Living guideline/future updates

The guideline will be formally reviewed every 3 years or sooner to determine the need for and nature of any updates, in accordance with the CTS Living Guideline Model. The CTS Asthma Assembly Steering Committee members will also use the continuously updated McMaster Plus database, whereby they will receive alerts when new articles pertaining to these PICO questions are published (starting from the last date of the literature search conducted for this guideline). This will serve to prompt members to consider timely guideline updates with evolving evidence and will facilitate formal literature reviews.

REVISIONS TO ASTHMA CONTROL CRITERIA AND ASSESSMENT OF EXACERBATION RISK

Asthma Control Criteria

Assessment of asthma control is a keystone to asthma management. Previous surveys of Canadians with asthma found that 93-97% consider their asthma controlled; however, 53-90% of individuals had 1 or more criteria for poorly-controlled asthma as per CTS criteria.[6,7] This highlights the importance of performing structured assessments or using control questionnaires to assess asthma control, instead of asking general questions about the individual's perception of their asthma control.

The evolution of the CTS Asthma Control Criteria

The CTS Asthma Control Criteria has undergone multiple changes since first introduced in 1989. The initial criteria[30] included "minimal symptoms, ideally none" and inhaled beta-agonist needed "not more than twice daily and ideally none." This was further quantified in the 1996 guideline as <3 days/week, allowing for 1 dose per day of SABA for prevention of exercise-induced symptoms (consensus).[31] In the 1999 update, this was increased to allow for <4 days/week of daytime symptoms and <4 doses/week of SABA, still allowing for 1 dose per day for prevention of exercise induced symptoms, acknowledging that "complete absence of respiratory symptoms and normal pulmonary function was difficult to achieve in individuals with asthma" and that "acceptable" control was the goal.[32] This was further revised in 2010 to count doses of FABA used to treat or prevent exercise-induced symptoms when evaluating FABA use (given that pre-exercise allowance of FABA was not evidence-based, and a concern that frequent use of FABA for exercise-induced symptoms indicated poorly-controlled asthma).[11] The term FABA replaced SABA in 2010 to recognize that PRN bud/form was approved to be used as a daily maintenance and reliever medication. In the last revision,[12] sputum eosinophils <2-3% were included for those with moderate to severe asthma.

In comparison, other national and international guidelines/strategies have used more stringent criteria for frequency of asthma symptoms and use of SABA. The National Heart, Lung, and Blood Institute (NHLBI)[21] and the GINA[20] documents apply a cutoff of ≤2 days/week of symptoms or SABA use, and use different criteria for lung function (GINA no longer uses a specific criterion but highlights that a forced expiratory volume in 1 second (FEV_1) <60% increases risk for future exacerbations; NHLBI uses an $FEV_1 > 80\%$ predicted). A study comparing asthma control with and without spirometry criteria found that asthma control was overestimated if lung function parameters were not included, but there was no significant discrepancy in individuals considered poorly-controlled when comparing the 2010 GINA and CTS symptom control criteria.[33]

Rationale for changes to the CTS Asthma Control Criteria

In this update, the frequency of daytime symptoms and need for reliever (SABA or PRN bud/form) defining well-controlled asthma were decreased from <4 days per week and <4 doses per week to ≤2 days per week and ≤2 doses per week, respectively. These changes were made for the following reasons:

1. RCTs reviewed for this update for the initiation of controller therapy most frequently used inclusion criteria of individuals with symptoms or use of SABA >2 days per week.[15,34–38]
2. Recommendations in previous guidelines for escalation of controller therapy, were based on RCTs that often used the cutoff of >2 days per week to define poorly-controlled asthma.[39–41]
3. Future trials that use a "number of days/week with symptoms" as an inclusion criterion will likely continue to use the cutoff of >2 days per week given that RCTs often use GINA or NHLBI criteria to define control[35,36,38,42,43] if they do not use a global score from a control questionnaire (e.g., Asthma Control Test, Asthma Control Questionnaire).
4. Aligning the Canadian control criteria with other national and international recommendations will allow future evidence to be generalizable in the Canadian context.
5. Aligning the criteria for initiation of controller treatment in preschoolers compared to older children and adults simplifies management guidance. The 2015 CTS/Canadian Pediatric Society (CPS) Preschool Position Statement[18] used a cutoff of symptoms ≥8 days per month (which roughly aligns with the cutoff of >2 days per week), and will be revised in the CTS 2021 Asthma Guideline Update to >8 days/month (thus approximating >2 days per week).
6. Previous control criteria were based on consensus opinion and it was not felt that a specific PICO question addressing this would yield evidence to support a cutoff of <4 days per week compared to ≤2 days per week.

There is also a discrepancy in the frequency of night symptoms, which is defined as <1/week in the CTS