MediMaps
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Asthma

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References:
1. ols.nice.org.uk
2. British thoracic society guidelines
3. Joanne Hamilton, Respiratory nurse specialist, Dudley Trust, lecture June 2017
4. Dr Ian Balfour-Lynn paediatric consultant, 2017
5. Walsall Manor Hospital GP Connect lecture, June 2017
6. Allergy UK lecture Birmingham, July 2017
7. Respiratory lectures Alliance Federation Nov 2017
8. Paediatric consultant Alliance Federation July 2018
9. BTS/SIGN guidelines, March 2019
10. Pocket guide for asthma management and prevention, Global Initiative for Asthma
11. Dr Ian Balfour-Lynn paediatric consultant, webinar April 2021
12. Maternal health Black Country webinar autumn 2024
13. Birmingham and Solihull ICS guidelines, March 2026

DIAGNOSIS

- There is no 100% definitive test for asthma.
- Asthma is incorrectly diagnosed in 10-30% of pt's.
- Cannot diagnose in one appointment.
- You need objective evidence i.e. use spirometry or peak flow
- Use a tool such as the Asthma Impact Guidelines and high risk category.
- Ask them to video 'wheeze' episode.
- No wheeze = no asthma.
- Cough alone is NOT asthma usually.

Assess probability

- Attempt to place them within one of the 3 categories (see right).

↑ probability

- Frequent and recurrent
- Worse at night and early morning
- Worse with exercise, cold, pets, emotions
- Occur when no cold symptoms

Note: children often express abdo or back pain, when in fact they mean chest tightness.

Can have a delayed reaction/allergy to pets.

- especially if

- Wheeze.
- Cough.
- Breathless.
- Chest tightness.
- Hx of atopy (1o relative).
- A high eosinophil count.

- Parents often say it's a wheeze but it is not in reality.
- Rasty noise from secretions is NOT a wheeze.
- So ask them to record the noisey episodes.

↓ probability

- With cold only.
- Cardiac disease
- Chest pain.
- Chronic productive cough with no wheezing
- Normal even when symptomatic
- Excessive vomiting.
- Croup like but well

consider

- Refer if any following:
- Symptoms from birth.
- Nasal polyps.
- Hx of FH positive.
- Wet cough.
- +ve Pmh unusual chest disease.
- Recurrent chest infections if < 5y.

Laryngomlacia, CF, GORD

CF → Neonatal screening misses 10/million.

Primary cilliary dysdiadokinesia

- Next steps depend on age (see right).

consider

Multi trigger wheeze

- Treat like asthma if needed.
- Use ICS rather than lots of salbutamol.

Viral induced wheeze

- Age 1-5y:
- Very common and colds in a yr in kids.
- Due to small airways because they are a child.
- Episodic viral wheeze.
- The pathology behind viral induced is different to asthma, hence standard asthma treatments will not work.
- Consider trial of ICS or montelukast.
- Oral pred has no evidence but the ones who come to hosp get it.
- Either give nothing or give salbutamol PRN.

Bronchiectasis

- Persistent wet cough is NOT asthma.
- It might be recurrent bacterial bronchitis which can lead to bronchiectasis.
- If significant phlegm think of undiagnosed bronchiectasis.
- In asthmatic, phlegm is usually yellow and small amount.

Reflux

Psychogenic cough

- Sounds like croup.
- Drives everyone mad apart from the pt.
- Rx = placebo inhaler i.e. albovent for ip52.
- Rx = ipratrop 2 puffs.
- *Your cough will melt away and there were come back to bother you again.

