OVERVIEW
Actigraphy refers to the assessment of activity patterns by devices typically placed on the wrist or ankle that record body movement, which is interpreted by computer algorithms as periods of sleep (absence of activity) and wake (activity). Sleep/wake cycles may be altered in sleep disorders including insomnia and circadian rhythm sleep disorders. In addition, actigraphy could potentially be used to assess sleep/wake disturbances associated with numerous other diseases or disorders. Actigraphy might also be used to measure the level of physical activity.

PRIOR AUTHORIZATION
Not applicable

POLICY STATEMENT
Blue CHiP for Medicare and Commercial
Actigraphy is considered not medically necessary when used as the sole technique to record and analyze body movement, including but not limited to its use to evaluate sleep disorders. This does not include the use of actigraphy as a component of portable sleep monitoring.

When used as a component of portable sleep monitoring, actigraphy should not be separately reported.

MEDICAL CRITERIA
None

BACKGROUND
Actigraphic devices are typically placed on the nondominant wrist with a wristband and are worn continuously for at least 24 hours. Activity is usually recorded for a period of 3 days to 2 weeks but can be collected over extended time periods with regular downloading of data onto a computer. The activity monitors may also be placed on the ankle for the assessment of restless legs syndrome, or on the trunk to record movement in infants. The algorithms for detection of movement are variable among devices and may include “time above threshold,” the “zero crossing method,” or “digital integration” method, resulting in different sensitivities. Sensitivity settings (eg, low, medium, high, automatic) can also be adjusted during data analysis. The digital integration method reflects both acceleration and amplitude of movement; this form of data analysis may be most commonly used today. Data on patient bed times (lights out) and rise times (lights on) are usually entered into the computer record from daily patient sleep logs or by patient-activated event markers. Proprietary software is then used to calculate periods of sleep based on the absence of detectable movement, along with movement-related level of activity and periods of wake. In addition to providing graphic depiction of the activity pattern, device-specific software may analyze and report a variety of sleep parameters including sleep onset, sleep offset, sleep latency, total sleep duration, and wake after sleep onset. Actigraphy has been used for more than 2 decades as an outcome measure in sleep disorders research.

Regulatory Status
Numerous actigraphy devices have received U.S. Food and Drug Administration (FDA) clearance for marketing through the 510(k) process. Some actigraphy devices are designed and marketed to measure...
sleep/wake states while others are designed and marketed to measure levels of physical activity. The clinical validity of actigraphy, the assessment of activity patterns by devices typically placed on the wrist or ankle that record body movement, depends, to a large extent, on the modality with which it is being compared.

Overall, progress has been made since the 2007 American Academy of Sleep Medicine (AASM) research recommendations in assessing the reliability and validity of different algorithms in comparison with the reference standard. Although actigraphy appears to provide reliable measures of sleep onset and wake time in some patient populations, the clinical utility of actigraphy over the less expensive sleep diary has not been demonstrated. Moreover, evidence indicates that actigraphy does not provide a reliable measure of sleep efficiency in clinical populations. Evidence to date does not indicate that this technology is as beneficial as the established alternatives. Therefore, actigraphy is considered not medically necessary as it is investigational.

**COVERAGE**

BlueCHiP for Medicare and Commercial

Benefits may vary between groups/contracts. Please refer to the Evidence of Coverage or Subscriber Agreement for applicable not medically necessary benefits/coverage.

**CODING**

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**RELATED POLICIES**

None

**PUBLISHED**

Provider Update Jan 2015

**REFERENCES**


