

Understanding Teen Asthma: Instructional Notes to accompany AAFA-TX PowerPoint Presentation
“**You’ve got the Power: Asthma Control for Tweens and Teens**”

Suggested faculty: School nurse, clinical nurse, faculty or staff delegated as school health liaison, asthma educator, youth counselor, or parent

This slide presentation is targeted to: Adolescent asthmatics and their peers and siblings between 12 and 15 years and pre-teens 10-11 years.

How to use these slide notes: The slide presentation can be used as part of a school program to help adolescents manage their asthma or it can be used with individual asthmatic adolescents or groups of them.

Background information about asthma and general psychological teen barriers to adherence is provided so the presentation is educationally effective. I have also included some questions or projects to involve the kids in the learning process. You may want to use these during the presentation (which will take more time) or you might hold the questions till the end of the full slide presentation as the basis for your discussion.

Ideally, the foundation for adolescent asthma control was built when these kids were young (ages 8-10 yrs) and more willing to work cooperatively with parents or other adults. But we don’t live in a perfect world and for some adolescents this slide presentation may be their first exposure to basic asthma education.

The objective of this slide presentation is to encourage COMPLIANCE to individual asthma management plans. Compliance means using prescribed medications when and how directed but can also refer to the elimination and avoidance of asthma triggers. Denial of being asthmatic, or of the severity of the illness, is a common reason for non-compliance in this age group. Additional factors such as the inconvenience of their treatment plan, forgetfulness, laziness, or carelessness are not unique to adolescent behavior but are often reasons for non-compliance. It is a scientific fact that the teen brain is still developing. Certain segments of the brain are as honed as they will ever be, for example eye-hand coordination. But the frontal part of the brain, the part that controls rational thought processes, thinking responsibly, actions and consequences, isn’t fully developed until age 20 which can explain why smart kids often make stupid choices and take risks. This lack of reasoning can contribute to non-compliance in teens. **They just don’t see the risk or danger to themselves by ignoring their disease.** Another important factor in non-compliance is financial. Asthma medications are expensive without insurance, and even with insurance some meds have expensive co-pays. Hopefully new laws and easier access to CHIP insurance can help. It’s also expensive for many to remove some environmental triggers, but there are resources to help. Any criticism about the way teens manage their asthma should be expressed in a way that does not worsen the relationship between healthcare professional, parent and teen.

Most kids aren’t being non-compliant with their asthma medications or triggers because they want to hurt themselves. It’s usually just the normal manifestation of teen rebellion against authority and regimentation and a combination of the “invincible me” attitude that comes with adolescence since certain parts of the brain aren’t fully developed yet. If the kids themselves were asked, they would prefer to use oral medications rather than inhalers since this are less visible; they don’t stand out from the crowd, yet we know this isn’t always possible.

Teaching adolescents about asthma (or anything) is a challenge for both patient and instructor. You can provide all the information available but if the teen doesn’t buy into the need to control their asthma, it’s wasted time and information. They have to be motivated. Your approach to this material will be part of the success of this educational process. I’ve tried not to “talk down” to teens on the slides but to speak to them in ways they can relate, treating them as the young adults they want to be. A casual, confident and knowledgeable instructor, such as you are, who does the same will inspire teens to want to manage their own asthma.

Suggested handouts are listed below. Each of these documents support and enhance the content of this slide presentation. The handouts can be found on our website <http://www.aafatexas.org/toolsforschools> Print and duplicate for the audience. Thank you for supporting AAFA-TX in helping others to learn to control asthma. If you have questions on this project you can contact joanhart6@gmail.com or joanhart@aafatexas.org

Suggested Hand-outs when teaching adolescents:

Asthma Devices - Peak Flow Meters, Spacers and Nebulizers, an Overview
Asthma Triggers, a poster
Early Warning Signs and Symptoms of Asthma Flares, bi-lingual
Rules of 2 - Taking Control
Asthma Control Test for kids 12 and over (available in Spanish)
Controlling Exercise Induced Asthma – Tips for Teens
Learn to Use a Peak Flow Meter
What Asthma Medicine Does
How to Use and Care for a Nebulizer (available in Spanish)
How to Use and Care for an MDI with a Spacer (available in Spanish)
How to Use an MDI without a Spacer (available in Spanish)
How to Use and Care for a Dry Powder Inhaler (available in Spanish)
Important Things to Know About Asthma, bi-lingual
What are the Most Common Asthma Triggers or Allergens (available in Spanish)

