



Play,
Learn

and

~~Get Sick~~

Grow...

Together!



Wheeze in the
Preschool Age
Child

Adam Buckmaster

Buffy age
3 years





3 year old girl with cough and wheeze
3rd presentation to you

Well in between episodes , no admissions
Responds well to salbutamol

Last GP gave her a salbutamol puffer and spacer
but mother struggles to get her to use it

Examination:

Feisty, Running around, talking,
mild WOB, bilateral wheezes

Further Information

- **This episode:** Intercurrent cold, Giving 2 puffs of salbutamol twice a day for 2 days
- **Triggers:** Viruses, Attends preschool
- **Atopy:** Has allergic rhinitis, not snoring, mild eczema, no serous otitis media
- **Family History:** Mother asthma as child, Older sibling age 6 on Singulair
- **Other:** No smokers, immunisation up to date, growing well

Advice

- How to hold Buffy to administer
- When to present to hospital
- Triggers and how to prevent



Viral Induced Wheeze



- Most Common chronic disease of childhood
- Prevalence up to 30%
- Most “grow out of it”
- Limited objective measures
- Children and adults with persistent asthma usually have had symptoms < 3 years of age

Review after 3 months

Recent admission to hospital and another separate episode of wheeze

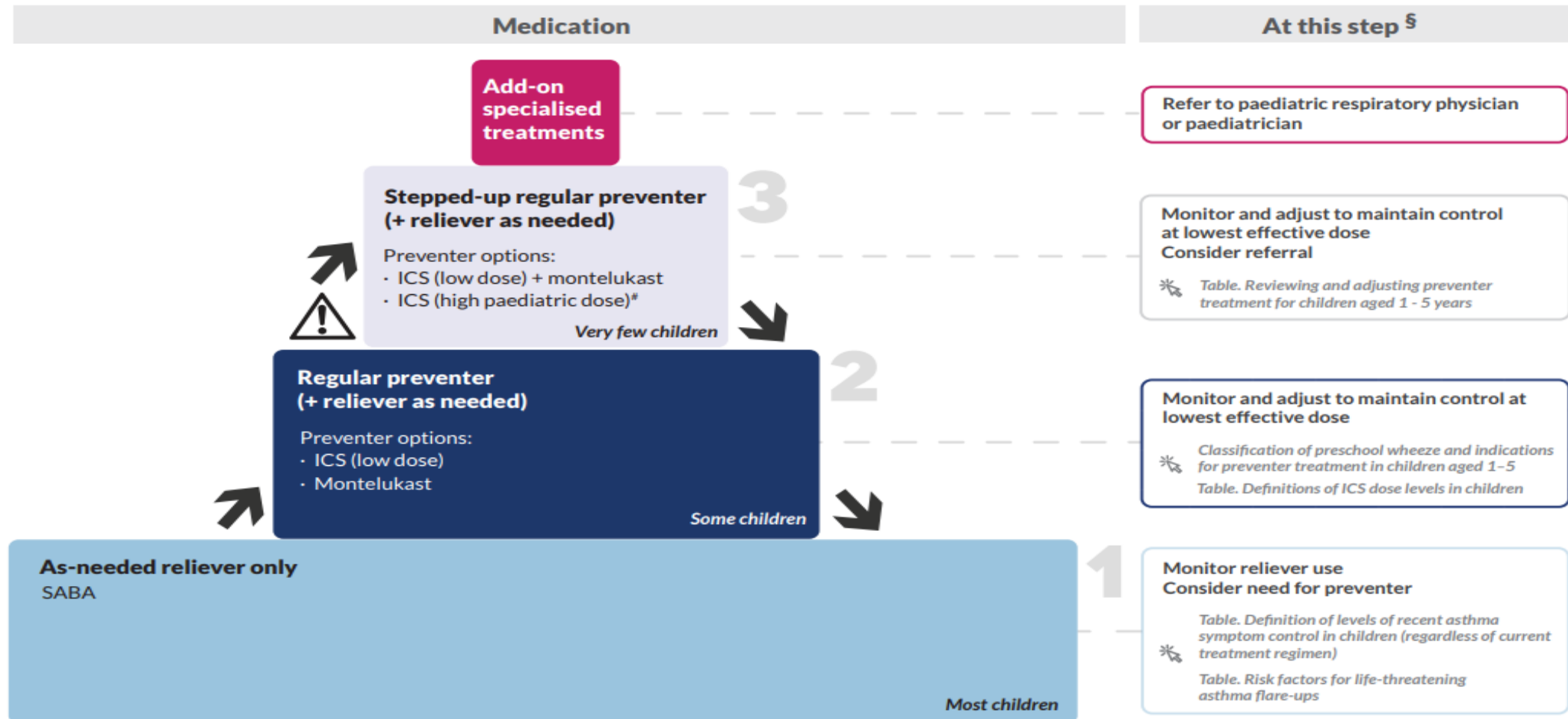
In Groups



- Would you prescribe a preventer?
 - Why? Why not?
- In which children aged 1-5 are preventers recommended?
- Which preventer will you use?
 - Why?

TABLE: Classification of preschool wheeze and indications for preventer treatment in children aged 1–5

Severity of flare-ups	Frequency of symptoms			
	Symptoms every 6 months or less	Symptoms every 3–4 months	Symptoms every 4–6 weeks	Symptoms at least once per week
