



# THE ENVIRONMENTAL & MATERNAL + CHILD HEALTH TOOLKIT

PROTECT THE HEALTH OF YOU  
AND THOSE YOU CALL FAMILY

EH&  
MCH

# EH & MCH TOOLKIT

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The goal of *The EH & MCH Toolkit* is to highlight common environmental threats to maternal and child health (MCH). Covering both physical and behavioral environmental health (EH) risks, the toolkit identifies direct sources of environmental hazards, discusses health consequences for women and children, and provides tips for prevention and resources. The toolkit aims to raise awareness through evidence-based information and serves as an educational guide to improve MCH well-being and development.



**EDUCATE**

**CREATE  
AWARENESS**



**PROMOTE  
HEALTH**



*Topics in this toolkit may be useful to mothers and children, pregnant people, birthing people, parents, caretakers, and friends.*

# OVERVIEW

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# INTRODUCTION

## ENVIRONMENTAL HEALTH

Environmental health (EH) is the study of **people and the environment**. Environmental health is a branch of public health, and together they help protect people from disease and injury that is linked to the environment. This is achieved through education, correcting environmental hazards, and promoting environmental justice. By working in the community to solve environmental health problems, both private and public organizations can work to limit causes of disease and injury.

## MATERNAL & CHILD HEALTH

Maternal & child health (MCH) examines the **health of women and infants before, during, and after pregnancy**. Public health programs target access to care, identifying risk factors for mortality and preterm births, and preventing pregnancy complications. Promoting healthy practices and providing a supportive network during this period of physical, mental, and emotional vulnerability facilitates the overall health outcomes and wellbeings of both mother and child.

*First edition: July 2023*  
*Reviewed: November 2024*



# THE INTERSECTION BETWEEN EH & MCH



Our built and natural environment influences human health in many ways. Some protective features of the environment include safe water for drinking, soil for farming, access to recreation, an ozone layer to protect against UV, and natural barriers to absorb storm surge and flooding. While many attributes of the environment can protect, some environmental issues can harm and even be life threatening.

While environmental issues pose a threat to the population as a whole, certain groups, including pregnant mothers and children, are more likely to experience more disease and injury. EH issues that disproportionately affect MCH include exposure to heavy metals and chemicals, climate change, and others.

It is essential for EH tools and resources to be targeted and made available for the MCH population of any community. Knowing the risk behaviors, promoting prevention, and emphasizing good public health practices can promote long-term health of mothers, infants, and our communities.

# THE VULNERABLE

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Vulnerable populations are groups requiring additional protection in the scope of public health. The Centers for Disease Control and Prevention (CDC) uses several indicators (demographic, health status, occupation, income) to help determine which communities are most “vulnerable.” Pregnant and postpartum women and children are among these groups.

## PREGNANT & POSTPARTUM WOMEN

**Pregnancy presents a wide range of physical, emotional, personal, and developmental challenges (morning sickness, changing bodies, accounting for another human life, family planning, etc).**

**Times of tremendous change can impact health and increase a pregnant woman’s changes of challenges and complications during the perinatal period (before, during, and after birth).**



**Risks:** High blood pressure, depression, anxiety, aches/discomfort



**Increased Maternal Morbidity and Mortality related to pregnancy**

*Morbidity: suffering // Mortality: death*



**Goal:** Ensure maternal health through perinatal & postnatal periods

## INFANTS & CHILDREN

**Infants and children are constantly undergoing rapid and various rates of development, making them one the world’s most vulnerable populations. Their bodies are physically, neurologically, and behaviorally different from an adult’s. Therefore, even when exposed to the exact same stressors as adults, they require certain adjustments and extra attention.**



**Risks:** Developing immunity, developmental/behavioral delay



**Increased infant morbidity and mortality**

*Morbidity: suffering // Mortality: death before the first birthday*



**Goal:** Safe birth and healthy childhood development

# TYPES OF EH ISSUES

## PHYSICAL ENVIRONMENT

&

## SOCIAL ENVIRONMENT

### THE DIFFERENCE

The environment that physically surrounds a person and includes tangible elements and structures.

Physical, chemical, biological, or radiological agents.

The social setting made up of a person's behaviors, beliefs, customs, and practices.

Relationship dynamics, personal lifestyle habits, or social status.

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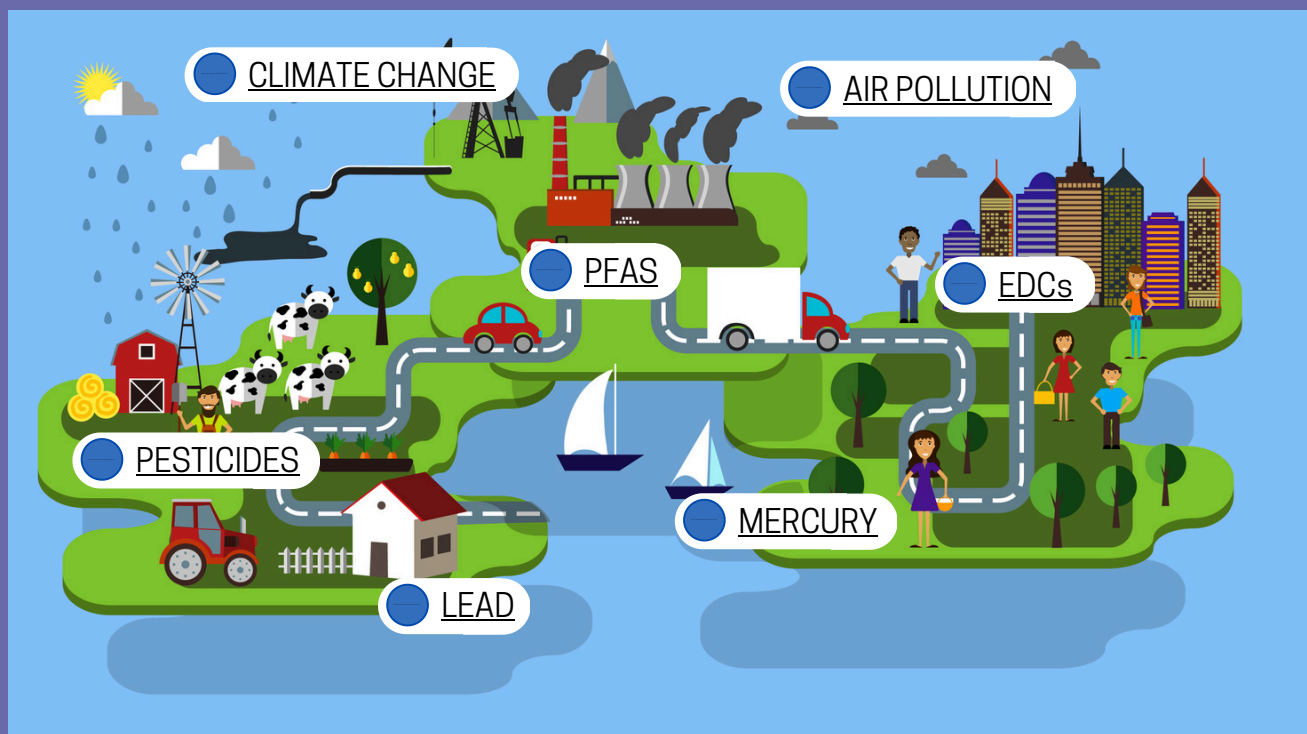
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# PHYSICAL ENVIRONMENT

Environmental hazards exist all around us. Some hazards, like smog and air pollution, are easier to detect. However, some are hidden in products and activities of our daily lives.

