

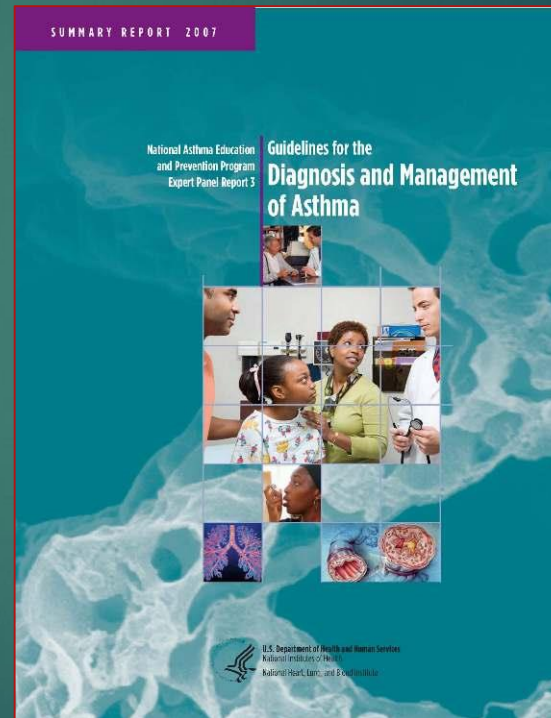
Behavioral and Environmental Modifications

JAN FIELDS
AIR PREP COURSE
MARCH 09, 2017



Four components of asthma management

1. Measures of assessment and monitoring
2. Control of factors that contribute to asthma severity
3. Pharmacologic therapy
4. Education for a partnership in asthma



Four components of asthma management

1. Measures of assessment and monitoring
2. Control of factors that contribute to asthma severity
3. Pharmacologic therapy
4. Education for a partnership in asthma



Environmental modifications



Behavioral modifications


Who needs to change behaviors?

- ▶ watching too much TV
- ▶ getting sunburned too often
- ▶ often spending over your budget
- ▶ skipping breakfast
- ▶ snacking when you're not hungry
- ▶ not always wearing a seat belt
- ▶ eating too much fast food
- ▶ not exercising enough
- ▶ not eating a balanced diet
- ▶ getting angry, worried, or stressed too often

Basic assumptions of behavioral science

- ▶ People should be valued as humans
- ▶ Human behavior is purposeful
- ▶ Behavior can be changed through learning

Basic assumptions of behavioral science

A photograph showing two hands breaking through thick, braided ropes. The hands are positioned at the top of the frame, with the ropes extending downwards. The background is a bright blue sky with scattered white clouds. The hands are wearing several colorful, multi-strand beaded bracelets. The ropes are made of natural fiber and have frayed ends.

“Effective self-management support means more than telling people what to do. It means acknowledging the central role they play in their own care and empowering them to manage their own health.”

Improving Chronic Illness Care website

Basic assumptions of behavioral science

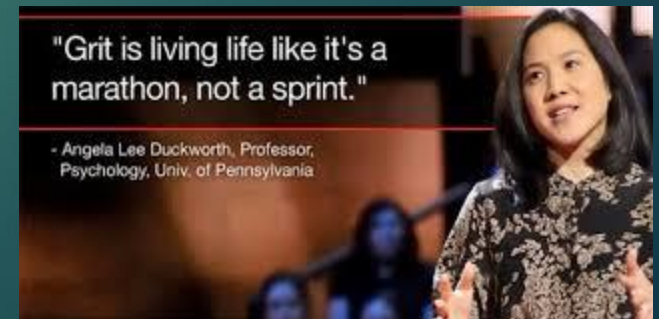
~~im~~possible

~~un~~attainable

Learning is most universally defined as a change in behavior.

Basic assumptions of behavioral science

- ▶ **Grit** = Passion + Perseverance
 - ▶ **Passion** = Interest + Purpose
 - ▶ **Perseverance** = Practice + Hope



Open cells show an examination could include items from indicated cognitive levels. Shaded cells prevent appearance of items on examinations.

	Cognitive Levels			
	Recall	Application	Analysis	TOTALS
B. Behavioral and Environmental Modifications	3	6	4	13
1. Recommend strategies to address				
a. the management of exercise-induced asthma				
b. psychosocial (e.g., stress, anxiety, depression)				
c. social support and family factors				
d. economic issues				
e. drug abuse				
f. active smoking				
g. adherence issues				
2. Employ culturally sensitive approaches to individuals with asthma and their families				
3. Allay concerns and fears of an individual with asthma and his or her family, and dispel myths they may believe				
4. Emphasize the importance of following a comprehensive trigger avoidance plan				
5. Recommend strategies to reduce, avoid, or eliminate common triggers in homes, work places, and schools e.g., <ul style="list-style-type: none"> • second-hand smoke • other irritants • allergens • infections • chemical exposure 				
6. Discuss the effectiveness of various equipment e.g., <ul style="list-style-type: none"> • air cleaners • vacuum cleaners • dehumidifiers • allergen-impermeable cover 				



B. Behavioral and Environmental Modifications	3	6	4	13
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f. active smoking				
g. adherence issues				
2. Employ culturally sensitive approaches to individuals with asthma and their families				
3. Allay concerns and fears of an individual with asthma and his or her family, and dispel myths they may believe				