Mild flare-ups (managed with salbutamol in community)	Not indicated	Not indicated	Consider	Indicated
Moderate–severe flare-ups (require ED care/oral corticosteroids)	Indicated	Indicated	Indicated	Indicated
Life-threatening flare-ups (require hospitalisation or PICU)	Indicated	Indicated	Indicated	Indicated



- Advise/prescribe reliever to be carried at all times
- Assess each patient's individual risk factors and comorbidities
- Ask parents about their goals and concerns, and implement shared decision-making
- Provide education and a written asthma action plan

All patients



Before considering stepping up:

- check symptoms are due to asthma
- inhaler technique is correct
- adherence is adequate

Which Preventer?



Inhaled corticosteroids





PRESCRIPTION ONLY MEDICINE
KEEP OUT OF REACH OF CHILDREN

SINGULAIR®

(montelukast sodium, MSD)

montelukast chewable cherry-flavoured tablets

28 tablets each containing montelukast sodium equivalent to 5mg montelukast

6 - 14 Years

AUST R 61847



5 mg



MONTELUKAST (SINGULAIR) SIDE EFFECTS



PLEASE REPORT SIDE EFFECTS TO [FDA MEDWATCH](https://www.fda.gov/medwatch) (and in your own country if outside the USA).

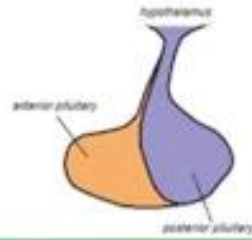
These are not all the possible side effects of montelukast. Compiled March 2019 from SINGULAIR'S US Prescribing and Patient Information, available at: www.dailymed.nlm.nih.gov. Consult a healthcare professional when making medication decisions.

www.parentsforafety.org [Montelukast \(Singulair\) Side Effects Support and Discussion Group on facebook](https://www.facebook.com/MontelukastSideEffectsSupport)

