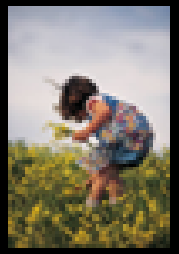
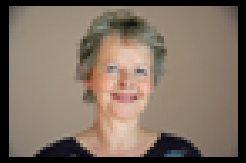
West Virginia Department of Health and Human Resources
Bureau for Behavioral Health and Health Facilities

Behavioral Health is Essential to Health

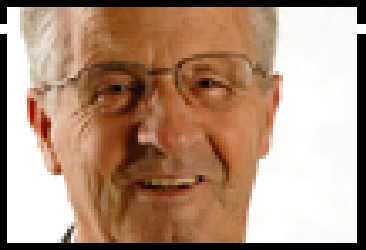


Prevention Works



Treatment is Effective

People Recover



Improving the quality of life for West Virginians with behavioral health needs

INHALANT ABUSE

Objectives:

- Increase knowledge of inhalants
- Recognize different types of inhalants
- Recognize signs, symptoms of abuse
- Learn short and long term effects of abuse
- Effects of inhalants on the brain
- What we can do to prevent and intervene in use

WHAT ARE INHALANTS AND INHALANT USE/ABUSE?

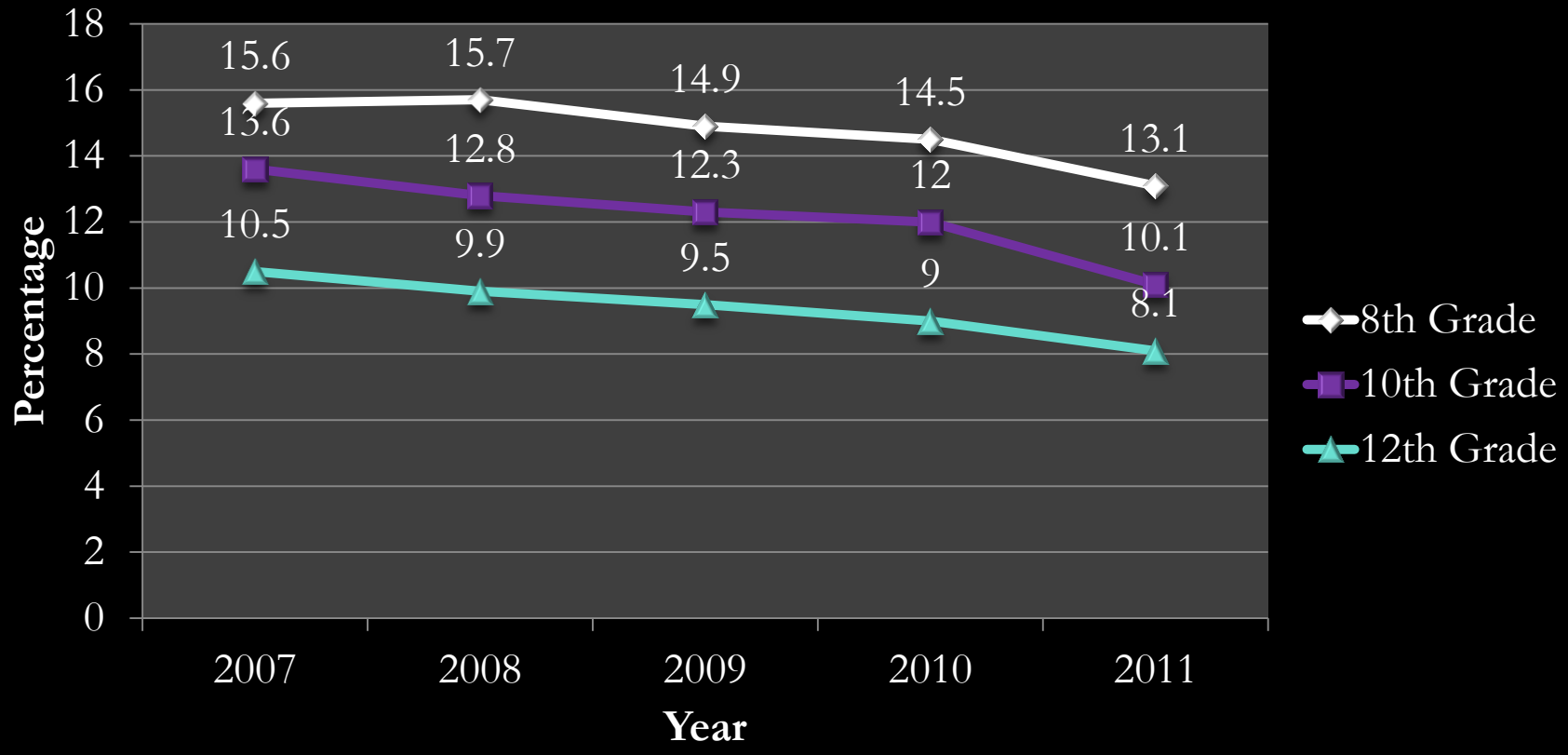
- Inhalant abuse refers to the intentional breathing of gas or vapors with the purpose of reaching a high.

- Inhalants are legal, everyday products which have a useful purpose, but can be misused.

