Childhood Asthma During COVID-19

Elissa Abrams, MD, MPH, FRCPC

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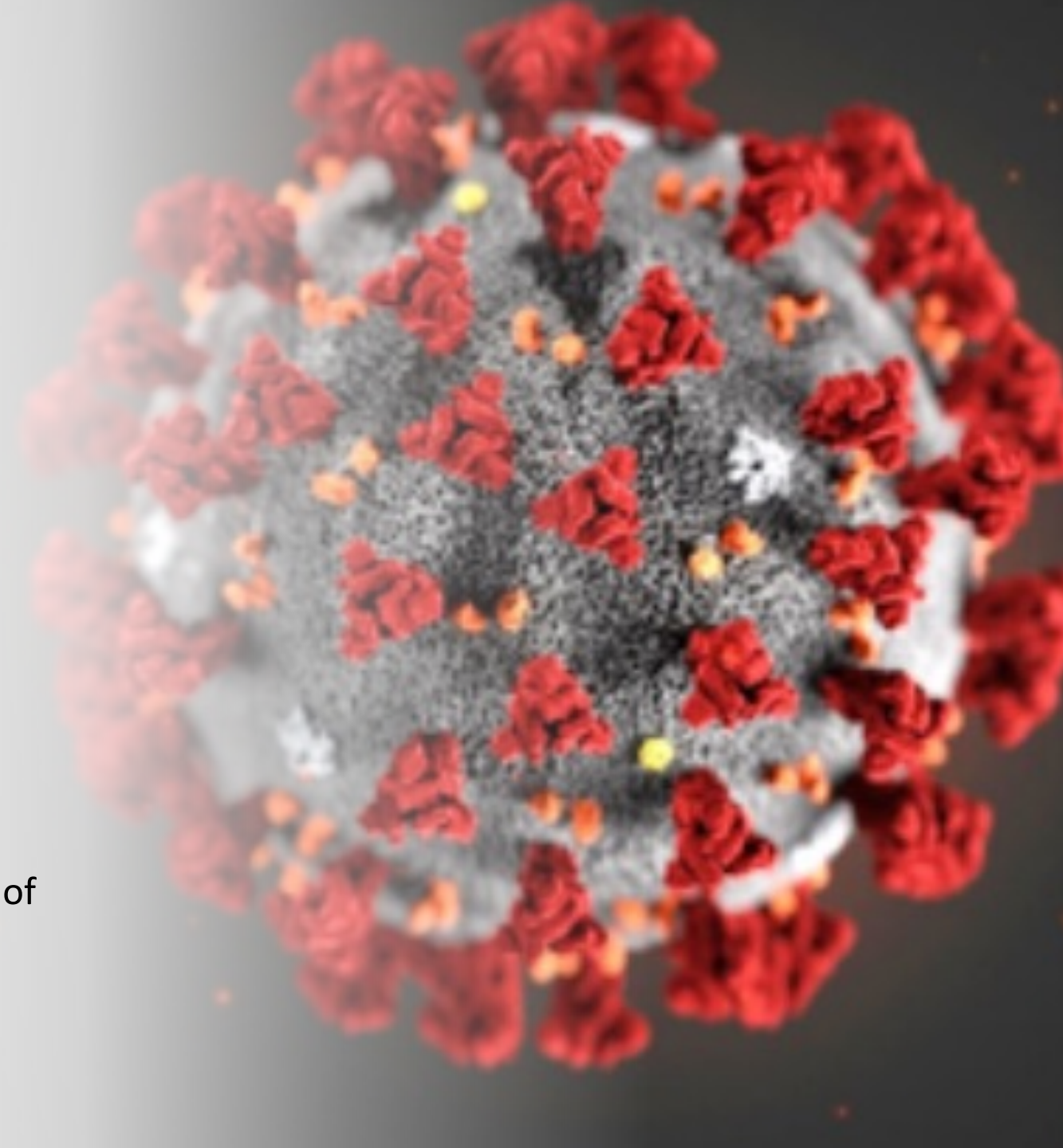
President, Allergy Section, Canadian Pediatric Society



Why?

- Asthma is a global health concern
- It is the most common chronic disease of childhood
- ++ Concern about asthma during COVID-19

Couriel J. Pediatr Respir Review 2003; 4: 47-54

Abrams EM et al. Lancet Respiratory Medicine 2017;5: 827-34

Image: Healthline.com

Outline

Asthma and COVID-19 risk:

- Asthma exacerbations
- COVID-19 morbidity and mortality

Differentiating Asthma from COVID-19

Asthma management during COVID-19:

- Use of asthma maintenance medications
- Tapering of asthma medications

Management of comorbidities

Other

- School attendance
- Mask use
- September epidemic
- Vaccination
- Risk communication
- Social determinants of health

Asthma During COVID-19

- Risk of worsening asthma
- Risk of more severe COVID-19 infection

Asthma Morbidity and Mortality During COVID-19

- Dramatic reduction in asthma exacerbations and admissions
  - Up to 80% reduction in asthma admissions
- Study on asthma-related ED utilization in US: dramatic reduction in 2020
- Study of in-person asthma encounters at US hospital: 87% reduction