Ophthalmic effects



Hypothalamic-pituitary-adrenal-axis suppression



Diabetes



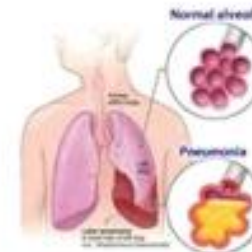
Osteoporosis



Reduced growth velocity



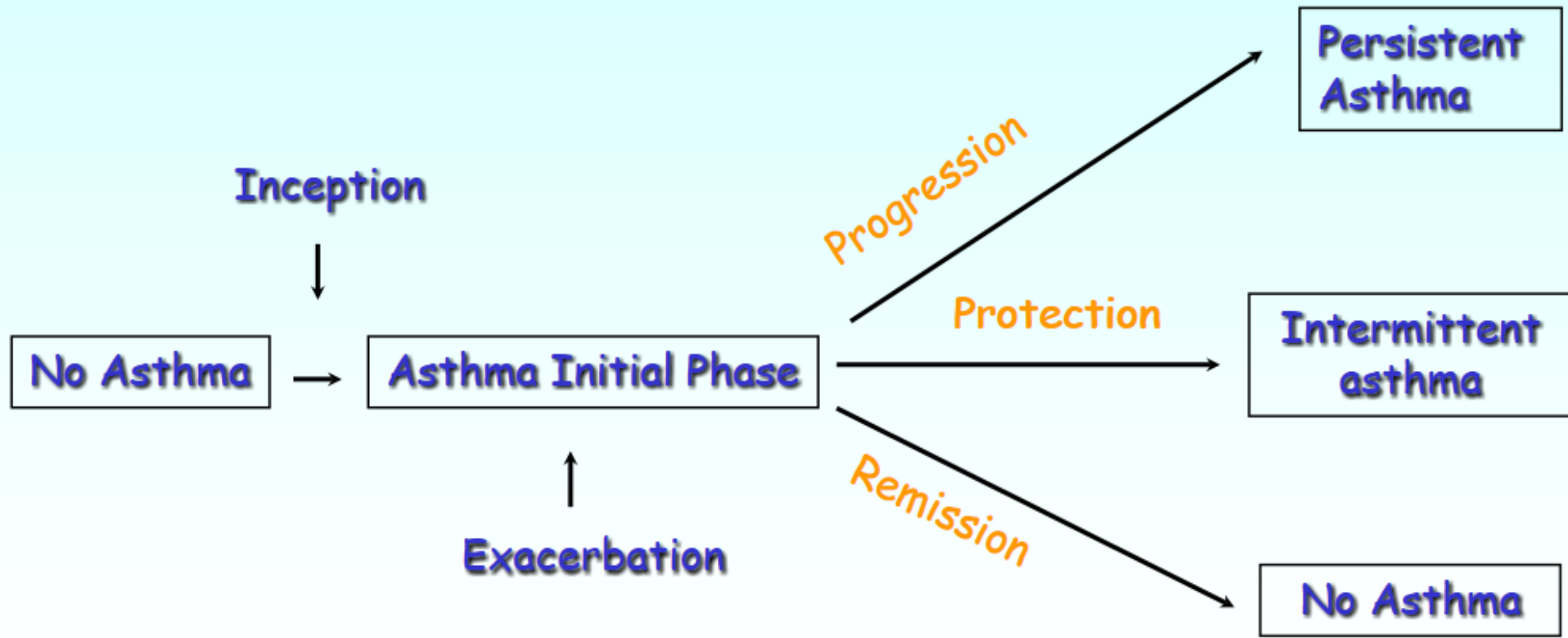
Respiratory infections





Why treat with a preventer ?

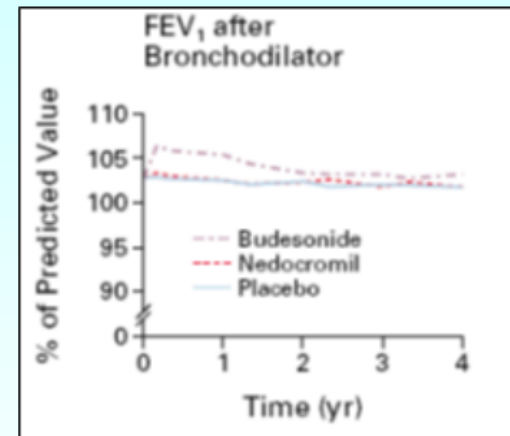
Can we modify the natural history?



