Challenges and Opportunities in Asthma Care for Adolescents and Teens

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Financial Disclosure

• I disclose I have no relationship with any commercial firm having products related to topics discussed at this conference.
Nationally recognized Pediatric Asthma Trainer

• NAPNAP Pediatric Asthma Education Curriculum

Learning Objectives

At the conclusion of this presentation, participants will be able to:

- Describe the uniqueness of adolescents and teens as a population.
- Recognize the approach needed when developing asthma plan of care for adolescents and teens.
- Identify appropriate methods to promote adolescents and teens to be engaged in their asthma care and self-management.
Goals of Asthma Management

- Minimal or no symptoms or exacerbations
- Maintain normal lung function
- Minimal side effects
- No emergency visits to doctor/hospital
- Minimal need for quick relief therapy
- No limitations on physical activities

Expectations should be HIGH

Childhood asthma can be controlled with minimal risk.

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Keys to Improved Asthma outcomes

1. Recognition and diagnosis
2. Identify poor control
3. Education and follow up
4. Identification of triggers and environmental controls
5. Team effort
6. Public awareness
7. Proper treatment modalities
8. Healthy lifestyle

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Tools for Assessing Asthma Control

Questions regarding control...

- How often is the quick relief agent required?
- Symptoms? Waking up at night with coughing/wheezing/chest tightness/shortness of breath?
- Teens typically do not tell parents and use quick relief agents on their own.
Factors impacting asthma control

- Tobacco exposure/use
- Pregnancy
- Obesity
- Bronchodilator over use
- Controller medication adherence
- Insurance plans after the age of 18
Tobacco Exposure/use

• 23% of teens have smoked within the last month.
• Higher in teens with asthma than their peers without asthma.

Teen Pregnancy

• 37% of high school students did not use a condom during sexual activity
Obesity

• 16% of children are overweight.
• No strong evidence that obesity causes asthma—however, increase in uncontrolled asthma
• There is a known increase in uncontrolled asthma in obese children.

Self-Management Plan should:

Provide strategies to improve activities of daily life
• Promote sports participation
• Minimize school absenteeism
• Minimize parental work loss
• Decrease Emergency Room/urgent care utilization as primary care
Goal, Goal, Goal. . . .

• Happy, healthy productive children!

Adolescents

• Unique population
• Individuality
• Trying to define their role
• Peers—a big influence, Teens don’t want to stand out and look different.
• Often with asthma management teens are reluctant to adhere to a treatment regimen, or may stop taking their medication for fear others will view them as different.
• Peer pressure could influence them to stay in an environment that could trigger asthma symptoms, just to fit in with the crowd.
Sense of omnipotence—
“Nothing’s going to happen to me.”
RISK TAKING; LACK OF IMPULSE CONTROL

- Adolescents have a sense of omnipotence, believing “nothing bad is going to happen to them”.
- This may lead to lack of impulse control, and taking risks such as smoking or doing drugs.
- Self-management skills are often lacking and impacted by psychosocial influences.
- Their asthma may be triggered by uncontrollable mood swings, depression, or anxiety.

Identity vs. Role confusion

- Erikson’s Stages of Development
  - Tries integrating many roles (child, sibling, student, athlete, worker) into a self-image under role model and peer pressure
Individuation
• Separating from parents
• Want to be seen as individuals
• May cause communication problems with parents

Psychosocial Influences
• Peer relationships impact teen identity
• Don’t want to be different
• Want to do what friends are doing
Body Image

- Sensitive about changes in their body
- Often have dissatisfaction and distortion of body image
- Teens with chronic disease tend to have a higher dissatisfaction with body image.

Mood swings

Depression

Anxiety
Denial  (fear of being sick; don’t want to be different)

- Pretend they don’t have asthma
- May stop taking their medicine

Tobacco use and exposure

May not be revealed in front of a parent (allow teen private time with their healthcare provider)
Athletics/Sports

- Premedication
- Warm-up exercises
- Involve coaches in care plan

Premedication

Pre-medicating with a bronchodilator 20 minutes before exertion may decrease bronchospasm.
Warm up

• Pre-exertional warm ups may decrease the bronchospasm and inflammation process to reduce symptoms.

Triggers

• Pollen: may need medications to control allergic rhinitis
• Cold air: cooling and drying of the airway may increase the likelihood of bronchospasm.
Health Benefits of Exercising for Patients With Asthma

• As tolerance for physical exertion is built up over time, occurrence of asthma attacks decreases.
• Exercise helps asthma patients reduce stress, sleep better, and feel more energized.

