APNEA OBSTRUCTIVA DEL SUEÑO

Trastornos Respiratorios del Sueño

Trastornos de Apnea Obstructiva del Sueño (AOS)
- AOS en Adultos (G47.33)
- AOS en Niños (G47.33)

Síndromes de Apnea Central del Sueño (ACS)
- ACS con Respiración de Cheyne-Stokes (R06.3)
- ACS sin Respiración de Cheyne-Stokes (R47.37)
- ACS con Respiración Periódica debida a Altitud (G47.32)
- ACS por Medicamentos o Sustancias (G47.39)
- ACS Primaria (G47.31)
- ACS de la Infancia (P28.3)
- ACS del Prematuro (P28.4)
- ACS Emergente al Tratamiento (G47.39)

Trastornos de Hipoventilación relacionados al sueño
- Síndrome de Hipoventilación por Obesidad (E66.2)
- Síndrome de Hipoventilacion Alveolar Central Congénita (G47.35)
- Hipoventilación Central de Inicio Tardío con Disfunción Hipotalámica (G47.36)
- Hipoventilación Central Idiopática (G47.34)
- Hipoventilación Asociada a Sueño por Medicamentos o Sustancias (G47.36)
- Hipoventilación Asociada a Sueño por Trastornos Médicos (G47.36)

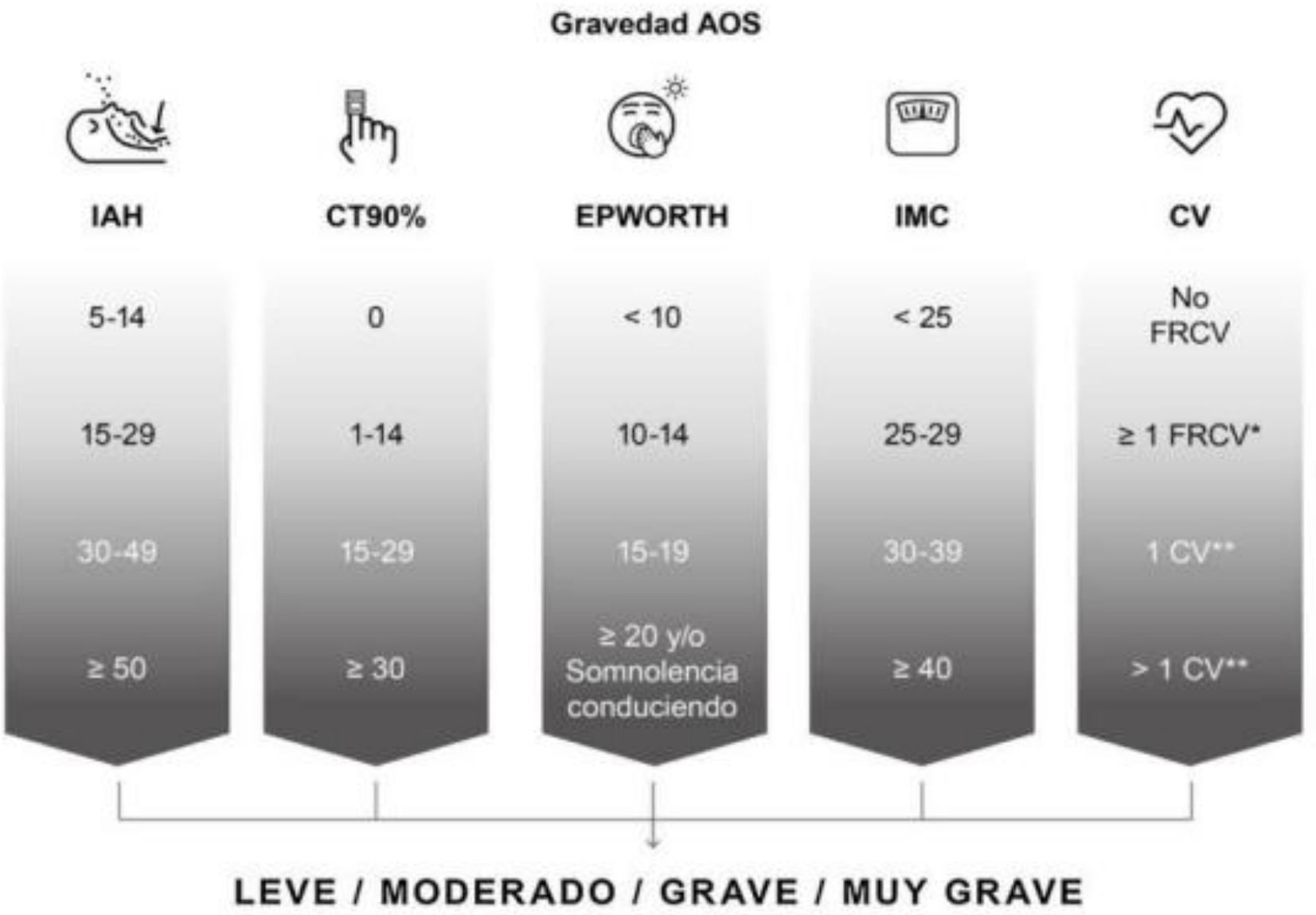
Trastornos de Hipoxemia Asociados al Sueño
- Hipoxemia Asociada al Sueño (G47.36)

Síntomas Aislados y Variantes Normales
- Ronquido (R06.83)
- Catatrenia

Academia Americana de Medicina del Sueño (AASM)	Documento Internacional de Consenso (DIC)
IAH ≥ 5/h asociado al menos a uno de los siguientes: 1. Excesiva somnolencia diurna, sueño no reparador, fatiga o insomnio 2. Despertares por cese de la respiración, sensación de ahogo o asfixia 3. El compañero de cama u otro observador refiere ronquido habitual , pausas de apnea o ambos 4. El paciente ha sido diagnosticado de hipertensión arterial, trastorno del estado de ánimo, disfunción cognitiva, enfermedad coronaria, enfermedad cerebro vascular, insuficiencia cardiaca congestiva, fibrilación auricular o diabetes mellitus tipo 2	IAH ≥ 5/h acompañado de uno o más de los siguientes factores no justificables por otras causas: 1. Excesiva somnolencia diurna 2. Sueño no reparador 3. Cansancio excesivo 4. Deterioro de la calidad de vida relacionada con el sueño
IAH ≥ 15/h independientemente de la sintomatología	AH ≥ 15/h, con predominio de eventos obstructivos

J Clin Sleep Med. 2009; 5: 263-76

Arch Bronconeumol 2022;58:52–68



*FRCV: HTA, DM2 o DLP
**CV: CI, arritmia, EVC o ICC

Arch Bronconeumol 2022;58:52–68

Signos y Síntomas de la Apnea del Sueño


Ronquidos intensos y persistentes


Cefaleas matutinas


Pausas respiratorias presenciadas


Somnolencia diurna


Asfixias o Jadeos


Disminución en la Concentración


Sueño no reparador


Irritabilidad


Frecuentes idas al baño


Dormir en actividades rutinarias

Nocturnos

Diurnos

Depresión

Ansiedad

Insomnio

Cefalea

Cansancio

Nicturia

Pesadillas

Alteraciones cognitivas

Ansiedad

Insomnio

Caídas

AASM American Academy of SLEEP MEDICINE

Screening anual en →

Insuficiencia cardiaca
Hipertension arterial
Fibrilacion auricular
Hipertension arterial refractaria
Diabetes tipo 2
Accidentes cerebrovasculares

Prevalencia de SHO

Pcte Nro	Fecha

Iniciales…… **Edad**:…… **Cel.**……

Peso:…… **Talla:**…… **Escolaridad:** 1aria (….) 2aria (…..) 3aria (…..) **Profesión u Oficio**……

Cuestionario STOP-BANG

S- Snoring (ronquidos)

Usted Ronca Fuerte ? → SI NO

T- Tiredness (fatiga)

Usted se siente cansado/somnoliento durante el dia? → SI NO

O- Observed (observacion)

Alguien observó que deja de respirar cuando duerme? → SI NO

P- Blood Pressure (presion arterial)

Ud Tiene Presion Alta? → SI NO

B- BMI (IMC)

Indice de masa corpórea > 35 ? → SI NO

A- Age (edad)

Edad > 50 años → SI NO

N- Neck (cuello)

Circunferencia del cuello > 40cm → SI NO

G- Gender (género)

Sexo Masculino → SI NO

Escala de Disnea de mMRC

Solo siente falta de aire con una actividad muy intensa o ejercicio muy intenso.	0
Siente falta de aire al caminar rápido o al subir una arribada.	1
Siente falta de aire al caminar normalmente y tengo que disminuir o parar DESPUES DE 100 mts.	2
Siento falta de aire al caminar, teniendo que parar ANTES DE 100 mts o a minutos de haber caminado.	3
Siento demasiada falta de aire para salir de casa o ya al vestirme o bañarme.	4

Rinitis

Rinorrea	Si	No
Congestión Nasal	Si	No
Estornudos	Si	No
Pica la nariz	Si	No
Cornetes pálidos	Si	No
Cornetes hipertrof	Si	No

IMC:…… **Ø Cuello:**……

$Sat_{puls}O2$……

Gasometría ARTERIAL

pH_a……p_aO_2……

p_aCO_2……$_aHCO_3$……

Sat_aO_2……

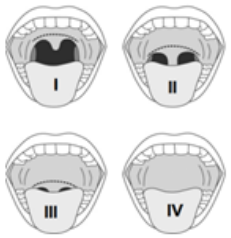
Gasometría VENOSA

pH_v……p_vO_2……

p_vCO_2……$_vHCO_3$……

Sat_vO_2……

Mallampati



Brodsky **N/E**

Riesgo **Bajo** SAHOS: Sí en 0-2 preguntas ☐

Riesgo **Intermedio** SAHOS: Sí en 3-4 preguntas ☐

Riesgo **Alto** SAHOS: Sí en 5-8 preguntas o ☐

Sí ≥ 2 preguntas STOP + sexo masculino o ☐

Sí ≥ 2 preguntas STOP +BMI>35 kg/m^2 o ☐

Sí ≥ 2 preguntas STOP + Ø cuello 43 (masc) o 41 (fem) ☐

IMC 35-39 ☐

IMC 40-45 ☐

IMC ≥ 46 ☐

HCO_3 26-28 ☐

HCO_3 ≥ 29 ☐

Espirometría preBD

CVF:……(……%)

VEF_1……(……%)

Tasa:……

Espirometría posBD

CVF:……(……%)

VEF_1……(……%)

Tasa:……

NCT
Neumología y Cirugía de Tórax
INER
Neumol Cir Torax Enero-marzo 2019 Vol. 78 - Núm. 1:65-108


González F


González M


Cristaldo N


Cáceres T


Báez A


Centurión C


Castro A


Galeano J


Cáceres R


Cuevas L


Fernández G


Guccione A

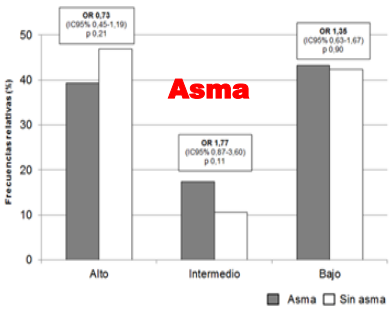

Bentos R


Cuenca E

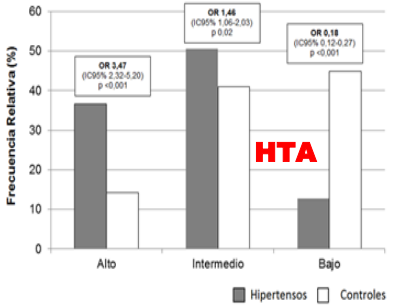

Ruiz A

Riesgo para Apnea de Sueño en diferentes grupos (Paraguay)

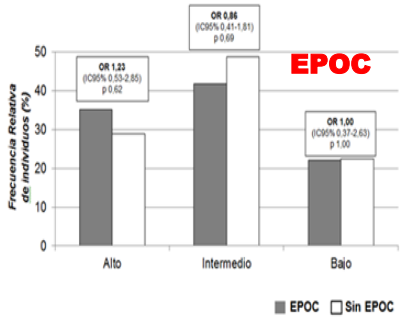
Riesgo estimado para apnea de sueño mediante cuestionario STOP-BANG en grupos de individuos con (n=132) y sin asma bronquial (n=132).



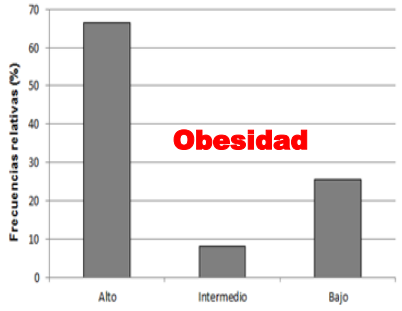
Riesgo estimado para apnea de sueño mediante cuestionario STOP-BANG en grupo de individuos con hipertensión arterial (n=295) y controles (n=295)



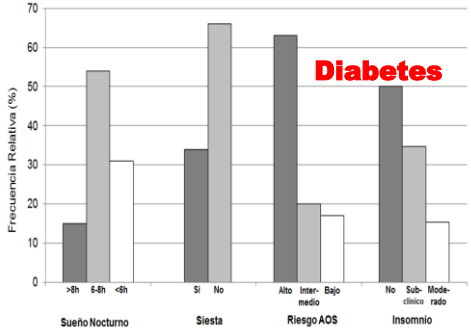
Riesgo estimado para apnea de sueño mediante cuestionario STOP-BANG en grupos de individuos con (n=45) y sin EPOC (n=45).