Interact with the map below to explore where you may find physical health hazards in your community.



*How to navigate:*

- Hover your mouse over the blue dots to read a summary on each specific hazard
- Click the underlined title to learn more about that hazard, the MCH impacts, and ways to prevent negative health outcomes

# CHEMICAL EXPOSURES

**Humans come into contact with chemicals every day.**

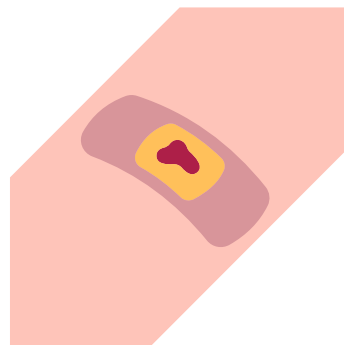
<b>Timing</b>	when did the exposure occur during pregnancy?
<b>Dose</b>	how much of the substance?
<b>Frequency</b>	how often was the exposure?



Brushing your teeth involves chemicals. However, when instructions are followed toothpaste is low risk.

**Using chemicals properly is important for your health and safety.**

Unsafe use of chemicals could lead to injury or disease. Read instructions and ask for help if you are unsure.



This section will cover a variety of chemical exposures, including **air pollution, lead, mercury, PFAS, pesticides, and endocrine disruptors.**

We encourage you to visit the resources section on page 65 to find out more to protect you and the health of your friends and family.

# Air Pollution

Clean air is necessary to sustain life on earth. However, both human and natural activities can increase the amount of harmful chemicals within the air. This can lead to air pollution, which can have a profound impact on human health.

Air pollution is found both indoors and outdoors:

INDOOR SOURCES	OUTDOOR SOURCES
<ul style="list-style-type: none"><li>• Combustion sources within homes (includes tobacco, heating and cooking supplies that use wood or coal)</li><li>• Cleaning supplies, paint, insecticides</li><li>• Building materials (new or old)</li><li>• Outdoor sources entering the home through window</li></ul>	<ul style="list-style-type: none"><li>• Transportation, such as burning fuel for cars, trucks, ships, planes, and trains</li><li>• Industrial emissions, such as factories burning fuel for energy</li><li>• Methane emissions from cows</li><li>• Stationary power generation</li><li>• Chemical manufacturing</li><li>• Wildfires</li></ul>



Visit the [Climate Change](#) section on Page 27 to learn more about how green house gases can increase global temperatures.

# PARTICULATE MATTER

**Particulate matter (PM)** are tiny pieces of solids or liquids within the **air**, such as dust, dirt, soot, or smoke that can be harmful to human health. Particulate matter varies in size, and can be small or large.



Small particulate matter is known as 'PM2.5' and is considered hazardous as their size makes it easier to enter the lungs and bloodstream. Tobacco smoke is a common type of small particulate matter.



Large particulate matter is known as 'PM10' and can be irritating to the eyes, nose, and throat. Dust is one common type of large particulate matter.

## MATERNAL & CHILD HEALTH IMPACTS

Air pollution exposure during pregnancy can have severe health consequences for pregnant people and their children:



Increase risk of pre-term delivery and stillbirth



Higher risk that baby will have low birth weight



More likely to develop heart defects



Greater risk of miscarriage



Increase the occurrence of asthma



Cause bronchitis and lung damage



Harm brain development, cardiovascular and immune systems





Smoke from the occasional wildfire can reach your community and have negative health effects.

## AIR QUALITY

Air pollution can worsen on certain days due to multiple environmental factors. Pregnant women and those with children should pay attention to air quality alerts and take appropriate action to limit time exposed to air pollution.

## AIR QUALITY ALERTS

The **Air Quality Index (AQI)** is what the EPA uses to report air quality. It is a useful tool for finding out what the air quality looks like in your area. This tool can be **found online, or on the weather app** on your smart phone. The AQI is useful to identify when certain sensitive groups should avoid being outside, due to potential health effects. **Sensitive groups** are people who experience health effects when exposed to the air.



Visit the [Climate Change](#) section on Page 27 to learn more about how wildfires will effect human health.



# AIR QUALITY INDEX CHART

Use **this chart** to understand the meaning of air quality alerts:

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.

## PROTECTIVE ACTIONS



Pay attention to air quality alerts in the weather app



Avoid burning leaves, trash, or other materials



Use environmentally safe paints and cleaning products



Wear an N95 mask when outdoors when air quality is poor

## WILDFIRES

MotherToBaby: [Keeping Your Cool...When Fire Season Heats Up](#)



Keep windows up when driving or riding in a vehicle



In your car use the air conditioning recirculate button



Pack extra batteries if you are using a breast pump



Bring bottled water if your child is formula fed

# Heavy Metals

Heavy metals include lead, cadmium, cobalt, and mercury. Exposure to heavy metals can be higher in certain jobs, such as construction workers, miners, firing range employees, smelters, welders, and artists.

Exposure to lead and mercury are the focus of this section.

## LEAD

Sources of exposure to lead include **lead-based paint, water, food, soil, imported lead-based goods, and certain occupations.**

Community members importing food, spices, and cookware from outside the USA may also be a source of lead exposure.

Lead can enter the body through inhalation or ingestion:



**Inhalation** or **breathing in** lead can occur when products containing lead are melted or burned.



**Ingestion** of lead can occur **in homes** where children are around chipped lead paint. Ingestion can also be from imported **cookware**.



**Ingestion** of lead-contaminated **dust, water, and food** can also occur. Contamination can also occur when water travels through **lead pipes** in a home.



**Homes built before 1978 may contain lead paint**

# LEAD POISONING

Lead poisoning occurs through breathing in or swallowing lead.

**Children under six years** of age are at a high risk of lead poisoning, as they are still growing very rapidly at this stage and their **bodies** can **absorb lead** very **easily**.

Once lead enters the body, it is **stored** in the **bones** and **tissues** and can be **released into the bloodstream** and **pass to the fetus** during pregnancy.

