COLLEGE OF PHYSICIANS AND SURGEONS OF BRITISH COLUMBIA

Diagnostic Accreditation Program

ACCREDITATION STANDARDS

Ambulatory Testing

Diagnostic Accreditation Program
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Introduction

Ambulatory sleep tests are a valuable diagnostic tool, when used in the right context for the investigation of patients with sleep related disorders.

Historically, overnight pulse oximetry was commonly used to evaluate nocturnal saturation levels, but advancement and accessibility in sleep services has ensured that Level I or home sleep apnea testing (HSAT) are the most preferred methods. However, the role of pulse oximetry, under the direction of a qualified individual, may allow for additional monitoring and data that could be used to assist in supporting patients with sleep-related disordered breathing.

Actigraphy is not a commonly used test, but when clinically relevant can be useful during the assessment of circadian rhythm sleep-wake disorders. Also, this test may be useful as an adjunct to polysomnography and multiple sleep latency test (MSLT) in the assessment of hypersomnolence.

Patient orientation

No.		Description	Risk	Reference	Change
AMBL1.0		**PATIENT ORIENTATION**			NEW
AMBL1.1		**Patients are orientated and prepared for the test being performed.**		POLY-AC-24	New
AMBL1.1.1	**M**	Patient preparation instructions are clearly communicated.	M		New
AMBL1.1.2	**M**	Patients are orientated to their testing equipment in person, but when this cannot be achieved the reason is documented. *Guidance: The preferred method of instructions for patient set-up is in person; however, virtual teaching can be used, but must include video and the facility should follow the patient's choice.*	L		New
AMBL1.1.3	**M**	Patients are informed of the procedure to contact staff for assistance with technical issues.	M		New
AMBL1.1.4	**M**	Patient set-up with the equipment is conducted by qualified staff who have appropriate training and experience.	M		New
AMBL4.1.5	**M**	The date and time settings of the testing equipment are verified prior to testing.			New
AMBL4.1.6	**M**	There is a process to ensure the battery will last for the duration of the test. *Guidance: This is done to ensure that the testing equipment is not compromised by dead batteries.*	M		New
AMBL4.1.7	**B**	There is a process to ensure the device memory has been cleared from previous tests, and the device has sufficient free memory to store data for the duration of the test.			New

Overnight oximetry

No.		Description	Risk	Reference	Change
					New
AMBL2.0		**OVERNIGHT OXIMETRY**			
AMBL2.1		**Overnight oximetry tests are conducted in a manner that ensures accurate results.**		JCSM 2019	New
AMBL2.1.1	**M**	The patient and/or caregiver receives instructions on the pulse oximeter that includes turning the oximeter on and off.	L		New
AMBL2.1.2	**M**	The patient and/or caregiver receives instructions on the pulse oximeter that includes placing and securing the probe.	L		New
AMBL2.1.3	**M**	The patient and/or caregiver receives instructions on the pulse oximeter that includes ensuring that a good signal is achieved.	L		New
AMBL2.1.4	**M**	The patient and/or caregiver receives instructions on the pulse oximeter that includes process to record events through the night.	L		New
AMBL2.1.5	**M**	Pulse rate and oxygen saturation data are collected for at least four hours. *Guidance: Six hours of data is preferable.*	L		New
AMBL2.2		**Overnight oximetry data is recorded and reported in a manner that ensures accurate results for interpretation.**			New
AMBL2.2.1	**B**	Unedited data is available to the interpreting physician.			New
AMBL2.2.2	**B**	Data analysis is performed using appropriate software provided by the device vendor and using a validated scoring algorithm.			New
AMBL2.2.3	**B**	Prior to analysis, data is subject to pre-processing to remove artifacts.			New
AMBL2.2.4	**M**	The reporting of data includes SpO_2% mean.	L		New
AMBL2.2.5	**M**	The reporting of data includes SpO_2% minimum.	L		New
AMBL2.2.6	**M**	The reporting of data includes total time the SpO_2 is below 88%, 85%, and 80%.	L		New
AMBL2.2.7	**M**	The reporting of data includes the desaturation index (the number of 4% desaturations/hour).	L		New
AMBL2.2.8	**M**	The reporting of data includes heart rate (mean, minimum and maximum).	L		New
AMBL2.2.9	**M**	The reporting of data includes graphic data of SpO_2 and cardiac rate for the duration of the test.	L		New