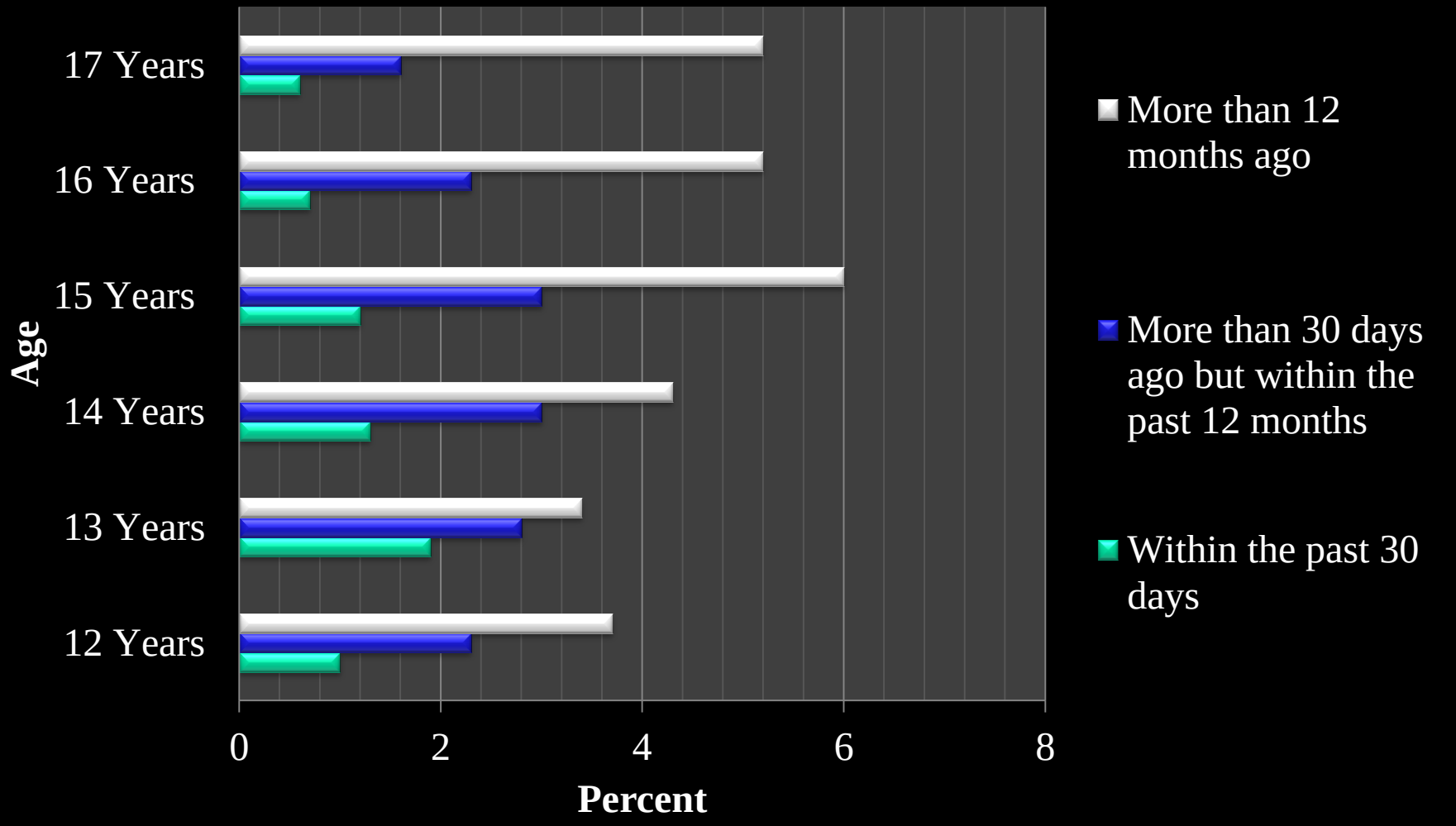
- More than 1,000 products that are very dangerous when inhaled -- things like typewriter correction fluid, air-conditioning refrigerant, felt tip markers, spray paint, air freshener, butane and even cooking spray.

- In 2010, there were 793,000 persons aged 12 or older who had used inhalants for the first time within the past 12 months, which was similar to the numbers in prior years since 2002; 68.4% were under the age of 18 when they first used
- The average age at first use among recent initiates aged 12 to 49 was similar in 2009 and 2010 (16.6 and 16.3 years)