Obesity

Vocal cord dysfunction

Breathing dysfunction (hyperventilation, panic attack)

TREATMENT

MAINTENANCE MANAGEMENT

STEP UP

Step up treatment if not well controlled:

- Using salbutamol ≥ 3 x per week
OR
- Symptomatic ≥ 3 x per week
OR
- Waking ≥ 1 x per week

- Step up in winter if required.
- Use ICS/LABA combination if symptoms for asthmatic kids.
- Do not not allow SSB and absence from PE lessons.
- But if doing vigorous exercise they might simply be demanding too much from their body. So you dont necessarily have to increase therapy. Just reduce intensity of exercise.
- If asthma is well controlled should only need to use 2 salbutamol inhalers per year.
- 39 of the 195 that died in the 2014 asthma review used ≥ 12 salbutamol per year.
- However, be aware that some severe asthmatics will need to over use.
- Also they might need multiple inhalers as they will need one for school, one for dad's house, one for moms house etc.
- Pt's may be fine with salbutamol at specific times in the year e.g. winter. Then in these situations do not necessarily have to use ICS.

STEP DOWN

Step down treatment: (see guide below) if well controlled for at least 3/12:

- No daytime symptoms.
- No night time waking.
- No need for rescue medication.
- No exacerbations.
- No limitation on activities including exercise.

- Try to step down in summer if possible e.g. can stop theophyline or montelukast in summer.

Seek specialist advice before stepping down if:
- Previous near-fatal asthma, or ICU.
- Exacerbation needing oral steroids within 6/12.

Seretide 25/25, 2p BD	Fluttform 25/10, 2p BD	Fostiar 200/6, 2p BD	Symbicort 400/12, 2p BD	Relvar 184/22, 1p BD
Seretide 125/25, 2p BD	Fluttform 125/5, 2p BD	Fostiar 100/6, 2p BD	Symbicort 200/6, 2p BD	Relvar 92/22, 1p BD
Seretide 50/25, 2p BD	Fluttform 50/5, 2p BD	Fostiar 100/6, 1p BD	Symbicort 100/6, 2p BD	

ACUTE MANAGEMENT

SEVERE ACUTE — if any of the following

- Peak flow < 33% best/predicted
- Sats < 92%
- Silent chest
- Cyanosis
- ↓ HR
- ↓ BP

- 999
- Oxygen driven NEBS
- Salbutamol 5mg NEB (1m - 4 yr 2.5mg)
- Ipratropium 500mcg NEB (1m -11 yr 250mcg)
- Prednisolone STAT, will start working while being taken to A&E (can be life saving).

- ≥ 12 yr = 40 mg STAT.
- 6 - 12 yr = 30 40 mg STAT.
- 2 - 5 yr = 20 mg STAT.
- < 2 yr = 10 mg STAT.

POST DISCHARGE

- If peak flow > 75% of best, they discharge on salbutamol 10 p 4 hrly, ipratro 4 hrly and prednisolone.
- However, steroids should be continued until all the inflammation has gone.
- Hence, GP to review within 2 days to assess if might need to have an extended supply to make it 4 - ??? in total.
- Also, GP to check if can speak speaking sentences (could get them to count to 20 instead), peak flow.

- Refer to respiratory team if:
- ≥ 2 oral prednisolone in last yr.
- ≥ 2 A&E in last yr.

MODERATE ACUTE — if any of the following

- Peak flow 33-50% best/predicted
- Cannot complete sentence
- Sats ≥ 92% (+/2 yr +92%)
- ↑ RR
- ↑ HR

Age	HR
< 1 yr	> 140
1 - 2 yr	> 125
> 12 yr	> 100

Age	RR
< 1 yr	> 40
1 - 2 yr	> 30
> 2 yr	> 25

- 999
- Oxygen driven NEBS
- Salbutamol 5mg NEB (1m - 4 yr 2.5mg)
- Ipratropium 500mcg NEB (1m -11 yr 250mcg)
- Prednisolone STAT, will start working while being taken to A&E (can be life saving).

- ≥ 12 yr = 40 mg STAT.
- 6 - 12 yr = 30 40 mg STAT.
- 2 - 5 yr = 20 mg STAT.
- < 2 yr = 10 mg STAT.