Parental Negative Health Beliefs Adversely Affect Exercise Promotion for Children With Asthma

• Restraints
• Beliefs-kids with asthma should not play sports
Exercises for Asthma Patients

- Swimming
- Walking
- Cycling

Medications

- Make sure understand how inhalers work
- Rescue vs controller
- Establish routine
Bronchodilator overuse

• Bronchodilators tend to be used more than the norm.
• At times more than one inhaler per month
• Increased use of bronchodilators without the daily use of inhaled steroids has been associated with increased Emergency Department utilization and hospitalization rates.

High School medication management/self-carry of inhalers

• Many states have a carry law in place → children allowed to carry MDIs on school property and self-administer.
Self-carry law

Medications & compliance

• Parents can have children on their insurance plans usually until 18 years of age.

• Obtaining prescriptions and refills are a parent’s responsibility, but the teen must inform the parent when the medication needs to be refilled.
Asthma Medication Adherence

• 45% did not take their medications as prescribed.
• 65% non-adherent with their inhaler treatment.
• Teens have lower adherence than younger children.

Self reported use of asthma medications

Patients tend to underreport their frequency of albuterol use

• Discrepancies between patient reporting and the number of canisters dispensed

Children and mothers reported >80% adherence with prescribed inhaled corticosteroids (ICS)

• Canister weight and electronic monitoring revealed adherence as low as 50%
• Older children/adolescents among least adherent

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Adolescents and Asthma Medication

- Often have poor understanding of their medication
- Often reliant on their parents
- Often more *unwilling* than *unable*
- Don’t want friends to know they’re “different.”

Approach

- Develop plan of care based on their goals
- Open discussion
- Perception of symptoms
- Communicate use of medication
Teen’s expectations
Elicit teen’s perception of asthma and personal expectations of therapy

Questions for the Teen: ASK!

Parents and guardians do not always know the symptoms the teen is experiencing.

A direct discussion with the teen will help elicit that information.
Medications used: Asthma control

- Discuss teen’s willingness to use medications, such as inhalers.
- Daily use of medications.
- Use of inhalers at school and with activities.

Factors to consider with Self-Management
Deficit in Self-Management Skills
Greatly impacted by psychosocial influences.

Independence/self-management
Develop plan of care based on adolescent’s goals for asthma control
Insurance Plans after age 18

- Pre-existing conditions
- Laws that allow children to continue coverage under parent’s policies to age 26
- State Medicaid insurance plans are available based on the income level of parents; however, many states end coverage at 18 years.

Parental Involvement

- Relationship with teen / communication
- Parental attendance during visits/ minors’ laws
- Support independence: allow private time with provider.
Attendance during visits

- A parent must be in attendance during a visit in the healthcare provider’s office. Consent laws typically pertain to reproductive health.
- But, if possible allow private time for teen & provider.
- Risky behavior may not be revealed in front of a parent: tobacco, marijuana.

Transitioning to adult care

- Adult care provider
- College health facility for the young adult who may leave the state of residence
- Medication utilization and adherence
Specialist vs. Primary Care

- Pediatric Pulmonary
- Allergy specialist
- Pediatrician → Family Practice

College Student Health

- Universities’ student health services free to college student attending the college
- Student should bring records from the primary care provider to the facility to ensure continuation of care.
- Action plan for the student should be in place with quick-relief agents available.
Strategies to Engage Adolescents

Educations Strategies

- Tailored to needs
- Customized to behaviors-online
- Technology is essential
- Use age appropriate material
- Recommend by HCP
Focus Groups

- Understanding of asthma
- Embracing daily routines
- Increased adherence
- Teen support
- Support and oversight

Developing electronic monitoring device technology

- **JOE** is a connected and playful companion. He helps children with asthma to follow their daily medicines.
- **JOE** reminds the child on when and how to take asthma treatment. Parents are reassured.

Propeller

[Image of Propeller device]

Getting started with Propeller is easy

https://www.propellerhealth.com/
Propeller

• Propeller records when and where you use your inhaler to make it easier to see trends, track symptoms and talk to your doctor.

• What can Propeller do?
  • Remind you and your family to take your daily medication
  • Show trends about when you use your inhaler
  • Alert your family and physician if you are getting worse
  • Help you talk to your doctor about your symptoms

• The Propeller Health smartphone app works with the Propeller Bluetooth Sensor and allows you to view the data your sensor captures to give you personalized feedback and education on ways to improve your asthma control or COPD status. Propeller automatically keeps a record of your trends including time, date and location of when you use your inhaled medications.