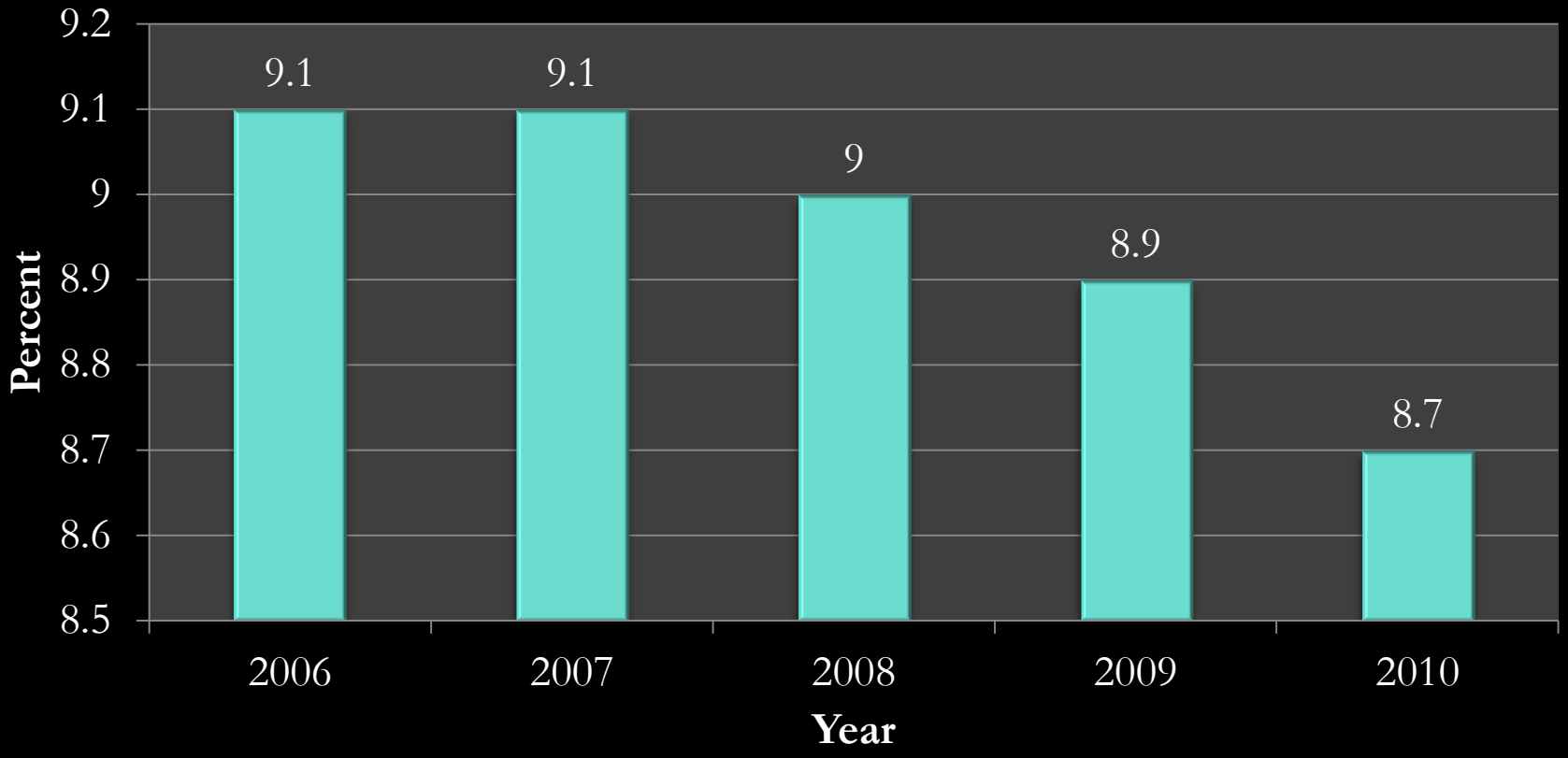
LIFETIME PREVALENCE OF INHALANTS



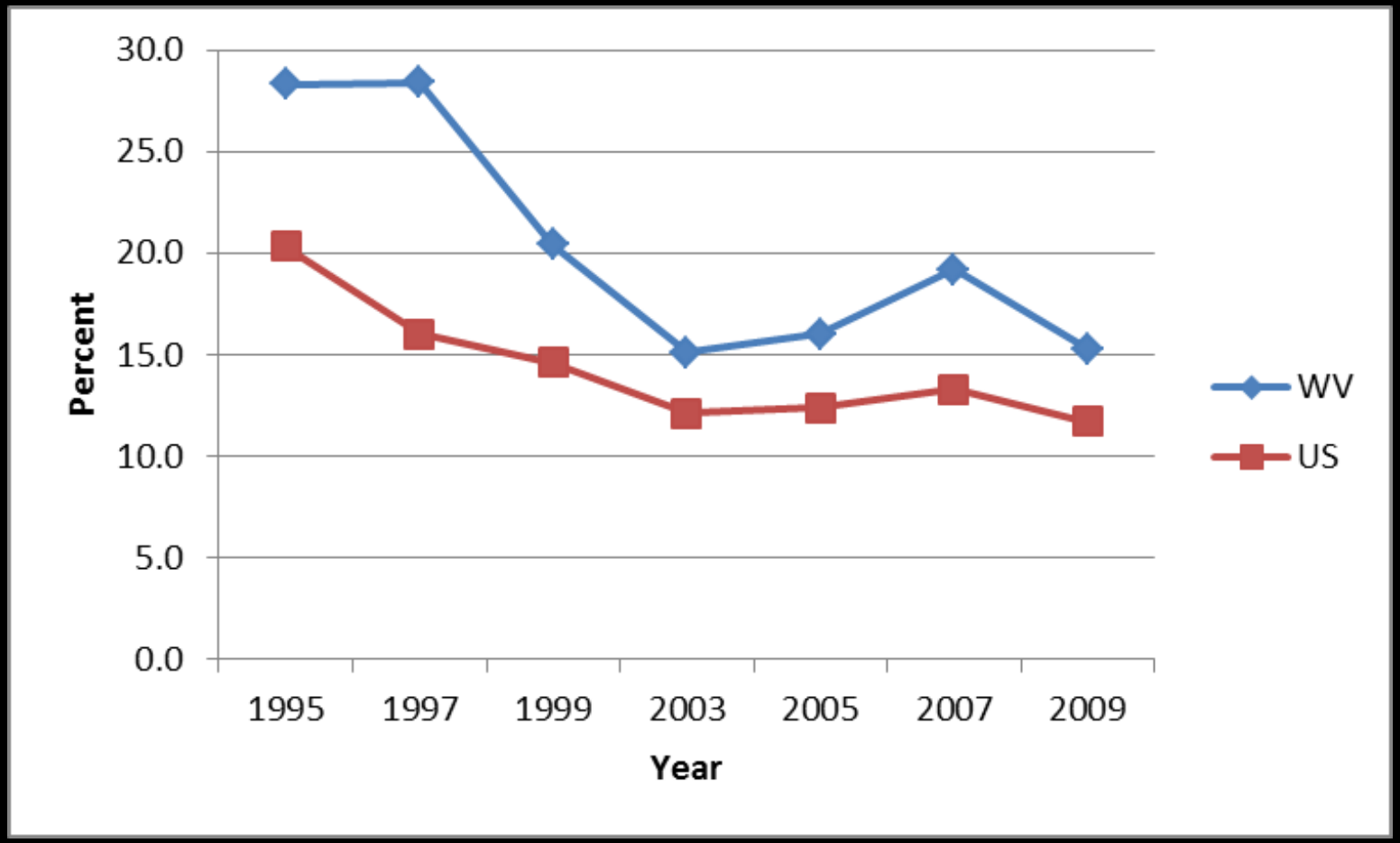
2010
Recency of Inhalant Use by Age



INHALANTS USE BY YEAR



Students Grades 9 through 12, Breathed the Contents of Aerosol Spray Cans, or Inhaled Any Paints to Get High on One or More time during Their Life



TYPES OF INHALANTS

Volatile Solvents

Adhesives, Aerosols, Solvents and gases, Cleaning agents, Food products, Gases

Anesthetics

Nitrites -Nitrite room “odorizers”

ONE IN FIVE STUDENTS HAVE USED/ABUSED AN INHALANT TO GET HIGH BY THE TIME S/HE REACHES THE EIGHTH GRADE

