## WatchPAT ONE First and Only Single-Use HSAT

WatchPAT™ ONE

Same WatchPAT Simplicity, Accuracy and Reliability

NO Return Shipment, NO Downloading or Charging

NO Cleaning, NO Infection Risk

## AASM COVID-19 Mitigation Strategies for Sleep Labs & Clinics

American Academy of SLEEP MEDICINE

UPDATED MARCH 19, 2020

**COVID-19 Mitigation Strategies** for Sleep Clinics and Labs

- Guidance to help mitigate spread of the novel coronavirus (<u>COVID-19</u>).
- Guidance is based on the <u>mitigation strategies</u> recommended by the Centers for Disease Control and Prevention (CDC).
- General Considerations
  - Use telemedicine where available to limit non-essential, in-person visits.
  - Consider the use of disposable home sleep apnea test (HSAT) devices instead of traditional re-usable devices.





## WatchPAT ONE First and Only Single-Use HSAT

## Breakthrough Single-Use Design

- Same WatchPAT simplicity, accuracy, reliability
- NO Return Shipment. NO Cleaning, Downloading or Charging
- NO Infection Risk





## Streamlined Workflow

- Data transfer through smart phone app
- Immediate access to sleep data for interpretation
- Data interpretation anytime anywhere with Cloud based solution

## 7 Channels and 4 Respiratory Indices



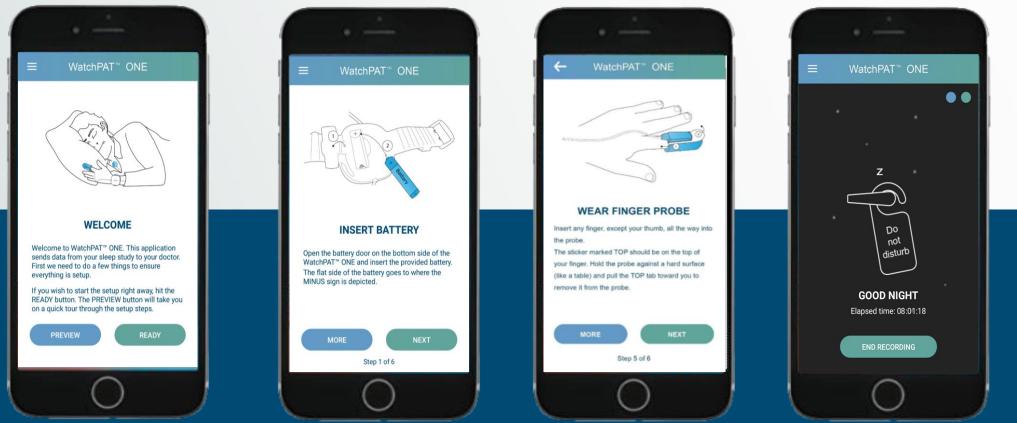
- AHI (Apnea Hypopnea Index) =
  Apneas + Hypopneas / true sleep time
- RDI (Respiratory Disturbance Index) =
  Apneas + Hypopneas + RERAs / true sleep time
- ODI (Oxygen desaturation index)
- cAHI and CSR % (Central Apnea Hypopnea Index)





### Intuitive User Application Interface

- Modern and easy to use interface
- Step by step user guide



medica

#### WatchPAT ONE Workflow

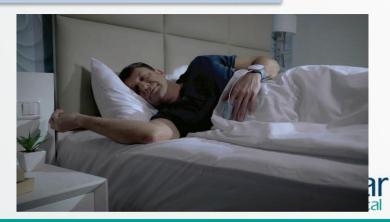
WatchPAT ONE shipped to the patient

Patient download the WatchPAT ONE application either for IOS or Android

WatchPAT ONE connects to smart phone through Bluetooth connection

When patient wakes up in the morning, ends the recording As the test starts, recorded data transfers to cloud server simultaneously

Within couple of minutes, clinician has the sleep data in zzzPAT/CloudPAT account Patient initiates the test based on instructions on the application



# Prevent up to 20% Misdiagnosis with True Sleep Time

- WatchPAT is the only HSAT that calculates AHI and RDI using the patient's **True Sleep Time** without EEG
- True Sleep Time reduces the risk of misdiagnosis up to 20% that has been reported with using total recording to

