WatchPAT™ 300

Home Sleep Apnea Testing

Simple. Accurate. Reliable.

itamar medical

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WatchPAT 300 is an innovative diagnostic Home Sleep Apnea Test (HSAT) that utilizes the proprietary peripheral arterial tone signal (PAT). WatchPAT measures up to 7 channels (PAT signal, heart rate, oximetry, actigraphy, body position, snoring and chest motion) via three points of contact. Within one-minute post study, the raw data is downloaded and auto-scored differentiating obstructive and central events, providing an AHI, RDI and ODI based upon True Sleep Time and Sleep Staging. Both the AHI and RDI derived from the WatchPAT were clinically validated with an 89% correlation to PSG[1]. The PAT signal is an approved measure in the 2017 AASM HSAT Clinical Practice Guidelines for Adults with OSA.

- **Simple**, 3 points of contact for outstanding patient compliance
- **Clinically reliable** with 98% success rate[2]
- **True Sleep Time** for accurate AHI
- **Sleep Architecture** for a comprehensive diagnosis
- **Central Sleep Apnea (CSA)** diagnostic capability with Central+ module
- **Scalable Cost Effective Solution** for high volume workflow with an automated report for immediate diagnosis and treatment decision
- **zzzPAT** software with an advanced automatic algorithm for scoring of respiratory events
- **CloudPAT™** cloud based IT solution for convenient sleep diagnosis and secure patient data transfer

WatchPAT's Clinical Parameters:

AHI
Apnea / Hypopnea Index

AHIc
Central Apnea/Hypopnea Index

RDI
Respiratory Disturbance Index

ODI
Oxygen Desaturation Index

Wake / Sleep
True Sleep Time

REM / Deep / Light - Sleep Stages
Complete Sleep Architecture

Body Position Indices

Snoring

Heart Rate

Chest Movement

Pulse Oximetry

Actigraphy

It's Simple.

Intuitive Design

- Modern intuitive design
- Improved comfort with lighter weight and flexible wristband
- Detachable design for easier cleaning

Improved Signals and User Interface

- Improved oximetry signal quality
- Enhanced user interface for improved ease of use

No More Waiting Time

- Rapid download (15 sec) for improved workflow
- One Stop processing with external battery