## MATERNAL & CHILD HEALTH IMPACTS

Lead exposure can have severe health consequences for pregnant, postpartum people, and children:



Miscarriage



Low birth weight



Pre-term birth



Damage to the brain and nervous system



Learning, memory, hearing, and speech problems



Developmental delays



Negatively impact intellectual and motor development



Harm a baby's brain, kidneys and nervous system

# PREVENTION

The primary way to reduce exposure to lead is by **removing lead-containing products** from the home. If an adult or child has already been exposed to lead, it is important to **visit a doctor to ask about blood-testing** to analyze the extent of the exposure and create a care plan.

Women and children who should discuss lead testing with their care provider include those who:

- Live in **homes built before 1978**
  - These homes may contain lead paint or lead pipes
- Live with **someone who works with lead** for their job
- Recently **immigrated from an area** where **lead contamination** is **high** (i.e. living in an area where leaded gasoline is still used)
- Live near a **current** or **closed lead source** such as mines, battery recycling plants, or smelters
- Use cookware, spices, or makeup **imported** from outside the USA

There is no safe amount of lead for anyone to ingest. If you believe you have been exposed to lead, ask your doctor about blood testing.



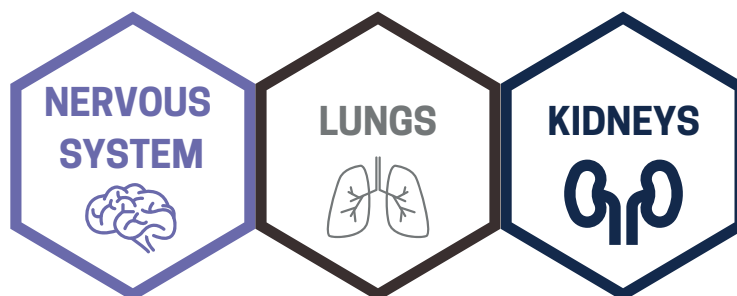
# MERCURY

Mercury is a toxic heavy metal found in the environment. **Sources of mercury exposure** include:

- contaminated fish and shellfish
- silver dental fillings, also known as 'crowns'
- broken fever thermometers
- antiques
- some jewelry

## MATERNAL & CHILD HEALTH IMPACTS

High exposure to mercury during pregnancy can cause damage to:



**Fish is the most common source of mercury.**



Fish is still an important source of **vital nutrients** that supports the development of a **baby's brain** and **spinal cord** during and after pregnancy.



Mercury in the mother's body can be **spread** to a **breastfed** infant. There are ways to **safely consume fish** during pregnancy and breastfeeding.

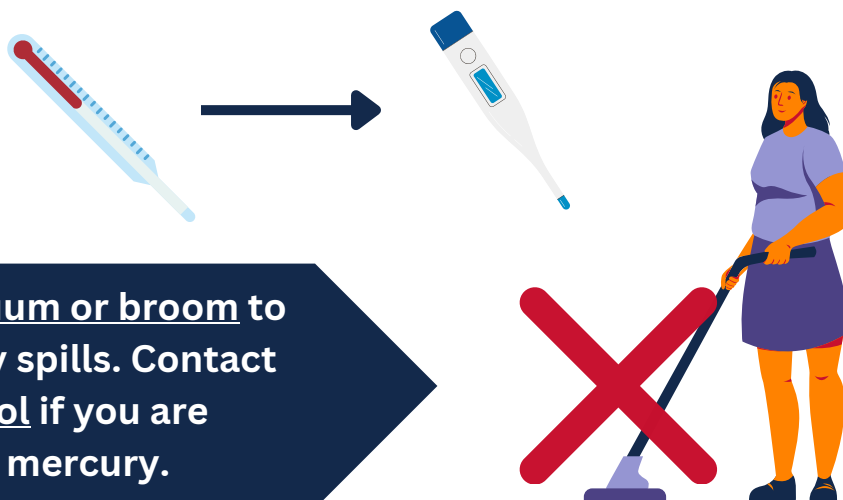
If you are concerned about mercury exposure, **talk to your doctor** about testing.

# PROTECTIVE ACTIONS

In most cases fish can be safely consumed during pregnancy and breastfeeding. The [FDA](#) and EPA recommend choosing fish that are lower in mercury. [This chart](#) can be used to make that choice easier, and is summarized below:

Best Choices	Good Choices	Avoid
<ul style="list-style-type: none"><li>• Anchovy</li><li>• Atlantic mackerel</li><li>• Catfish</li><li>• Cod</li><li>• Flounder</li><li>• Herring</li><li>• Lobster</li><li>• Oyster</li><li>• Salmon</li><li>• Sardine</li><li>• Scallop</li><li>• Shrimp</li><li>• Skipjack tuna</li><li>• Tilapia</li></ul>	<ul style="list-style-type: none"><li>• Tuna (including albacore, yellowtail, white; canned, fresh, or frozen)</li><li>• Mahi mahi</li><li>• Snapper</li><li>• Halibut</li><li>• Spanish mackerel</li></ul>	<ul style="list-style-type: none"><li>• King mackerel</li><li>• Bigeye tuna</li><li>• Shark</li><li>• Swordfish</li></ul>

Consider switching from a mercury thermometer to an electric thermometer.



**NEVER use a vacuum or broom to clean up mercury spills. Contact Poison Control if you are exposed to mercury.**

\* Extra tip: avoid raw fish and sushi during pregnancy!