MODERATE ACUTE — if any of the following

- Peak flow >50% best/predicted
- Completes sentence
- Sats ≥ 92%
- RR within normal limits
- HR within normal limits

Age	HR
< 1 yr	< 140
1 - 2 yr	< 125
> 12 yr	< 100

Age	RR
< 1 yr	< 40
1 - 2 yr	< 30
> 2 yr	< 25

- Can manage in 1 core, but assess response over next 3-4 hrs
- 2-10 puffs salbutamol INH via spacer
- Oral prednisone STAT.
- Should be able to stretch out to 4 hrs. If not go to A&E.
- Prednisolone (3/7 is usually enough in children).
- Ongoing exacerbation is nearly always viral, so no Abx needed unless temp > 38.5oC and resp distress.
- If approved do not give Abx regardless of what you hear on the chest.

Adult or child over the age of 12 years 40 50 mg once a day for 5 days.
Child 6 to 12 years 30 40 mg once a day for 3 days.
Child 2 to 5 years 20 mg once a day for 3 days.
Child under 2 years 10 mg once a day for 3 days.

DIAGNOSIS

< 5 y:

- Cannot perform spirometry reliably.
- So code as 'suspected asthma'.
- Treat as if it is asthma.
- Use a trial of asthma treatments to get objective evidence of reversible airway obstruction.
- If fails to perform, try to repeat test every 6-12/12 until you get objective evidence to confidently diagnose.

≥ 5 y:

Spirometry

- Spirometry is vital, and better than peak flow.
- Can be done in children from 5 yrs and all >7y.
- Ideal time to do spirometry is when they are symptomatic.
- If normal spirometry while symptomatic, ↓ the probability of asthma.
- Normal spirometry while asymptomatic, does not rule out asthma.

- First you are looking for evidence of obstruction.
- i.e. FEV1 / FVC < 0.7.
- If present you then check for reversibility testing.

- 4 puffs of salbutamol (total dose 400mcg) via spacer.
- Then perform spirometry again to check for reversibility.

aged 5- <12y

- Can perform reversibility testing.

- A positive result is:
- ↑ FEV1 by ≥ 12%.

- If negative result perform peak flow.

aged ≥ 12

- Perform reversibility testing.

- A positive result is:
- ↑ FEV1 by ≥ 12%.
AND
- ↑ FEV1 by ≥ 200ml.

- If negative result perform peak flow.

Post FEV1 - Pre FEV1 / Pre FEV1 x 100 = % improvement

Peak flow

- Be aware, up to to 80% of patients do not perform accurately.
- Peak flow monitoring could act as a feedback loop for children so they can see whats happening with their lungs i.e. something objective for them to see.

- Diurnal variation is normal, due to the diurnal release of cortisol.
- Peak flow is usually highest at 3pm and lowest in morning.
- This diurnal variation is pronounced variation.
- Record best of 3 attempts.
- However, further attempts should be done if the largest two readings are within 40 L/min of each other.
- If they can only do 2 a per day, perform mid morning and mid afternoon.
- If they can do 3 a per day, perform additionally in evening.
- Can also look for a decrease ≥11% after 6 min of running.

- Prescribe mini Wright Peak Flow.
- Monitor for 2-4/52.
- Can use Asthma UK peak flow diary.

- A positive result is:
- >20% variability.
- Tell the pt to calculate the variability each day using the following formula:
- Daily peak flow minus lowest peak flow.
- Divided by the mean of the days highest + days lowest.
- Multiply by 100.
- e.g. 450 (highest reading) - 320 (lowest reading) = 130.
- 130 ÷ [(450+320) ÷ 2] x 100 = 33% variability
- Average the variability for each day for the 2-4/52 of recordings.

- If negative result:
- Consider alternative diagnosis or referral to 2o care.