The Back Story, slides 1- 6

STATISTICS: About 23 million Americans, including 6.5 million kids, have documented or diagnosed asthma. In Texas, informal surveys indicate 25% of school-age kids have asthma. We know there are many more with undiagnosed asthma. Asthma is an equal opportunity disease: men, women, seniors, teens, kids, toddlers and infants can have asthma. African-American, Caucasian, Hispanic, Oriental or Indian, race doesn't matter, all can have asthma although there does seem to be a higher prevalence among African-American and Hispanic populations. Economics or education doesn't matter either. Rich or poor, anyone can have asthma although there is a higher prevalence in families of lower income and the mortality risk is also higher in African-American and Hispanic populations.

FATALITY: You can die from asthma and for African-Americans there is a 200% higher death rate from asthma than for other races. At least 14 persons a day in the USA die from asthma, and many of these deaths are preventable through education. One in every 10 kids in the USA has asthma, 1 in every 7 teens has it; it is one of the top three most common and chronic diseases in children and the leading cause of school absenteeism. Asthma affects everyone touched by it: patients, parents or caretakers, siblings, extended family, employers, friends.

GOALS OF ASTHMA CONTROL: It's easy to say "be in control of your asthma" but to do that it's important to first know what being in control means. Asthma is chronic (lifelong). Some think because symptoms might disappear or are fewer for teens their asthma is gone. Not true. Hormones triggered in puberty often reduce asthma symptoms, plus, asthma is very individualized. The severity and frequency of symptoms will change over time, many times, for the same person. Hormones seem to play a role. Many adults die of asthma because they thought they no longer had the disease so were taken unawares by an acute severe flare. The goals for control are the same for all ages and type of asthma: few or mild symptoms; sleeping through the night; the ability to participate in all activities as normal; not missing school or work due to asthma symptoms.

The Back Story, slides 7-16

Asthma has been known since recorded history but of course no statistics were kept so we don't know the extent of the disease. And, because of the nature of social history, until fairly recent time, we only know of relatively famous (or infamous) people, and almost always men, who had the disease. Many Greek and Roman philosophers and writers had the disease, writers and statesmen, several of our US presidents had asthma as have performers, past and current. The selection here includes personalities teens might recognize, especially current performers and sports icons. I've also included some of the exceptional Texas teens who have come to our attention as recipients of the AAFA-TX Memorial Scholarships. Their full bios, plus those of three additional scholarship recipients can be found on our website, www.aafatexas.org/scholarships

The purpose of pointing out successful famous asthmatics is to inspire tweens and teens as well as to let them know having asthma doesn't impose limitations on goals and ambitions. Children often have very strong emotional reactions to a diagnosis of asthma especially since asthma is a chronic, life-long disease with no known cure.

UNIQUE TO ADOLESCENTS: Adolescence, from age 12-17, (but now, due to faster physical maturity trends reflect pre-teens or tweens 11-12 too), can be a rocky experience for both kids and adults or it can be a smooth journey with no major bumps or bruises. This is as true for teens with asthma as those without. Puberty calls for special support from parents and other adults as kids weave their way into maturity and many times, asthmatic teens may have added challenges during these years.

During puberty, most young people with asthma develop physically in the same ways and the same growth rate as others of their age. A few may have delayed puberty and growth, and these kids may need extra reassurance that they will develop just like their friends, only perhaps it may take longer. In many cases, the delayed growth may correlate to asthma severity and the need for extensive use of oral steroid medications.

For all pre-teens (tweens) and 12-14 year olds, having friends and being in the right social group is extremely important and the kids are very concerned, even troubled, by the changes occurring in their bodies due to puberty, too. They want to blend in, not stand out; they get moody, they daydream a lot, and in their mind, having asthma makes them "different" from the crowd. They're often in a battle with parents as they try to assert their independence and parents try to maintain control. It's alarming to parents to see their kids ignoring asthma symptoms and medications, which sets a stage for unnecessary warfare.

For some, puberty means asthma improves dramatically; hormones seem to play a part in lessening asthma symptoms. This presents a real problem for teens because they think their asthma has gone away and they don't need to follow the same regimen they did when younger and their parents were in charge of every aspect of their lives. The problems asthmatic teens face shift and change as they grow through these teen years into young adulthood. Find opportunities for asthmatic teens to talk with other young adults who have asthma and are managing their own asthma well. Whatever you do, don't make kids feel unsuccessful compared to the others who do manage their asthma successfully. The "why can't you be like" comment could sabotage your relationship with a child. When you see an asthmatic teen who has taken control of their disease, encourage them to be a mentor to other kids.