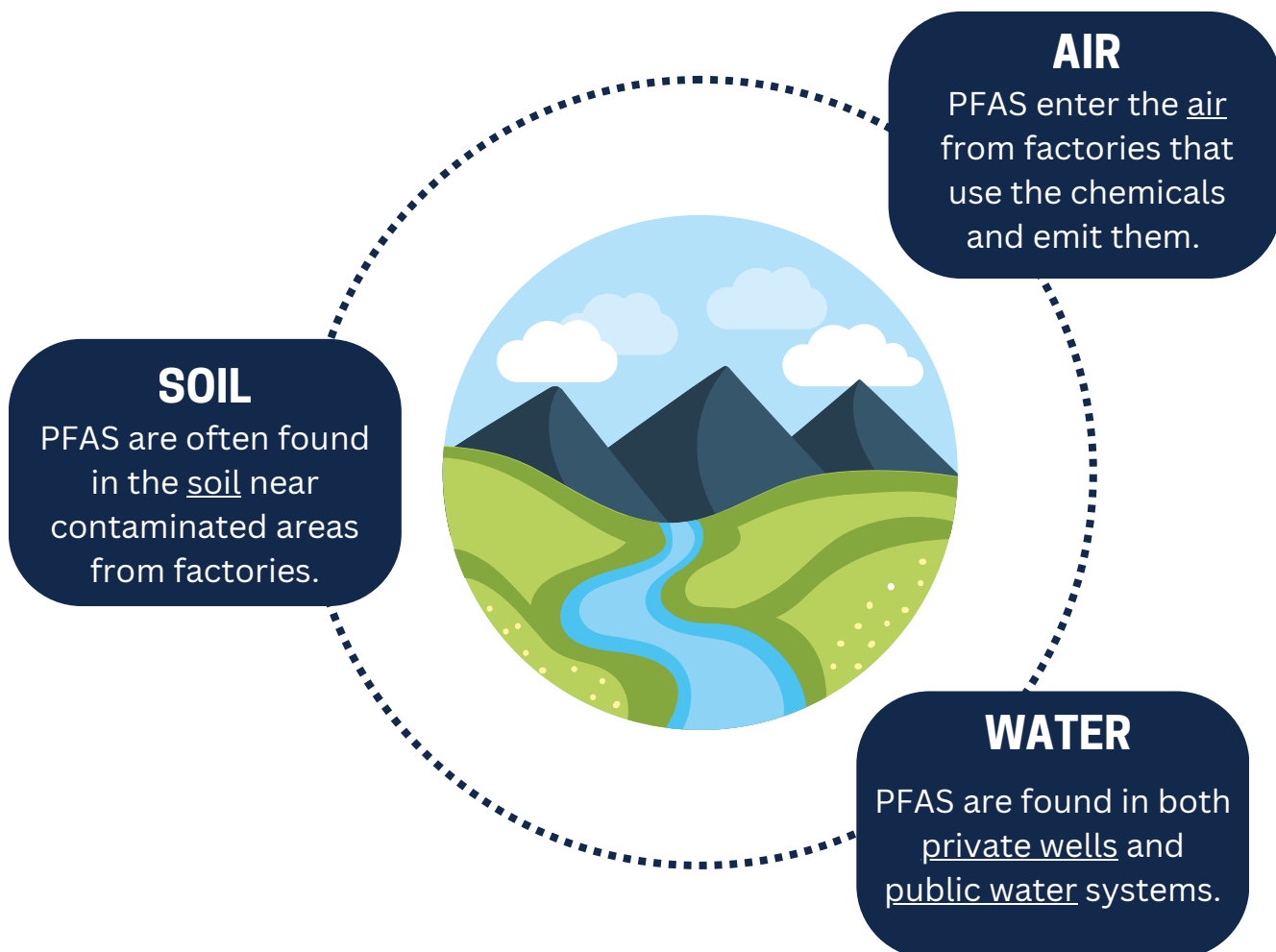
# PFAS

**PFAS (per- and polyfluoroalkyl substances)** are a group of **man-made chemicals** that have been used since the 1940s in many different industrial and consumer products.

PFAS have been of greater concern to the public in recent years. Information on PFAS is being updated every day, and there may be updated information since the creation of this toolkit.

## HAZARDOUS EXPOSURES

PFAS are widely used. In the **environment**, these chemicals are found in:





PFAS exposure occurs most commonly by **eating** and **drinking contaminated food and water**, including:

- Drinking contaminated water
- Eating fish from contaminated water
- Eating food grown near areas with high levels of PFAS
- Eating foods stored in packaging made with PFAS

PFAS can be **found in many consumer products**. Some of the most common products include:

- Carpet
- Fabric
- Fire extinguisher foam
- Non-stick coating on cookware and food packaging

## MATERNAL & CHILD HEALTH IMPACTS

Exposure to PFAS in pregnant people and their children *may* lead to:



Increased risk of high blood pressure



Higher risk of pre-eclampsia



Decreased vaccine response in children



Low birth weight in infants

PFAS can pass from an exposed mother to their baby through breastfeeding, but the CDC currently maintains that **the benefits of breastfeeding outweigh risks** of PFAS in breastmilk.

# PROTECTIVE ACTIONS



Call your water company to find out if PFAS are in your water



Look into private well testing if you are not on public water



Use stainless steel or cast iron cookware; avoid “nonstick”



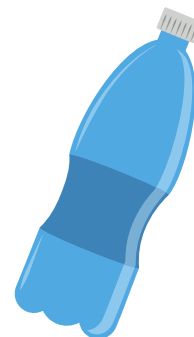
Avoid fast & processed foods, as the packaging often uses PFAS



Heat popcorn kernels on the stove instead of a microwave bag

- If you are on a private well, visit the EPA’s site to look for a list of approved labs that test for PFAS
  - Please note that lab testing may be expensive
- Stay up to date about PFAS by visiting the EPA’s website
- Use Virginia's PFAS Detection tool to learn more about PFAS in your area

Levels of PFAS in bottled water are not monitored by the FDA.



Technologies such as **activated carbon** or **ion exchange treatment** are used to filter PFAS from the water. These treatments will often be utilized in drinking water treatment facilities.

If you are on private well water, these treatments can be used where water enters the home. These treatment **costs can vary**.

# Pesticides



Pesticides are chemicals used to **control pests** and **plants**.

Certain pests or plants are limited because they are known to **carry disease**, such as **mosquitoes, ticks, fleas, rats, and mice**. Diseases that can be spread by these pests include:



**Mosquitos**: dengue, malaria, chikungunya, yellow fever, zika



**Ticks**: lyme disease



**Fleas**: plague, typhus, cat scratch disease, tapeworms



**Mice & rats**: salmonella, plague, mpox

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Some **examples of pesticides** include:



**Insecticides**: control insects



**Herbicides**: control weeds or other unwanted plants



**Fungicides**: control mold, mildew, and rust

## HAZARDOUS EXPOSURE

Pesticides are widely used due to their useful application.  
*Reference pages [24](#) & [39](#) for more information about safely using pesticides.*

Exposure to small amounts of pesticides is also common due to their heavy use. However, pesticides can **harm human health** when used **unsafely**, especially **in high amounts**.

# MATERNAL AND CHILD HEALTH IMPACTS

Pesticides can have negative health effects. **Long term exposures** are often work related (farmers, veterinarians, landscapers, lawn/pest control, aircrew). **Over time lengthy exposure** may lead to:



Cancer



Damage to nervous system



Thyroid hormone imbalance



Difficulty breathing



Organ damage



Learning difficulties



Birth defects

## PROTECTIVE ACTIONS

It is important to exercise caution when using pesticides.



Proper storage and labelling of pesticides in the home



Do not use more than needed



Always read and follow the product's instructions



If exposed at work change clothes before going into home



**Insect repellent fact sheet**  
**pregnancy and breastfeeding**

# Endocrine Disrupting Chemicals

Certain pesticides are classified as **endocrine disruptors**. Endocrine disrupting chemicals (EDCs) are substances that can interfere with the body's endocrine system. The endocrine system plays a large role in how hormones are used throughout the body.