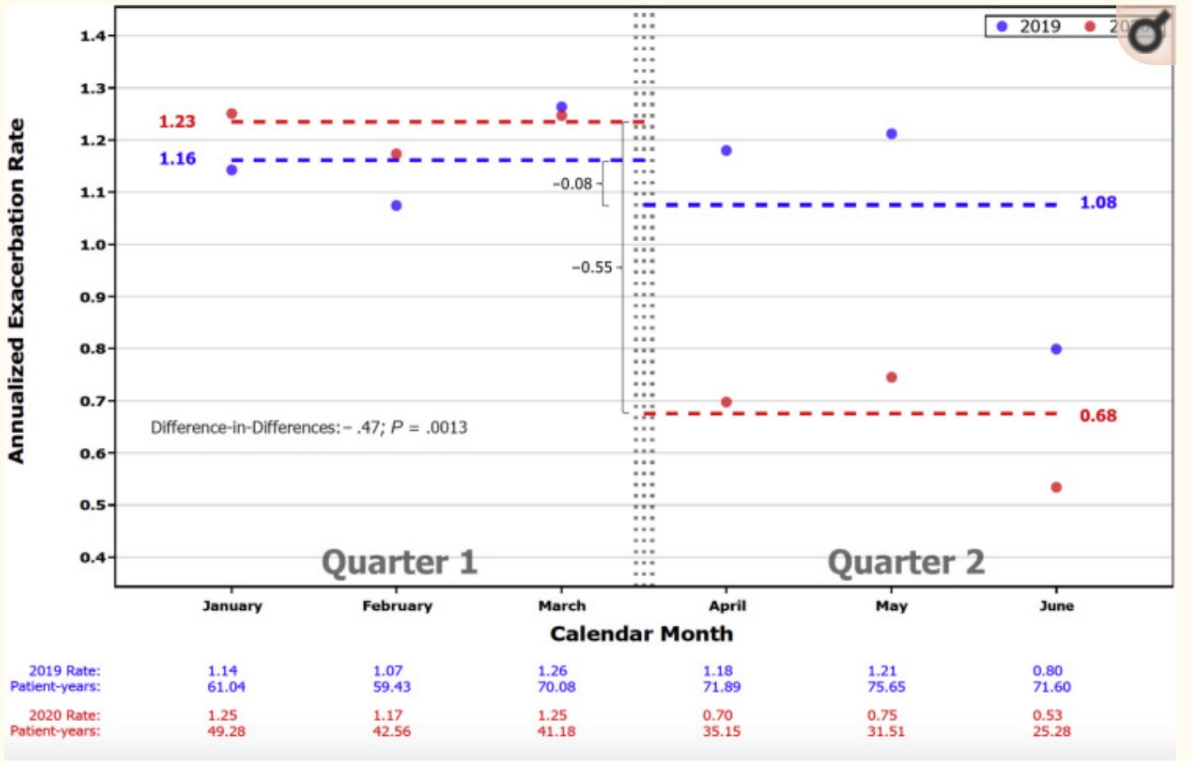


Figure 1

AEX rate comparing Q1 with Q2 rates for 2019 and 2020. Lines represent quarterly mean AEX; monthly AEX rates are represented by red (2020) and blue (2019) dots.

Krivec U et al. Archives of disease in childhood. 2020. p. 809–10.
Salciccioli JD et al. J Allergy Clin Immunol Pr [Internet]. 2021;in press.
Leven R et al Am J Emerg Med 2021;43: 109-14
Tacquechel K et al. J Allergy Clin Immunol 2020 in press

Etiology

- Etiology likely multi-factorial
  - Increased PH measures
  - Improved compliance
  - Possibly hesitancy to present to ED or primary care

COVID-19 in Children with Asthma

Systematic review:

- While asthma listed as a prognostic factor for COVID-19 outcomes, this is “based more on common sense rather than mounting evidence”
- “Scarcely any data on whether childhood asthma…constitutes a risk factor for COVID-19 infection or severity”
- retrospective review of COVID-19 infection among children with asthma noted no increased COVID-19 severity independent of asthma severity and control over the year prior to the pandemic

Paradoxically asthma may be protective

- ACE2 receptor underexpressed in lungs of atopic children

Castro-Rodriguez JA et al. *Pediatr Pulmonol*. 2020;55:2412-2418.
Ruano FJ et al. J Allergy Clin Immunol Pract 2020 in press

POSITION STATEMENT FROM THE CANADIAN THORACIC SOCIETY (CTS)
ASTHMA ASSEMBLY STEERING COMMITTEE

ADDRESSING THERAPEUTIC QUESTIONS TO HELP CANADIAN PHYSICIANS OPTIMIZE ASTHMA MANAGEMENT FOR THEIR PATIENTS DURING THE COVID-19 PANDEMIC

Risk of acquiring SARS-CoV-2 infection (COVID 19) by patients with asthma

There does not appear to be an increased risk for asthma patients to acquire SARS-CoV-2 infection (COVID-19) compared to the general population.

Rationale: Two studies from China and one from Korea did not find that hospitalized patients with asthma were over-represented in the COVID-19 populations studied.[6,7,8]

STATE OF THE ART

PEDIATRIC PULMONOLOGY WILEY

Pediatric asthma and COVID-19: The known, the unknown, and the controversial

Elissa M. Abrams MD, FRCPC[1,2] | Ian Sinha MBBS, FRCPCH, PhD[3,4] |
Ricardo M. Fernandes MD, PhD[5,6] | Daniel B. Hawcutt MB ChB (Hons), MD, MRCPCH[3,7]

Take Home Point 1

- Studies to date have not demonstrated an increased risk of severe COVID-19 outcomes among children with asthma and have in fact noted a reduction in asthma healthcare utilization during COVID-19. While further studies are required, and asthma remains listed as a risk factor in some guidelines, children with asthma appear to not be at increased risk of severe respiratory outcomes compared to children without asthma during the pandemic.

