

What to Know Before You Move In

Healthy Home Guide

To help buyers and renters move into a safe home, this guide provides information on:

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|-------------------|---------------------------|
| 1. Drinking water | 7. Carbon monoxide |
| 2. Septic systems | 8. Outdoor air quality |
| 3. Lead | 9. Power lines |
| 4. Radon | 10. Hazardous waste sites |
| 5. Asbestos | 11. Disease patterns |
| 6. Mold | |

Summary To-Do List:

✓ Ask the current owner about:

- Where the drinking water comes from (public water source or private well)
- Where the wastewater is treated (public sewer or on-site septic system)
- Pumping/inspection records for an on-site septic system (if applicable)
- Lead paint and age of the building
- Radon tests
- Building materials with asbestos
- Known water leaks or moisture problems
- Maintenance history of heating systems and fuel-burning appliances
- Known environmental hazards in the area

✓ Research environmental conditions:

- Drinking water quality
- Outdoor air quality
- Hazardous waste sites
- Nearby high-voltage power lines

✓ Consider testing your home for:

- Water quality (if private well)
- Lead
- Radon
- Asbestos (if needed)



Drinking Water



Where does my drinking water come from?

- Public water systems provide water to many people on a regular basis. They serve about 90% of Massachusetts residents.
- Other residents use a private well. Private wells provide water to fewer people (usually just one home).



Is my public drinking water safe?

By law, public water providers must regularly test the water for bacteria and contaminants. The Massachusetts Department of Environmental Protection (MassDEP) makes sure that providers meet stringent water quality standards.



Is my private well water safe?

Private wells can become contaminated from natural substances (e.g. bacteria, radon, arsenic), nearby industrial activities, landfills, urban runoff, or residential activities (e.g. fertilizers). Some toxic contaminants do not have a taste, smell, or color. The homeowner is responsible for testing the private well.



What can I do?

1. If the home has a public water source, look up water quality information:
 - Consumer Confidence Reports: <http://water.epa.gov/drink> or from your local water department or water provider.
2. If the home has a private well, test the water before you buy or rent the home. Find testing information from MassDEP at <http://www.mass.gov/eea/agencies/massdep/water/drinking/protect-your-family-a-guide-to-water-quality-testing-f.html>.



Where can I find more information?

1. Massachusetts Department of Environmental Protection:
 - 617-292-5770
 - www.mass.gov/eea/agencies/massdep/water/drinking/
2. U.S. Environmental Protection Agency:
 - Safe Drinking Water Hotline: 1-800-426-4791
 - <http://water.epa.gov/drink>

Septic Systems



What are septic systems?

About 1 of 4 homes in Massachusetts has an on-site wastewater system (septic system). Other homes are served by a public sewer. Septic systems use the soil in the leach field to treat and dispose of the home's wastewater.



What are the signs of a failing septic system?

It is the owner's responsibility to maintain and repair the on-site septic system.

Signs of a failing septic system include:

- Pooling of wastewater on ground surface (above leach field), especially after storms
- Lush, green growth on ground surface (above leach field)
- Sewage back-ups in the home, slow-draining toilets or drains, or sewage odors



What are the risks of a failing septic system?

A failing septic system can contaminate drinking water, spread disease, and harm the environment. It can also lower property value and be costly to repair.



What can I do?

1. Ask the owner if the home uses a septic system. (A home with a private well probably also uses a septic system.) If so:
 - Find out the location of the septic system and drainfield. Trees, cars, and water drainage (e.g. roof drains) should be kept away from the drainfield.
 - Ask for pumping/inspection records for the system. Septic tanks should be pumped out at least every 3 years or as required by local Board of Health.
 - Replace the septic system if necessary. Only a MA Professional Engineer (PE) or Registered Sanitarian (RS) can design a new system.
 - Call the local Board of Health (primary enforcement authority for septic systems) to ensure all septic-related Title V forms were filed and reviewed.



Where can I find more information?

1. MassDEP: <http://www.mass.gov/eea/agencies/massdep/water/wastewater/septic-systems-title-5.html>
EPA: <https://www.epa.gov/septic>
3. Contact the local Board of Health for septic system information.

Lead



How does lead affect health?

Lead is a metal that can damage the brain, kidneys, and nervous system. Young children and pregnant women are most vulnerable to the health effects of lead.



How could I be exposed to lead?

1. **Paint** in most homes built before 1978 contains lead. Chipped or peeling paint, or paint dust from renovations can cause lead exposure.
2. **Drinking water** can be contaminated from lead in 1) pipes or plumbing in the home, 2) the service line that connects a home to the water main in the street.
3. **Soil** can be contaminated with lead near old buildings with exterior lead paint, roadways (due to historic use of leaded gasoline), or industrial sources.



What can I do?