The endocrine system plays a role in:

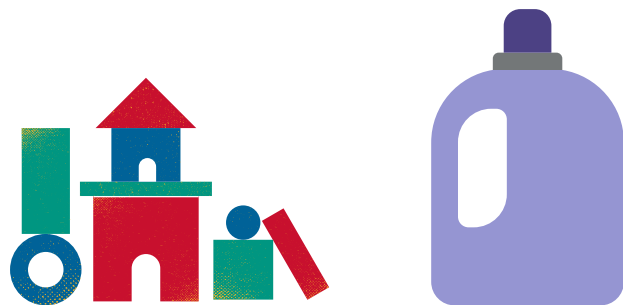
- Sleep
- Metabolism
- Reproduction
- Growth and development

EDCs can interfere with hormones by changing how they are made, broken down, and utilized in the body.

## HAZARDOUS EXPOSURE

Common EDCs include BPA, dioxins, perchlorate, PFAS, phthalates, parabens, phenols, phytoestrogens, certain flame retardants, PCBs, and triclosan. These chemicals are often found in products such as:

- Plastic bottles and containers
- Food can liners
- Detergents
- Toys
- Cosmetics
- Pesticides



# MATERNAL AND CHILD HEALTH IMPACTS

Endocrine disrupting chemicals (EDCs) have been **linked** to health problems among pregnant people and children, such as:



! Changes to intellectual function

! Impacts on the central nervous system

Though EDCs are still being studied, there is some evidence to suggest a link between EDCs and the following conditions:

- ADHD
- Decreased immune response to vaccines
- Disruption to metabolism
- Changes in puberty
- Fertility and reproduction issues

## PROTECTIVE ACTIONS



Read labels on commonly used consumer goods



Try purchasing BPA-free products



Avoid personal care products with phthalates or parabens



Do not store plastic packaged food or water in a hot car



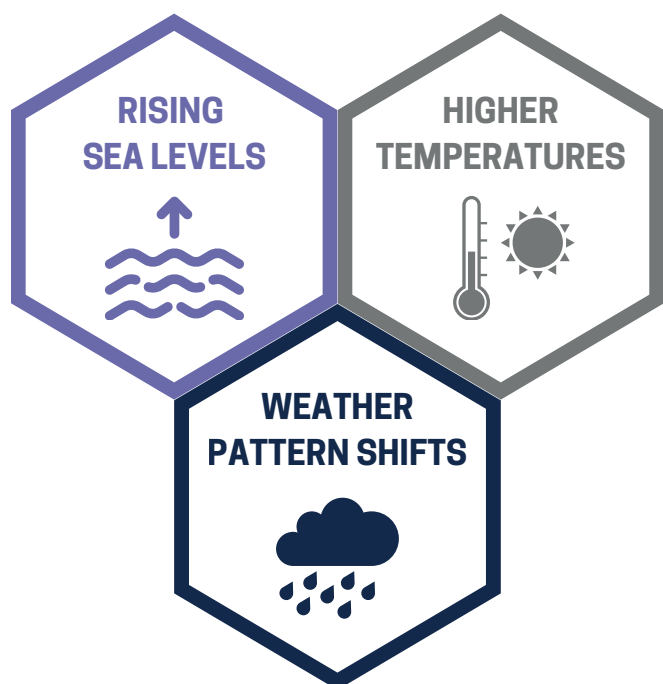
Avoid microwaving plastic containers



Wash fruits and vegetables before eating them

# CLIMATE CHANGE

*CLIMATE CHANGE refers to a combination of higher temperatures, increasing sea levels, and shifts in weather patterns resulting in flooding, droughts, and more.*



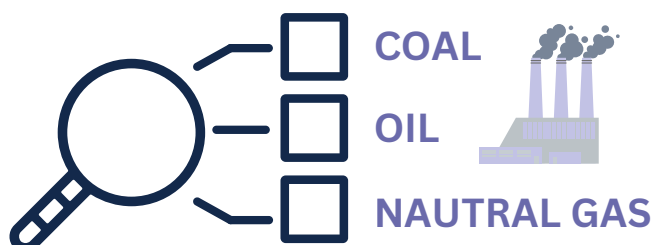
These activities can be the result of natural events such as volcanic eruptions or changes in the sun's energy, but **HUMAN ACTIVITY** is one of the main driving forces.

**BETWEEN 1901-2020 temperatures across the world increased**

by  **1.98 °F**

While this may not seem like a lot, on a global scale this increase is unusual and has severe health-related consequences.

**WHY?** The release of greenhouse gas emissions (burning of coal, natural gas, and oil) traps heat in the earth's atmosphere causing rises in temperature.



# Emissions

## HAZARDOUS EXPOSURES

Burning fossil fuels and cutting down forests release harmful amounts of **carbon dioxide and greenhouse gases** in the air. These gases absorb and **trap heat in the atmosphere**. Without proper removal, heat will continue to accumulate and gradually increase global temperatures.



**Rising Temperatures**



**Excessive Heat**



**Unusual Weather Patterns**

If emissions continue at its current rate, the earth's temperature could **increase by 5 to 10 °F** in the next 70 years.

## MATERNAL & CHILD HEALTH IMPACTS

Heat exposure presents major health risks for pregnant people, as the body works harder to regulate both their temperature and the baby's.



**Dehydration**

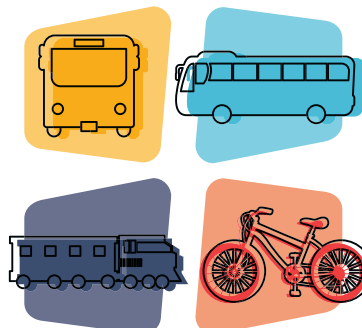


**Exhaustion**



**Heat stroke and/or heat-related death**

Harsh, hot weather may also deter or prevent easy access to transportation and medical care.





# Extreme Weather

## EXTREME HEAT

MotherToBaby Resources

High heat & humidity with temperatures over 90 degrees

## PROTECTIVE ACTIONS



Drink plenty of fluids to stay hydrated



Limit time outside and maximize time in shady spots



Wear lightweight clothing



Avoid high-impact exercise and sweat-inducing activities

## HURRICANES

MotherToBaby Resources

Damage to homes and businesses, flooding, high winds, increase in mosquitos, unsafe drinking water.



Wear long sleeves and pants to limit insect exposure



Take note of exposures to chemicals and any new symptoms

[Breastfeeding during disasters FACT SHEET here](#)



# Flooding

## HAZARDOUS EXPOSURES

Changes in climate are causing more frequent **precipitation** and rainfall leading to **rising sea levels, hurricanes, surge storms, and floods.**



**Increased Precipitation**



**Rising Sea Levels**



**Hurricanes**

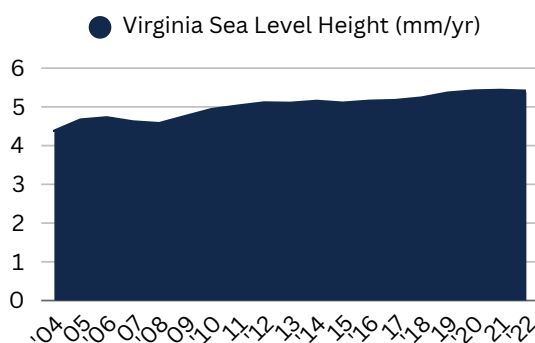


**Destructive Flooding**



**Surge Storms**

### VA SEA LEVEL BY YEAR (2004-22)



Yearly sea level change in Norfolk, VA. Increasing trend shows gradual rise in sea level from 2004-2022.

