

Would a Health Study Be Useful For The Hamden Newhall Street Neighborhood?

BACKGROUND



The Newhall neighborhood is an 11-block area located in the southern portion of Hamden, Connecticut. Beginning in the early 1900s, domestic and industrial waste was disposed in wetlands and other low spots throughout the area. Many of the homes in the neighborhood were built on top of landfill waste. Many residents in the Newhall St. neighborhood are concerned about whether the landfill contamination has caused health problems. Some have asked for a health study. Concerns about health and the landfill contamination are very reasonable, and it is also reasonable to want a health study. However, it is very difficult for health studies to find a link between exposure to environmental contamination and health problems. In fact, out of hundreds of health studies conducted around hazardous waste sites in the U.S., only a handful have found a possible connection between the pollution and health problems. Therefore, it is very important to look at the situation carefully before making a decision to do a health study.

The purpose of this fact sheet is to help you understand:

- What has to be considered before deciding to do a health study,
- Why it is so difficult to link exposure to environmental contamination and illness,
- What a health study can and cannot tell you.

“The DPH Rules of the Road:”

- ⇒ DPH is required to use accepted science-based methods when we look at health risks.
- ⇒ When DPH looks at environmental data, we use guidelines that are most protective of health to make our decisions and recommendations.
- ⇒ **Just because we may not be able to say that illnesses are caused by exposure to contaminants, it does not mean the community should not be concerned or work to clean up the site. Preventing exposures is very important!**



WHAT ARE THE MAIN QUESTIONS IN DECIDING WHETHER A HEALTH STUDY WOULD BE USEFUL?

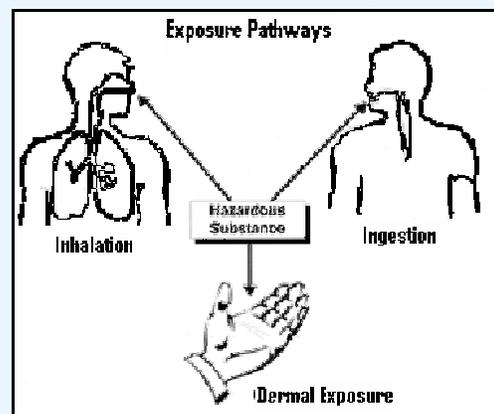
1. Is there contamination?

We must have evidence that there is contamination in the area. We must have environmental samples that tell us the amounts and the extent of the contamination.

2. Are people being exposed to the contamination? Were they exposed in the past?

It is very important to understand what being exposed means:

- “**Exposure**” means that you have come into contact with a chemical (breathing, eating, touching), and it has gotten into your body.
- If you are **not exposed** to a chemical, **it can't make you sick**. If this is true, a health study would not be useful.



3. Have people been exposed to levels that are high enough, and time periods long enough, to cause disease?

Even if people are exposed, they may not get sick. Exposure must be at high enough levels, for a long enough period of time, to cause disease.

4. Are enough people exposed at high enough levels that a health study could find the increases in illnesses? Are there other causes for the illnesses?

In order to have any chance of finding a link between an environmental exposure and a disease, there has to be enough people exposed at high enough levels. Then, the study may be able to sort out which people got the disease because of their exposure and which people got the disease because of other reasons. For most diseases, environmental exposures are only one of many possible causes. For example, lifestyle issues such as diet, exercise, smoking and genetics can be linked to many of the diseases of interest at hazardous waste sites. These other factors confuse our ability to find a link between exposure to an environmental contaminant and disease.

5. Has enough time passed for diseases to show up?

Many diseases that may be related to chemical exposures take a long time to develop and be diagnosed by a doctor. This time between exposure and the development of disease is called the *latency period*. Most cancers have a *latency period* of 10 years or more.

6. Is there a recognized group or “cluster” of a specific type of disease in the area that should be investigated?

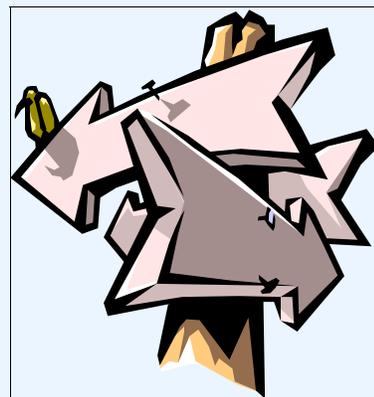
One reason for conducting a health study is to look into whether there is a high number of cases of a certain disease in an area. Often, the main concern is cancer. A “cluster” may be suspected when a greater than expected number of one type of disease (like one type of cancer) is found within a small area and within a short period of time. It is very rare for scientists to find real clusters of disease, and even rarer to find clusters that are connected to environmental exposures.

7. Is it scientifically possible that exposure to the chemicals of concern could cause the health problems people are worried about?

Different chemicals may cause very different diseases. Other chemicals may or may not cause the diseases that people are concerned about. It is important that scientific information exists to show a link between a chemical and a disease. This is called **biological plausibility**. For example, there is no recognized connection between lead exposure and diabetes. In other words, it has to make sense scientifically before we can decide to do a health study.

8. Is there background information on the diseases that people think might be related to the contamination?

We need background data to compare the numbers of recognized diseases among exposed people in the area with the numbers of diseases among people who are not exposed. For example, when we look at cancer, we use background cancer rates for the state. A major problem is that background numbers are not reported for many diseases, such as developmental disabilities and diabetes. This makes it very difficult to study the possible connection between chemicals and most diseases.





WHAT ARE THE STEPS WE TOOK IN HAMDEN TO DECIDE WHETHER A HEALTH STUDY WOULD BE USEFUL?

To decide whether a health study was justified in Hamden, DPH took the following steps, using the questions described previously.

