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A 51 Year Old with Irregular, Rapid, Shallow Breathing during Spontaneous Breathing Trials

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A 51 year old treated with multiple medications including quetiapine, desipramine, gapapentin and hydroxyzine, presented with overdose of desipramine requiring endotracheal intubation. During her ICU stay, she received centrally acting medications including lorazepam, levitiracetam and dexmetomidine. On her 5th hospital day, she underwent a sedation holiday and breathing trial during which she breathed 30-40 breaths/min irrespective of pressure support levels (0 to 20 cm H_2O). Next day, during an unassisted breathing trial, she breathed 35-50 breaths/min without increments of heart rate, blood pressure. Most tidal volumes were <100 ml but occasional beaths were >500 ml. After arterial blood gas showed pH 7.41, PCO_2 34 mmHg, PO_2 131 mmHg on 50% inspired oxygen, she was extubated, but continued to breathe 40-50, evidently comfortable, breaths/min. With endotracheal tube removed, involuntary tongue movements were observed and treated with benztropine and diphenhydramine. She was arousable, able to speak in full sentences and cooperative with physical therapy. **Video** of her breathing pattern is attached. Over the next 48 h, her respirations normalized with benzotropine treatment, and over ensuing days her tongue movements also improved.

While dyskinetic respirations have been reported, there are very few reported cases [1-3] of tardive dyskinesia-related tachypnea. “Slight tachypnea” has been reported with tardive dyskinesia [2], but extreme (and stable) tachypnea has been reported in only one previous patient after withdrawal of prochlorperazine resulting in Parkinsonism, tardives and diaphragmatic flutter of 30-60/min [3]. We here report a second case of tardive (-related) tachypnea that was unexpectedly associated with successful extubation and recovery. While it is almost always inadvisable to extubate patients breathing more than 30 breaths/min, this case demonstrates that, rarely, there are exceptions to otherwise sound physiologic rules and protocols.

Video **Note:** Video of the patient on the day after extubation captured with an Apple i-phone. Note her tachypnea (40-50 breaths/min) verified by end-tidal CO2 waves (yellow tracing on monitor; and white number bottom right corner). Her tongue movements are notably at near the same frequency as her respirations.

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