Do You Know What's In Your Water?

Presented by the Paterson Youth Council

Paterson Youth Council

- We are a group of 30 high school students, who are part of year long leadership development program.
- We do a lot of community service work, and this year we are focusing on educating our peers about lead in the water.
- We are grateful to our friends from State Farm and the Youth Advisory Board for providing us with the resources to make this entire project possible.
- Later on we will provide you with more information on who we will be making our presentation to.

Our Journey

- Last year, members of the PYC helped to come up with the plan for water testing.
- In October, this year's PYC class began to learn about the dangers of lead in the water, and started to understand the dire situation for Paterson.
- Beginning in December PYC targeted over 100 different homes to test for lead levels in their water.
- After receiving the results we created this report and will disseminate the information to the residents of Paterson.

What Is Lead?

- Lead is a naturally occurring element in the earth, and is commonly found with other naturally occurring elements such as gold, iron and silver.
- Because lead is so abundant in the earth and because it is so easy to work with, lead has been used extensively in many products such as paint, ceramics, gasoline, pipes, solders, jewelry and cosmetics.
- Since the 1980's the government has regulated the use of lead in household and worksite products to significantly reduce or eliminate the risk of exposure.

How Is Lead Harmful?

- Lead exposure leads to accumulations of lead in your body over time, and even small doses of lead can produce serious health effects.
- Unlike many other elements, lead does not naturally leave your body once you have consumed or breathed it in.
- The effects of lead poisoning are varied based on age, gender and the overall amount that you have been exposed to. Also, the effects of lead poisoning can vary greatly based on these same factors.

What Are The Harmful Effects Of Lead?

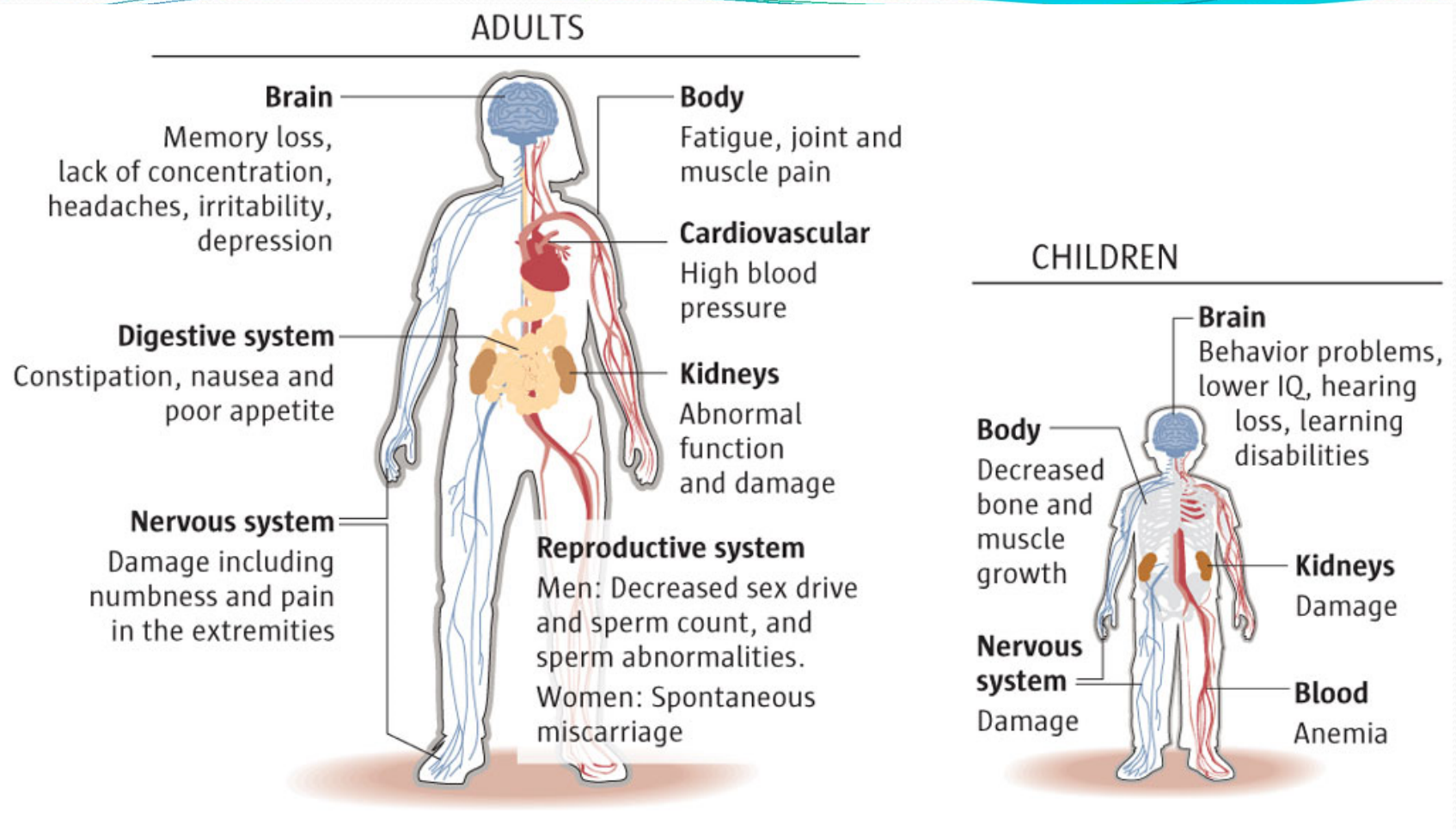
- Hearing impairment; auditory sensitivity decreased
- Aggression, violence, hostility, anti-social or delinquent behavior
- Hyperactive behaviors
- Fine motor dysfunction
- Constipation, diarrhea, anemia
- Renal disease
- Miscarriage, still birth, neonatal death
- Death

