:12:27.430 --> 00:12:28.876 is considered amenorrhea.

NOTE Confidence: 0.8191623

00:12:28.876 --> 00:12:31.768 And when menstrual cycles are irregular,

NOTE Confidence: 0.8191623

00:12:31.770 --> 00:12:34.598 a diagnosis of PCOS should be considered,
NOTE Confidence: 0.8191623

00:12:34.600 --> 00:12:38.989 and this is what is strong recommendation.
NOTE Confidence: 0.8191623

00:12:38.990 --> 00:12:41.080 The last core feature here
NOTE Confidence: 0.8191623

00:12:41.080 --> 00:12:42.334 is polycystic ovaries.
NOTE Confidence: 0.8191623

00:12:42.340 --> 00:12:45.580 Which on ultrasound can support
NOTE Confidence: 0.8191623

00:12:45.580 --> 00:12:47.524 diagnosis of PCOS.
NOTE Confidence: 0.8191623

00:12:47.530 --> 00:12:49.906 In patients already with a legal
NOTE Confidence: 0.8191623

00:12:49.906 --> 00:12:51.094 memory and hyperandrogenism,
NOTE Confidence: 0.8191623

00:12:51.100 --> 00:12:54.280 an ovarian ultrasound is not necessary.
NOTE Confidence: 0.8191623

00:12:54.280 --> 00:12:56.405 Ultrasound should not be used
NOTE Confidence: 0.8191623

00:12:56.405 --> 00:12:57.680 for PCOS diagnosis.
NOTE Confidence: 0.8191623

00:12:57.680 --> 00:12:59.805 If less than 8 years have
NOTE Confidence: 0.8191623

00:12:59.805 --> 00:13:01.930 elapsed after men are key.
NOTE Confidence: 0.8191623

00:13:01.930 --> 00:13:04.640 When typically the ovaries can
NOTE Confidence: 0.8191623

00:13:04.640 --> 00:13:07.350 demonstrate multi Follicle tools and
NOTE Confidence: 0.8191623

00:13:07.445 --> 00:13:10.030 that that's common and normal.

NOTE Confidence: 0.8191623

00:13:10.030 --> 00:13:12.207 To make the diagnosis of polycystic ovaries,

NOTE Confidence: 0.8191623

00:13:12.210 --> 00:13:14.754 ultrasound will show bears and 20

NOTE Confidence: 0.8191623

00:13:14.754 --> 00:13:17.260 follicles or an ovarian volume gear

NOTE Confidence: 0.8191623

00:13:17.260 --> 00:13:20.180 is greater than or equal to 10 Mills.

NOTE Confidence: 0.8191623

00:13:20.180 --> 00:13:22.007 Here are pictures of what Paula cystic

NOTE Confidence: 0.8191623

00:13:22.007 --> 00:13:23.738 ovaries may look like on ultrasound.

NOTE Confidence: 0.8191623

00:13:23.740 --> 00:13:25.721 Some of us may remember from medical

NOTE Confidence: 0.8191623

00:13:25.721 --> 00:13:27.649 school that is sometimes referred to

NOTE Confidence: 0.8191623

00:13:27.649 --> 00:13:29.683 as a string of pearls appearance.

NOTE Confidence: 0.8191623

00:13:29.690 --> 00:13:30.572 And for comparison,

NOTE Confidence: 0.8191623

00:13:30.572 --> 00:13:32.630 we have here a cystic ovary and

NOTE Confidence: 0.8191623

00:13:32.694 --> 00:13:34.569 normal ovary with two antral

NOTE Confidence: 0.8191623

00:13:34.569 --> 00:13:36.444 follicles and one dominant follicle.

NOTE Confidence: 0.8174612

00:13:38.960 --> 00:13:40.253 Now, numerous comorbidities

NOTE Confidence: 0.8174612

00:13:40.253 --> 00:13:42.408 have been identified and PCOS,

NOTE Confidence: 0.8174612

00:13:42.410 --> 00:13:44.565 but the following ones recognized
NOTE Confidence: 0.8174612

00:13:44.565 --> 00:13:46.289 by the International Society.
NOTE Confidence: 0.8174612

00:13:46.290 --> 00:13:48.440 They include type 2 diabetes,
NOTE Confidence: 0.8174612

00:13:48.440 --> 00:13:49.302 gestational diabetes,
NOTE Confidence: 0.8174612

00:13:49.302 --> 00:13:51.026 and impaired fasting glucose
NOTE Confidence: 0.8174612

00:13:51.026 --> 00:13:52.750 will be city depression,
NOTE Confidence: 0.8174612

00:13:52.750 --> 00:13:54.474 anxiety, body image distress,
NOTE Confidence: 0.8174612

00:13:54.474 --> 00:13:56.629 a question of cardiovascular disease,
NOTE Confidence: 0.8174612

00:13:56.630 --> 00:14:00.214 as this is supported by limited data.
NOTE Confidence: 0.8174612

00:14:00.220 --> 00:14:02.240 OSA an enemy treil cancer.
NOTE Confidence: 0.8174612

00:14:02.240 --> 00:14:04.669 As you can see, some of these
NOTE Confidence: 0.8174612

00:14:04.669 --> 00:14:06.680 disorders are considered comorbidities.
NOTE Confidence: 0.8174612

00:14:06.680 --> 00:14:10.270 As with OSA as well.
NOTE Confidence: 0.8174612

00:14:10.270 --> 00:14:13.259 We now move on to discuss the
NOTE Confidence: 0.8174612

00:14:13.259 --> 00:14:15.608 prevalence of comorbid OSA in PCOS.
NOTE Confidence: 0.8174612

00:14:15.610 --> 00:14:17.234 Just to remind everyone,

NOTE Confidence: 0.8174612

00:14:17.234 --> 00:14:19.264 the prevalence of OSA increases

NOTE Confidence: 0.8174612

00:14:19.264 --> 00:14:21.667 as women get older and heavier,

NOTE Confidence: 0.8174612

00:14:21.670 --> 00:14:25.174 and this is supported by data from the

NOTE Confidence: 0.8174612

00:14:25.174 --> 00:14:27.395 famous Wisconsin Sleep Cohort from

NOTE Confidence: 0.8174612

00:14:27.395 --> 00:14:30.349 between the years of 1988 and 2011.

NOTE Confidence: 0.8174612

00:14:30.350 --> 00:14:33.638 This is the logic tunele study of over

NOTE Confidence: 0.8174612

00:14:33.638 --> 00:14:35.858 1500 participants between the ages of

NOTE Confidence: 0.8174612

00:14:35.858 --> 00:14:39.019 30 to 60s selected from a Mail in survey.

NOTE Confidence: 0.8174612

00:14:39.020 --> 00:14:41.276 45% of the participants were females.

NOTE Confidence: 0.8174612

00:14:41.280 --> 00:14:43.625 The table here shows modeling data on

NOTE Confidence: 0.8174612

00:14:43.625 --> 00:14:45.809 aging and weight increase overtime.

NOTE Confidence: 0.8174612

00:14:45.810 --> 00:14:48.526 OSA is defined by an hi greater

NOTE Confidence: 0.8174612

00:14:48.526 --> 00:14:49.950 than equal to 5.

NOTE Confidence: 0.85611427

00:14:52.220 --> 00:14:54.936 In the 30 to 49 age group,

NOTE Confidence: 0.85611427

00:14:54.940 --> 00:14:56.870 estimated prevalence of OSA is

NOTE Confidence: 0.85611427

00:14:56.870 --> 00:14:59.510 1.4% in women with normal BMI and
NOTE Confidence: 0.85611427

00:14:59.510 --> 00:15:01.487 we see this estimated prevalence
NOTE Confidence: 0.85611427

00:15:01.487 --> 00:15:04.245 increase all the way up to 43%.
NOTE Confidence: 0.85611427

00:15:04.250 --> 00:15:06.959 In those who have class 3 obesity,
NOTE Confidence: 0.85611427

00:15:06.960 --> 00:15:10.064 and among the 50 to 70 age group,
NOTE Confidence: 0.85611427

00:15:10.070 --> 00:15:11.622 estimated prevalence range from
NOTE Confidence: 0.85611427

00:15:11.622 --> 00:15:14.344 9% in those are normal BMI all
NOTE Confidence: 0.85611427

00:15:14.344 --> 00:15:17.441 the way up to 68% in those women
NOTE Confidence: 0.85611427

00:15:17.441 --> 00:15:19.376 with the Class 3 obesity.
NOTE Confidence: 0.8353128

00:15:22.100 --> 00:15:24.452 Now we look at women with PCOS
NOTE Confidence: 0.8353128

00:15:24.452 --> 00:15:27.647 in a meta analysis of 17 studies
NOTE Confidence: 0.8353128

00:15:27.647 --> 00:15:29.747 with over 600 participants.
NOTE Confidence: 0.8353128

00:15:29.750 --> 00:15:33.150 The prevalence bull essay in PCOS is 35%
NOTE Confidence: 0.8353128

00:15:33.150 --> 00:15:37.230 with a confidence interval of 22 to 49%.
NOTE Confidence: 0.8353128

00:15:37.230 --> 00:15:39.890 Now it's important to remember that these
NOTE Confidence: 0.8353128

00:15:39.890 --> 00:15:41.511 studies typically included teenagers

NOTE Confidence: 0.8353128

00:15:41.511 --> 00:15:43.606 and excluded post menopausal women.

NOTE Confidence: 0.8353128

00:15:43.610 --> 00:15:46.028 Therefore the prevalence may seem lower

NOTE Confidence: 0.8353128

00:15:46.028 --> 00:15:48.000 compared to Wisconsin cohort data,

NOTE Confidence: 0.8353128

00:15:48.000 --> 00:15:50.068 which represents women across

NOTE Confidence: 0.8353128

00:15:50.068 --> 00:15:51.619 the entire lifespan.

NOTE Confidence: 0.8353128

00:15:51.620 --> 00:15:54.614 Problem OSA is higher in obese

NOTE Confidence: 0.8353128

00:15:54.614 --> 00:15:57.583 women compared to lean women with

NOTE Confidence: 0.8353128

00:15:57.583 --> 00:16:00.656 PCOS and the odds ratio is 3.8.

NOTE Confidence: 0.8353128

00:16:00.660 --> 00:16:03.362 Now what is very important to know

NOTE Confidence: 0.8353128

00:16:03.362 --> 00:16:06.219 is that after controlling for BMI.

NOTE Confidence: 0.8353128

00:16:06.220 --> 00:16:08.892 The risk for OSA is 5 to 10

NOTE Confidence: 0.8353128

00:16:08.892 --> 00:16:11.548 times higher in adults with PCOS

NOTE Confidence: 0.8353128

00:16:11.548 --> 00:16:13.918 compared to those without PCOS.

NOTE Confidence: 0.8322795

00:16:16.410 --> 00:16:18.966 Again, I cannot emphasize enough that

NOTE Confidence: 0.8322795

00:16:18.966 --> 00:16:22.638 obesity is not the sole driver in the

NOTE Confidence: 0.8322795

00:16:22.638 --> 00:16:25.470 pathophysiology of OSA and PCOS population.

NOTE Confidence: 0.8322795

00:16:25.470 --> 00:16:28.134 Now, this study here actually found

NOTE Confidence: 0.8322795

00:16:28.134 --> 00:16:31.414 that HIV is higher in PCOS after

NOTE Confidence: 0.8322795

00:16:31.414 --> 00:16:33.779 controlling for age and obesity.

NOTE Confidence: 0.8322795

00:16:33.780 --> 00:16:36.840 It's a case control study and there were 36

NOTE Confidence: 0.8322795

00:16:36.840 --> 00:16:39.066 participants have had PCOS and half do not.

NOTE Confidence: 0.8322795

00:16:39.070 --> 00:16:41.392 Table one shows that they were

NOTE Confidence: 0.8322795

00:16:41.392 --> 00:16:44.160 of similar age in the early 30s.

NOTE Confidence: 0.8322795

00:16:44.160 --> 00:16:49.160 And have exact same mean BMI of 36.9.

NOTE Confidence: 0.8322795

00:16:49.160 --> 00:16:51.302 Now obviously the waist to hip

NOTE Confidence: 0.8322795

00:16:51.302 --> 00:16:53.156 ratio and testosterone levels are

NOTE Confidence: 0.8322795

00:16:53.156 --> 00:16:55.346 significantly higher in the PCOS Group,

NOTE Confidence: 0.8322795

00:16:55.350 --> 00:16:56.798 as we would expect.

NOTE Confidence: 0.78464663

00:16:59.740 --> 00:17:01.488 Table 2 here summarizes

NOTE Confidence: 0.78464663

00:17:01.488 --> 00:17:03.236 sleepiness and PSG data.

NOTE Confidence: 0.78464663

00:17:03.240 --> 00:17:06.614 It shows that the PCOS PCOS group

NOTE Confidence: 0.78464663

00:17:06.614 --> 00:17:08.571 has significantly higher mean

NOTE Confidence: 0.78464663

00:17:08.571 --> 00:17:11.115 upward score of 9.5 would arrange

NOTE Confidence: 0.78464663

00:17:11.115 --> 00:17:14.031 between 4 to 18 compared to an

NOTE Confidence: 0.78464663

00:17:14.031 --> 00:17:16.917 average of 5.8 in the control group.

NOTE Confidence: 0.78464663

00:17:16.917 --> 00:17:19.602 The overall HI is significantly

NOTE Confidence: 0.78464663

00:17:19.602 --> 00:17:21.750 high under PCOS Group.

NOTE Confidence: 0.78464663

00:17:21.750 --> 00:17:25.539 With the average age of 22 range of 1

NOTE Confidence: 0.78464663

00:17:25.539 --> 00:17:29.658 to 102 compared to an average of 6.7.

NOTE Confidence: 0.78464663

00:17:29.660 --> 00:17:31.004 In the control group,

NOTE Confidence: 0.78464663

00:17:31.004 --> 00:17:32.684 this is a remarkable finding,

NOTE Confidence: 0.78464663

00:17:32.690 --> 00:17:35.154 considering that none of these women had

NOTE Confidence: 0.78464663

00:17:35.154 --> 00:17:37.407 been diagnosis OSA prior to the study.