Asthma Diagnosis and Management During COVID-19

THE JOURNAL OF PEDIATRICS • www.jpeds.com COMMENTARY

Managing Asthma during Coronavirus Disease-2019: An Example for Other Chronic Conditions in Children and Adolescents

Elissa M. Abrams, MD, MPH[1,2], and Stanley J. Szefler, MD[3,4]

- Differentiating asthma from COVID19
  - Dry cough, shortness of breath most common symptoms of COVID19
  - Fever and atypical symptoms may help differentiate but substantial overlap
- Effectively no clear or concise way to differentiate worsening asthma from COVID

TABLE 14
Diagnosis of asthma: Pulmo

Pulmonary function mea		lts
Preferred: Spirome		
Reduced FEV$_1$/	Less than lower limit of normal based on age, sex, height and ethnicity (<0.8–0.9)*	ed on age, sex, 8)*
AND	**AND**	
Increa onchodila co	≥12%	≥12% (and a min
Al xpiratory flow variability		
In onchodilator or after course of controlle	%	60 L/min (minimum ≥2
C		**OR**
D		>8% based on twice daily r
		>20% based on multiple da
Alte challenge test		
a) Me	(4–16 mg/m	
OR		
b) Exercise cha	≥10%–15% decrea	

**Approximate lower lim mum pm value as % of recent maximum. FEV$_1$ producing a 20% fall in FEV$_1$. Reproduced from reference*

Special Article

A Phased Approach to Resuming Suspended Allergy/Immunology Clinical Services

Daniel A. Searing, MD[a], Cullen M. Dutmer, MD[a], David M. Fleischer, MD[a], Marcus S. Shaker, MD, MSc[b,c], John Oppenheimer, MD[d], Mitchell H. Grayson, MD[e], David Stukus, MD[e], Nicholas Hartog, MD[f], Elena W.Y. Hsieh, MD[a,g], Nicholas L. Rider, DO[h], Timothy K. Vander Leek, MD[i], Harold Kim, MD[j,k], Edmond S. Chan, MD[l], Doug Mack, MD[m,n], Anne K. Ellis, MD, MSc[o], Elissa M. Abrams, MD[p], Priya Bansal, MD[q], David M. Lang, MD[r], Jay Lieberman, MD[s], David BK. Golden, MD[t], Dana Wallace, MD[u], Jay Portnoy, MD[v], Giselle Mosnaim, MD, MSc[w], and Matthew Greenhawt, MD, MBA, MSc[a] *Aurora and Denver, Colo; Lebanon and Hanover, NH; Newark, NJ; Columbus and Cleveland, Ohio; Grand Rapids, Mich; Houston, Texas; Edmonton, AB, Canada; London, Hamilton, Burlington, and Kingston, ON, Canada; Vancouver, BC, Canada; Winnipeg, MB, Canada; St Charles and Evanston, Ill; Memphis, Tenn; Baltimore, Md; Fort Lauderdale, Fla; and Kansas City, Mo*

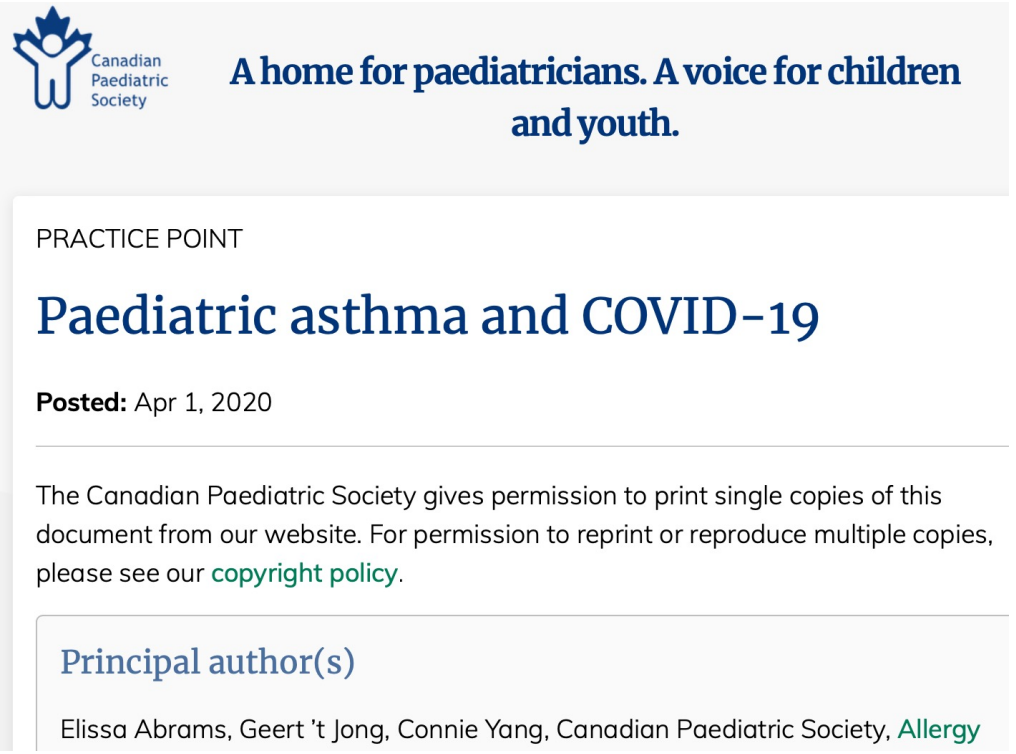
- Spirometry is still contraindicated in many scenarios because of the aerosolization risk, except in highly individualized situations in which it would be essential for immediate treatment decision that could not otherwise be made without such information and where it can be performed with appropriate precautions and room/equipment disinfection

COVID-19 and asthma – infection control

- Avoid spirometry in patients with confirmed or suspected COVID-19, or if community transmission of COVID-19 is occurring in your region
  - Follow aerosol, droplet and contact precautions if spirometry is needed
  - Consider asking patients to monitor PEF at home, if information about lung function is needed

Asthma Management
CPS Practice Point: Asthma and COVID19

- Remain on current asthma medications including ICS
- Follow public health measures



Canadian Paediatric Society

A home for paediatricians. A voice for children and youth.

PRACTICE POINT

Paediatric asthma and COVID-19

Posted: Apr 1, 2020

Principal author(s)

Elissa Abrams, Geert 't Jong, Connie Yang, Canadian Paediatric Society, Allergy

PRACTICE | FIVE THINGS TO KNOW ABOUT ...