Action point slides 7-16

1) Ask the kids if they know others, classmates, relatives or personalities, who have asthma and ask them to describe how these acquaintances are handling their asthma.

The Back Story, slides 17-19

UNIQUE TO ADOLESCENTS:

Studies show 1 in 10 asthmatic teens are bullied because of their asthma, but bullies don't need much of a reason to pick on another. It is possible these statistics are skewed as there could be other reasons, besides having asthma and using an inhaler that instigates being bullied. But the fear of being the victim of a bully will stop kids from using their inhalers in public and cause them to ignore their symptoms if they recognize them. Kids want to do everything their friends do so they often pretend they don't have asthma, will stop using their meds, especially their inhalers, if their friends are around. They ignore asthma symptoms and take risks by doing things and going places where they shouldn't be, hanging out with the smoking crowd, for example.

If doesn't get better for the 14-16 year old: their need to be part of the group is even stronger. At the same time they have this strong "herd" instinct, they also want to test their own individuality and that may mean fighting their parents when it comes to managing their asthma. Until they were in upper middle school their parents protected them from their triggers, went to the doctor's with them, saw that they took their meds as needed. Now the kids will fight these actions in their need to be independent. To make it worse, kids acquire the "*invincibility cloak*" around this time. They don't think anything bad can happen to them so they often take dangerous risks including "loosing" their inhalers and not using asthma meds; they hate it when their parents "remind" them to take their meds. For them, it's a sign they're not being treated as the adults they want to be.

Emotions play a strong role in asthma symptoms and the emotional roller-coaster of adolescence may mean frequent flares for some. Anticipation and fear of the achievement tests, spats with friends, social disappointments can trigger asthma symptoms. Adults need to recognize what is happening so they can help educate the kids that controlling the emotional roller-coaster also means controlling asthma symptoms.

By the time they're 17-19, they definitely want to make more decisions about their own life directions even though parents may not want to let go. But the good thing is by this age, they are also freer of the herd mentality and don't have to do exactly what the group says. Their "rational" brain functions are stronger. They have more confidence in their own decisions and actions and they need and want to be in control of their own health problems, too. They will definitely object to hovering parents or adults who check to see how they're feeling, have they taken their asthma meds, etc. This is the time for parents to back off, act as a safety net not a life coach.

Action Points, sides 17-19

1) Ask how many in the group WANT to take charge of their own asthma. There may be a few who might be hesitant of accepting this responsibility.

2) Ask what they already know about asthma. Just listen, list and don't comment yet. There may be many misconceptions about the disease at this point so it's important to learn what they already know.

3) Ask the group what they think they can do to prove to their parents they're capable of taking care of their own asthma. What concrete steps can they take to show they're no longer little kids but young adults?

The Back Story, slides 20-26

CAUSES OF ASTHMA: Scientists still don't know what causes the disease of asthma. The majority of studies believe it is partly caused by a genetic pre-disposition: if either parent had asthma, there is a good chance the off-spring will inherit it, and the other leading cause is pointing to environmental

factors including smoking or being around smoke or environmental chemical exposure. Some studies believe that other physical diseases may also contribute to someone getting the disease, things like GERD (gastro-esophageal reflux disease) and obesity.

We may not know what causes the disease, but we do know what cause the symptoms of the disease. When symptoms occur, that is referred to as an asthma flare-up or exacerbation or episode or often with kids, as an asthma attack.

Asthma is a very individual disease in that the severity and frequency of symptoms varies from patient-to-patient but can also vary over time with an individual. It's possible for a young child with mild asthma to show few asthma symptoms during adolescence and not have any symptoms again until later in adulthood, or conversely, someone with mild symptoms during childhood may develop severe life-long symptoms later. Usually those with severe symptoms from onset remain with severe symptoms but this too many vary. Even those with very mild asthma can have a flare or attack with very severe symptoms which, if unassisted, could lead to complications, hospitalization and even death. Vigilance is vital for asthma patients.