NOTE Confidence: 0.8095056

00:17:39.560 --> 00:17:41.088 These next two slides,

NOTE Confidence: 0.8095056

00:17:41.088 --> 00:17:43.380 or these next two studies here,

NOTE Confidence: 0.8095056

00:17:43.380 --> 00:17:45.977 are highlighted to show that common sleep

NOTE Confidence: 0.8095056

00:17:45.977 --> 00:17:48.193 complaints in PCOS include insomnia
NOTE Confidence: 0.8095056

00:17:48.193 --> 00:17:50.257 and excessive daytime sleepiness.
NOTE Confidence: 0.8095056

00:17:50.260 --> 00:17:53.068 Both are community based studies comparing
NOTE Confidence: 0.8095056

00:17:53.068 --> 00:17:56.460 women with PCOS and women without PCOS.
NOTE Confidence: 0.8095056

00:17:56.460 --> 00:17:58.734 Women with PCOS had increased difficulty
NOTE Confidence: 0.8095056

00:17:58.734 --> 00:18:01.411 falling asleep with an odds ratio close
NOTE Confidence: 0.8095056

00:18:01.411 --> 00:18:03.613 to two increase awakening without causing
NOTE Confidence: 0.8095056

00:18:03.613 --> 00:18:06.206 an inability to resume sleep for greater
NOTE Confidence: 0.8095056

00:18:06.206 --> 00:18:08.650 than 15 minutes within office ratio.
NOTE Confidence: 0.8095056

00:18:08.650 --> 00:18:10.650 Also close to two.
NOTE Confidence: 0.8095056

00:18:10.650 --> 00:18:12.915 Increased severe tiredness with their
NOTE Confidence: 0.8095056

00:18:12.915 --> 00:18:15.680 relative risk ratio 11.5 and increases
NOTE Confidence: 0.8095056

00:18:15.680 --> 00:18:18.236 sleep difficulties within the last 12
NOTE Confidence: 0.8095056

00:18:18.236 --> 00:18:21.297 months when an author show close to 1.3.
NOTE Confidence: 0.8095056

00:18:21.300 --> 00:18:23.790 The authors concluded that targeted
NOTE Confidence: 0.8095056

00:18:23.790 --> 00:18:26.280 screening and management of sleep

NOTE Confidence: 0.8095056

00:18:26.355 --> 00:18:28.810 disturbances is warranted in PCOS.

NOTE Confidence: 0.8095056

00:18:28.810 --> 00:18:30.438 Now, according to the

NOTE Confidence: 0.8095056

00:18:30.438 --> 00:18:32.066 International Committee on PCOS,

NOTE Confidence: 0.8095056

00:18:32.070 --> 00:18:35.584 creating for OSA in PCOS is recommended.

NOTE Confidence: 0.8095056

00:18:35.590 --> 00:18:37.828 Their statements are US outlined here.

NOTE Confidence: 0.8095056

00:18:37.830 --> 00:18:39.302 Screening should only be

NOTE Confidence: 0.8095056

00:18:39.302 --> 00:18:41.930 considered for all I stay in PCOS.

NOTE Confidence: 0.8095056

00:18:41.930 --> 00:18:43.422 Identify and alleviate related

NOTE Confidence: 0.8095056

00:18:43.422 --> 00:18:44.914 symptoms such as snoring,

NOTE Confidence: 0.8095056

00:18:44.920 --> 00:18:45.309 waking,

NOTE Confidence: 0.8095056

00:18:45.309 --> 00:18:46.087 unrefreshing sleep,

NOTE Confidence: 0.8095056

00:18:46.087 --> 00:18:48.421 daytime sleepiness and the potential for

NOTE Confidence: 0.8095056

00:18:48.421 --> 00:18:50.509 fatigue to contribute to mood disorders.

NOTE Confidence: 0.8095056

00:18:50.510 --> 00:18:53.114 And this is with a strong recommendation.

NOTE Confidence: 0.8095056

00:18:53.120 --> 00:18:55.256 Screening should not be considered with

NOTE Confidence: 0.8095056

00:18:55.256 --> 00:18:57.154 the intention of improving cardiometabolic
NOTE Confidence: 0.8095056

00:18:57.154 --> 00:18:59.644 risk with the with inadequate evidence
NOTE Confidence: 0.8095056

00:18:59.644 --> 00:19:01.330 for metabolic benefits of OSA.
NOTE Confidence: 0.8095056

00:19:01.330 --> 00:19:02.446 Treatment in PCOS.
NOTE Confidence: 0.8095056

00:19:02.446 --> 00:19:04.306 Also, with a strong recommendation.
NOTE Confidence: 0.8095056

00:19:04.310 --> 00:19:06.180 Lastly, a simple screening questionnaire.
NOTE Confidence: 0.8095056

00:19:06.180 --> 00:19:07.704 Preferably, the Berlin tool,
NOTE Confidence: 0.8095056

00:19:07.704 --> 00:19:08.847 could be applied.
NOTE Confidence: 0.8095056

00:19:08.850 --> 00:19:10.560 It is positive referral to
NOTE Confidence: 0.8095056

00:19:10.560 --> 00:19:11.586 a specialist considered,
NOTE Confidence: 0.8095056

00:19:11.590 --> 00:19:13.636 and that's with a conditional recommendation,
NOTE Confidence: 0.8095056

00:19:13.640 --> 00:19:16.734 as currently there is not yet a
NOTE Confidence: 0.8095056

00:19:16.734 --> 00:19:18.979 screening tool validated in young
NOTE Confidence: 0.8095056

00:19:18.979 --> 00:19:21.064 women with and without PCOS.
NOTE Confidence: 0.8095056

00:19:21.070 --> 00:19:22.741 Disappointingly, in practice,
NOTE Confidence: 0.8095056

00:19:22.741 --> 00:19:24.969 screening rate is low.

NOTE Confidence: 0.8095056

00:19:24.970 --> 00:19:26.685 Perhaps this is due to the fact

NOTE Confidence: 0.8095056

00:19:26.685 --> 00:19:28.691 that there is little or no research

NOTE Confidence: 0.8095056

00:19:28.691 --> 00:19:30.211 on specific screening tools in

NOTE Confidence: 0.8095056

00:19:30.211 --> 00:19:31.449 the PCOS population.

NOTE Confidence: 0.8095056

00:19:31.450 --> 00:19:34.066 And this is the only study I found

NOTE Confidence: 0.8095056

00:19:34.066 --> 00:19:36.332 in regards to screening in the

NOTE Confidence: 0.8095056

00:19:36.332 --> 00:19:38.642 study of 50 OBGYN and 29 endocrine

NOTE Confidence: 0.8095056

00:19:38.716 --> 00:19:41.546 practitioners caring for PCOS patients.

NOTE Confidence: 0.8095056

00:19:41.550 --> 00:19:43.974 37% reported that most of their

NOTE Confidence: 0.8095056

00:19:43.974 --> 00:19:46.399 patients had that Class 3 obesity.

NOTE Confidence: 0.8095056

00:19:46.400 --> 00:19:48.818 86% felt that their patients Nordin

NOTE Confidence: 0.8095056

00:19:48.818 --> 00:19:51.242 frequently and 92% refers less than

NOTE Confidence: 0.8095056

00:19:51.242 --> 00:19:54.070 25% of their patients for sleep study,

NOTE Confidence: 0.8095056

00:19:54.070 --> 00:19:56.560 and so to summarize and minority

NOTE Confidence: 0.8095056

00:19:56.560 --> 00:19:58.220 applied practitioners who treat

NOTE Confidence: 0.8095056

00:19:58.290 --> 00:20:00.510 PCOS are referring a minority of
NOTE Confidence: 0.8095056

00:20:00.510 --> 00:20:02.770 their patients for sleep evaluation.
NOTE Confidence: 0.8095056

00:20:02.770 --> 00:20:04.415 Despite the high prevalence of
NOTE Confidence: 0.8095056

00:20:04.415 --> 00:20:06.060 OSA in patients with PCOS,
NOTE Confidence: 0.8095056

00:20:06.060 --> 00:20:08.064 the lack of awareness of the
NOTE Confidence: 0.8095056

00:20:08.064 --> 00:20:10.010 link between PCOS and OSA may.
NOTE Confidence: 0.8095056

00:20:10.010 --> 00:20:12.110 It may also be a potential reason
NOTE Confidence: 0.8095056

00:20:12.110 --> 00:20:14.289 for the low rates of referral.
NOTE Confidence: 0.7319053

00:20:16.810 --> 00:20:19.346 We now move on to the key theories
NOTE Confidence: 0.7319053

00:20:19.346 --> 00:20:22.309 on the pathogenesis of OSA and PCOS.
NOTE Confidence: 0.7319053

00:20:22.310 --> 00:20:25.217 The purpose of this slide is to show what
NOTE Confidence: 0.7319053

00:20:25.217 --> 00:20:28.337 is known about the pathogenesis of PCOS.
NOTE Confidence: 0.7319053

00:20:28.340 --> 00:20:30.892 The main theory is that there is a
NOTE Confidence: 0.7319053

00:20:30.892 --> 00:20:33.328 disruption in GNRH release from the
NOTE Confidence: 0.7319053

00:20:33.328 --> 00:20:35.920 hypothalamus which leads to hyper secretion
NOTE Confidence: 0.7319053

00:20:35.991 --> 00:20:38.546 of LH from the pituitary gland resulting

NOTE Confidence: 0.7319053

00:20:38.546 --> 00:20:41.540 in an increase in the LH FSH ratio.

NOTE Confidence: 0.7319053

00:20:41.540 --> 00:20:44.280 This induces abula Tori dysfunction.

NOTE Confidence: 0.7319053

00:20:44.280 --> 00:20:46.112 Repeat a follicular arrested.

NOTE Confidence: 0.7319053

00:20:46.112 --> 00:20:48.860 What results in the polycystic ovary

NOTE Confidence: 0.7319053

00:20:48.929 --> 00:20:51.149 morphology we see on ultrasound?

NOTE Confidence: 0.7319053

00:20:51.150 --> 00:20:55.218 The increase in LH to FSH also promotes the

NOTE Confidence: 0.7319053

00:20:55.218 --> 00:20:58.016 hypersecretion of androgens and theca cells,

NOTE Confidence: 0.7319053

00:20:58.020 --> 00:21:00.648 which in turn reduces the inhibition

NOTE Confidence: 0.7319053

00:21:00.648 --> 00:21:03.605 of normal GNRH pulse frequency by

NOTE Confidence: 0.7319053

00:21:03.605 --> 00:21:05.849 progesterone and further promoting

NOTE Confidence: 0.7319053

00:21:05.849 --> 00:21:08.093 this development of PCOS.

NOTE Confidence: 0.7319053

00:21:08.100 --> 00:21:10.572 What is not shown here is that there's

NOTE Confidence: 0.7319053

00:21:10.572 --> 00:21:13.483 also an increased level of anti malarian

NOTE Confidence: 0.7319053

00:21:13.483 --> 00:21:16.310 hormone released in the follicles of PCOS,

NOTE Confidence: 0.7319053

00:21:16.310 --> 00:21:18.290 and that leads to reduce FSH

NOTE Confidence: 0.7319053

00:21:18.290 --> 00:21:20.120 sensitivity and blocks the conversion
NOTE Confidence: 0.7319053

00:21:20.120 --> 00:21:21.896 of androgens to estrogens,
NOTE Confidence: 0.7319053

00:21:21.900 --> 00:21:25.668 resulting in reduced overall estrogen levels.
NOTE Confidence: 0.7319053

00:21:25.670 --> 00:21:28.226 It will resistance arising from separate
NOTE Confidence: 0.7319053

00:21:28.226 --> 00:21:31.168 pathways that we will discuss later on.
NOTE Confidence: 0.7319053

00:21:31.170 --> 00:21:33.708 Also contribute to Abula Tori dysfunction.
NOTE Confidence: 0.81340754

00:21:36.460 --> 00:21:38.500 We will now segue into discussing
NOTE Confidence: 0.81340754

00:21:38.500 --> 00:21:40.540 the role of *** hormones in
NOTE Confidence: 0.81340754

00:21:40.540 --> 00:21:42.240 controlling breathing in normal women.
NOTE Confidence: 0.81340754

00:21:42.240 --> 00:21:44.145 Without PCOS, there's a balance
NOTE Confidence: 0.81340754

00:21:44.145 --> 00:21:46.050 between female hormones and male
NOTE Confidence: 0.81340754

00:21:46.113 --> 00:21:48.017 hormones on the one side we are.
NOTE Confidence: 0.81340754

00:21:48.020 --> 00:21:49.720 We have the female hormones
NOTE Confidence: 0.81340754

00:21:49.720 --> 00:21:50.740 estrogen and progesterone,
NOTE Confidence: 0.81340754

00:21:50.740 --> 00:21:52.100 which are protective in
NOTE Confidence: 0.81340754

00:21:52.100 --> 00:21:53.460 the development of OSA.

NOTE Confidence: 0.81340754

00:21:53.460 --> 00:21:55.500 On the other side are male

NOTE Confidence: 0.81340754

00:21:55.500 --> 00:21:56.520 hormones or androgens,

NOTE Confidence: 0.81340754

00:21:56.520 --> 00:21:58.308 among which include testosterone,

NOTE Confidence: 0.81340754

00:21:58.308 --> 00:22:01.310 which may promote the development of OSA.

NOTE Confidence: 0.81340754

00:22:01.310 --> 00:22:03.445 In PCOS we have a deficiency of

NOTE Confidence: 0.81340754

00:22:03.445 --> 00:22:05.502 female hormones and an excess of

NOTE Confidence: 0.81340754

00:22:05.502 --> 00:22:07.297 male hormones causing an imbalance.

NOTE Confidence: 0.81340754

00:22:07.300 --> 00:22:09.478 We no longer have the protective

NOTE Confidence: 0.81340754

00:22:09.478 --> 00:22:11.518 effects of female hormones and at

NOTE Confidence: 0.81340754

00:22:11.518 --> 00:22:13.331 the same time there is an excess

NOTE Confidence: 0.81340754

00:22:13.331 --> 00:22:15.467 of androgens when they which may

NOTE Confidence: 0.81340754

00:22:15.467 --> 00:22:18.184 promote development of OFA in the next

NOTE Confidence: 0.81340754

00:22:18.184 --> 00:22:21.313 several slides we will dive into the

NOTE Confidence: 0.81340754

00:22:21.313 --> 00:22:23.929 implications of this hormonal imbalance.

NOTE Confidence: 0.81340754

00:22:23.930 --> 00:22:26.625 We will start by talking about progesterone.