Behavioral Modifications

Behavioral modifications

Exercise-induced asthma



bronchospastic event that is caused by a loss of heat, water, or both

usually occurs during or minutes after vigorous activity

should be anticipated in all asthma patients

Behavioral modifications

Exercise-induced asthma



Pre-Exercise Treatment

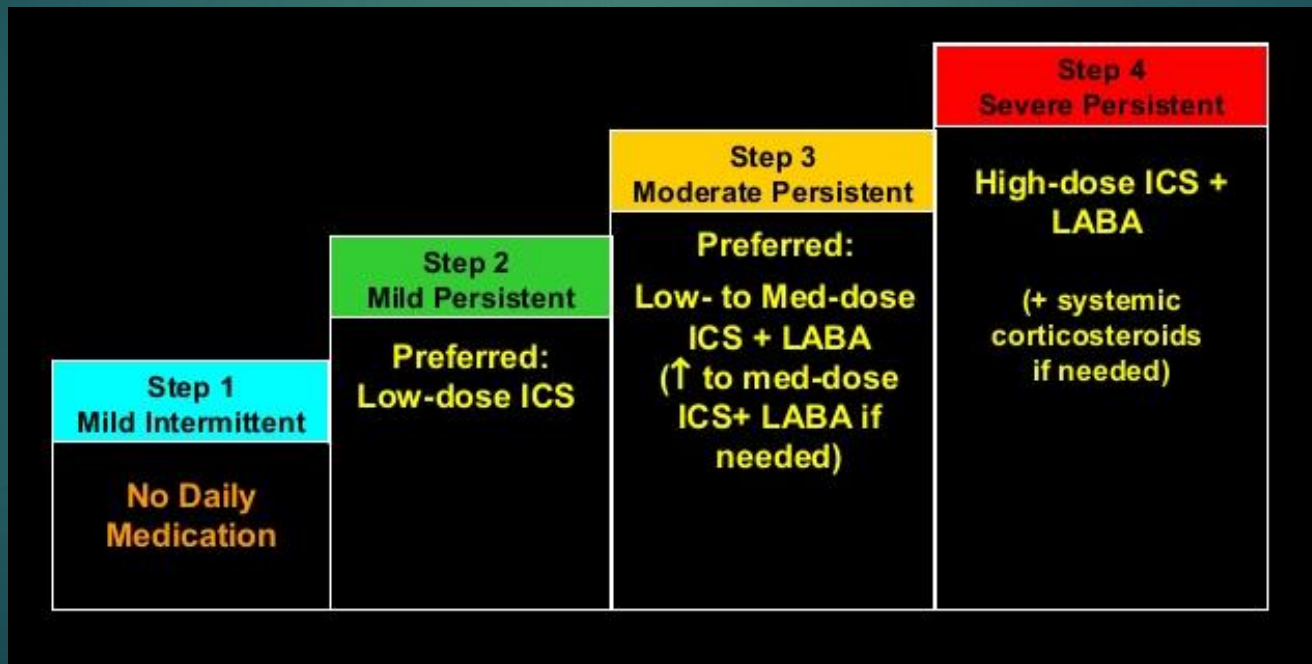
- SABA/LABA
- LTRAs
- Mast cell stabilizers
- Warm-up
- Mask or scarf

Behavioral modifications

Exercise-induced asthma

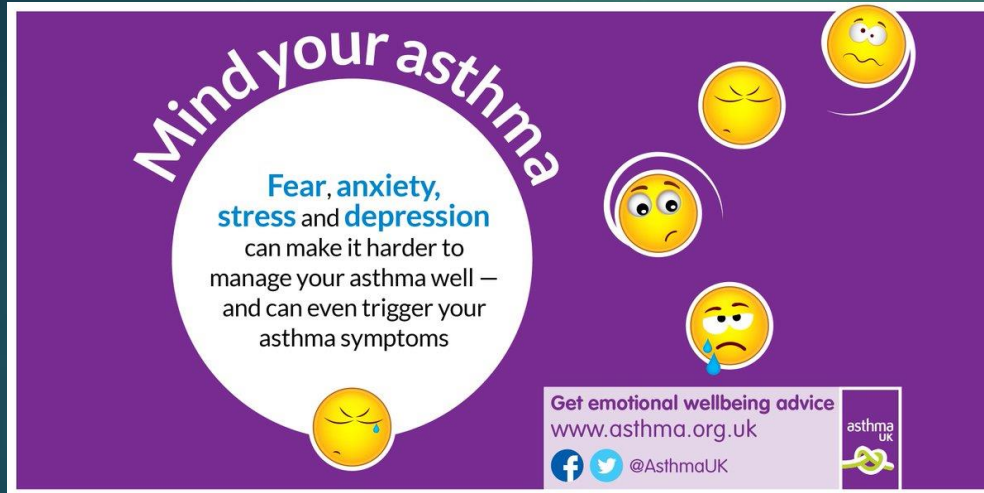
Long-term Treatment

need to initiate or increase daily long term control therapy



Behavioral modifications

Psychosocial issues



Low self esteem,
helplessness, victim role

Depression, anxiety,
panic, other psychiatric
illnesses

Poor symptom
perception

Behavioral modifications

Psychosocial issues



Behavioral modifications

Psychosocial issues

SAYING TO SOMEONE WHO HAS DEPRESSION, "WHAT DO YOU HAVE TO BE DEPRESSED ABOUT? YOU HAVE A GREAT LIFE!"

IS THE SAME THING AS SAYING TO AN ASTHMATIC: "WHAT DO YOU MEAN YOU CAN'T BREATHE? THERE'S LOTS OF AIR IN HERE!"