Hx and tests point to asthma

Asthma Control Test AND

- ICS in < 5 yr is better in RCT. But in real world data montelukast is better due to compliance (as its easier to take).
- So if chaotic child running around the clinic more give montelukast. If more docile give the more effective treatment i.e. ICS.

Issue a high dose ICS:
< 12 yrs
- Clenil 100 MDI, 1-2p BD, for 6-8/52.

≥ 12 yrs
- Clenil 200 MDI, 1-2p BD, for 6-8/52.

- This is a high dose just for a short time period, to help improve the diagnosis.
- Prescribe by brand (national guidance).
- Use a spacer and compulsory to issue a salbutamol inhaler at this stage.

AND Code as 'Suspected asthma'

6-8/52 review

Asthma Control Test

significant improvement

- Stop treatment, and watch and wait.

if symptoms return confirms diagnosis

- Keep code as 'Suspected asthma' if under 5 yr.
- Even professors of asthma do not diagnose in < 5 yrs age.

Code as 'Asthma'

- Stop high dose steroid.
- Reduce ICS at lower dose (follow 'Maintenance Management as below.
- Ensure prescribed salbutamol.

if remains assymptomatic

Watch and wait.

- No diagnosis of asthma needed.

no significant improvement

- Ask about compliance.
- Assess inhaler technique.

good use

- Think of differentials:
- Breathing dysfunction (panic attack or hyperventilation.
- Cystic fibrosis.
- Bronchiectasis.
- Upper/lower/pharyngeal problem.
- GORD.
- Anxiety, depression.
- Vocal cord dysfunction.
- Psychogenic cough.
- Obesity.

poor use

- 'If you dont like the treatment, try the disease'.
- See 'Technique' and 'Compliance' information below.
- 6-8/52 review.

TREATMENT

5 - 11 yrs

LOW DOSE ICS

Clenil 100 MDI, 1p BD (via spacer)
OR
Qvanticle 50 MDI, 1p BD (via spacer)
OR
Pulmicort 100 turbohaler, 1p BD or 2p evening

AND

SABA

Salbutamol MDI, 2p PRN (via spacer)
OR
Salamol 100 Easi-breathe MDI, 2p PRN
OR
Bricanyl 500 turbohaler, 1p PRN

if fails

Switch to low dose MART if ≥ 6 yrs

MART regime
Maintenance And Reliever Therapy

MART ICS/LABA

Symbicort 100/6 turbohaler, 1p OD or BD + 1p PRN.
Max 8p/day.

Note: licenced in ≥ 6 yrs

- Use Symbicort as both the preventer and the reliever.
- Use MART inhaler as both the preventer and as quick as salbutamol.
- *** STOP SABA (salbutamol) ***
- PRN doses = can use every few min if needed.
- If needing dp consequently on one occasion = seek STAT review for ASTHMA ATTACK.
- Max 8 or 12p per day.
- But if regularly using >4p per day should seek medical review as something is obviously not right.

NEVER prescribe SABA with MART. REFUSE point blank.

Parent demands = ask them to register elsewhere, your policy is 'NO', as per national guidelines.

if fails (i.e. regularly using >4p/day) trial ⅛ 12/52

ADD LTRA
Montelukast
6m - 5 yrs
Montelukast 4mg chewtab OM or ON
OR
Montelukast 4mg granules OM or ON (mix with food only)
6 - 14 yrs
Montelukast chewtab 5mg OM or ON

if fails

Refer to paediatrics

- Asthma clinic will find it useful if you test:
- Total IgE (if raised may indicate atopic status).
- Specific IgE for house dust mite, tree, grass .
- Note: Cat dander tests for years.

