

LEAD AND LEAD-BASED PAINT HAZARDS



LEAD AND LEAD-BASED PAINT HAZARDS

FOR FAMILY CARE HOMES:

**“LEAD-FREE PAINT SHALL BE USED
FOR ALL PAINTED SURFACES.”**

**SEE SECTION 19 CSR40-61.085(2)(A)(7) ON
PAGE 13 OF REGULATIONS.**

LEAD AND LEAD-BASED PAINT HAZARDS

- **BEFORE A FACILITY IS LICENSED IT MUST RECEIVE A “BASIC LEAD HAZARD EVALUATION (BLHE)”**
- **IF THE “BLHE” INDICATES THAT A LEAD HAZARD MAY BE PRESENT, A SEPARATE INSPECTION IS CONDUCTED BY A LICENSED LEAD INSPECTOR.**

LEAD AND LEAD-BASED PAINT HAZARDS

**FOR GROUP CHILD CARE HOMES AND
CHILD CARE CENTERS:**

**“LEAD-FREE PAINT SHALL BE USED
FOR ALL PAINTED SURFACES.”**

**SEE SECTION 19 CSR40-62.082(2)(A)(7) ON
PAGE 13 OF REGULATIONS.**

LEAD AND LEAD-BASED PAINT HAZARDS

FOR LICENSE-EXEMPT CHILD CARE:

**“THE FACILITY SHALL BE FREE OF
ALL LEAD HAZARDS AND ASBESTOS
THAT IS FRIABLE OR DANGEROUS.”**

**SEE SECTION 19 CSR40-60.100(1)(F) ON
PAGE 16 OF REGULATIONS.**

The Problem

LEAD PAINT



- **One out of every 11 children in the United States has dangerous levels of lead in the bloodstream.**
- **Even children who appear healthy can have dangerous levels of lead.**
- **Lead exposure can harm young children and babies even before they are born.**

The Problem

LEAD PAINT




- **MANUFACTURERS USED TO PUT LEAD IN PIGMENT IN PAINT TO MAKE THE PAINT LAST LONGER AND CLING TO SURFACES.**
- **IN 1978, THE CONSUMER PRODUCT SAFETY COMMISSION BANNED ITS SALE FOR USE IN RESIDENCES.**
- **APPROXIMATELY 64 MILLION DWELLINGS BUILT BEFORE 1978 CONTAIN LEAD-BASED PAINT.**

LEAD AND LEAD-BASED PAINT HAZARDS

- **µg** : SHORT-HAND FOR MICROGRAM. A MICROGRAM IS ONE MILLIONTH OF A GRAM.
- **µg/dL** : SHORT FOR MICROGRAMS PER DECILITER. THIS MEASUREMENT IS USED TO EXPRESS HOW MUCH LEAD IS IN THE BLOOD.

LEAD AND LEAD-BASED PAINT HAZARDS

- **NINE**  **EQUALS 1 OUNCE**
- **1 OUNCE EQUALS 0.0353 GRAMS**
- **1 MICROGRAM = ONE MILLIONTH OF
A GRAM.**

LEAD-BASED PAINT

CONSIDER THIS COMPARISON:

**IT ONLY TAKES 10 µg
(MICROGRAMS) TO CAUSE
PROBLEMS WHEN INGESTED.**

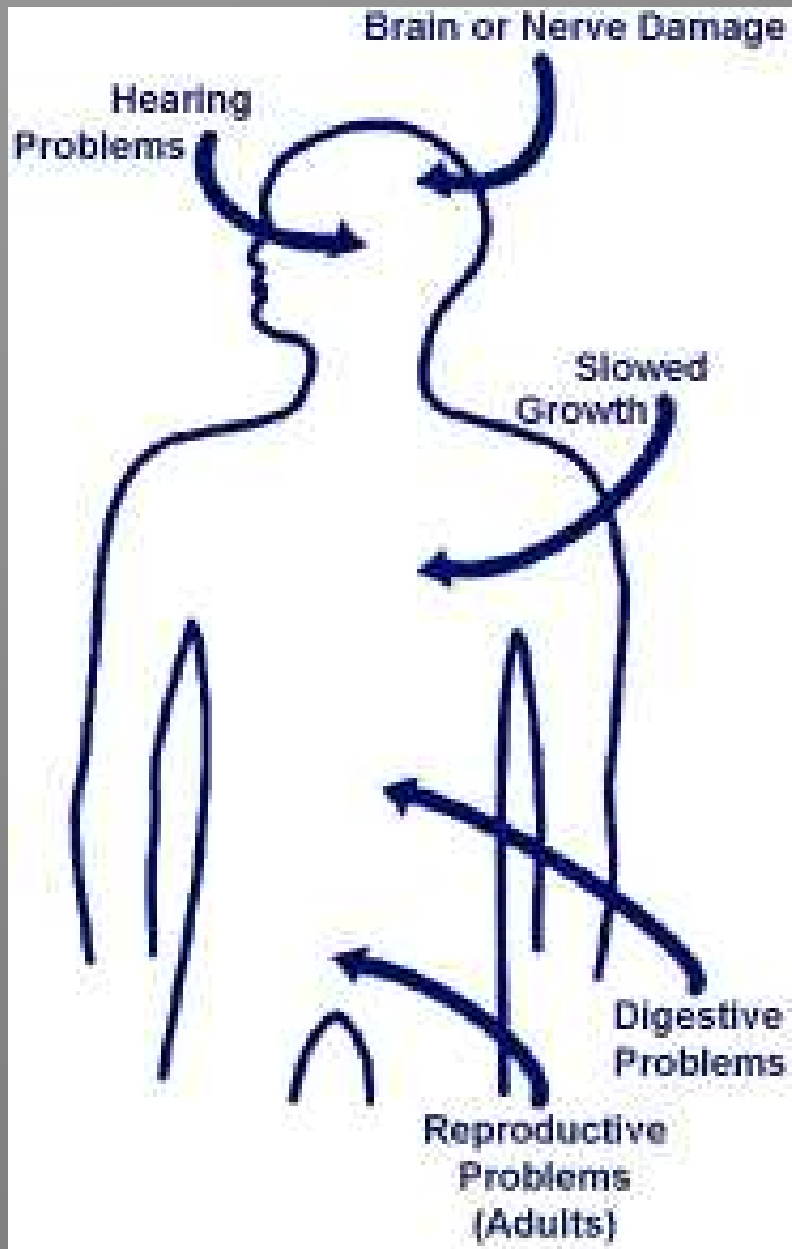
**AND THERE IS AN ESTIMATED 3
MILLION TONS OF LEAD STILL IN
OCCUPIED HOUSING.**

EFFECTS OF LEAD

- **PERSISTENT TIREDNESS**
- **HYPERACTIVITY**
- **LOSS OF APPETITE**
- **WEIGHT LOSS**
- **REDUCED ATTENTION SPAN**
- **DIFFICULTY SLEEPING**
- **CONSTIPATION.**

EFFECTS OF LEAD

- LEAD INTERFERES WITH SOME OF THE BODY'S BASIC BIOLOGICAL FUNCTIONS.**
- THE HUMAN BODY DOES NOT DISTINGUISH BETWEEN LEAD AND CALCIUM; LEAD IS ABSORBED IN BONES.**
- IN THE USA, APPROXIMATELY 900,000 CHILDREN AGES 1-TO-5 HAVE A BLOOD-LEAD LEVEL EXCEEDING THE LEVEL OF CONCERN.**



How Lead Enters and Affects Our Bodies

- **Damage to Brain**
- **Behavior & learning problems; hyperactivity**
- **Slowed growth.**
- **Hearing Problems.**
- **Headaches**

