0-4 Years

>3 episodes of wheeze in a lifetime OR
>2 episodes of wheezing in 12 months

Symptoms between episodes of exacerbation (Exercise intolerance 2x/week, nighttime symptoms 2x/month) OR
High Severity (any ICU hospitalization for exacerbation)

**Intermittent**
With URI symptoms: 10 days of High Dose ICS+SABA PRN.
*See dosages below

**Persistent**
Daily Low Dose ICS+ SABA PRN **
ALTERNATIVE: LTRA+SABA PRN
Reassess every 1-6 months

**AED**
Check Adherence
Check Environmental triggers
Check Device technique
If still not well controlled, refer to be seen by specialist within 1-2 months.
Consider Medium Dose ICS (see separate med tables) and CXR.

**Complete Asthma Control Assessment**

**Well Controlled**

**Not Well Controlled**

**Continue Current Therapy**
Reassess in 3-6 months

Consider trial off daily medication if well controlled >3 months

**Medication Dosages**

<table>
<thead>
<tr>
<th>ICS Drug name</th>
<th>*Intermittent High Dose (total/day)</th>
<th>**Low Dose (total mcg/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nebulized budesonide (For example: Pulmicort)</td>
<td>1 mg (0.5 mg BID)</td>
<td>250 mcg (0.25mg/2 ml QD)</td>
</tr>
<tr>
<td>Fluticasone HFA (For example: Flovent)</td>
<td>660 mcg (Flovent 110, 3 puffs BID, for 10 days)</td>
<td>88 mcg (Flovent 44 mcg, 2 puffs daily)</td>
</tr>
<tr>
<td>Mometasone (For example: Asmanex)</td>
<td>N/A</td>
<td>100 mcg (Asmanex HFA 50 mcg, 2 puffs daily)</td>
</tr>
</tbody>
</table>

**Asthma Control Assessment: Well Controlled**

Daytime Symptoms ≤ 2 days/week
Nighttime Symptoms ≤ 2x/month
Limitation of Activities None
SABA use for symptoms ≤ 2 days/week
Asthma Control Test (ACT) Score ≥ 20
Prednisone courses ≤ 2 in last 12 months
Spirometry FEV1>80% predicted normal FEV1/FVC ratio for age
**5-11 Years**

**Starting Treatment**

- **Step 1**
  - Symptom frequency:
    - Symptoms less than 2x/week AND no exercise limitations (Intermittent)
  - Treatment options:
    - PRN SABA
    - ALTERNATIVE: PRN SABA + Low dose ICS concomitantly

- **Step 2**
  - Symptom frequency:
    - Symptoms 2x/week but less than daily OR 2x/month at NOC OR >2 oral steroids in the last 12 months.
  - Treatment options:
    - Daily Low dose ICS+PRN SABA
    - ALTERNATIVE: Daily LTRA + PRN SABA

- **Step 3**
  - Symptom frequency:
    - Symptoms most days OR waking up ≥1/week.
    - Patients should have a SABA inhaler for backup and back to back tx with exacerbation.
  - Treatment options:
    - Daily & PRN Low dose ICS/Formoterol (Symbicort, Dulera only)
    - ALTERNATIVE: Daily Medium dose ICS + PRN SABA
    - ALTERNATIVE: Daily Low dose ICS/LABA + PRN SABA
    - ALTERNATIVE: Daily Low dose ICS+LTRA+PRN SABA

- **Step 4**
  - Symptom frequency:
    - Symptoms most days, waking up ≥1/week and low lung function
    - Treatment options:
      - Daily & PRN Medium dose ICS/Formoterol (Symbicort, Dulera only)
      - ALTERNATIVE: Daily Medium dose ICS+LABA + PRN SABA
      - ALTERNATIVE: Daily Medium dose ICS+LTRA + PRN SABA

**Follow Up**

- **Complete Asthma Control Assessment**
  - Well Controlled
    - Not Well Controlled
      - AED
        - Check Adherence
        - Check Environmental triggers
        - Check Device technique
  - AED Needs Education
  - AED Good
  - Follow up in 1-6 months

- **Medication Dosages**
  - See Medication Tables for low/medium/high dosing.
  - Provide additional education on treatment plan, device technique, provide adherence strategies and reduce exposure to triggers. Follow up in 1-6 months
  - Move to next treatment Step, **if moving to Step 3 or 4, consider referral to specialist**

- **Follow up in 1-6 months**

- **Referral to Specialist**

**For patients starting treatment, select path that describes symptom frequency. Use follow up section under current step for patients already on treatment.
*If asthma is well controlled, no need to adjust therapy to preferred.**

**Patients starting treatment or with a change should follow up in 1-6 months.**
For patients starting treatment, select path that describes symptom frequency. Use follow up section under current step for patients already on treatment.