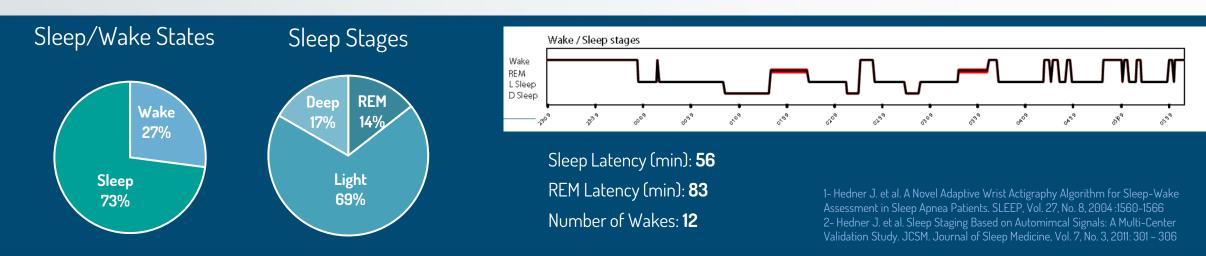


Sleep Summary

i	Start Study Time: End Study Time: Total Study Time:	9:43:01PM 6:04:59AM 8 hrs, 21 min
	Sleep Time % REM of Sleep Time:	6 hrs, 7 min 21.4

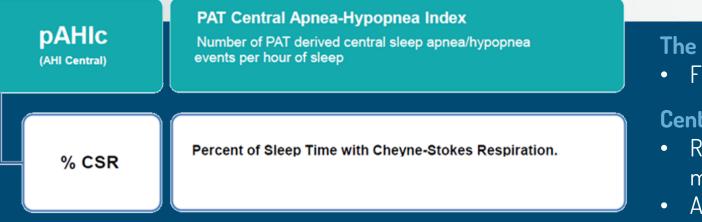
## Improved Accuracy with Sleep Architecture

- WatchPAT's clinically validated Sleep Architecture provides information on sleep stages, sleep efficiency, sleep and REM latency<sup>1-2</sup>
- It also provides the added value of detecting REM related sleep apnea with **REM and non-REM AHI**



## Improved Accuracy with Central Sleep Apnea Identification

WatchPAT has been clinically proven to detect all types of apnea events. **The Central PLUS Module enables specific identification of Central Sleep Apnea (CSA) and** Percent of Sleep Time with Cheyne-Stokes Respiration.



#### The PAT Signal

• Fewer upstroke variations as there is no respiratory effort

**Central PLUS Sensor** 

- RSBP (Respiratory, Snoring and Body Position) sensor measures the chest movement
- Assesses breathing noise during and after suspected CSA event

## Automated Report in Just Seconds

- Respiratory Indices AHI, RDI, ODI
- Central AHI- Apneas per hour
- Apnea Episodes through the night
- Snoring and Body \_ Position
- Oxygen & Heart Rate (note precipitous drops)
- Sleep Stages (unique to WatchPAT)