CAUSE FOR ASTHMA SYMPTOMS: Some people have allergic asthma. Breathing an allergen causes wheeze, cough, chest tightness and shortness of breath. Allergy is common in asthma and a personal and family history of allergies is often associated with asthma. Approximately 70% of patients with asthma have allergies. The goal is to eliminate these allergen triggers from the environment in order to control asthma symptoms induced by allergic reactions. Fix leaky pipes and use exhaust fans to reduce humidity in indoor air to prevent mold. Use bedding encasements to prevent dust mites from living in pillows, mattresses and comforters, wash all bedding weekly in hot (130°) water to kill dust mites, vacuum frequently with a Hepa filter vacuum to keep dust under control.

All warm-blooded animals whether domestic or farm animal have dander which is the residue left on their coats from their dried saliva. Cats produce more saliva than other animals so they are usually the worst pets to have if someone has a dander allergy. The animal's length of hair or amount of hair has little to do with a dander allergy. It's the amount of saliva that matters. There are new studies, however, which suggest exposure to a pet from infancy reduces or eliminates a dander allergy in many children. These studies are inconclusive but interesting.

Although not a true allergen (occurring in nature) strong chemical odors can trigger allergy symptoms. Gasoline, exhaust fumes, pesticides, herbicides, fertilizers, room deodorizers, perfumes, scented body lotions, household cleaning products can all cause allergy symptoms in some individuals.

Smoke of any kind irritates the lungs and can trigger asthma symptoms. The second-hand smoke from tobacco is more harmful to children and others (even pets) than inhaling a cigarette. Because smoke clings to hair, skin and clothing as well as furniture, walls and carpeting, no one should smoke around anyone with allergies or asthma.

Emotions can play a role in triggering an asthma flare or exacerbation. Crying, arguing, classroom performance stress, work stress and even the "good" stress of excessive laughter can all trigger asthma flares in some individuals.

Colds, flu or other infections lower immune system defenses and increase the chance of an asthma flare. They also affect the respiratory system placing more restrictions on a delicate area.

Many have Exercise Induced Asthma, flares that are triggered by activity BUT almost everyone with asthma will at some time have asthma symptoms triggered by exercise, which includes sports or dance. EIA can be controlled. Asthma patients should not eliminate exercise from their life; they should live a normal and active life as active lungs are healthier lungs. There are some exercises that are better for asthma patients, those that require short bursts of energy rather than sustained energy. Things like swimming, baseball, football, walking, doubles tennis, climbing stairs, gymnastics or

volleyball are all good activities for those with asthma. Always follow your healthcare provider's instructions with sports participation. A warm up and cool down period are recommended and in some cases, the physician may prescribe using a rescue inhaler (albuterol) before a sports activity. For more info on EIA, see the AAFA-TX handout.

Action points slides 20- 26

1) Ask the kids if they know what triggers their own symptoms. Do they know how to determine what their triggers might be? (observation, a symptom diary, allergy testing)

2) Ask them for suggestions on how they might eliminate their own triggers and control their environment. (Limiting contact with warm-blooded animals; asking for bedding encasements for pillows and mattresses; keeping their rooms free of dust and clutter; using a smear of Vaseline beneath their nose in pollen season when they have to do yard chores; shedding clothes after being outdoors working in the gardens right into the wash, then showering; paying attention to ozone levels during hot summer months; staying hydrated in the heat; getting plenty of rest so their emotions aren't stressed; washing hands frequently to avoid picking up cold and flu viruses; staying away from smoke of all kinds; asking parents not to use air fresheners or perfumes, etc).

The Back Story, slides 27 - 30

PHYSICAL ASPECTS OF A FLARE/EXACERBATION OR ATTACK: During an asthma flare or exacerbation, the muscles tighten around the airways (broncho-constriction). This causes the insides of the airways to swell, reducing the passageway for oxygen. It also makes extra mucus (inflammation).

NORMAL LUNG FUNCTION: Asthma is a disease of our respiratory or breathing system. The respiratory system is made up of two sections: the upper respiratory tract - the nose, mouth, larynx (voice box which allows us to make speech), and trachea (windpipe). The lower respiratory tract consists of the lungs, bronchi, and alveoli, where air travels to feed our blood with oxygen. When we breathe in

1) air enters the body through the nose and the mouth and travels down the airway passage to the lungs.

2) Nasal hairs and mucus (a slimy lubricating fluid) in the nose filter out dust particles and bacteria and also warm and moisten the air.

3) Air travels down the throat.