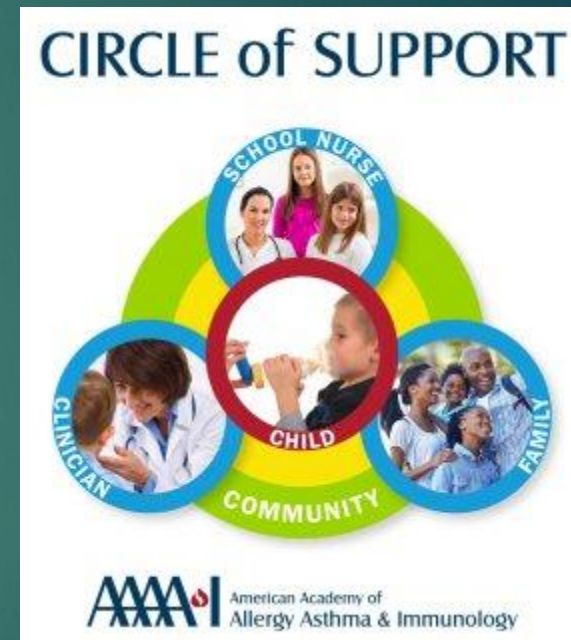
Behavioral modifications

Social support/family factors

Mother working full time
or part time

Other sick family
members

Multiple stressors in the
home



Behavioral modifications

Social support/family factors

Mother working full time
or part time

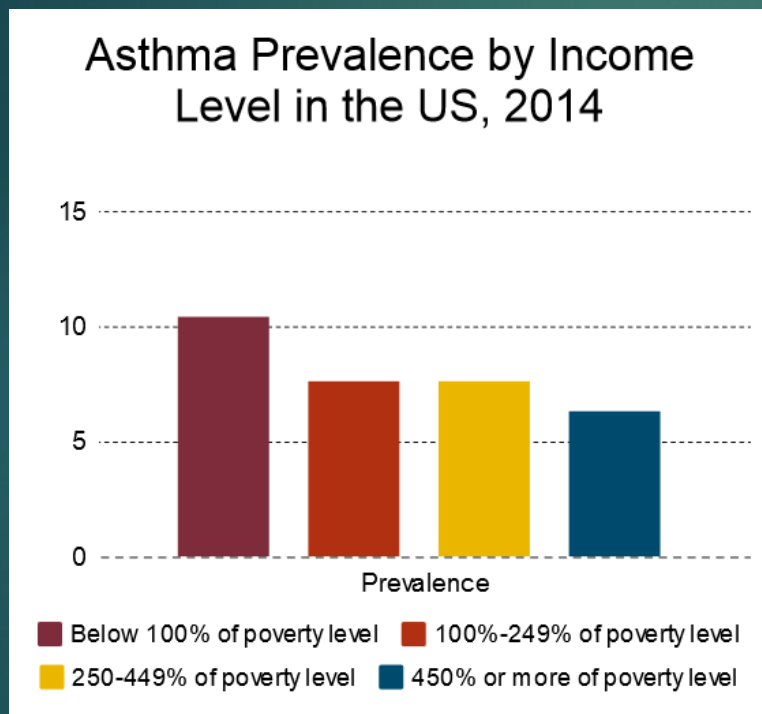
Other sick family
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Multiple stressors in the
home



Behavioral modifications

Economic issues



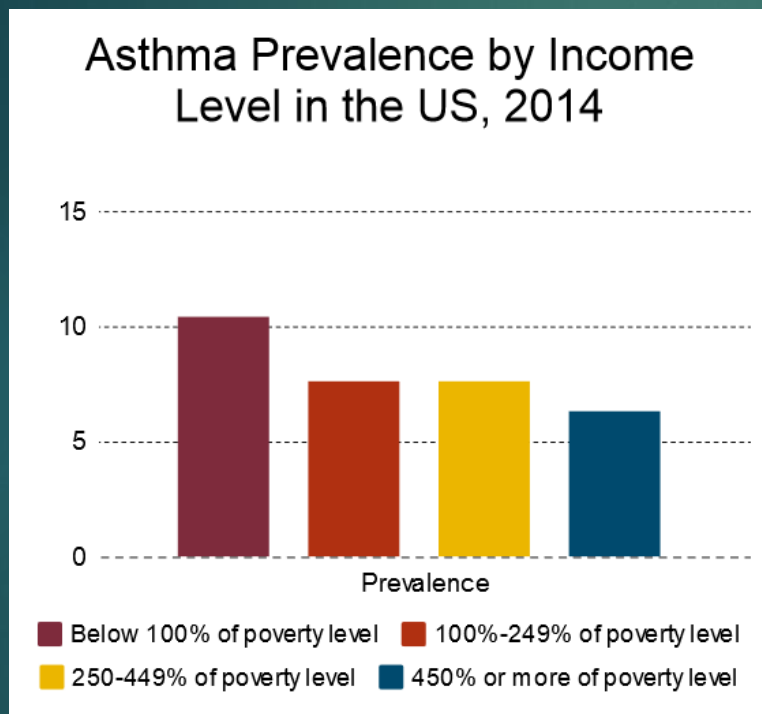
Lack of or inadequate health insurance

Limited access to subspecialty care

geographic location of health care

Behavioral modifications

Economic issues



Lack of resources to assist patients/families

Inadequate housing

Lack of transportation

Behavioral modifications

Drug abuse

Addict Behav. Author manuscript; available in PMC 2008 May 12.

Published in final edited form as:

[Addict Behav. 2006 February; 31\(2\): 278–287.](#)

Published online 2005 June 20. doi: [10.1016/j.addbeh.2005.05.005](https://doi.org/10.1016/j.addbeh.2005.05.005)

PMCID: PMC2376756

NIHMSID: NIHMS47382

Asthma inhaler misuse and substance abuse: A random survey of secondary school students[☆]



more likely to smoke cigarettes and marijuana as well as more likely to drink alcohol

Behavioral modifications

Drug abuse

Weitzman JB, Kanarek NF, Smialek JE (1998) Medical examiner asthma death autopsies: a distinct subgroup of asthma deaths with implications for public health strategies. Arch Pathol Lab Med 122: 691-699



should focus on inner-city African-American men, particularly those with a history of drug abuse

Behavioral modifications

Drug abuse

Tashkin DP, Kleerup EC, Koyal SN, Marques JA, Goldman MD (1996) Acute effects of inhaled and IV cocaine on airway dynamics. Chest 110: 904–910



inhaled, but not IV, cocaine causes acute bronchoconstriction

Behavioral modifications

Drug abuse

Chest. 1996 Sep;110(3):604-10.

Asthma deaths confounded by substance abuse. An assessment of fatal asthma.

Levenson T, Greenberger PA, Donoghue ER, Lifschultz BD.