### INTERACTIVE COASTAL MAP

The Changing Coast



Link to interactive, visual map that shows changes in sea level, and storm/flood risk zones.



#### INJURIES

Cuts, punctures, fractures, broken bones, physical blows



#### DAMAGES

Buildings, roads, food/water supply, communities, personal property



#### DEBRIS

Tree branches, broken glass, loose waste, electrical lines



#### DROWNING

Even strong swimmers can get swept away by strong waters

FLOOD DANGERS

# MATERNAL & CHILD HEALTH IMPACTS

The emotional and physical stress of floods and natural disasters have been linked to the following MCH outcomes:



Anemia (low red blood cell count)



Eclampsia (high blood pressure and potential seizures)



Miscarriage



Post-Traumatic Stress Disorder (PTSD)



Pre-term birth

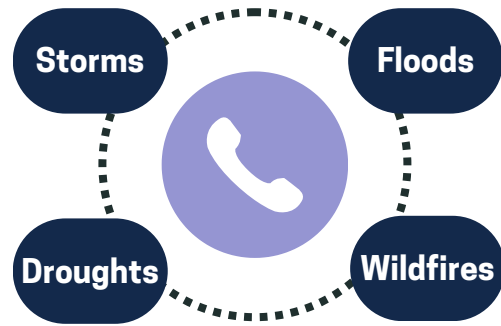


Low birth weight

Physical damages are not the only hazards that come with extreme precipitation. **Bacteria or viruses** in flood water may mix with drinking water and cause **waterborne illnesses**. This can cause acute infections in pregnant mothers and subject fetuses to severe future birth defects.

<b>TOP WATERBORNE DISEASES IN THE US</b>	<b>SYMPTOMS</b>	<b>MCH COMPLICATIONS</b>
<b>Otitis Externa "Swimmer's Ear"</b>	Tenderness, pain, itchiness, swelling in the ear; fluid discharge	No known fetal risk, but ear discomfort in mother
<b>Norovirus</b>	Diarrhea, nausea, stomach pain, vomiting	Electrolytes imbalances may cause pre-term birth or urinary tract infections
<b>Giardia</b>	Diarrhea, dehydration, gas, greasy stools, stomach pain, vomiting	Malabsorption (problem with intestines absorbing nutrients) and diarrhea may affect fetus

If you need crisis or emotional support, call or text 1-800-985-5990  
(Disaster Distress Helpline)



Moisture in flood debris can lead to **mold** growth. These fungi spread through the **release of spores**, which are small airborne particles, and can cause poor indoor and outdoor air quality.



Visit the [Outdoor Air Quality](#) section on page 35 to learn more about how airborne irritants affect respiratory health.

## PROTECTIVE ACTIONS

- ✓ Create a flood plan - risk evaluation, evacuation, safe spots
- ✓ Prepare emergency kits - first aid, food/water, batteries
- ✓ Pack enough medicine for days to weeks
- ✓ WAIT! Do not attempt to go out during an emergency
- ✓ Proceed with caution when walking through debris

# Foodborne Infections



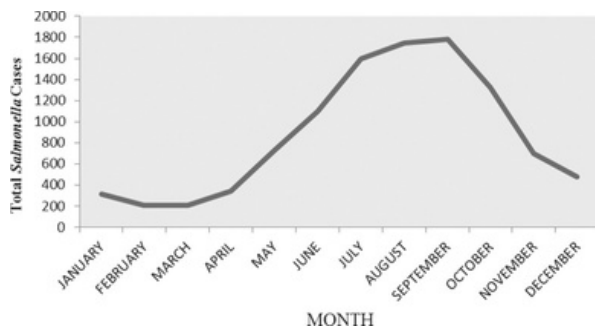
## HAZARDOUS EXPOSURES

Perishable foods, and especially raw meats, must be kept at certain temperatures to be safe for consumption. Warm temperatures and humidity create a favorable environment for **pathogen growth** in these foods. **Salmonella** is one of the most common types of bacteria that causes food poisoning. Recent data suggests that **warming trends may be causing an increase** in Salmonella cases.



**Bacteria:** Salmonella, E. coli  
**Parasites:** Giardia, tapeworms

**Viruses:** Norovirus, rotavirus



Virginia had 11,411 lab confirmed cases of salmonella from 2012-2022. Some types increase noticeably in summer.

Salmonella is contracted through undercooked food or contaminated water/items and causes **gastrointestinal distress**.

## ANIMAL TO HUMAN TRANSMISSION

### FECES



Contact with the stool of infected wild or domestic animals

### WATER



Aquariums or tanks can contaminate human water

### SALIVA



Contact with animal feeders, dry food, or pet toys

### MEAT



Undercooked or raw meat, seafood, or unpasteurized dairy

# MATERNAL & CHILD HEALTH IMPACTS

Foodborne illness can have severe health consequences for pregnant people and their children:



Dehydration from vomiting and/or diarrhea



Bacteria in bloodstream



Inflammatory diseases (meningitis or arthritis)



Birth defects



Low birth weight

Fully cooking your food can help prevent Salmonella! The US Food & Drug Administration recommends these temperatures.



## FDA TEMPERATURE GUIDE

**MEAT & POULTRY:** 140-160 °F

**EGGS:** until yolk and whites are firm

**SEAFOOD:** at least 145 °F

**LEFTOVERS:** at least 166 °F

*Always remember to wash your hands after handling raw meat and disinfect all surfaces, plates, & utensils!*

## PROTECTIVE ACTIONS



Thoroughly cook meats based on FDA recommendations



Wear gloves, wash hands & items when handling raw meat



Wash your hands before and after touching animals



Throw out meats that are past their "Best Before" dates

# Outdoor Air Quality



## HAZARDOUS EXPOSURES

Changes in climate cause longer, more intense wildfire and allergy seasons. Their byproducts - **smoke**, **carbon dioxide**, and **respiratory irritants** (pollen/airborne allergens) - pollute and reduce the air quality.