1. Is There Contamination?

First we looked at the environmental sampling data to see if contamination is or was present. Sampling results show that contamination is present in surface soil and soil beneath the surface. The primary contaminant is **lead**. **Arsenic** and **polycyclic aromatic hydrocarbons (PAHs)** are also present in many samples.

2. Was There Exposure?

Next we evaluated whether people could be exposed to the soil contamination. The answer is yes, adults and children could be exposed to contaminants in the soil now and in the past.

3. Was There Enough Exposure? To Enough People?

Yes and No. *In the past, children living in some homes could have been exposed to lead in the soil at levels that could have caused health symptoms.* But we do not think very many children were exposed to lead levels high enough to cause health symptoms. Exposure to adults is not likely high enough to have caused illness now or in the past. Other contaminants such as arsenic and PAHs are not high enough to cause illness in adults or children now or in the past.

4. Is There Enough Background Informa- tion to Study Lead Exposure?

No. We were not able to find children that were exposed to high levels of lead in the past, before recordkeeping began. We also do not have infor-

mation on the background numbers of children with symptoms such as slower learning and reduced growth. Thus, we have no way of measuring what the background numbers of these symptoms are in the neighborhood, without lead exposure. Without comparison information, there is no way to evaluate whether there has been an increase or decrease in symptoms of lead exposure that could be associated with exposure to contaminated soil.

What About Lead?

Children with too much lead in their bodies for a long time can have slower learning, impairments in intelligence and reduced growth (lead impairs bone growth).

Pregnant women with too much lead in their bodies can have babies with low birth weight or prematurely born babies.

Children with very high levels of lead in their bodies for even a short time can have anemia, impaired kidney function, damage to brain function (hallucinations, paralysis, muscle tremors, coma), abdominal pain, and even death.

DPH and the Quinnipiac Valley Health District offered free blood lead screening to the community in 2004. No elevations in blood lead were found. Also, we reviewed all existing records of elevated blood levels in children in Hamden. We found no elevations that could be linked to lead in soil in the Newhall Street neighborhood.

5. Are there illnesses that many community members are concerned about?

Yes, many community members are concerned that rates of cancer, diabetes, and high blood pressure are higher in the Newhall St. neighborhood than elsewhere in Hamden.

It is quite possible that these illnesses are higher in the Newhall community but it is very unlikely that there is any link with the landfill. Lead exposure is not associated with cancer or diabetes. Some studies indicate that adults with high lead exposure may have higher blood pressure, but this link is not certain. In any case, we know that the only exposure likely to have occurred at high enough levels to cause health effects is lead exposure to children, but not adults. This is because children are more sensitive to lead exposure.



I THINK I UNDERSTAND, BUT I STILL HAVE QUESTIONS:

Why does there seem to be a lot of cancer, diabetes and high blood pressure in the Newhall neighborhood? If it's not the landfill, what is it?

It is probably true that there are a lot of these diseases in the neighborhood. Why is this? First, these are very common health problems, especially in areas with lots of older people, like this neighborhood. Besides age, there are many other **risk factors** for these and other diseases. **Risk factors** are things that can increase the chances of getting a disease. For example, the chart here shows risk factors for diabetes. Environmental exposures are not believed to be linked to diabetes.

Risk factors for diabetes include:

- | | |
|---------------------------------|--------------------|
| ⇒ ethnic background | ⇒ your age |
| ⇒ high blood pressure | ⇒ family history |
| ⇒ high cholesterol | ⇒ lack of exercise |
| ⇒ lack of access to health care | ⇒ diet |

Many people have asked about cancer and whether it may be related to the landfill. Here are some important facts to know about cancer:

- ⇒ First, it is very important to know that cancer is very common—it is estimated that **one out of every two or three people in the U.S. will be diagnosed with cancer.**
- ⇒ You should know that cancer is not just one disease. Different cancers are different diseases. There are many kinds of cancers found in the neighborhood.
- ⇒ Cancer is usually not caused by only one factor, but has many causes such as smoking, diet, exercise, heredity, and environmental exposures.
- ⇒ The risk factors for the development of one type of cancer (such as lung cancer and

smoking) are likely to be very different from the risk factors associated with another type of cancer (exposure to sunlight and skin cancer).

⇒ We might suspect environmental exposures if we see many cases of the same type of cancer.

⇒ Remember, for the 3 main contaminants at the landfill:

- Lead: not clearly associated with cancer
- Arsenic and PAHs: linked with cancer, but not at low levels found here.

If the risk factors for cancer, diabetes, hypertension and other diseases are more common among Newhall St. neighborhood residents, then the illnesses will be seen more often.

Why can't you just go door-to-door collecting health information from the neighborhood about cancer and other health problems?

That's a good question! In fact, the QVHD did do a door-to-door health survey last year. However, this survey was not able to determine whether neighborhood health problems could have been increased by environmental exposures.

In this fact sheet, we have shown you the steps to making the decision whether or not to do a study. In Hamden, we have made the decision that a health study would not be useful. Also, you should keep in mind that conducting a health study when it has been determined to be not useful may act to slow down the clean-up process and raise false hopes.

DPH has done health studies at other sites. Why not here?

Yes, this is true. However, at these sites, thousands of people were exposed to high levels of cancer-causing contaminants. Because of the magnitude of exposures, we determined that a health study would be useful.

The fact that so many people were exposed to such high levels made it much more likely that if there were an effect from exposure, the study would be able to detect it. However, none of the studies conducted by DPH have found links between site environmental exposures and health effects, such as cancer.



FOR MORE INFORMATION:



Meg Harvey
CT Dept. of Public Health
Telephone: (860) 509-7742
margaret.harvey@po.state.ct.us

Leslie Balch, Director of Health
Quinnipiack Valley Health District
Telephone: (203)-248-4528
lbalch@qvhd.org

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