Department of Medicine, Northwestern University Medical School, Chicago.



the use of cocaine may induce fatal ventricular dysrhythmias in adults with asthma

Behavioral modifications

Drug abuse

FIGURE 5-2a. RISK FACTORS FOR DEATH FROM ASTHMA

Asthma history

Previous severe exacerbation (e.g., intubation or ICU admission for asthma)
Two or more hospitalizations for asthma in the past year
Three or more ED visits for asthma in the past year
Hospitalization or ED visit for asthma in the past month
Using >2 canisters of SABA per month
Difficulty perceiving asthma symptoms or severity of exacerbations
Other risk factors: lack of a written asthma action plan, sensitivity to *Alternaria*

Social history

Low socioeconomic status or inner-city residence
Illicit drug use
Major psychosocial problems

Comorbidities

Cardiovascular disease
Other chronic lung disease
Chronic psychiatric disease

Key: ED, emergency department; ICU, intensive care unit; SABA, short-acting beta₂-agonist

Sources: Abramson et al. 2001; Greenberger et al. 1993; Hardie et al. 2002; Kallenbach et al. 1993; Kikuchi et al. 1994; O'Hollaren et al. 1991; Rodrigo and Rodrigo 1993; Strunk and Mrazek 1986; Suissa et al. 1994

Behavioral modifications

Active smoking

All smokers should to be identified and documented

motivational treatments should be used when the smoker is unwilling to quit

telephone quit-line counseling should be made available



Behavioral modifications

Active smoking



Try diverse combinations of tobacco dependence medications

using both counseling and medications is the best approach

counseling should involve both problem-solving and social support

Behavioral modifications

Active smoking

Figure 5-2-3. Brief Strategies to Help the Patient Willing to Quit¹⁰⁻¹³

1. **ASK:** Systematically identify all tobacco users at every visit.
Implement an office-wide system that ensures that, for EVERY patient at EVERY clinic visit, tobacco-use status is queried and documented.



Behavioral modifications

Active smoking



Figure 5-2-3. Brief Strategies to Help the Patient Willing to Quit¹⁰⁻¹³

- 1. ASK:** Systematically identify all tobacco users at every visit.
Implement an office-wide system that ensures that, for EVERY patient at EVERY clinic visit, tobacco-use status is queried and documented.
- 2. ADVISE:** Strongly urge all tobacco users to quit.
In a clear, strong, and personalized manner, urge every tobacco user to quit.

Behavioral modifications

Active smoking



Figure 5-2-3. Brief Strategies to Help the Patient Willing to Quit¹⁰⁻¹³

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3. ASSESS: Determine willingness to make a quit attempt.

Ask every tobacco user if he or she is willing to make a quit attempt at this time (e.g., within the next 30 days).

Behavioral modifications

Active smoking



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4. ASSIST: Aid the patient in quitting.

Help the patient with a quit plan; provide practical counseling; provide intra-treatment social support; help the patient obtain extra-treatment social support; recommend use of approved pharmacotherapy except in special circumstances; provide supplementary materials.

Behavioral modifications

Active smoking



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Help the patient with a quit plan; provide practical counseling; provide intra-treatment social support; help the patient obtain extra-treatment social support; recommend use of approved pharmacotherapy except in special circumstances; provide supplementary materials.

5. ARRANGE: Schedule follow-up contact.

Schedule follow-up contact, either in person or via telephone.

Behavioral modifications

Adherence issues

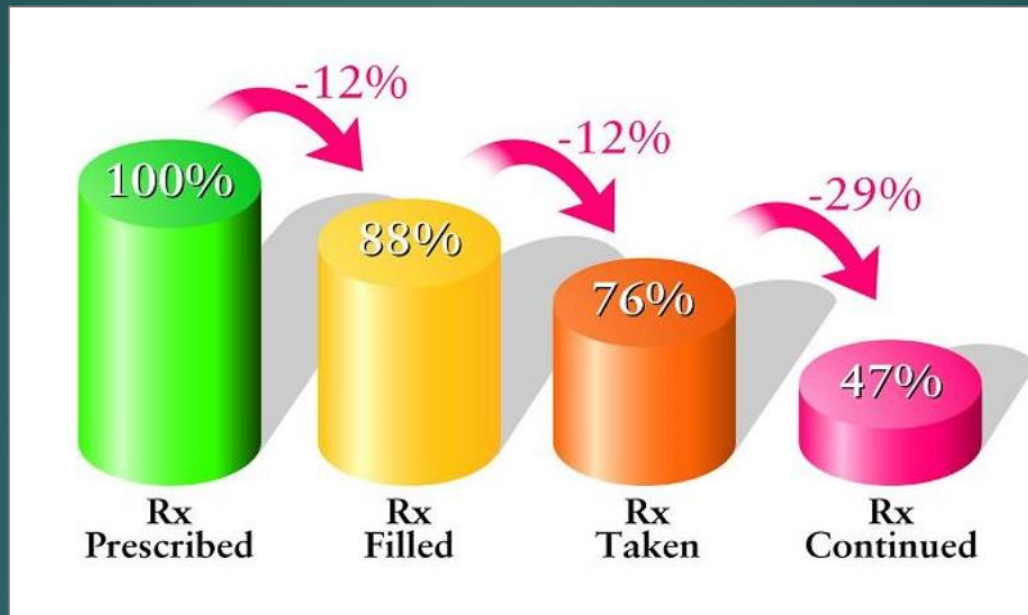
The extent to which a patient's behavior corresponds with recommendations from a health care provider

- Not filling the prescription
- Not using the medication when filled
- Using the medication too often or too seldom



Behavioral modifications

Adherence issues



According to the Case Management Adherence Guide (2006) medication adherence rates are low, averaging only 50-65%. This chart illustrates the magnitude of the problem at various stages of medication adherence.

Behavioral modifications

Adherence issues

The notion of a typical non-adherent patient is a myth

- Type or severity of disease do not significantly relate to adherence rate
- No clear relationship to socio-demographic variables and non-adherence



Behavioral modifications

Adherence issues

Intentional

- ▶ Perception that treatment is not necessary
- ▶ Denial or anger about asthma or its treatment
- ▶ Inappropriate expectations
- ▶ Concerns about side-effects (real or perceived)
- ▶ Dissatisfaction with health care providers



Behavioral modifications

Adherence issues



Unintentional

- ▶ Cost of medication
- ▶ Difficulties using inhaler device (e.g., arthritis)
- ▶ Burdensome regimen (e.g., multiple times per day)
- ▶ Multiple different inhalers
- ▶ Misunderstanding about instructions
- ▶ Forgetfulness

Behavioral modifications

Adherence issues

Patients



Adherence increases when

- ▶ Realize that symptoms are sufficiently severe to require adherence
- ▶ Realize that remedial action effects a rapid and noticeable reduction in symptoms