EFFECTS OF LEAD

ADULTS CAN SUFFER FROM LEAD:

- DIFFICULTIES DURING PREGNANCY**
- REPRODUCTIVE PROBLEMS**
- HIGH BLOOD PRESSURE**
- DIGESTIVE PROBLEMS**
- NERVE DISORDERS**
- MEMORY AND CONCENTRATION**
- MUSCLE AND JOINT PAIN**

LEAD-BASED PAINT



LEAD-BASED PAINT

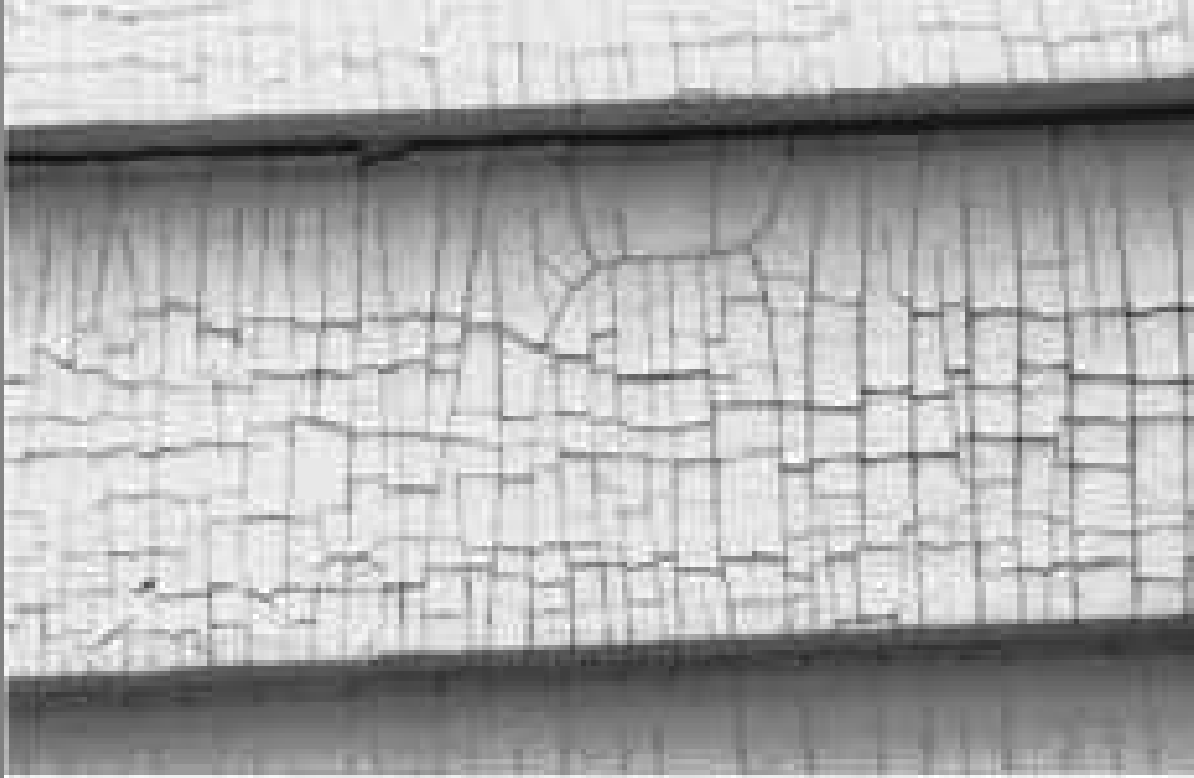