Few know the deadly effects the poisons in these products have on the brain and body when they are inhaled or "huffed."

It's like playing Russian Roulette.

The user/abuser can die the 1st, 10th or 100th time a product is misused as an inhalant.

POTENTIAL SHORT AND LONG TERM EFFECTS OF CHRONIC INHALANT USE/ABUSE

- Potential **Sudden Sniffing Death** (SSD) during any use *even the first time*
- Short term memory loss
- Hearing loss
- Limb spasms

Potential Short and Long Term Effects Of Chronic Inhalant Use/Abuse

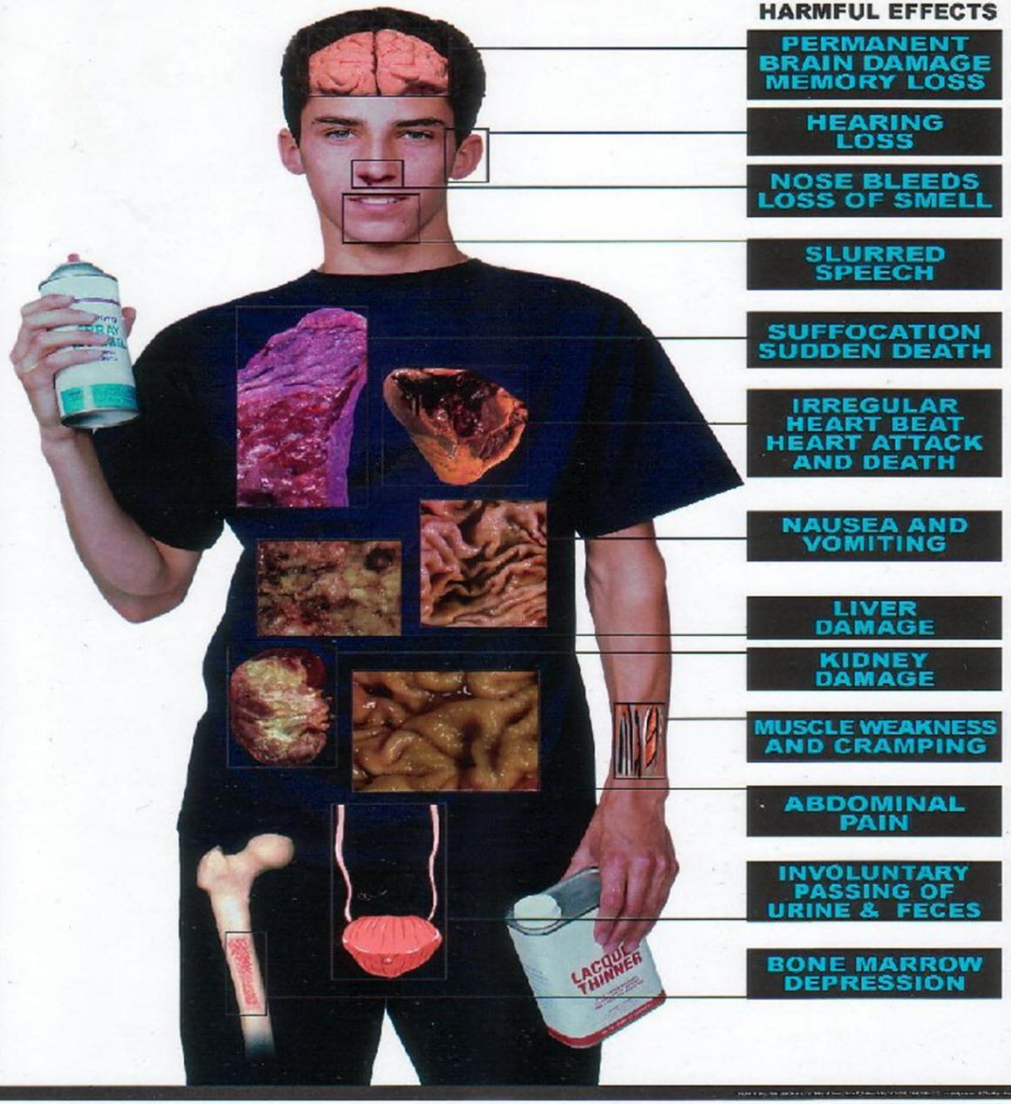
- Permanent brain damage
- Bone marrow damage
- Liver and kidney damage
- Possible fetal effects similar to fetal alcohol syndrome