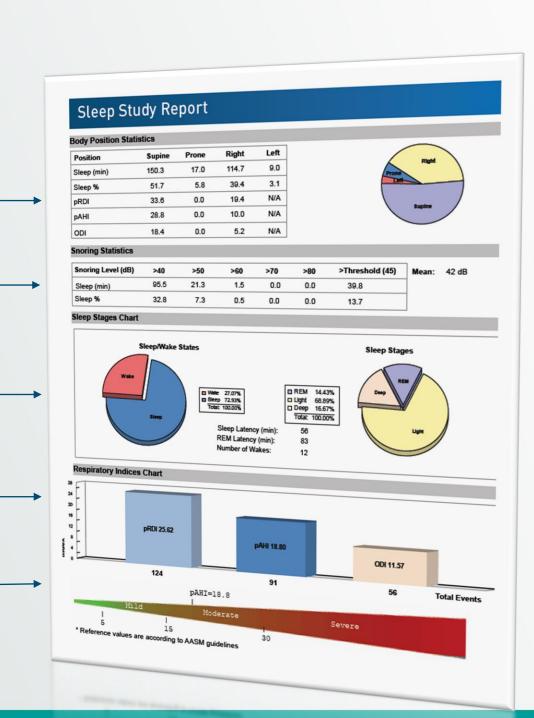
Sleep Summa	iry				Oxygen Saturation Statistics						
Start Study Time: 11:09:35PM					Mean:	Mean: 96 Minimum: Mean of Desaturations Nadirs (%):		86	Maximum:		99
End Study				5:48:33AM	Mean of D	esaturations	Nadirs (%):				3
Total Study	Time:		6	hrs, 38 min	Oxygen D	esatu r.%:		4-9	10-20	>20	Tota
Sleep Time 4 hrs, 5				hrs, 50 min	Events Nu	mber		55	1	0	56
% REM of S	ileep Time:			14.4	Total			98.2	1.8	0.0	100.
Respiratory li	espiratory Indices				Oxygen Si	Oxygen Saturation		<88>	<85	<80	<70
	Total Events	REM	NREM	All Night	Duration	minutes):	0.8	0.3	0.0	0.0	0
pRDI:	124	47.1	22.0	25.6	Sleep %		0.3	0.1	0.0	0.0	0.
pAHI:	91	47.1	14.0	18.8	Pulse Rate S	Statistics during Sleep (B		)			
ODE	56	35.7	7.5	11.6	Mean:	55	Minimum:	N/A	Mari	mum:	
pAHIC: %CSR	4	0.8	0.8	0.8			Marian Maria	IVA	Max	mum:	7
Indices are ca pRDI/pAHI ar PAT Respira		ld sleep tin 3 oxl desatu	ne of 4 hrs, 50 Jrations 2	0 min. 3%	]		ļ				
PAT Respira	y Position		irations 2								
PAT Respira	e calculated using tory Events		irations 2								
PAT Respira	y Position		irations 2								
PAT Respira	y Position		irations 2				<u></u>				
DALUPAHI an PAT Respira	Position	Rate (BPM)	irations 2								
PAT Respira	Position	Rate (BPM)	irations 2								
PALIOPAHI an PAT Respira Snore / Bod	Position	Rate (BPM)	irations 2						1111		
PALIVPAHI an PAT Respira	Position	Rate (BPM)	irations 2				U-1				
PAT Respira	Position	Rate (BPM)	irations 2								



## Automated Report in Just Seconds

- Body Position Statistics and Graphical Display
- Snoring Statistics

- Sleep Stages Graphical Display
- Respiratory Indices Chart
- AHI Severity Scale





# WatchPAT, a well validated HSAT against Polysomnography

#### **Diagnosis of Obstructive Sleep Apnea by Peripheral Arterial Tonometry (Meta-Analysis)**

Yalamanchali et al. JAMA Otolaryngnol Head Neck Surg, 2013

**Study Objective**: To assess the correlation between sleep indexes measured by a portable sleep-testing device (peripheral arterial tonometry -PAT) and those measured by PSG.

**Method:** Review incl. 14 studies (909 patients) with data suitable for pooling, that assessed correlation RDI, AHI ODI.

**Results:** WatchPAT and PSG indices of RDI, AHI and ODI, were all significantly correlated with r values of **0.879 (RDI), 0.893 (AHI)**, and **0.942 (ODI)** (all P<0.001).

RDI combined with AHI were highly correlated (r = 0.889, p < .001).

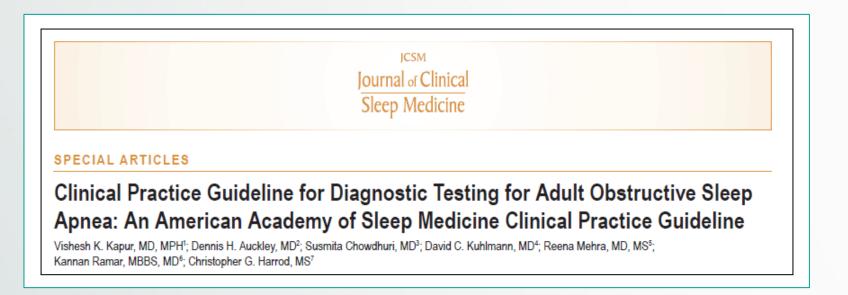
Overall Correlation of the Respiratory Disturbance Index (RDI) and Apnea-Hypopnea Index (AHI) Between Polysomonography (PSG) and Peripheral Arterial Tonometry (PAT)