Asthma and COVID-19

Elissa M. Abrams MD MPH, Geert W. 't Jong MD PhD, Connie L. Yang MD MSc

Cite as: *CMAJ* 2020 May 19;192:E551. doi: 10.1503/cmaj.200617; early-released April 24, 2020

- Good asthma control can prevent exacerbations during the COVID19 pandemic
- Nebulization should be avoided if possible
- Oral steroids should be used if required to treat asthma exacerbations

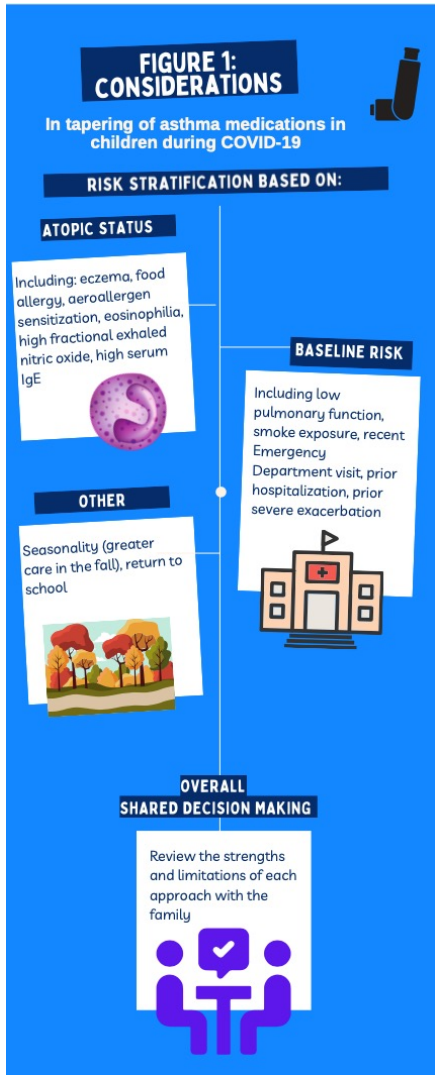
Medical Management – Other

Remain on biologic medications as well

- AAAAI: no evidence that immune response to COVID-19 will be impaired in patients with asthma on biologic therapies and that it would be “reasonable” to continue administration of biologics in patients with asthma

Use OCS if you need to

Abrams EM et al. Pediatric Pulmonol 2020;55: 3573-8



Tapering Asthma Medications During COVID-19

- Prior to the pandemic evidence would support step down approach (Q3 months)
- Balance this against reasons to keep children on asthma medications during COVID-19: ED visits, risk that asthma control misinterpreted, potential benefit of ICS therapy against COVID-19
- Consider:
  - Atopy – asthma persistence, asthma exacerbations, ICS response
  - Baseline risk
  - Other

Abrams EM et al. Lancet Respiratory Medicine. 2021 in press

Management – Consider Asthma Risk and Control

- "The long-term goals of asthma management are **risk reduction** and **symptom control**. The aim is to reduce the burden to the patient and to reduce their risk of asthma-related death, exacerbations, airway damage, and medication side-effects."
- Risk = future and past exacerbations, use of oral steroids, lung function deterioration (as well as others)

Box 4. Assessment of symptom control and future risk

A. Assessment of symptom control		**Level of asthma symptom control**		
In the past 4 weeks, has the patient had:		**Well controlled**	**Partly controlled**	**Uncontrolled**
Daytime symptoms more than twice/week?	Yes☐ No☐	None of these	1–2 of these	3–4 of these
Any night waking due to asthma?	Yes☐ No☐			
SABA reliever needed more than twice/week?	Yes☐ No☐			
Any activity limitation due to asthma?	Yes☐ No☐			
B. Risk factors for poor asthma outcomes				
Assess risk factors at diagnosis and periodically, at least every 1-2 years, particularly for patients experiencing exacerbations. Measure FEV_1 at start of treatment, after 3–6 months for personal best lung function, then periodically for ongoing risk assessment.				
Having uncontrolled asthma symptoms is an important risk factor for exacerbations Additional potentially modifiable risk factors for exacerbations, even in patients with few asthma symptoms, include: • *Medications*: ICS not prescribed; poor adherence; incorrect inhaler technique; high SABA use (with increased mortality if >1x200-dose canister/month) • *Comorbidities*: obesity; chronic rhinosinusitis; GERD; confirmed food allergy; anxiety; depression; pregnancy • *Exposures*: smoking; allergen exposure if sensitized; air pollution • *Setting*: major socioeconomic problems • *Lung function*: low FEV_1, especially if <60% predicted; higher reversibility • *Other tests*: sputum/blood eosinophilia; elevated FeNO in allergic adults on ICS Other major independent risk factors for flare-ups (exacerbations) include: • Ever being intubated or in intensive care for asthma; having ≥1 severe exacerbations in the last 12 months.				Having any of these risk factors increases the patient's risk of exacerbations ***even if they have few asthma symptoms***

GERD: gastroesophageal reflux disease; FeNO: exhaled nitric oxide; ICS: inhaled corticosteroid; SABA: short-acting b_2-agonist. See next page for rest of table.