LEAD-BASED PAINT



**LEAD-BASED
PAINT WAS
USED IN A
VARIETY OF
HOUSING; FROM
RESIDENTAL
HOMES TO
HIGH-RISE
APARTMENT
BUILDINGS.**

LEAD-BASED PAINT



‘ALLIGATORING’ OF AGING LEAD-BASED PAINT

LEAD-BASED PAINT

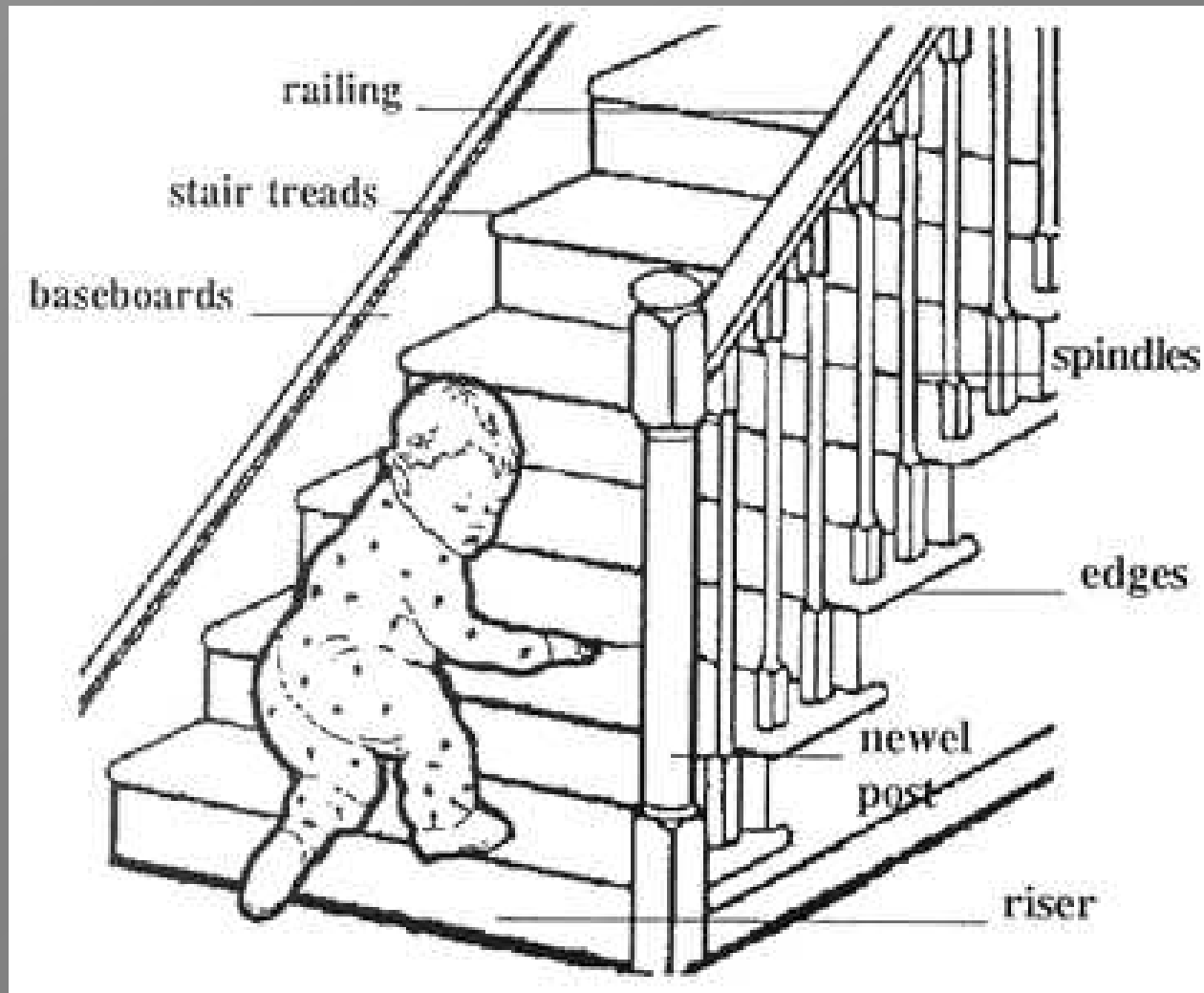


‘BLISTERING’ OF AGING LEAD-BASED PAINT

