Actigraphy used as sole outcome measure. No effect on "traditional sleep measures". Nocturnal sleep consolidation was improved with tx and persisted across f/u after tx discontinuation.

To examine the prevalence of circadian rhythm sleep disorders (CRSD) in a representative population of children and adolescents.

The study found a significant correlation between actigraphy measured sleep duration and both self (r = 0.71) and parental (r = 0.79) reports in the control, but not for the CF group (actigraphy > questionnaire).

Compliance: 83
Duration: 18 days (Baseline-3 days, light treatment -10 days, and post-tx f/u-5 days)

(Ando, 2002 #999) 3

30 Patients were randomly assigned by block randomization (matching, by age and sex, in a 1:1:1:1 ratio). Enroll: 93

At baseline, improvement in circadian rhythmicity and sleep pattern was observed in the CRSD group (21 vs. 8).

To determine if there were any differences in the performance of the two modalities of actigraphy when they were used in a setting resembling the environment in which they were developed.

Compliance: 95
Duration: Standard 0-1:00 Actigraphy

(Ando, 2002 #999) 3

The study aimed to examine the sleep-wake cycle across different activities and contexts using a variety of actigraphy devices. The objectives were to determine the feasibility of using different actigraphy devices in various settings and to assess their reliability and validity in detecting sleep-wake patterns.

All but two of the 10 actigraphy devices were used across different activities and contexts. The devices included wrist actigraphy, and a combination of actigraphy and motion sensors. The results showed that actigraphy could be used to detect sleep-wake patterns in various settings, including hospitals, homes, and schools.

The study concluded that actigraphy is a useful tool for detecting sleep-wake patterns in various settings and can provide valuable information about sleep-wake behavior. The results also indicated that the choice of device may depend on the specific needs and conditions of the setting.

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The study aimed to examine the prevalence of circadian rhythm sleep disorders (CRSD) in a representative population of children and adolescents.

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Compliance: 83
Duration: 18 days (Baseline-3 days, light treatment -10 days, and post-tx f/u-5 days)
3. Actigraphy was used to validate sleep improvement. Outcomes included comparison to actigraphy (n = 33) or change from baseline (n = 33). Group comparisons made using repeated measures ANOVA. Consistent with earlier findings, 84% of all epochs identified as sleep on PSG were correctly scored as sleep on actigraphy. All PSG recordings were scored by an experienced technologist and scored forland on a five-category scale.

4. The goal of this study was to test the effectiveness of morning bright light therapy in reducing sleepiness, fatigue, and subjective measures of sleepiness in middle-aged patients with severe AD. A total of 20 patients completed the study (10 assigned to the morning bright light condition and 10 to the control condition).

5. To determine the circadian rhythm of melatonin in the SRS group, a circadian rhythm assessment device was used. All children/adolescents with SMS had a night/day inversion of their circadian rhythm of melatonin compared to controls. Behavioral tantrums correlated with the melatonin rise and may have reflected a struggle against sleep. Circadian rhythm assessment devices provide accurate assessments of common sleep parameters when compared to PSG recordings.
Days 8-14 from pre-treatment

Sleep improved substantially with bright light exposure (in 6 out of 7 actigraphically (71-101) monitored infants). Nocturnal melatonin levels were also higher with massage therapy.

While there were no differences between groups on clinical or cognitive status, n=27, all groups had a history of sleep-wake problems in infancy and sleep efficiency was <85%

Sleep disturbance and fatigue were also observed in pre-term vs full-term (control) neonates continue to persist at the age of 20 mos.

Actigraphy was the sole measure of sleep quality in this study. Nocturnal melatonin levels were examined.

Comparison to reference standard

Actigraphy was more sensitive in detecting sleep disturbance, and was more likely than teachers (control group) to experience circadian disruption as measured by actigraphy.

Thus actigraphy was the sole measure of sleep quality in this study. Participants were randomly assigned to one of the 4 treatment groups, and were asked to record their sleep and wake times each morning and evening.

Periods of peak activity were delayed in treated infants at 8 weeks of age (from 8 AM to 10 AM) in control infants. Both measures showed disturbed sleep patterns, with early morning awakening in the delayed group and increased sleep efficiency in the non-delayed group.

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Survey to determine the locomotor type and severity of sleep disturbances in patients with SDB and parallel actigraphy and polysomnography in patients with sleep-related breathing disorders.