NOTE Confidence: 0.81340754

00:22:26.630 --> 00:22:28.874 Much of the research comes from
NOTE Confidence: 0.81340754

00:22:28.874 --> 00:22:31.029 studying the normal luteal phase in
NOTE Confidence: 0.81340754

00:22:31.029 --> 00:22:33.397 women where there is a surge and peak
NOTE Confidence: 0.81340754

00:22:33.470 --> 00:22:35.825 of progesterone activity which is
NOTE Confidence: 0.81340754

00:22:35.825 --> 00:22:38.180 associated with increased upper airway.
NOTE Confidence: 0.81340754

00:22:38.180 --> 00:22:39.972 Dilatory muscle activity reduce
NOTE Confidence: 0.81340754

00:22:39.972 --> 00:22:41.764 upper airway resistance and
NOTE Confidence: 0.81340754

00:22:41.764 --> 00:22:43.410 improved nocturnal ventilation.
NOTE Confidence: 0.81340754

00:22:43.410 --> 00:22:45.190 And just as a reminder,
NOTE Confidence: 0.81340754

00:22:45.190 --> 00:22:47.668 as you see here in the diagram,
NOTE Confidence: 0.81340754

00:22:47.670 --> 00:22:48.380 the normal,
NOTE Confidence: 0.81340754

00:22:48.380 --> 00:22:50.510 normal luteal phase occurs after ovulation,
NOTE Confidence: 0.81340754

00:22:50.510 --> 00:22:52.640 or the rupture of the follicles.
NOTE Confidence: 0.81340754

00:22:52.640 --> 00:22:54.770 What's left behind at the follicles
NOTE Confidence: 0.81340754

00:22:54.770 --> 00:22:56.190 becomes the corpus luteum.
NOTE Confidence: 0.81340754

00:22:56.190 --> 00:22:57.965 The corpus luteum is responsible

NOTE Confidence: 0.81340754
00:22:57.965 --> 00:22:59.740 for the release of progesterone,
NOTE Confidence: 0.81340754
00:22:59.740 --> 00:23:02.442 which will then stick in the lining
NOTE Confidence: 0.81340754
00:23:02.442 --> 00:23:04.454 of endometrium preparing for the
NOTE Confidence: 0.81340754
00:23:04.454 --> 00:23:06.429 implantation of the fertilized egg.
NOTE Confidence: 0.81340754
00:23:06.430 --> 00:23:08.776 Because operation is impaired in PCOS,
NOTE Confidence: 0.81340754
00:23:08.780 --> 00:23:11.325 the surge of progesterone does
NOTE Confidence: 0.81340754
00:23:11.325 --> 00:23:14.462 not occur and overall levels of
NOTE Confidence: 0.81340754
00:23:14.462 --> 00:23:16.977 progesterone remain low in PCOS.
NOTE Confidence: 0.81340754
00:23:16.980 --> 00:23:18.291 Four decades ago,
NOTE Confidence: 0.81340754
00:23:18.291 --> 00:23:20.913 this study came out in Java.
NOTE Confidence: 0.81340754
00:23:20.920 --> 00:23:22.736 Exogenous progesterone led to
NOTE Confidence: 0.81340754
00:23:22.736 --> 00:23:24.552 reduce obstructive apneas and
NOTE Confidence: 0.81340754
00:23:24.552 --> 00:23:26.618 improve daytime sleepiness in OSA.
NOTE Confidence: 0.81340754
00:23:26.620 --> 00:23:29.616 It was a small study with nine
NOTE Confidence: 0.81340754
00:23:29.616 --> 00:23:31.869 subjects with only one woman,
NOTE Confidence: 0.81340754

00:23:31.870 --> 00:23:34.936 an 8 of the subjects had obesity.
NOTE Confidence: 0.81340754

00:23:34.940 --> 00:23:38.450 Their average age is between 4070.
NOTE Confidence: 0.81340754

00:23:38.450 --> 00:23:40.798 The intervention was medroxyprogesterone,
NOTE Confidence: 0.81340754

00:23:40.798 --> 00:23:43.733 60 to 120 milligrams given
NOTE Confidence: 0.81340754

00:23:43.733 --> 00:23:45.748 daily in divided doses.
NOTE Confidence: 0.81340754

00:23:45.750 --> 00:23:47.415 The results here showed that
NOTE Confidence: 0.81340754

00:23:47.415 --> 00:23:49.080 there were four responders for
NOTE Confidence: 0.81340754

00:23:49.142 --> 00:23:51.287 represented by these building circles.
NOTE Confidence: 0.81340754

00:23:51.290 --> 00:23:53.365 Among the responders was the
NOTE Confidence: 0.81340754

00:23:53.365 --> 00:23:55.960 single woman enrolled in the study.
NOTE Confidence: 0.81340754

00:23:55.960 --> 00:23:57.364 Now the responder shows
NOTE Confidence: 0.81340754

00:23:57.364 --> 00:23:58.066 significant reduction.
NOTE Confidence: 0.81340754

00:23:58.070 --> 00:23:58.422 Hi,
NOTE Confidence: 0.81340754

00:23:58.422 --> 00:24:00.886 as well as improvement in daytime sleepiness,
NOTE Confidence: 0.81340754

00:24:00.890 --> 00:24:03.480 but that isn't shown here.
NOTE Confidence: 0.81340754

00:24:03.480 --> 00:24:05.778 The improvement in hi a curd

NOTE Confidence: 0.81340754

00:24:05.778 --> 00:24:07.888 during the intervention where they

NOTE Confidence: 0.81340754

00:24:07.888 --> 00:24:09.900 received madocks is progesterone.

NOTE Confidence: 0.81340754

00:24:09.900 --> 00:24:12.625 This is comparative before they

NOTE Confidence: 0.81340754

00:24:12.625 --> 00:24:15.350 receive this medication and compared

NOTE Confidence: 0.81340754

00:24:15.440 --> 00:24:18.410 to after they stopped the medication.

NOTE Confidence: 0.81340754

00:24:18.410 --> 00:24:20.050 Interesting Lee of note.

NOTE Confidence: 0.81340754

00:24:20.050 --> 00:24:22.510 The responders at baseline were also

NOTE Confidence: 0.81340754

00:24:22.579 --> 00:24:24.997 more hypoxemic on their wakeful ABG.

NOTE Confidence: 0.81340754

00:24:25.000 --> 00:24:26.644 The difference in PA.

NOTE Confidence: 0.81340754

00:24:26.644 --> 00:24:27.953 CO2 was, however,

NOTE Confidence: 0.81340754

00:24:27.953 --> 00:24:30.851 NASA tips to assist the Statistique

NOTE Confidence: 0.81340754

00:24:30.851 --> 00:24:31.817 Lee significant.

NOTE Confidence: 0.81340754

00:24:31.820 --> 00:24:33.902 The authors also noted that both

NOTE Confidence: 0.81340754

00:24:33.902 --> 00:24:35.666 responders and non responders showed

NOTE Confidence: 0.81340754

00:24:35.666 --> 00:24:37.580 improvements in their CO2 and O2

NOTE Confidence: 0.81340754

00:24:37.580 --> 00:24:40.049 levels during mid Roxy progesterone therapy.

NOTE Confidence: 0.81340754

00:24:40.050 --> 00:24:43.392 This speaks to the theory that

NOTE Confidence: 0.81340754

00:24:43.392 --> 00:24:45.620 progesterone may improve ventilation.

NOTE Confidence: 0.81340754

00:24:45.620 --> 00:24:47.725 We talked about normal menstrual

NOTE Confidence: 0.81340754

00:24:47.725 --> 00:24:50.392 cycle now will touch touch on

NOTE Confidence: 0.81340754

00:24:50.392 --> 00:24:51.838 pregnancy and pregnancy.

NOTE Confidence: 0.81340754

00:24:51.840 --> 00:24:53.346 Progesterone positively correlated

NOTE Confidence: 0.81340754

00:24:53.346 --> 00:24:55.354 suggest statinal age negatively

NOTE Confidence: 0.81340754

00:24:55.354 --> 00:24:57.623 correlated with maternal weight and

NOTE Confidence: 0.81340754

00:24:57.623 --> 00:24:59.378 when adjusted for gestational age,

NOTE Confidence: 0.81340754

00:24:59.380 --> 00:25:01.261 maternal weight bearing,

NOTE Confidence: 0.81340754

00:25:01.261 --> 00:25:03.769 professional level is significantly

NOTE Confidence: 0.81340754

00:25:03.769 --> 00:25:05.650 lower in women

NOTE Confidence: 0.7786045

00:25:05.737 --> 00:25:07.190 with OSA. In menopause,

NOTE Confidence: 0.7786045

00:25:07.190 --> 00:25:09.640 there's a lot of progesterone and estrogen,

NOTE Confidence: 0.7786045

00:25:09.640 --> 00:25:11.887 and we all know that the prevalence

NOTE Confidence: 0.7786045

00:25:11.887 --> 00:25:13.840 of OSA increases post menopause.

NOTE Confidence: 0.7786045

00:25:13.840 --> 00:25:16.180 This is, however, impacted by other

NOTE Confidence: 0.7786045

00:25:16.180 --> 00:25:18.670 factors such as age and obesity.

NOTE Confidence: 0.7786045

00:25:18.670 --> 00:25:20.378 And to perhaps illustrate

NOTE Confidence: 0.7786045

00:25:20.378 --> 00:25:22.513 this point in one study,

NOTE Confidence: 0.7786045

00:25:22.520 --> 00:25:25.166 the administration of Luke Bronan healthy

NOTE Confidence: 0.7786045

00:25:25.166 --> 00:25:28.218 non obese young women to induce medical

NOTE Confidence: 0.7786045

00:25:28.218 --> 00:25:30.642 menopause did not result in sleep,

NOTE Confidence: 0.7786045

00:25:30.650 --> 00:25:32.540 fragmentation or clinically

NOTE Confidence: 0.7786045

00:25:32.540 --> 00:25:35.060 significant sleep disorder breathing.

NOTE Confidence: 0.7786045

00:25:35.060 --> 00:25:37.352 When we apply when we know

NOTE Confidence: 0.7786045

00:25:37.352 --> 00:25:38.880 about normal luteal phase.

NOTE Confidence: 0.7786045

00:25:38.880 --> 00:25:40.068 Pregnancy and menopause.

NOTE Confidence: 0.7786045

00:25:40.068 --> 00:25:42.835 The PCOS. We know that there are

NOTE Confidence: 0.7786045

00:25:42.835 --> 00:25:44.415 reduced levels of progesterone,

NOTE Confidence: 0.7786045

00:25:44.420 --> 00:25:45.746 estrogen, and PCOS.
NOTE Confidence: 0.7786045

00:25:45.746 --> 00:25:48.398 Therefore, this may predispose women to
NOTE Confidence: 0.7786045

00:25:48.398 --> 00:25:50.881 have increased upper airway collapsibility
NOTE Confidence: 0.7786045

00:25:50.881 --> 00:25:53.827 an reduce ventilla Tori drive and
NOTE Confidence: 0.7786045

00:25:53.899 --> 00:25:56.389 therefore increase the risk for OSA.
NOTE Confidence: 0.7786045

00:25:56.390 --> 00:25:59.186 We will now discuss and region.
NOTE Confidence: 0.7786045

00:25:59.190 --> 00:26:01.320 Androgen access is linked to central
NOTE Confidence: 0.7786045

00:26:01.320 --> 00:26:03.369 adiposity or Apple shaped body type.
NOTE Confidence: 0.7786045

00:26:03.370 --> 00:26:05.419 We see here.
NOTE Confidence: 0.7786045

00:26:05.420 --> 00:26:07.905 Studies have shown that 50 to 60%
NOTE Confidence: 0.7786045

00:26:07.910 --> 00:26:10.395 of women with PCOS have a nap.
NOTE Confidence: 0.7786045

00:26:10.400 --> 00:26:11.824 Dot abdominal distribution of
NOTE Confidence: 0.7786045

00:26:11.824 --> 00:26:13.604 body fat or central obesity.
NOTE Confidence: 0.7786045

00:26:13.610 --> 00:26:16.578 Regardless of their BMI.
NOTE Confidence: 0.7786045

00:26:16.580 --> 00:26:18.400 Central adiposity contributes to the
NOTE Confidence: 0.7786045

00:26:18.400 --> 00:26:20.220 pathogenesis and severity of OSA.

NOTE Confidence: 0.7786045

00:26:20.220 --> 00:26:22.040 Here, in this perspective study,

NOTE Confidence: 0.7786045

00:26:22.040 --> 00:26:23.860 looking at 36 women recruited

NOTE Confidence: 0.7786045

00:26:23.860 --> 00:26:25.316 from the sleep setting,

NOTE Confidence: 0.7786045

00:26:25.320 --> 00:26:27.140 the baseline age was 50s.

NOTE Confidence: 0.7786045

00:26:27.140 --> 00:26:29.318 BMI is in the low 30s.

NOTE Confidence: 0.7786045

00:26:29.320 --> 00:26:31.868 In the mean age I was 15.

NOTE Confidence: 0.7786045

00:26:31.870 --> 00:26:34.180 What was measured was the percentage

NOTE Confidence: 0.7786045

00:26:34.180 --> 00:26:37.398 of fat and lean body mass in different

NOTE Confidence: 0.7786045

00:26:37.398 --> 00:26:39.798 regions of the body using dexa.

NOTE Confidence: 0.7786045

00:26:39.800 --> 00:26:42.866 What was found was that Android or

NOTE Confidence: 0.7786045

00:26:42.866 --> 00:26:45.437 central distribution of fat was the

NOTE Confidence: 0.7786045

00:26:45.437 --> 00:26:47.795 best univariate predictor of hi in

NOTE Confidence: 0.7786045

00:26:47.795 --> 00:26:50.524 women with an R square value of 26%.

NOTE Confidence: 0.7786045

00:26:50.530 --> 00:26:52.917 These images here were taken from the

NOTE Confidence: 0.7786045

00:26:52.917 --> 00:26:54.705 publication to demonstrate what was

NOTE Confidence: 0.7786045

00:26:54.705 --> 00:26:56.460 considered Android versus gynoid fat.

NOTE Confidence: 0.81137085

00:26:59.640 --> 00:27:00.580 Furthermore, androgens,

NOTE Confidence: 0.81137085

00:27:00.580 --> 00:27:03.870 androgens and waist to hip ratio positively

NOTE Confidence: 0.81137085

00:27:03.870 --> 00:27:05.869 correlate with hi women with PCOS.

NOTE Confidence: 0.81137085

00:27:05.870 --> 00:27:07.904 This data is from this same

NOTE Confidence: 0.81137085

00:27:07.904 --> 00:27:09.884 case control study I referenced

NOTE Confidence: 0.81137085

00:27:09.884 --> 00:27:12.088 earlier in the presentation.

NOTE Confidence: 0.81137085

00:27:12.090 --> 00:27:15.219 Here we're looking at the 18 women

NOTE Confidence: 0.81137085

00:27:15.219 --> 00:27:18.338 with PCOS and not their control.

NOTE Confidence: 0.81137085

00:27:18.340 --> 00:27:21.064 The first figure shows a correlation

NOTE Confidence: 0.81137085

00:27:21.064 --> 00:27:23.526 between waist to hip ratio on

NOTE Confidence: 0.81137085

00:27:23.526 --> 00:27:26.240 the X axis and hi in the Y axis.

NOTE Confidence: 0.81137085

00:27:26.240 --> 00:27:28.690 We see a positive correlation

NOTE Confidence: 0.81137085

00:27:28.690 --> 00:27:30.650 within $R = 0.51$.

NOTE Confidence: 0.81137085

00:27:30.650 --> 00:27:32.505 The second figure shows a

NOTE Confidence: 0.81137085

00:27:32.505 --> 00:27:33.618 positive correlation between

NOTE Confidence: 0.81137085

00:27:33.618 --> 00:27:35.440 serum total cholesterol serum,

NOTE Confidence: 0.81137085

00:27:35.440 --> 00:27:36.236 total testosterone,

NOTE Confidence: 0.81137085

00:27:36.236 --> 00:27:38.624 an AHI with a positive correlation,

NOTE Confidence: 0.81137085

00:27:38.630 --> 00:27:40.198 $R = 0.52$. Again,

NOTE Confidence: 0.81137085

00:27:40.198 --> 00:27:43.020 these graphs only show women with PCOS.

NOTE Confidence: 0.81137085

00:27:43.020 --> 00:27:45.010 For those of you wondering,

NOTE Confidence: 0.81137085

00:27:45.010 --> 00:27:47.010 what about the control group?

NOTE Confidence: 0.81137085

00:27:47.010 --> 00:27:48.264 In this study,

NOTE Confidence: 0.81137085

00:27:48.264 --> 00:27:51.642 the women without PCOS but but control for

NOTE Confidence: 0.81137085

00:27:51.642 --> 00:27:54.586 age and BMI well in the control group.