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www.ginasthma.org

Assessment of symptom control

Box 2-2. GINA assessment of asthma control in adults, adolescents and children 6–11 years

A. Asthma symptom control		Level of asthma symptom control		
In the past 4 weeks, has the patient had:		**Well controlled**	**Partly controlled**	**Uncontrolled**
• Daytime asthma symptoms more than twice/week?	Yes☐ No☐	None of these	1–2 of these	3–4 of these
• Any night waking due to asthma?	Yes☐ No☐			
• Reliever (SABA) for symptoms more than twice/week?*	Yes☐ No☐			
• Any activity limitation due to asthma?	Yes☐ No☐			

Management - Factors That Drive Asthma Risk

- Poor access to care
- Under-recognition of symptoms
- High exposure to irritants
- Suboptimal medication adherence
- Comorbid conditions
- Treatment refractory phenotype of asthma

Bacharier, Guilbert Imm Clin NA 2019
Orellano, Quaranta, Reynoso et al. PLoS One 2017
Williams, Sternthal, Wright, Pediatrics 2009

COMORBIDITIES

THE LANCET
Respiratory Medicine
Volume 8, Issue 9, September 2020, Pages 847-849

Comment

COVID-19, asthma, and return to school

Elissa M Abrams [a, b] ✉, Gráinne McGill [c], Sunil S Bhopal [d, e, f], Ian Sinha [g, h], Ricardo M Fernandes [i, j]

Show more

https://doi.org/10.1016/S2213-2600(20)30353-2

Photo c/o oxford learning

Rostrum

School Attendance, Asthma Risk, and COVID-19 in Children

Elissa M. Abrams, MD, MPH[a], Marcus Shaker, MD, MSc[b,c], and Matthew Greenhawt, MD, MBA, MSc[d] *Winnipeg, MB, Canada; Lebanon and Hanover, NH; and Aurora, Colo*

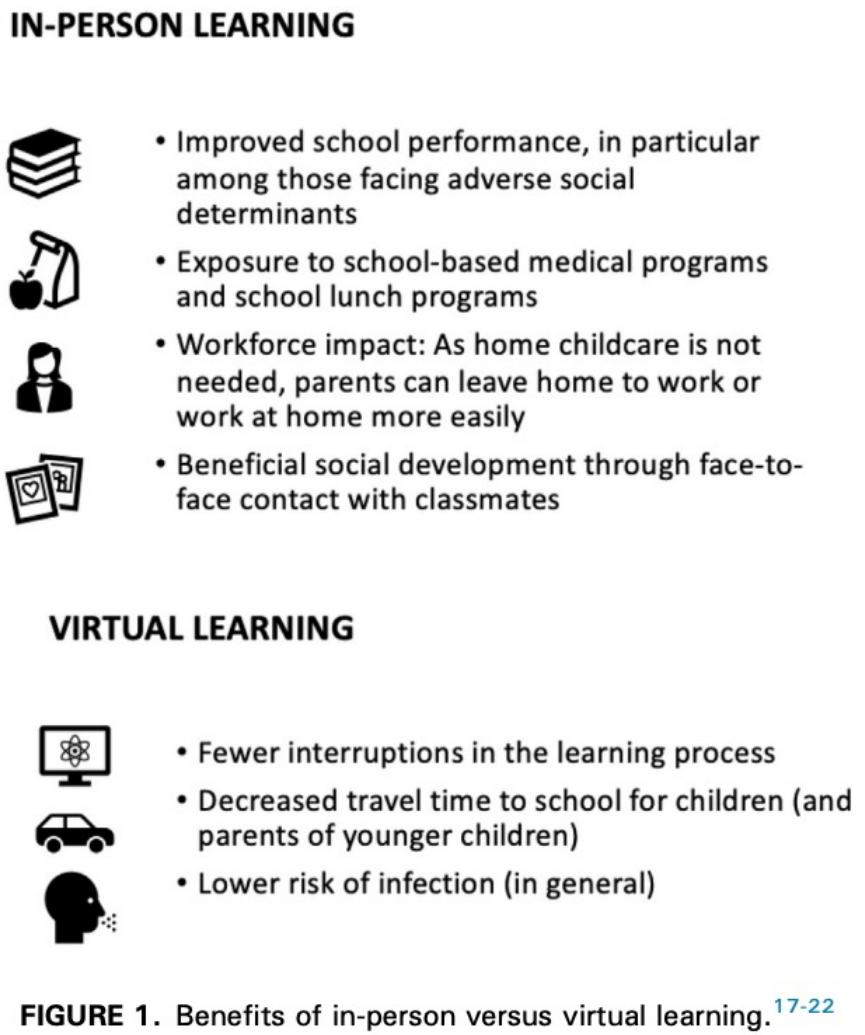


FIGURE 1. Benefits of in-person versus virtual learning.[17-22]

An open letter to the Ontario government regarding the re-opening of schools

May 20, 2021

Premier Ford,
Minister Lecce,
Dr. Williams,
Minister Elliott,

The impact of school closures and the resulting social isolation on the health and well-being of children and youth has become impossible to ignore. Getting Ontario's students back into the classroom, with appropriate safety measures in place, for the remainder of this school year and for summer learning must be a priority now. Prioritizing school re-opening means putting the necessary resources in place to safeguard classrooms, including public health capacity for contact tracing, in conjunction with ongoing community measures.

We are witnessing a crisis in children's mental health with a dramatic increase in utilization of acute mental health services. Schools play an essential role in the recovery process. In-person school provides students with routine and structure, accountability, socialization and recognition of abuse and neglect. For many children, school is where they receive services and supports to meet developmental milestones. In-person attendance is linked to important long-term health and well- being outcomes and the benefits are particularly apparent in those who are marginalized or have disappeared from the school system.

With the decrease in COVID-19 hospitalizations in Ontario by over 50%, and with more than 50% of adults at least partially vaccinated, the decision to re-open schools at this time will have minimal, if any, impact on the health care system. As our vaccine roll out continues, teachers, education workers, school staff and parents are all eligible, providing increased reassurance for these adults who play a critical role in our education system.

Children and youth have suffered immeasurably over the course of the pandemic. It is time to prioritize their health and well-being. As members of the medical community and key pediatric advisory groups, we raise our voices TOGETHER and call for the following:

- schools to re-open immediately – every day counts
- summer school learning to occur in-person
- schools to resume in September with routine scheduling – we have time to plan

The benefits of a few weeks in classroom cannot be overstated. Our front-line educators are in a position to recognize signs of abuse and to support children struggling with mental health issues. The ability to re-engage with classmates and participate in normal routines will allow children to successfully transition into summer programming and the next academic year, including new school settings for those entering middle-school, high-school and post-secondary institutions.