			Statistics				Negative	Positive
Source (Study Setting), (Design)	Subgroup Within Study	Correlation, r Value	Lower Limit (95% CI)	Upper Limit (95% Cl)	Z Value	P Value	Correlation	Correlation
Pillar et al, 17 2002 (L), (B)	AHP	0.820	(0.740	-0.877)	11.035	<.001	-	-#-
Penzel et al,18 2002 (L), (B)	AHI	0.656	(0.313	-0.848)	3.334	.001	_	<b>_</b>
Bar et al,3 2003 (L), (B)	AHP	0.880	(0.826	-0.918)	13.480	<.001	_	-
Ayas et al,20 2003 (L), (B)	AHI	0.870	(0.742	-0.937)	6.927	<.001	_	
Pillar et al,22 2003 (L), (B)	AHIP	0.870	(0.797	-0.918)	10.748	<.001	_	- <b>-</b>
Penzel et al, <sup>22</sup> 2004 (L), (B)	AHI	0.890	(0.715	-0.960)	5.320	<.001	_	<b>+</b> _
Penzel et al, <sup>22</sup> 2004 (L), (B)	RDI	0.770	(0.459	-0.913)	3.818	<.001	_	
Pittman et al, 23 2004 (L), (B)	AHP	0.880	(0.758	-0.943)	7.015	<.001	_	_ <b>_</b>
Pang et al,25 2007 (L), (B)	AHI	0.929	(0.858	-0.965)	8.883	<.001	_	-
Choi et al, 28 2010 (L), (NB)	AHI	0.940	(0.867	-0.974)	8.152	<.001	_	
Hedner et al, 27 2011 (L), (B)	RDI	0.870	(0.834	-0.898)	19.962	<.001	_	•
Onder et al, 20 2012 (L), (B group 1)	AHI	0.920	(0.835	-0.962)	8.102	<.001	_	-
Onder et al,20 2012 (L), (B group 2)	AHI	0.940	(0.871	-0.973)	8.515	<.001	_	- <b>-</b>
Weimin et al,32 2013 (L), (B)	AHI	0.920	(0.833	-0.963)	7.945	<.001	_	-
Yuceege et al, <sup>31</sup> 2013 (L), (B)	AHI	0.960	(0.939	-0.974)	17.621	<.001	_	•
Yuceege et al,31 2013 (L), (B)	RDI	0.909	(0.863	-0.940)	13.780	<.001	_	
Overall		0.894	(0.864	-0.918)	21.241	<.001	-0.50 0.1	

corresponds to the relative weight assigned in the pooled analysis. B indicates blinded; H, home setting; L, laboratory setting; and NB, non-blinded. Study reported the value as RDI; however, recent American Academy of Sleep Medicine criteria defined the value as AHI.



## **PAT Signal Recognized By** AASM Clinical Practice Guidelines

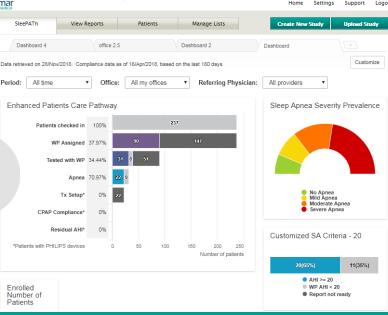


"A technically adequate HSAT device incorporates a minimum of the following sensors: Nasal pressure, chest and abdominal respiratory inductance plethysmography, and oximetry; **Or else PAT with oximetry and actigraphy.**"

## **CloudPAT<sup>TM</sup>** Makes Sleep Diagnostics Accessible

- **CloudPAT**, HIPPA-compliant cloud based IT solution for convenient sleep diagnosis and secure patient data transfer, streamline user workflow through online access for sleep report interpretation.
- Its expanded capability SleePATh, a patient care pathway dashboard, enable physicians to track their patient's sleep apnea management pathway and on-line raw signals study review and interpretation

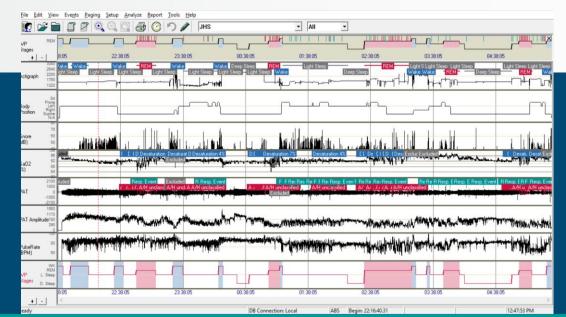




### **zzzPAT**<sup>™</sup>Advance Algorithm for Sleep Diagnostics

- **zzzPAT** software with an advanced algorithm for scoring of respiratory events and sleep stages
- A comprehensive **sleep study report** is generated within **seconds** allowing patients to initiate treatment without delay
- **zzzPAT** enables both automatic scoring based on its advanced algorithm or manual scoring by user's preference

**zzzPAT** allows users to have several montages and graphical changes for event representation for easier report analyzing





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