NOTE Confidence: 0.81137085

00:27:54.590 --> 00:27:56.170 Hi was positively correlated

NOTE Confidence: 0.81137085

00:27:56.170 --> 00:27:58.980 with waist to hip ratio as well,

NOTE Confidence: 0.81137085

00:27:58.980 --> 00:28:02.550 and the R value was 0.5.

NOTE Confidence: 0.81137085

00:28:02.550 --> 00:28:04.728 Which arguably is a stronger correlation,

NOTE Confidence: 0.81137085

00:28:04.730 --> 00:28:07.264 and we see in the PCOS group.

NOTE Confidence: 0.81137085

00:28:07.270 --> 00:28:07.732 However,
NOTE Confidence: 0.81137085
00:28:07.732 --> 00:28:10.042 there was no significant correlation
NOTE Confidence: 0.81137085
00:28:10.042 --> 00:28:11.428 between serum testosterone
NOTE Confidence: 0.81137085
00:28:11.428 --> 00:28:13.406 and hi in the control group.
NOTE Confidence: 0.81137085
00:28:13.410 --> 00:28:15.552 This suggests that there are other
NOTE Confidence: 0.81137085
00:28:15.552 --> 00:28:16.980 factors contributing to central
NOTE Confidence: 0.81137085
00:28:17.041 --> 00:28:19.096 obesity besides androgen levels alone,
NOTE Confidence: 0.81137085
00:28:19.100 --> 00:28:21.386 and one of these factors is
NOTE Confidence: 0.81137085
00:28:21.386 --> 00:28:23.572 thought to be insulin resistance
NOTE Confidence: 0.81137085
00:28:23.572 --> 00:28:26.487 and elevated serum glucose levels.
NOTE Confidence: 0.81137085
00:28:26.490 --> 00:28:28.884 And that is segue into the next
NOTE Confidence: 0.81137085
00:28:28.884 --> 00:28:30.366 section on metabolic syndrome
NOTE Confidence: 0.81137085
00:28:30.366 --> 00:28:32.306 and insulin resistance in women
NOTE Confidence: 0.81137085
00:28:32.306 --> 00:28:33.858 with PCOS and OSA.
NOTE Confidence: 0.81137085
00:28:33.860 --> 00:28:36.578 Here's a visual to remind us
NOTE Confidence: 0.81137085
00:28:36.578 --> 00:28:38.390 what metabolic syndrome is.

NOTE Confidence: 0.81137085

00:28:38.390 --> 00:28:40.660 It consists of high triglycerides,

NOTE Confidence: 0.81137085

00:28:40.660 --> 00:28:43.304 low HDL, visceral obesity,

NOTE Confidence: 0.81137085

00:28:43.304 --> 00:28:45.948 insulin resistance and hypertension.

NOTE Confidence: 0.81137085

00:28:45.950 --> 00:28:49.658 When it was both PCOS and OSA have worse

NOTE Confidence: 0.81137085

00:28:49.658 --> 00:28:52.970 metabolic profile than women with only PCOS.

NOTE Confidence: 0.81137085

00:28:52.970 --> 00:28:55.060 In an observation ULL study

NOTE Confidence: 0.81137085

00:28:55.060 --> 00:28:57.670 of 28 Teen Agers with PCOS.

NOTE Confidence: 0.81137085

00:28:57.670 --> 00:28:59.805 Those with OSA had increased

NOTE Confidence: 0.81137085

00:28:59.805 --> 00:29:00.659 metabolic syndrome,

NOTE Confidence: 0.81137085

00:29:00.660 --> 00:29:01.938 increase insulin resistance,

NOTE Confidence: 0.81137085

00:29:01.938 --> 00:29:04.494 reduce HDL in increase in triglycerides.

NOTE Confidence: 0.81137085

00:29:04.500 --> 00:29:05.781 In another observation,

NOTE Confidence: 0.81137085

00:29:05.781 --> 00:29:08.770 ULL study of 103 teenagers with PCOS.

NOTE Confidence: 0.81137085

00:29:08.770 --> 00:29:10.905 Those with OSA hat increase

NOTE Confidence: 0.81137085

00:29:10.905 --> 00:29:12.186 homeostatic model assessment,

NOTE Confidence: 0.81137085

00:29:12.190 --> 00:29:14.722 which is essentially a method used
NOTE Confidence: 0.81137085

00:29:14.722 --> 00:29:16.905 to quantify insulin resistance as
NOTE Confidence: 0.81137085

00:29:16.905 --> 00:29:19.015 well as increase metabolic syndrome.
NOTE Confidence: 0.81137085

00:29:19.020 --> 00:29:19.445 Now,
NOTE Confidence: 0.81137085

00:29:19.445 --> 00:29:21.570 both of these studies did
NOTE Confidence: 0.81137085

00:29:21.570 --> 00:29:23.710 control her BMI an age.
NOTE Confidence: 0.8056642

00:29:26.590 --> 00:29:28.525 Insulin resistance is a key
NOTE Confidence: 0.8056642

00:29:28.525 --> 00:29:30.840 feature in both PCOS and OSA.
NOTE Confidence: 0.8056642

00:29:30.840 --> 00:29:31.920 In this diagram,
NOTE Confidence: 0.8056642

00:29:31.920 --> 00:29:33.720 we're looking at the pathogenesis
NOTE Confidence: 0.8056642

00:29:33.720 --> 00:29:35.850 from OSA to insulin resistance.
NOTE Confidence: 0.8056642

00:29:35.850 --> 00:29:37.046 In Type 2 diabetes,
NOTE Confidence: 0.8056642

00:29:37.046 --> 00:29:39.428 the two key elements of OSA are
NOTE Confidence: 0.8056642

00:29:39.428 --> 00:29:42.028 intermittent hypoxia and sleep fragmentation,
NOTE Confidence: 0.8056642

00:29:42.030 --> 00:29:44.669 and they have been linked to an
NOTE Confidence: 0.8056642

00:29:44.669 --> 00:29:46.280 increase in inflammatory aside,

NOTE Confidence: 0.8056642

00:29:46.280 --> 00:29:48.542 a time oxidative stress and the

NOTE Confidence: 0.8056642

00:29:48.542 --> 00:29:50.520 activation of sympathetic nervous system,

NOTE Confidence: 0.8056642

00:29:50.520 --> 00:29:53.446 and that all in turn leads to

NOTE Confidence: 0.8056642

00:29:53.446 --> 00:29:55.128 reduce insulin sensitivity at

NOTE Confidence: 0.8056642

00:29:55.128 --> 00:29:57.240 the target tissues as well as.

NOTE Confidence: 0.8056642

00:29:57.240 --> 00:29:59.195 Pancreatic beta cell dysfunction in

NOTE Confidence: 0.8056642

00:29:59.195 --> 00:30:01.781 the adipose tissue we see increased

NOTE Confidence: 0.8056642

00:30:01.781 --> 00:30:04.037 by policies increase inflammation,

NOTE Confidence: 0.8056642

00:30:04.040 --> 00:30:05.387 reduce insulin sensitivity.

NOTE Confidence: 0.8056642

00:30:05.387 --> 00:30:08.081 In the liver we see increased

NOTE Confidence: 0.8056642

00:30:08.081 --> 00:30:09.360 glucose production.

NOTE Confidence: 0.8056642

00:30:09.360 --> 00:30:11.796 The phenotype of non alcoholic fatty

NOTE Confidence: 0.8056642

00:30:11.796 --> 00:30:14.463 liver disease as well as increased

NOTE Confidence: 0.8056642

00:30:14.463 --> 00:30:16.878 inflammation in the muscles that

NOTE Confidence: 0.8056642

00:30:16.878 --> 00:30:19.090 decreases in efficiency of glucose

NOTE Confidence: 0.8056642

00:30:19.090 --> 00:30:21.148 uptake and then in the pancreas
NOTE Confidence: 0.8056642

00:30:21.148 --> 00:30:22.998 we see increased beta cells.
NOTE Confidence: 0.8056642

00:30:22.998 --> 00:30:25.314 Def Simple operation reduces one content
NOTE Confidence: 0.8056642

00:30:25.314 --> 00:30:27.657 reduce glucose induced insulin secretion.
NOTE Confidence: 0.8056642

00:30:27.660 --> 00:30:30.565 All of this results in insulin resistance,
NOTE Confidence: 0.8056642

00:30:30.570 --> 00:30:32.650 glucose intolerance and can potentially
NOTE Confidence: 0.8056642

00:30:32.650 --> 00:30:34.730 progressed to type 2 diabetes.
NOTE Confidence: 0.7736004

00:30:37.290 --> 00:30:40.139 Now I move the OSA figure aside
NOTE Confidence: 0.7736004

00:30:40.139 --> 00:30:43.270 and make room for the PCOS figure.
NOTE Confidence: 0.7736004

00:30:43.270 --> 00:30:44.706 We talked about earlier.
NOTE Confidence: 0.7736004

00:30:44.706 --> 00:30:46.860 We can see how untreated OSA
NOTE Confidence: 0.7736004

00:30:46.936 --> 00:30:49.211 may potentially feed into this
NOTE Confidence: 0.7736004

00:30:49.211 --> 00:30:51.031 insulin resistance pathway here
NOTE Confidence: 0.7736004

00:30:51.031 --> 00:30:52.928 that can further perpetuate
NOTE Confidence: 0.7736004

00:30:52.928 --> 00:30:55.218 abula Tori dysfunction in PCOS.
NOTE Confidence: 0.7566038

00:30:58.960 --> 00:31:00.452 All right, moving on,

NOTE Confidence: 0.7566038

00:31:00.452 --> 00:31:03.161 we're going to next talk about the

NOTE Confidence: 0.7566038

00:31:03.161 --> 00:31:05.555 treatment outcomes of OSA and PCOS.

NOTE Confidence: 0.7566038

00:31:05.560 --> 00:31:08.520 First, we're going to talk about this study

NOTE Confidence: 0.7566038

00:31:08.520 --> 00:31:11.178 that tries to answer the question what

NOTE Confidence: 0.7566038

00:31:11.178 --> 00:31:13.968 are the short term impacts of metformin

NOTE Confidence: 0.7566038

00:31:13.968 --> 00:31:16.584 on the metabolic and sleep parameters?

NOTE Confidence: 0.7566038

00:31:16.590 --> 00:31:18.785 This study included 90 adolescent

NOTE Confidence: 0.7566038

00:31:18.785 --> 00:31:21.709 females between the ages of 12 to 18,

NOTE Confidence: 0.7566038

00:31:21.710 --> 00:31:23.286 randomized into three groups.

NOTE Confidence: 0.7566038

00:31:23.286 --> 00:31:24.865 Control, untreated PCOS and

NOTE Confidence: 0.7566038

00:31:24.865 --> 00:31:26.050 PCOS plus metformin.

NOTE Confidence: 0.7566038

00:31:26.050 --> 00:31:28.400 The treatment was metformin 850

NOTE Confidence: 0.7566038

00:31:28.400 --> 00:31:31.340 milligrams twice daily for three months.

NOTE Confidence: 0.7566038

00:31:31.340 --> 00:31:33.326 Table one here shows the baseline

NOTE Confidence: 0.7566038

00:31:33.326 --> 00:31:35.080 characteristics of the three groups.

NOTE Confidence: 0.7566038

00:31:35.080 --> 00:31:38.559 The mean age is similar or about
NOTE Confidence: 0.7566038

00:31:38.559 --> 00:31:40.810 16 across the board.
NOTE Confidence: 0.7566038

00:31:40.810 --> 00:31:43.897 The mean BMI was normal at 21 in the
NOTE Confidence: 0.7566038

00:31:43.897 --> 00:31:46.624 control group and this is significantly
NOTE Confidence: 0.7566038

00:31:46.624 --> 00:31:49.360 different from the two PCOS group
NOTE Confidence: 0.7566038

00:31:49.360 --> 00:31:51.817 with the mean BMI of about 35.
NOTE Confidence: 0.7566038

00:31:51.820 --> 00:31:55.500 Here in here the BMI was not significantly
NOTE Confidence: 0.7566038

00:31:55.500 --> 00:31:58.109 different between the two PC LF groups.
NOTE Confidence: 0.7566038

00:31:58.110 --> 00:32:00.126 Now the fasting blood Glucose Tahoma
NOTE Confidence: 0.7566038

00:32:00.126 --> 00:32:01.936 index again that's the measurement
NOTE Confidence: 0.7566038

00:32:01.936 --> 00:32:03.931 of insulin resistance and hirsutism
NOTE Confidence: 0.7566038

00:32:03.931 --> 00:32:06.488 scores were all higher in two PCOS
NOTE Confidence: 0.7566038

00:32:06.488 --> 00:32:07.983 group compared to the control.
NOTE Confidence: 0.7566038

00:32:07.990 --> 00:32:10.275 But they were not significantly
NOTE Confidence: 0.7566038

00:32:10.275 --> 00:32:13.150 different between the two PCOS groups.
NOTE Confidence: 0.7566038

00:32:13.150 --> 00:32:15.118 Sleep disturbance Scale is a scale

NOTE Confidence: 0.7566038

00:32:15.118 --> 00:32:16.960 validated in adolescence and children,

NOTE Confidence: 0.7566038

00:32:16.960 --> 00:32:19.054 and it consists of 26 items

NOTE Confidence: 0.7566038

00:32:19.054 --> 00:32:21.110 with a score greater than 52,

NOTE Confidence: 0.7566038

00:32:21.110 --> 00:32:22.840 considered positive for sleep disorders,

NOTE Confidence: 0.7566038

00:32:22.840 --> 00:32:26.566 the mean score was 48 in the control group.

NOTE Confidence: 0.7566038

00:32:26.570 --> 00:32:29.524 Alright here and there were 75 in

NOTE Confidence: 0.7566038

00:32:29.524 --> 00:32:32.390 untreated PCOS group and 78 in the PCOS.

NOTE Confidence: 0.7566038

00:32:32.390 --> 00:32:34.330 Plus plus metformin group again.

NOTE Confidence: 0.7566038

00:32:34.330 --> 00:32:36.022 No significant difference between

NOTE Confidence: 0.7566038

00:32:36.022 --> 00:32:39.072 the two PCOS groups and both of

NOTE Confidence: 0.7566038

00:32:39.072 --> 00:32:41.287 these groups have pathologic scores.

NOTE Confidence: 0.7566038

00:32:41.290 --> 00:32:41.978 And Lastly,

NOTE Confidence: 0.7566038

00:32:41.978 --> 00:32:44.042 the mean upwards of eight in

NOTE Confidence: 0.7566038

00:32:44.042 --> 00:32:46.128 the control group and very high,

NOTE Confidence: 0.7566038

00:32:46.130 --> 00:32:49.244 about 16 in each of the two PCOS group.