ADD LTRA FOR 8-12/52
6m - 5 yrs
Montelukast 4mg chewtab OM or ON
OR
Montelukast 4mg granules OM or ON (mix with food only)
6 - 14 yrs
Montelukast chewtab 5mg OM or ON

if fails

LOW DOSE ICS/LABA

Seretide 50 MDI, 2p OD (via spacer)
OR
Symbicort 100/6 turbohaler, 1p BD or 2p evening (if ≥ 6 yrs)

AND

SABA

Salbutamol MDI, 2p PRN (via spacer)
OR
Salamol 100 Easi-breathe MDI, 2p PRN
OR
Bricanyl 500 turbohaler, 1p PRN

OR

**Guidelines (Birmingham and Solihull) make no sense. If a child is on low dose you use normal regime instead of MART regime. Author opinion.

MODERATE DOSE ICS/LABA

Seretide 50 MDI, 2p BD (via spacer)
OR
*Symbicort 100/6 turbohaler, 2p BD (if ≥ 6 yrs)

AND

SABA

Salbutamol MDI, 2p PRN (via spacer)
OR
Salamol 100 Easi-breathe MDI, 2p PRN
OR
Bricanyl 500 turbohaler, 1p PRN

if fails

Refer to paediatrics

- Asthma clinic will find it useful if you test:
- Total IgE (if raised may indicate atopic status).
- Specific IgE for house dust mite, tree, grass .
- Note: Cat dander tests for years.

12 - 17 yrs

MART regime
Maintenance And Reliever Therapy

AIR regime
Anti-Inflamatory Reliever

- Use MARTIAIR inhaler as both the preventer and the reliever.
- How? Because the LABA works as quick as salbutamol.
- *** STOP SABA (salbutamol) ***
- PRN doses = can use every few min if needed.
- If needing dp consequently on one occasion = seek STAT review for ASTHMA ATTACK.
- Max 12p per day.
- But if regularly using > 4p per day (8p for Symbicort 100/3 MDI) should seek medical review as something is obviously not right.

MART ICS/LABA

Symbicort 100/6 turbohaler, 1p BD +1p PRN
Max 12p/day
OR
Symbicort 200/6 turbohaler, 1p BD + 1p PRN
Max 12p/day
OR
Symbicort 100/3 MDI, 2p BD + 2p PRN (via spacer)
Max 24p/day
OR
Fobumix 160/4.5 Easyhaler, 1p BD + 1 PRN
Max 12p/day

OR

AIR ICS/LABA

Symbicort 200/6 turbohaler, 1p PRN
Max 12p/day
OR
Fobumix 160/4.5 Easyhaler, 1p PRN
Max 12p/day

NEVER prescribe SABA with MARTIAIR. REFUSE point blank.

Parent demands = ask them to register elsewhere, your policy is 'NO', as per national guidelines.

if fails (i.e using >4p/day (>8 puffs) if Symbicort 100/3 (MDI)) trial 8-12/52 of the following

ADD LAMA
Spiriva Respimat 2.5mcg, 2p OD

AND / OR

ADD LTRA
12 - 14 yrs
Montelukast chewtab 5mg OM or ON
≥ 15 yrs
Montelukast 10mg OM or ON

Refer to expiratory:
- <16 years Paediatric Referral
16 - 17 years Adult Referral

- Asthma clinic will find it useful if you test:
- Total IgE (if raised may indicate atopic status).
- Specific IgE for house dust mite, tree, grass .
- Note: Cat dander tests for years.

≥ 18 yrs

MART regime
Maintenance And Reliever Therapy

AIR regime
Anti-Inflamatory Reliever

- Use MARTIAIR inhaler as both the preventer and the reliever.
- How? Because the LABA works as quick as salbutamol.
- *** STOP SABA (salbutamol) ***
- PRN doses = can use every few min if needed.
- If needing dp consequently on one occasion = seek STAT review for ASTHMA ATTACK.
- Max 8 or 12p per day depending on inhaler.
- But if using > 4p per day should seek medical review as something is obviously not right.