Cutoff values were compared between patients and controls, and between patients with obstructive sleep apnea syndrome (OSAS) and those with non-apneic SDB. The area under the ROC curve was 0.80 and the sensitivity was 64% for the SDB group.

Circadian rhythm disorders and their impact on sleep quality and daytime functioning in patients with SDB and healthy controls. The study included 20 healthy subjects and 20 patients with SDB. The actigraphy measures included total sleep time, sleep efficiency, sleep latency, and number of awakenings. The results showed that the patients with SDB had significantly reduced sleep efficiency and increased sleep latency compared to the controls.

Comparison of actigraphy and polysomnography in the evaluation of sleep apnea syndrome. The study compared the results of actigraphy and polysomnography in patients with SDB and healthy controls.

A comparison of actigraphy and polysomnography in the evaluation of sleep apnea syndrome. The study included 30 patients with SDB and 30 healthy controls. The results showed that actigraphy and polysomnography were equally effective in detecting sleep apnea episodes, with a sensitivity of 90% and a specificity of 95% for both measurements.

Comparison of actigraphy and polysomnography in the evaluation of sleep apnea syndrome. The study included 50 patients with SDB and 50 healthy controls. The results showed that actigraphy and polysomnography were equally effective in detecting sleep apnea episodes, with a sensitivity of 90% and a specificity of 95% for both measurements.
Visional-2 week of placement
Primary-3 week of placement
Secondary-4 week of placement
Note: Incorrect due to 5 week trial

Failure to replicate previous findings. Not a single instance of aberrant circadian phases in the aMT6s of seniors. An intentionally biased, sample of seniors w/ symptoms of either a short or long period body clock was investigated. All subjects were diagnosed with Insomnia AW64. The study was conducted in 2002 in Electronic, Hombrechtikon, Switzerland.

Lamond, 2005 #909 3 To assess the impact of relay work on sleep quantity and quality, the sleep duration is ~half of what is obtained at home and of poor subject quality. In addition, the timing of the sleep opportunities directly impacts the quantity, efficiency, and quality of the sleep obtained.

Lichstein, 2006 #1353 3 To use PSG and actigraphy to evaluate the sleep patterns in infants born at risk for early awakening sleep-wake cycles and complete or partial sleep cycles. We compared the free-running pattern results of newborns with sleep episodes at night showed that newborns have a higher TST with a Sleep Lat that was twice as long, and a reduced Sleep Eff% compared to age and sex paired sighted newborns.

Lotjonen, 2003 #781 1 To determine the reliability of Wrist Care in recording sleep/wake states. 2) When compared with diaries, there is 87% agreement regarding naps. 3) Both wrist care and actigraphy appeared to overestimate sleep time by 30-70 min. 1) Wrist Care and actigraphy had about 80% agreement with PSG regarding sleep/wake states. 2) Other complex elements, had 87% agreement regarding sleep/wake states.

Martin, 2005 #703 5a Evaluation of SDB in nursing home residents using a PSG scoring algorithm and different settings of the scoring factor in low and high efficiency sleepers. Epochs were scored as “true sleep” or “true wake”.

Martin, 2006 #1361 5b This study is a secondary analysis of data collected from 506 nursing home residents using Action 3 sleep/wake scoring algorithm and different settings of the scoring factor in low and high efficiency sleepers. 60% of the residents had daytime sleep episodes (were observed sleeping >15% of daily time). Of all observational variables assessed, only loud breathing during sleep had an abnormal ODI. Of all observational variables assessed, only loud breathing during sleep had an abnormal ODI. Of all observational variables assessed, only loud breathing during sleep had an abnormal ODI.

Grelot, 2002 #1356 3 To use PSG and actigraphy to evaluate the sleep patterns in infants born at risk for early awakening sleep-wake cycles and complete or partial sleep cycles. We compared the free-running pattern results of newborns with sleep episodes at night showed that newborns have a higher TST with a Sleep Lat that was twice as long, and a reduced Sleep Eff% compared to age and sex paired sighted newborns.

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Lambert, 2005 #890 3 An attempt to replicate an earlier study by these authors. 62 of the participants showed no differences in the length of sleep, but when sleep was advanced or delayed, there was no increased for the participants who were delayed or advanced. The study was conducted in 2005 in Zürich, Switzerland.

Vogt, 2005 #690 3 A blinded, prospective comparison to reference standard. 19-40 yrs)-Younger Adult Contrs

Laxminarayan, 2005 #698 3 To assess the impact of relay work on sleep quantity and quality, the sleep duration is ~half of what is obtained at home and of poor subject quality. In addition, the timing of the sleep opportunities directly impacts the quantity, efficiency, and quality of the sleep obtained.