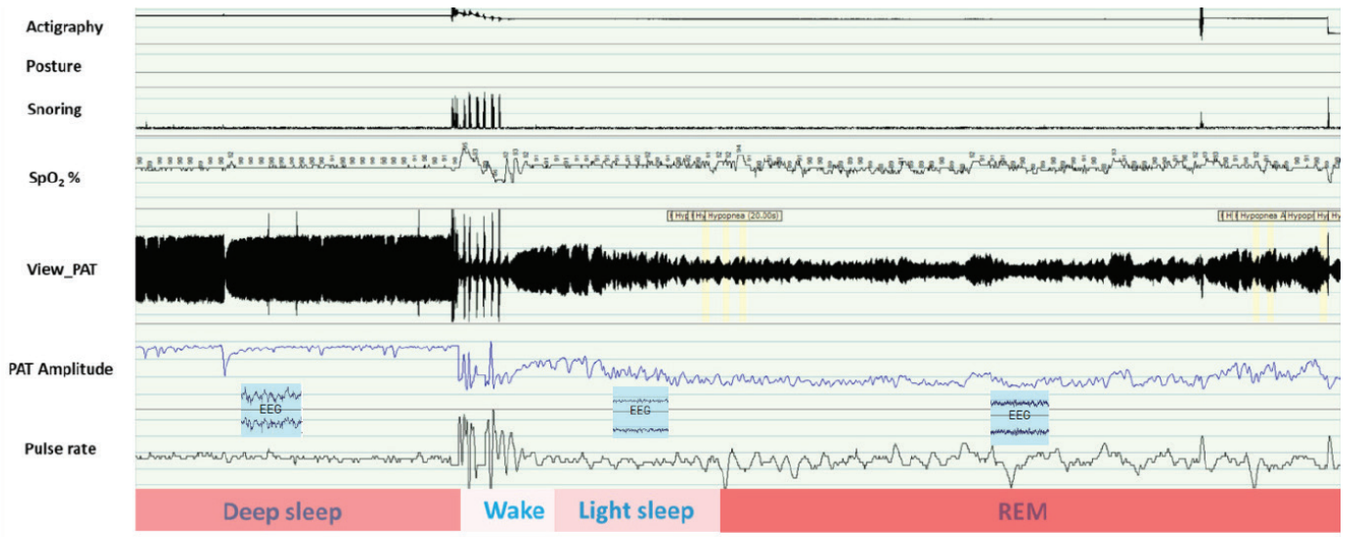
Central Plus Module

- Specific identification of Central Sleep Apnea

It's Accurate. It's Reliable.

Sleep Architecture

WatchPAT's clinically validated Sleep Architecture provides information on sleep staging including sleep efficiency, sleep latency and REM latency[3-4]. It also provides the added value of detecting REM related sleep apnea with REM and non-REM AHI.



Deep sleep
Low PAT amplitude variability, low pulse rate variability

Light sleep
High PAT amplitude variability, high pulse rate variability

REM sleep
Very high PAT amplitude variability, very high pulse rate variability, attenuated PAT amplitude

True Sleep Time

The WatchPAT uses its advanced actigraphy to differentiate between wake and sleep periods to calculate True Sleep Time and uses the PAT amplitude and pulse rate to differentiate between non-REM and REM thereby creating a Sleep Architecture (Light, Deep, REM). WatchPAT calculates AHI and RDI using the patient's True Sleep Time rather than the recorded time used in most commercially available HSAT's. WatchPAT's True Sleep Time reduces the risk of misdiagnosis and misclassification that has been reported to be 20% with HSAT's using total recording time.[5]

Sleep Summary

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

Comprehensive Automated Report Streamlines Workflow

Sleep Summary

- Recording Start and End Time
- Total Recording Time and True Sleep Time

Respiratory Indices

- pRDI – PAT Respiratory Disturbance Index
- pAHI - PAT Apnea-Hypopnea Index
- ODI – Oxygen Desaturation Index
- pAHIc - PAT Central Apnea Hypopnea Index
- %CSR - Percentage of Cheyne Stokes Respiration

Hypnogram

- All Respiratory Events
- Snore / Body Position
- Oxygen / Pulse Rate
- Sleep Stages

Sleep Summary

Start Study Time:	11:09:35PM
End Study Time:	5:48:33AM
Total Study Time:	6 hrs, 38 min
Sleep Time	4 hrs, 50 min
% REM of Sleep Time:	14.4

Respiratory Indices

	Total Events	REM	NREM	All Night
pRDI:	124	47.1	22.0	25.6
pAHI:	91	47.1	14.0	18.8
ODI:	56	35.7	7.5	11.6
pAHIc:	4	0.8	0.8	0.8
%CSR	0.0			

Indices are calculated using valid sleep time of 4 hrs, 50 min.
pRDI/pAHI are calculated using oxi desaturations ≥ 3%

Oxygen Saturation Statistics

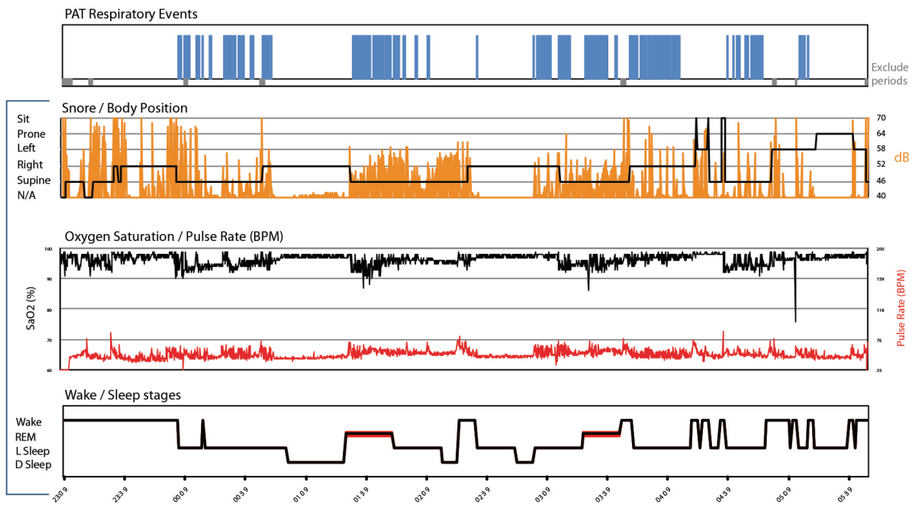
Mean: 96 Minimum: 86 Maximum: 99
Mean of Desaturations Nadirs (%): 93