MART ICS/LABA

Symbicort 200/6 turbohaler, 1p BD + 1p PRN
Max 12p/day
OR
Fobumix 160/4.5 Easyhaler, 1p BD + 1 PRN
Max 12p/day
OR
Fostair 100/6 NEXThaler, 1p BD + 1 PRN
Max 8p/day
OR
Provoc 100/6 MDI or Bibecfo 100/6, 1p BD + 1 PRN (via spacer)
Max 8p/day

OR

AIR ICS/LABA

Symbicort 200/6 turbohaler, 1p PRN
Max 12p/day
OR
Fobumix 160/4.5 Easyhaler, 1p PRN
Max 12p/day

NEVER prescribe SABA with MARTIAIR. REFUSE point blank.

Parent demands = ask them to register elsewhere, your policy is 'NO', as per national guidelines.

if fails (i.e using >4p/day) trial 8-12/52 of the following

ADD LAMA (two options)

OR

ADD LTRA

STOP MART

OR

CONTINUE MART ICS/LABA

ADD ICS/LABA/LAMA
Trimbow 87/5/9 MDI, 2p BD (via spacer)

AND

SABA
Salamol MDI, 2p PRN (via spacer)

ADD LAMA
Spiriva Respimat 2.5mcg, 2p OD

ADD LTRA
Montelukast 10mg OM or ON

if fails trial LTRA instead.
OR if partial success ADD in LTRA.

if fails trial LAMA instead.
OR if partial success ADD in LAMA.

if fails

Refer to respiratory

< 5 yrs

VERY LOW DOSE ICS

Clenil 50 MDI, 2p BD (via spacer)
OR
Clenil 100 MDI, 1p BD (via spacer)

AND

SABA

Salbutamol MDI, 2p PRN (via spacer)
OR
Salamol 100, no counter, so record doses used.

- If needing 10 puffs on one occasion = seek STAT review for ASTHMA ATTACK.

if works

Can pause both inhalers and rin after 3/12.

If needed, restart same inhalers again.

Or if needed step up to MODERATE DOSE ICS.

if fails after 8-12/52

MODERATE DOSE ICS (continue SABA)

Clenil 100 MDI, 2p BD (via spacer)

if works

Can pause both inhalers and rin after 3/12.

If needed, restart same inhalers again and ADD LTRA.

if fails after 4/52

ADD LTRA

Montelukast 4mg chewtab OM
OR
Montelukast 4mg granules OM (mix with food only)

if fails after 8-12/52

STOP LRTA

Refer to paediatrics

- Asthma clinic will find it useful if you test:
- Total IgE (if raised may indicate atopic status).
- Specific IgE for house dust mite, tree, grass .
- Note: Cat dander tests for years.

- Although Birmingham & Solihull guidelines state: 'Do not Rx salbutamol alone'.

- Expert speaker stated 'If only using salbutamol few times a week then that's fine. You do not need to force them to use a steroid inhaler.
- But this was probably sometime before 2025.

TIPS & TRICKS

Smoking

- Parents to stop smoking.
- "1 smoke out side", makes no difference as the particles that cause harm are still on your clothes.
- Your choice if you want to damage your child.

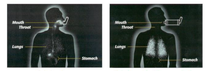
Obesity

- Wt loss works because it is a pro inflammatory state.

Technique

- Only 8% of patients and clinicians use MDI correctly.
- Only 2 in 10 children in paediatric clinic use inhaler properly.
- Unless spot on, the medication will not go to the lungs.
- Use 'In Check Dial' to assess inhaler technique. Can use a normal spacer without a mask to do the assessment.
- If don't inhale inhaler, you will get propellent, not medication.
- Tell them the speed of an MDI = 70mph !
- Hence, the benefit of a spacer (See below).

Why use a Spacer with an Inhaler?



Inhaler alone

When an inhaler is used alone, medicine ends up in the mouth, throat, stomach and lungs.

Inhaler used with spacer device

When an inhaler is used with a spacer device, more medicine is delivered to the lungs.