Can we modify natural history?

CAMP Study

1041 children, 5-12 years
Followed 4-6 years
Budesonide / Nedocromil / Placebo

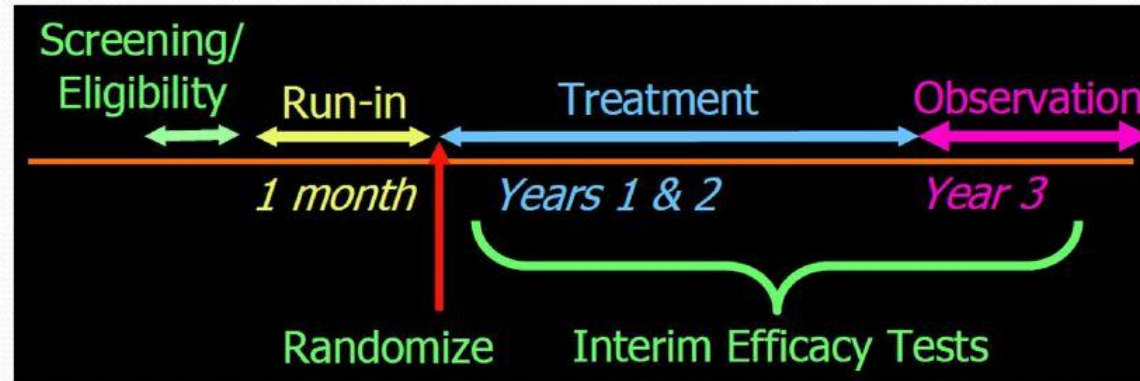


No effect of ICS on the natural course of asthma in school aged children.

Due to the initiation of ICS after the occurrence of critical injurious events??

Can we modify natural history?

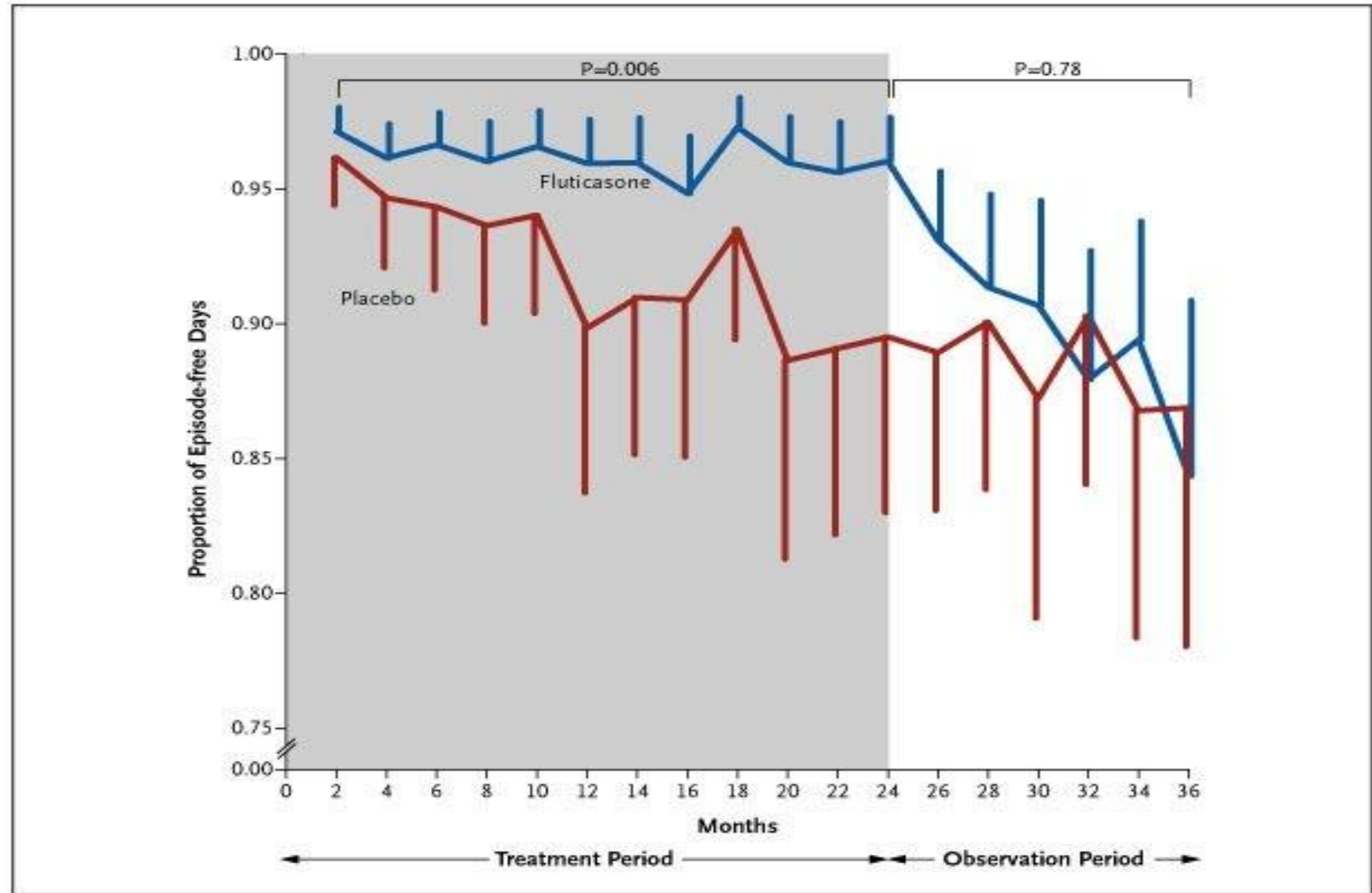
PEAK (Preventing Early Asthma in Kids) Trial