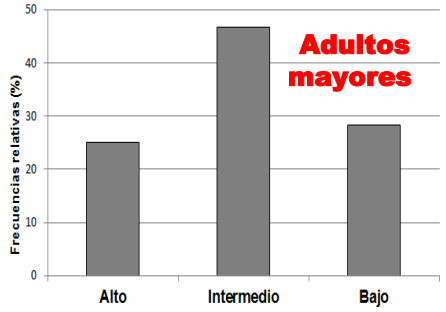
Riesgo estimado para apnea de sueño mediante cuestionario STOP –BANG en pacientes con obesidad candidatos a cirugía bariátrica (n=113)

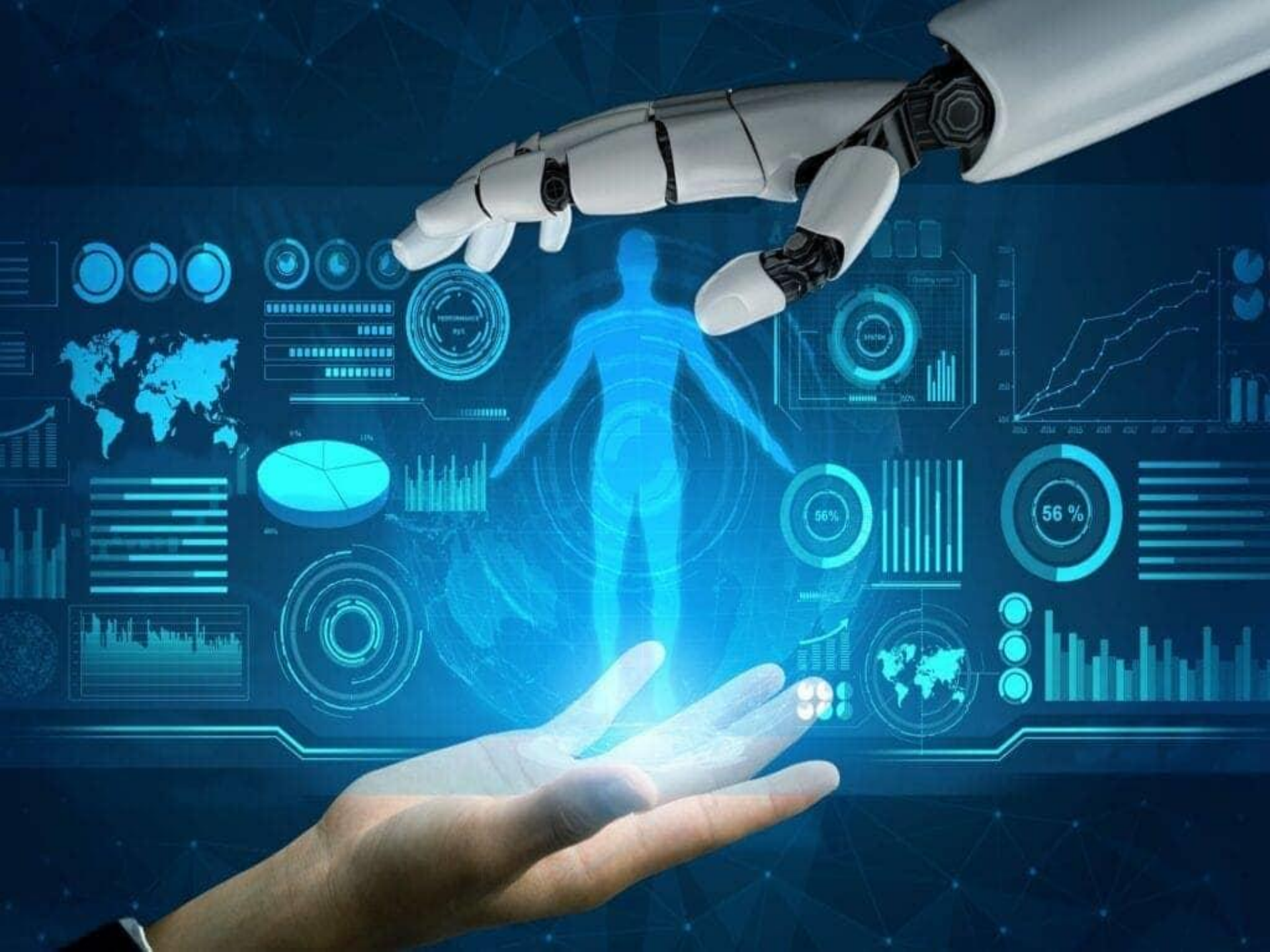


Duración de sueño nocturno, siesta, riesgo para apnea obstructiva (STOP-BANG) e insomnio (ISI) en adultos con diabetes mellitus en el Hospital General de Luque (n= 170)



Riesgo estimado para apnea de sueño mediante cuestionario STOP –BANG en adultos mayores(n= 244)




56%
56 %

Portable Recording in the Assessment of Obstructive Sleep Apnea

ASDA Standards of Practice

Sleep **1994**; *17(4):378-392*

Clinical Guidelines for the Use of Unattended Portable Monitors in the Diagnosis of Obstructive Sleep Apnea in Adult Patients

Portable Monitoring Task Force of the American Academy of Sleep Medicine

J Clin Sleep Med **2007**;*3(7):737-747*

Clinical Practice Guideline for Diagnostic Testing for Adult Obstructive Sleep Apnea: An American Academy of Sleep Medicine Clinical Practice Guideline

J Clin Sleep Med **2017**; *13 (3):479-507*

Consumer Sleep Technology: An American Academy of Sleep Medicine Position Statement

J Clin Sleep Med. **2018**;*14(5):877–880.*

Portable Recording in the Assessment of Obstructive Sleep Apnea

ASDA Standards of Practice

Sleep **1994**; 17(4):378-392

I- Polisomnografia (PSG)
II- PSG No-supervisada
III- Poligrafía Domiciliar (HSAT)
IV- Monitores 1-2 canales ✗

Clinical Guidelines for the Use of Unattended Portable Monitors in the Diagnosis of Obstructive Sleep Apnea in Adult Patients

Portable Monitoring Task Force of the American Academy of Sleep Medicine

J Clin Sleep Med **2007**;3(7):737-747

Poligrafía Domiciliar = PSG

Clinical Practice Guideline for Diagnostic Testing for Adult Obstructive Sleep Apnea: An American Academy of Sleep Medicine Clinical Practice Guideline

J Clin Sleep Med **2017**; 13 (3):479-507

PSG restringida

Consumer Sleep Technology: An American Academy of Sleep Medicine Position Statement

J Clin Sleep Med. **2018**;14(5):877–880.

Tecnologías de consumo
o
«Wereables»

Indicaciones de Polisomnografia (PSG)

Resultados negativos o indeterminados con Poligrafia Respiratoria (HSAT)

Niños o adolescentes (<18 años)

Individuos con comorbilidades:

EPOC c/ VEF_1 < 60%

ICC NYHA III o IV

IMC >50

Sx Hipoventilacion por Obesidad

Epilepsias nocturnas

Enfs NM progresivas o Transt. Neurodegenerativos
(Secuela ACV, Parkinson, ELA, Distrofia multiple, EM c/ enf pulmonar)

Otros transtornos del sueño

Sindrome de Piernas Inquietas

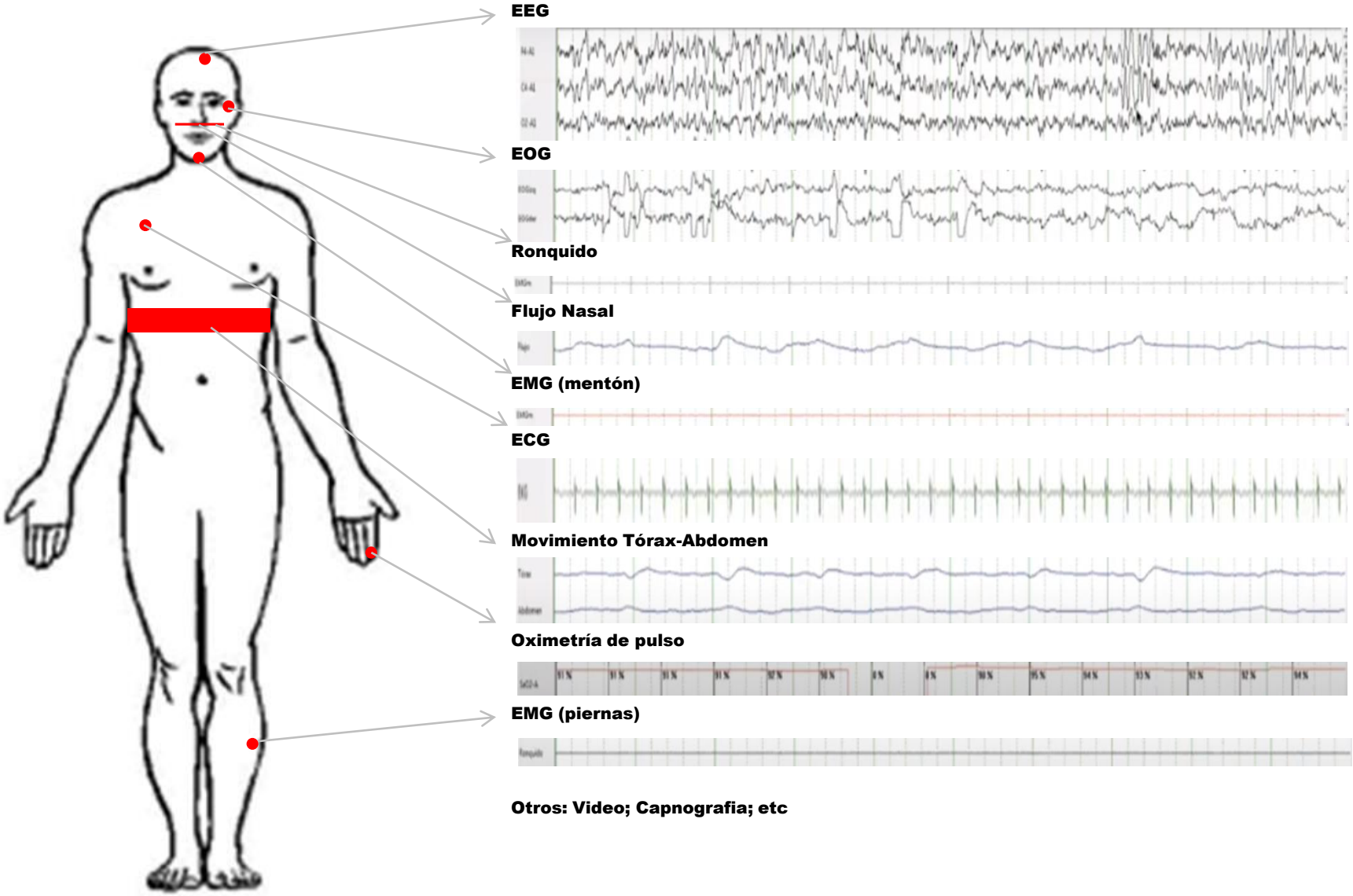
Transtornos de Movimientos Periodicos de Piernas

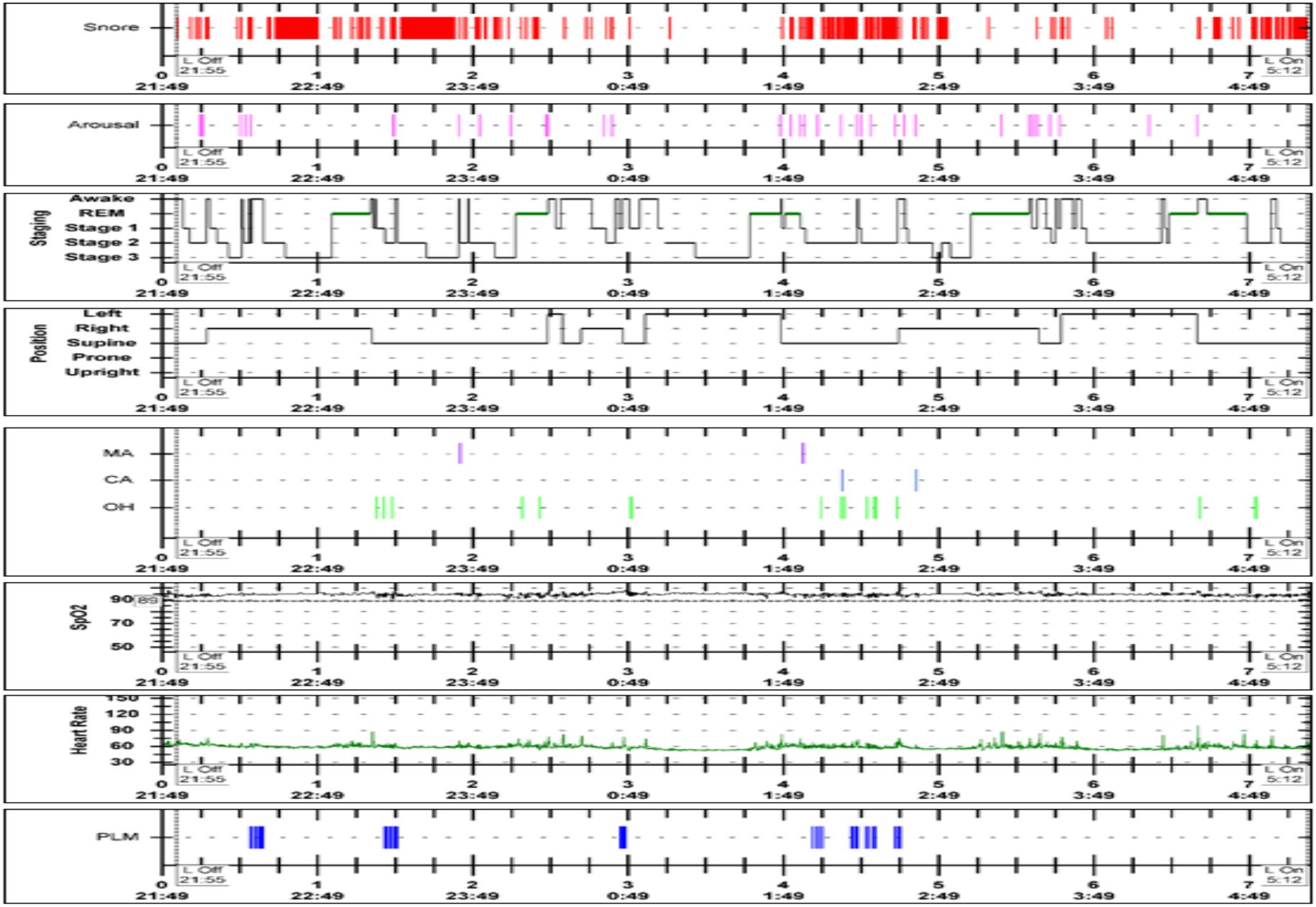
Parasomnias con conducta injuriosa durante sueño

Narcolepsia

United Healthcare

Polisomnografia (PSG)