SIGNS AND SYMPTOMS MOST FREQUENTLY REPORTED IN LONG-TERM, HEAVY USERS/ABUSERS OF TOLUENE-CONTAINING SOLVENTS

toluene (tol' yoo en')- A colorless liquid related to benzene that burns easily, is composed of carbon and hydrogen, and has a formula $CH_3C_6H_5$.

Used in making fuels, dyes, and other chemicals.

INHALANTS


HARMFUL EFFECTS
PERMANENT BRAIN DAMAGE MEMORY LOSS
HEARING LOSS
NOSE BLEEDS LOSS OF SMELL
SLURRED SPEECH
SUFFOCATION SUDDEN DEATH
IRREGULAR HEART BEAT HEART ATTACK AND DEATH
NAUSEA AND VOMITING
LIVER DAMAGE
KIDNEY DAMAGE
MUSCLE WEAKNESS AND CRAMPING
ABDOMINAL PAIN
INVOLUNTARY PASSING OF URINE & FECES
BONE MARROW DEPRESSION
LACQUER THINNER

SIGNS AND SYMPTOMS

Emotional instability

Short term memory loss

Cognitive impairment /thought process

Slurred and "scanning" speech

Wide-based ataxic gait

Staggering or stumbling

Ocular flutter / vision problems

Hearing loss

EVEN MORE SIGNS

Tremor

Loss of sense of smell

Abnormal or absent brainstem auditory-evoked response

Diffuse cerebral, cerebella, and brainstem atrophy

Enlarged ventricles and widening of cortical sulci, especially in the frontal or temporal cortex

-Gordon T. Pryor, Ph.D.

SIGNS OF INHALANT USE/ABUSE

Nearly all used/abused products produce effects similar to anesthetics, which **slow down the body's function**. Varying upon level of dosage, the user can experience slight stimulation, feeling of less inhibition or **loss of consciousness**.

The user/abuser can also suffer from **Sudden Sniffing Death Syndrome.**

Did we say - the user can die the **1st, 10th or 100th** time he or she uses/abuses an inhalant.

THERE IS A COMMON LINK BETWEEN INHALANT USE/ABUSE AND …POOR SCHOOL PERFORMANCE AND ADJUSTMENT

Lower grades/Failing grades

Chronic absences

General apathy

Attention deficit

Poor short term memory

Low abstraction and judgment scores

OTHER SIGNS INCLUDE THE FOLLOWING

paint or stains on body or clothing

spots or sores around the mouth

red or runny eyes or nose

chemical odor on breath

drunk, dazed or dizzy actions

nausea, loss of appetite

anxiety, excitability, irritability

WHO IS AT RISK?

Anyone.

Inhalants are an equal opportunity method of substance abuse.

Statistics show that young, white males have the highest usage rates.

Hispanic and American Indian populations also show high rates of usage.

