



MERCURY POISONING:

CLINICAL SIGNS AND SYMPTOMS

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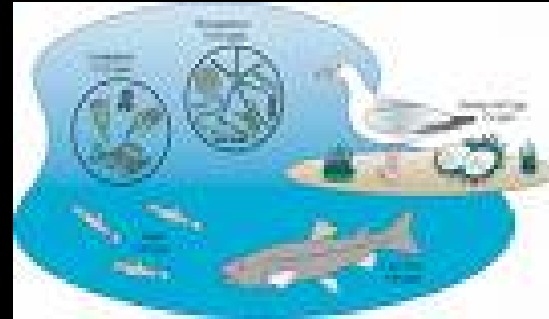
Introduction

- Only metal in liquid state at room temperature.
- Toxic to humans in both liquid and vaporized state.



HUMAN EXPOSURE

- Aquatic food chain



- Fungicides used on seeds



Human exposure.....contd

- **Inhalation** ---- from working environment

Burning waste

Burning coal in power plants

Industries:

Chlor alkali

Cathodes in distilleries

Making of scientific instruments

Hat , Fur , Felt industry



Human exposurecontd

- **Dentistry**--- amalgams



- Drinking water & atmosphere---min
- **Broken** fluorescent **bulbs** & **thermometers**
- Skin whitening **creams**
- **Thiomersal**---preservative in **vaccines** (still used in flu tetanus & other non-childhood vaccines in U.S)

Human screening tests for mercury

1. URINE TEST :

24 hr collection better than spot test

normal value---- less than 5ugm/g of creatinine

occupational limit----less than 35ug/g creatinine

2. BLOOD TEST:

normal value----less than 8ug/L

occupational limit-----less than 15ug/L

Human Screening.....contd

3. HAIR ASSAY:

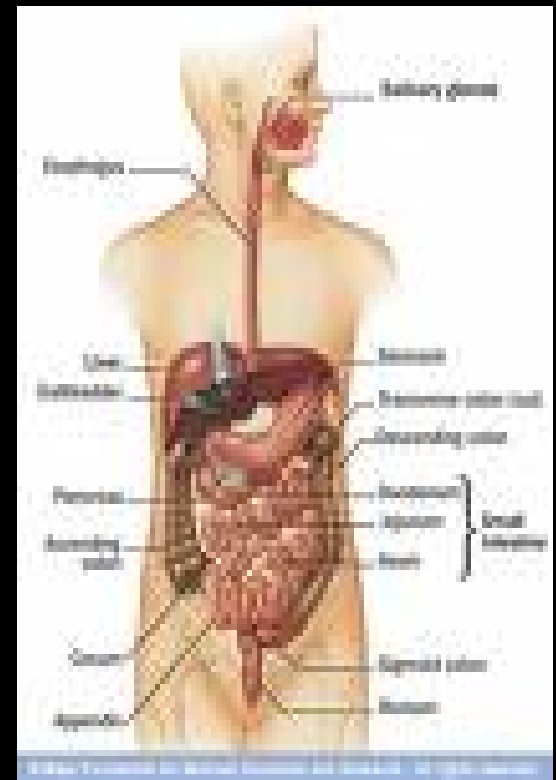
Most reliable if properly performed

Normal value-----less than 15 ug /g

TOXICOKINETICS

Liquid mercury

- slow absorption from gut.





Vapors

Absorbed in lungs

Dissolves in blood

Diffuses in all tissues

Accumulates in blood , kidney
brain , CNS

Excretion mainly through stool

EFFECTS IN PREGNANCY



- Mercury crosses placenta to reach fetus
- Concentration in fetal tissues is twice that of maternal tissue
- It is 30 % higher in fetal RBCs

- **LACTATION:**

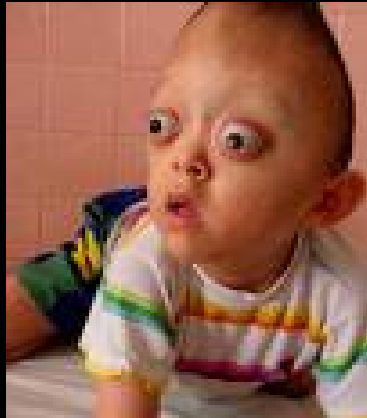
Mercury is **secreted in mothers milk**. Its concentration is 5% of maternal blood.