Snore
Arousal
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Stage 1
Stage 2
Stage 3
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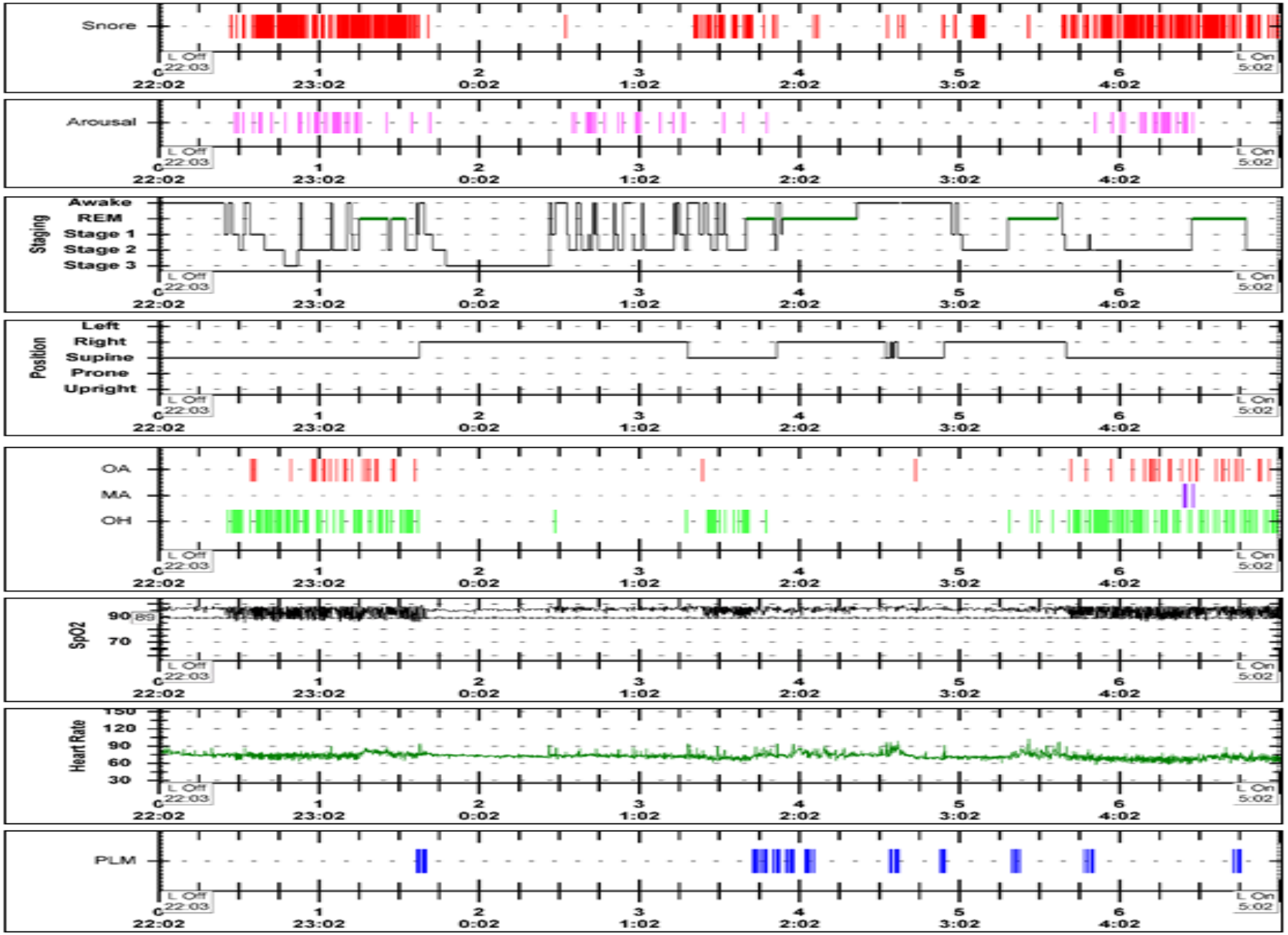
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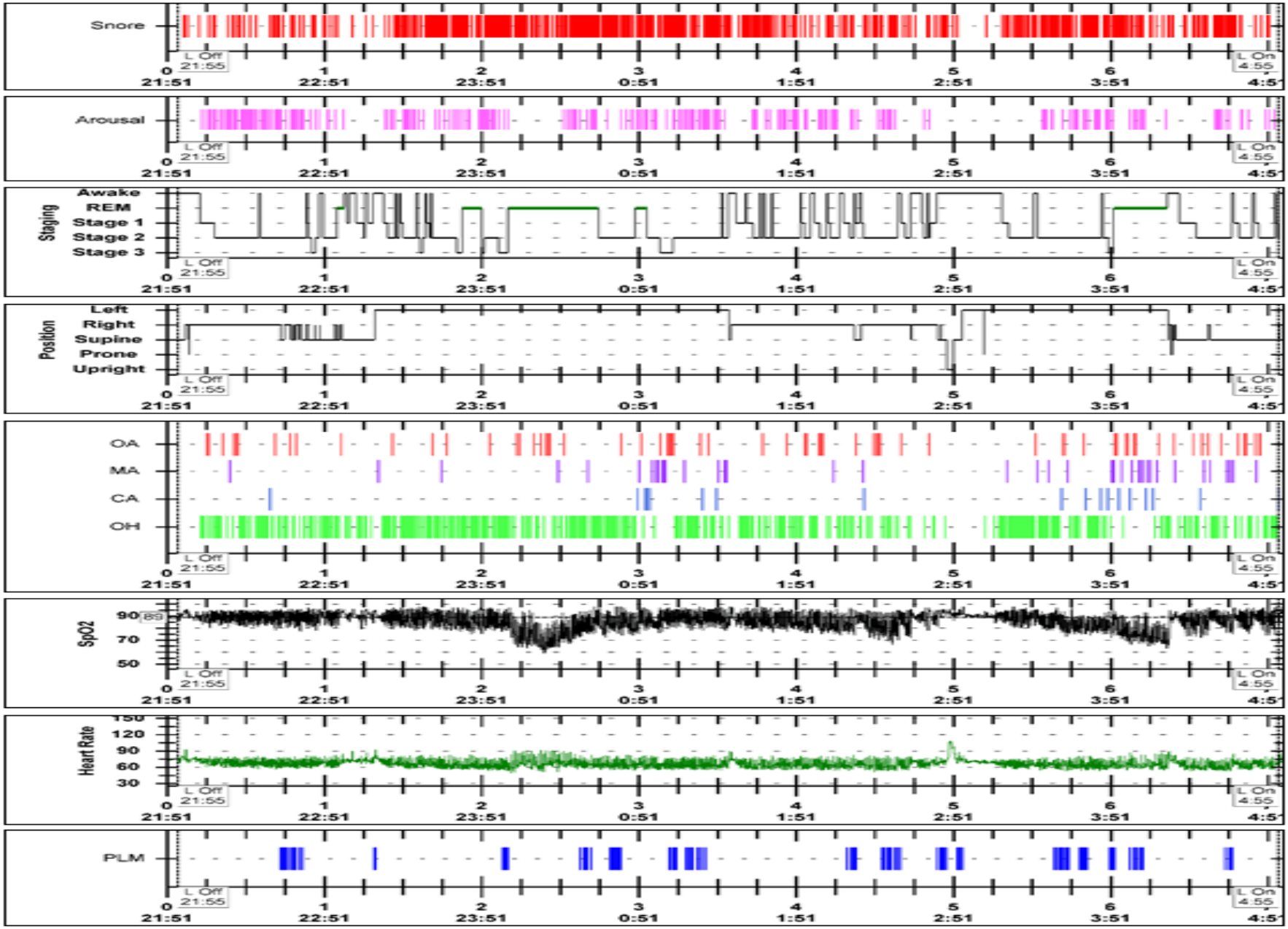
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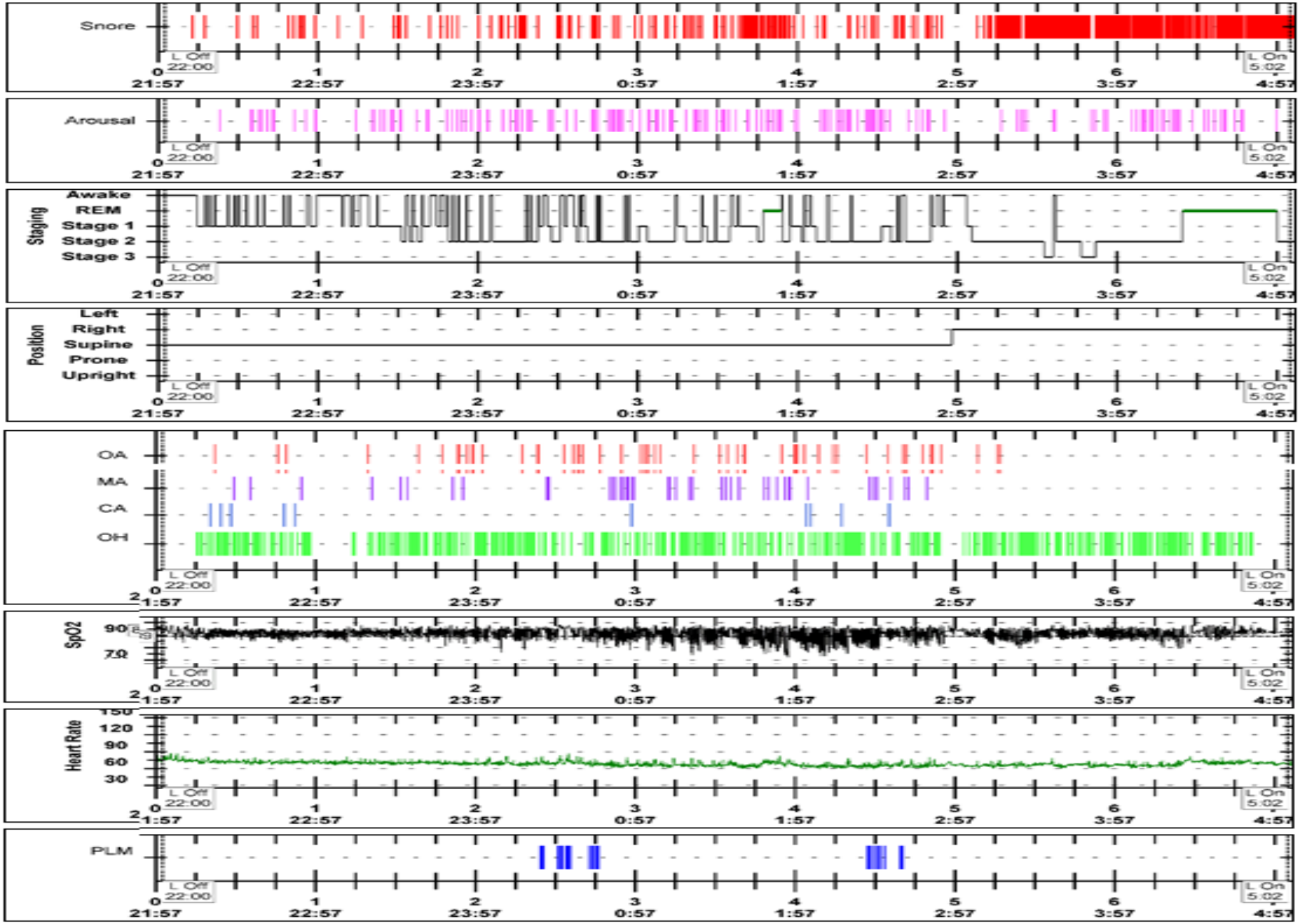
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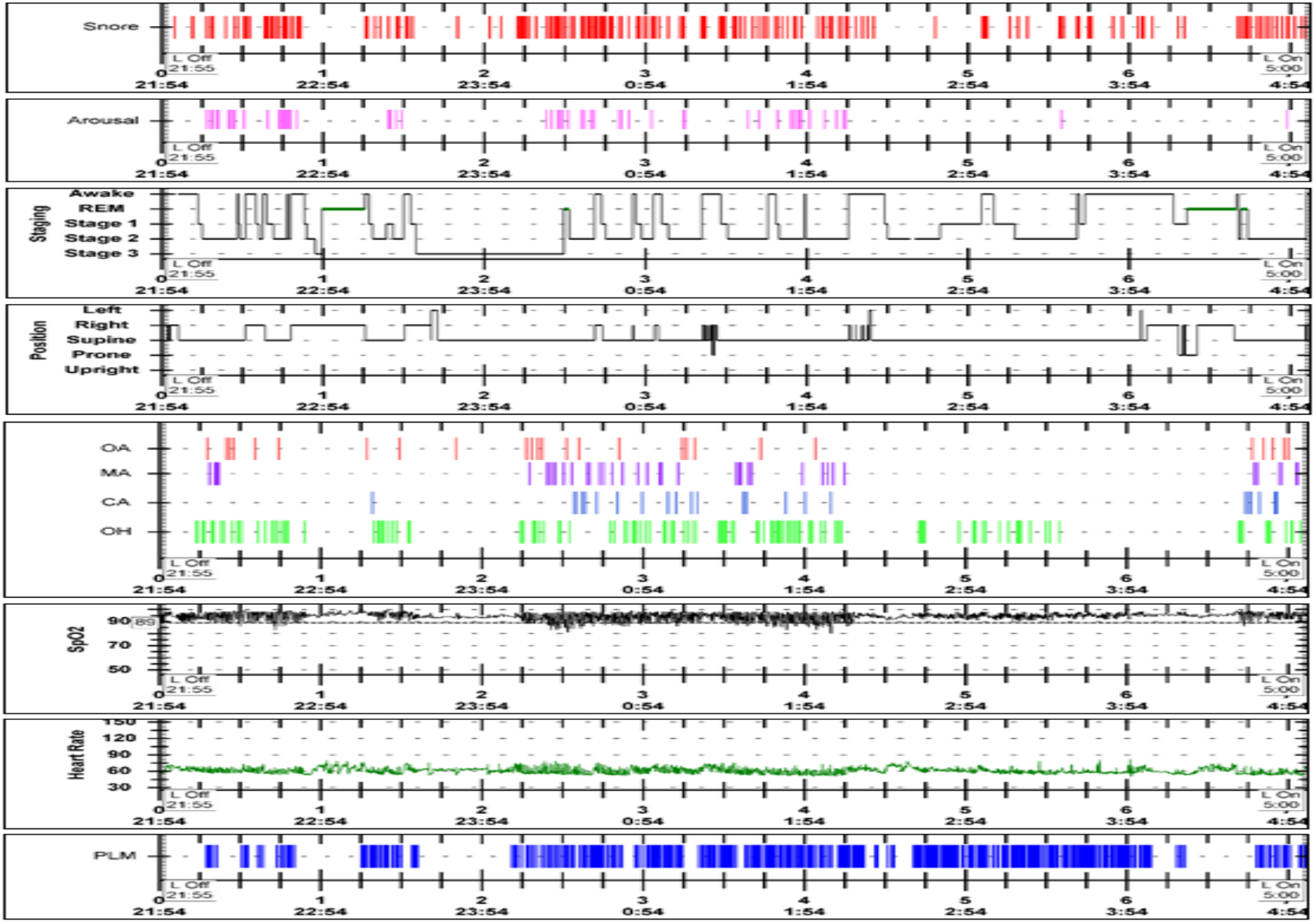
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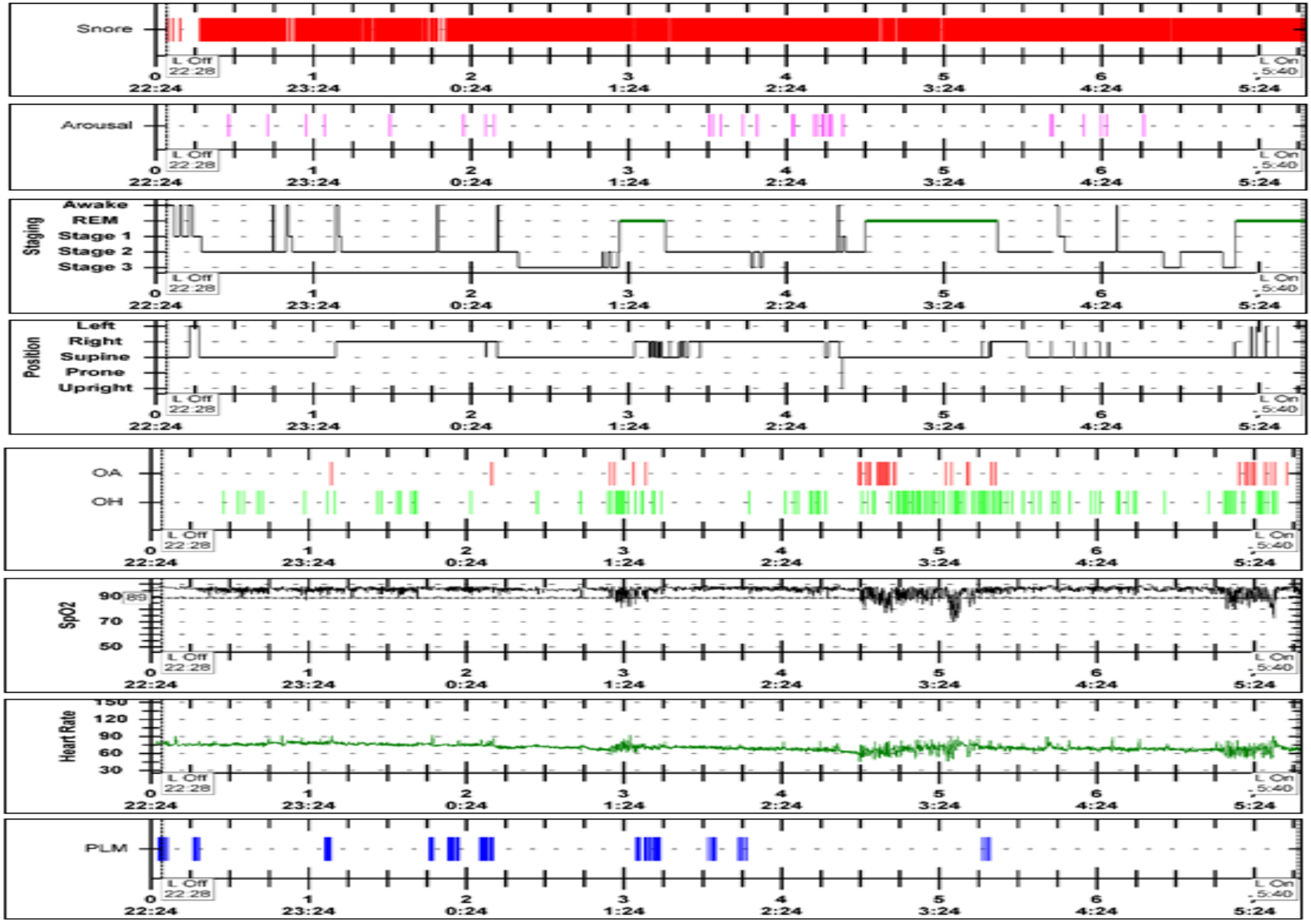
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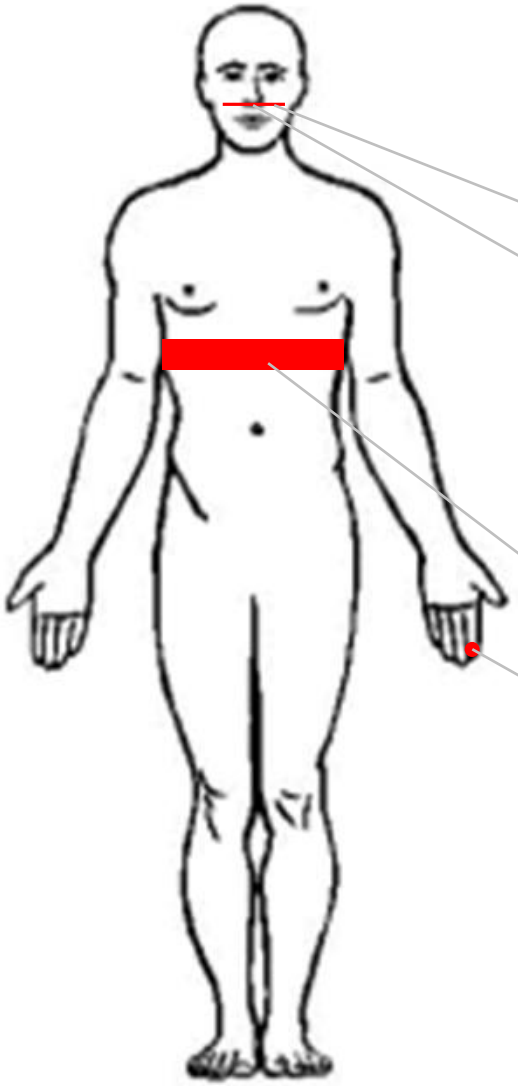
Poligrafía domiciliar (HSAT)