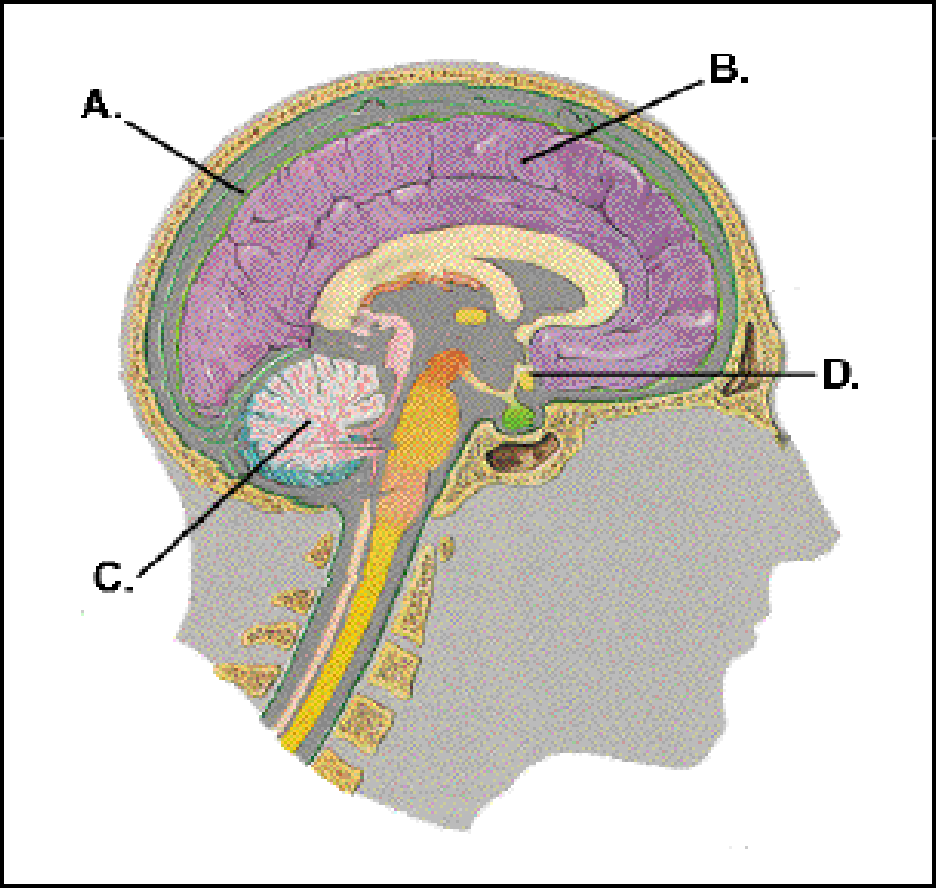
GENDER DIFFERENCES?

Experimental use/abuse equally common in males and females

Chronic use most common in males

Morbidity and mortality more common among chronic male users

DAMAGE INHALANTS CAN DO TO THE BRAIN AND BODY
A. BRAIN



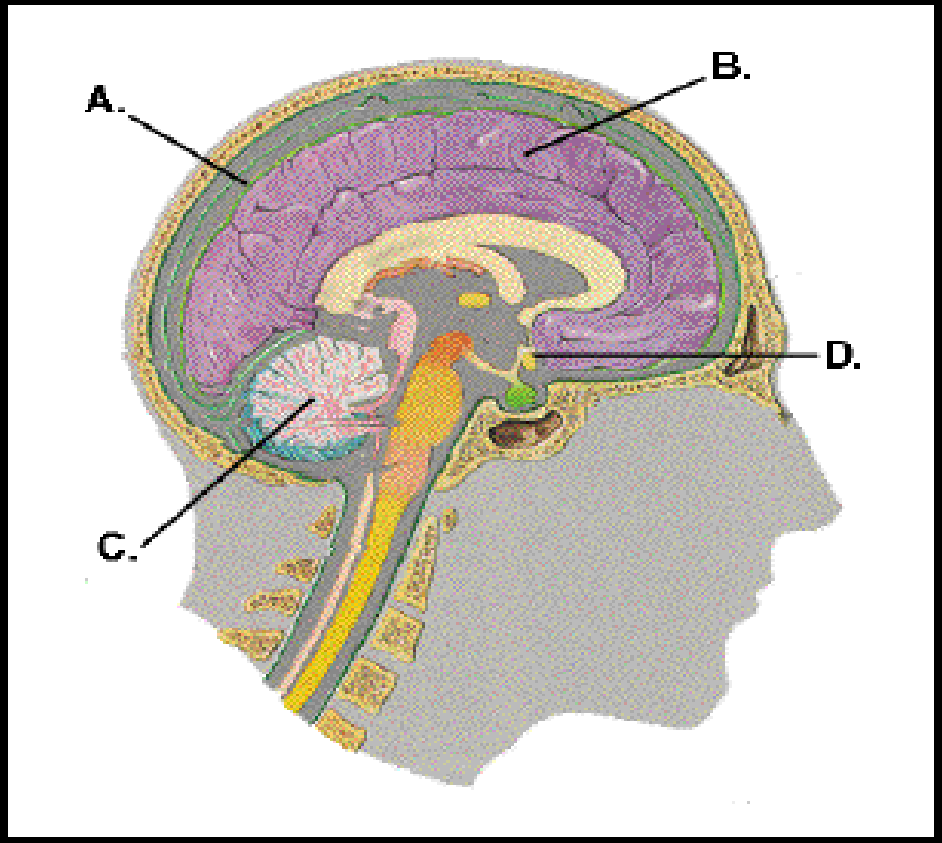
A. THE BRAIN

The chemicals abused by inhalant users affect different parts of the brain,

producing a variety of sensory and psychological disorders.

Many inhalants are thought to dissolve the protective myelin sheath that surrounds neurons - brain cells - resulting in cell death.