Sincerely,

Canadian Paediatric Society / Société canadienne de pédiatrie
PAO Pediatricians Alliance of Ontario
Ottawa Community Pediatricians Network / Réseau de pédiatres communautaires d'Ottawa
CHILDREN FIRST CANADA
CHEO
Children's Hospital London Health Sciences Centre
CMHO
eko Empowered Kids Ontario
eao Enfants Avenir Ontario
Holland Bloorview Kids Rehabilitation Hospital
McMaster Children's Hospital
SickKids
Coalition for Kids

Mask Wearing

- Firm evidence that masks do not exacerbate underlying lung conditions
  - CTS: NO evidence that wearing a face mask will exacerbate (cause a ‘flare up’ of) an underlying lung condition
- Scoping review on the impact of masks on cardiorespiratory response to exercise found that while subjective sense of dyspnea may be increased with mask wearing, the objective effects on work of breathing, blood gases, and other physiological parameters are minimal with no sex-based or age-based differences detected
- Opposite might be true:
  - emerging evidence that wearing a face mask at school, and in other public places, can reduce spread of other common respiratory infections – such as RSV and influenza – that are frequent causes of asthma exacerbations and might reduce the risk of viral-triggered asthma exacerbations at school in children

https://cts-sct.ca/wp-content/uploads/2020/06/June-5_2020_Face-Mask-position-statement-1-2.pdf

September/fall:

- Common spike in asthma exacerbations due to colder weather, aeroallergens, viral infections
- Flu vaccination
- Careful asthma care
- Management of comorbidities

Differentiating Asthma/Allergic Disease from COVID-19

- Basically impossible to do
- American Academy of Allergy, Asthma and Immunology (AAAAI): it is impossible to distinguish between a viral-induced asthma exacerbation and the symptoms of COVID-19
- Study of 435 patients who presented for COVID-19 testing at a tertiary medical center noted a high overlap in symptoms of COVID-19 and worsening asthma

Cao L et al. Am Coll Asthma Immunol 2021; 126: 535-41
AAAAI: https://www.aaaai.org/Aaaai/media/MediaLibrary/PDF Documents/Libraries/SchoolAsthmaCovid_Final.pdf
Hageman J et al. Allergy 2021;76: 2354-66

COVID-19 vaccines and asthma

- Have COVID-19 vaccines been studied in people with asthma?
  - Yes. Many types of COVID-19 vaccines have been studied and are being used worldwide
  - New evidence, including in people with asthma, will emerge over time
- Are COVID-19 vaccines safe in people with allergies?
  - In general, allergic reactions to vaccines are rare
  - The Pfizer/BioNTek and Moderna COVID-19 vaccines should be administered in a healthcare setting where anaphylaxis can be treated if it occurs
  - These vaccines should not be administered to patients with a history of severe allergic reaction to polyethylene glycol, or any other vaccine ingredient. More details from ACIP are here
  - As always, patients should speak to their healthcare provider if they have concerns
- Usual vaccine precautions apply, for example:
  - Ask if the patient has a history of allergy to any components of the vaccine
  - If the patient has a fever or another infection, delay vaccination until they are well
- At present, based on the risks and benefits, and with the above caution, GINA recommends COVID-19 vaccination for people with asthma

Impact of Social Determinants of Health

- Crowded living spaces increase COVID-19 transmission
- Lack of access to care reduces screening/testing
- Ethnic and racial discrepancies in COVID-19 infection
- Unintended consequences of public health policies related to COVID-19 such as school closures impact children living in poverty the most
- Impact of adverse determinants likely amplified with asthma

Abrams EM et al. Pediatr Pulmonol 2020; 55: 3573-8

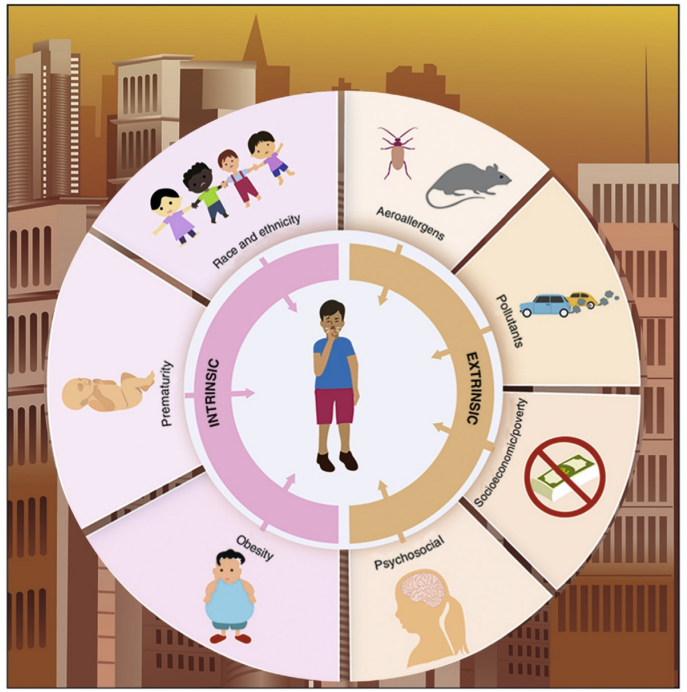
Inner City Asthma

- Poverty – increases asthma prevalence and morbidity
- Poor health literacy – associated with worse asthma outcomes
- Inner city living (aeroallergen exposure, secondhand smoke exposure, urban living) – associated with asthma morbidity

Rostrum

The Impact of Social Determinants of Health on Children with Asthma

Monica J. Federico, MD[a], Arthur E. McFarlane II, MS[a], Stanley J. Szefler, MD[a], and Elissa M. Abrams, MD[b,c] *Aurora, Colo; Winnipeg, MB, Canada; and Vancouver, BC, Canada*