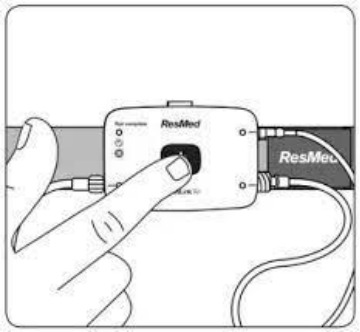
Ronquido

Flujo Nasal

Movimiento Tórax-Abdomen

Oximetría de pulso

Otros: ??


ResMed
ResMed


CADWELL


#GMITEC @gmitec.com

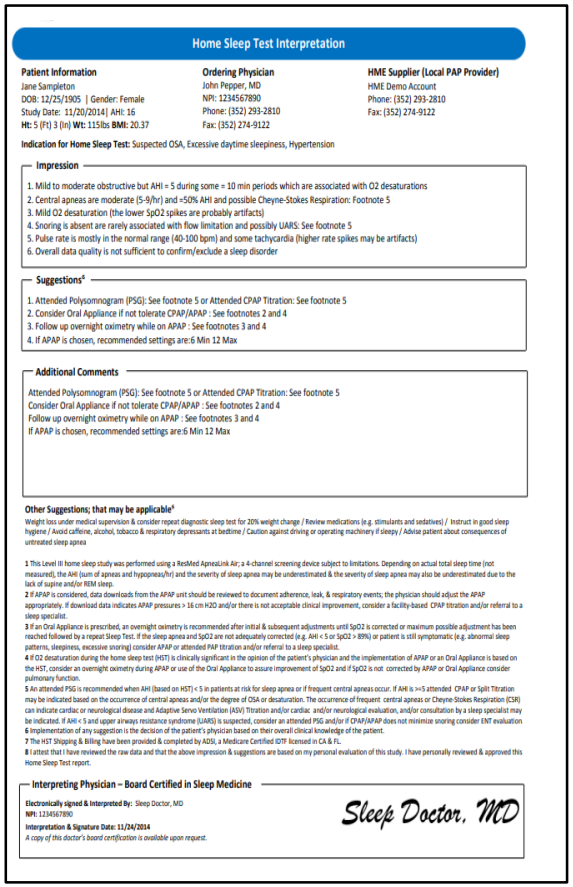

RX 4.8
RESPIRONICS


SpO2
Nasal Cannula
Screen&Go
Aux
BATTERY : 68h
MEMORY : 1501HRS 239h
MANUAL START
Sibelmed


Snore
Flow
Thorax
Abdomen
20s HR 58 SpO2 98%

Reporte de Poligrafía (HSAT)

Reporte en Prosa



Home Sleep Test Interpretation

Patient Information
Jane Sampleton
DOB: 12/25/1905 | Gender: Female
Study Date: 11/20/2014| AHI: 16
Ht: 5 (Ft) 3 (In) **Wt:** 115lbs **BMI:** 20.37

Ordering Physician
John Pepper, MD
NPI: 1234567890
Phone: (352) 293-2810
Fax: (352) 274-9122

HME Supplier (Local PAP Provider)
HME Demo Account
Phone: (352) 293-2810
Fax: (352) 274-9122

Indication for Home Sleep Test: Suspected OSA, Excessive daytime sleepiness, Hypertension

Impression

1. Mild to moderate obstructive but AHI = 5 during some = 10 min periods which are associated with O2 desaturations
2. Central apneas are moderate (5-9/hr) and =50% AHI and possible Cheyne-Stokes Respiration: Footnote 5
3. Mild O2 desaturation (the lower SpO2 spikes are probably artifacts)
4. Snoring is absent are rarely associated with flow limitation and possibly UARS: See footnote 5
5. Pulse rate is mostly in the normal range (40-100 bpm) and some tachycardia (higher rate spikes may be artifacts)
6. Overall data quality is not sufficient to confirm/exclude a sleep disorder

Suggestions[4]

1. Attended Polysomnogram (PSG): See footnote 5 or Attended CPAP Titration: See footnote 5
2. Consider Oral Appliance if not tolerate CPAP/APAP : See footnotes 2 and 4
3. Follow up overnight oximetry while on APAP : See footnotes 3 and 4
4. If APAP is chosen, recommended settings are:6 Min 12 Max

Additional Comments

Attended Polysomnogram (PSG): See footnote 5 or Attended CPAP Titration: See footnote 5
Consider Oral Appliance if not tolerate CPAP/APAP : See footnotes 2 and 4
Follow up overnight oximetry while on APAP : See footnotes 3 and 4
If APAP is chosen, recommended settings are:6 Min 12 Max

Other Suggestions; that may be applicable[1]

Weight loss under medical supervision & consider repeat diagnostic sleep test for 20% weight change / Review medications (e.g. stimulants and sedatives) / Instruct in good sleep hygiene / Avoid caffeine, alcohol, tobacco & respiratory depressants at bedtime / Caution against driving or operating machinery if sleepy / Advise patient about consequences of untreated sleep apnea

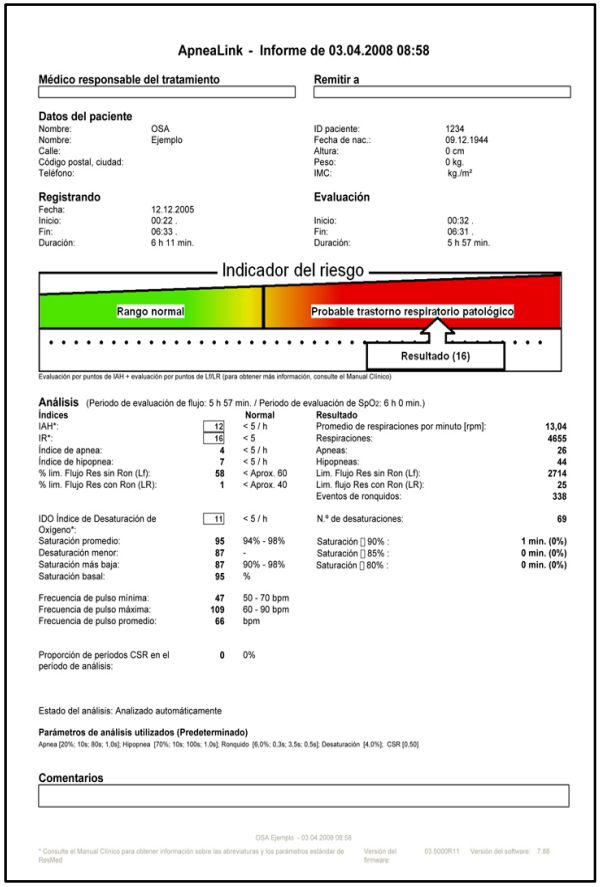
1 This Level III home sleep study was performed using a ResMed ApneaLink Air; a 4-channel screening device subject to limitations. Depending on actual total sleep time (not measured), the AHI (sum of apneas and hypopneas/hr) and the severity of sleep apnea may be underestimated & the severity of sleep apnea may also be underestimated due to the lack of supine and/or REM sleep.
2 If APAP is considered, data downloads from the APAP unit should be reviewed to document adherence, leak, & respiratory events; the physician should adjust the APAP appropriately. If download data indicates APAP pressures > 16 cm H2O and/or there is not acceptable clinical improvement, consider a facility-based CPAP titration and/or referral to a sleep specialist.
3 If an Oral Appliance is prescribed, an overnight oximetry is recommended after initial & subsequent adjustments until SpO2 is corrected or maximum possible adjustment has been reached followed by a repeat Sleep Test. If the sleep apnea and SpO2 are not adequately corrected (e.g. AHI < 5 or SpO2 > 89%) or patient is still symptomatic (e.g. abnormal sleep patterns, sleepiness, excessive snoring) consider APAP or attended PAP titration and/or referral to a sleep specialist.
4 If O2 desaturation during the home sleep test (HST) is clinically significant in the opinion of the patient's physician and the implementation of APAP or an Oral Appliance is based on the HST, consider an overnight oximetry during APAP or use of the Oral Appliance to assure improvement of SpO2 and if SpO2 is not corrected by APAP or Oral Appliance consider pulmonary function.
5 An attended PSG is recommended when AHI (based on HST) < 5 in patients at risk for sleep apnea or if frequent central apneas occur. If AHI is >=5 attended CPAP or Split Titration may be indicated based on the occurrence of central apneas and/or the degree of OSA or desaturation. The occurrence of frequent central apneas or Cheyne-Stokes Respiration (CSR) can indicate cardiac or neurological disease and Adaptive Servo Ventilation (ASV) Titration and/or cardiac and/or neurological evaluation, and/or consultation by a sleep specialist may be indicated. If AHI < 5 and upper airways resistance syndrome (UARS) is suspected, consider an attended PSG and/or if CPAP/APAP does not minimize snoring consider ENT evaluation
6 Implementation of any suggestion is the decision of the patient's physician based on their overall clinical knowledge of the patient.
7 The HST Shipping & Billing have been provided & completed by ADSI, a Medicare Certified IDTF licensed in CA & FL.
8 I attest that I have reviewed the raw data and that the above impression & suggestions are based on my personal evaluation of this study. I have personally reviewed & approved this Home Sleep Test report.

Interpreting Physician – Board Certified in Sleep Medicine

Electronically signed & Interpreted By: Sleep Doctor, MD
NPI: 1234567890
Interpretation & Signature Date: 11/24/2014
A copy of this doctor's board certification is available upon request.

Sleep Doctor, MD

Reporte estadístico



ApneaLink - Informe de 03.04.2008 08:58

Médico responsable del tratamiento | **Remitir a**

Datos del paciente

Nombre:	OSA	ID paciente:	1234
Nombre:	Ejemplo	Fecha de nac.:	09.12.1944
Calle:		Altura:	0 cm
Código postal, ciudad:		Peso:	0 kg.
Teléfono:		IMC:	kg./m²

Registrando

Fecha:	12.12.2005
Inicio:	00:22 .
Fin:	06:33 .
Duración:	6 h 11 min.

Evaluación

Inicio:	00:32 .
Fin:	06:31 .
Duración:	5 h 57 min.

Indicador del riesgo

Rango normal | Probable trastorno respiratorio patológico | Resultado (16)

Evaluación por puntos de IAH + evaluación por puntos de Lf/LR (para obtener más información, consulte el Manual Clínico)

Análisis (Periodo de evaluación de flujo: 5 h 57 min. / Periodo de evaluación de SpO2: 6 h 0 min.)

