# TEAM ASTHMA: BACK ON TRACK
Preconference Session
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SMART Therapy and Asthma Management in Special Populations

**Monitoring Growth in Children on Corticosteroids**

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No disclosures

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## Monitoring Growth in Children on Corticosteroids
Objectives:

1. Learners will be able describe the possible side effects of corticosteroids.
2. Learners will be able explain the rationale for:
   - Using a chamber to administer inhaled corticosteroid inhalers
   - Teaching patients to rinse their mouth after taking an inhaled corticosteroid

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**RESPONDING TO PATIENT QUESTIONS ABOUT INHALED C ORTICOSTEROIDS**
**Questions and varying beliefs about inhaled corticosteroids (ICSs) are common and may affect adherence to treatment (and control).**

Following are some key points to share with patients and families.

*ICSs are the most effective medications for long-term control of persistent asthma. Because ICSs are inhaled, they go right to the lungs to reduce chronic airway inflammation. In general, ICSs should be taken every day to prevent asthma symptoms and attacks.

*The potential risks of ICSs are well balanced by their benefits. To reduce the risk of side effects, patients should work with their doctor to use the lowest dose that maintains asthma control and be sure to take the medication correctly.

*Mouth irritation and thrush (yeast infection), which may be associated with ICSs at higher doses, can be avoided by rinsing the mouth and spitting after ICS use and, if appropriate for the inhaler device, by using a valved holding chamber or spacer.

*ICSs are generally safe for pregnant women. Controlling asthma is important for pregnant women to be sure the fetus receives enough oxygen.

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As per Asthma Care **Quick Reference** DIAGNOSING AND MANAGING ASTHMA Guidelines from the National Asthma Education and Prevention Program **EXPERT PANEL REPORT 3**

**The most important determinant of appropriate dosing is the clinician's judgment of the patient's response to therapy:**
The clinician must monitor the patient's response on several clinical parameters (e.g., symptoms; activity level; measures of lung function) and adjust the dose accordingly
Once asthma control is achieved and sustained at least 3 months, the dose should be carefully titrated down to the minimum dose necessary to maintain control.

**RESPONDING TO PATIENT QUESTIONS ABOUT INHALED C ORTICOSTEROIDS**
ICS use may slow a child's growth rate slightly. This effect on linear growth is not predictable and is generally small (about 1 cm), appears to occur in the first several months of treatment, and is not progressive. The clinical significance of this potential effect has yet to be determined. Growth rates are highly variable in children, and poorly controlled asthma can slow a child's growth.

*We also need to consider use of oral corticosteroids and adrenal function* Refer patients with concerns about growth and/or adrenal insufficiency to endocrinology*

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Aaron is a 15-year-old male here for a follow up visit for asthma with his mother who provides a reliable history.

Aaron has been doing well. In the interim since our last visit, he has not had any fevers, upper respiratory tract infections or COVID-19 and he has received a COVID-vaccine booster shot. Aaron and mom cannot remember when he last needed to take any albuterol. They deny asthma symptoms wheeze, cough, dyspnea, chest pain and chest tightness. Currently Aaron is not doing exercise (playing any sports). He uses a chamber to administer his metered-dose inhalers.

**PAST MEDICAL HISTORY:**
ER: 12/05/21 COVID-19 testing negative
Hospitalizations: none since last visit
Last course of prednisone/dexamethasone as per EPIC: 2014

**SOCIAL\ENVIRONMENTAL HISTORY:**
Aaron lives with mother, father, one sister, no pets, no smoking or smokers in the home.

**SPIROMETRY:**
Normal FVC and FEV1. Reduced FEV1/FVC ratio and FEF25-75%. The expiratory curve of the flow volume loop is concave. Very mild obstructive lung disease and these results are stable compared to last testing.

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Aaron

**ASSESSMENT/PLAN:**
Moderate persistent asthma, uncomplicated
Allergic rhinitis, unspecified seasonality, unspecified trigger
Food allergy

Aaron is a 15-year-old with moderate persistent asthma that is currently clinically well controlled but continues with stable obstruction on spirometry.

Based on severity classification, adherence to therapy and control, continue ciclesonide 160 mcg MDI one puff BID and montelukast 5 mg PO once daily. Next month after completing the school year step down ciclesonide 160 mcg MDI to one puff once daily.

Aaron will take rescue medication: albuterol before activity and PRN as per asthma care plan.

MDIs to be administered via a chamber.

Continue loratadine 10 mg PO once daily.

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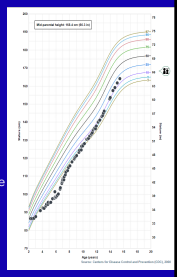
**As the asthma educator, what do we need to know and do for this patient?**

**Growth:**
I reviewed the growth charts - Weight: 67 kg (147 lb. 11.3 oz)
77 %ile based on CDC (Boys, 2-20 Years).
Height: 164.2 cm (5' 4.65")
17 %ile based on CDC (Boys, 2-20 Years)

CHOP endocrine for evaluation of short stature and adrenal insufficiency
Aaron's continued growth is reassuring,
he no longer has adrenal insufficiency

His height was 0.31% when he was referred to pulmonary at 6 years of age on medium dose fluticasone MDI and we added montelukast.



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**As the asthma educator, what do we need to know and do for this patient?**

As per Asthma Care **Quick Reference** DIAGNOSING AND MANAGING ASTHMA Guidelines from the National Asthma Education and Prevention Program **EXPERT PANEL REPORT 3**

The most important determinant of appropriate dosing is the clinician's judgment of the patient's response to therapy: The clinician must monitor the patient's response on several clinical parameters (e.g., symptoms; activity level; measures of lung function) and adjust the dose accordingly
**Once asthma control is achieved and sustained at least 3 months, the dose should be carefully titrated down to the minimum dose necessary to maintain control.**

- Monitor ICS strength: note different strengths of MDIs look exactly alike (Flovent and Asmanex vs QVAR two strengths/two different colors)
- Consider non-steroidal treatment as appropriate: LTRA, LAMA, biologics
- Review pharmacy medication dispense records
- Assess medication adherence (not taking ICS, not controlled, frequent courses of OCS?)
- Patients are treated at many different locations: PCP, urgent care, specialists, ER/hospital
- Determine number of oral corticosteroid courses
- Ensure use of a chamber and mouth rinsing
- Check growth every visit
- Monitor of signs/symptoms of adrenal insufficiency: consider checking 8 am serum cortisol level

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**As the asthma educator, what do we need to know and do for this patient?**

**As per Up To Date, let's review the signs and symptoms of adrenal insufficiency:**

The symptoms of adrenal insufficiency are common, can be overlooked or attributed to other common conditions:

- Fatigue and weakness
- Nausea
- Vomiting
- Headache
- Abdominal pain
- Weight loss

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