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Seniors (60 yrs and older) were studied in 4 studies and a total of 116 were enrolled.

**McCurry, 2004 (P062)**

Concurrent Circadian rhythms of activity and sleep in older adults. All subjects were at least 65 years old, primarily females, with varying levels of chronic illnesses.

1. Actigraphy measures of sleep: Only skilled differentiated groups – complainants – across both categories of sleep disorders (MS and sleep apnea). Both groups reported more depressed mood, anxiety, and somatic symptoms than the healthy group.

2. Subjective sleep measures: Significant differences in subjective sleep measures were noted between the two groups of subjects, with those who complained of poor sleep reporting significantly lower sleep quality and lower sleep efficiency.

**McCurry, 2004 (P057)**

Examines a cohort of 116 subjects from a longitudinal study of sleep problems in community-dwelling seniors. The study was designed to determine if there were differences in sleep measures between actigraphic and subjective measures.

1. Actigraphy measures of sleep: Gender differences were noted in sleep duration and sleep efficiency. Subjects with higher levels of depression reported lower sleep efficiency and longer sleep latency.

2. Subjective sleep measures: Significantly lower sleep quality and lower sleep efficiency were reported by subjects with higher levels of depression.

**McCurry, 2004 (P058)**

Evaluation of a sleep education program on improving sleep in older adults with sleep complaints.

1. Actigraphy measures of sleep: No significant differences were found in sleep measures between the intervention and control groups.

2. Subjective sleep measures: Significant improvements were noted in sleep measures after the sleep education program, including increased sleep efficiency and decreased sleep latency.

**McCurry, 2005 (P058)**

3. Community Seniors were stratified into groups by age: Enroll: 180

4. Actigraphy measures of sleep: No significant differences were found in sleep measures between the intervention and control groups.

5. Subjective sleep measures: Significant improvements were noted in sleep measures after the sleep education program, including increased sleep efficiency and decreased sleep latency.

**McCurry, 2004 (P057)**

6. To evaluate the effects of a sleep education program on improving sleep in older adults with sleep complaints.

7. Actigraphy measures of sleep: No significant differences were found in sleep measures between the intervention and control groups.

8. Subjective sleep measures: Significant improvements were noted in sleep measures after the sleep education program, including increased sleep efficiency and decreased sleep latency.
(Ohtsuki, 2004 #919) 1 White adiposity and body dimensions were used to compare Group 1 (n=24) in a randomized, double-blind, placebo-controlled, parallel-group study with 2 months of duration to assess the effect of daily intervention on the improvement of disturbed sleep in obesogenic adults. The improvement of disturbed sleep was assessed using the PSS and NS. The study showed that the intervention group had a significant improvement in sleep quality compared to the placebo group. (Ozer, 2004 #910) 3 Clinical significance of sleep disturbance has been shown in patients with depression, with an odds ratio of 2.6 (95% CI 1.2–5.5) for individuals with sleep disturbances compared to those without. The study aimed to investigate the effects of cognitive-behavioral therapy (CBT) on sleep quality in patients with depression. The results showed that the CBT group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #911) 2 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #912) 4 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #913) 1 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #914) 3 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #915) 2 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #916) 4 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #917) 3 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #918) 1 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #919) 2 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #920) 4 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #921) 3 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #922) 1 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #923) 2 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group. (Ozer, 2004 #924) 3 A randomized, controlled trial compared the effects of a sleep hygiene intervention (12 weekly sessions) vs. a control group (12 weekly sessions). The intervention group had a significant improvement in sleep quality compared to the control group.
This study was designed to test two behavioral treatments for individuals with persistent insomnia versus control (no-treatment) conditions. Insomnia was measured using the ISI-9 at baseline and following 2 weeks of treatment. Insomnia severity was significantly lower in the treatment groups compared to the control group. The findings suggest that both treatments are effective in reducing insomnia severity. However, further research is needed to determine the long-term effectiveness of these interventions.

Savit, 1986 (cited)

Three studies were conducted to examine the role of sleep in the pathophysiology of Alzheimer's disease (AD). In each study, AD patients were compared to a control group of healthy individuals. The results showed that AD patients had shorter sleep duration, increased sleep latency, and decreased sleep efficiency compared to the control group. These findings suggest that sleep disturbances may be an early marker of AD. Further research is needed to determine the mechanisms underlying these sleep changes and the potential role of sleep in the progression of AD.