B. CEREBRAL CORTEX



CEREBRAL CORTEX

Cellular death here causes permanent damage

Effects include:

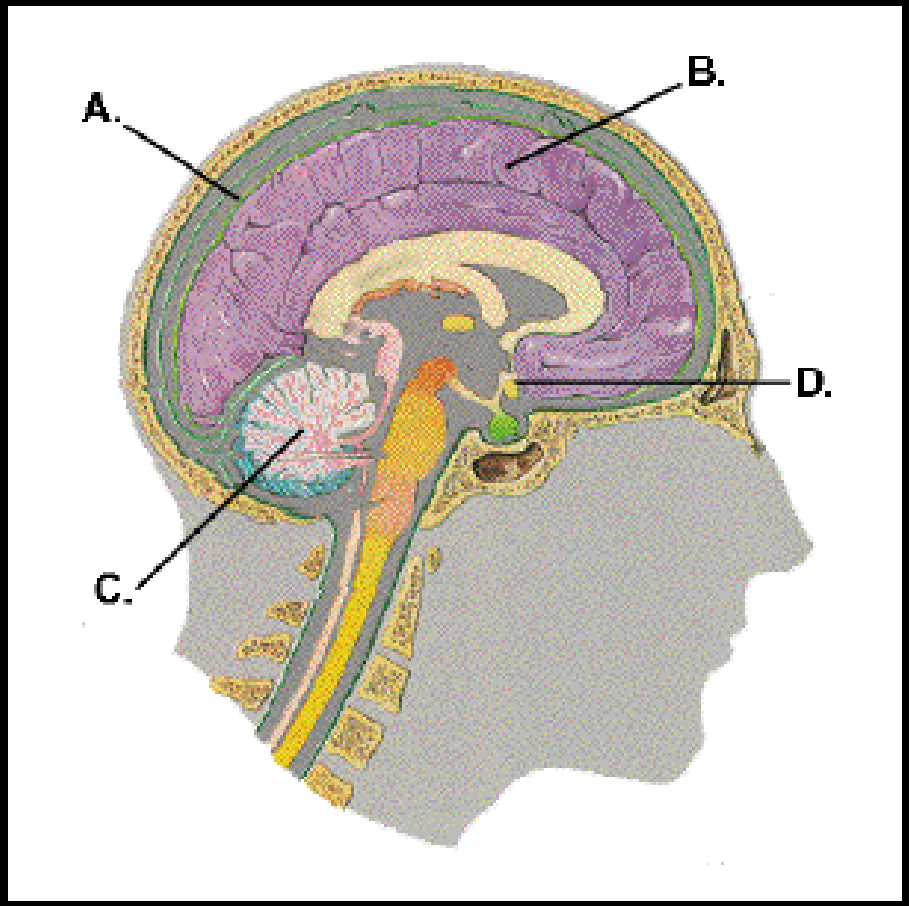
personality changes

memory impairment

hallucinations

learning disabilities

C. CEREBELLUM



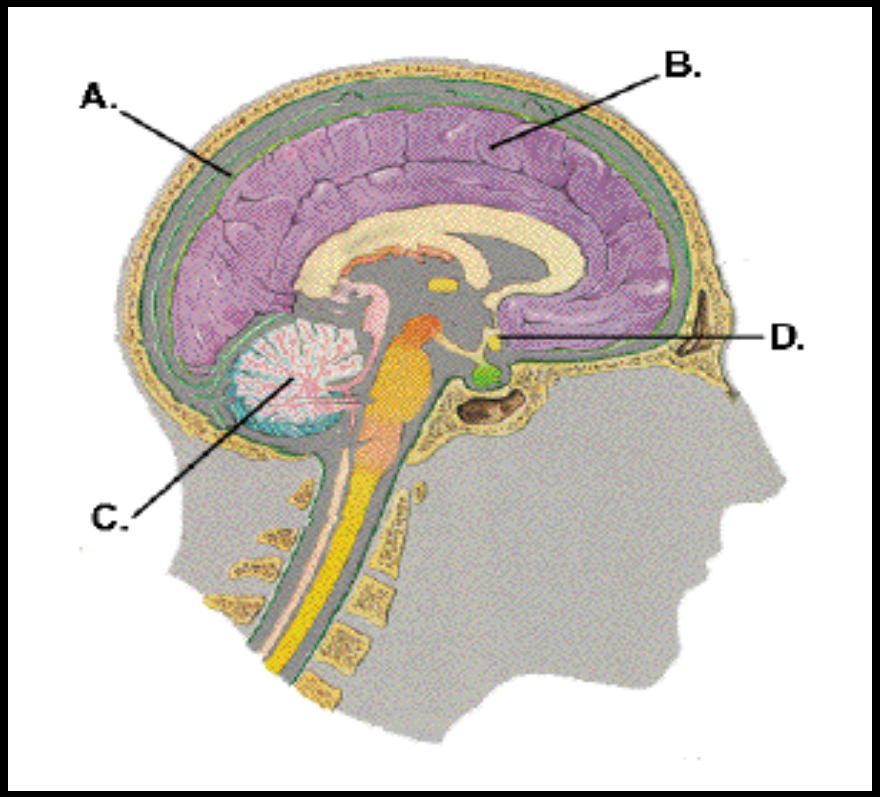
CEREBELLUM

This is the center that controls balance and coordination.