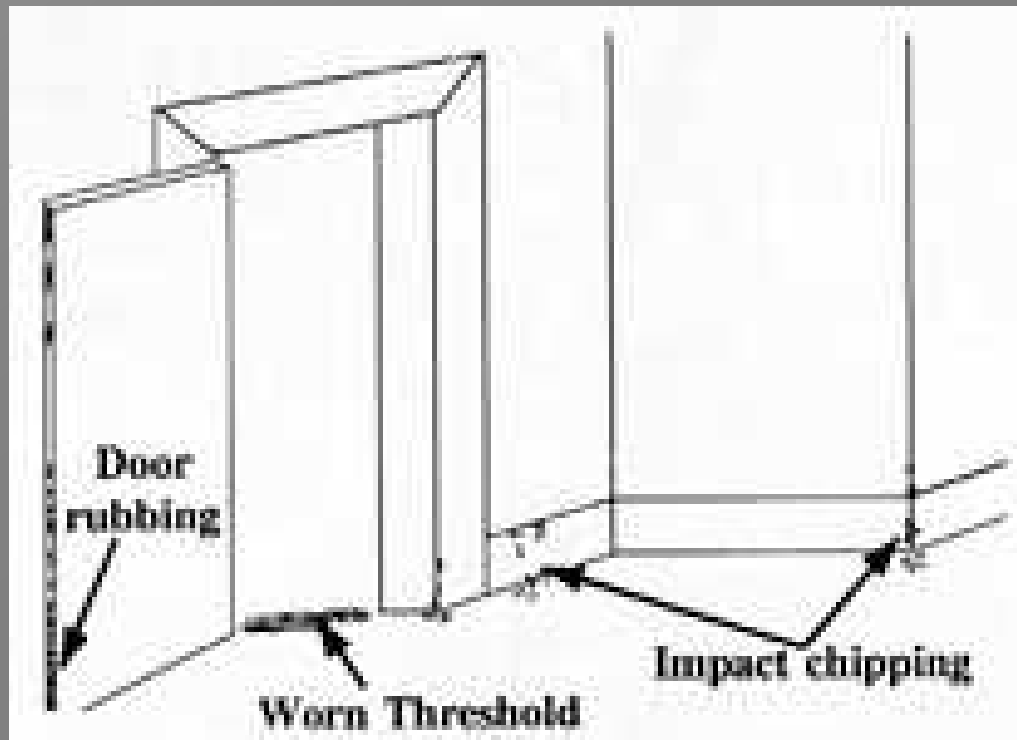
LEAD-BASED PAINT



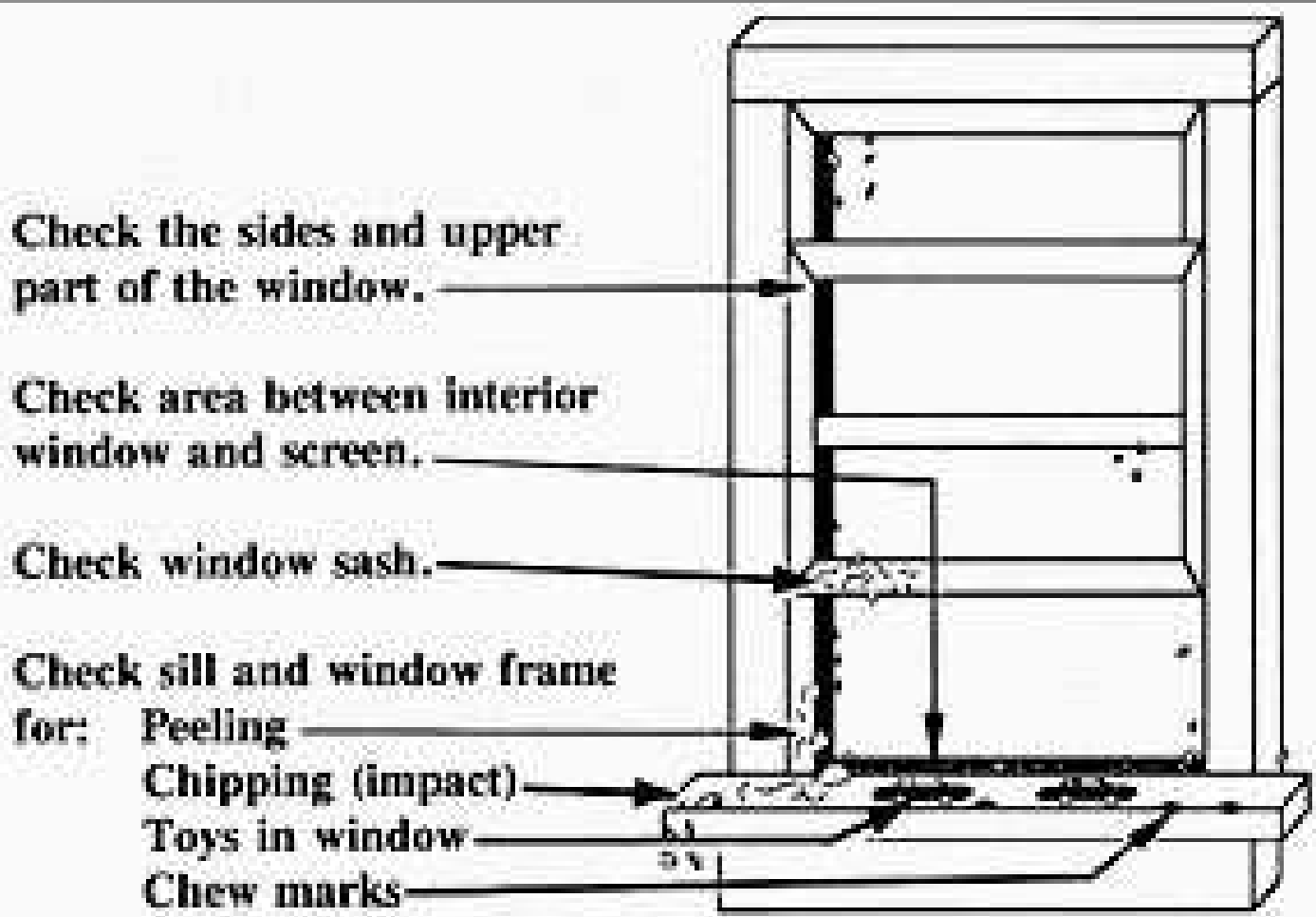
LEAD-BASED PAINT



LEAD-BASED PAINT



LEAD-BASED PAINT



SOURCES OF LEAD

- **LEADED PAINT**
- **SOIL**
- **DUST**
- **DRINKING WATER**
- **PARENTAL OCCUPATIONS AND HOBBIES**
- **AIR**
- **FOOD**
- **FOLK-CURE MEDICATIONS.**
- **VINYL MINIBLINDS**
- **POTTERY**
- **LEADED GLASS**

SOURCES OF LEAD

- **ETHNIC HOME REMEDIES:**
- **“GRETA” & “AZARCON” FOR UPSET STOMACHS.**
- **“PAY-LOO-AH” A RED POWDER USED TO TREAT SKIN RASHES**
- **PUTTING LEAD INTO THE BODY IS DANGEROUS!**