Kupfer, 1990 (cited)

This study investigated the effect of a sleep manipulation on objective and subjective sleep parameters in a sample of AD patients. The results showed that the sleep manipulation had no significant effect on objective sleep parameters, but did significantly reduce subjective reports of sleep disturbance. These findings suggest that sleep manipulation may be a useful tool for improving subjective sleep reports in AD patients. Further research is needed to determine the optimal sleep manipulation parameters and their long-term effects on sleep quality.

Singer, 2003 (cited)

This study was designed to examine the effects of melatonin on sleep and behavior in AD patients. The results showed that melatonin had no significant effect on objective sleep parameters, but did significantly reduce subjective reports of sleep disturbance. These findings suggest that melatonin may be a useful tool for improving subjective sleep reports in AD patients. Further research is needed to determine the optimal melatonin dosage and duration of treatment and the potential effects on cognitive functioning.

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Digital integration method of RLS NS Start: 

1. Nocturnal activity distinguished patient and control groups, with RLS pts having significantly more motor activity at rest and during sleep latency than control subjects.

2. RLS pts also exhibited more motor activity during sleep than control subjects.

- Actigraphy derived sleep latency from the first 10-15 min of sleep after the first period of sleep onset and was used to estimate sleep onset. Two blinded raters rated the sleep latency and scored the time of sleep onset.

- Actigraphy showed significant treatment effects for hypnotic use (TST, immobility, fragmentation index). Low correlation between fragmentation index and subjective sleep quality (St. Mary’s Hospital Sleep Questionnaire).

Van der Heijden, Winkler, Jalmab et al. 2005 JAMA Sleep logs Subjective Measures

1. Sleep logs were analyzed for the 3 measures: sleep latency, sleep duration, and subjective sleep quality. 2. Compared to PSG, both actigraphy and sleep logs showed moderate agreement. 3. PSG showed higher interclass correlation than actigraphy (0.72 vs. 0.64).

Yaron, 2004 #643

- The interval from sleep propensity to sleep was shortened in children with chronic SO insomnia (20:32 +/- 0:55 mins) compared to the ADHD controls (19:47 +/- 0:49 mins).

Van der Heijden, Winkler, 2005 #682

- To investigate if Bright Light Tx (BLT) reverses the circadian phase (p<.001) in SAD vs Controls (12:00 +/- 0:40 mins vs. 13:00 +/- 1:00 mins); activity measures.

Molloy, 2003 #646

- To examine the validity of self-reported survey estimates of sleep patterns in adolescents by a comparison of self-reported sleep patterns (in weeks) to the sleep patterns of adolescents (in years) who were involved in the study. The study included 150 participants aged 12-20 years for all participants in the study.

Yarnell, 2003 #756

- This study tested the feasibility and acceptability of actigraphy as an outcome measure for treatment of insomnia. The results showed that the majority of patients preferred to use the telephone system (22/38) of data collection methods.

Van der Heijden, Winkler, 2005 #682

- To test whether sleep logs could be a valid alternative to PSG for the measurement of sleep quality in healthy children. The results showed that sleep logs provided reliable estimates of sleep and sleep quality compared to PSG.

- Actigraphy showed significant treatment effects for hypnotic use (TST, immobility, fragmentation index). Low correlation between fragmentation index and subjective sleep quality (St. Mary’s Hospital Sleep Questionnaire).

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Actigraphy Conclusions

Useful for detection of treatment outcomes in residents of nursing homes

High correlation between actigraphy and retrospective reports (both parental and from the child) in normals, but not patients with cystic fibrosis.

Reasonable correlation between actigraphy and retrospective reports for bedtimes and waketimes; the exact time was off by 10 to 22 min, respectively. There was no correlation between sleep complaints and sleep timing. Actigraphy can be used to measure differences in day/night activity levels in children and adolescents.

Useful for detection of treatment outcomes in special populations

Consistent results for sleep quality between actigraphy and sleep logs (both no change) in healthy older adults (both with and without sleep maintenance problems).

Actigraphy identified 40% of patients diagnosed with narcolepsy by sleep > 9 h. May be useful as one component of a multi model dx of hypersomnia.

Increased activity levels during the daytime were consistent with decreases in objective and subjective sleepiness. Actigraphy not sensitive to changes in sleep following slow release caffeine.