How Does Lead Affect Children?

- Children are at the highest risk of developing lead poisoning, as it takes a lesser exposure to produce noticeable effects. Some of the effects include:
  - Behavior and learning problems
  - Lower IQ and Hyperactivity
  - Slowed growth
  - Hearing Problems
  - Anemia
- For children, any level of exposure to lead can lead to these problems so it is important to get children tested and eliminate their risk of exposure.

How Does Lead Affect Adults?

- Lead can accumulate in our bodies over time, where it is stored in bones along with calcium. This buildup of lead can result in the following:
  - Reduced growth of the fetus in pregnant mothers
  - Premature birth in pregnant mothers
  - Cardiovascular effects, increased blood pressure and incidence of hypertension
  - Decreased kidney function
  - Reproductive problems (in both men and women)


ADULTS
Brain
Memory loss, lack of concentration, headaches, irritability, depression
Body
Fatigue, joint and muscle pain
Cardiovascular
High blood pressure
Digestive system
Constipation, nausea and poor appetite
Kidneys
Abnormal function and damage
Nervous system
Damage including numbness and pain in the extremities
Reproductive system
Men: Decreased sex drive and sperm count, and sperm abnormalities.
Women: Spontaneous miscarriage
CHILDREN
Brain
Behavior problems, lower IQ, hearing loss, learning disabilities
Body
Decreased bone and muscle growth
Kidneys
Damage
Nervous system
Damage
Blood
Anemia

How Does Lead Get in Drinking Water?

