MRI Measures of Lung Water in Adults with Cystic Fibrosis

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Cystic Fibrosis

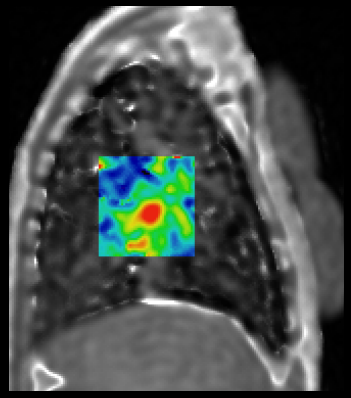
- Mutation in the CFTR gene
  - Retained mucus
    - infections, inflammation, edema
      - Median age of death ~ 41 years

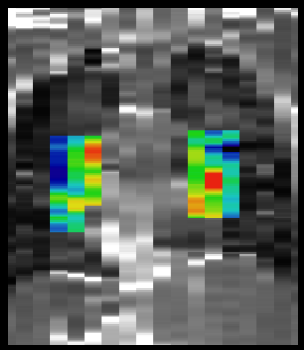
Hypothesis: CF abnormalities ≈ excess lung H_2O

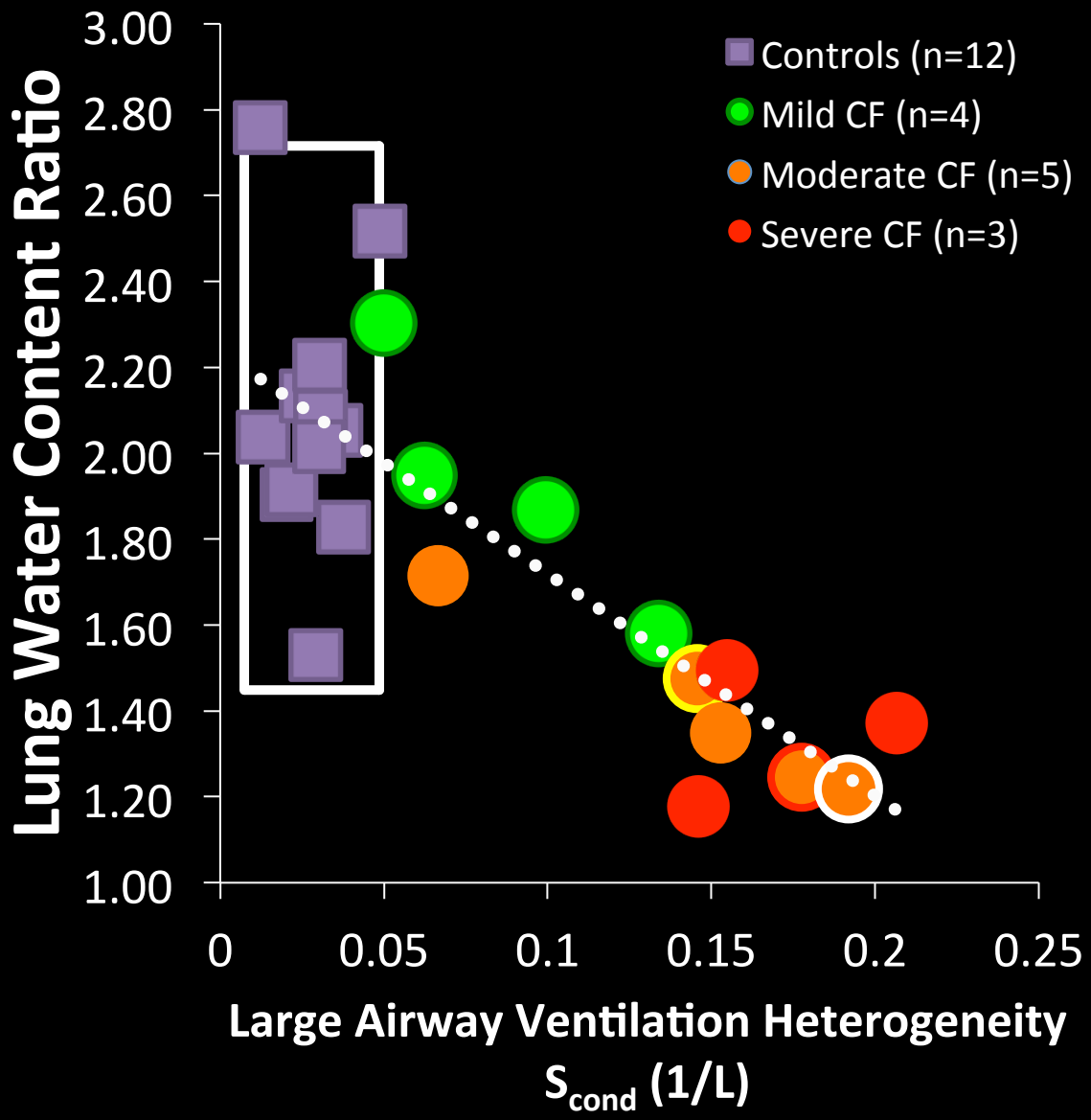
GOAL: **Establish, evaluate, and translate MRI technique to monitor disease status in CF**

