

# Bronchial Thermoplasty in the Endoscopy Unit Reducing Smooth Muscle Hypertrophy Asthmatic

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# Bronchial Thermoplasty in the Endoscopy Unit Reducing Smooth Muscle Hypertrophy Asthmatic

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## Background

Asthma, a chronic respiratory disease affects 25 million people in the U.S. Severe asthma patients experience chronic inflammatory conditions of the airway characterized by periodic symptoms of breathlessness, coughing, wheezing, and chest tightness. Chronic airway inflammation can lead to an increase in thickness of airway smooth muscle (ASM), which causes airflow constriction and difficulty breathing.

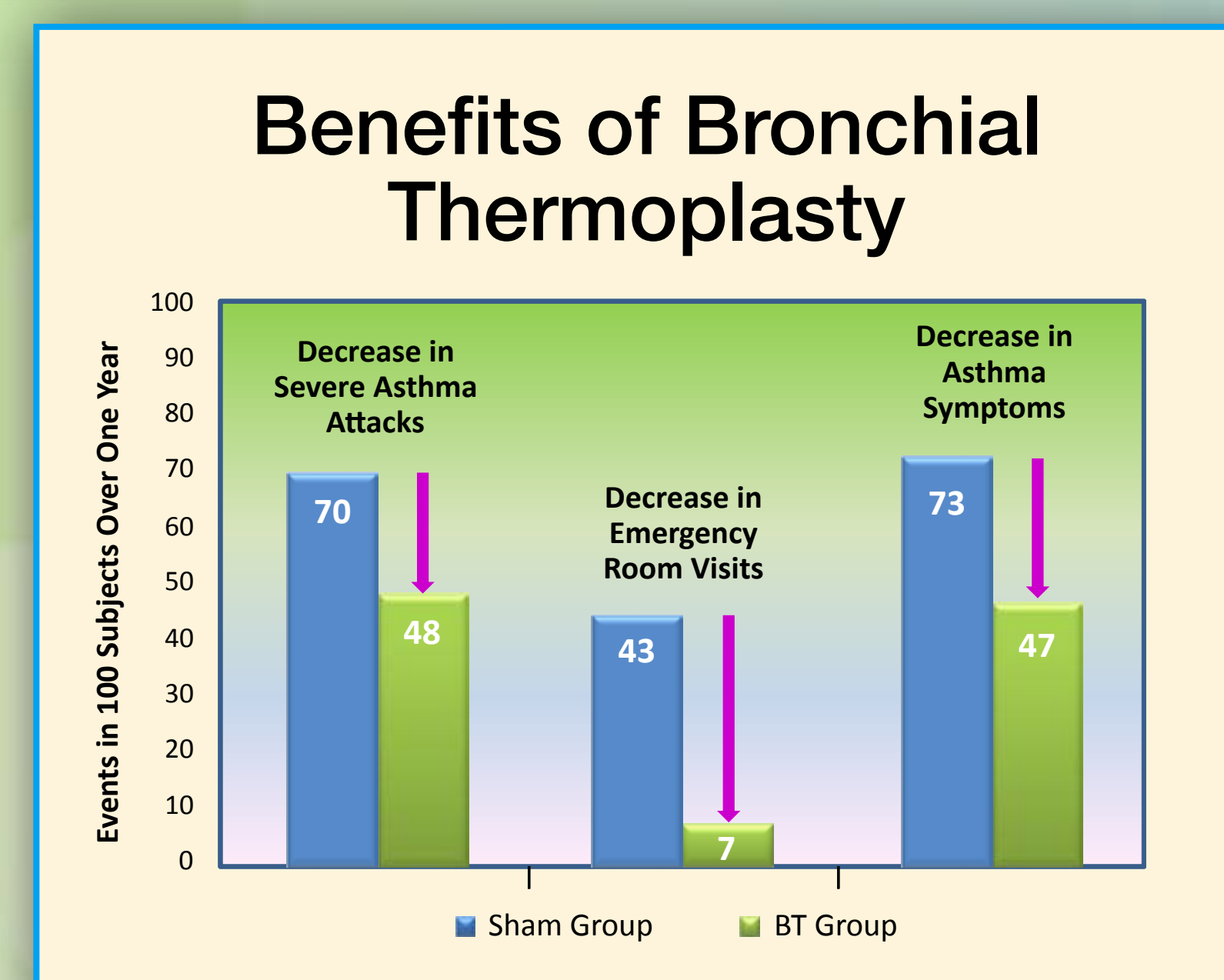
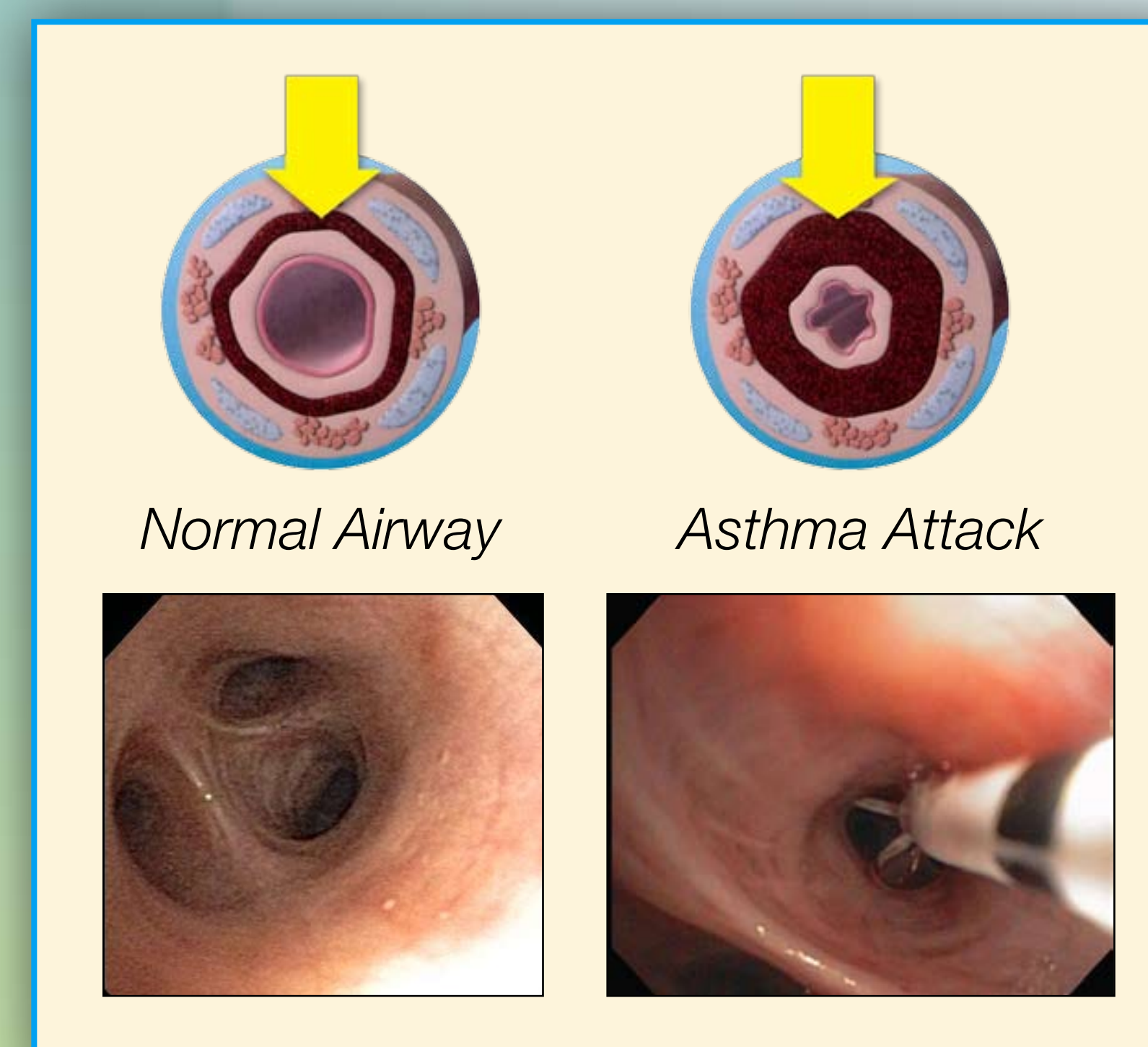
Bronchial thermoplasty (BT) is an innovative procedure for a pulmonary endoscopist to treat adult patients with severe persistent asthmatic symptoms.