*If asthma is well controlled, no need to adjust therapy to preferred.

### Step 1

**Symptoms less than 2x/week AND no exercise limitations (Intermittent)**
- PRN SABA
- ALTERNATIVE: Low dose ICS/Formoterol PRN (Symbicort, Dulera only)
  - Patients should have a SABA inhaler for backup and back to back tx with exacerbation.
- **Or**
  - Daily Low Dose ICS+PRN SABA
  - ALTERNATIVE: PRN Low dose ICS+LTRA concomitantly
  - ALTERNATIVE: LTRA+ PRN SABA

### Step 2

**Symptoms 2x/week but less than daily OR 2x/month at NOC OR >2 oral steroids in the last 12 months.**
- Low dose ICS/Formoterol PRN (Symbicort, Dulera only)
  - Patients should have a SABA inhaler for backup and back to back tx with exacerbation.
- **Or**
  - Daily Low Dose ICS+PRN SABA
  - ALTERNATIVE: PRN Low dose ICS+LTRA+PRN SABA

### Step 3

**Symptoms most days OR waking up ≥1/week.**
- Daily & PRN Low dose ICS/Formoterol (Symbicort, Dulera only)
  - Patients should have a SABA inhaler for backup and back to back tx with exacerbation.
  - ALTERNATIVE: Daily Medium dose ICS + PRN SABA
  - ALTERNATIVE: Daily Low dose ICS/LABA + PRN SABA
  - ALTERNATIVE: Daily Low dose ICS + LTRA+PRN SABA

### Step 4

**Symptoms most days, waking up ≥1/week and low lung function**
- Daily & PRN Medium dose ICS/Formoterol (Symbicort, Dulera only)
  - Patients should have a SABA inhaler for backup and back to back tx with exacerbation.
  - ALTERNATIVE: Medium dose ICS+LABA + PRN SABA
  - ALTERNATIVE: Daily Medium dose ICS + LTRA + LTRA +PRN SABA

**Patients starting treatment or with a change should follow up in 1-6 months.**

**Follow up**

<table>
<thead>
<tr>
<th>&gt; 3 months controlled</th>
<th>&lt; 3 months controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider stepping down treatment</td>
<td>Continue current treatment</td>
</tr>
<tr>
<td>Follow up in 3-12 months</td>
<td></td>
</tr>
</tbody>
</table>

**Complete Asthma Control Assessment**

**AED**

- Check Adherence
- Check Environmental triggers
- Check Device technique

- AED Needs Education
- AED Good

**Medication Dosages**

- See Medication Tables for low/medium/high dosing.

**Provide additional education on treatment plan, device technique, provide adherence strategies and reduce exposure to triggers. Follow up in 1-6 months**

**Move to next treatment Step.**

- **If moving to Step 3 or 4, consider referral to specialist**

**Complete Asthma Control Assessment**

- > 3 months controlled
- < 3 months controlled
- **Refer to Specialist**

**Follow up in 3-6 months**

**Asthma Control Assessment: Well Controlled**

<table>
<thead>
<tr>
<th>Daytime Symptoms</th>
<th>≤ 2 days/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nighttime Symptoms</td>
<td>≤ 2x/month</td>
</tr>
<tr>
<td>Limitation of Activities</td>
<td>None</td>
</tr>
<tr>
<td>SABA use for symptoms</td>
<td>≤ 2 days/week</td>
</tr>
<tr>
<td>Asthma Control Test (ACT) Score</td>
<td>&gt; 20</td>
</tr>
<tr>
<td>Prednisone courses</td>
<td>≤ 2 in last 12 months</td>
</tr>
<tr>
<td>Spirometry</td>
<td>FEV1&gt;80% predicted normal FEV1/FVC ratio for age</td>
</tr>
</tbody>
</table>
## Pediatric Care Network (PCN): Asthma Medication Tables

Doses below are based on the ICS component but are translatable to ICS/LABA formulations