Coleman, Teach, Sheehan. Imm Clin NA 2019

REVIEW

Ten tips for improving your clinical practice during the COVID-19 pandemic

Elissa M. Abrams[a], *Alexander G. Singer*[b], *Matthew Greenhawt*[c], *David Stukus*[d] *and Marcus Shaker*[e,f]

Table 1. Practical approaches to consider during individual encounters

Topic	Examples
Empathy and compassion	''This is really hard for all of us' ''What is the hardest part of the pandemic for your family?' ''Do you have anyone to talk with when you're feeling stressed?'
Shared clinical decision-making	''There are always options to consider. What part of your treatment regimen is most challenging?' ''What is most important to you regarding your health?' ''Are you more interested in trying new approaches to treatment or making things as simple as possible?'
Acknowledge uncertainty	''It can be really hard when recommendations change. As COVID-19 has evolved, our understanding has increased as well. Changing recommendations is actually a good thing – it means we've learned lessons from the early stages and now know better ways to lessen spread or treat patients.' ''We have learned that things can change rapidly during COVID-19 and we have to become comfortable changing plans or adapting if things worsen suddenly.'
Communicate risk	''The good news about COVID-19 is that we control a lot of factors that impact transmission.' ''Risk changes based upon many factors. It is not ''high vs low' but more of a sliding scale. Risk in a ''high' risk situation can be lowered by wearing masks, physical distancing, limiting time spent with others, and hand washing.'' ''We all take risks everyday, but also understand ways to live with that risk. Driving in a car is risky, but wearing seatbelts and observing traffic laws lower risk.'
Resource stewardship	Do not routinely prescribe unproven therapies based upon low level (or lack of) evidence
Focus on vulnerable populations	Anticipate disparities associated with patients of certain race, ethnicity, or socioeconomic status. Engage social workers, allied health professionals, or community resources to assist patients.
Be a critical reader	Read published trials or case series in entirety to understand enrollment criteria, interventions, outcomes, and limitations. Do not share articles or information with others unless it has been vetted as accurate.
Health literacy	Discuss difficult concepts surrounding public health measures and epidemiology in simple terms. Use analogies to describe complicated information. Incorporate infographics, videos, or handouts into clinical encounters or discussions. Use the teachback method with individual patients to assess their understanding.
Mitigate misinformation	Ask patients what sources they use to gather information. Actively address the various sources of misinformation and how that can negatively impact medical decision making. Healthcare professionals should spend time online 'thinking like a patient' and use search engines to learn the types of information that appear with common questions or terms.
Hidden costs to children	''How has remote learning impacted your family?' 'Does your family have access to groceries, food, and medication?' 'Have you been attending routine well-child visits, dental visits, and eye appointments?' 'Are your child's recommended vaccines up to date?'

Shared Decision Making During COVID-19

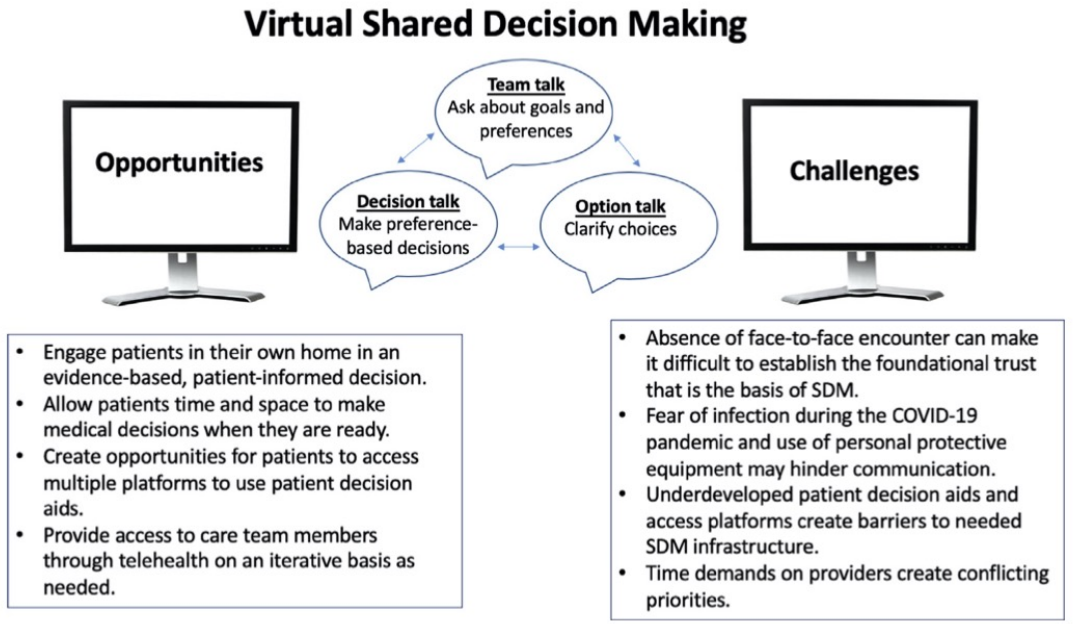


FIGURE 1. VSDM. Images created by creative commons license. Three-talk model of shared decision adapted from Blaiss et al.[13]

Abrams EM, Shaker M, Oppenheimer J et al. The challenges and opportunities for shared decision making highlighted by COVID19. *J Allergy Clin Immunol Pract* 2020 (in press)

Communicating Risk to Children During COVID-19

- Be ‘realistically reassuring’
- Enquire what children understand and engage in an ‘honest but positive’ and age appropriate discussion
- Recommend minimizing screen time and remind children what they see on screens may be inaccurate or false
- Provide ongoing sense of normalcy to contextualize risk