Behavioral modifications

Adherence issues

Providers



Adherence increases when

- ▶ Give comprehensive information
- ▶ Develop the ability to teach behavioral skills
- ▶ Develop skills in empowerment

Behavioral modifications

Adherence issues

Healthcare
systems

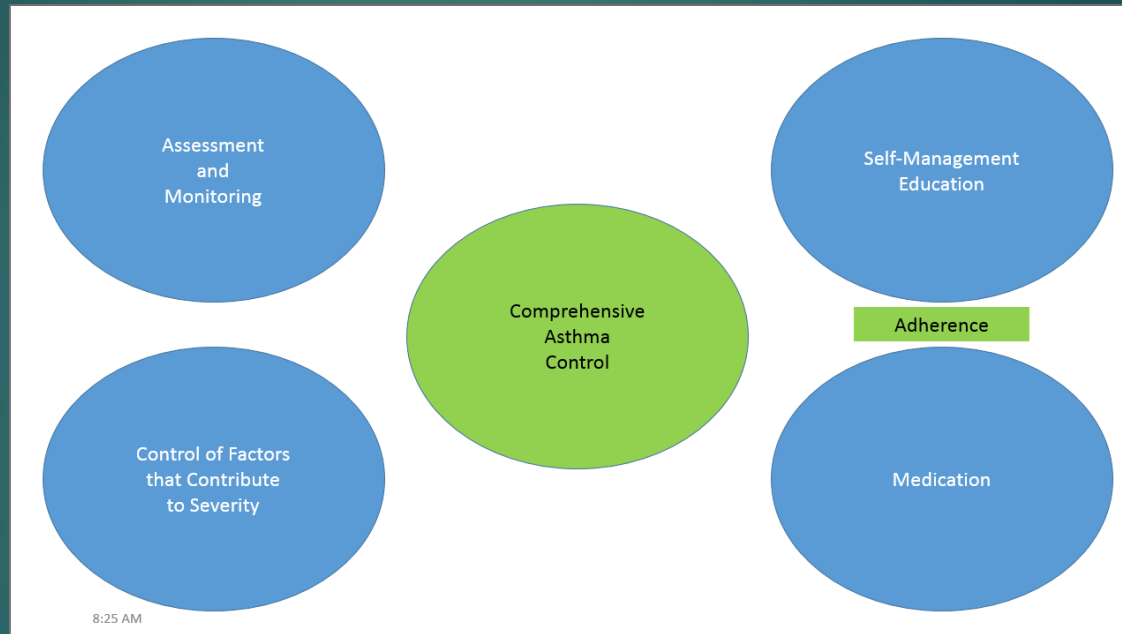
Adherence increases with

- ▶ Continuity of care (i.e., care from the same provider over time)
- ▶ Adequate appointment length and duration of treatment
- ▶ Adequate resources to decrease demands upon providers
- ▶ Adequate fee structures for patient counselling and education



Behavioral modifications

Adherence issues



Behavioral modifications

Adherence issues

Chronic
Respiratory
Disease

Chronic Respiratory Disease
2015, Vol. 12(2) 165-176
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DOI: 10.1177/1479972315573529
crd.sagepub.com



Table 2. Emerging therapies for adult asthma.

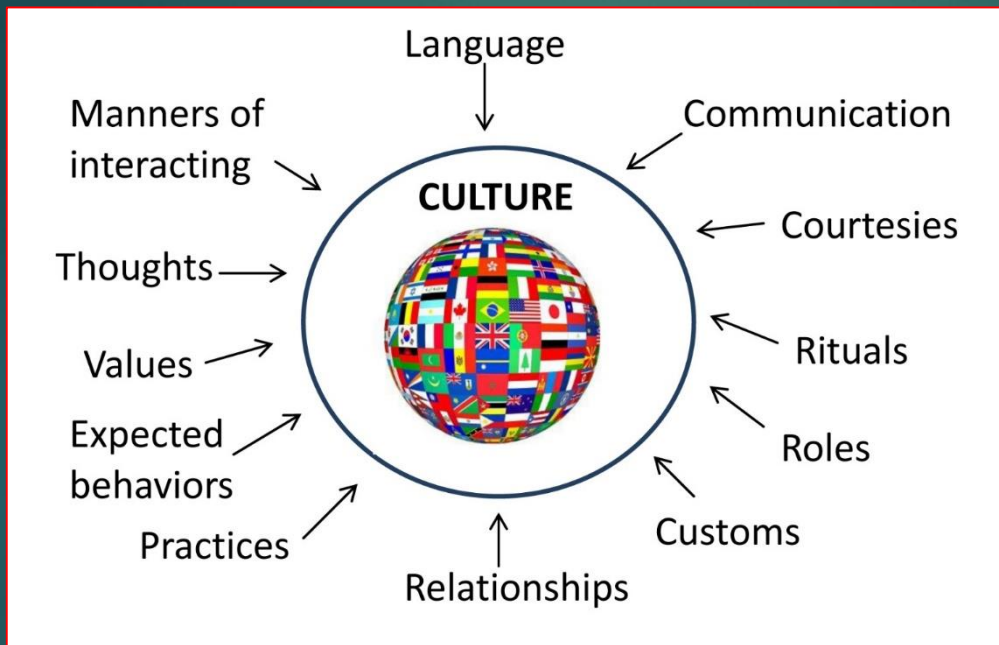
Treatment	Category
'As-needed' ICS/fast-onset LABA inhaler	Inhaled treatment in response to symptoms
ICS/24-hour acting LABA	Combination ICS and ultra-LABA
Azithromycin	Oral antibiotic with anti-inflammatory effects
Anti-IL-4, anti-IL-5 and anti-IL-13	Systemic biologic treatment

ICS: inhaled corticosteroids; LABA: long-acting β -agonist; IgE, immunoglobulin E; IL: interleukin.