No.		Description	Risk	Reference	Change
AMBL2.2.10	**M**	The reporting of data includes details of the therapeutic intervention settings (e.g. PAP settings).	L		New

Actigraphy

No.		Description	Risk	Reference	Change
AMBL3.0		**ACITGRAPHY**		JCSM 2018 WEH	New
AMBL3.1		**Actigraphy tests are conducted in a manner to ensure accurate results.**			New
AMBL 3.1.1	**M**	Tests are conducted using a validated actigraphy device and is approved by the medical director for use.	M		New
AMBL 3.1.2	**B**	The device is worn on the non-dominant wrist.			New
AMBL 3.1.3	**B**	Instructions on established event markers are defined and communicated to the patient. *Guidance: Event markers should be used to mark the time of first getting into bed and turning out the lights, regardless of sleep, and of physically getting out of bed.*			New
AMBL 3.1.4	**B**	The device is worn on the non-dominant wrist and kept on at all times. *Guidance: If the device is removed, appropriate use of the event marker is used.*			New
AMBL 3.1.5	**B**	Tests are conducted for a minimum of seven consecutive 24-hour periods.			New
AMBL 3.1.6	**B**	Tests are accompanied by a sleep diary.			New
AMBL 3.1.7	**B**	There is a process in place to ensure the device memory has been cleared from previous tests, and the device has sufficient free memory to store data for the duration of the test.			New
AMBL3.2		**Actigraphy data is recorded and reported in a manner that ensures accurate results for interpretation.**			New
AMBL 3.2.1	**B**	The collection of data on the device is in standard epoch lengths of no more than one minute.			New
AMBL 3.2.2	**B**	Data analysis is performed using appropriate software provided by the device vendor and using a validated scoring algorithm.			New
AMBL 3.2.3	**B**	Time in bed is determined manually using a combination of event markers, sleep dairy, and/or ambient light sensors.			New
AMBL 3.2.4	**B**	Prior to analysis, data is subject to pre-processing to remove noise from the beginning and ending of the recording period, to identify and mark any “off wrist” periods, and to identify and mark time in bed.			New

No.		Description	Risk	Reference	Change
AMBL 3.2.5	**B**	The scoring software allows for fine-tuning of the scoring algorithm, for example adjusting wake threshold values or application of sleep re-scoring rules.			New
AMBL 3.2.6	**B**	The generated report includes at least total sleep time, sleep efficiency, sleep latency, and wake after sleep onset.			New
AMBL 3.2.7	**B**	Raw data is available to the interpreting physician.			New

References

Abbreviation	Reference
AASM 2014	American Academy of Sleep Medicine. International Classification of Sleep Disorders. 3rd ed. Darien, IL: American Academy of Sleep Medicine; 2014.
AASM Scoring Manual V3.0	American Academy of Sleep Medicine. The AASM Manual for Scoring Sleep and Associated Events. Rules, Terminology and Technical Specifications. Version 3.0. 2023
JCSM 2017	Kapur VK, Auckley DH, Chowdhuri S, Kuhlmann DC, Mehra R, Ramar K, Harrod CG. 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 Mar 15;13(3):479-504. doi: 10.5664/jcsm.7230.
JCSM 2018	Smith MT, McCrae CS, Cheung J, Martin JL, Harrod CG, Heald JL, Carden KA. Use of Actigraphy for the Evaluation of Sleep Disorders and Circadian Rhythm Sleep-Wake Disorders: An American Academy of Sleep Medicine Clinical Practice Guideline. J Clin Sleep Med. 2018 Jul 15;14(7):1231-1237. doi: 10.5664/jcsm.7230. PMID: 29991437; PMCID: PMC6040807. https://jcsm.aasm.org/doi/10.5664/jcsm.7230
JCSM 2019	Patil SP, Ayappa IA, Caples SM, Kimoff RJ, Patel SR, Harrod CG. Treatment of Adult Obstructive Sleep Apnea with Positive Airway Pressure: An American Academy of Sleep Medicine Clinical Practice Guideline. J Clin Sleep Med. 2019 Feb 15;15(2):335-343. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6223566/
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WEH	Fekedulegn D, Andrew ME, Shi M, Violanti JM, Knox S, Innes KE. Actigraphy-Based Assessment of Sleep Parameters. Ann Work Expo Health. 2020 Apr 30;64(4):350-367. doi: 10.1093/annweh/wxaa007. PMID: 32053169; PMCID: PMC7191872.