BIRTH DEFECTS

CAUSED BY

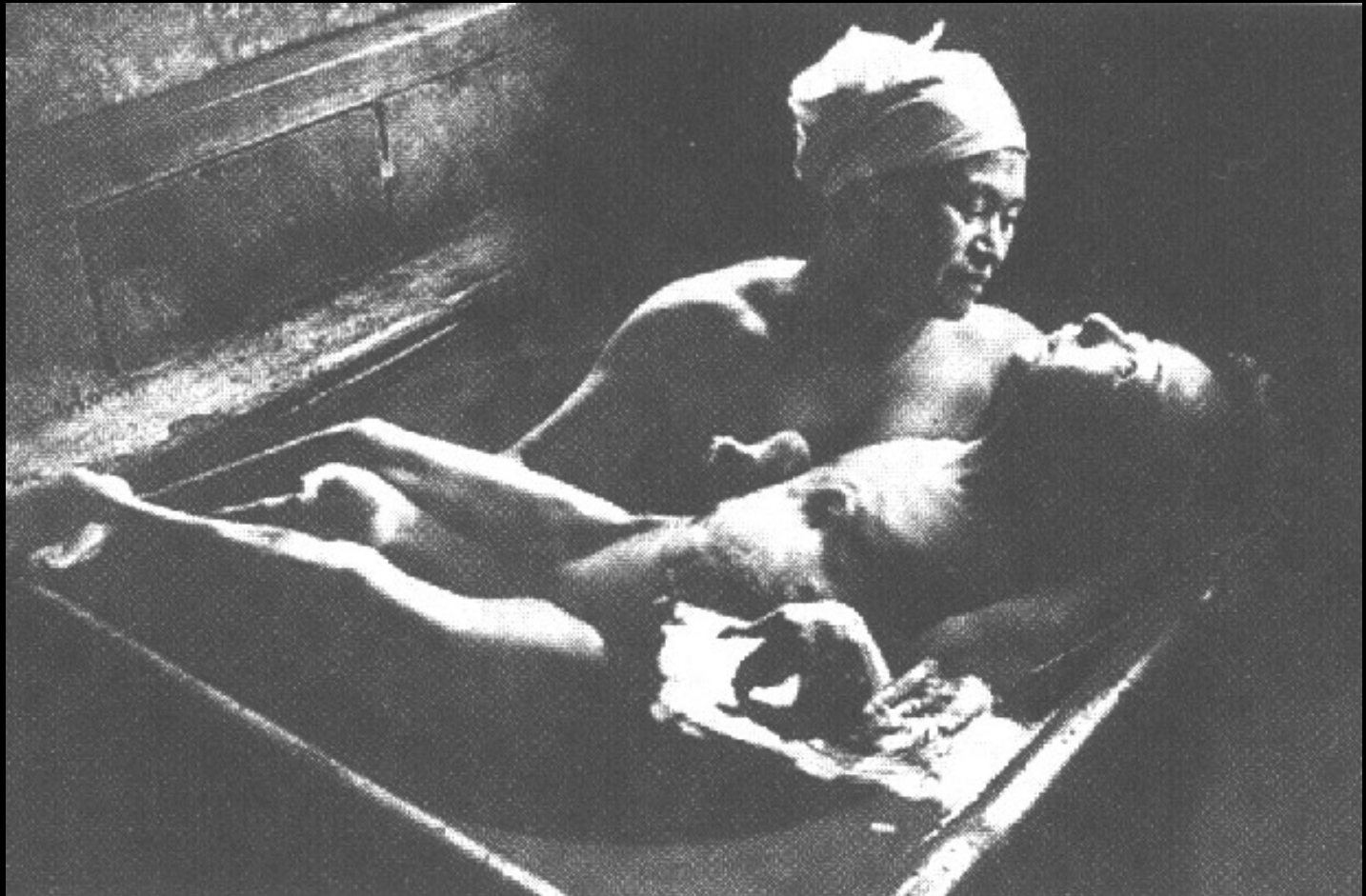
MERCURY



Acrodynia
caused by
Mercury



CLASSICAL CASE OF ACRODYNYIA



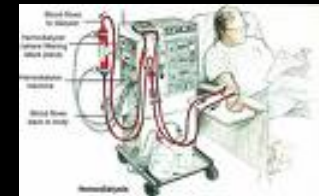
ACUTE MERCURY POISONING

○ INGESTION

Burning sensation in throat
Discoloration/swelling mouth
Severe abdominal pain
Vomiting
Bloody Diarrhea



Acute renal failure / shut down

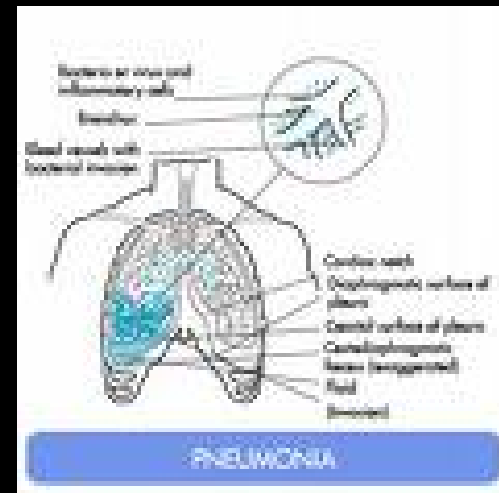


Tremors & excitability



○ INHALATION

Ac. corrosive bronchitis and
pneumonitis



CHRONIC MERCURY POISONING

- MAINLY CNS SYMPTOMS (asthenic vegetative syndrome)

Tremors-----Gingivitis----- Excitability
Behavior changes
Memory Loss

- Demographism
- Thyroid enlargement
- Blood changes
- Catastrophic birth defects



MANAGEMENT



- Remove patient from toxin site.
- Remove ingested mercuric salts by stomach washing & activated charcoal.

Pharmacological Management:



- Diamercaprol ---- at once
- DMSA --- 10 mg/kg orally for 5 days
then every 12 hrs for
2weeks
- UNITHIOL ---- Not freely available
- Maintain good kidney function.



LAST BUT NOT THE LEAST

PREVENT MERCURY POISONING
BEFORE IT OCCURS