1. **Lead paint:**
 - The owner must tell you about any known lead paint hazards, inspections, and compliance information for pre-1978 homes. If the home hasn't been tested and was built before 1978, get the home tested.
2. **Drinking water:**
 - Get the water tested.
 - Ask the local water department about the home's service lines and service line replacement.
 - If you own the home, consider replacing leaded water pipes.
3. **Soil:** Get the soil tested or consider ways to reduce your exposure (e.g. using new soil for vegetables in pots and clean sand in a sandbox for outdoor play).



Where can I find more information?

1. EPA: www.epa.gov/lead
2. MDPH Childhood Lead Poisoning Prevention Program: 1-800-532-9571
 - www.mass.gov/dph/clppp
 - www.mass.gov/dph/lead-sources
3. MA Lead Law: <http://www.mass.gov/eohhs/gov/departments/dph/programs/environmental-health/exposure-topics/lead/lead/>
4. MA EPHT: https://matracking.ehs.state.ma.us/Health-Data/Childhood_Blood_Lead_Levels.html (see Community Progress Report)
5. MassDEP: www.mass.gov/eea/agencies/massdep/water/drinking/

Radon



What is radon?

Radon is an invisible, odorless, radioactive gas. Radon gas comes up from the ground and can seep into a home through cracks in the foundation. Inside a home, radon gas can get into the air you breathe and become trapped. Although most radon gas in a home comes from the ground, it can also become airborne from private well water in the home.



Am I being exposed to radon?

On average, 1 out of 4 homes in Massachusetts may have elevated radon air levels. Testing the air is the only way to know if a home has high radon levels. If a home does have high levels, there are ways to reduce the radon to safe levels.



Can radon affect my health?

Radon is the 2nd leading cause of lung cancer in the US after cigarette smoking. Your risk of getting lung cancer goes up if you are exposed to high levels of radon for a long time. The risk is much higher for smokers.



What can I do?

1. Ask the owner if the home has been tested for radon.
 - If so, ask for a copy of the results.
 - If not, test the home for radon in the air.
2. If air levels are high and you will use a private well, test the water.
3. Call the MDPH Radon Unit for information about testing and solutions.



Where can I find more information?

1. Massachusetts Department of Public Health
 - Radon Unit: 1-800-723-6695
 - Radon Fact Sheet: <http://www.mass.gov/eohhs/docs/dph/environmental/iaq/radon-fact-sheet-2016.pdf>
 - MA Environmental Public Health Tracking: <https://matracking.ehs.state.ma.us/Environmental-Data/radon/index.html>
2. U.S. Environmental Protection Agency
 - <https://www.epa.gov/radon>

Asbestos

What is asbestos?



Asbestos is a mineral fiber that has been used for insulation and fire protection in building materials. Asbestos can be found in certain vinyl flooring, shingles, textured paints, and insulation for walls, attics, ducts, and pipes. Homes built after the late 1970s usually have fewer materials with asbestos.

How could I be exposed to asbestos?



You could be exposed to asbestos if asbestos-containing material is disturbed or damaged. This can happen during construction, repairs, renovations, and product use. These activities can loosen the asbestos fibers which then get into the air and can be inhaled (breathed in).

Will asbestos affect my health?



Inhaling asbestos can lead to mesothelioma, lung and bronchus cancer, or lung disease. Your risk of disease goes up if you are exposed to high levels for a long time. The risk is higher for smokers.

What can I do?



1. Ask the owner if the home was inspected for asbestos.
 - If so, ask for a copy of the results.
 - If not, hire an asbestos inspector if there are damaged building materials or you are going to remodel. You do not need to have the home inspected if the materials are in good condition and won't be disturbed or damaged.
2. If there are damaged asbestos-containing materials, licensed asbestos professionals can do removals and repairs. Avoid the area and don't vacuum or sweep any debris.

Where can I find more information?



1. U.S. Environmental Protection Agency
 - <https://www.epa.gov/asbestos>
2. Massachusetts Department of Environmental Protection
 - <http://www.mass.gov/eea/agencies/massdep/air/programs/answers-to-common-asbestos-questions.html>
3. Massachusetts Department of Labor Standards Asbestos Program
 - <http://www.mass.gov/lwd/labor-standards/asbestos-safety/>

Mold

What is mold?



Mold is a fungus that can be found almost anywhere. Mold needs moisture to grow. Moisture can come from rain, humidity, water leaks, flooding, overflow from sinks, and wet laundry.

What are the health effects of mold?



Touching or inhaling mold can cause allergic reactions, asthma attacks, and irritation (of the eyes, skin, nose, throat, and lungs). Certain molds can sometimes release substances that are potentially toxic.

How can I detect mold?