Compliance

- 'If you dont like the treatment, try the disease'.
- If compliance is an issue, ask the patient to trace out where the drug is in their lungs.
- Then highlight to them the actual area.
- Explain it is a huge area, and if the lungs are not working properly, it will impact on the entire body.
- Important to explain pathophysiology at initial diagnosis to parents.
- Steroid inhaler will prevent the child from stunted growth with steroid inhaler, getting addicted or immune to the inhaler.
- Steroid inhaler will take 4-6/52 to work.
- Explain montelukast can cause nightmares in some.
- Tell the child, 3 kids in every classroom will have asthma. So nothing special about them. Just unlucky.
- Children are unlikely to use MDI with a spacer when they go to secondary school. So switch to a breath actuated inhaler instead e.g. salbutamol easybreath instead of ventolin MDI.
- Be realistic: 80% adherence is acceptable.
- Even the best asthmatics will only achieve 80% adherence, even when they know they are being monitored !
- Most people have their mobile with them so put reminder apps on them.
- Weekends are the worst for adherence.

Spacers

- MDI with spacer has been proven to be superior to neubiser treatment.
- Only reason to give a nebuliser is if hypoxic, as the neb are oxygen driven if used in hospital.
- Neb are oxygen driven, driven through air so it is dangerous.
- If screaming child, even with a spacer and mask, they will still not get good intake into the lungs (unlike the myth that states it gets in when they inhale).
- So try to give when calm to get into lungs rather than throat and lung spaces.
- Yes, you can give when asleep.
- Good idea to let kids play with them when well, so they get used to it.

AEROCHAMBER

- Prescribe 2 spacers if required e.g. for school and home.
- Issue Aerochamber rather than Volumatic as it is easier for parents to administer, and easier to can be carried around.
- Wash once a month using washing up liquid.
- When first removed from plastic wrapper must wash as static will have built up from wrapper.
- Leave it to air dry, because if just been removed from wrapper, prime with 10 puffs of salbutamol, then give whatever dose you desire.
- Wash once a month using washing up liquid.
- Leave it to air dry, because if you lub dry then static will build up.
- Check valve every 6-12 months.
- Replace at least every 9-12 months.
- Aerochamber + noise (whistle) is bad i.e. breathing in too quickly, (as compared to Volumatic + noise is good when used.)
- Deliver one spray in the spacer, and then take 5 breaths.
- If using a mask, ensure the mouthpiece is firmly placed in the spacer (or can remove), and deliver the dose into spacer, i.e. all separate puffs.
- Between each puff wait 30 sec, to allow particle size to get back to normal.
- Tell them to bring spacer when come for their asthma review.
- Hosp: You can re-use spacer on other patients in the GP practice, you just need to clean it.

AEROCHAMBER FLOW-VU

- Updated version of Aerochamber which has a valve.
- This valve closes when patient breaths in, and away from them when they breathe out.
- You can use it to ensure a good seal is present and hence, you are getting the dose into the lungs.
- Aerochamber + noise (whistle) is bad i.e. breathing in too quickly, (as compared to Volumatic + noise is good when used.)
- No need to wash at first use, as there is no static build up.
- Replace every 12 months.

Aerochamber flow-vu small mask (ORANGE)
0 - 18 m

Aerochamber flow-vu medium mask (YELLOW)
1 - 5 yrs

Aerochamber flow-vu youth (GREEN)
5 - 16 yrs

- Has a low resistance valve.
- Kid friendly design.

Aerochamber flow-vu mouthpiece (BLUE)
> 5 yrs

Aerochamber flow-vu face mask (PINK) (Adult size)
> 5 yrs

- If adult with difficulty with mouthpiece, or prefers mask.

Aerochamber flow-vu large mask (BLUE)
> 5 yrs

Aerochamber infant with mask (ORANGE)
0 - 18 m

- Chubby/chunky babies might need yellow aerochamber rather than the orange.