Índices		Normal	Resultado	
IAH*:	12	< 5 / h	Promedio de respiraciones por minuto [rpm]:	13,04
IR*:	16	< 5	Respiraciones:	4655
Índice de apnea:	4	< 5 / h	Apneas:	26
Índice de hipopnea:	7	< 5 / h	Hipopneas:	44
% lim. Flujo Res sin Ron (Lf):	58	< Aprox. 60	Lim. Flujo Res sin Ron (Lf):	2714
% lim. Flujo Res con Ron (LR):	1	< Aprox. 40	Lim. flujo Res con Ron (LR):	25
			Eventos de ronquidos:	338
IDO Índice de Desaturación de Oxígeno*:	11	< 5 / h	N.º de desaturaciones:	69
Saturación promedio:	95	94% - 98%	Saturación [] 90% :	1 min. (0%)
Desaturación menor:	87	-	Saturación [] 85% :	0 min. (0%)
Saturación más baja:	87	90% - 98%	Saturación [] 80% :	0 min. (0%)
Saturación basal:	95	%		
Frecuencia de pulso mínima:	47	50 - 70 bpm		
Frecuencia de pulso máxima:	109	60 - 90 bpm		
Frecuencia de pulso promedio:	66	bpm		
Proporción de períodos CSR en el período de análisis:	0	0%		

Estado del análisis: Analizado automáticamente

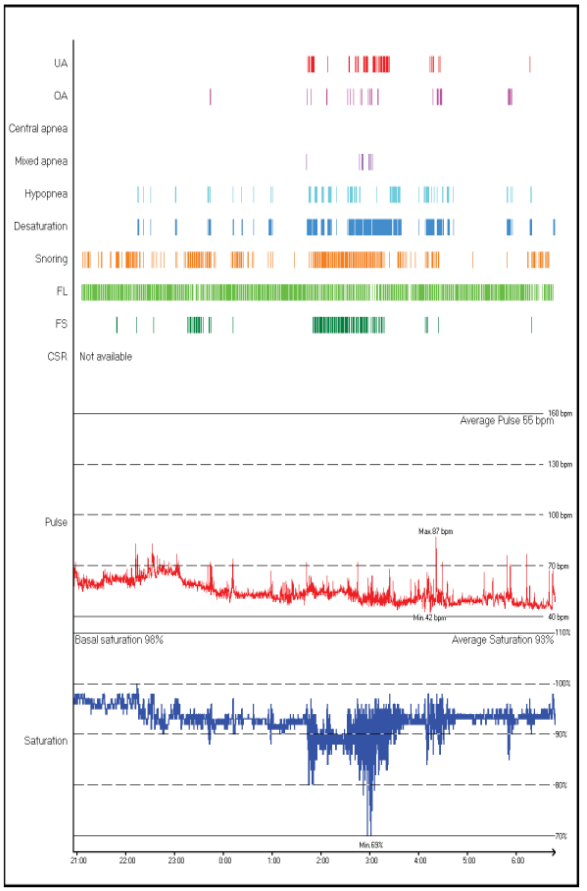
Parámetros de análisis utilizados (Predeterminado)
Apnea [20%; 10s; 80s; 1.0s]; Hipopnea [70%; 10s; 100s; 1.0s]; Ronquido [6.0%; 0.3s; 3.5s; 0.5s]; Desaturación [4.0%]; CSR [0.50]

Comentarios

OSA Ejemplo - 03.04.2008 08:58

* Consulte el Manual Clínico para obtener información sobre las abreviaturas y los parámetros estándar de ResMed | Versión del firmware: 03.5000R11 | Versión del software: 7.88

Reporte Grafico



Reporte de Poligrafía (HSAT)

Reporte en Prosa

ENCABEZADO
Logo, Ficha, Sexo, Edad., Duración
Motivo de envío y antecedentes

PARAMETROS TECNICOS Y CALIFICACION
Tipo de estudio
Marca y Modelo de equipo
Capacidades (canales, etc)
Parametros del registro (filtros, señales registradas)
Tipos de estadificacion (manual o automatica) y criterios utilizados,
Problemas tecnicos del registro, del paciente o calificación.

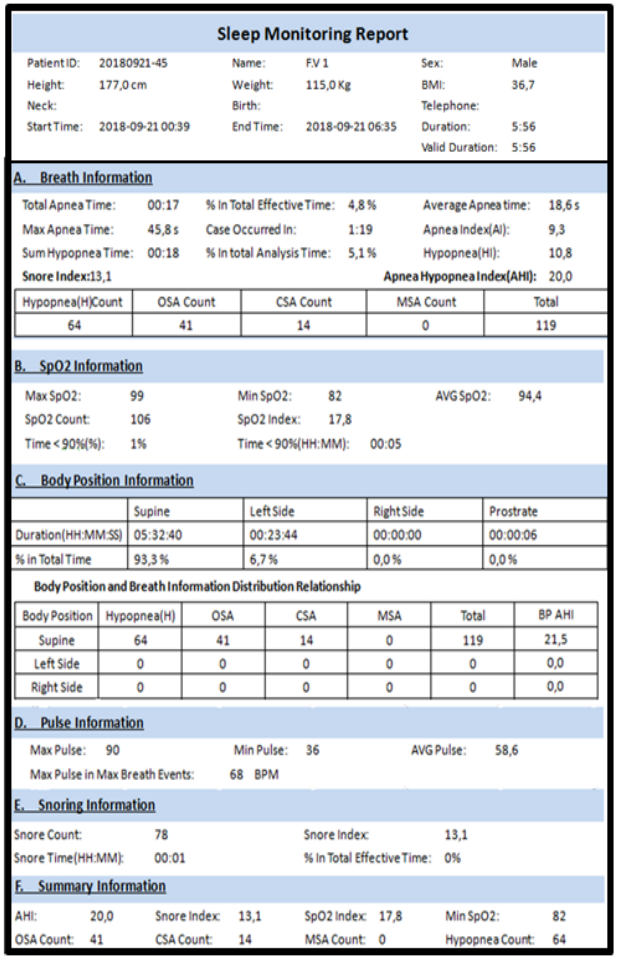
DESCRIPCION
Sueño,
Eventos respiratorios,
Eventos cardiacos,
Posición corporal.
Eventos de movimiento,
Alertamientos,

CONCLUSION

OBSERVACION Y/O COMENT

FIRMA

Reporte estadístico



Sleep Monitoring Report

Patient ID:	20180921-45	Name:	F.V 1	Sex:	Male
Height:	177,0 cm	Weight:	115,0 Kg	BMI:	36,7
Neck:		Birth:		Telephone:	
Start Time:	2018-09-21 00:39	End Time:	2018-09-21 06:35	Duration:	5:56
				Valid Duration:	5:56

A. Breath Information

Total Apnea Time:	00:17	% In Total Effective Time:	4,8 %	Average Apnea time:	18,6 s
Max Apnea Time:	45,8 s	Case Occurred In:	1:19	Apnea Index(AI):	9,3
Sum Hypopnea Time:	00:18	% In total Analysis Time:	5,1 %	Hypopnea(HI):	10,8
Snore Index:	13,1			**Apnea Hypopnea Index(AHI):**	20,0

Hypopnea(H)Count	OSA Count	CSA Count	MSA Count	Total
64	41	14	0	119

B. SpO2 Information

Max SpO2:	99	Min SpO2:	82	AVG SpO2:	94,4
SpO2 Count:	106	SpO2 Index:	17,8		
Time < 90%(%):	1%	Time < 90%(HH:MM):	00:05		

C. Body Position Information

	Supine	Left Side	Right Side	Prostrate
Duration(HH:MM:SS)	05:32:40	00:23:44	00:00:00	00:00:06
% in Total Time	93,3 %	6,7 %	0,0 %	0,0 %

Body Position and Breath Information Distribution Relationship

Body Position	Hypopnea(H)	OSA	CSA	MSA	Total	BP AHI
Supine	64	41	14	0	119	21,5
Left Side	0	0	0	0	0	0,0
Right Side	0	0	0	0	0	0,0

D. Pulse Information

Max Pulse:	90	Min Pulse:	36	AVG Pulse:	58,6
Max Pulse in Max Breath Events:	68 BPM				

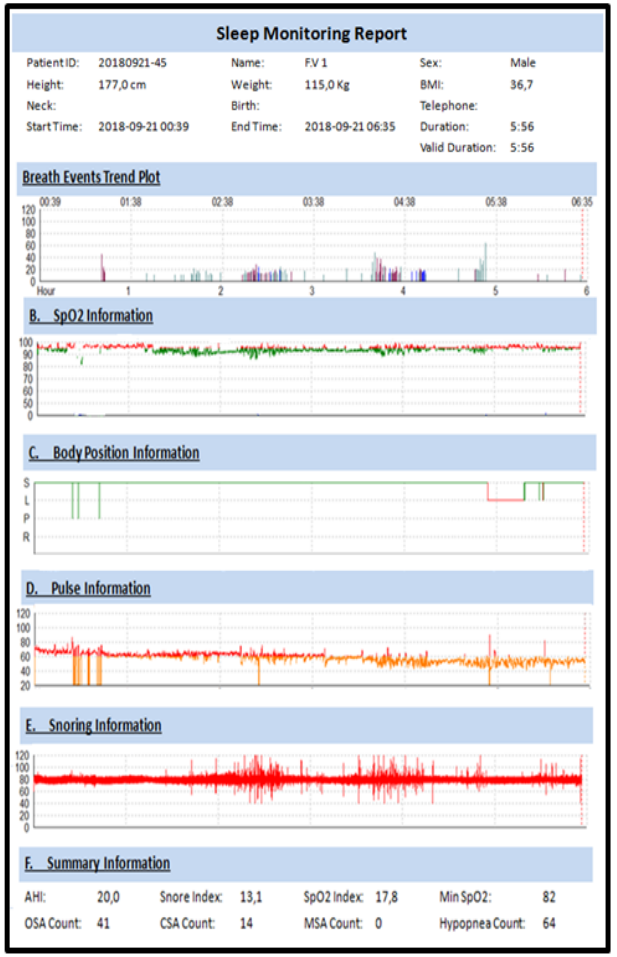
E. Snoring Information

Snore Count:	78	Snore Index:	13,1
Snore Time(HH:MM):	00:01	% In Total Effective Time:	0%

F. Summary Information

AHI:	20,0	Snore Index:	13,1	SpO2 Index:	17,8	Min SpO2:	82
OSA Count:	41	CSA Count:	14	MSA Count:	0	Hypopnea Count:	64

Reporte Grafico



Sleep Monitoring Report

Patient ID:	20180921-45	Name:	F.V 1	Sex:	Male
Height:	177,0 cm	Weight:	115,0 Kg	BMI:	36,7
Neck:		Birth:		Telephone:	
Start Time:	2018-09-21 00:39	End Time:	2018-09-21 06:35	Duration:	5:56
				Valid Duration:	5:56

Breath Events Trend Plot

B. SpO2 Information

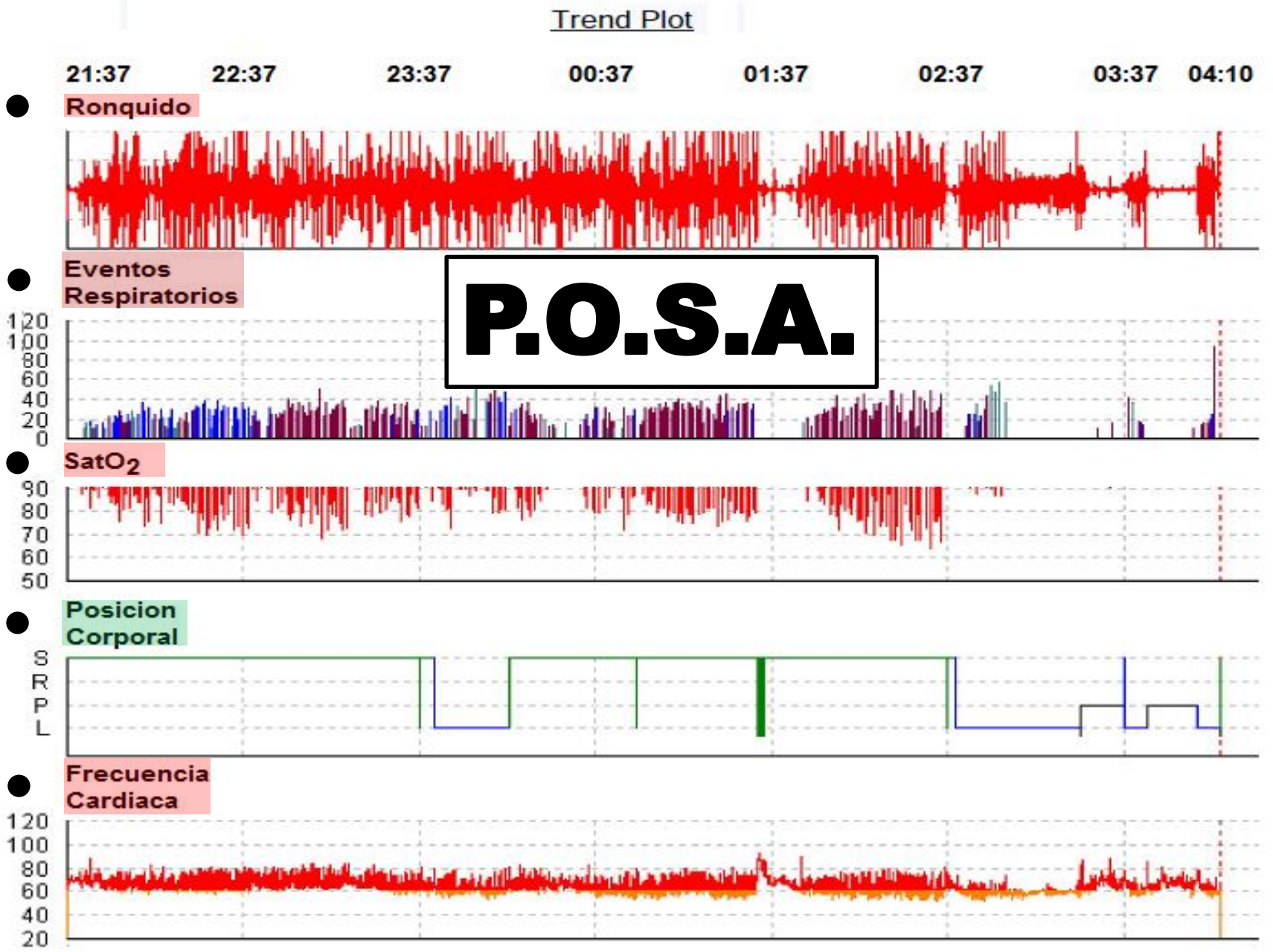
C. Body Position Information

D. Pulse Information

E. Snoring Information

F. Summary Information

AHI:	20,0	Snore Index:	13,1	SpO2 Index:	17,8	Min SpO2:	82
OSA Count:	41	CSA Count:	14	MSA Count:	0	Hypopnea Count:	64


Trend Plot
21:37
22:37
23:37
00:37
01:37
02:37
03:37
04:10
Ronquido
Eventos Respiratorios
120
100
80
60
40
20
0
P.O.S.A.
SatO2
90
80
70
60
50
Posicion Corporal
S
R
P
L
Frecuencia Cardiaca
120
100
80
60
40
20

Portable Recording in the Assessment of Obstructive Sleep Apnea

ASDA Standards of Practice

Sleep **1994**; 17(4):378-392

Clinical Guidelines for the Use of Unattended Portable Monitors in the Diagnosis of Obstructive Sleep Apnea in Adult Patients

Portable Monitoring Task Force of the American Academy of Sleep Medicine

J Clin Sleep Med **2007**;3(7):737-747

Clinical Practice Guideline for Diagnostic Testing for Adult Obstructive Sleep Apnea: An American Academy of Sleep Medicine Clinical Practice Guideline

J Clin Sleep Med **2017**; 13 (3):479-507

Consumer Sleep Technology: An American Academy of Sleep Medicine Position Statement

J Clin Sleep Med. **2018**;14(5):877–880.