SOURCES OF LEAD

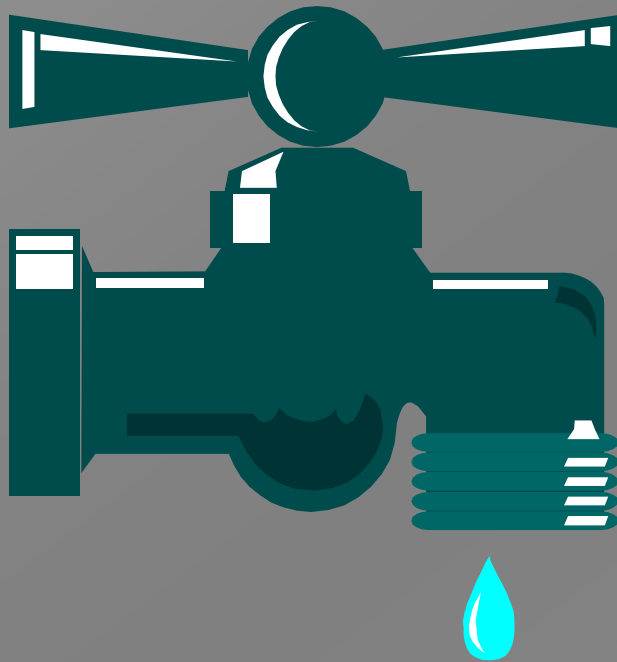
PICA BEHAVIOR

**IS THE REPEATED INGESTION
OF NONFOOD SUBSTANCES
AND HAS BEEN IMPLICATED IN
LEAD-POISONING.**

LEAD-BASED PAINT



SOURCES OF LEAD



- **USED IN FIXTURES, PIPES & SOLDERING AND CAN LEACH INTO WATER.**

- **SAFE DRINKING WATER ACT OF 1986 AND 1988 RESTRICTS THE USE OF LEAD IN PLUMBING FIXTURES.**

SOURCES OF LEAD



**•SUNLIGHT & HEAT
CAN BREAK DOWN
SOME VINYL
MINIBLINDS,
RELEASING LEAD
DUST.**

**•LOOK FOR “NEW
FORMULATION,”
“NON-LEADED
FORMULA,” OR “NEW
NON-LEADED VINYL.”**

SOURCES OF LEAD



- **OIL COMPANIES USED TO ADD LEAD IN GASOLINE TO STOP ENGINE KNOCK.**
- **LEAD REDUCED IN 1978 BY THE EPA.**
- **AN ESTIMATED 4 - 5 MILLION METRIC TONS OF LEAD FROM GAS STILL IN THE ENVIRONMENT.**

SOURCES OF LEAD



**REMODELING CAN
INTRODUCE LEAD DUST
INTO THE FACILITY.**

**WHICH IS THEN PICKED
UP ON THE HANDS OF
THE CHILD AND
INGESTED.**



TESTING FOR LEAD

- AN **'AT RISK' CHILD** SHOULD BE TESTED AT 6 MONTHS OF AGE. REPEAT EVERY 6 MONTHS UNTIL AGE 2. AFTER 2, HAVE CHILD TESTED ONCE A YEAR UNTIL AGE 6.
- A CHILD THAT IS **'NOT AT RISK'** SHOULD BE TESTED FOR THE FIRST TIME AT AGE 1 AND AGAIN AT AGE 2.

TESTING FOR LEAD

- A SIMPLE **BLOOD TEST** CAN DETERMINE THE PRESENCE OF LEAD IN THE BODY.
- YOUR PHYSICIAN OR THE LOCAL HEALTH DEPARTMENT CAN TAKE THIS BLOOD SAMPLE.
- A CHILD SHOULD NOT HAVE MORE THAN **10 µg/dL** BLOOD-LEAD LEVEL.