These two commercially available monitors are similar, particularly with a medium sensitivity setting for the actiwatch. Detection of wake depends on the sensitivity setting of the activity monitor.

Actigraphy used to assess sleep timing and duration across the day and night in night-shift workers. Shorter sleep times were consistent with self-reports of poor sleep quality.

Changes in mean activity level were consistent with changes in PSG-SE% following transmeridian travel in normal sleepers, but actigraphy sleep parameters were not. Group diff in phase shifts of DLMO were not accompanied by changes in actigraphy measures.

Actigraphy is useful to monitor compliance to scheduled bedtimes and wake times. Compliance to schedules and diaries is greater if subjects are told that they are being monitored by the actigraph.

Actigraphy data can be used in field studies as a partial substitute for “gold standard” markers of sleep and the body clock, e.g., PSG, core temperature, and melatonin. Note that comparisons of custom activity algorithms with established markers of sleep and the body clock are necessary.

Actigraphy was used to validate the sleep log data. With the exception of SOL, nighttime sleep parameters showed significant correlations in at least 76% of subjects.
Self-reported sleep revealed a greater severity of symptoms than either collateral reports or actigraphy, agreement between logs and actigraphy were comparable when averaged over days, but fair agreement only was seen in analysis of single nights. Activity counts without sleep analysis software are not comparable to subjective measures of sleep quality.

Actigraphy consistent with parental logs of sleep disruption and with PSG for frequent arousals and a reduced duration of sleep relative to controls.

High sensitivity for identification of sleep > 97%, but low specificity for identification of transient wake periods < 44%.

Changes in motor activity can be detected by activity monitors.

Outcomes measure for therapy in patients with severe AD.

For TIB and SOL, act did not differ from PSG and the correlation between logs and PSG was significantly lower than between act and PSG. Act measures of TIB, TIBW, TWT and sleep efficiency differed from PSG in a population with differing sleep disorders.

Actigraphy combined with standard measures of respiratory parameters may assist in the assessment of sleep-related breathing severity.

Act cannot be used to measure adherence to a sleep schedule in children.
Actigraphy can detect changes in circadian activity rhythms in infants.

Caregiver reports and actigraphy data were similar for sleep onset and offset, but actigraphy showed more WASO than nurse observations.

Actigraphy used to measure treatment outcome in demented nursing home patients with sleep disturbances. Authors created their own 5-item behavioral sleep observation scale for this study, and the results were similar to that found for the actigraphically measured sleep parameters.

Actigraphy used to measure treatment outcome in demented nursing home patients with sleep disturbances.

High correlation between PSG and actigraphy for TST. Actigraphy may be useful for assessing improvements in sleep with treatment.

For differences between groups and conditions, actigraphy was consistent with self-reported perceptions of sleep disturbance in healthy new parents.

High agreement between observer reports and actigraphy estimates of sleep/wake in infants. Agreement was highest in those under 1 mo of age.

Actigraphy used to assess differences in circadian rhythms and sleep duration between two pediatric groups.

Actigraphy used as a follow-up measure for SDB by assessing movements between 2–3 units (sleep apneas).
In controls and patients with AD but not FTD, changes in the rhythm of activity paralleled changes in the temperature rhythm.

Activity measurements are consistent with parental diaries of sleep across the day and night in healthy infants.

In patients with sleep problems, subjective sleep quality was worse than actimeter estimates. Good sleepers tended to overestimate sleep quality relative to actimeter estimates (not compared statistically).

Actigraphy demonstrated an ability to detect significant differences between groups (Alzheimer severity) for consolidation of sleep/wake (NPCROA is a circadian analysis).

This specialized device and software had good agreement with PSG in normals, but less as SDB increased.

Compared to acti, the shorter duration sleepers tended to underestimate sleep duration while the longer duration sleepers tended to overestimate sleep duration.

Consistent with caregiver report of bedtime and waketime, actigraphy detects more waking than caregiver reports.

Actigraphy could detect differences in sleep parameters between controls and subjects with fibromyalgia and co-morbid depression.

24 h Actigraphy is a suitable non-invasive method to characterize inter-individual variability in the activity

Rest-activity rhythm of preterm and full-term neonates and differs in sleep patterns.
Phase of the sleep/wake rhythm at home was correlated with the timing of circadian phase markers.

Measures of habitual sleep duration at home in adolescents.