Propeller AIR

Asthma conditions in Madison, WI just changed to fair. Be sure to keep your rescue inhaler handy.

Local Asthma Conditions

Your local asthma conditions are good. Your environment isn’t likely to cause any asthma symptoms today but be sure to keep your rescue inhaler handy in case of other triggers of your asthma or emergencies.

Get personal notifications
Social Media

- Catalyst to engage adolescents
- Technology is mainstay
- Potential to generate exuberant amount of information
- Peer to Peer networking

Tweets

Quick Tweets to Spread Asthma and Allergy Awareness (AAFA)
- There is no cure for #asthma. Best way to manage is avoid triggers, take meds to prevent symptoms & prepare to treat attacks: via @AAFANational
- Common #asthma symptoms are coughing, shortness of breath, wheezing and chest tightness. via @AAFANational
- An #asthma episode, also called an asthma flare-up or asthma attack can happen any time. Mild symptoms may only last a few minutes while more severe asthma symptoms can last hours or days. via @AAFANational
- I control my #asthma so it doesn’t control me. via @AAFANational
Apps

- Increase compliance
- Provide information
- Customized management calendars
- Reminders
- Symptom diaries
- Trigger warnings
- Exercise regimens
- Healthy diet choices

SPARX aims to use gamification to help kids manage diabetes, asthma, and other chronic conditions. It is a video game equipped with a 3D interface reminiscent of World of Warcraft and reaches out to children & adolescents to ameliorate symptoms of depression and anxiety.

Game | Description | Goals | Cost
--- | --- | --- | ---
**WellaPets** | Kids ages 6-11 care for a loveable fire-breathing dragon that wants to blow fire, but cannot because it has asthma. Kids can care for the pet in a way that mirrors their own self-care. | Inhaler technique Controller medication timing, Trigger avoidance Symptom recognition | $2.99

**Asthma management app** that uses acoustic respiratory monitoring that measures the sounds caused by breathing distress. The measurement is taken via Bluetooth and sends it to the app for measurement. The measurements can also be sent to the parent’s phone for monitoring. | Symptoms Breathing measurements Medication use Adherence to AAP Alerts to take medications | Free (Sensor is $150)

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<th>Game</th>
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| Assist Me with Inhalers | is a patient centered app that instructs patients on how to use their inhaler and it will even set a reminder for them to take scheduled treatments. The app has 11 types of inhalers that it goes over. These types include: MDI – closed and open mouthed, MDI spacer, Aerolizer, autohaler, diskus, fleshaler, twisthaler, handihaler, respimat and neohaler. | Inhaler technique  
Medication compliance  
Alerts to take medication | Free   |
| Asthma Tracker | allows you to keep a daily journal to keep track of asthma symptoms, potential triggers, peak flow values, and medications. Also has built in reminders. | Asthma education  
Symptoms  
Triggers  
Medication Use  
Peak Flow  
Activity | Free   |
| Asthma Buddy | is a take-anywhere reminder of your day-to-day asthma medications. This easy to use app can help you to recognize if your asthma is getting worse and tell you what to do in response. | Medication Use  
Peak Flow Tracker  
Asthma Action Plan  
Symptoms  
Triggers  
Asthma Education | Free   |
| Mis Pollen | This friendly application provides index levels for four different conditions: Allergy (Pollen), Asthma, Cold and Cough, and Ultraviolet Sensitivity. With a simple touch of the screen, you can plan your day with the One Day Alerts or think about your whole week with the four day forecasts! | Pollen alerts | Free   |
Resources

Allergy & Asthma Network/Mothers of Asthmatics - www.aanma.org
American Academy of Allergy, Asthma & Immunology - www.aaaai.org
American College of Allergy, Asthma & Immunology - www.acaai.org
American Academy of Pediatrics - www.aap.org
American Lung Association - www.lung.org
Asthma and Allergy Foundation of America - www.aafa.org
Centers for Disease Control and Prevention - www.cdc.gov/asthma
Kids health - www.Kidshealth.org
National Heart, Lung, and Blood Institute - www.nhlbi.nih.gov
U.S. Environmental Protection Agency - www.epa.gov/asthma

Summary

Tailor asthma education/approach with adolescents development and needs in mind. + Utilize the internet, social media, peers, and other technology. = Goal is to enhance self-management to attain control and optimize outcome and QOL.
References


ANY QUESTIONS??