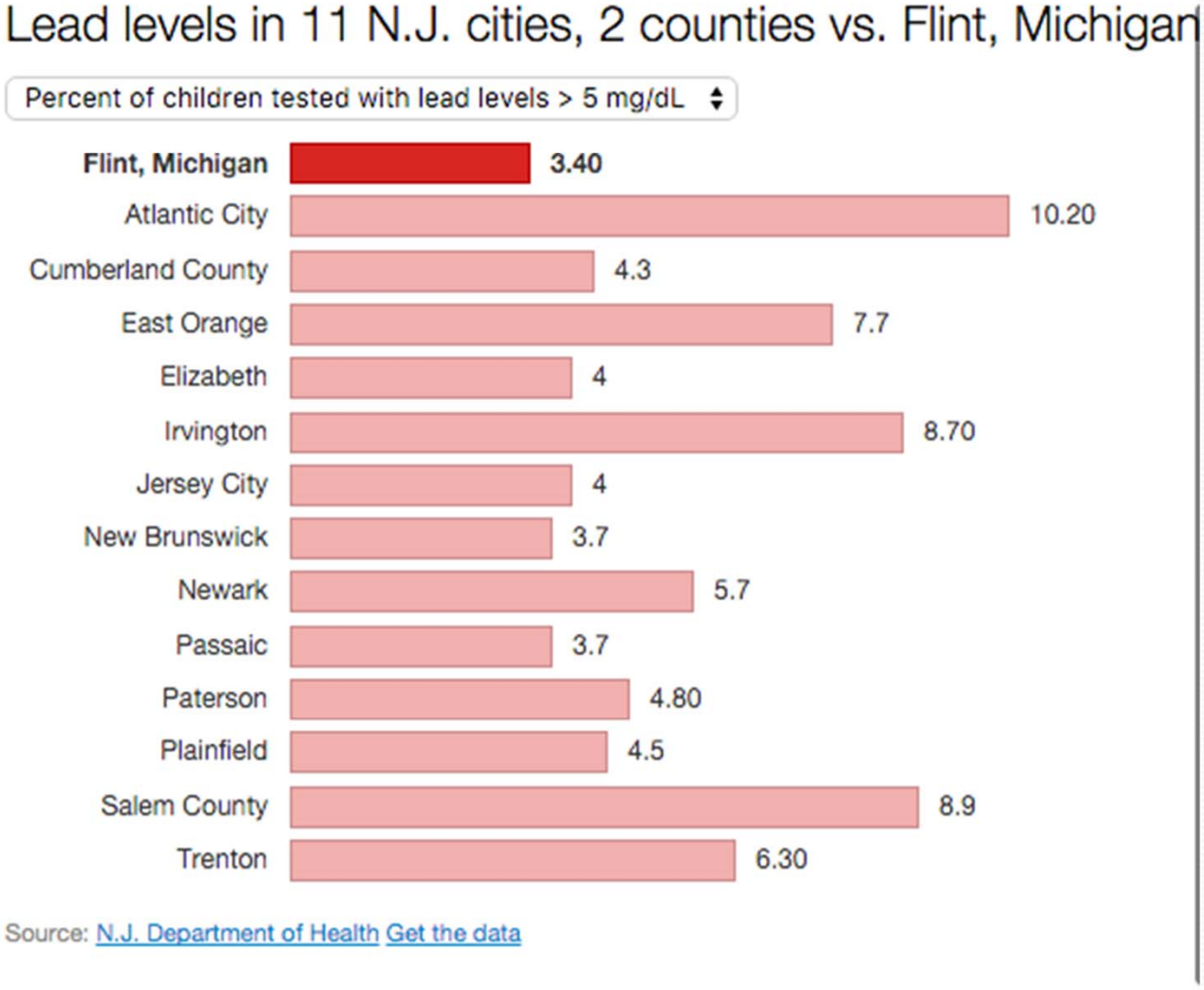
- Lead can enter into our drinking water due to the corrosion of plumbing, pipes and fixtures.
- This usually occurs when water has either high acidity or low mineral content which leads to the corrosion of pipes, solder and other fixtures.
- Homes built before 1986 are at a much higher risk for having lead pipes and other fixtures, but even “lead free” homes may have water that is contaminated with lead.

EPA's Drinking Water Requirements

- The EPA's goal for drinking water is to have zero lead in drinking water.
- The standard for lead in drinking water is set at 15 parts per billion. Anything higher than this is considered to be above the safe levels and further action should be taken to avoid and reduce the exposure to lead.
- The EPA has created the Lead and Copper Rule under the Safe Drinking Water Act that requires corrosion control to prevent lead and copper from contaminating drinking water.