Oxygen Desatu r. %:	4-9	10-20	>20	Total
Events Number	55	1	0	56
Total	98.2	1.8	0.0	100.0

Oxygen Saturation	<90	<88	<85	<80	<70
Duration (minutes):	0.8	0.3	0.0	0.0	0.0
Sleep %	0.3	0.1	0.0	0.0	0.0

Pulse Rate Statistics during Sleep (BPM)

Mean: 55 Minimum: N/A Maximum: 75



Oxygen and Pulse Information

- Oxygen Saturation Statistics
- Oxygen Desaturation %
- Oxygen Desaturation
- Pulse Rate Statistics

Body Position and Snoring Statistics

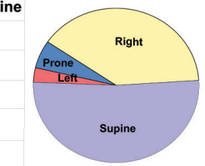
Sleep Stages and Efficiency

Sleep Latencies and Sleep Stage Percentages

Respiratory Indices Graph

Body Position Statistics

Position	Supine	Prone	Right	Left	Non-Supine
Sleep (min)	150.3	17.0	114.7	9.0	140.7
Sleep %	51.7	5.8	39.4	3.1	48.3
pRDI	33.6	0.0	19.4	N/A	17.1
pAHI	28.8	0.0	10.0	N/A	8.1
ODI	18.4	0.0	5.2	N/A	4.3

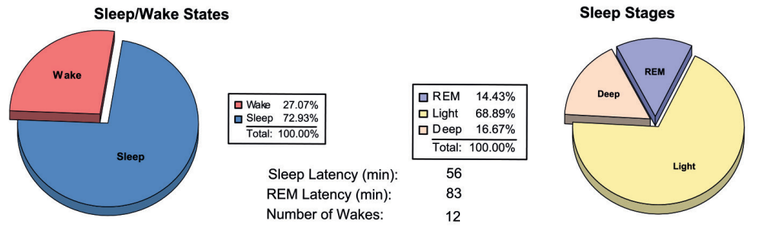


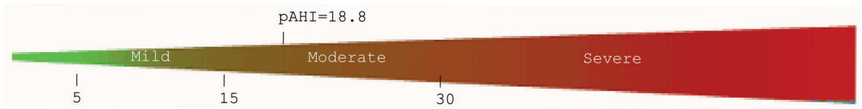
Snoring Statistics

Snoring Level (dB)	>40	>50	>60	>70	>80	>Threshold (45)
Sleep (min)	95.5	21.5	1.7	0.0	0.0	40.0
Sleep %	32.8	7.4	0.6	0.0	0.0	13.7