- Designed for any 1.5T clinical MRI
- Breath-hold imaging (GRE sequence)
- MRI signal intensity = absolute *water content*

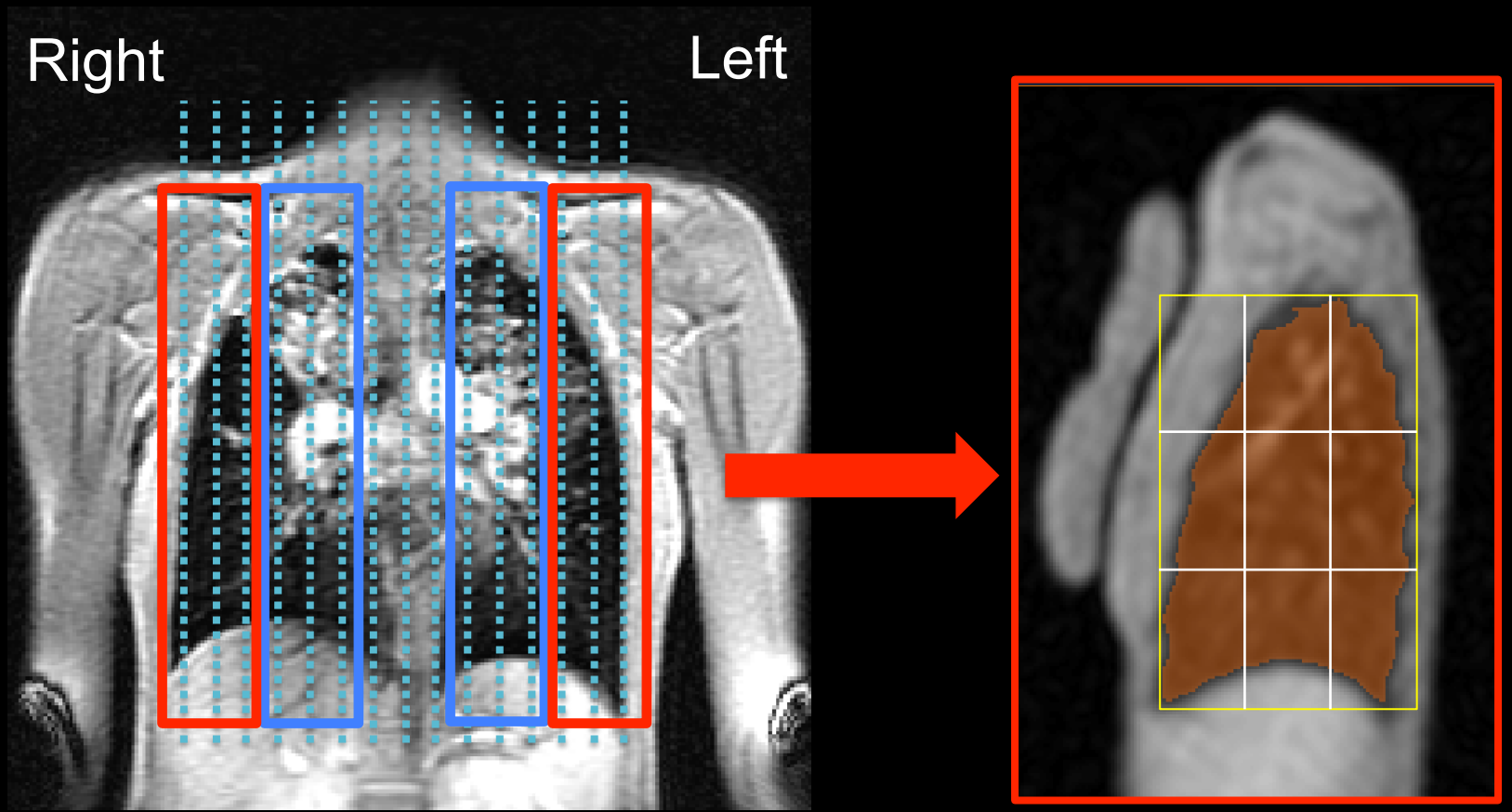
CENTRAL REGION
(large airways)







Probabilistic Library - Lung Water Content



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