Abrams EM, Greenhawt M. Communicating risk to children during COVID19. *CFP* (in press)
www.cps.ca/en/blog-blogue/how-can-we- talk-to-kids-about-covid-19
www..healthychildren.org/
www.unicef.org/coronavirus/how-talk-your-child-about- coronavirus-covid-19

Communicating Risk to Children During COVID-19

- Children take their cues from adults– “Kids watch your face, hear your tone of voice and overhear your conversations”
- Avoid assumptions and explain to children that “coronavirus has nothing to do with what someone looks like, where they are from, or what language they speak”

Table 1: Resources for Physicians and Families – Talking to Children About COVID-19

Resource	Website
American Academy of Pediatrics: Healthy Children – 2019 Novel Coronavirus (COVID-19)	https://www.healthychildren.org/English/health-issues/conditions/chest-lungs/Pages/2019-Novel-Coronavirus.aspx
Centers for Disease Control: COVID-19 – Talking to Children	https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/talking-with-children.html
Canadian Pediatric Society: How can we talk to kids about COVID-19? Be realistically reassuring	https://www.cps.ca/en/blog-blogue/how-can-we-talk-to-kids-about-covid-19
COVID-19 Health Literacy Project	https://covid19healthliteracyproject.com/?fbclid=IwAR0_z2yx7YJ4xY8YSRWN2LiBtytnKFnv8UH6nK1L-nBcDdHNfk9WgArOJjE#
UNICEF: How to talk to your child about COVID-19	https://www.unicef.org/coronavirus/how-talk-your-child-about-coronavirus-covid-19
World Health Organization: Mental health and psychosocial considerations during the COVID-19 outbreak	https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf?sfvrsn=6d3578af_8

Abrams EM, Greenhawt M. Communicating risk to children during COVID19. *CFP* (in press)
https://www.cps.ca/en/blog-blogue/how-can-we- talk-to-kids-about-covid-19
https://www.healthychildren.org/English/health- issues/conditions/chest-lungs/Pages/2019-Novel-Coronavirus.aspx
https://www.unicef.org/coronavirus/how-talk-your-child-about- coronavirus-covid-19

COVID-19 pandemic and the tension between the need to act and the need to know

Concerns have been raised about publication of small case series, or randomized controlled trials that have small samples from a single center, which “at any other time would be hypothesis generating” now receiving significant weight and attention.

BE A CRITICAL READER

- Understand the strength of medical recommendations
- Understand if recommendations are conditional or strong
- Keep risk in context

Pundi K, Perino AC, Harrington RA et al. JAMA Intern Med 2020;180: 1398-1400
Scott IA. Intern Med J 2020;59: 904-9
Abrams EM, Singer AG, Greenhawt M, Stukus D, Shaker M. Curr Opin Pediatr 2021

Table. COVID-19 Studies Registered on ClinicalTrials.gov

Study characteristic	Study type, No. (%)[a] All (n = 1551)	Observational (n = 640)	RCTs (n = 664)
Study size, No. of participants			
0-100	580 (37.4)	180 (28.1)	231 (34.8)
101-1000	731 (47.1)	308 (48.1)	358 (53.9)
>1000	240 (15.5)	152 (23.8)	75 (11.3)
Funding source			
NIH or federal	30 (1.9)	17 (2.7)	6 (0.9)
Industry	223 (14.4)	42 (6.6)	148 (22.3)
Study centers			
1	1180 (76.1)	517 (80.8)	461 (69.4)
2	104 (6.7)	27 (4.2)	54 (8.1)
≥3	267 (17.2)	96 (15.0)	149 (22.4)
Recruitment status			
Not yet recruiting	588 (37.9)	186 (29.1)	314 (47.3)
Active, not recruiting	58 (3.7)	35 (5.5)	13 (2.0)
Recruiting or enrolling	837 (54.0)	370 (57.8)	329 (49.5)
Completed	68 (4.4)	49 (7.7)	8 (1.2)
Study design features			
Placebo group	NA	0	203 (30.6)
Blinded	NA	NA	364 (54.8)
Intervention type			
Behavioral	63 (4.1)	21 (3.3)	32 (4.8)
Critical care interventions	27 (1.7)	6 (0.9)	16 (2.4)
Diagnostics	149 (9.6)	109 (17.0)	2 (0.3)
Drugs and biologic compounds	599 (38.6)	28 (4.4)	486 (73.2)
Hydroxychloroquine or chloroquine	174 (11.2)	4 (0.6)	155 (23.3)
Remdesivir	9 (0.6)	1 (0.2)	7 (1.1)
Other antivirals	55 (3.5)	0	48 (7.2)
Other antimicrobials	73 (4.7)	1 (0.2)	66 (9.9)
Tocilizumab	31 (2.0)	2 (0.3)	21 (3.2)
Corticosteroids	23 (1.5)	1 (0.2)	20 (3.0)
Convalescent plasma	71 (4.6)	1 (0.2)	39 (5.9)
Oxygenation	25 (1.6)	2 (0.3)	15 (2.3)
Stem cells	30 (1.9)	0	21 (3.2)
Vaccination	28 (1.8)	3 (0.5)	18 (2.7)
OCEBM level of evidence			
2	451 (29.1)	87 (13.6)	364 (54.8)
3	908 (58.5)	361 (56.4)	300 (45.2)
4	192 (12.4)	192 (30.0)	0

Resources

www.ginasthma.org

www.cps.ca

www.cts-sct.ca/covid-19

Take Home Messages

- There is no evidence that asthma in children increases COVID-19 risk nor morbidity
- Asthma management consists largely of remaining on current asthma medications during COVID-19
- Tapering of medications could be considered but must be done carefully and with evaluation of atopic history and risk
- Extra care around asthma management will likely be necessary seasonally
- Nebulization should be avoided if possible
- OCS and biologics could be used
- Manage comorbidities if possible; mitigate impact of adverse determinants if possible

Questions?