- Randomized, multicenter, double-blind, parallel group, placebo-controlled trial
- 285 two and three year olds at high risk for asthma (+asthma predictive index)
- Fluticasone 44 mcg/puff or placebo (2 puffs b.i.d.)

Can we modify natural history?

PEAK

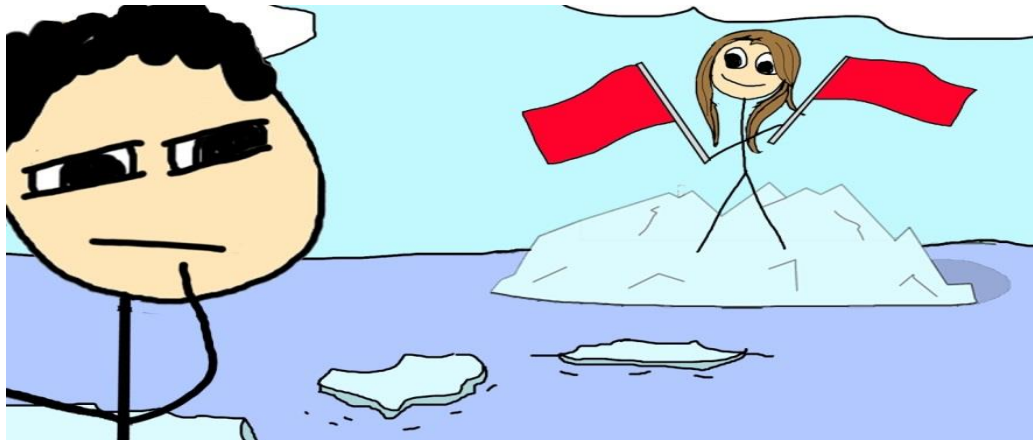




ICS probably do not change natural history BUT...