I- Polisomnografia (PSG)

II- PSG No-supervisada

III- Poligrafía Domiciliar (HSAT)

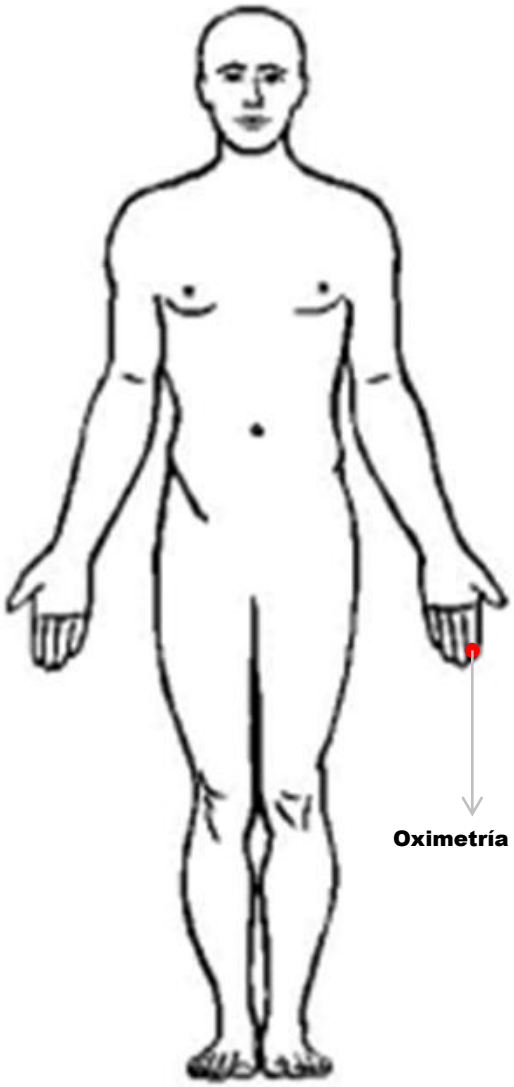
IV- Monitores 1-2 canales ✗

Análisis Espectral
Fotopletismografia
Acelerómetros
MEMS
Nanotecnología
+
Redes Neuronales
Machine Learning
AI

Tecnologías de consumo
o
«Wereables»

(Monitores 1-2 canales)

Monitores de uno o dos canales «Wereables»



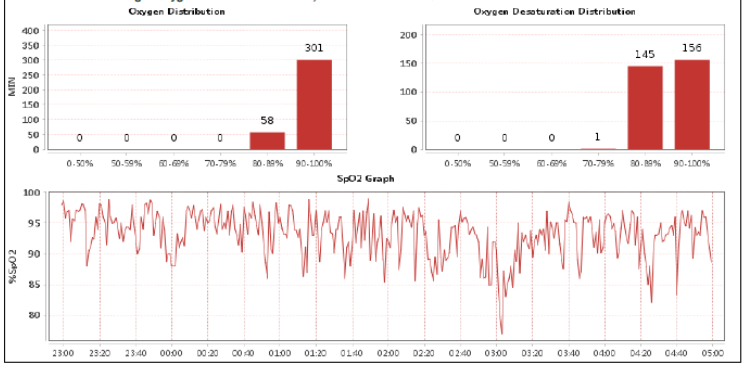
Oximetría de pulso

Sleep Monitoring Report

Personal Information
Name: ____ Age: 57 Gender: Male Height: 169cm Weight: 125.0kg Phone: - ESS Score: ____
BMI Index: 43.77(Severely Obese) Medical History: Hypertension
Recording Date: 2018-09-04 Start Time: 2018-09-04 22:59:58 End Time: 2018-09-05 04:59:59 Duration: 06:00:01

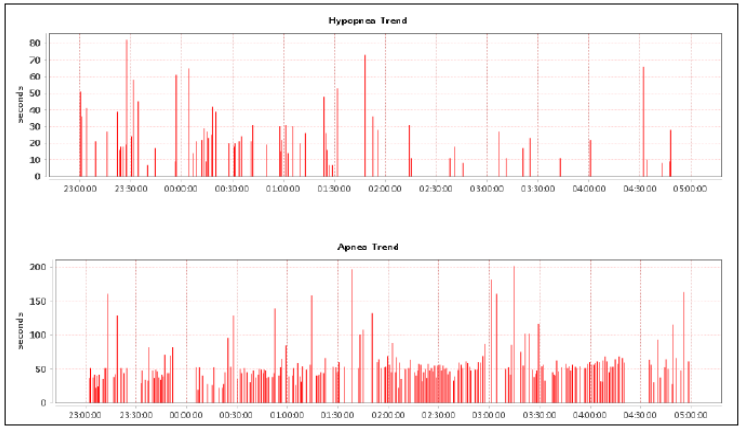
Respiratory Details
Respiratory Disturbance Index: 49.50 Apneas: 227 Longest Apnea: 00:03:21 , Occured at 03:14:40 Total Duration of Apnea Events: 03:32:49
Hypopneas: 70 Longest Hypopneas: 00:01:22 , Occured at 23:27:27 Total Duration of Hypopnea Events: 00:31:12 Score: 51

SpO2 Details
Mean SpO2: 93.12% Min SpO2: 77.00% T90(SpO2<90%): 16.32% Oxygen Desaturation Index: 50.33 Max Oxygen Desaturation: 00:03:21 , Occured at 23:00:04 Longest Oxygen Desaturation: 00:00:51 , Occured at 03:14:40 ODRI: 18.39

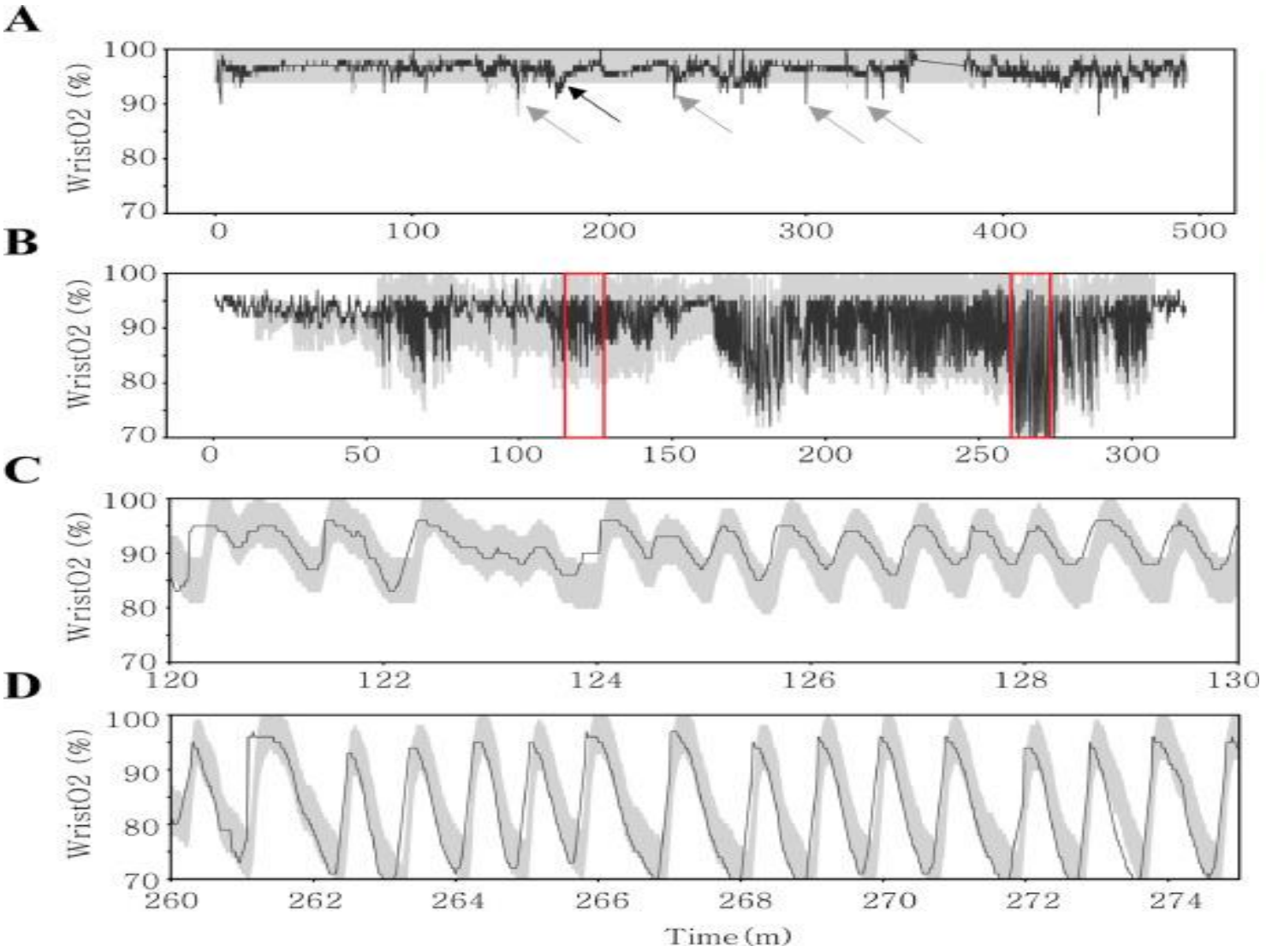


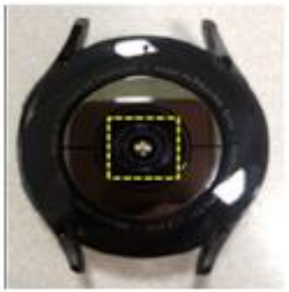
Pulse Rate Details
Mean PR: 65.07 BPM Min PR: 43.00 BPM, Occured at 04:22:43 Max PR: 118.00 BPM, Occured at 01:36:00

Sleep Details
Total Sleep Duration: 06:00:01 Deep Sleep: 01:29:29 %Total: 24.86% Light Sleep: 03:38:18 %Total: 60.64%
Score of Sleep Quality: 86



Performance evaluation of a wrist-worn reflectance pulse oximeter during sleep





Sat pulso O_2 ≈ Sat muñeca O_2

Sleep Health 2022, 706 (9 julio)
doi.org/10.1016/j.sleh.2022.04.003

Sleep Monitoring Report

Personal Information

Name: _____ Age: 51 Gender: Male Height: 168cm Weight: 90.0kg Phone: - ESS Score: _____

BMI Index: 31.89(Obese) Medical History: Hypertension、Nasal Obstruction、Long-term Smoking、Elongated Uvula

Recording Date: 2019-12-23 Start Time: 2019-12-23 22:09:16 End Time: 2019-12-24 04:09:15 Duration: 05:59:59

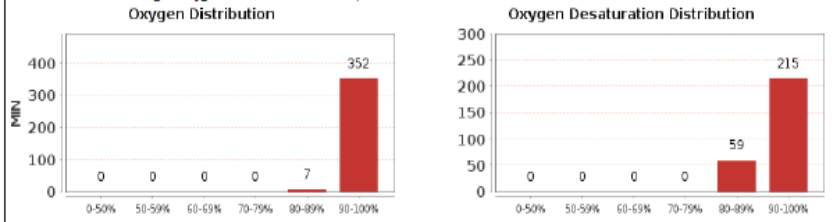
Respiratory Details

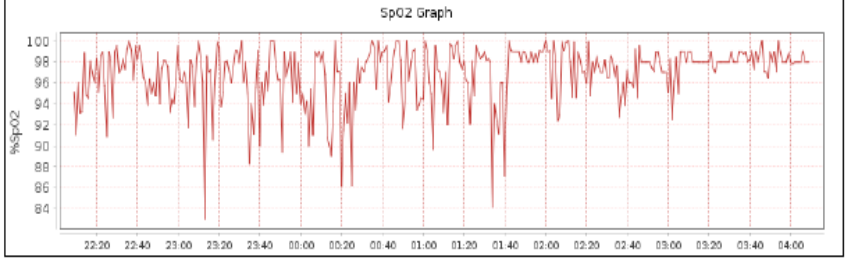
Respiratory Disturbance Index: 45.67 Apneas: 250 Longest Apnea: 00:01:50 , Occured at 00:05:42 Total Duration of Apnea Events: 03:25:44

Hypopneas: 24 Longest Hypopneas: 00:02:59 , Occured at 01:54:34 Total Duration of Hypopnea Events: 00:21:26 Respiratory Score: 54

SpO2 Details

Mean SpO2: 96.83% Min SpO2: 83.00% T90(SpO2<90%): 2.17% Oxygen Desaturation Index: 45.67 Max Oxygen Desaturation: 00:03:05 , Occured at 22:09:20 Longest Oxygen Desaturation: 00:00:27 , Occured at 01:54:34 ODRI: 2.30





Pulse Rate Details

Mean PR: 65.50 BPM Min PR: 49.00 BPM, Occured at 02:34:49 Max PR: 103.00 BPM, Occured at 23:13:58

Sleep Details

Total Sleep Duration: 05:59:59 Deep Sleep: 00:59:44 %Total: 16.59% Light Sleep: 01:33:52 %Total: 26.08%

REM Sleep: 02:43:44 %Total: 45.48% Score of Sleep Quality: 83

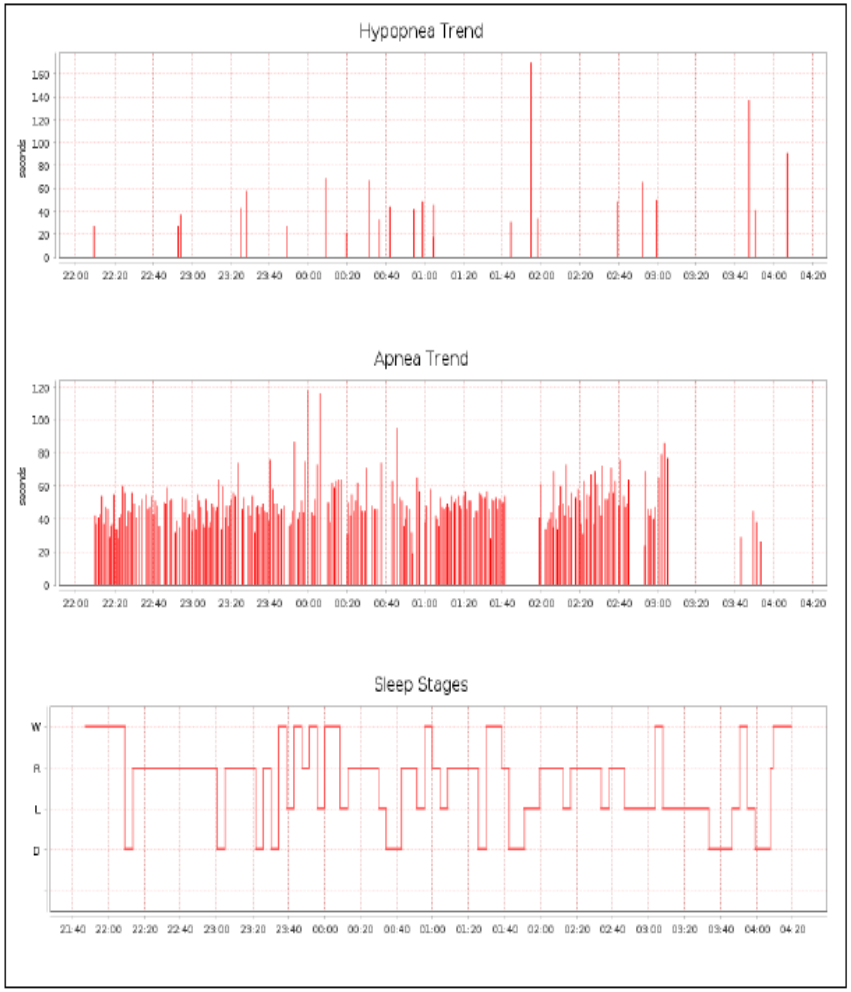
Sleep Monitoring Report

Personal Information

Name _____ Age: 51 Gender: Male Height: 168cm Weight: 90.0kg Phone: - ESS Score: _____