Mean: 42 dB

Sleep Stages Chart



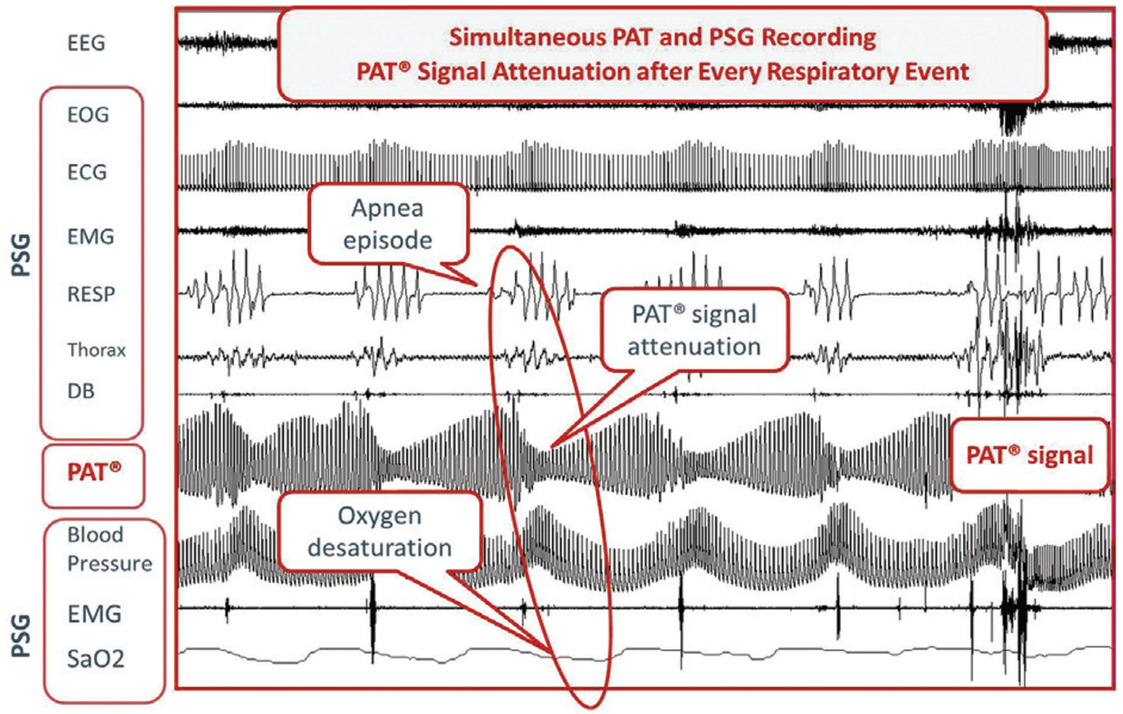


* Reference values are according to AASM guidelines

WatchPAT™ 300

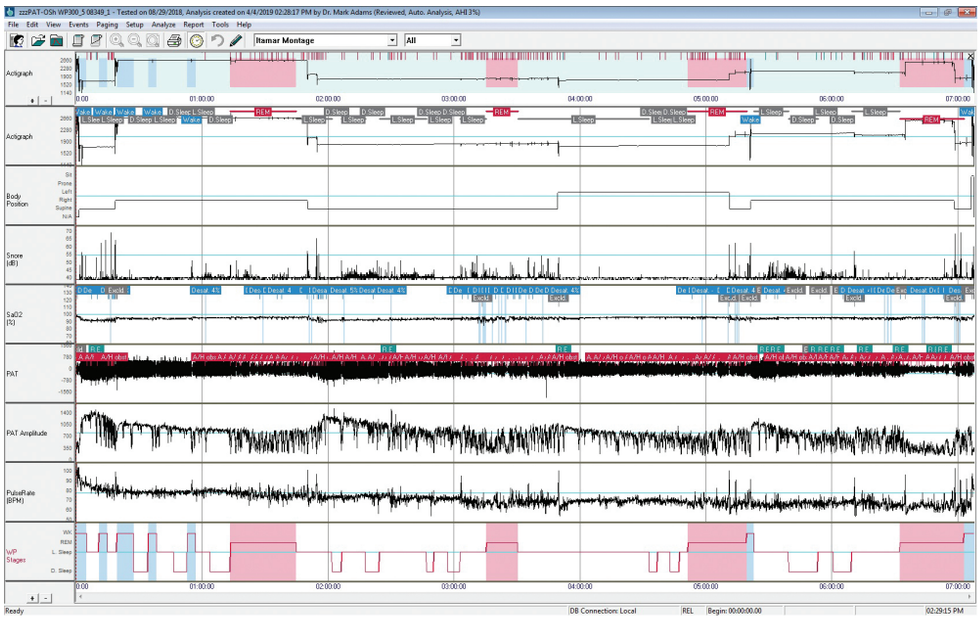
PAT Signal Explained

The proprietary PAT signal is a non-invasive measure of the arterial pulsatile volume changes at the fingertip.
The PAT signal attenuation and accelerated pulse rate has been shown to reflect sympathetic activation which is a clinically validated surrogate for autonomic arousals and micro-arousals found in sleep disordered breathing[1]. Combined with oximetry desaturations or re-saturations, the proprietary WatchPAT algorithm accurately classifies the SDB events into AHI, RDI and ODI, providing the physician with a comprehensive assessment of the patient.