TESTING FOR LEAD

- **10 - 14 $\mu\text{g}/\text{dL}$**

**RESCREEN; START
PREVENTION.**

- **15 - 19 $\mu\text{g}/\text{dL}$**

**DETERMINE SOURCE
AND DIET ADVICE.**

- **20 - 44 $\mu\text{g}/\text{dL}$**

**MAY NEED MEDICAL
TREATMENT.**

- **44 $\mu\text{g}/\text{dL}$ +**

**SERIOUS POISONING,
SEEK IMMEDIATE
MEDICAL CARE**

TESTING FOR LEAD



**PRESENCE OF
LEAD-BASED
PAINT CAN BE
TESTED FOR
WITH A VARIETY
OF
INEXPENSIVE
TEST KITS.**

TESTING FOR LEAD



**CANNOT
DISCRIMINATE
BETWEEN HIGH
AND LOW
LEVELS OF
LEAD;
REQUIRES
ADDITIONAL
TESTING.**

TESTING FOR LEAD



- **X-Ray Fluorescence Analyzer uses radiation to check for lead.**

- **Military personnel use a portable XRF gun to measure the lead content of the paint.**

TESTING FOR LEAD



- **X-Ray Fluorescence Analyzer uses radiation to check for lead.**
- **Lead Inspector uses a portable XRF gun to measure the lead content of the paint.**

ABATEMENT

- **THE PROCEDURE(S) THAT ELIMINATES LEAD OR LEAD-BASED PAINT HAZARDS.**

- **FOUR TYPES OF ABATEMENT:**

- **REMOVAL**

- **REPLACEMENT**

- **ENCLOSURE**

- **ENCAPSULATION**

LEAD-BASED PAINT



ABATEMENT BY REPLACEMENT

LEAD-BASED PAINT



ABATEMENT BY REMOVAL

ABATEMENT

- **REMOVAL OF LEADED-PAINT IN AN OCCUPIED DAYCARE CENTER REQUIRES THAT A LICENSED CONTRACTOR DO THE WORK.**

- **ACCORDING TO THE MISSOURI BUREAU OF CHILD CARE SAFETY AND LICENSURE, LEADED-PAINT IN GOOD CONDITION IS NOT CONSIDERED A HAZARD.**

ABATEMENT

ENCLOSURE:

**LEAD-PAINTED
SURFACE IS
COVERED WITH
PANELING,
WALLBOARD, OR
OTHER APPROVED
MATERIAL TO
PREVENT LEAD
DUST FROM BEING
RELEASED.**



ABATEMENT



ENCAPSULATION:

A LEAD-PAINTED SURFACE IS COATED WITH A SPECIAL LIQUID PAINT THAT HARDENS AND PREVENTS LEAD DUST FROM BEING RELEASED.

PREVENTION

- **TEACH CHILDREN TO HANDWASH BEFORE THEY EAT OR SLEEP.**
- **WASH TOYS, BOTTLES, AND PACIFIERS OFTEN.**
- **KEEP HOME DUST-FREE BY WET MOPPING.**
- **TEACH CHILDREN TO PLAY IN THE GRASS, NOT IN THE DIRT.**



PREVENTION

- **MAKE SURE CHILDREN EAT AT LEAST THREE MEALS A DAY.**
- **LESS LEAD IS ABSORBED WHEN CHILDREN HAVE FOOD IN THEIR SYSTEMS.**
- **AVOID FRIED AND FATTY FOODS THAT ALLOW LEAD ABSORPTION.**



PREVENTION

- GIVE FOODS HIGH IN CALCIUM AND IRON.
- THE BODY CAN MISTAKE LEAD FOR THESE MINERALS.
- A DIET LACKING PROTEIN, ZINC, AND VITAMIN C MAY ALSO RESULT IN INCREASED LEAD ABSORPTION.



PREVENTION



- **WASH TOYS, BOTTLES, & PACIFIERS.**
- **STUFFED TOYS HOLD DUST & SHOULD BE WASHED OFTEN.**

PREVENTION

- MORE LEAD WILL LEACH INTO HOT WATER FROM PLUMBING, SO COOK WITH OR DRINK COLD WATER.
- BOILING WATER WILL NOT GET RID OF LEAD.
- OLDER WELL PUMPS WITH BRASS OR BRONZE MAY CONTAIN LEAD.