NOTE Confidence: 0.7566038

00:32:49.250 --> 00:32:49.797 Again,
NOTE Confidence: 0.7566038

00:32:49.797 --> 00:32:53.626 no difference between the two PCOS group.
NOTE Confidence: 0.7566038

00:32:53.630 --> 00:32:55.810 The results of metformin therapy
NOTE Confidence: 0.7566038

00:32:55.810 --> 00:32:57.118 were quite remarkable.
NOTE Confidence: 0.7566038

00:32:57.120 --> 00:33:00.296 Here we see in Table 2 the mean
NOTE Confidence: 0.7566038

00:33:00.296 --> 00:33:03.334 BMI in the PCOS plus metformin
NOTE Confidence: 0.7566038

00:33:03.334 --> 00:33:06.532 group decrease in 34 to 26.
NOTE Confidence: 0.7566038

00:33:06.540 --> 00:33:09.348 After just three months of metformin,
NOTE Confidence: 0.7566038

00:33:09.350 --> 00:33:12.050 mean body weight was 75 kilograms
NOTE Confidence: 0.7566038

00:33:12.050 --> 00:33:14.959 pretreatment and is now 57 kilograms,
NOTE Confidence: 0.7566038

00:33:14.960 --> 00:33:18.706 which is about 14 or 24% weight reduction.
NOTE Confidence: 0.7566038

00:33:18.706 --> 00:33:20.110 And for comparison,
NOTE Confidence: 0.7566038

00:33:20.110 --> 00:33:23.582 the untreated PCOS went up slightly from
NOTE Confidence: 0.7566038

00:33:23.582 --> 00:33:28.508 35 to 36 in their BMI and the control
NOTE Confidence: 0.7566038

00:33:28.508 --> 00:33:31.550 group BMI basically stayed normal.
NOTE Confidence: 0.7566038

00:33:31.550 --> 00:33:33.060 The fasting and postprandial glucose,

NOTE Confidence: 0.7566038

00:33:33.060 --> 00:33:35.812 as well as the home and index all

NOTE Confidence: 0.7566038

00:33:35.812 --> 00:33:38.827 decreased in the PCOS plus metformin group.

NOTE Confidence: 0.7566038

00:33:38.830 --> 00:33:40.306 Which was significantly different

NOTE Confidence: 0.7566038

00:33:40.306 --> 00:33:42.520 compared to the untreated PCOS group.

NOTE Confidence: 0.7566038

00:33:42.520 --> 00:33:43.242 Hirsutism score.

NOTE Confidence: 0.7566038

00:33:43.242 --> 00:33:45.047 Also decreasing the PCOS plasma

NOTE Confidence: 0.7566038

00:33:45.047 --> 00:33:47.319 form a group and download chart.

NOTE Confidence: 0.7566038

00:33:47.320 --> 00:33:49.540 All these fees here indicates significant

NOTE Confidence: 0.7566038

00:33:49.540 --> 00:33:51.380 difference compared to untreated group,

NOTE Confidence: 0.7566038

00:33:51.380 --> 00:33:53.195 whereas at baseline prior to

NOTE Confidence: 0.7566038

00:33:53.195 --> 00:33:55.010 treatment there was no difference

NOTE Confidence: 0.7566038

00:33:55.074 --> 00:33:56.538 between these two groups.

NOTE Confidence: 0.8007394

00:33:59.100 --> 00:34:01.989 Here in table three we see there is a

NOTE Confidence: 0.8007394

00:34:01.989 --> 00:34:04.281 significant decrease in Epworth score in

NOTE Confidence: 0.8007394

00:34:04.281 --> 00:34:07.155 the PCOS plus Metformin Group from 16 prior

NOTE Confidence: 0.8007394

00:34:07.155 --> 00:34:10.120 to treatment to all the way down to 12.
NOTE Confidence: 0.8007394

00:34:10.120 --> 00:34:12.670 The Edwards is now significantly different
NOTE Confidence: 0.8007394

00:34:12.670 --> 00:34:14.990 compared to the untreated group.
NOTE Confidence: 0.8007394

00:34:14.990 --> 00:34:17.216 The sleep disturbance core also decrease,
NOTE Confidence: 0.8007394

00:34:17.220 --> 00:34:21.196 but it does remain pathologic at above 52.
NOTE Confidence: 0.8007394

00:34:21.200 --> 00:34:22.973 So, to summarize,
NOTE Confidence: 0.8007394

00:34:22.973 --> 00:34:26.519 metformin therapy in PCOS reduces BMI,
NOTE Confidence: 0.8007394

00:34:26.520 --> 00:34:28.293 insulin resistance, hirsutism,
NOTE Confidence: 0.8007394

00:34:28.293 --> 00:34:30.657 and the Epworth score.
NOTE Confidence: 0.83903766

00:34:32.960 --> 00:34:34.348 In the prior study,
NOTE Confidence: 0.83903766

00:34:34.348 --> 00:34:36.720 we saw a weight reduction of 24%
NOTE Confidence: 0.83903766

00:34:36.720 --> 00:34:38.430 in the metformin treatment arm,
NOTE Confidence: 0.83903766

00:34:38.430 --> 00:34:40.140 which is a massive change.
NOTE Confidence: 0.83903766

00:34:40.140 --> 00:34:43.124 What we know is that a weight reduction
NOTE Confidence: 0.83903766

00:34:43.124 --> 00:34:45.560 of only 5 to 10% have beneficial
NOTE Confidence: 0.83903766

00:34:45.560 --> 00:34:48.470 results in both OSA and PCOS.

NOTE Confidence: 0.83903766

00:34:48.470 --> 00:34:50.204 We lost as a primary treatment

NOTE Confidence: 0.83903766

00:34:50.204 --> 00:34:52.100 in both of these conditions.

NOTE Confidence: 0.83903766

00:34:52.100 --> 00:34:54.212 In the general population and average

NOTE Confidence: 0.83903766

00:34:54.212 --> 00:34:57.072 weight loss of 10% of body weight can

NOTE Confidence: 0.83903766

00:34:57.072 --> 00:35:00.177 result in a modest reduction in Hi Ann

NOTE Confidence: 0.83903766

00:35:00.177 --> 00:35:02.733 and overall improvement in OSA severity.

NOTE Confidence: 0.83903766

00:35:02.740 --> 00:35:05.290 And PCOS a weight reduction of

NOTE Confidence: 0.83903766

00:35:05.290 --> 00:35:07.728 5% can restore regular menstrual

NOTE Confidence: 0.83903766

00:35:07.728 --> 00:35:09.736 cycles and improve fertility.

NOTE Confidence: 0.83903766

00:35:09.740 --> 00:35:12.332 Other benefits of weight loss include

NOTE Confidence: 0.83903766

00:35:12.332 --> 00:35:14.570 decreased adipose and androgen levels,

NOTE Confidence: 0.83903766

00:35:14.570 --> 00:35:17.910 as well as an improvement

NOTE Confidence: 0.83903766

00:35:17.910 --> 00:35:19.914 in insulin resistance.

NOTE Confidence: 0.83903766

00:35:19.920 --> 00:35:22.060 Now let's review the current

NOTE Confidence: 0.83903766

00:35:22.060 --> 00:35:23.344 weight reduction recommendation.

NOTE Confidence: 0.83903766

00:35:23.350 --> 00:35:25.735 The American Thoracic Society societies
NOTE Confidence: 0.83903766

00:35:25.735 --> 00:35:28.120 clinical practice guidelines recommend a
NOTE Confidence: 0.83903766

00:35:28.186 --> 00:35:30.790 comprehensive weight loss program for OSA.
NOTE Confidence: 0.83903766

00:35:30.790 --> 00:35:33.905 In all comers with OSA with a
NOTE Confidence: 0.83903766

00:35:33.905 --> 00:35:36.798 BMI greater than or equal to 25,
NOTE Confidence: 0.83903766

00:35:36.800 --> 00:35:38.512 a comprehensive lifestyle intervention
NOTE Confidence: 0.83903766

00:35:38.512 --> 00:35:40.652 program that includes a weight,
NOTE Confidence: 0.83903766

00:35:40.660 --> 00:35:41.944 reduced calorie diet,
NOTE Confidence: 0.83903766

00:35:41.944 --> 00:35:43.228 increase physical activity,
NOTE Confidence: 0.83903766

00:35:43.230 --> 00:35:44.838 and behavioral counseling
NOTE Confidence: 0.83903766

00:35:44.838 --> 00:35:46.446 is strongly recommended.
NOTE Confidence: 0.83903766

00:35:46.450 --> 00:35:47.734 And those of OSA,
NOTE Confidence: 0.83903766

00:35:47.734 --> 00:35:50.465 would it be in my greater than or
NOTE Confidence: 0.83903766

00:35:50.465 --> 00:35:53.020 equal to 27 but with no improvement?
NOTE Confidence: 0.83903766

00:35:53.020 --> 00:35:54.508 After a comprehensive weight
NOTE Confidence: 0.83903766

00:35:54.508 --> 00:35:55.996 loss program and antiobesity

NOTE Confidence: 0.83903766

00:35:55.996 --> 00:35:57.730 pharmacotherapy is recommended with

NOTE Confidence: 0.83903766

00:35:57.730 --> 00:35:59.140 the conditional recommendation.

NOTE Confidence: 0.83903766

00:35:59.140 --> 00:36:02.020 Those with OSA in a BMI greater than

NOTE Confidence: 0.83903766

00:36:02.020 --> 00:36:05.940 or equal to 35 but no improvement after

NOTE Confidence: 0.83903766

00:36:05.940 --> 00:36:08.020 comprehensive weight loss program.

NOTE Confidence: 0.83903766

00:36:08.020 --> 00:36:10.668 Referral for bariatric surgery

NOTE Confidence: 0.83903766

00:36:10.668 --> 00:36:13.316 evaluation is recommended conditionally.

NOTE Confidence: 0.83903766

00:36:13.320 --> 00:36:15.140 The international evidence based

NOTE Confidence: 0.83903766

00:36:15.140 --> 00:36:17.415 guidelines also recommend a comprehensive

NOTE Confidence: 0.83903766

00:36:17.415 --> 00:36:19.169 weight loss program for PCOS.

NOTE Confidence: 0.83903766

00:36:19.170 --> 00:36:21.230 Here third, two statements,

NOTE Confidence: 0.83903766

00:36:21.230 --> 00:36:22.775 healthy lifestyle behaviors

NOTE Confidence: 0.83903766

00:36:22.775 --> 00:36:24.788 encompassing healthy eating and

NOTE Confidence: 0.83903766

00:36:24.788 --> 00:36:26.803 regular physical activity should be

NOTE Confidence: 0.83903766

00:36:26.803 --> 00:36:29.126 recommended in those with PCOS to

NOTE Confidence: 0.83903766

00:36:29.126 --> 00:36:31.058 achieve an or maintain healthy weight

NOTE Confidence: 0.83903766

00:36:31.058 --> 00:36:33.096 and to optimize hormonal outcomes.

NOTE Confidence: 0.83903766

00:36:33.096 --> 00:36:35.406 General Health and quality of

NOTE Confidence: 0.83903766

00:36:35.406 --> 00:36:38.127 life across the life course with

NOTE Confidence: 0.83903766

00:36:38.127 --> 00:36:39.420 a strong recommendation.

NOTE Confidence: 0.83903766

00:36:39.420 --> 00:36:40.308 Lifestyle intervention,

NOTE Confidence: 0.83903766

00:36:40.308 --> 00:36:41.640 preferably including diet,

NOTE Confidence: 0.83903766

00:36:41.640 --> 00:36:43.520 exercise and behavioral strategies

NOTE Confidence: 0.83903766

00:36:43.520 --> 00:36:45.870 should be recommended in those

NOTE Confidence: 0.83903766

00:36:45.870 --> 00:36:48.015 with PCOS and excess weight

NOTE Confidence: 0.83903766

00:36:48.015 --> 00:36:49.623 for reductions in weight,

NOTE Confidence: 0.83903766

00:36:49.630 --> 00:36:51.850 central obesity and insulin resistance,

NOTE Confidence: 0.83903766

00:36:51.850 --> 00:36:54.070 and this has limited confidence

NOTE Confidence: 0.83903766

00:36:54.070 --> 00:36:56.290 in the level of evidence.

NOTE Confidence: 0.8140758

00:36:59.350 --> 00:37:01.230 They don't effective CPAP in

NOTE Confidence: 0.8140758

00:37:01.230 --> 00:37:02.734 PCOS are extremely limited.

NOTE Confidence: 0.8140758

00:37:02.740 --> 00:37:06.133 This is one of the only studies to date.

NOTE Confidence: 0.8140758

00:37:06.140 --> 00:37:08.440 It addresses the question what

NOTE Confidence: 0.8140758

00:37:08.440 --> 00:37:10.740 are the cardiometabolic effects of

NOTE Confidence: 0.8140758

00:37:10.820 --> 00:37:13.158 short term C pap therapy in PCOS?

NOTE Confidence: 0.8140758

00:37:13.160 --> 00:37:14.776 Here the intervention is

NOTE Confidence: 0.8140758

00:37:14.776 --> 00:37:16.796 8 weeks of CPAP therapy.

NOTE Confidence: 0.8140758

00:37:16.800 --> 00:37:18.940 The measures include metabolic, hormonal,

NOTE Confidence: 0.8140758

00:37:18.940 --> 00:37:20.592 and cardiovascular assessments at

NOTE Confidence: 0.8140758

00:37:20.592 --> 00:37:23.630 baseline and after eight weeks of therapy.

NOTE Confidence: 0.8140758

00:37:23.630 --> 00:37:26.186 The subjects are 56 young women,

NOTE Confidence: 0.8140758

00:37:26.190 --> 00:37:28.698 young obese women with PCOS recruited

NOTE Confidence: 0.8140758

00:37:28.698 --> 00:37:30.890 from a University endocrine clinic.

NOTE Confidence: 0.8140758

00:37:30.890 --> 00:37:33.446 They were excluded if there was

NOTE Confidence: 0.8140758

00:37:33.446 --> 00:37:35.158 presence of diabetes, hypertension,

NOTE Confidence: 0.8140758

00:37:35.158 --> 00:37:36.870 or significant cardiovascular disease,

NOTE Confidence: 0.8140758

00:37:36.870 --> 00:37:40.765 and they must have been off any *** steroids,

NOTE Confidence: 0.8140758

00:37:40.765 --> 00:37:43.140 anti androgens or insulin lowering

NOTE Confidence: 0.8140758

00:37:43.140 --> 00:37:45.040 medications for eight weeks

NOTE Confidence: 0.8140758

00:37:45.112 --> 00:37:46.828 prior to the intervention.

NOTE Confidence: 0.8140758

00:37:46.830 --> 00:37:48.382 26 of them met,

NOTE Confidence: 0.8140758

00:37:48.382 --> 00:37:49.546 including criteria which

NOTE Confidence: 0.8140758

00:37:49.546 --> 00:37:51.219 includes a diagnosis of OSA.

NOTE Confidence: 0.8140758

00:37:51.220 --> 00:37:53.698 7 dropped out among the 19 who

NOTE Confidence: 0.8140758

00:37:53.698 --> 00:37:55.250 completed this study study.

NOTE Confidence: 0.8140758

00:37:55.250 --> 00:37:57.440 Only nine were Papa here and.

NOTE Confidence: 0.7766447700000001

00:37:59.510 --> 00:38:01.526 When we look at just those who

NOTE Confidence: 0.7766447700000001

00:38:01.526 --> 00:38:03.783 were Papa here and graph A here

NOTE Confidence: 0.7766447700000001

00:38:03.783 --> 00:38:05.775 shows a fitted regression values of

NOTE Confidence: 0.7766447700000001

00:38:05.847 --> 00:38:07.702 the change in insulin sensitivity

NOTE Confidence: 0.7766447700000001

00:38:07.702 --> 00:38:10.490 after CPAP as a function of BMI.