Inhalant-related damage results in loss of coordination and slurred speech.

Chronic abusers experience tremors and uncontrollable shaking.

D. OPHTHALMIC NERVE



OPHTHALMIC NERVE

Toluene (found in many inhalants) may affect this nerve causing sight disorders.

POOR SCHOOL ATTENDANCE

Drop-outs

Absenteeism

Suspension

Expulsion

DELINQUENCY

Particularly theft and burglary

Inhalant users are known to be more disruptive, deviant or delinquent than other drug users

PSYCHOPATHOLOGY

Users/abusers seeking treatment have high rates of psychopathology, especially conduct disorders and personality disorders

Antisocial personality

Depressive disorder

EMOTIONAL PROBLEMS

More emotional problems than other drug users or non-drug users

Anxiety

Depression

Anger

OTHER PROBLEMS

Use of Other Drugs
Multiple Personal and Social Problems
Poor Adjustment to Work Environments
Multi-problem and Disrupted Families
Varied Socioeconomic Conditions

WEAK OR NEGATIVE-FUTURE ORIENTATIONS

Uncertain whether or not the future is worth waiting for.

Low Self Esteem

High Adolescent Rebellion

Strong Peer Drug Influence

BOTTOM LINE !!!

Inhalants highs are short lived. They only last a few seconds/minutes.

Inhalants can kill you (even the first time).

Inhalants will cause problems for you now and in the future.

Inhalants kill brain cells and harm your body each and every time.

WHAT TO DO IF SOMEONE IS HUFFING (USING/ABUSING INHALANTS

Do not excite or argue with the abuser when they are under the influence, as they can become aggressive or violent.

If the person is unconscious or not breathing, call for help. CPR should be administered until help arrives.

If the person is conscious, keep him or her calm and in a well-ventilated room.

MORE WHAT TO DOS…

Excitement or stimulation can cause hallucinations or violence.

Activity or stress may cause heart problems which may lead to "Sudden Sniffing Death."

Talk with other persons present or check the area for clues to what was used.

Once the person has recovered, seek professional help for abuser: school nurse, counselor, physician, other health care worker.

If use is suspected, adults should be frank but not accusatory in discussions with youth about inhalant dangers.

TIPS FOR TEACHERS SCHOOL-BASED PREVENTION PROGRAMS

Ages 4 to 7:

Teach about oxygen's importance to life and body functioning.

Discuss the need for parental supervision and adequate room ventilation for cleaning products, solvents, glues and other products.

Be a good role model; let students see you reading labels and following instructions

TIPS FOR TEACHERS SCHOOL-BASED PREVENTION PROGRAMS

Ages 7 to 10:

Define and discuss the term "toxic"; students can practice reading labels and following instructions.

Teach about oxygen's importance to life and functioning, with emphasis on body systems and brain functions.

Discuss the need for parental supervision, following directions and adequate room ventilation.

Be a good role model; let students see you reading labels and following instructions.

Discuss and discourage "body pollution" and introducing poisons into the body.

TIPS FOR TEACHERS SCHOOL-BASED PREVENTION PROGRAMS

Ages 10 to 14:

Discuss negative effects of oxygen deprivation.

Teach/reinforce peer resistance skills.

Discuss environmental toxins and personal safety issues.

TIPS FOR TEACHERS SCHOOL-BASED PREVENTION PROGRAMS

Ages 14 to 18:

Describe and discuss implications of other gases replacing oxygen in the blood.

Describe and discuss short/long-term effects of inhaling toxic products.

Describe and discuss negative effects of volatile chemicals on fatty brain tissue.

DOS AND DON'TS

for school-based prevention programs

DO

Review school policy regarding drug use and referral service

Provide training for all school staff as well as parents

Start prevention efforts, by age 5, minimum

Link inhalants to safety or environmental issues

Ascertain current level of knowledge

DO – TEACH AND REINFORCE APPROPRIATE SKILLS

1. reading labels
2. safety precautions
3. following directions
4. decision-making skills
5. recognition of poisons/toxins
6. refusal skills
7. awareness of physical symptoms

DON'T

Glamorize or promote usage

Rely on scare tactics

Tell too much, too soon

Give details on "how to use" or trendy products being abused

Limit prevention to secondary grade levels

Link inhalants with drugs or a drug unit

SOURCE: Isabel Burk, M.S., CHES, The Health Network

VOLATILE SOLVENTS

Adhesives - model airplane glue, rubber cement, household glue

Aerosols – spray paint, hairspray, air freshener, deodorant, fabric protector

Solvents and gases - nail polish remover, paint thinner, type correction fluid and thinner, toxic markers, pure toluene, cigar lighter fluid, gasoline, carburetor cleaner, octane booster

Cleaning agents - dry cleaning fluid, spot remover, degreaser

Food products - vegetable cooking spray, dessert topping spray (whipped cream), whippets

Gases - nitrous oxide, butane, propane, helium

ANESTHETICS

Anesthetic - nitrous oxide, ether, chloroform

NITRITES
(NITRITE ROOM ODORIZES)

Amyl - "Poppers," "Snappers"

Butyl - "Rush," "Locker room," "Bolt," "Climax," also marketed in head shops as "video head cleaner"

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