4) Air continues down the windpipe or trachea, which branches into right and left bronchi, (tubes that pass from the windpipe to the lungs).

5) The main bronchi divide into smaller bronchi or tubes, then into even smaller tubes called bronchioles. The bronchi contain hair-like projections called cilia that sweep debris out of the lungs, like a filter.

6) Once in the bronchioles, the smallest of the bronchial tubes, the air is at body temperature and 100% humidity, and is (hopefully), completely filtered of dust or other particles.

7) Air sacs called alveoli – (small, thin-walled "balloons" arranged in clusters like grapes) are at the end of the bronchioles. When we breathe in, our chest cavity gets bigger and the "balloons" expand as air rushes in. When we breathe out, the "balloons" relax and air moves out of the lungs.

8) Tiny blood vessels or capillaries surround each of the alveoli or clusters. When we breathe in, oxygen, a colorless gas, is carried to these capillaries and sent into our blood stream; carbon dioxide gas, a waste gas, passes out of the blood into the alveoli and is then breathed out.

When we are healthy, the process of breathing is so smooth most of us are not even aware we are doing it.

Peak Flow Meters: A peak flow meter is a device that measures how well a patient is breathing; it can detect breathing difficulties even before other symptoms of an asthma flare or episode occur. In fact, a first sign of an asthma flare is a drop in the peak flow reading. Devices differ by manufacturer but each has 3 color "zones": Green, Yellow and Red. These color zones indicate how open the airways are.

Green = open airways, the patient feels well and can perform all normal activities. Yellow = airways are blocking, the patient doesn't feel very well, activity is slowed down and it may mean using additional medications. Red = danger! This means the airways are closed; the patient feels very ill, has great difficulty breathing and may even have blue lips or fingertips. The patient requires immediate help, more medications and perhaps emergency care.

The peak flow meter is a *gauge* and reading results will be different for each patient. Every patient has a "best number" which means the biggest, fastest breath blown into the meter when the patient feels well and has no symptoms of asthma. This number will vary for the individual depending on time taken; it is usually lower in the morning. If the patient is a child, as the child grows taller, their number will also increase.

Peak flow meters can help a patient control asthma flares by indicating the airways are closing up BEFORE other symptoms occur. If the reading is in the green zone, it's a "go". Activity is normal. If the reading is in "yellow", it means take caution.

If the reading is in the "red", it means stop! Get help.

To take an accurate reading to determine a "personal best" number, the patient should stand straight, inhale as deeply as they can and blow as fast and hard into the meter as possible. The gauge will climb next to a number on the meter (lines on the meter are like a ruler, not all numbers are written on it. Usually each line counts for 10). Use a Peak Flow Meter diary and record the first number. Move the arrow back to zero and repeat this blowing exercise a total of 3 times. Record the best or highest of these numbers on the diary. This is the "personal best."

Asthma Action Plans: A written plan that tells people with asthma, or those who care for them, how to take care of asthma symptoms. It can be in chart form or it might just be a written page listing actions to take under different situations. Every physician has a preference as to what to use and some non-specialists often don't know about and use these plans which are helpful to both patient and caregiver. The plans should include what to do every day to prevent symptoms, and also what to do if symptoms are very bad, or severe. This Plan should be developed together with a health care provider and family members. When used properly, the plan can help people control their asthma. The plans usually work in conjunction with peak flow meter readings and the PFM color chart. It will tell you what medications to use and when to use them if experiencing clues that a flare-up is beginning. AAFA-TX has a good form on our website <http://www.aafatexas.org/toolsforschools>

Action Points, Slides 27 - 30

- 1) Ask the kids to describe what a flare feels like to them.
- 2) This is a good time to discuss the emotional and psychological aspect of asthma, too, not only the physical. Ask what the kids feel emotionally when a flare occurs. Are they scared? Of what? Do they get panicky? Ask if any have had such severe flares that they had to go the ER or were admitted to the hospital. What was this experience like for them? Do any of the kids live with the fear of another attack? What can they do to overcome these feelings?
- 3) Why do the kids think these flare-ups are called "attacks"?
- 4) Ask how many have and use a peak flow meter. Explain what it does and why it's an important tool in providing clues that a flare or attack is imminent. If possible, demonstrate the proper way to use a peak flow meter. (visit www.aafatexas.org/toolforschools for detailed steps)
- 5) This is a good place to talk about their relationship with their doctors. Are they allowed to see their doctors by themselves? Do they want to? How many have a written Action Plan? Did they help create it with their doctors? If they don't have one, how many think one would help them better control their asthma.