NOTE Confidence: 0.7766447700000001

00:38:10.490 --> 00:38:13.280 There's a function that CPAP use.

NOTE Confidence: 0.776644770000001

00:38:13.280 --> 00:38:15.696 The dark line here represents a line of

NOTE Confidence: 0.776644770000001

00:38:15.696 --> 00:38:18.720 fit and the dotted lines represent the

NOTE Confidence: 0.776644770000001

00:38:18.720 --> 00:38:21.070 95th percentile constant confidence bands.

NOTE Confidence: 0.776644770000001

00:38:21.070 --> 00:38:22.830 Improvement in insulin sensitivity

NOTE Confidence: 0.776644770000001

00:38:22.830 --> 00:38:25.470 after C pap is greatest among

NOTE Confidence: 0.776644770000001

00:38:25.470 --> 00:38:27.815 women with lower BMI assist here.

NOTE Confidence: 0.776644770000001

00:38:27.820 --> 00:38:30.232 Anne was greater with more hours

NOTE Confidence: 0.776644770000001

00:38:30.232 --> 00:38:32.938 of CPAP used as we see here.

NOTE Confidence: 0.776644770000001

00:38:32.940 --> 00:38:34.986 Graph B shows modeling of change

NOTE Confidence: 0.776644770000001

00:38:34.986 --> 00:38:36.350 in insulin sensitivity expected

NOTE Confidence: 0.776644770000001

00:38:36.404 --> 00:38:37.310 after four hours,

NOTE Confidence: 0.776644770000001

00:38:37.310 --> 00:38:40.208 6 hours and 8 hours of sleep apneas per

NOTE Confidence: 0.776644770000001

00:38:40.208 --> 00:38:42.576 night in an overly weight patient here

NOTE Confidence: 0.776644770000001

00:38:42.576 --> 00:38:46.035 with a BMI of 28 and an obese patient here.

NOTE Confidence: 0.776644770000001

00:38:46.040 --> 00:38:48.287 Would it be in my 35 predicted

NOTE Confidence: 0.776644770000001

00:38:48.287 --> 00:38:50.107 improvement in insulin sensitivity after
NOTE Confidence: 0.7766447700000001

00:38:50.107 --> 00:38:52.471 treatment of OSA is more pronounced
NOTE Confidence: 0.7766447700000001

00:38:52.471 --> 00:38:55.001 with longer hours of C pap used in
NOTE Confidence: 0.7766447700000001

00:38:55.001 --> 00:38:57.128 a dose dependent manner and is of
NOTE Confidence: 0.7766447700000001

00:38:57.128 --> 00:38:59.480 lesser magnitude in patients with higher BMI.
NOTE Confidence: 0.7766447700000001

00:38:59.480 --> 00:39:00.015 Again,
NOTE Confidence: 0.7766447700000001

00:39:00.015 --> 00:39:04.830 this is all modeling data here on the bottom.
NOTE Confidence: 0.7766447700000001

00:39:04.830 --> 00:39:06.222 Another significant finding in
NOTE Confidence: 0.7766447700000001

00:39:06.222 --> 00:39:08.837 this study was that short term pap
NOTE Confidence: 0.7766447700000001

00:39:08.837 --> 00:39:10.709 therapy reduce norepinephrine levels.
NOTE Confidence: 0.7766447700000001

00:39:10.710 --> 00:39:12.630 Here we see norepinephrine levels
NOTE Confidence: 0.7766447700000001

00:39:12.630 --> 00:39:15.894 on the Y axis and the 24 hour day
NOTE Confidence: 0.7766447700000001

00:39:15.894 --> 00:39:18.331 on the X axis potted along this
NOTE Confidence: 0.7766447700000001

00:39:18.331 --> 00:39:21.085 continuum is the mean levels of
NOTE Confidence: 0.7766447700000001

00:39:21.085 --> 00:39:23.252 norepinephrine before an after eight
NOTE Confidence: 0.7766447700000001

00:39:23.252 --> 00:39:25.207 weeks to see pap therapy.

NOTE Confidence: 0.776644770000001

00:39:25.210 --> 00:39:27.898 The Gray bars indicate meals and the

NOTE Confidence: 0.776644770000001

00:39:27.898 --> 00:39:31.090 black bar here indicates that I'm in bed.

NOTE Confidence: 0.776644770000001

00:39:31.090 --> 00:39:32.658 See PAP treatment resulted

NOTE Confidence: 0.776644770000001

00:39:32.658 --> 00:39:34.305 in a 25% reduction.

NOTE Confidence: 0.776644770000001

00:39:34.305 --> 00:39:37.095 In the mean 24 hour plasma

NOTE Confidence: 0.776644770000001

00:39:37.095 --> 00:39:38.025 norepinephrine levels,

NOTE Confidence: 0.776644770000001

00:39:38.030 --> 00:39:41.408 it's interesting to note that affects

NOTE Confidence: 0.776644770000001

00:39:41.408 --> 00:39:44.570 extended beyond hours of CPAP use.

NOTE Confidence: 0.776644770000001

00:39:44.570 --> 00:39:46.376 I will mention that the authors

NOTE Confidence: 0.776644770000001

00:39:46.376 --> 00:39:48.210 did also look at cortisol,

NOTE Confidence: 0.776644770000001

00:39:48.210 --> 00:39:49.870 epinephrine, an left in levels,

NOTE Confidence: 0.776644770000001

00:39:49.870 --> 00:39:51.525 but there was no significant

NOTE Confidence: 0.776644770000001

00:39:51.525 --> 00:39:53.180 changes detected in those levels.

NOTE Confidence: 0.78457415

00:39:55.520 --> 00:39:58.495 Here the authors show the reduction in

NOTE Confidence: 0.78457415

00:39:58.495 --> 00:40:00.429 sympathetic activity after CPAP use.

NOTE Confidence: 0.78457415

00:40:00.430 --> 00:40:02.878 Segments of ECG recordings at these
NOTE Confidence: 0.78457415

00:40:02.878 --> 00:40:04.908 four time points, dinner, bedtime,
NOTE Confidence: 0.78457415

00:40:04.908 --> 00:40:07.302 breakfast and lunch or uses markers
NOTE Confidence: 0.78457415

00:40:07.302 --> 00:40:08.995 of cardiac autonomic function
NOTE Confidence: 0.78457415

00:40:08.995 --> 00:40:11.467 before and after C PAP treatment.
NOTE Confidence: 0.78457415

00:40:11.470 --> 00:40:13.310 The authors used spectral analysis
NOTE Confidence: 0.78457415

00:40:13.310 --> 00:40:15.150 of heart rate variability to
NOTE Confidence: 0.78457415

00:40:15.212 --> 00:40:16.790 measure autonomic activity.
NOTE Confidence: 0.78457415

00:40:16.790 --> 00:40:19.046 Here, the high frequency HF means
NOTE Confidence: 0.78457415

00:40:19.046 --> 00:40:21.050 normalized high frequency band is
NOTE Confidence: 0.78457415

00:40:21.050 --> 00:40:23.225 essentially a surrogate for vagal
NOTE Confidence: 0.78457415

00:40:23.225 --> 00:40:24.965 activity or parasympathetic activity.
NOTE Confidence: 0.78457415

00:40:24.970 --> 00:40:27.130 Bagel activity appears increased faster.
NOTE Confidence: 0.78457415

00:40:27.130 --> 00:40:30.066 The past few years, as you see here,
NOTE Confidence: 0.78457415

00:40:30.070 --> 00:40:32.646 the LM is normalized low frequency band,
NOTE Confidence: 0.78457415

00:40:32.650 --> 00:40:34.485 which is essentially a marker

NOTE Confidence: 0.78457415

00:40:34.485 --> 00:40:35.586 for sympathetic activity,

NOTE Confidence: 0.78457415

00:40:35.590 --> 00:40:39.550 and you see that decrease after CPAP use.

NOTE Confidence: 0.78457415

00:40:39.550 --> 00:40:43.600 The last chart here the L F2 HF ratios

NOTE Confidence: 0.78457415

00:40:43.600 --> 00:40:46.307 essentially index of cardio symptom.

NOTE Confidence: 0.78457415

00:40:46.310 --> 00:40:50.174 They go activity and that is

NOTE Confidence: 0.78457415

00:40:50.174 --> 00:40:53.370 also reduced after CPAP use.

NOTE Confidence: 0.78457415

00:40:53.370 --> 00:40:54.008 So again,

NOTE Confidence: 0.78457415

00:40:54.008 --> 00:40:55.922 the pickle method this year is

NOTE Confidence: 0.78457415

00:40:55.922 --> 00:40:58.580 that pap therapy seems to reduce

NOTE Confidence: 0.78457415

00:40:58.580 --> 00:40:59.556 sympathetic activity.

NOTE Confidence: 0.8454247

00:41:02.680 --> 00:41:04.300 And this is the last study

NOTE Confidence: 0.8454247

00:41:04.300 --> 00:41:05.830 I will highlight because it

NOTE Confidence: 0.8454247

00:41:05.830 --> 00:41:07.398 addresses an interesting question.

NOTE Confidence: 0.8454247

00:41:07.400 --> 00:41:10.970 CLOSE PCOS treatment prevent OSA.

NOTE Confidence: 0.8454247

00:41:10.970 --> 00:41:13.178 In a longitudinal study with peer

NOTE Confidence: 0.8454247

00:41:13.178 --> 00:41:15.813 she data at baseline and at three
NOTE Confidence: 0.8454247

00:41:15.813 --> 00:41:17.985 years follow up in 15 adolescent
NOTE Confidence: 0.8454247

00:41:17.985 --> 00:41:20.531 females with PCOS treated for
NOTE Confidence: 0.8454247

00:41:20.531 --> 00:41:22.647 hyperandrogenism and insulin resistance.
NOTE Confidence: 0.8454247

00:41:22.650 --> 00:41:24.310 We see here that.
NOTE Confidence: 0.8218088

00:41:26.500 --> 00:41:29.272 At baseline or their, their weight
NOTE Confidence: 0.8218088

00:41:29.272 --> 00:41:32.199 has not changed after three years.
NOTE Confidence: 0.8218088

00:41:32.200 --> 00:41:33.478 With treatment plan,
NOTE Confidence: 0.8218088

00:41:33.478 --> 00:41:36.994 it stayed around 32 for BMI and just
NOTE Confidence: 0.8218088

00:41:36.994 --> 00:41:40.095 just to kind of review that the
NOTE Confidence: 0.8218088

00:41:40.095 --> 00:41:42.729 treatment looking farther into this
NOTE Confidence: 0.8218088

00:41:42.729 --> 00:41:45.499 study was actually not standardized.
NOTE Confidence: 0.8218088

00:41:45.500 --> 00:41:47.975 It included either a comprehensive
NOTE Confidence: 0.8218088

00:41:47.975 --> 00:41:50.450 lifestyle intervention that only about
NOTE Confidence: 0.8218088

00:41:50.526 --> 00:41:53.478 50% of the participants took part in
NOTE Confidence: 0.8218088

00:41:53.478 --> 00:41:56.730 an in a combination of medications.

NOTE Confidence: 0.8218088

00:41:56.730 --> 00:41:59.138 So I follow up three of the girls

NOTE Confidence: 0.8218088

00:41:59.138 --> 00:42:01.178 were not on any medications.

NOTE Confidence: 0.8218088

00:42:01.180 --> 00:42:02.616 Two were taking Ocps,

NOTE Confidence: 0.8218088

00:42:02.616 --> 00:42:05.157 eight were taking an anti androgen drug

NOTE Confidence: 0.8218088

00:42:05.157 --> 00:42:07.669 called Diane 35 and one was taking OCP.

NOTE Confidence: 0.8218088

00:42:07.670 --> 00:42:09.380 Plus metformin was taking Diane

NOTE Confidence: 0.8218088

00:42:09.380 --> 00:42:10.406 35 plus performance.

NOTE Confidence: 0.8218088

00:42:10.410 --> 00:42:12.434 So as you can tell there was a

NOTE Confidence: 0.8218088

00:42:12.434 --> 00:42:14.860 lot of variability into treatment.

NOTE Confidence: 0.8638948

00:42:17.530 --> 00:42:19.618 So you know I, I just want to

NOTE Confidence: 0.8638948

00:42:19.618 --> 00:42:21.680 point out here that the weight

NOTE Confidence: 0.8638948

00:42:21.680 --> 00:42:23.888 and BMI were maintained after all,

NOTE Confidence: 0.8638948

00:42:23.890 --> 00:42:26.116 as opposed to increase after three years.

NOTE Confidence: 0.8638948

00:42:26.120 --> 00:42:28.586 And this was attributed to having

NOTE Confidence: 0.8638948

00:42:28.586 --> 00:42:30.969 some form of treatment for PCOS.

NOTE Confidence: 0.8638948

00:42:30.970 --> 00:42:33.818 And we don't see a in a significant
NOTE Confidence: 0.8638948

00:42:33.818 --> 00:42:36.831 difference here in the markers of glucose
NOTE Confidence: 0.8638948

00:42:36.831 --> 00:42:39.061 fasting glucose or insulin resistance,
NOTE Confidence: 0.8638948

00:42:39.070 --> 00:42:42.679 but that's perhaps this is the fact that very
NOTE Confidence: 0.8638948

00:42:42.679 --> 00:42:46.198 few of these teenagers were on metformin.
NOTE Confidence: 0.8638948

00:42:46.200 --> 00:42:48.454 And then we do see a significant
NOTE Confidence: 0.8638948

00:42:48.454 --> 00:42:50.450 reduction in free androgen index,
NOTE Confidence: 0.8638948

00:42:50.450 --> 00:42:53.432 and that's likely because many of them
NOTE Confidence: 0.8638948

00:42:53.432 --> 00:42:56.978 were on an anti androgen medication.
NOTE Confidence: 0.8638948

00:42:56.980 --> 00:42:59.505 With treatment Ann the Adolescents
NOTE Confidence: 0.8638948

00:42:59.505 --> 00:43:03.230 with PCOS had no changes in their AHI,
NOTE Confidence: 0.8638948

00:43:03.230 --> 00:43:08.180 which was normal and less than one per hour.
NOTE Confidence: 0.8638948

00:43:08.180 --> 00:43:10.439 At three years follow up as you see here,
NOTE Confidence: 0.8638948

00:43:10.440 --> 00:43:13.026 along with the other sleep parameters.
NOTE Confidence: 0.8638948

00:43:13.030 --> 00:43:15.445 I bring up this study because it
NOTE Confidence: 0.8638948

00:43:15.445 --> 00:43:17.750 suggests that early treatment of PCOS,

NOTE Confidence: 0.8638948

00:43:17.750 --> 00:43:19.302 particularly treatment that achieves

NOTE Confidence: 0.8638948

00:43:19.302 --> 00:43:21.242 weight maintenance and a slight

NOTE Confidence: 0.8638948

00:43:21.242 --> 00:43:22.829 reduction in free androgen index,

NOTE Confidence: 0.8638948

00:43:22.830 --> 00:43:25.205 may potentially prevent or at

NOTE Confidence: 0.8638948

00:43:25.205 --> 00:43:28.073 least delay the development of OSA

NOTE Confidence: 0.8638948

00:43:28.073 --> 00:43:30.515 in an otherwise high risk group.