BMI Index: 31.89(Obese) Medical History: Hypertension、Nasal Obstruction、Long-term Smoking、Elongated Uvula

Recording Date: 2019-12-23 Start Time: 2019-12-23 22:09:16 End Time: 2019-12-24 04:09:15 Duration: 05:59:59



Reproducibilidad de Monitor de Sueño de un solo canal para medida de variables

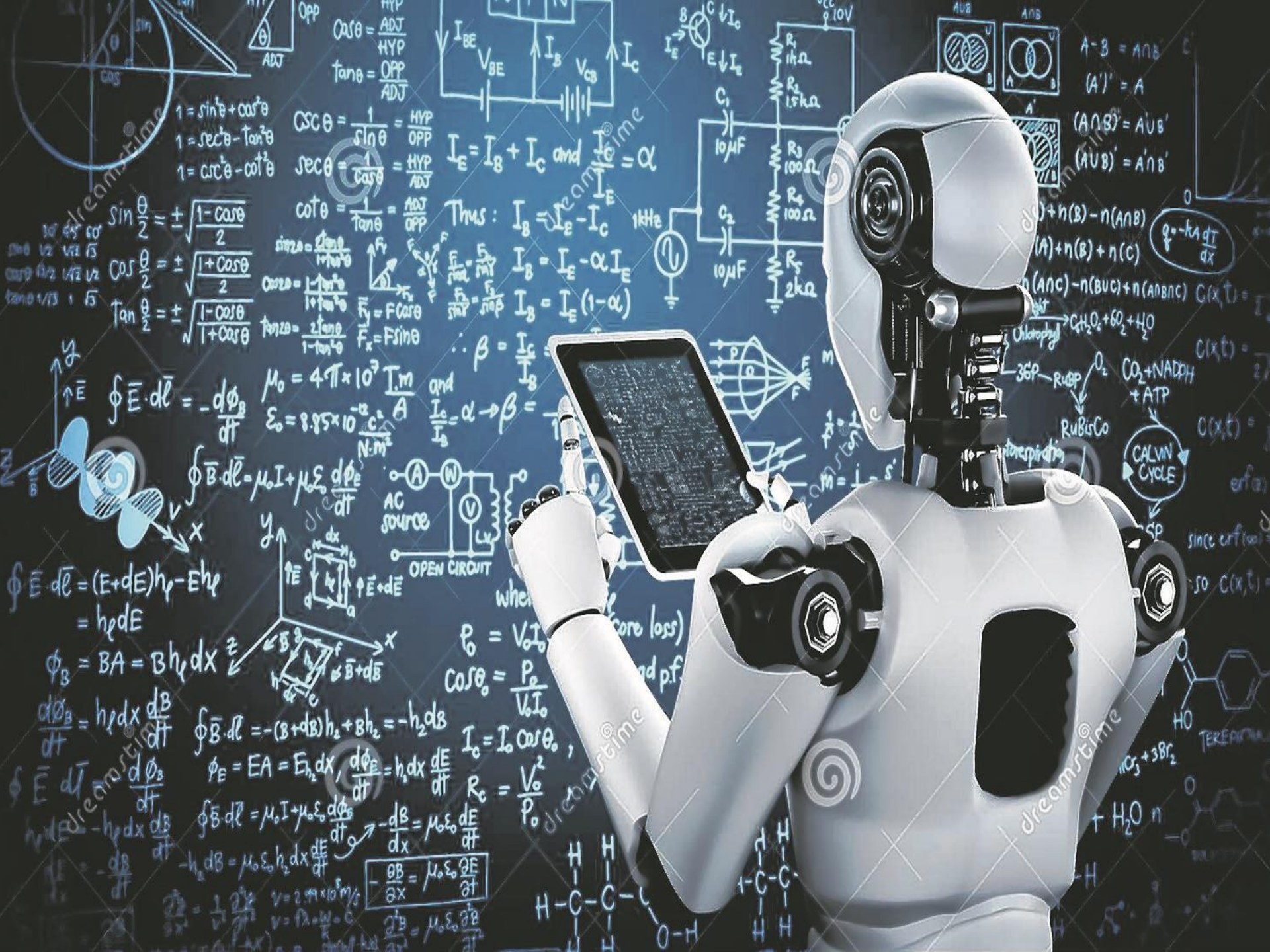
Validación de Monitor de Sueño de un solo canal para medida de variables

Reproducibilidad

IMC	NoSAS Bajo	IDR	IDR
61,7	S	15,69	17,03
50,7	S	7,74	20,58
63,7	S	18,11	9,84
48,9	S	8,16	11,49
23,2	S	1,50	3,45
29,7	S	2,80	6,27
49,3	S	4,38	12,83
43,1	S	16,48	15,10
39,1	S	3,47	6,25
39,8	S	14,80	6,70
32,9	S	7,38	19,08
25,6	S	3,36	3,67
21,9	S	7,62	6,17
29	S	1,96	5,45
25,7	S	13,48	12,66
23,7	S	6,37	2,62
23,6	S	0,17	1,75
23,8	S	0,14	1,74
25,5	S	3,73	3,89
24,4	S	4,01	4,04
28,6	S	6,87	7,88
80,9	N	7,25	7,17
41,8	N	11,93	15,36
48,3	N	21,52	27,61
31,8	N	7,33	8,19
45,1	N	62,29	46,91
38,4	N	11,65	12,58
48,3	N	9,84	9,16
70,2	N	20,33	23,67
44,4	N	4,60	8,22
32,7	N	13,76	9,47
49,3	N	4,17	3,43
37,7	N	23,19	12,60
51,4	N	15,65	11,74
28,1	N	31,19	33,14
27,8	N	7,54	6,82
27,7	N	29,40	26,65
30,1	N	7,10	10,66
42,5	N	12,91	11,27
33,9	N	16,02	30,84
37,9	N	62,45	61,18
27,6	N	14,72	6,87
29,4	N	12,03	19,74

Validación

SEXO	IMC	AHÍ (Poli)	AHÍ (Moni)
M	47,32	5,6	3,88
M	45,2	35,9	40.39
M	43,7	58,4	49,5
F	41,6	4,1	15,94
F	40,65	13,3	7,78
F	40,48	8,1	11,43
M	38,5	22,8	16,18
F	38	11,1	5,47
M	36,71	20	24,27
F	35,76	2,1	2,69
M	34,11	19,8	20,29
F	32,72	2,7	9,96
M	32,21	7,7	10,31
M	31,89	51,1	45,67
M	30,45	4,1	4,66
M	28,69	1,3	4,99
M	28,04	7,7	8,29
M	27,16	1,6	7,48
M	26,99	2,3	7,3
F	26,93	1,4	7,94
M	26,67	10	3,96
F	25,24	6,3	7,37
F	24,62	1,2	5,5
F	24,39	1,2	2.19
F	23,73	5,2	3,74
M	23,2	22,5	17
F	23,15	2,7	1,5
F	22,15	1,1	2,24
F	21,36	0,9	3,02
F	18,59	3,4	4,12


AC source
OPEN CIRCUIT
CALVIN CYCLE
RuBisCo
Thus :
and
dreamstime

European Respiratory Society guideline on non-CPAP therapies for obstructive sleep apnoea

Cirugía Laparoscópica de Bypass gástrico en Y de Roux	Recomendación condicional (muy baja calidad de evidencia)

Banda Gástrica Ajustable Laparoscópica (LAGB)

N= 60; Cirugía vs Programa de Dieta

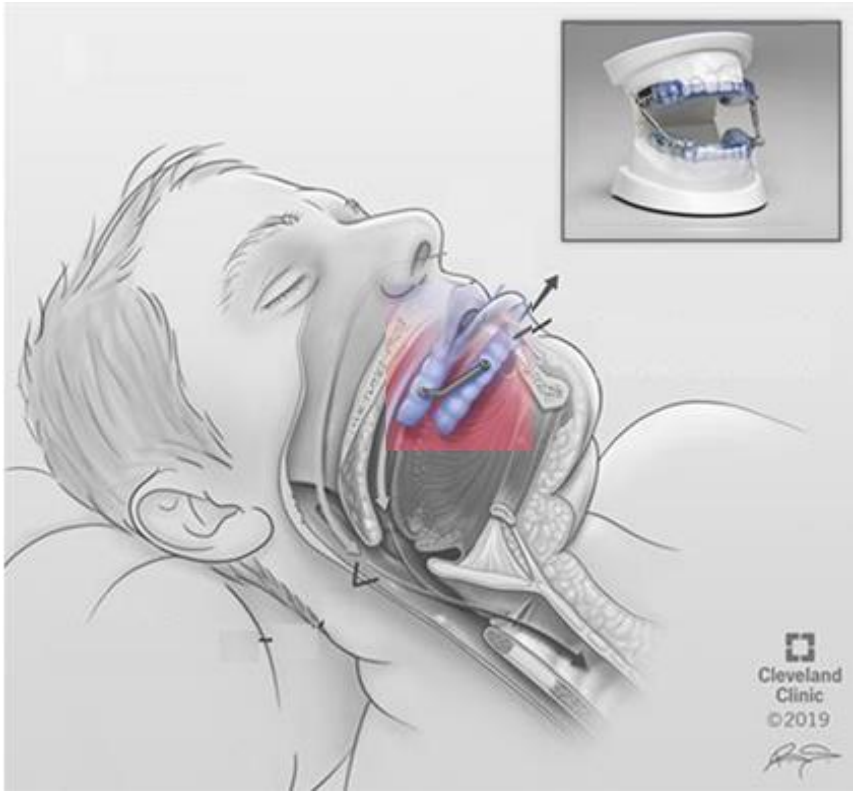
↓ IAH, ↑ Eficiencia Sueño,
↓ ESS (NS); ↑ **SF-36 (S)** ;
HTA (0)

Indicada si no hay pérdida de peso después de un buen programa de dieta

Eur Respir Rev 2021; 30: 210200
doi.org/10.1183/16000617.0200-2021

European Respiratory Society guideline on non-CPAP therapies for obstructive sleep apnoea

Dispositivos de Avance Mandibular de doble bloqueo Vs CPAP	Recomendación condicional (muy baja calidad de evidencia)



N= 13 ECR; DAM vs CPAP

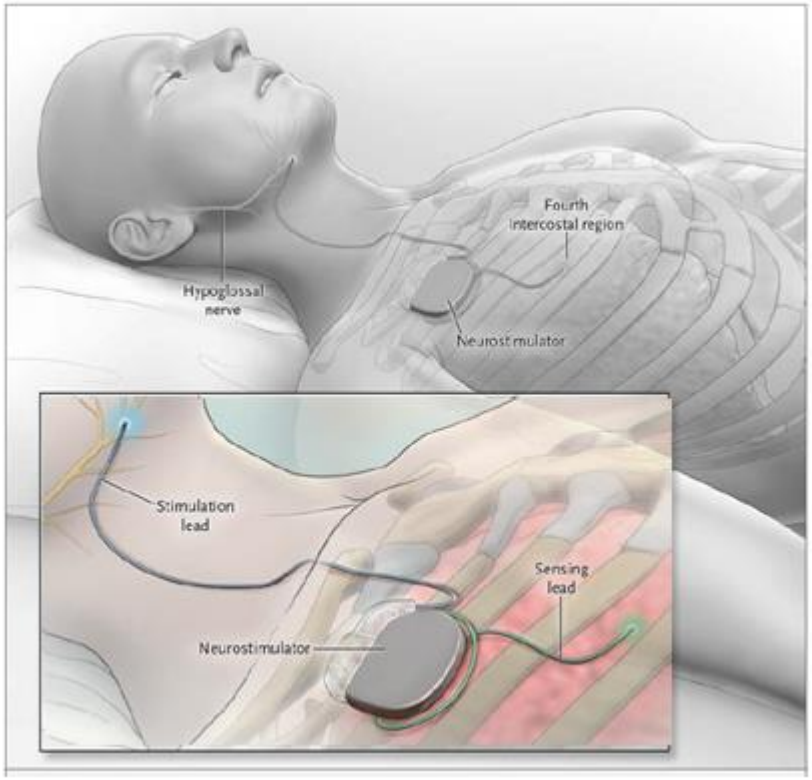
↓ **IAH (S)**; ↑ Eficiencia Sueño,
↓ ESS, ↑ SF-36 (NS);
HTA diurno (0);
↓HTA (3torr) nocturno en AOS Mod o Sev;.
Adherencia DAM > CPAP (5 ECR)

En AOS leve o moderado
DAM = CPAP
En AOS severo usar CPAP

Eur Respir Rev 2021; 30: 210200
doi.org/10.1183/16000617.0200-2021

European Respiratory Society guideline on non-CPAP therapies for obstructive sleep apnoea

Estimulación del Nervio Hipogloso (HNS)	Recomendación condicional (muy baja calidad de evidencia)