## Opportunities

Bronchial thermoplasty, a minimally invasion procedure, improves a patient's breathing capacity by delivering thermal energy to the airway wall to reduce the excessive airway smooth muscle (ASM). Reducing the size of the ASM decreases the ability of the airways to constrict, thereby reducing the frequency of asthma attacks.

The Altair Bronchial Thermoplasty System is approved by FDA to treat severe persistent asthma patients 18 years and older where current treatment is not well controlled.

The benefits of bronchial thermoplasty are decrease in severe asthma attacks, decrease in emergency room visits, and decrease in asthma symptoms.



## Procedure

**Patients complete 3-4 outpatient procedures, 3 weeks apart. Each procedure treats a different area of the lung.**

### Pre Procedure:

- Initiate prophylactic Oral Corticosteroids 3 days prior, day of, and day after procedure to prevent asthmatic exacerbation.
- Perform Pulmonary Function Test (PFT) the morning of procedure to assess stability of the airway and prevent flare up during and post procedure.

### Procedure:

- Schedule as Outpatient Bronchoscopy with BT with a 90 minute timeline: physician requires 40-60 minutes to perform procedure
- Administer anesthesia-assisted sedation or moderate sedation

### Post Procedure:

- Monitor for 2-4 hours
- Repeat PFT; results must be within 80% of baseline pre-procedure FEV1 (forced expiratory volume)
- Discharge with bronchoscopy criteria

### Home Care Instructions:

- Reinstruct patient to take next-day Oral Corticosteroid
- Instruct patient to schedule office visit at 2-3 weeks to assess clinical stability for next treatment
- Return patient to primary asthma physician care after completion of BT treatment

## Patient Profile

- 65 year-old male with asthma since childhood
- FEV1 = 1.83L (55%)
- Advair 500/50 twice a day, Xopenex, (levalbuterol), Metformin, Theophylline, Normalizer, Prednisone, Tricort
- Allergic to Xolair
- Two severe exacerbations in prior 12 months;
  - one requiring 8 days of hospitalization
  - 5 courses of Prednisone in 12 months; side effects lead to obesity, diabetes, sleep apnea
- Began to use walker and cane due to shortness of breath
- Onset of diabetes due to asthma

## Patient Outcomes

- No further exacerbation or flares since procedure:
  - “I was walking and biking two days later.”
  - “You changed my life.”
  - “I can’t stop moving.”
- No further Prednisone



## Procedure Outcome

Bronchial thermoplasty, a non-drug therapy, is expected to complement the asthmatic's medications treatment. Reducing the smooth muscle airway with radio frequency thermo energy thereby reducing bronchoconstriction, the patient's outcome would be fewer asthmatic attacks, fewer emergency rooms visits, and improved quality of life.

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