Signs of excess mold growth include:

- Visible mold growth (black, white, green, orange, or other color)
- A moldy, musty smell
- Water leaks, discoloration, rotting wood, warping floor or wall boards, or high humidity in the home
- Water pooling around the foundation of the house

What can I do?



1. Ask the owner about any known water leaks or moisture problems.
2. Don't test the home for mold in the air. There is some level of mold everywhere, and there aren't any standards to judge whether the airborne mold levels are acceptable or not.
3. Instead, look for signs of water leaks or water damage in the home. Try not to breathe or touch any mold.
 - Small amounts of surface mold, such as on bathroom tiles, can usually be removed easily.
 - Extensive mold growth would likely require more time and money to fix.

Where can I find more information?



1. EPA: <https://www.epa.gov/mold>
2. MDPH: <http://www.mass.gov/eohhs/gov/departments/dph/programs/environmental-health/exposure-topics/iaq/pollution/mold/>

Carbon Monoxide



What is carbon monoxide?

Carbon monoxide (CO) is a toxic gas released from appliances and equipment that burn fossil fuels. Common sources include cars, gas stoves, wood stoves, clogged chimneys, unvented kerosene or gas space heaters, gas water heaters, gas or oil furnaces, portable generators, and lawn mowers. Carbon monoxide cannot be seen or smelled.



What are the health effects of carbon monoxide?

Breathing carbon monoxide can cause flu-like symptoms such as headaches, weakness, dizziness, confusion, and nausea. At very high levels, it can cause loss of consciousness and death. If you suspect high levels, leave the home immediately and call 911.



What can I do?

1. Check that there are certified, working CO alarms less than 5 years old throughout the house. By law, most homes in Massachusetts must have CO alarms on every floor and within 10 feet of bedroom doors. (Homes must also have working smoke alarms.)
2. Ask the owner for the maintenance history of the heating system, water heater, stove, chimney, and any other appliances that burn gas, oil, or coal. They should be inspected, serviced, and cleaned every year.
3. Choose fully vented appliances (e.g. vented space heater) over unvented.
4. Check that fuel-burning appliances are properly installed and vented.
5. Check that vents and flues are not blocked (e.g. by snow or ice).
6. Consider installing an exhaust fan vented to the outside over gas stoves if the home does not have one already.



Where can I find more information?

1. MA EPHT: <https://matracking.ehs.state.ma.us/Health-Data/Carbon-Monoxide-Poisoning.html>
2. EPA: <https://www.epa.gov/indoor-air-quality-iaq/carbon-monoxides-impact-indoor-air-quality>
3. U.S. Centers for Disease Control: <https://www.cdc.gov/co/>
4. MA Department of Fire Services safety & legal requirements: www.mass.gov/eopss/agencies/dfs/osfm/pubed/fs-topics/carbon-monoxide-safety.html

Outdoor Air Quality



What causes outdoor air pollution?

Air pollution is caused by cars, trucks, power plants, factories, and other commercial and industrial activities. Air pollution can consist of:

- Ground-level ozone (urban smog)
- Particle pollution (tiny particles in the air)
- Air toxics (some gases, liquid aerosols, and particles)



Does air pollution affect health?

Air pollution can contribute to:

- Wheezing, coughing, and breathing difficulties
- Heart attacks and heart problems
- Asthma and lung problems
- Premature death in people with heart or lung disease

Some groups of people are more sensitive to air pollution. These groups include children, older adults, people with asthma, and people with heart or lung disease. The US Environmental Protection Agency (EPA) sets limits on outdoor pollution levels to protect health.



What can I do?

1. Note nearby high-traffic roads, power plants, or other sources of pollution.
2. Research and monitor the local air pollution.
 - MA EPHT Community Profile: www.mass.gov/dph/matracking
 - EPA AirNow (+ sign up for email alerts): www.airnow.gov
 - MassDEP: www.mass.gov/eea/agencies/massdep/air/quality/
3. Know if you or your family members are sensitive to pollution.

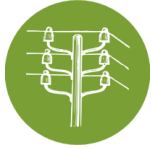


Where can I find more information?

1. U.S. Environmental Protection Agency
 - Air pollutants: <https://www.epa.gov/criteria-air-pollutants>
 - Air toxics: <https://www.epa.gov/haps>
2. Massachusetts Department of Public Health
 - MA EPHT: <https://matracking.ehs.state.ma.us/Environmental-Data/Air-Quality/index.html>

Power Lines

What are power lines and EMFs?



Power lines carry electricity over long distances. Electromagnetic fields (EMFs) are a combination of electric and magnetic fields created from flowing electricity.

Am I exposed to EMFs from power lines?



Electric fields are blocked by trees or buildings. Magnetic fields are difficult to block but decrease with distance. They are undetectable at about 300 feet away from power lines. Local distribution lines (on wooden poles in the street) create much lower EMF levels than high-voltage transmission lines (on steel towers).