Because the type of medication being taken seems to influence adherence, two emerging therapies may improve adherence

Behavioral modifications

Cultural competence

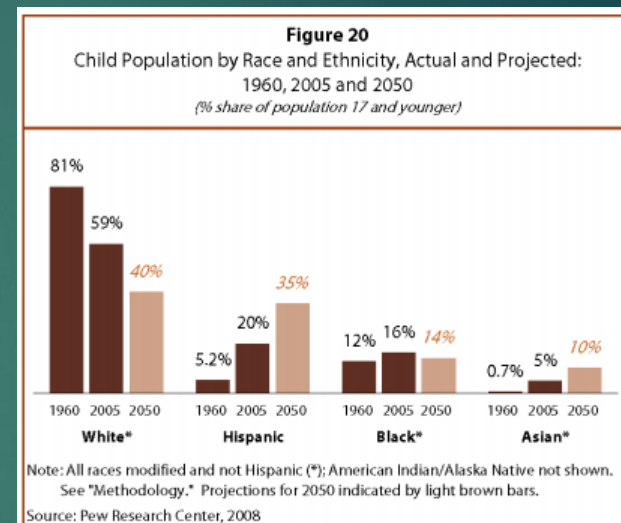
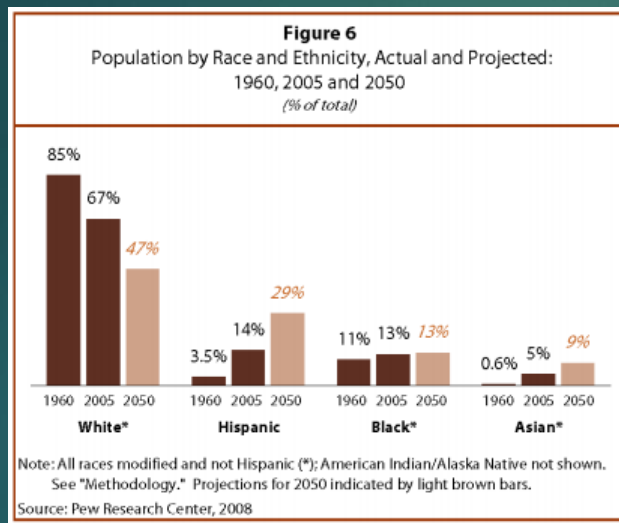


Cultural factors

- Race/ethnicity
- Religion
- Social class
- Language
- Disability
- Sexual orientation
- Age
- Gender

Behavioral modifications

Cultural competence



These two figures show actual and projected changes in our population by race and ethnicity, with adults on the left and children on the right. Hispanic, Black, and Asian populations are increasing and will continue to increase while White populations will continue to decline.

Behavioral modifications

Cultural competence

- ▶ Not a state at which one arrives, but a process of learning, unlearning, and relearning
- ▶ A sensibility to differences cultivated throughout a lifetime
- ▶ Requires a high level of emotional intelligence
- ▶ Competence in one context is no assurance of competence in another



Behavioral modifications

Cultural competence



Acknowledge the complexity of cultural identity

- ▶ People belong to multiple cultural groups
- ▶ This requires reconciling multiple and sometimes clashing norms
- ▶ There is a danger of missing diversity by collapsing identities into cultural groups

Behavioral modifications

Cultural competence

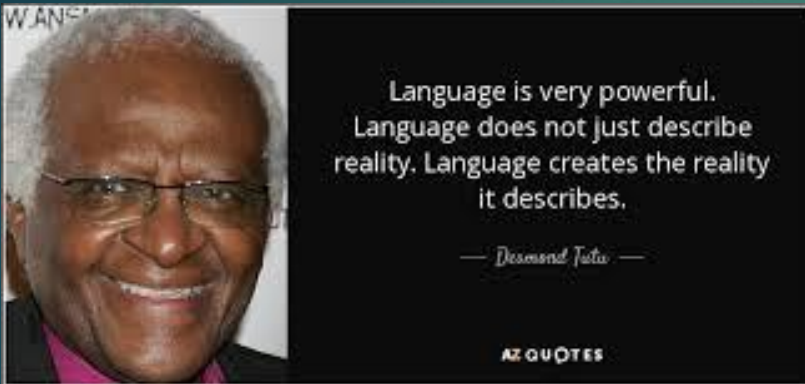
Recognize the dynamics of power

- ▶ Cultural privilege can create and perpetuate inequities in power
- ▶ This can foster unequal resource distribution and access
- ▶ One must understand the experience of being devalued, marginalized, or subordinated due to cultural identity



Behavioral modifications

Cultural competence



Recognize and eliminate bias in language

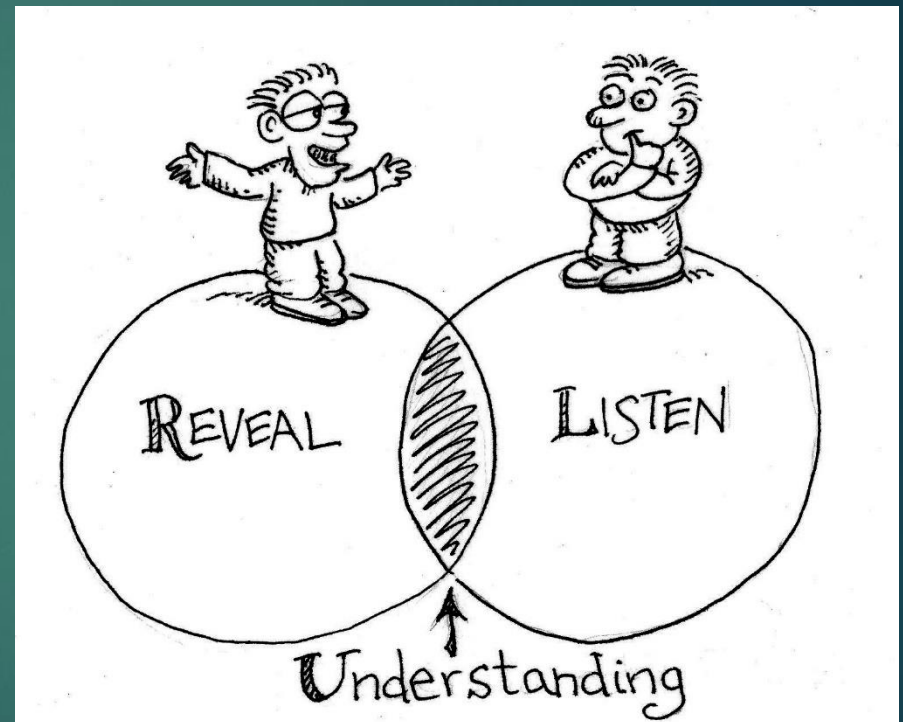
- ▶ Language is powerful
- ▶ When used respectfully and effectively, language can reduce power inequalities in therapeutic relationships
- ▶ And it can promote full understanding between the practitioner and the person with asthma