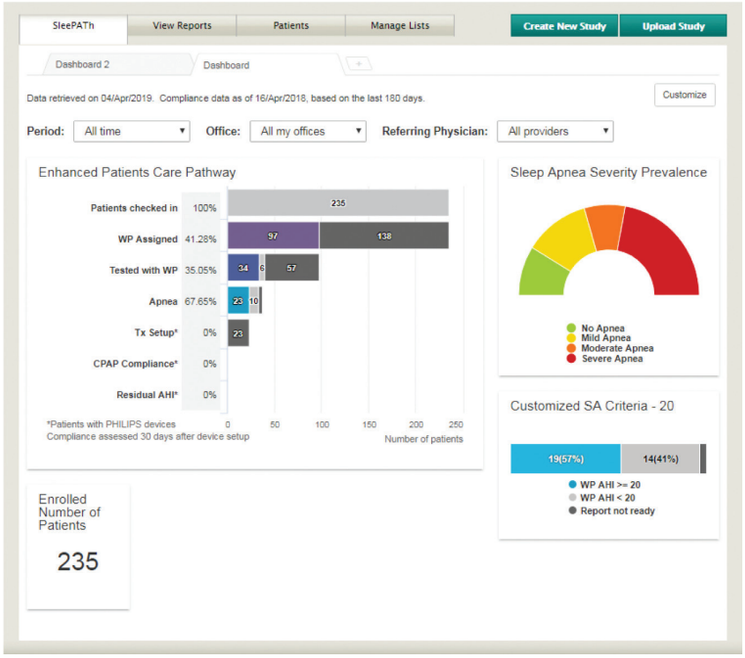
The zzzPAT Software

The zzzPAT software uses an advanced algorithm for the scoring of respiratory events and delineation of sleep stages. After a study is downloaded, an automated report is generated detailing sleep architecture, sleep efficiency, sleep latency, REM and non-REM related apnea events. If required zzzPAT's flexibility allows the user to manually score an event or study.



The CloudPAT® Platform

The CloudPAT® platform is a HIPAA-compliant, cloud-based IT solution for secure patient data transfer and convenient sleep study interpretation and diagnosis. SleePATh™ expands the CloudPAT platform with a dashboard to assist physicians in monitoring patient compliance throughout the entire patient care pathway.



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Itamar Medical is a leading medical device company that develops and markets products utilizing its proprietary PAT technology to diagnose and manage Sleep Disordered Breathing. The company has pioneered innovative solutions to help physicians provide comprehensive sleep apnea management in a variety of clinical environments to optimize patient care and reduce healthcare costs.

Itamar Medical has offices and distribution channels around the world.

References:

1 Yalamanchali S, Farajian V, Hamilton C, Pott TR, Samuelson CG, Friedman M. Diagnosis of obstructive sleep apnea by peripheral arterial tonometry: meta-analysis. JAMA Otolaryngol. Head Neck Surg. December 2013;139(12):1343-1350

2 Data on file

3 Hedner J. et al. A Novel Adaptive Wrist Actigraphy Algorithm for Sleep-Wake Assessment in Sleep Apnea Patients. SLEEP, Vol. 27, No. 8, 2004 :1560-1566

4 Hedner J. et al. Sleep Staging Based on Automimcal Signals: A Multi-Center Validation Study. JCSM. Journal of Sleep Medicine, Vol. 7, No. 3, 2011: 301 – 306

5 Comparison of AHI using recording time versus sleep time Schutte – Rodin et al., J Sleep Abs supl 2014, p. A373

REF MM2198724