### 0-4 Years

<table>
<thead>
<tr>
<th>ICS Drug name</th>
<th>LOW DOSE: Total mcg/day (Example sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nebulized budesonide (Pulmicort)</strong></td>
<td>Total: 250 mcg (Pulmicort 0.25mg-2ml daily)</td>
</tr>
<tr>
<td><strong>Fluticasone HFA (Flovent)</strong></td>
<td>Total: 88 mcg (Flovent 44mcg-2p daily)</td>
</tr>
<tr>
<td><strong>Mometasone (Asmanex)</strong></td>
<td>Total: 100 mcg (Asmanex 50 mcg-2 p daily)</td>
</tr>
</tbody>
</table>

### 5-11 Years

<table>
<thead>
<tr>
<th>ICS Drug Name (Available dosing)</th>
<th>LOW DOSE: Total mcg/day</th>
<th>MEDIUM DOSE: Total mcg/day</th>
<th>HIGH DOSE: Total mcg/day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beclomethasone HFA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QVAR (40mcg/80mcg)</td>
<td>Total: 50-100 mcg</td>
<td>Total: &gt;100-200 mcg</td>
<td>Total: &gt;200 mcg</td>
</tr>
<tr>
<td>QVAR 40mcg-2p daily</td>
<td>QVAR 40mcg-2p BID</td>
<td>QVAR 80 mcg 2p BID</td>
<td></td>
</tr>
<tr>
<td><strong>Budesonide nebuluse</strong></td>
<td>Total: 250-500 mcg</td>
<td>Total: &gt;500-1000 mcg</td>
<td>Total: &gt;1000 mcg</td>
</tr>
<tr>
<td>Pulmicort nebulse (0.25/2ml, 0.5mg/2ml)</td>
<td>Pulmicort Nebules 0.25mg/2ml daily or 0.25mg/2ml BID</td>
<td>Pulmicort Nebules 0.25mg/2ml BID</td>
<td>Pulmicort Nebules 0.5mg/2ml BID</td>
</tr>
<tr>
<td><strong>Budesonide/formoterol HFA</strong></td>
<td>Total: 80-160 mcg</td>
<td>Total: 320-640 mcg</td>
<td>Total: &gt;640 mcg</td>
</tr>
<tr>
<td>Symbicort* (80mcg/160mcg)</td>
<td>Symbicort HFA 80mcg 2p BID</td>
<td>Symbicort HFA 160mcg 2p daily or BID</td>
<td>Symbicort HFA 160mcg 2p BID</td>
</tr>
<tr>
<td><strong>Ciclesonide</strong></td>
<td>Total: 80 mcg</td>
<td>Total: &gt;80-160 mcg</td>
<td>Total: &gt;160 mcg</td>
</tr>
<tr>
<td>Alvesco (80mcg/160mcg)</td>
<td>Alvesco 80 mcg 2 puffs QD or BID</td>
<td>Alvesco 160 mcg 2 p Qd or BID</td>
<td></td>
</tr>
<tr>
<td><strong>Fluticasone propionate HFA</strong></td>
<td>Total: 88-180 mcg</td>
<td>Total: 180-220 mcg</td>
<td>Total: &gt;220 mcg</td>
</tr>
<tr>
<td>Flovent HFA (44mcg/110mcg/220mcg)</td>
<td>Flovent 44mcg 2p daily or 2p BID</td>
<td>Flovent 44mcg 2p BID</td>
<td>Flovent 110mcg 2p BID</td>
</tr>
<tr>
<td>Flovent 44mcg 2p BID</td>
<td>Flovent 44mcg 2p BID</td>
<td>Flovent 220 mcg 2p BID</td>
<td>Flovent 220 mcg 2p BID</td>
</tr>
<tr>
<td>Advair HFA-fluticasone/salmeterol</td>
<td>Advair 45mcg 2p daily or 2p BID</td>
<td>Advair 45mcg 2p BID</td>
<td>Advair 115mcg 2p BID</td>
</tr>
<tr>
<td>(45mcg/115mcg/230mcg)</td>
<td>Advair 45mcg 2p BID</td>
<td>Advair 230 mcg 2p BID</td>
<td></td>
</tr>
<tr>
<td><strong>Mometasone furoate</strong></td>
<td>Total: 100 mcg</td>
<td>Total: 100 mcg</td>
<td>Total: &gt;200 mcg</td>
</tr>
<tr>
<td>Asmanex-50mcg/100mcg/200mcg</td>
<td>Asmanex 50mcg 2p daily</td>
<td>Asmanex 50mcg 2p BID</td>
<td>Asmanex 100mcg 2p BID</td>
</tr>
<tr>
<td>Asmanex (mometasone/formoterol)*</td>