How to Test for Lead

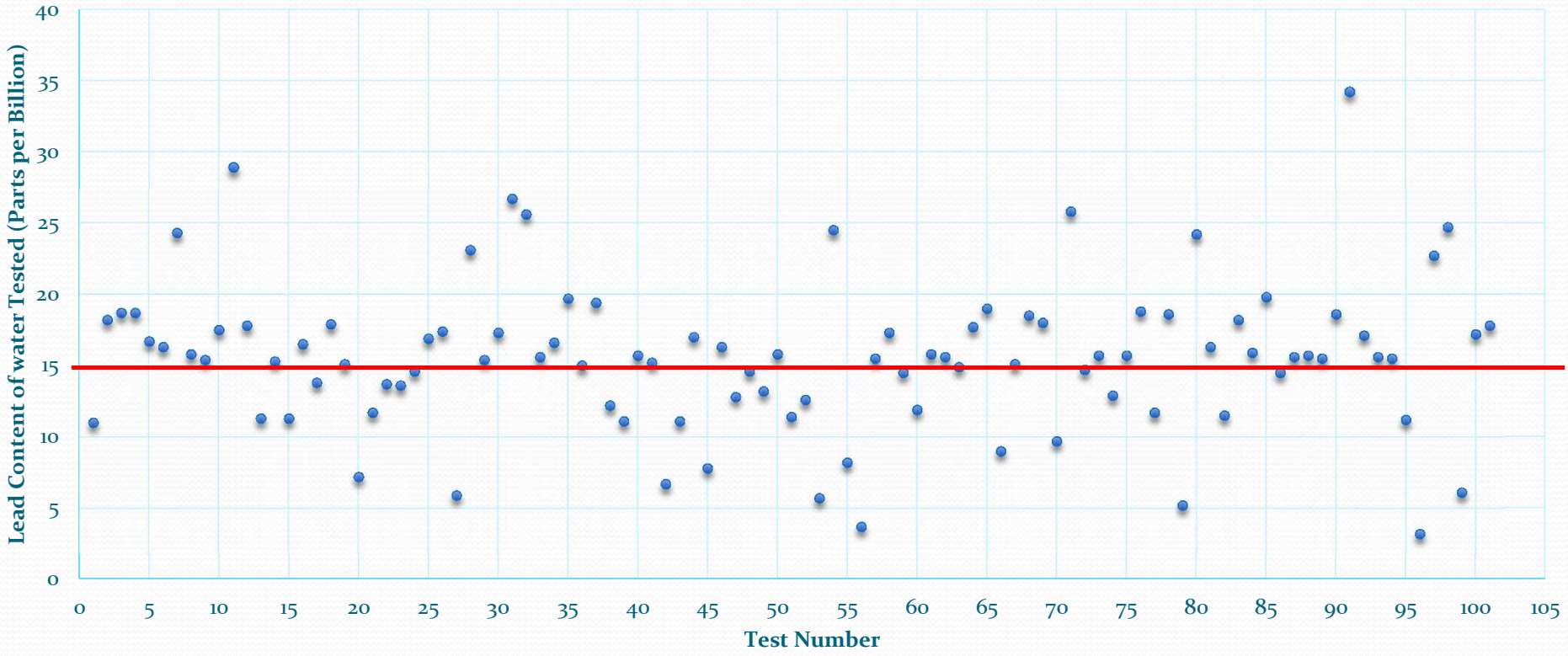
- Since you cannot see, taste, or smell lead dissolved in water, testing is the only sure way of telling whether there are harmful quantities of lead in your drinking water.
- Testing kits generally cost between $20-$100 but can be received for free
- The test itself should be done using cold water after the water has not been used for at least 8 hours. This testing can usually be done first thing in the morning or in the afternoon, when returning home from work.