The Back Story, Slides 31-42

Asthma Medications: Asthma medications take many forms: they're found as pills, syrups, as inhalers, as liquids used in a nebulizer, (a machine which direct the flow of medicine more intensely). Asthma medications work in different ways to help control asthma and, for many patients, more than

one type is usually required. Because everyone's asthma is different, physicians will prescribe different medications at different times to different persons. Asthma is classified by severity. Someone with mild asthma may only need to take medications for a short time when they have shown symptoms and have a flare-up. Patients with moderate or severe asthma may need to use several medications daily. Over time, the doctor may change medications, which is why it's important to visit a physician regularly.

There are two types of medications:

→ Long-term control medicine works to keep breathing easy and asthma symptoms and flares from starting. They work by preventing airway swelling, de-sensitizing the airways and helping prevent attacks. These control meds also help before sports or in bad weather to keep symptoms at bay and flare-ups from occurring. The most effective long-term medications for most patients are *corticosteroids*. These are not the same as sport steroids, however. Many confuse the illegal anabolic steroids taken by some athletes and body builders which pump up muscles and affect the body in harmful ways, with the safe corticosteroids used to control respiratory problems. There is usually little danger of steroid side-effects with inhaled corticosteroids but long-term use of the steroid prednisone tablets used to control severe asthma can increase weight and produce a "dough-boy" look for some. Most with mild intermittent asthma don't need controller meds unless they have a severe flare, which can happen. Latest research has proclaimed corticosteroid controller meds have a tendency to be over-prescribed for mild asthma.

→ Quick relief medicines are used when the patient feels a flare-up starting or when the peak flow meter reading is low (in the yellow or red zone). They work fast and stop flares by opening up the airways and relaxing the muscles around the airways. NOTE: Some patients use quick-relief or rescue medicines too much. If used daily to stop flare-ups or more than 4 times a day to halt flares, this is dangerous. The airways will actually become more swollen and may cause a serious asthma flare. Long term control medication should be used instead of relying on rescue meds if so prescribed. Everyone with asthma should have a rescue or albuterol inhaler at all times.

Controller medications are usually dispensed in dry powder inhalers. Normally these have built-in dose counters to help keep track of medication in order to know when the inhaler will be empty and it's time to refill. Several of these medications come in different dose packaging – 60, 90, and 120. Dry powder inhalers don't need primed so simple division will tell you when it's time to refill. If a new inhaler holds 60 doses, and 2 doses a day are used, divide 60 by 2 which means it will need refilled in 30 days.

- Dry Powder Inhalers should never be stored in a bathroom or kitchen where there is a lot of humidity as the powder will clog. Protect from exposure to all water and humidity.
- These containers require little or no cleaning. Follow manufacturer directions for use and cleaning.
- Ask a pharmacist if the prescribed asthma medications should be taken before, after or with food, or if there are certain foods that should be avoided when taking these medications. The pharmacist can also demonstrate the proper way to use these asthma medication devices.

Quick relief or rescue medications for teens are usually dispensed in MDI's or Metered Dose Inhalers, liquid medication propelled with a gas. Being in control of asthma is to be "in compliance" with a medication plan, meaning not only using the right medications for asthma symptoms but also using this medication correctly as prescribed. Inhalers make it possible to absorb asthma medications directly into the airways and to stop asthma symptoms quickly. Inhalation is a difficult technique but with practice, anyone can do it correctly. There are Open Mouth and Closed Mouth techniques to use MDI's – age, ability and choice determine who should use which one. Details on the basic techniques are provided on slides 38-40.

- Most MDI's don't have a counter to tell when they're almost empty; to keep track of the number of doses, puffs or sprays (all mean the same) left before a refill is needed, ask the pharmacist how many doses a new canister holds. If the canister holds 60 sprays and they are prescribed 2 sprays or puffs a day, then a canister will last almost 30 days (don't forget the priming process which uses a couple sprays). To calculate, divide the number of prescribed sprays or puffs used daily into the total number available in a new canister which tells how many days it should last. Mark a calendar when first using the MDI and calculate when a refill is needed.