<td>Asmanex 50mcg 2p daily</td>
<td>Asmanex 50mcg 2p BID</td>
<td>Asmanex 100mcg 2p BID</td>
</tr>
<tr>
<td>Dulera (mometasone/formoterol)*</td>
<td>Dulera 50mcg 2p daily</td>
<td>Dulera 50mcg 2p BID</td>
<td>Dulera 100 mcg 2p BID</td>
</tr>
<tr>
<td>50mcg/100mcg)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*If using SMART therapy, must use a FORMOTEROL containing combination (Symbicort or Dulera only). p=puffs
Max puffs in 24 hours for ICS/Formoterol combination medications: **8 puffs**
<table>
<thead>
<tr>
<th>ICS Drug name (Available dosing)</th>
<th>LOW DOSE</th>
<th>MEDIUM DOSE</th>
<th>HIGH DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total mcg/day</td>
<td>Example sig</td>
<td>Total mcg/day</td>
</tr>
<tr>
<td><strong>Beclomethasone HFA</strong>&lt;br&gt;QVAR (40mcg/80mcg)</td>
<td>Total: 100-200 mcg</td>
<td>QVAR 40mcg 2pBID</td>
<td>Total: &gt;200-400 mcg</td>
</tr>
<tr>
<td><strong>Budesonide DPI</strong>&lt;br&gt;Pulmicort flexhaler (90mcg/180mcg)</td>
<td>Total: 200-400 mcg</td>
<td>Pulmicort flexhaler 90mcg 2inh daily or 2inh BID</td>
<td>Total: &gt;400-800 mcg</td>
</tr>
<tr>
<td><strong>Budesonide/formoterol HFA</strong>&lt;br&gt;Symbicort (80mcg/160mcg)</td>
<td>Total: 80-160 mcg</td>
<td>Symbicort HFA 80mcg 2p daily or BID</td>
<td>Total: 320-640 mcg</td>
</tr>
<tr>
<td><strong>Ciclesonide</strong>&lt;br&gt;(Alvesco (80mcg/160mcg)</td>
<td>Total: 80-160 mcg</td>
<td>Alvesco 80mcg 2p daily</td>
<td>Total: &gt;160-320 mcg</td>
</tr>
<tr>
<td><strong>Fluticasone furoate DPI</strong>&lt;br&gt;Breo (fluticasone/vilanterol) (100mcg/200mcg)&lt;br&gt;Arnuity (50mcg/100mcg/200mcg)</td>
<td>Total: 100-250 mcg</td>
<td>Flovent Diskus 50 mcg 1 or 2 inh BID</td>
<td>Total: &gt;250-500 mcg</td>
</tr>
<tr>
<td><strong>Fluticasone propionate DPI</strong>&lt;br&gt;Flovent Diskus (50 mcg/100mcg/250 mcg)&lt;br&gt;Advair Diskus (fluticasone/salmeterol)100mcg/250mcg/500mcg)</td>
<td>Total: 100-250 mcg</td>
<td>Advair Diskus 100mcg 1inh daily or BID</td>
<td>Total: &gt;250-500 mcg</td>
</tr>
<tr>
<td><strong>Fluticasone propionate HFA</strong>&lt;br&gt;Flovent (44mcg/110mcg/220mcg)&lt;br&gt;Advair HFA (fluticasone/salmeterol) (45mcg/115mcg/230mcg)</td>
<td>Total: 100-250 mcg</td>
<td>Flovent HFA 44mcg 2puffs BID</td>
<td>Total: &gt;250-500 mcg</td>
</tr>
<tr>
<td><strong>Mometasone furoate</strong>&lt;br&gt;Asmanex (50mcg/100mcg/200mcg)&lt;br&gt;Dulera (mometasone/formoterol) (50mcg/100mcg/200 mcg)</td>
<td>Total: 100-200 mcg</td>
<td>Asmanex 100mcg 2puff daily</td>
<td>Total: &gt;200-400 mcg</td>
</tr>
<tr>
<td></td>
<td>50mcg 2puffs daily or BID</td>
<td>Dulera 50mcg or 100mcg 2puffs BID</td>
<td></td>
</tr>
</tbody>
</table>

If using SMART therapy, must use a FORMOTEROL containing combination (Symbicort or Dulera only). p=puffs

Max puffs in 24 hours for ICS/Formoterol combination medications: 12 puffs
REFERENCES

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