Losing the Internal Compass:

Chaotic ciliary fluid transport in asthma

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Motile cilia of the airways transport mucus

Mucus clearance is impaired in asthma, possibly due to altered ciliary fluid transport

To test this, we visualized ciliary fluid transport in healthy and asthma-like engineered human airway tissue

Healthy airway tissue: Uniform and unidirectional fluid transport

Asthmatic airway tissue: Non-uniform flow with stagnation and circulation zones\(^*\)

* Such flow patterns could facilitate the mucus built-up and increased risk of bacterial infection seen in asthma patients.