➤ It's very important to clean an MDI, especially the new HFA propelled inhalers. These have a tendency to gum up with medication residue over time. If there is a visible white powder or other residue around the tiny medication spray hole then it is time to clean the device. To clean, remove the medication canister from the L-shaped plastic mouth piece, rinse only the mouth piece in warm water and then dry completely before replacing the canister. Never get the medication canister itself wet! It is still recommended that children use a spacer with the new inhalers to channel the medication into their lungs rather than letting medication escape into the air although teens will probably balk at this suggestion.

It is now legal for kids in all states to carry their own asthma medications to school or at school sponsored events with signed permission from both their doctor and their parents. Sample forms can be found on our website <http://www.aafatexas.org/toolsforschools>

Some kids aren't responsible enough to carry their own medications; they may "share" them with classmates or friends thinking they can get high from it or in some other way abuse the medication. In this case, arrangements should be made for their inhalers to be kept on campus or at school events in the care of either the school nurse, administration office or in another centrally located area depending on the school situation itself. CAUTION! IF an asthmatic teen is participating in organized sports after school hours and they aren't allowed to carry their own meds, they must be accessible on the playing field.

Another point to remember with teens is their need to be part of the crowd, to stand in, not stand out, from their friends so some teens may abuse their inhalers by "loosing" them or just not using them in front of their friends, both serious risks.

Action Points, Slides 31-39

1) Ask how many are currently using controller meds and when they use them. How do they remember to use them? How could they remember to use them?

2) Ask to see their albuterol (rescue) inhalers. It will be interesting to see how many have them. Ask them why they think it's important that they use these inhalers at the first sign of symptoms? How many do? Why or why not?

3) All medications have **side-effects**:

➤ Some might make some kids jittery, others sleepy, others moody or irritable.

➤ They might affect school success, social interactions and general behavior.

Discuss any side-effects the kids may be having with their meds. Are these a barrier to using their meds? Remind them that they should report any side-effects or strange feelings while using their meds with the school nurse, their parents and their physicians. It is usually possible to change medications or increase/reduce dosages. No one has to go around feeling like a zombie if they use their meds.

The Back Story, slides 43-50

IS ASTHMA IN CONTROL? How do you know if asthma is in control? Apply the "Rules of Two"

➔ Do you use your "quick-relief inhaler" more than TWO TIMES A WEEK?

➔ Do you awaken at night with asthma more than TWO TIMES A MONTH?

➔ Do you refill your "quick-relief inhaler" more than TWO TIMES A YEAR?

If the answer is yes to these questions, then asthma is probably not in control and the patient should visit their healthcare provider to see if change, adding or reducing the medication therapy is needed.

If the patient is **non-compliant**, they're not avoiding or eliminating their triggers and not following their medication plans so their asthma isn't in control. Most likely, they will have more asthma symptoms or flares as a result, miss a lot of school and perhaps these flares will be so severe they'll require emergency room visits and/or hospitalizations to stop the flare and save a life.

The **goals for asthma management for an adolescent** are the same as for young children or adults: they should be able to take part in all physical activities as normal, not miss school due to asthma,

avoid severe asthma symptoms, sleep through the night, and avoid ER visits because of asthma symptoms.

The biggest hurdle to self-asthma control for tweens and teens is the emotional and social conflicts that occur during these years. They NEED to be part of their crowd; they NEED to be like their friends. They don't WANT to stand out as different and their pre-conceived notion is that having asthma and needing inhalers makes them different, labels them as losers and sets them up for social hell and being bullied. All of that may be true in their world: bullies don't need much of a reason to make life miserable for their peers and we've all seen recently the tragic results bullying can produce for some teens.

Asthmatic teens may have more emotional ups/downs than other teens. If they are frequently unhappy or take serious health risks, please discuss this with their parent and their healthcare provider. But if you, as their front line healthcare provider, their teacher, their parent or asthma educator, can boost their self-esteem, fragile during adolescent years, not only will they become more successful adults in general, they're more likely to comply or be in adherence with their management plan. If an adolescent feels he is empowered they are more likely to take control of their asthma.

Additional asthma-related issues to discuss with adolescents:

- Asthma and sports participation
- Asthma and smoking
- Asthma and exercise
- Asthma and extra curricular activities other than sports
- The relationship of obesity, diabetes and asthma
- The importance of a healthy lifestyle as part of asthma control

For more information on asthma or allergies, contact the Asthma and Allergy Foundation of America, Texas: www.aafatexas.org



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