Acti used to include 24-h sleep over 14 days in free running blind subjects. TST consistent with PSG, but sleep efficiency was significantly higher by acti in these subjects with disturbed sleep.

1. Acti reasonable in measuring WASO, TST. Sleep 90% of real awakenings, but no sleep latency in insomniacs.
2. Not as close to PSG in insomniacs.
3. Actigraphy closer to PSG values than sleep diary to PSG.

80% agreement with PSG but overestimates TST in healthy controls (r = 0.70). Agreement was higher in middle aged than in elderly subjects.

The settings of the algorithm can have a significant impact on the scoring of sleep and wake by acti. Higher agreement w/PSG in good sleepers than in subjects with poor sleep 88%.
High correlation between logs and actigraphy for TST in non-complaining good sleepers, but not in subjects complaining of poor sleep.

Actigraphy is able to detect treatment-related improvements in sleep in patients with dementia.

Shifts in sleep and activity rhythms are similar to those observed in circadian phase markers.

Actigraphy and sleep timing is strongly correlated with the timing of circadian phase markers.

Consistent results between actigraphy and sleep logs for TST and sleep efficiency, with a trend towards significant differences in SOL, ASL, and sleep efficiency, with a trend towards significant trend.

Good correlation between questionnaire bedtime and waketime and actigraphy in the majority of healthy subjects.

Actigraphy is not sufficiently accurate to diagnose PLMD in children.

Significant differences in both subjective and objective SOL in insomnia vs. good sleepers.

Actigraphy is useful to assess circadian rhythms of sleepwake activity in children.
Activity level is weakly associated with subjective sleep quality. There was no sleep analysis conducted.

There were no significant differences in nocturnal sleep estimates between the two placements in elementary school age children. Diurnal activity measurements may be more affected by placement.

Acti measured baseline to post-tx changes in sleep parameters in children with Asperger's Syndrome.

Specialized device for assessment of sleep apnea and restless leg syndrome. Automatic evaluation of "wake" vs. "sleep" based on activity level; also evaluates oxygen saturations and the P0.1 signal attenuation. No correlation for TST with Acti.

Minimal effect of tx on either subjective or objective measures. Study may have been underpowered to detect diffs.

The longer the subjective sleep latency the more it differed from Acti. The shorter self-reported TST, the more it differed from Acti.

Acti measured treatment outcomes in nursing home patients with dementia.

Significant associations between ratings of restless leg syndrome activity level, and between ratings of sleep problems and nighttime activity. The association between rating of sleep problems and sleep efficiency did not reach significance.
Very low correlations were found between act and self-reported sleep measures in older adults with insomnia and co-morbid diseases. Act used as an outcome measure to detect change-related changes in sleep.

High correlations between daily caregiver sleep logs and act in infants for SOL and TST, but retrospective data and act had few to moderate correlations.

Used in an experimental protocol to assess the impact of subjective estimates of sleep with objectively measured sleep in the same. Act used as an outcome measure in RCT in patients with dementia and sleep problems. Act data lost from many subjects due to removal or refusal to wear the sensor, but caregiver reports. Sleep diary reports could not be used.

High correlation between act and PSG, but act consistently overestimated sleep in Alzheimer’s patients.

Ability to detect rhythms of activity in patients with severe dementia.

Study shows that feedback about objective sleep timing or staging can alter the subjective perception of sleep.

Act is more closely associated with daily caregiver ratings of sleep quality than subjective ratings of sleep quality in patients with major and other sleep disturbances.
One night of actigraphy data was unreliable for measuring total sleep time, sleep onset, and time in bed (intraclass correlation $r = 0.15$), but was acceptable for assessing sleep efficiency and total wake time (intraclass correlation $r = 0.52$). Actigraphy is feasible for measuring sleep, but multiple nights of actigraphy may be needed to obtain reliable estimates.

Actigraphy is more similar to PSG than sleep logs in subjects with primary insomnia. Also sensitive for detecting the effects of treatment on some parameters.

Later bedtimes and wake times are paralleled by later DLMO in children with ADHD.

Detection of daytime napping and wake time instability in young subjects with visual dysfunction.

Both act and subjective reports showed significant effects, but the subjective effects were greater in magnitude and lasted longer in patients with insomnia.

In adolescents, the highest associations between survey data and act were for wake time during the week ($r = 0.77$), followed by bedtimes and sleep duration. The lowest correlation was for weekend sleep duration ($r = 0.25$).

Increased physical activity during sleep documented by actigraphy in children with young children.