NOTE Confidence: 0.8638948

00:43:30.520 --> 00:43:31.555 Now, of course,

NOTE Confidence: 0.8638948

00:43:31.555 --> 00:43:33.280 this study has its weaknesses.

NOTE Confidence: 0.8638948

00:43:33.280 --> 00:43:35.010 It was a small study.

NOTE Confidence: 0.8638948

00:43:35.010 --> 00:43:36.730 The subjects were still quite

NOTE Confidence: 0.8638948

00:43:36.730 --> 00:43:38.106 young that follow up.

NOTE Confidence: 0.8638948

00:43:38.110 --> 00:43:39.490 There was no standardized

NOTE Confidence: 0.8638948

00:43:39.490 --> 00:43:40.870 treatment as I mentioned,

NOTE Confidence: 0.8638948

00:43:40.870 --> 00:43:42.940 and no comparative data on adolescents.

NOTE Confidence: 0.8638948

00:43:42.940 --> 00:43:43.630 Untreated PCOS.

NOTE Confidence: 0.77841204

00:43:46.070 --> 00:43:47.905 So finally back to our
NOTE Confidence: 0.77841204

00:43:47.905 --> 00:43:49.740 case for our patient SK.
NOTE Confidence: 0.77841204

00:43:49.740 --> 00:43:53.034 The 38 year old patient with PCOS and OSA.
NOTE Confidence: 0.77841204

00:43:53.040 --> 00:43:55.392 Our recommendations for her which are in
NOTE Confidence: 0.77841204

00:43:55.392 --> 00:43:57.809 this shape app with close monitoring.
NOTE Confidence: 0.77841204

00:43:57.810 --> 00:44:00.100 Aim for five to 10% weight
NOTE Confidence: 0.77841204

00:44:00.100 --> 00:44:01.450 reduction with referrals.
NOTE Confidence: 0.77841204

00:44:01.450 --> 00:44:02.800 Weight management clinic.
NOTE Confidence: 0.77841204

00:44:02.800 --> 00:44:04.774 We encourage the patient to re
NOTE Confidence: 0.77841204

00:44:04.774 --> 00:44:07.083 establish care for PCOS and discuss
NOTE Confidence: 0.77841204

00:44:07.083 --> 00:44:09.398 referral between an endocrinologist or
NOTE Confidence: 0.77841204

00:44:09.398 --> 00:44:11.734 a reproductive specialist and decided
NOTE Confidence: 0.77841204

00:44:11.734 --> 00:44:13.490 on reproductive specialist because
NOTE Confidence: 0.77841204

00:44:13.490 --> 00:44:15.652 of her preference achieve fertility.
NOTE Confidence: 0.77841204

00:44:15.652 --> 00:44:17.662 We also discussed potentially restarting
NOTE Confidence: 0.77841204

00:44:17.662 --> 00:44:20.229 metformin to assist with weight reduction,

NOTE Confidence: 0.77841204

00:44:20.230 --> 00:44:21.890 improve sense insulin sensitivity,

NOTE Confidence: 0.77841204

00:44:21.890 --> 00:44:24.380 and potentially restore her menstrual cycles.

NOTE Confidence: 0.8305148

00:44:26.720 --> 00:44:27.623 So in summary,

NOTE Confidence: 0.8305148

00:44:27.623 --> 00:44:29.730 here are the take home bullet points.

NOTE Confidence: 0.8305148

00:44:29.730 --> 00:44:32.160 OSA has a high prevalence of

NOTE Confidence: 0.8305148

00:44:32.160 --> 00:44:34.190 35% among women with PCOS,

NOTE Confidence: 0.8305148

00:44:34.190 --> 00:44:35.405 controlling for BMI.

NOTE Confidence: 0.8305148

00:44:35.410 --> 00:44:38.344 The risk of OSA is 5 to 10 fold

NOTE Confidence: 0.8305148

00:44:38.344 --> 00:44:40.699 higher in adults with PCOS

NOTE Confidence: 0.8305148

00:44:40.699 --> 00:44:43.129 compared to those without PCOS.

NOTE Confidence: 0.8305148

00:44:43.130 --> 00:44:46.364 *** hormones play a role in the

NOTE Confidence: 0.8305148

00:44:46.364 --> 00:44:48.569 pathogenesis of OSA in PCOS.

NOTE Confidence: 0.8305148

00:44:48.570 --> 00:44:50.730 Insulin resistance is a key feature

NOTE Confidence: 0.8305148

00:44:50.730 --> 00:44:53.010 in both of these conditions.

NOTE Confidence: 0.8305148

00:44:53.010 --> 00:44:54.630 Metformin may reduce BMI,

NOTE Confidence: 0.8305148

00:44:54.630 --> 00:44:55.440 insulin resistance,
NOTE Confidence: 0.8305148

00:44:55.440 --> 00:44:57.858 and net worth C PAP therapy,
NOTE Confidence: 0.8305148

00:44:57.860 --> 00:45:00.688 or oh for OSA in PCOS may
NOTE Confidence: 0.8305148

00:45:00.688 --> 00:45:01.900 reduce cardiometabolic risk.
NOTE Confidence: 0.8305148

00:45:01.900 --> 00:45:04.595 Early treatment of PCOS may
NOTE Confidence: 0.8305148

00:45:04.595 --> 00:45:07.770 reduce the risk of developing OSA.
NOTE Confidence: 0.8305148

00:45:07.770 --> 00:45:10.186 I want to end with the comment that
NOTE Confidence: 0.8305148

00:45:10.186 --> 00:45:11.822 resources only skimmed the surface
NOTE Confidence: 0.8305148

00:45:11.822 --> 00:45:14.069 on the link between PCOS and OSA.
NOTE Confidence: 0.8305148

00:45:14.070 --> 00:45:16.373 We still have much more to learn
NOTE Confidence: 0.8305148

00:45:16.373 --> 00:45:18.795 about the role of *** hormones in the
NOTE Confidence: 0.8305148

00:45:18.795 --> 00:45:20.685 pathogenesis of OSA into feel less.
NOTE Confidence: 0.8305148

00:45:20.690 --> 00:45:23.371 It will also be interesting to see
NOTE Confidence: 0.8305148

00:45:23.371 --> 00:45:24.956 more longitudinal data regarding
NOTE Confidence: 0.8305148

00:45:24.956 --> 00:45:27.134 the treatment of OSA cinepax in
NOTE Confidence: 0.8305148

00:45:27.134 --> 00:45:29.353 PCOS as well as the treatment

NOTE Confidence: 0.8305148

00:45:29.353 --> 00:45:31.118 of PCOS is impacting OSA.

NOTE Confidence: 0.8305148

00:45:31.120 --> 00:45:33.262 And so hopefully I have accomplished

NOTE Confidence: 0.8305148

00:45:33.262 --> 00:45:35.337 the learning objectives in this hour

NOTE Confidence: 0.8305148

00:45:35.337 --> 00:45:37.402 and thank you all for your attention.

NOTE Confidence: 0.8305148

00:45:37.410 --> 00:45:39.524 I also want to thank all of

NOTE Confidence: 0.8305148

00:45:39.524 --> 00:45:41.050 the Yale faculty members,

NOTE Confidence: 0.8305148

00:45:41.050 --> 00:45:42.046 particularly this doctors,

NOTE Confidence: 0.8305148

00:45:42.046 --> 00:45:42.710 Tobias Hilbert,

NOTE Confidence: 0.8305148

00:45:42.710 --> 00:45:45.146 and minor for giving me feedback on

NOTE Confidence: 0.8305148

00:45:45.146 --> 00:45:47.242 my presentation and for Doctor Motion

NOTE Confidence: 0.8305148

00:45:47.242 --> 00:45:49.990 and for supervising me on the case of SK.

NOTE Confidence: 0.8305148

00:45:49.990 --> 00:45:52.614 And I will leave you with this image

NOTE Confidence: 0.8305148

00:45:52.614 --> 00:45:54.955 to remind us about the balance of

NOTE Confidence: 0.8305148

00:45:54.955 --> 00:45:56.945 *** hormones or just bounds in

NOTE Confidence: 0.8305148

00:45:56.945 --> 00:45:58.991 general and open the floor for

NOTE Confidence: 0.8305148

00:45:58.991 --> 00:46:00.910 up for any questions. Thank you.

NOTE Confidence: 0.8476358

00:46:02.680 --> 00:46:05.025 Thank you man, that was excellent really.

NOTE Confidence: 0.8476358

00:46:05.030 --> 00:46:06.302 A wonderful, wonderful overview.

NOTE Confidence: 0.8476358

00:46:06.302 --> 00:46:08.906 So what I would love is if people

NOTE Confidence: 0.8476358

00:46:08.906 --> 00:46:10.496 would like to either unmute

NOTE Confidence: 0.8476358

00:46:10.496 --> 00:46:12.420 themselves and ask their questions,

NOTE Confidence: 0.8476358

00:46:12.420 --> 00:46:15.164 or feel free to put questions in the

NOTE Confidence: 0.8476358

00:46:15.164 --> 00:46:17.811 chat and I will read them so that

NOTE Confidence: 0.8476358

00:46:17.811 --> 00:46:20.820 we don't look at them so we have one

NOTE Confidence: 0.8476358

00:46:20.820 --> 00:46:23.172 question from one of our former fellows.

NOTE Confidence: 0.8476358

00:46:23.172 --> 00:46:24.180 A great talk.

NOTE Confidence: 0.8476358

00:46:24.180 --> 00:46:26.196 What is the timeline from developing

NOTE Confidence: 0.8476358

00:46:26.196 --> 00:46:28.220 PCOS to developing OSA? What do

NOTE Confidence: 0.8476358

00:46:28.220 --> 00:46:29.560 we know about them?

NOTE Confidence: 0.8476358

00:46:29.560 --> 00:46:30.900 That's a great question.

NOTE Confidence: 0.8476358

00:46:30.900 --> 00:46:33.937 So what we know is that. Typically,

NOTE Confidence: 0.8476358

00:46:33.937 --> 00:46:37.626 women who develop PCOS develop it earlier,

NOTE Confidence: 0.8476358

00:46:37.630 --> 00:46:41.854 typically soon after their men are key an.

NOTE Confidence: 0.8476358

00:46:41.860 --> 00:46:45.339 There is typically a lapse of years

NOTE Confidence: 0.8476358

00:46:45.339 --> 00:46:49.684 later in the studies I found many of

NOTE Confidence: 0.8476358

00:46:49.684 --> 00:46:53.469 the adolescent studies 3rd to show OSA,

NOTE Confidence: 0.8476358

00:46:53.470 --> 00:46:56.697 appear in the in the late teens

NOTE Confidence: 0.8476358

00:46:56.697 --> 00:46:59.995 early 20s and there is definitely

NOTE Confidence: 0.8476358

00:46:59.995 --> 00:47:03.613 also a component of obesity that.

NOTE Confidence: 0.8476358

00:47:03.620 --> 00:47:06.567 That of course, the heavier the women,

NOTE Confidence: 0.8476358

00:47:06.570 --> 00:47:09.377 the more likely to they are to

NOTE Confidence: 0.8476358

00:47:09.377 --> 00:47:12.876 have OSA at an earlier age in PCOS,

NOTE Confidence: 0.8476358

00:47:12.880 --> 00:47:15.400 but definitely at a younger age than

NOTE Confidence: 0.8476358

00:47:15.400 --> 00:47:18.359 compared to the general female population.

NOTE Confidence: 0.84743434

00:47:19.220 --> 00:47:20.045 Great thank you.

NOTE Confidence: 0.84743434

00:47:20.045 --> 00:47:21.695 Alright where we have a couple

NOTE Confidence: 0.84743434

00:47:21.695 --> 00:47:23.460 of outstanding presentations.
NOTE Confidence: 0.84743434

00:47:23.460 --> 00:47:26.475 Great talk so it's always nice to see those
NOTE Confidence: 0.84743434

00:47:26.475 --> 00:47:29.098 people don't feel free to ask questions.
NOTE Confidence: 0.84743434

00:47:29.100 --> 00:47:31.184 You know doctor too.
NOTE Confidence: 0.84743434

00:47:31.184 --> 00:47:33.789 I was really struck by.
NOTE Confidence: 0.84743434

00:47:33.790 --> 00:47:35.692 Sort of similar to the to
NOTE Confidence: 0.84743434

00:47:35.692 --> 00:47:36.643 your pregnancy data.
NOTE Confidence: 0.84743434

00:47:36.650 --> 00:47:38.240 When you when you serve,
NOTE Confidence: 0.84743434

00:47:38.240 --> 00:47:40.148 aid OB GY and practitioners here,
NOTE Confidence: 0.84743434

00:47:40.150 --> 00:47:42.250 you know you presented that data
NOTE Confidence: 0.84743434

00:47:42.250 --> 00:47:44.264 about practitioners who take care of
NOTE Confidence: 0.84743434

00:47:44.264 --> 00:47:46.182 these women with PCOS all the time,
NOTE Confidence: 0.84743434

00:47:46.190 --> 00:47:48.092 but their referral rates for sleep
NOTE Confidence: 0.84743434

00:47:48.092 --> 00:47:49.686 evaluations seem right, extraordinary low.
NOTE Confidence: 0.84743434

00:47:49.686 --> 00:47:52.870 And so how do we? How do we change that?
NOTE Confidence: 0.84743434

00:47:52.870 --> 00:47:54.138 Like what would you?

NOTE Confidence: 0.84743434

00:47:54.138 --> 00:47:55.406 What would you suggest?

NOTE Confidence: 0.83638996

00:47:56.130 --> 00:47:59.770 Yeah, that's it. This is a great question,

NOTE Confidence: 0.83638996

00:47:59.770 --> 00:48:02.738 so I think a large factor in that

NOTE Confidence: 0.83638996

00:48:02.738 --> 00:48:06.413 is the lack of awareness of the the

NOTE Confidence: 0.83638996

00:48:06.413 --> 00:48:09.330 link between these two disorders,

NOTE Confidence: 0.83638996

00:48:09.330 --> 00:48:11.600 especially the lack of awareness.

NOTE Confidence: 0.83638996

00:48:11.600 --> 00:48:14.832 How early on in life that OSA may

NOTE Confidence: 0.83638996

00:48:14.832 --> 00:48:18.649 present in in these young out in the

NOTE Confidence: 0.83638996

00:48:18.649 --> 00:48:21.610 adolescents and young women with PCOS.

NOTE Confidence: 0.83638996

00:48:21.610 --> 00:48:25.273 So I think you know, to counteract that,

NOTE Confidence: 0.83638996

00:48:25.273 --> 00:48:27.117 I educational outreach too.

NOTE Confidence: 0.83638996

00:48:27.120 --> 00:48:29.345 You know, having collaboration between

NOTE Confidence: 0.83638996

00:48:29.345 --> 00:48:31.570 the sleep providers and endocrinologist,

NOTE Confidence: 0.83638996

00:48:31.570 --> 00:48:33.800 the reproductive specialist is key.