N= 3 ECR; HNS vs S/Tto

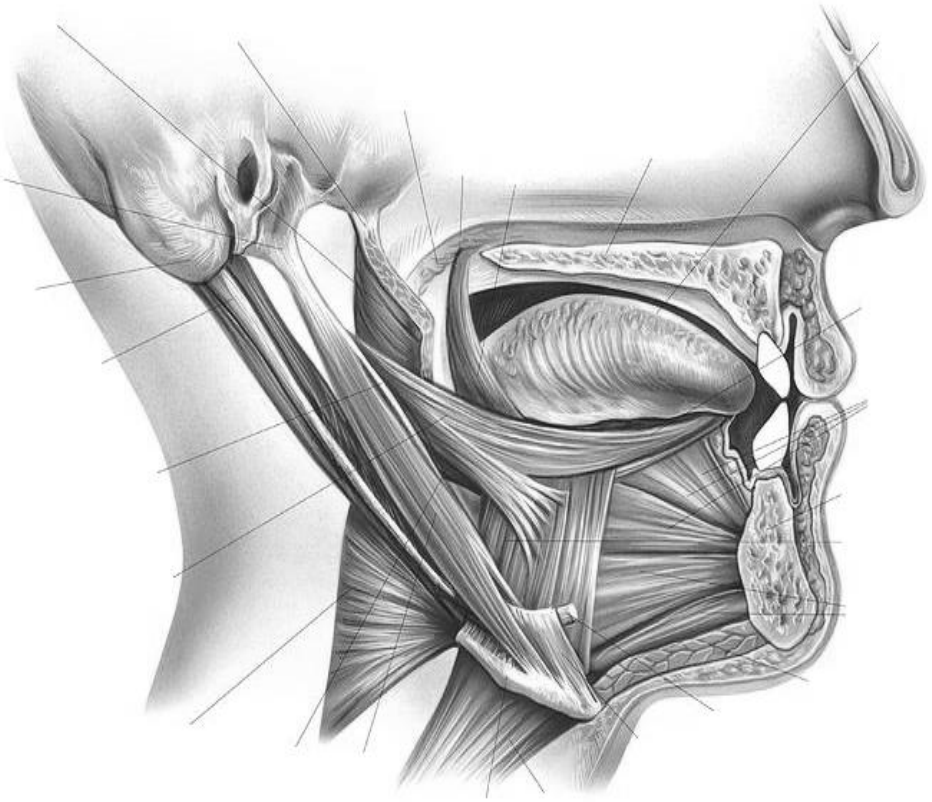
↓ IAH, ↑ Eficiencia Sueño,
↓ ESS (NS); ↑ **SF-36 (S)**

Tto. de SALVATAJE en AOS sintomáticos que no pueden ser manejados con CPAP o DAM (IAH< 50 y IMC<32)

Eur Respir Rev 2021; 30: 210200
doi.org/10.1183/16000617.0200-2021

European Respiratory Society guideline on non-CPAP therapies for obstructive sleep apnoea

Terapia miofuncional	Recomendación condicional (baja calidad de evidencia)



N= 6 ECR (vs S/Tto)

↓ IAH,↑ Eficiencia Sueño,
↑ ESS, ↑ SF-36 (NS)

N= 1ECR (vs CPAP)

↓ **IAH (S);**↑ Eficiencia Sueño;
↑ **ESS (S)**,↑ **SF-36 (S)**

No indicada / Incierto
(tal vez SÍ en reacios a Ttos convencionales)

Eur Respir Rev 2021; 30: 210200
doi.org/10.1183/16000617.0200-2021

app

SnoreGym

EJERCICIOS PARA UN SUEÑO MÁS SILENCIOSO

Entrenamiento con tutoriales

Inicio

YouTube **Apnea de sueño: ejercicios oro-faríngeos**

https://www.youtube.com/watch?v=MkN-64JQGas

https://www.youtube.com/watch?v=SA8paNadc1o

Ejercicio 1 Vocal intermitente

Ejercicio 4 Posteriorización lingual

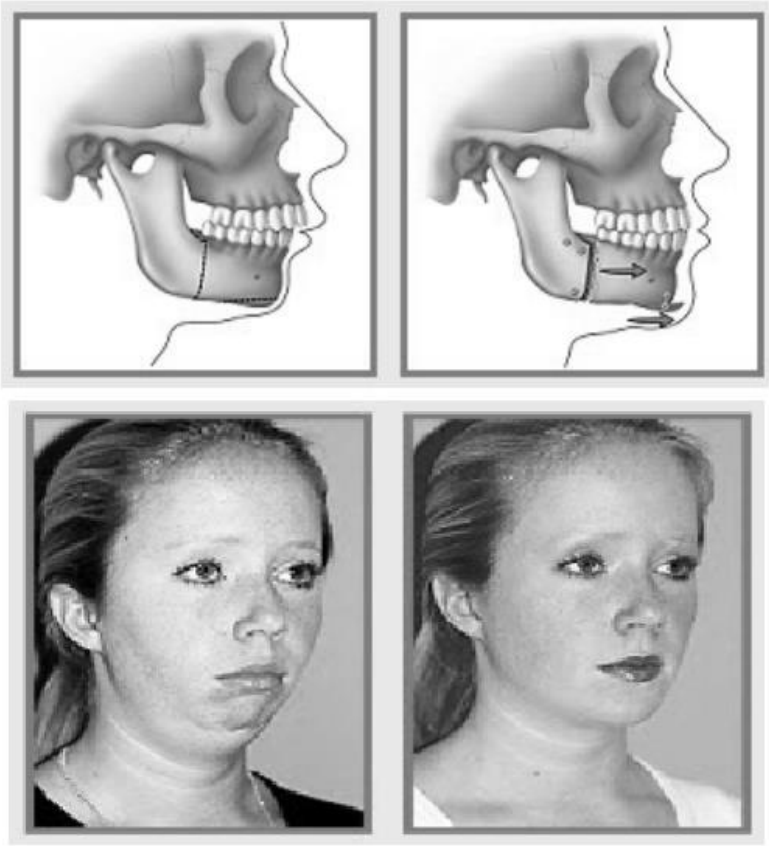
Ejercicio 7 Orbicular y buccinador

Ejercicio 8 Buccinador resistido

Ejercicio 9 Angulo oral superior

European Respiratory Society guideline on non-CPAP therapies for obstructive sleep apnoea

Osteotomía Maxilo-mandibular	Recomendación condicional (muy baja calidad de evidencia)



N=1ECR ; OMM vs APAP

↓↓**IAH 48 y 44 (NS);** ↓ ESS (NS);

Puede reemplazar a CPAP (depende de aceptabilidad)

Eur Respir Rev 2021; 30: 210200
doi.org/10.1183/16000617.0200-2021

European Respiratory Society guideline on non-CPAP therapies for obstructive sleep apnoea

Terapia Posicional	Recomendación condicional (muy baja calidad de evidencia)

N= 5 ECR; TP vs CPAP

↓ IAH (CPAP>),↑ Eficiencia Sueño,
↑ ESS, ↑ SF-36 (NS)
Adherencia (TP >)

N= 1 ECR; TP vs DAM

↓ IAH, Eficiencia Sueño (no Δ),
↓ ESS, ↑ SF-36 (no Δ)
Adherencia (TP >, NS)

POSA:
Usar TP con dispositivos vibratorios o CPAP (leve o moderada) O DAM (leve)

Eur Respir Rev 2021; 30: 210200
doi.org/10.1183/16000617.0200-2021

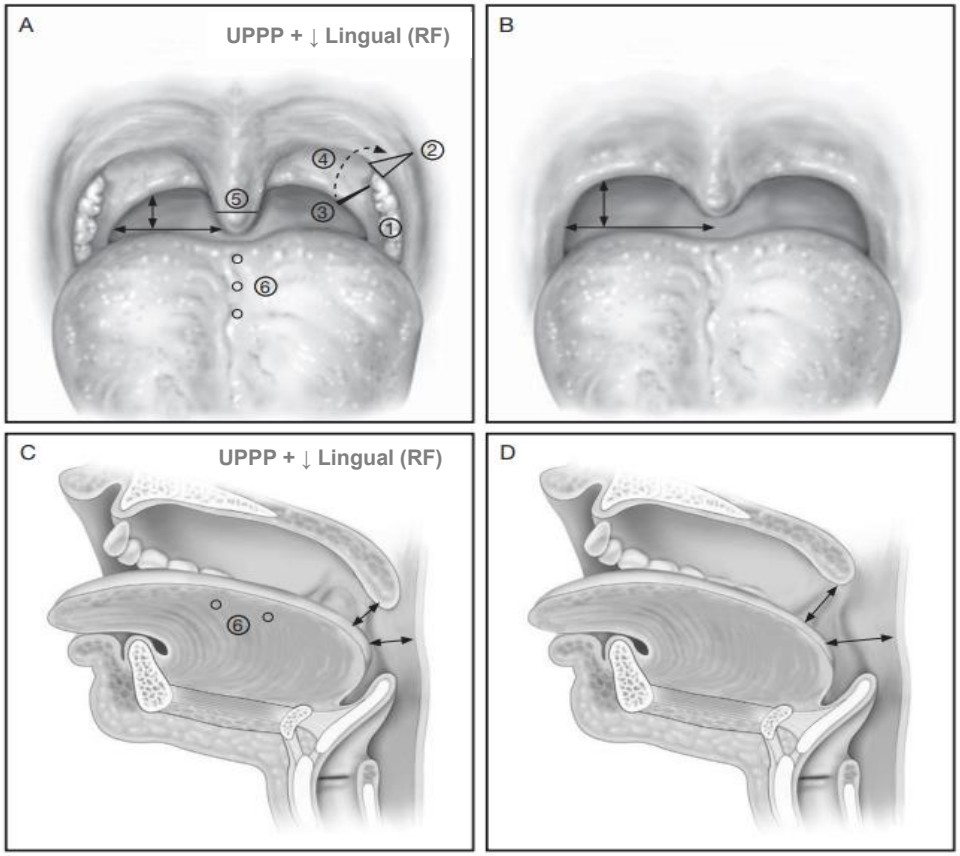
Efficacy of vibrotactile positional therapy devices on patients with positional obstructive sleep apnoea: a systematic review and meta-analysis

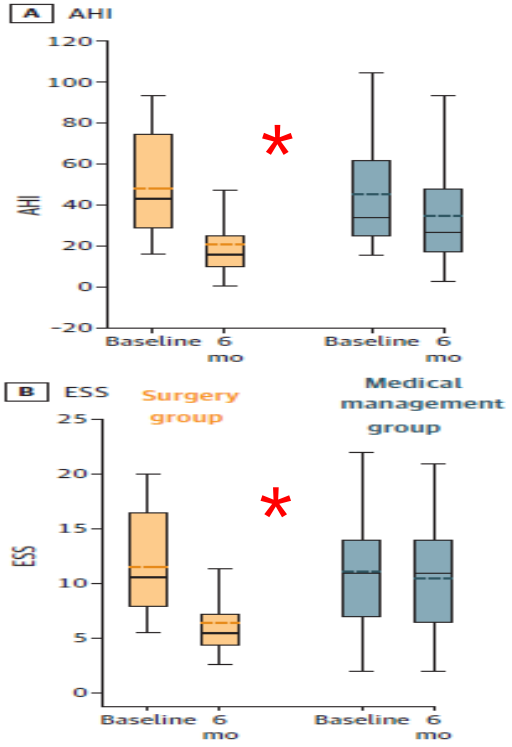
- Efectivos para tratar POSA
- ↓ IAH y % T supino
- Minimo efecto sobre calidad de sueño
- Mínimo efecto sobre somnolencia
- Limitado estudios sobre seguimiento

Thorax. 2023 Nov;78(11):1126-1134.

European Respiratory Society guideline on non-CPAP therapies for obstructive sleep apnoea

Cirugía Multinivel de V.A.S.	Effect of Multilevel Upper Airway Surgery vs Medical Management on the Apnea-Hypopnea Index and Patient-Reported Daytime Sleepiness Among Patients With Moderate or Severe Obstructive Sleep Apnea The SAMS Randomized Clinical Trial *JAMA. 2020;324(12):1168-1179.*





Eur Respir Rev 2021; 30: 210200
doi.org/10.1183/16000617.0200-2021

Conclusiones

User Information

Name: Gender: Female Birthday: 1987-06-13 Age: 36 Height: 155cm Weight: 129kg BMI: 53.69

Sleep Analysis

Start: 2024-04-17 07:45:41 End: 2024-04-17 18:02:40 Duration: 10:16:59

Deep Duration: 08:49:04 93.0% Light Duration: -- Sleep Score: 99

Respiratory Event Analysis

AHI: 38.04 Respiratory Score: 62

Apnea: 263times 3.2hours Longest Apnea: >20s at 09:51:56

Hypopnea: 99times 47.9minutes Longest Hypopnea: >120s at 17:55:00

AHI Time Rate: 42.09% AHI Time(Per Hour): 25.25minutes

SpO_2 Analysis

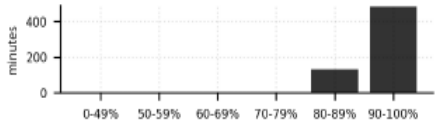
ODI: 40.35 ODRI: 29.06 SpO_2 Less Then 90%: 22.0%

Mean SpO_2: 92.2% Min SpO_2: 73% Oxygen Desaturation: Max >20s at 07:48:19 Longest >20s at 17:16:41

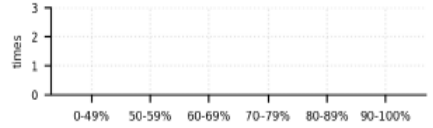
PR Analysis

Mean PR: 89.6bpm Min PR: 52bpm at 13:23:59 Max PR: 171bpm at 12:12:33

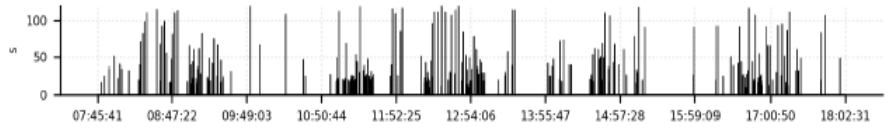
SpO_2 Distribution Diagram



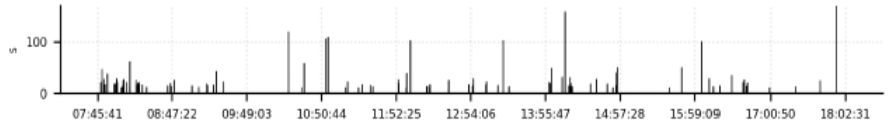
Oxygen Desaturation Distribution Diagram



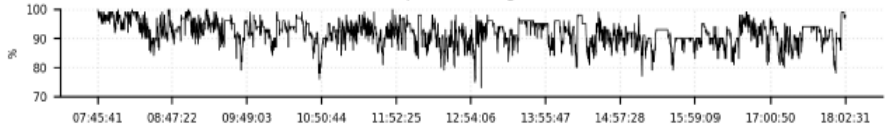
Apnea Event Diagram



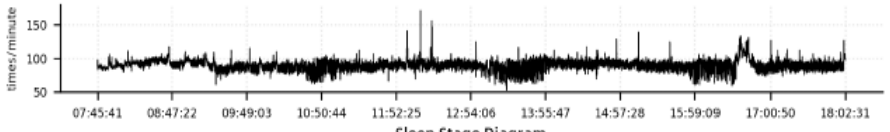
Hypopnea Event Diagram



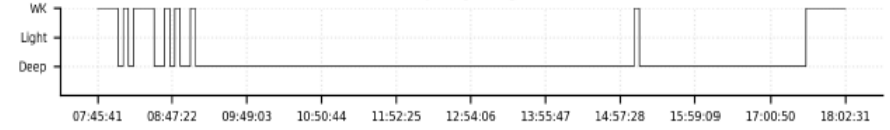
SpO_2 Trend Diagram



PR Trend Diagram



Sleep Stage Diagram



IMC 53,7
IAH=38
CT90=22%