Behavioral modifications

Cultural competence

Employ culturally appropriate methods

- ▶ There is no formulaic approach to different cultures and age groups
- ▶ The key to effective learning across cultural differences is mutual understanding
- ▶ Understanding and the proper use of methods is possible only by looking for the uniqueness that underlies the differences in people



Behavioral modifications

Cultural competence

Cultural Competence



- ▶ One example of employing a culturally appropriate method for teaching asthma management might be using open-ended questions such as “In your community, what does having asthma mean?” to elicit informative responses

Behavioral modifications

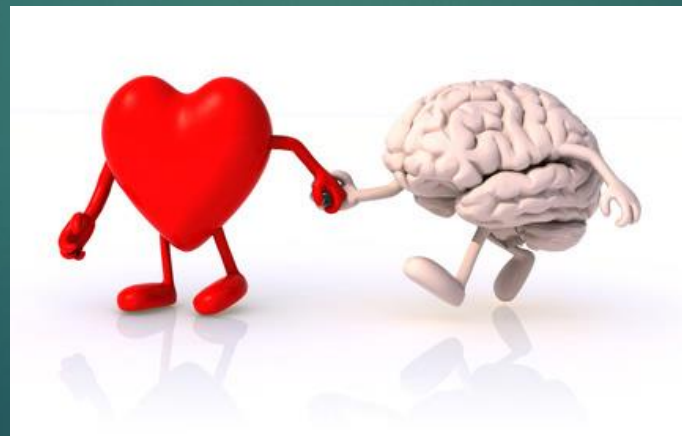
Fears and myths about asthma

self-awareness

- ▶ The ability to accurately perceive your own emotions in the moment and understand your tendencies across situations

social awareness

- ▶ The ability to accurately pick up on emotions in other people and understand what is really going on with them



Behavioral modifications

Fears and myths about asthma

Do not

- ▶ Ignore feelings and emotions
- ▶ Be judgmental
- ▶ Interrupt too quickly
- ▶ Use fear to motivate

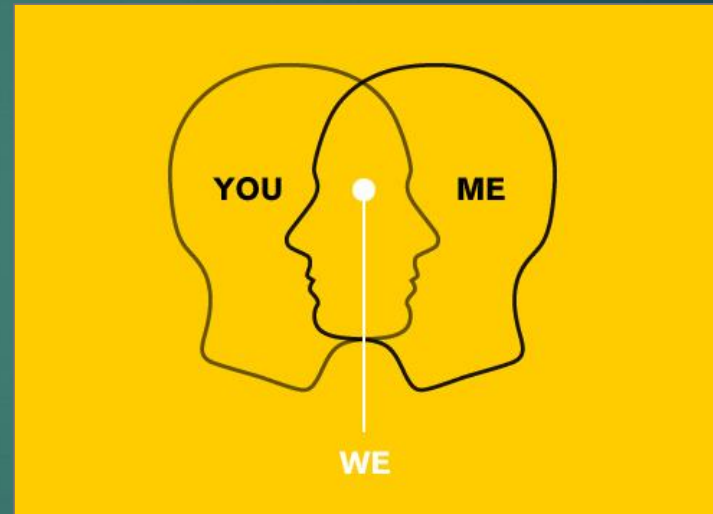


Behavioral modifications

Fears and myths about asthma

Do

- ▶ Accept unconditionally
- ▶ Use active listening
- ▶ Encourage honesty
- ▶ Express empathy



Behavioral modifications

Fears and myths about asthma

- ▶ **Empathy** is heartbreaking — you experience other people's pain and joy.
- ▶ **Sympathy** is easier because you just have to feel sorry for someone.



Behavioral modifications

Fears and myths about asthma



Myths about asthma

- ▶ Asthma is a psychological condition
- ▶ Asthma medicine is addictive
- ▶ The steroids used to treat asthma are the same as the steroids abused by athletes in order to get bigger and stronger
- ▶ I can stop taking my medicine when I feel good and don't have any symptoms



4. Emphasize the importance of following a comprehensive trigger avoidance plan				
5. Recommend strategies to reduce, avoid, or eliminate common triggers in homes, work places, and schools e.g., <ul style="list-style-type: none">• second-hand smoke• other irritants• allergens• infections• chemical exposure				
6. Discuss the effectiveness of various equipment e.g., <ul style="list-style-type: none">• air cleaners• vacuum cleaners• dehumidifiers• allergen-impermeable cover				