NOTE Confidence: 0.83638996

00:48:33.800 --> 00:48:36.576 Really an an as I found out from

NOTE Confidence: 0.83638996

00:48:36.576 --> 00:48:39.789 also just reaching out to the OBGYN
NOTE Confidence: 0.83638996

00:48:39.789 --> 00:48:43.140 practitioners on my research with pregnancy.
NOTE Confidence: 0.83638996

00:48:43.140 --> 00:48:47.145 A lot of them were very open and willing to,
NOTE Confidence: 0.83638996

00:48:47.150 --> 00:48:50.258 you know, attend any future you know.
NOTE Confidence: 0.83638996

00:48:50.260 --> 00:48:52.520 Educational session on just learning
NOTE Confidence: 0.83638996

00:48:52.520 --> 00:48:55.160 about how to screen for OSA.
NOTE Confidence: 0.83638996

00:48:55.160 --> 00:48:58.106 What symptoms to look for an?
NOTE Confidence: 0.83638996

00:48:58.110 --> 00:49:00.766 And you know what the treatment benefits are.
NOTE Confidence: 0.83638996

00:49:00.770 --> 00:49:02.440 They do want to know,
NOTE Confidence: 0.83638996

00:49:02.440 --> 00:49:04.100 and they're very interested in
NOTE Confidence: 0.83638996

00:49:04.100 --> 00:49:05.096 any educational opportunities.
NOTE Confidence: 0.83638996

00:49:05.100 --> 00:49:05.768 Terrific, right?
NOTE Confidence: 0.83638996

00:49:05.768 --> 00:49:06.770 So it sounds
NOTE Confidence: 0.8418776

00:49:06.770 --> 00:49:09.731 like it's really up to us as the sleep
NOTE Confidence: 0.8418776

00:49:09.731 --> 00:49:11.830 practitioners to really help educate and
NOTE Confidence: 0.8418776

00:49:11.830 --> 00:49:14.429 really teach them what they need to know.

NOTE Confidence: 0.8418776

00:49:14.430 --> 00:49:16.428 So that's terrific. Let me see.

NOTE Confidence: 0.8418776

00:49:16.430 --> 00:49:20.006 I'm just saying, oh, go ahead.

NOTE Confidence: 0.8418776

00:49:20.010 --> 00:49:22.313 Ivan, that was a wonderful twice really

NOTE Confidence: 0.8418776

00:49:22.313 --> 00:49:25.020 putting it all together nicely with the

NOTE Confidence: 0.8418776

00:49:25.020 --> 00:49:27.504 scientific background and all the clinical.

NOTE Confidence: 0.8418776

00:49:27.510 --> 00:49:32.016 So as you all heard is there is a wide open.

NOTE Confidence: 0.8418776

00:49:32.016 --> 00:49:33.302 Field at investigate.

NOTE Confidence: 0.8418776

00:49:33.302 --> 00:49:35.110 They buy directional relationship between

NOTE Confidence: 0.8418776

00:49:35.110 --> 00:49:37.948 this year's and OSA and and I'm sure

NOTE Confidence: 0.8418776

00:49:37.948 --> 00:49:40.882 it's going to make a huge impact if

NOTE Confidence: 0.8418776

00:49:40.882 --> 00:49:43.518 you have better understanding of the.

NOTE Confidence: 0.8418776

00:49:43.518 --> 00:49:46.098 Hormonal variations within PCOS population.

NOTE Confidence: 0.8418776

00:49:46.100 --> 00:49:49.468 Some of them may not have an actual

NOTE Confidence: 0.8418776

00:49:49.468 --> 00:49:51.839 increase in androgen levels,

NOTE Confidence: 0.8418776

00:49:51.840 --> 00:49:55.196 so trying to dissect out who are

NOTE Confidence: 0.8418776

00:49:55.196 --> 00:49:57.590 within that PCOS group actually
NOTE Confidence: 0.8418776

00:49:57.590 --> 00:50:00.461 at higher risk of developing OSA
NOTE Confidence: 0.8418776

00:50:00.461 --> 00:50:02.954 or an or metabolic syndrome.
NOTE Confidence: 0.8418776

00:50:02.954 --> 00:50:05.824 So maybe either current fellows
NOTE Confidence: 0.8418776

00:50:05.824 --> 00:50:08.593 or future fellows can actually
NOTE Confidence: 0.8418776

00:50:08.593 --> 00:50:11.959 get into this and do a kind of a
NOTE Confidence: 0.78594595

00:50:11.960 --> 00:50:13.400 translational and clinical
NOTE Confidence: 0.78594595

00:50:13.400 --> 00:50:14.840 correlation type of
NOTE Confidence: 0.79259943

00:50:14.840 --> 00:50:17.225 research. So it's going to be
NOTE Confidence: 0.79259943

00:50:17.225 --> 00:50:19.390 very fruitful, kind of the area
NOTE Confidence: 0.7942628

00:50:19.390 --> 00:50:20.838 to investigate absolutely absolutely.
NOTE Confidence: 0.7942628

00:50:20.838 --> 00:50:22.564 Yeah, the what we know.
NOTE Confidence: 0.7942628

00:50:22.564 --> 00:50:25.530 As I've mentioned in one of the slides,
NOTE Confidence: 0.7942628

00:50:25.530 --> 00:50:27.960 is that a lot of the data we know
NOTE Confidence: 0.7942628

00:50:27.960 --> 00:50:30.917 on the effect hormones role in PCOS
NOTE Confidence: 0.7942628

00:50:30.917 --> 00:50:33.110 and OSA development comes from,

NOTE Confidence: 0.7942628

00:50:33.110 --> 00:50:35.276 you know, studies looking at normal

NOTE Confidence: 0.7942628

00:50:35.276 --> 00:50:37.082 women's luteal phase, pregnant women.

NOTE Confidence: 0.7942628

00:50:37.082 --> 00:50:39.611 And so a lot of this. This.

NOTE Confidence: 0.7942628

00:50:39.611 --> 00:50:42.499 This is still not hashed out in PCOS.

NOTE Confidence: 0.7942628

00:50:42.500 --> 00:50:43.992 So I think really,

NOTE Confidence: 0.7942628

00:50:43.992 --> 00:50:46.607 diving in and looking at the role

NOTE Confidence: 0.7942628

00:50:46.607 --> 00:50:48.270 of *** hormones is important.

NOTE Confidence: 0.8081322

00:50:50.790 --> 00:50:52.595 Terrific so we have another

NOTE Confidence: 0.8081322

00:50:52.595 --> 00:50:54.400 question and this again revolves

NOTE Confidence: 0.8081322

00:50:54.461 --> 00:50:56.555 around treatment and you know this

NOTE Confidence: 0.8081322

00:50:56.555 --> 00:50:58.965 seems like limited data on C Pap's

NOTE Confidence: 0.8081322

00:50:58.965 --> 00:51:00.873 obviously to Doctor Most means point

NOTE Confidence: 0.8081322

00:51:00.873 --> 00:51:02.504 right areas fruitful for research.

NOTE Confidence: 0.8081322

00:51:02.504 --> 00:51:04.880 But a question of have you come

NOTE Confidence: 0.8081322

00:51:04.880 --> 00:51:06.685 across any information about the

NOTE Confidence: 0.8081322

00:51:06.685 --> 00:51:08.490 role of surgical weight loss?
NOTE Confidence: 0.8081322

00:51:08.490 --> 00:51:11.258 For for individuals who have PCOS and OSA?
NOTE Confidence: 0.8136157

00:51:11.990 --> 00:51:15.190 Yes, so the current recommendations
NOTE Confidence: 0.8136157

00:51:15.190 --> 00:51:19.039 in terms of surgical weight loss
NOTE Confidence: 0.8136157

00:51:19.039 --> 00:51:21.779 from the International Society on
NOTE Confidence: 0.8136157

00:51:21.779 --> 00:51:26.109 PCOS is is kind of it's conditional.
NOTE Confidence: 0.8136157

00:51:26.110 --> 00:51:29.584 There is not enough evidence to
NOTE Confidence: 0.8136157

00:51:29.584 --> 00:51:32.543 show that even bariatric surgery
NOTE Confidence: 0.8136157

00:51:32.543 --> 00:51:35.765 in PCOS is a strong recommendation
NOTE Confidence: 0.8136157

00:51:35.765 --> 00:51:39.212 or even a definitive potential
NOTE Confidence: 0.8136157

00:51:39.212 --> 00:51:42.660 definitive treatment for the.
NOTE Confidence: 0.8136157

00:51:42.660 --> 00:51:44.732 Hormonal imbalance or insulin
NOTE Confidence: 0.8136157

00:51:44.732 --> 00:51:47.840 resistance so they they are very,
NOTE Confidence: 0.8136157

00:51:47.840 --> 00:51:51.430 very cautious in that particular
NOTE Confidence: 0.8136157

00:51:51.430 --> 00:51:54.302 recommendation and also especially
NOTE Confidence: 0.8136157

00:51:54.302 --> 00:51:58.504 that a lot of these are young women so.

NOTE Confidence: 0.8136157

00:51:58.510 --> 00:51:59.544 And obviously,

NOTE Confidence: 0.8136157

00:51:59.544 --> 00:52:02.129 the weight comprehensive weight loss

NOTE Confidence: 0.8136157

00:52:02.129 --> 00:52:05.090 program is the initial approach.

NOTE Confidence: 0.8136157

00:52:05.090 --> 00:52:06.974 With these young women,

NOTE Confidence: 0.8136157

00:52:06.974 --> 00:52:10.567 and certainly I have not come over

NOTE Confidence: 0.8136157

00:52:10.567 --> 00:52:13.259 across any evidence regarding

NOTE Confidence: 0.8136157

00:52:13.259 --> 00:52:14.605 bariatric surgery.

NOTE Confidence: 0.8136157

00:52:14.610 --> 00:52:17.410 For these two conditions combined.

NOTE Confidence: 0.86588

00:52:18.420 --> 00:52:20.110 Great thank you. Thank you.

NOTE Confidence: 0.86588

00:52:20.110 --> 00:52:22.792 Alright so I think we have a few more

NOTE Confidence: 0.86588

00:52:22.792 --> 00:52:25.014 minutes or maybe one more minute

NOTE Confidence: 0.86588

00:52:25.014 --> 00:52:26.869 if anyone has another question.

NOTE Confidence: 0.86588

00:52:26.870 --> 00:52:28.560 Ann wants to unmute themselves.

NOTE Confidence: 0.86588

00:52:28.560 --> 00:52:31.080 I know we have a conference at three

NOTE Confidence: 0.86588

00:52:31.080 --> 00:52:33.871 so I I'm mindful of. Yeah, I yeah,

NOTE Confidence: 0.86588

00:52:33.871 --> 00:52:36.670 I'd like to make a very quick comment.
NOTE Confidence: 0.86588

00:52:36.670 --> 00:52:39.703 Several years ago when I was still in Canada,
NOTE Confidence: 0.86588

00:52:39.710 --> 00:52:42.536 I had a bunch of patients with PCOS and
NOTE Confidence: 0.86588

00:52:42.536 --> 00:52:45.546 there was only at the time there was only
NOTE Confidence: 0.86588

00:52:45.546 --> 00:52:48.159 one article about it in the literature,
NOTE Confidence: 0.86588

00:52:48.160 --> 00:52:50.170 so I submitted my series.
NOTE Confidence: 0.86588

00:52:50.170 --> 00:52:52.956 To this Journal to the main Journal
NOTE Confidence: 0.86588

00:52:52.956 --> 00:52:55.261 of obstetrics and gynecology and
NOTE Confidence: 0.86588

00:52:55.261 --> 00:52:57.836 I got an instantaneous rejection.
NOTE Confidence: 0.86588

00:52:57.840 --> 00:53:00.437 And the and the rejection letter said.
NOTE Confidence: 0.86588

00:53:00.440 --> 00:53:02.290 And this is a paraphrase.
NOTE Confidence: 0.86588

00:53:02.290 --> 00:53:04.887 Our readers have no interest in sleep.
NOTE Confidence: 0.86588

00:53:04.890 --> 00:53:07.488 I mean, this is like so, anyway,
NOTE Confidence: 0.86588

00:53:07.488 --> 00:53:11.569 so I thought I I sort of throw that in that,
NOTE Confidence: 0.86588

00:53:11.570 --> 00:53:14.648 and I think we might still be in that
NOTE Confidence: 0.86588

00:53:14.648 --> 00:53:16.727 situation because, as you mentioned,

NOTE Confidence: 0.86588

00:53:16.727 --> 00:53:18.881 Janet, we're not getting a whole

NOTE Confidence: 0.86588

00:53:18.881 --> 00:53:20.838 lot of referrals from from,

NOTE Confidence: 0.86588

00:53:20.840 --> 00:53:23.320 you know, from the gynecologists.

NOTE Confidence: 0.86588

00:53:23.320 --> 00:53:24.178 Right, right I.

NOTE Confidence: 0.86588

00:53:24.178 --> 00:53:25.036 But you know,

NOTE Confidence: 0.86588

00:53:25.040 --> 00:53:26.180 as Doctor Chu mentioned,

NOTE Confidence: 0.86588

00:53:26.180 --> 00:53:26.750 you know,

NOTE Confidence: 0.86588

00:53:26.750 --> 00:53:28.268 I think that when we approached

NOTE Confidence: 0.86588

00:53:28.268 --> 00:53:30.236 them an ask them questions about why

NOTE Confidence: 0.86588

00:53:30.236 --> 00:53:32.336 aren't you screening and what are the

NOTE Confidence: 0.86588

00:53:32.396 --> 00:53:34.190 barriers at its lack of knowledge.

NOTE Confidence: 0.86588

00:53:34.190 --> 00:53:34.720 And yes,

NOTE Confidence: 0.86588

00:53:34.720 --> 00:53:36.310 they are actually interested in learning

NOTE Confidence: 0.86588

00:53:36.310 --> 00:53:37.910 so hopefully hopefully we've evolved.

NOTE Confidence: 0.86588

00:53:37.910 --> 00:53:38.844 You know,

NOTE Confidence: 0.86588

00:53:38.844 --> 00:53:41.646 since you got that rejection letter.
NOTE Confidence: 0.86588

00:53:41.650 --> 00:53:43.757 So alright, well I would like to
NOTE Confidence: 0.86588

00:53:43.757 --> 00:53:45.650 thank everybody for their attention,
NOTE Confidence: 0.86588

00:53:45.650 --> 00:53:46.625 specifically Doctor Chu.
NOTE Confidence: 0.86588

00:53:46.625 --> 00:53:48.575 This was outstanding and everyone for
NOTE Confidence: 0.86588

00:53:48.575 --> 00:53:50.307 your comments and your questions.
NOTE Confidence: 0.86588

00:53:50.310 --> 00:53:52.966 I think we will adjourn at this point,
NOTE Confidence: 0.86588

00:53:52.970 --> 00:53:55.636 so thanks everyone. Have a great thank you.
NOTE Confidence: 0.86588

00:53:55.636 --> 00:53:57.302 Bye bye great talk, Ivan.
NOTE Confidence: 0.86588

00:53:57.302 --> 00:53:59.294 Great talk. Thank you so much.
NOTE Confidence: 0.86588

00:53:59.300 --> 00:53:59.630 Thank
NOTE Confidence: 0.83139217

00:53:59.630 --> 00:54:01.628 you thank you, thank you everyone.