Lead levels in 11 N.J. cities, 2 counties vs. Flint, Michigan
Percent of children tested with lead levels > 5 mg/dL
Flint, Michigan 3.40
Atlantic City 10.20
Cumberland County 4.3
East Orange 7.7
Elizabeth 4
Irvington 8.70
Jersey City 4
New Brunswick 3.7
Newark 5.7
Passaic 3.7
Paterson 4.80
Plainfield 4.5
Salem County 8.9
Trenton 6.30
Source: N.J. Department of Health Get the data

Paterson's Water Data

- PYC Members tested 101 homes within Paterson to determine the levels of lead in the water.
- Of these homes 63 tested positive for high levels of lead, or 62.4% of the homes tested. (Homes with 15 parts per billion or higher).
- The average lead levels of all homes tested was 15.59 parts per billion.
- The highest level tested was 34.2 parts per billion

Paterson's Water Data Continued:



Possible Solutions

- Update Paterson's aging infrastructure to replace all pipes and fixtures around the city that are made of lead. This solution would be extremely costly for the city and for homeowners.
- Install water filters in all homes and businesses throughout Paterson to ensure that water has been properly filtered prior to use. Again, this is a costly solution and would be difficult to enact on such a large scale.
- A final solution is a public awareness campaign to inform the public of ways that they can reduce their exposure to lead in their drinking water.

Water Filters

- Contrary to common belief not all water filters remove all contaminants in your water.
- Water filters for lead have to SPECIFICALLY say they help reduce the lead levels.
- Popular brands that do this are Brita($21 at target) and Pur ($14 at target) filters.

What Can You Do?

- Get your home water tested to determine if you have high levels of lead in your water.
- Never cook or drink using hot water, as lead can build up in hot water heaters, and cause an increase of lead in drinking water.
- Install water filters on faucets or only drink water that has been filtered prior to use. (Devices that are not designed to remove lead will not reduce the amount of lead in your water
- Run your faucets on cold for between 30 seconds and 2 minutes to “flush” lead water out of your pipes. (The longer water sits in pipes, the higher the lead levels will be.)
- Find out if your child’s school has elevated levels of lead in their water and push your child to drink bottled water whenever possible.

Common Myths

- Boiling your water prior to consumption will reduce the lead in your water.

Myth: this will actually increase the lead in your water, as lead does not evaporate.

- Replacing part of your water system will reduce the lead in your water.

Myth: this can actually lead to an increase in lead in your water, as the disruption caused by the work can disturb lead in pipes.

- Children are the only ones affected by lead poisoning.

Myth: prolonged exposure can lead to many health concerns for adults as well.

- If your water meets the EPA's minimum standards it is safe to drink.

Myth: there is no safe level of lead for children. Even small amounts of lead exposure over a prolonged amount of time can lead to health concerns.

What's Next—Getting Tested

- Get your home and family tested.
- Even if you do not have lead in your water there are many other ways to be exposed to lead, and the only way to remedy the situation is to know that there is a problem.
- Tests can be received from the Passaic Valley Water Commission.
- These results will tell you whether your home water has elevated levels of lead.

What's Next—Speak With Officials

- Speak to your elected officials and let them know that you are outraged that more children in Paterson have high levels of lead in their blood than children in Flint.
- This information comes directly from an in depth investigative report from NJ.com

What's Next—Limit Lead Exposure

- Take the necessary steps to ensure that your exposure to lead is limited.

What's Next—Spread the Word

- Spread the word. Let your friends and family members know that this is a problem and they need to take action to prevent lead poisoning in those they care about.

Lead in School Water—Is it Fair?

- The lead levels in our schools and our homes are higher in Paterson than other towns.
- This begs the question: Is it fair that children in Paterson are exposed to more lead than children who live in neighboring towns?
- Paterson has a higher level of special needs children than most other districts. Lead is not necessarily the reason for the high amounts of special needs children but it is not fair that children in Paterson are exposed to high levels of lead in the water.
- Our research during this project helps us to understand that this is an issue that everyone, not just Paterson residents, should care about.

Sources

- https://www2.ed.gov/fund/data/report/idea/partbspap/2013/nj-acc-stateprofile-11-12.pdf
- http://acnj.org/downloads/2015_12_10_paterson_kids_count.pdf
- http://www.nj.com/news/index.ssf/2016/02/11_cities_in_jersey_have_more_lead-affected_kids_t.html
- http://www.vox.com/2016/1/21/10811004/lead-poisoning-cities-us
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