Aerochamber child with mask (YELLOW)
1 - 5 yrs

Aerochamber plus (BLUE)

Aerochamber plus with mask (BLUE)
> 2 yrs

- Aerochamber plus comes in two versions.
- One version has a hard plastic mouthpiece, just like an MDI mouthpiece. This is more difficult than the other version which has a mask instead of a mouthpiece.

Medication

LABA

- Same receptors that ventolin works on is also what LABA works on.
- So should work physiologically.
- If it is a medical reason it would not work.
- Consider informing pt before adding so they will not suffer a psychological reason for finding it does not work.

ICS

- Children lose just 1cm in height with normal dose steroid inhaler.
- If using 1600mcg or more of beclomethasone, they need a steroid card.
- If they suddenly stop seretide 500 BD, they can get addisonian crisis.
- Have to use Short Synacthen test if accidentally been on high dose seretide.

- Inhaled steroids do not supress growth
if used appropriately.
- ICS 50mcg or 100mcg is not going to reduce growth in children and hence, there is no risk of loss of height to from an old study with high steroid doses which we do not use now.
- Only issue is with high effects of repeated oral steroid courses, for poorly controlled asthma flare ups.

SALBUTAMOL

- It's a myth that will not work in babies do to not having receptors.
- Onset within few min.
- Peaks at 20min
- Lasts for 4 hrs.

PREDNISOLONE

- Safe in pregnancy.
- If the steroid course if > 14/7 then need to taper the dose.

LEUKOTRIENE

- Works within 4 hrs.
- 1/3 significant improvement with montelukast, 1/3 mod, and 1/3 no effect.
- Can be continued in pregnancy.
- Can take in morning (no good reason given by manufacturer as to why needs to be at night).
- Can use PRN at start of cough & cold for about 1/52 instead of daily because it prevents if kid and terrible at using inhalers.
- But do not start in pregnancy.

THEOPHYLLINE

- 1/3 cannot tolerate theophyline.
- Sx headache, nausea.
- So only at night for 2/52, then BD.
- Persevere as gets better if possible.

Allergy testing

- Only test for allergens to identify triggers in pt's who are not easily controlled.
- Only test once a diagnosis of asthma is confirmed.
- Varied opinions about trying to remove house dust mite (HDM).
- Worth getting checked for an allergy to HDM first, before spending money on eradication.
- Most fatalities in asthma have food allergies.
- If a pt has anaphylaxis, they want identify a snipe trigger for asthma i.e. it is multifactorial.
- Can have -ve SPT or IgE and still be allergic to a dog as they are genetically modified to be hypoallergenic.
- No such thing as hypoallergenic pets !
- 48 hr exposure on two occasions will test if they will be able to tolerate or not.
- Keeping pets outside does not solve the problem as takes 4/12 for allergens to get out of house once a pet is removed.

- Start antihistamines 2/12 before the season starts.
- Can give the once daily antihistamine in half dose am half dose pm if the symptoms not controlled throughout 24 hrs.
- So the body has built up an immunity.
- Vaseline under nose to help avoid inhalation of pollen.
- Do not dry washing outside, as it will collect pollens and living areas.
- Do not steam clean mattresses. Just hoover.
- Soft toys have lots of HDM, so just keep one with them and get rid of the rest or put toy in freezer once a month overnight.
- Dont buy new pets.
- Wash animal bedding weekly.
- Wash cats and dogs 1-2 x a week.

Pregnancy

- Treat same as non-pregnant.
- Give oral steroids if needed, but ensure midwife team know (T risk of DM). Only 10% reaches fetus. No evidence of affecting fetus. Can breast feed.
- Continue all inhalers. Can breast feed.
- Continue montelukast if it's needed to stabalise asthma. Can breast feed.

Beta Blockers in asthma

- Cardio selective B1 beta blockers are safe to use.

- Bisoprolol.
- Nebivolol.
- Atenolol.

Reference:
https://pmc.ncbi.nlm.nih.gov/articles/PMC7917253/