**Smoke**



**Hazardous Chemicals**



**Respiratory Irritants**

## MATERNAL & CHILD HEALTH IMPACTS

Exposure to poor outdoor air quality can have severe health consequences for pregnant people and their children:



Coughing, wheezing, sinus irritation



Respiratory diseases (bronchitis, asthma, emphysema)



Impact on lungs & heart



Miscarriage or pre-term birth



Intrauterine growth restriction



Congenital abnormalities



Infant mortality



Low birth weight



Changes in brain and lung development

# PROTECTIVE ACTIONS



Limit outdoor activities during peak wildfire/allergy season



Wear a surgical-grade face mask



Check the Air Quality Index (AQI) before going outside



Improve indoor air quality with an air purifier or filter



Keep windows and door shut when air quality is low



# Vector-Borne Infections



## HAZARDOUS EXPOSURES

Temperature changes impact seasonal weather patterns causing increased precipitation, longer summer months, and general climate changes. These changes can be favorable for **disease carrying organisms (vectors)** that are typically only active during certain times of the year. **Vectors surviving for longer periods** of time can lead to **increased disease transmission**.



**Mosquitos**: dengue, malaria, chikungunya, yellow fever, zika



**Ticks**: Lyme disease



**Fleas**: plague



**Snails**: schistosomiasis

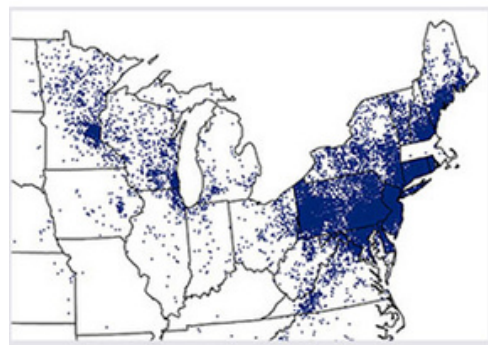
Mosquitos, ticks, fleas, and snails carry infectious pathogens that can be passed to humans through biting or bloodsucking.



Due to Virginia's heavily forested areas, which are breeding grounds for ticks, **LYME DISEASE** is the most common vector-borne infection.



1996



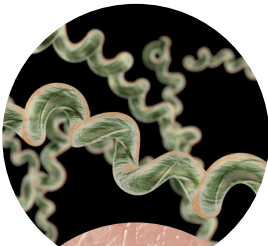
2018

From 1996 to 2018, the prevalence has significantly risen and swept across the Northeastern region of the United States, including Virginia.

# LYME DISEASE

## HOW IS IT SPREAD?

Lyme disease is spread through small, often **unnoticeable tick bites**. At first, most experience minimal irritation and are unaware the bite, unless the site is on a visible part of their body.



## WHAT ARE THE SIGNS?

Lyme disease can cause severe **swelling, heart palpitations, headaches, muscular stiffness, or neurological pain**.

## WHAT ARE THE DANGERS?

While the rates of transmission from mother to infant are low, during pregnancy, Lyme disease is dangerous for the mother's individual health and can cause **infections in the placenta**. Longer-lasting symptoms may include **arthritis, fatigue**, or trouble with cognitive functions like **memory**.

Untreated symptoms only get worse! If you think you have Lyme disease, seek medical attention immediately.



**KNOW WHAT TO LOOK FOR!** Lyme disease rashes have a very distinct, circular shape. It is very common to see multiple rings around the main site, resembling a bullseye pattern. They can look different depending on skin color.

# PROTECTIVE ACTIONS



Check yourself and others for ticks after being outside



Avoid grassy, woody areas - stay on clear paths



Wear sleeved-shirts (tucked in), socks, & closed-toed shoes



Use EPA-approved repellents (DEET, picaridin, IR3535, etc.)

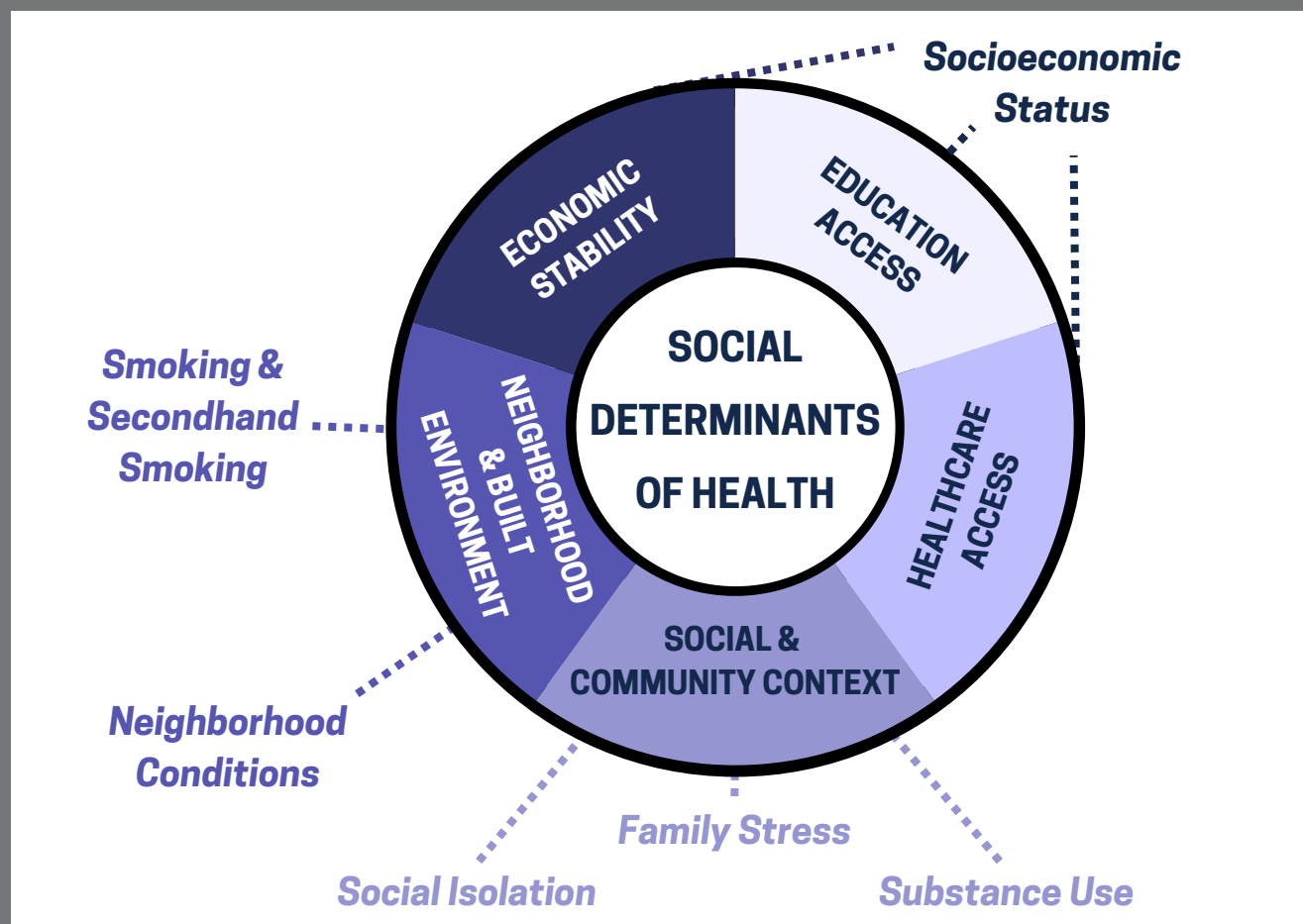
Check if your repellent is Environmental Protection Agency (EPA) registered at <https://www.epa.gov/insect-repellents>



# SOCIAL ENVIRONMENT

The **Social Determinants of Health (SDOH)** are economic and social factors which examine health through a non-medical lens. The five (5) categories consider how policies, social norms, identities, and systems shape the way people live and impact their quality of life.

