

**Hillrom™**

Case Study:

**IMPROVEMENT IN ATELECTASIS –  
ORTIZ-PUJOLS**

# CHEST HIGH-FREQUENCY OSCILLATORY TREATMENT

for severe atelectasis in a patient with toxic epidermal necrolysis (TEN)

## OVERVIEW

Report of a 17-year-old neurology patient transferred to burn unit after developing severe atelectasis secondary to an adverse medication reaction resulting in toxic epidermal necrolysis (Stevens-Johnson Syndrome).

**17**

year-old with  
severe atelectasis

## PATIENT TIMELINE

Protocol adherence was enhanced when respiratory therapists could direct the intervention.

Compared with a pre-protocol phase, the protocol was associated with:

DAY 1	Large surface involvement (>80% total body surface area).
DAY 2	Intubated in Burn Unit for pain and wound care management.
DAY 3	To OR for debridement and xenografting.
DAY 8	Became febrile, >WBC, chest X-ray (CXR) showed left-sided infiltrate, pseudomonas cultured, antibiotics initiated.
DAY 17	Extubation after progressive improvement.
DAY 18	<ul style="list-style-type: none"><li>Abrupt deterioration after 24 hours with impaired cough, secretion retention, worsening atelectasis.</li><li>The MetaNeb® System delivered oscillation and lung expansion (OLE) therapy every 2–3 hours for 10-minute treatments.</li></ul>

## OUTCOMES

After initiation of OLE therapy with The MetaNeb System:

DAY 18	Within 4 hours of starting 2-hour treatments, atelectasis showed improvement.
DAY 21	Atelectasis completely resolved.
DAY 25	Discharged without further infectious or pulmonary complications.

## EVIDENCE

- A. Worsening Atelectasis
- B. 4 hrs after initiating continuous high-frequency oscillation (CHFO)
- C. 48 hrs



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### References

<sup>1</sup> Ortiz-Pujols S, Boshini L, Klatt-Cromwell C, et al. Chest high frequency oscillatory treatment for severe atelectasis in a patient with toxic epidermal necrolysis (TEN). J Burn Care Res. 2013;34@:e112-e115. doi: 10.1097/BCR.0b013e318257d83e.

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