Can EMFs affect my health?



Decades of studies on EMFs have given mixed results. One 1979 study found a possible link between living near power lines and childhood leukemia. Other studies didn't support that finding. There isn't reliable evidence for other health effects.

What can I do?



1. Locate the nearest high-voltage transmission line.
 - If it is more than 300 feet away, exposure is unlikely.
 - If it is less than 300 feet away, EMF levels may be elevated but are not necessarily harmful.
2. Get EMF measurements using an EMF detection meter or from the local power company.
3. Note: Some pesticides may be sprayed occasionally underneath transmission lines to control vegetation. If you are concerned, call the local Board of Health or power company and test the soil before planting edible gardens.
4. Be careful working near power lines to avoid risk of electric shock.

Where can I find more information?



1. National Institute of Environmental Health Sciences:
<https://www.niehs.nih.gov/health/topics/agents/emf/index.cfm>
2. National Cancer Institute: <https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/electromagnetic-fields-fact-sheet>

Hazardous Waste Sites



What is hazardous waste?

Hazardous waste is waste that can harm human health and the environment. It can get into air, soil, or water from manufacturing processes, poorly designed landfills, spills, and illegal dumping.



Can nearby hazardous waste affect my health?

Any potential risk to health depends on:

- Whether you come into contact with the chemical (e.g. if you drink contaminated water or touch contaminated soil)
- The amount of the chemical that gets into your body
- How toxic the chemical is

MassDEP requires a hazardous waste site to be cleaned up if it poses a risk to human health. If you are concerned, talk with your doctor and the local Board of Health.



What can I do?

1. Ask the property owner about any known hazards in the area.
2. Walk around the neighborhood and talk to prospective neighbors. Note any nearby landfills or industries.
3. Ask your Board of Health about complaints filed by residents.
4. Research local waste sites and environmental conditions:
 - National Priority List Superfund sites:
<http://www.mass.gov/eea/agencies/massdep/cleanup/sites/npl-superfund-sites-in-massachusetts.html>
 - MassDEP hazardous waste cleanup sites:
<http://www.mass.gov/eea/agencies/massdep/cleanup/sites/>
 - MA EPHT: www.mass.gov/dph/matracking
 - EPA Envirofacts: <http://www.epa.gov/enviro>
 - Toxics Use Reduction Act Data: <http://turadata.turi.org>

Disease Patterns

What are disease patterns in a community?



Some areas may seem to have an unusually high occurrence of certain diseases, such as cancer or diabetes. As a result, some residents may suspect that there is an environmental hazard nearby. However, many disease clusters are not actually unusual. High disease rates in a community may be due to:

- Community lifestyle factors, such as a large number of people who smoke or eat unhealthy food
- An older population
- High disease screening rates
- Random chance

What factors can increase my risk for disease?



A variety of factors can contribute to disease. For example, your risk of having a heart attack is related to genetics, age, lifestyle, and environment. Environmental factors depend on the amount, duration, and route of your exposure to the pollutant. For example, inhaling large amounts of a certain pollutant may increase your risk for disease, but touching a small amount may not.

What are social determinants of health?



Social determinants of health are the conditions in which we live, learn, work, and play that affect health. Individual, social, and economic factors (such as income and education) can lead to increased disease risks for certain groups. For example, people with low income might not have much access to preventive health care or healthy food. As a result, they have a higher risk of disease. Or, children living in older housing might be at higher risk of lead poisoning. For more information, visit www.cdc.gov/socialdeterminants/.

Where can I find disease statistics for my community?



The MA EPHT website (www.mass.gov/dph/matracking) has information and data on the following health conditions:

- ALS
- Asthma
- Birth defects
- Cancer
- Carbon monoxide
- Childhood lead poisoning
- Heart attack
- Heat stress
- Pediatric diabetes
- Reproductive outcomes

More Resources

1. U.S. Environmental Protection Agency:
<https://www.epa.gov/environmental-topics>
2. U.S. Centers for Disease Control:
<https://www.cdc.gov/healthyhomes/>
3. U.S. Department of Housing and Urban Development:
https://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/healthyhomes
4. U.S. National Institute of Environmental Health Sciences:
<https://www.niehs.nih.gov/health/topics/agents/index.cfm>
5. American Lung Association:
<http://www.lung.org/our-initiatives/healthy-air/indoor/indoor-air-pollutants/>
6. Massachusetts Department of Environmental Protection:
<http://www.mass.gov/eea/agencies/massdep/toxics/sources/checklist-for-a-hazard-free-home.html>
7. Massachusetts Environmental Public Health Tracking:
<https://www.mass.gov/dph/matracking/>
8. Connecticut Department of Public Health and Connecticut Association of Realtors, Inc:
http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/realtorguide2011.pdf