- Improve quality of life
- Decreases hyper-reactivity
- Fewer hospitalisations
- Fewer emergency visits
- Reduce lost time off work for parents
- Fewer courses of prednisone
- Less additional asthma medications





Red Flags

- Dispensing 12 or more canisters of SABA in a year is associated with asthma death
- Food allergy is a risk factor for life threatening asthma flare-ups

Routine follow up 2 months later

In Groups



- How will you assess his asthma control since commencing the preventer?
- What tools are you aware of that may help?

Test for Respiratory and Asthma Control in Kids: TRACK

Test for Respiratory and Asthma Control in Kids (TRACK): A caregiver-completed questionnaire for preschool-aged children. Murphy K et al. *J Allergy Clin Immunol*. April 2009

Respiratory control assessment	Control rating categories*		
	(1)	(2)	(3)
1. During the <u>past 4 weeks</u> , how many days a week did the child have cough or wheeze (for example, breathing that makes a high pitched whistling or squeaking sound from the chest)?	≤2 days/week <input type="checkbox"/> 1	>2 days/week <input type="checkbox"/> 2	Throughout the day <input type="checkbox"/> 3
2. During the <u>past 4 weeks</u> , how often was the child's sleep disrupted by cough or wheeze?	1 time/month <input type="checkbox"/> 1	>1 time/month <input type="checkbox"/> 2	>1 time/week <input type="checkbox"/> 3
3. During the <u>past 4 weeks</u> , how limited was the child in performing normal activities by cough or wheeze?	No limitation <input type="checkbox"/> 1	Some limitation <input type="checkbox"/> 2	Extremely limited <input type="checkbox"/> 3
4. During the <u>past 4 weeks</u> , how many days a week did the child use albuterol to treat his or her respiratory symptoms, such as cough or wheeze?	≤2 days/week <input type="checkbox"/> 1	>2 days/week <input type="checkbox"/> 2	Several times/day <input type="checkbox"/> 3
5. In the <u>past year</u> , how many times did the child take oral steroids to treat episodes of cough or wheeze?	0-1 time/year <input type="checkbox"/> 1	2-3 times/year <input type="checkbox"/> 2	>3 times/year <input type="checkbox"/> 3

*1, Well controlled; 2, not well controlled; 3, very poorly controlled.

Test for Respiratory and Asthma Control in Kids: TRACK

- Completed by the care giver in waiting room
- Developed from 33 items down to final 5
- Validated on 500 caregivers of children < 5 years with respiratory symptoms
- Reliable and Responsive
- Avoids any mention of Asthma
- Objective measures not possible in these age groups
- Quick in time limited practice

Childhood Asthma Control Test

- Online test that can be done in waiting room
- The child answers the first 4 questions
- The parent answers the last 2
- Score 0 – 19 “Asthma may not be well controlled”
- Score 20 -27 “Asthma may be well controlled”

Childhood Asthma Control Test

1 How is your asthma today?

Very bad



Bad



Good



Very good



5 During the last 4 weeks, how many days did your child have any daytime asthma symptoms?

Not at all

1-3 days

4-10 days

11-18 days

19-24 days

Everyday



Session 2 – The Vicki Burneikis Memorial Session

Wheeze in Children

Relevant HealthPathways

- Central Coast HealthPathways website –
<https://centralcoast.communityhealthpathways.org/>
Username: centralcoast Password: 1connect
- [Asthma in Children](#) section
 - [Acute Asthma in Children](#) pathway
 - [Non-acute Asthma in Children](#) pathway
 - [Inhalers and Techniques](#) pathway
- [Wheeze in Children Aged 1 to 5 Years](#) pathway
- [Bronchiolitis](#) pathway
- [Cough in Children](#) pathway
- Allergic Rhinitis and Nasal Obstruction in Children pathway
- [Urgent Paediatric Assessment](#) referral page
- [Non-urgent Paediatric Assessment](#) referral page
- [Paediatric Medical Advice](#) referral page
- [Non-urgent Immunology and Allergy Assessment](#) referral page