Environmental Modifications

Environmental modifications

Second-hand smoke



Ask family members to quit smoking

Don't allow smoking in your home or car

Be sure no one smokes at a child's daycare center or school

Environmental modifications

Other irritants

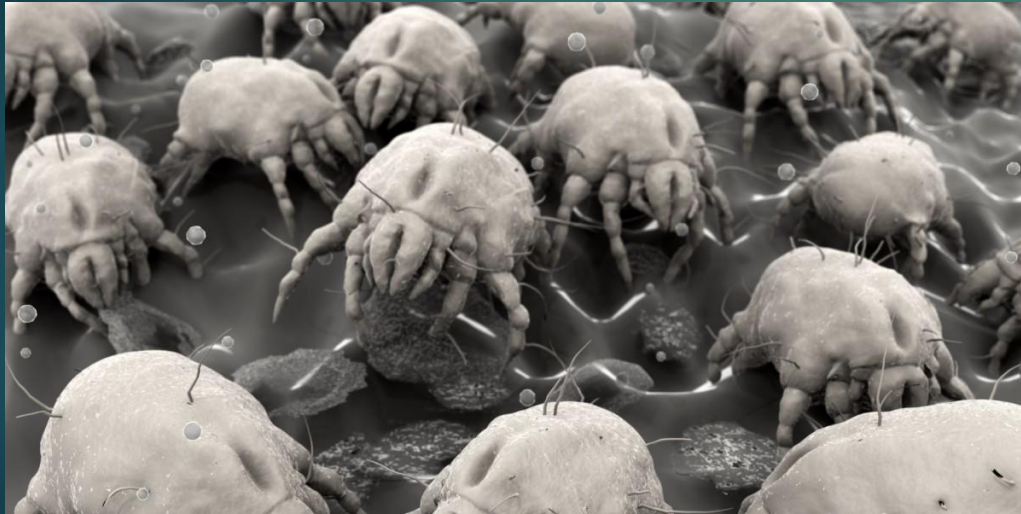
No wood-burning stove,
kerosene heater, or heater

Stay away from strong odors
and sprays



Environmental modifications

Allergens



Encase your mattress in a special cover

Encase your pillow in a special cover or wash it each week in hot water

Wash the sheets and blankets each week in hot water

Environmental modifications

Allergens



Indoor humidity < 60%

Don't lie on cloth-covered cushions

Remove carpets from your bedroom and those on concrete

Keep stuffed toys out of the bed, or wash weekly

Environmental modifications

Allergens

Keep food out of bedroom

Keep food in closed containers

Use poison baits, powders, etc.

If a spray is used, stay out of the room till the odor goes away



Environmental modifications

Allergens



Fix leaking faucets, pipes, etc.

Clean moldy surfaces

Dehumidify basements

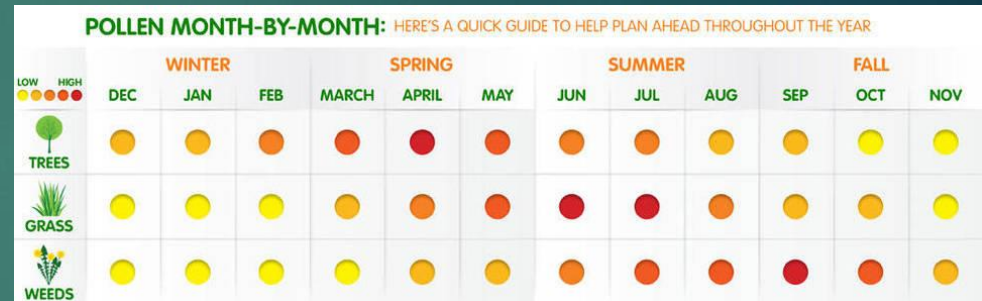
Environmental modifications

Allergens

Keep window closed

Stay indoors when midday or afternoon

Consult doctor about increasing ICS before allergy season starts



Environmental modifications

Infections

Viral infections are the most frequent precipitants of wheezing during infancy and asthma exacerbations during childhood

a family history of asthma, persistent rhinorrhea, atopic dermatitis, or high IgE levels

Environmental modifications Infections

Viruses

- ▶ Viral infections are the most frequent precipitants of wheezing during infancy and asthma exacerbations during childhood

Bacteria

- ▶ infections with both Mycoplasma and Chlamydia, in addition to viral infections, may contribute to exacerbation rates and disease chronicity and severity



Environmental modifications

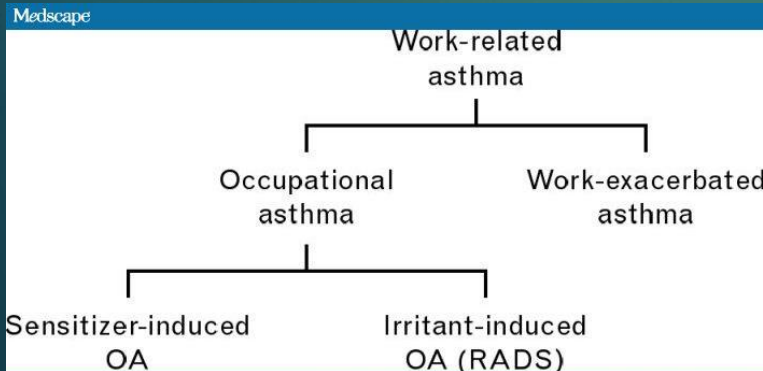
Chemical exposure

Irritants

- ▶ Chemicals that cause asthma-like symptoms in those people who have sensitive airways
- ▶ Cleaning materials
- ▶ Diesel exhaust

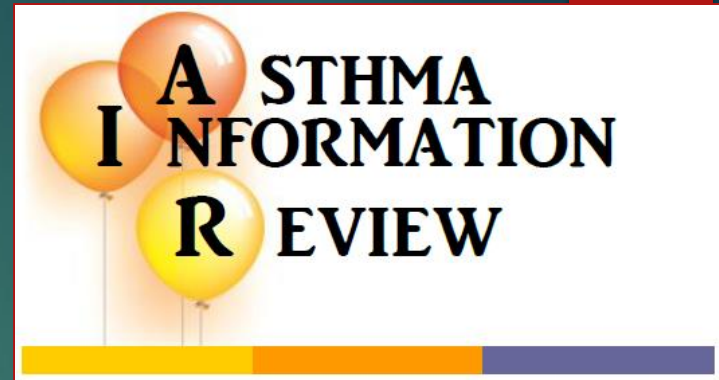
Sensitizers

- ▶ Chemicals that, when exposed to them over a period of time, lead to the development of asthma
- ▶ Chlorine gas
- ▶ Formaldehyde



Effectiveness of household equipment

Equipment	Effectiveness
A/C	controls humidity sufficiently to reduce dust mite growth
Dehumidifier	maintain levels below 60%, ideally 30–50% relative humidity, to reduce dust mites
Vacuum cleaner	use a dust mask, a central cleaner with the collecting bag outside the home, or a cleaner fitted with a HEPA filter or with a double bag
Pillow covers	significantly decreased the level of dust mite allergens; beneficial effects on allergen reduction and asthma outcome



Behavioral and Environmental Modifications

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MARCH 09, 2017

