Vivo 45LS Suggested Settings

NMD (Adult)

Below are Vivo 45LS initial setup parameters for adult patients with NMD, as suggested by Dr. Lisa F. Wolfe, MD.

NMD (Adult)

Variable	Setting	Effect	Adjustment	How to monitor the setting and tips to help titration
Inspiratory Pressure / IPAP	8 cmH_2O	Pressure support	+ 2 cmH_2O Increase to the maximum tolerated aiming for exhaled Vt 8cc/kg of ideal body weight	Ask the patient if the breath in is deep enough. Review: Respiratory rate, Vt, SpO_2 and CO_2 levels
PEEP / EPAP	4 cmH_2O	Maintain adequate lung recruitment and prevent obstruction of the upper airway	+ 1 cmH_2O Increase as required to maintain a normal AHI	Review: AHI vs. SpO_2, waveforms for upper airway obstruction. If a partner or carer reports snoring slowly increase the EPAP until this has resolved or significantly decrease. Remember to maintain the same pressure support.
Rise Time	3 in non-bulbar disease 8 in bulbar disease	The speed of delivery of the inspiratory phase of the breath	+ 1 Increase or decrease to patient comfort	Ask the patient if it feels comfortable. Does the breath come in too fast or too slow? In patients with bulbar onset ALS this should be slow. In patients with Limb onset ALS this can be faster. Observe shoulder movement. If this is in line with breathing then the rise time is slow.
Inspiratory Trigger	1 (most sensitive)	Triggers the ventilator breath in	+ 1 If auto-trigger is detected	Is the ventilator delivering breaths when the patient does not need it (auto triggering) or is the patient making increased effort to receive a breath (ineffective effort)? Review download, where possible.
Expiratory Trigger	7 (or 30% of delivered peak flow)	Completion of the delivered breath	± 1 According to expiratory synchrony	Ask the patient if the breath stops too early or do you want the breath to be longer when you make the effort to trigger a breath. Synchronization: premature or late cycling, this is the point where the breath is CYCLED off. If needed, change the cycle sensitivity to 15% (9).
Minimum Inspiratory Time	0.8 – 1.4 sec Average 1.2 sec	Ensure a minimal breath time	± 0.1 According to patient comfort	Ask the patient if the length of the breath in is long enough. This feature will set the minimum length of the breath in for a triggered breath. If the patient is complaining of severe aerophagia and the Ti min to >1.0, then reduce to 0.8-1.0 sec. In people with NMD, Ti assurance is fundamental in preventing atelectasis. It is tempting to look at the awake alert spontaneous RR and use that value to set the Ti min. However, the goal should be to reduce WOB and atelectasis, and more effectively reduce CO_2 by improving v/q and reducing dead space.
Maximum Inspiratory Time	2.0 – 2.5 sec based on the back up rate	End the mechanical breath if expiratory trigger fails	Current time + 0.2 s Increase or decrease according to comfort	This will terminate the breath in if the set pressure is not reached and there is no spontaneous expiratory cycle. This can be assessed by asking the patient if they are able to cycle the ventilator to exhalation comfortably. In the setting of NMD, this is most important to allow for occasional sigh breaths, typically during sleep onset. Try to avoid reducing the BUR to <12 just to facilitate a longer Ti max or consider the Sigh feature on the device The single exception may be C–Spine injury, especially during the early stage when NIV may be most helpful.
Backup Rate	15 bpm	Ensure a minimal breaths per minute	Or spontaneous respiratory rate -2 Increase or decrease according to comfort	This parameter comes in if the patient spontaneous triggering falls below the set backup rate. This can be assessed by asking the patient if breaths are coming at the right pace. The adjustment may be most important as the patient transitions to the supine position when triggering may be most challenging. Occasionally, a patient may just say, "I can't get a breath." If so, increase the BUR.
Backup Inspiratory Time	1.2 sec	Ensure appropriate length of inspiration	Current time ± 0.1 s Increase or decrease according to comfort	This parameter comes in when the backup rate is active. Review the downloadable data to ensure adequate Vt in when the patient is in a "timed or backup" period. Ask the patient about when they are fully relaxed on the ventilator, and is it doing the work; is the breath in long enough?

Intended use: The Vivo 45LS ventilator (with or without the SpO_2 and CO_2 sensors) is intended to provide continuous or intermittent ventilatory support for the care of individuals who require mechanical ventilation. Specifically, the ventilator is applicable for pediatric through adult patients weighing more than 5 kg (11 lbs.), however, the mouthpiece ventilation modes are for adult patients only. The Vivo 45LS with the SpO_2 sensor is intended to measure functional oxygen saturation of arterial hemoglobin (%SpO_2) and pulse rate. The Vivo 45LS with the CO_2 sensor is intended to measure CO_2 in the inspiratory and expiratory gas. The device is intended to be used in home, institution, hospitals and portable applications such as wheelchairs and gurneys. It may be used for both invasive and non-invasive ventilation. The Vivo 45LS is not intended to be used as an emergency transport or critical care ventilator.

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