obtained under different scoring standards or instruments with widely different acoustical characteristics. Our study used small historical data sets; further validation through a well-controlled prospective test on a larger data set is needed.

**P134 | Utility of verbal questioning to improve efficiency of urinary drug testing during MSLT and MWT**

A. Anniss¹; S. Huddle¹; A. Young¹,²; D. O’Driscoll¹,²
¹Eastern Health, Box Hill, Australia, ²Monash University, Clayton, Australia

**Introduction:** Urine drug testing can ensure that multiple sleep latency test (MSLT) and maintenance of wakefulness test (MWT) patients are not affected by drug use which can influence results. However, initial drug screening becomes more time consuming and expensive if all positive samples are subsequently sent for confirmation by gas chromatography mass spectrometry (GCMS) analysis. We aimed to determine if a brief verbal questionnaire performed by the sleep scientist at the time of collection of urine samples would provide a better understanding of a patient’s current drug use. It was proposed that this questionnaire may reduce the number of positive screened samples requiring further GCMS analysis.

**Methods:** All MSLT or MWT patients from Feb-May 2018 were included in this study. The attending sleep scientist asked the patient the following questions: 1) Have you taken any sleeping tablets in the last two weeks? 2) Have you taken any pain relief in the last week? 3) Have you taken any recreational drugs in the last week or any cannabis in the last month? Urinary drug screening (UDS) for the presence of amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine, methadone and opiates was then performed and results compared with information obtained from overnight and verbal questionnaires. Unexpected positive results were confirmed by further GCMS analysis.

**Results:** All patients (n=22) were comfortable with answering the questions. The verbal questionnaire alone identified 3 patients (14%) that had taken sleeping medication in the last two weeks, 10 patients (46%) that had taken non-prescribed pain relief medication in the last week and 1 patient (5%) that had taken recreational drugs in the last month. This information was not identified in the patient’s overnight questionnaire or medication history and otherwise would not have been known. UDS analysis detected 6 positive samples (27%). Of these positive urine samples, 4 agreed with information detected from both overnight and verbal questionnaires and 2 agreed with the verbal questionnaire alone.

**Discussion:** These findings indicate that use of a simple verbal questionnaire allows improved detection of drugs that may influence MSLT and MWT results and may provide time and cost saving benefits by reducing samples requiring further GCMS analysis.

**P135 | Rethinking RIP – potential advantages of DC respiratory effort bands**

P. Breen¹,²; G. Naik¹; B. Tong³; D. Eckert³; G. Gargiulo¹,²
¹The MARCS Institute, Western Sydney University, Penrith, Australia, ²Translational Health Research Institute, Western Sydney University, Penrith, Australia, ³Neuroscience Research Australia, Randwick, Australia

**Introduction:** Respiratory Inductive Plethysmography (RIP) is widely used in clinical and research settings to monitor respiratory function. However, this technology is not without its drawbacks. To measure RIP band inductance, a highly resonant and stable oscillator circuit containing the band is required. This is difficult to maintain even with additional hardware or software. Mutual inductance between RIP sensors is another issue that either requires multiple resonant oscillators with sufficient frequency separation or a time-division multiplexing scheme. Either option requires substantial hardware or software additions.

The advent of new electrically conductive polymers has enabled the development of a range of novel respiratory sensors. A key advantage of these materials is that they produce a resistive, rather than inductive, response to stretch. However, similarly to traditional RIP bands they can be cut to measure or be one-size-fits-all wrapping around the torso. The aim of this study was to compare these new RIP alternatives with gold standard measures of breathing and effort during overnight sleep studies.

**Methods:** RIP alternatives were used while simultaneously recording airflow via nasal mask and pneumotachograph during overnight polysomnography in people with sleep apnoea. Participants also slept with an epiglottic pressure sensor. Measures of respiratory rate, respiratory variability, airflow and breathing effort derived from gold standard measures of airflow from the pneumotach and epiglottic pressure sensors were compared to data obtained using these non-invasive wearable RIP sensors.

**Results:** Preliminary findings demonstrate the technical feasibility and capability of these new wearable sensors to match key measures of breathing and respiratory effort. For example, respiratory rate was 94% accurate. Conclusions

While further validation is required, these preliminary findings demonstrate the potential for these sensors to derive key parameters of interest for respiratory monitoring during sleep. Technical advances such as how they may be instrumented in DC, results in a smaller circuit size/complexity, lower power requirements and greater suitability as a truly wearable solution.

**Support:** This study was funded by a Cooperative Research Centre Project Grant, a joint Government, Academia and Industry collaboration (Industry partners: Oventus Medical, Medical Monitoring Solutions).