

PEDIATRIC PAP TITRATION PROTOCOL

PURPOSE

In order to provide the highest quality care for our patients, our sleep disorders facility adheres to the *AASM Standards of Accreditation*. The accompanying policy and procedure on pediatric titrations follows the spirit of the *Clinical Guidelines for the Manual Titration of Positive Airway Pressure in Patients with Obstructive Sleep Apnea*. We recognize that the guidelines from this 2008 consensus paper are non-binding, and that there may be some minor deviations found in our policy.

POLICY

All individuals who record sleep studies must follow best practices for pediatric titrations in order to attain the ideal pressure setting for their patients. Too low of pressures may cause patients to either be sub-optimally treated or to wake up in a panic. Too much pressure may cause the patient to experience bloating or mask leakage. Determining the appropriate pressure setting for each patient will lead to improved adherence and outcome. Pediatric titrations are not an exact science, and it is understood that technologists may need to make minor changes for individual patients. The procedure below is meant as a guideline. PAP may be started in the sleep lab as a planned PAP titration study or emergently due to a severely abnormal sleep study if directed by the on call sleep specialist. The following protocol applies to those patients in whom PAP will be used in the sleep lab.

PROCEDURE

- 1.0** Review the patient's clinical notes for pertinent history.
- 2.0** Review the patient's previous sleep study or studies to assess the severity of sleep-disordered breathing, the type of respiratory events, and the position and stage at which the events were most severe. This will help to attain a better titration.
Example: If the patient's sleep-disordered breathing was worse in the supine position, make sure the patient stays in the supine position as much as possible; or, if it was worse during REM sleep, minimize sleep disruption so that the patient can achieve and maintain REM sleep.
- 3.0** Application of electrodes, montages, filters, sensitivities, and scoring will be performed according to *The AASM Scoring Manual*.
- 4.0** Each patient and parent should be shown the PAP device and nasal interface prior to starting PAP titration. Patient/parent questions about the device should be elicited and answered. The need for this treatment will likely already have been discussed with the patient, but additional explanation and encouragement may be needed on the night of the study.

PEDIATRIC PAP TITRATION PROTOCOL

- 5.0** The sleep laboratory VPAPtx unit will be used for all titration studies unless specified for particular patients by the ordering physician. These studies will be conducted in the CPAP mode, unless otherwise specified.
- 6.0** The patient should be fitted with an appropriate mask. This means ensuring that the mask does not extend down onto the lip (for nasal masks) and is not so wide as to leak around the bridge of
- the nose or put pressure on the inner canthus of the eye. The mask should be put in place firmly enough that it does not leak but not so firmly as to be uncomfortable. Nasal masks are preferred.
- 7.0** Full face mask can be substituted for severe air leak at the mouth that interferes with therapy, patient comfort, or high pressures
- 8.0** Prior to “lights-out”, the parent and patient should be given a demonstration of the device to familiarize them with it. With the mask in place and the PAP set at 4 cmH₂O on the remote control software, turn on the blower unit. The patient should be informed that this is the starting pressure for the night and instructed to keep their mouth closed when using CPAP. It may take a few minutes to adapt to this, and encouragement may be needed at this time.
- 9.0** Begin the patient on a setting of four cm of water. If the patient is morbidly obese or unable to fall asleep on the setting of four cm of water, higher starting pressures may be needed. Bilevel titration should begin at 8/4 cm of water.
- 10.0** If apneas or frequent hypopneas are present, pressure settings should be increased by one cm of water (inspiratory and expiratory settings should be increased by one cm of water each if bilevel titration). If occasional hypopneas, snoring, or mask flow limitation (see below) are present, pressure settings should be increased by one half cm of water (inspiratory and expiratory settings should be increased by one half cm of water each if bilevel titration) and maintained for at least five minutes to determine if events improve or resolve. Pressure settings may need to be increased more quickly during REM sleep given the limited amount of REM during sleep and the need to treat events during this stage. Heated humidification should be used during all titrations to improve patient comfort. This can be stopped if uncomfortable for the patient.