The SDOH influences a person's living conditions and environment. These societal exposures may have negative impacts on maternal and child health outcomes. Below are social environment risk factors for MCH and how they relate to the SDOH.



# COMMUNITY & RELATIONSHIPS

*Community support and mental health play a vital role in maternal and child outcomes. A stressful social environment surrounding a mother and child can significantly impact wellness and development.*

Stressful social environments

are linked to...



**DEPRESSION**  
**ANXIETY**  
**SELF HARM**

Social support from partners, family members, and friends can increase a person's subjective well-being (SWB).

Improved

**Mental  
Health**

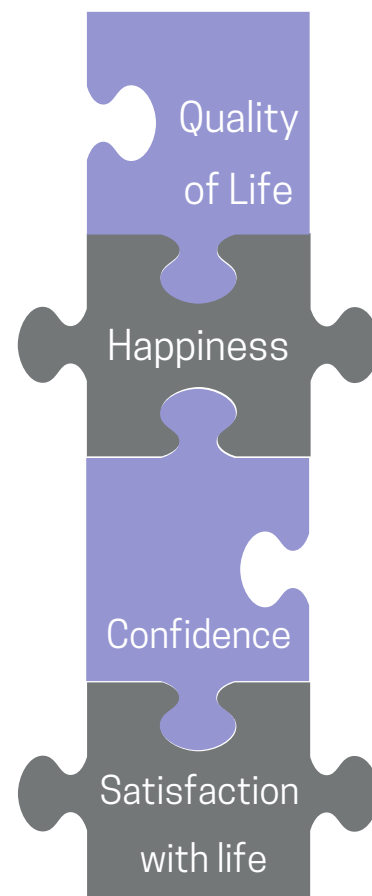
**Birth  
Outcomes**



**Mothers with strong  
social networks show:**

- **Better pregnancy outcomes**
- **Stronger confidence in parenting abilities**
- **Deeper bonds with their children**

## MEASURES OF SWB



# Family Stress

## CONTRIBUTING FACTORS

While raising a family is fulfilling, **managing responsibilities, obligations, and pressures** can be a challenge. Stressful family events can overlap, build up, and cause tremendous strains. Some common situations that can create a stressful home environment are:

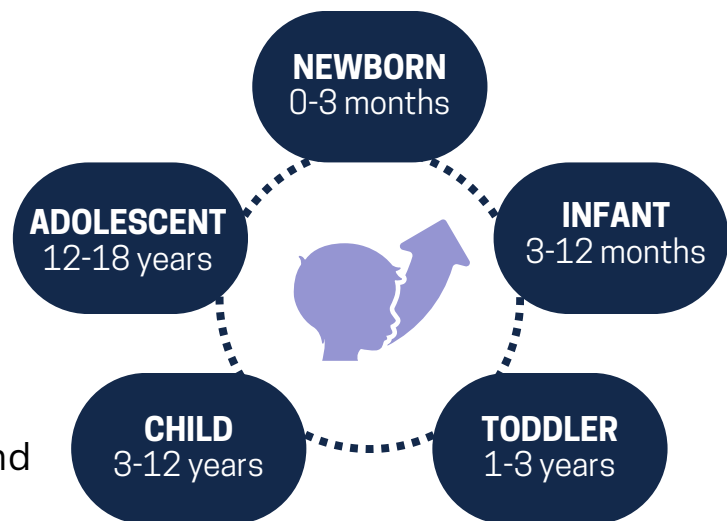


**Conflicting Schedules:** Overlapping responsibilities (work, school, medical, extracurriculars, sports, shift work, etc.), limited time, and transportation challenges.



**Child Development:** As children grow, they experience physical, emotional, and mental changes (entering school, socialization, puberty, relationships, etc.). Transitioning between stages, from birth through adolescence, is influenced by parental involvement and guidance.

### STAGES OF DEVELOPMENT



**Financial Planning:** Short- and long-term budgeting for the costs of living, family expenses, and other unexpected expenditures.





**Illness, Death, & Emergencies:** Unexpected family events such as medical emergencies or the death of a family member are not only stressful but can create lasting trauma.



**Family Discord:** Differences in personality, stage of life, and opinion lead to strains and conflict. Disagreements between any family members (partner to partner, parent to child, sibling to sibling, etc.) affects the entire household



**Marital Conflict:** Arguments between parents are normal, especially when trying to balance work, life, and home roles. When relationship conflicts create a high-tension environment it can make the family dynamic confusing or uncomfortable

Conflict is normal, but when does it become too much? Know the warning signs of a potentially abusive situation.

### QUICK FACTS

- **1 in 3 WOMEN** and **1 in 4 MEN** are victims of physical domestic violence
- In the US **~20 PEOPLE PER MINUTE** are physically abused by a partner
- **WOMEN AGES 18-24** are the most commonly abused age group



Signs of extreme jealousy



Complete control of finances



Sexual pressure or coercion



Verbal or physical intimidation



Destruction of personal things



Preventing independence

If you believe you are in a potentially unsafe environment, call the 24/7 National Domestic Violence Hotline (1-800-799-7233) or text "START" to 88788.

*For additional support, see our domestic violence resources (page 72)*

# STRESS MANAGEMENT

While many social environment stressors are unavoidable, communicating your needs and limits to your family can help reduce some pressure throughout your pregnancy.



## Lean on your family and friends

Parenting is stressful. Find the family and friends who are there for you. Spend time doing leisure activities (walks, games, movie nights, etc.) and other enjoyable activities.



## Ask for help from your partner/spouse

Communicate your concerns and worries with your partner. The more they know the better they are able to help, create solutions to alleviate stresses, and take some responsibilities off of you.



## Explore workplace & community resources

- Research what benefits and resources your job offers
- Explore what your community distribution centers offer (strollers, cribs, baby clothes)
- Ask friends or co-workers for used baby supplies



## Reserve consistent "Me" time in your family's schedule

Take breaks for yourself. Block off specific times in the family schedule that are reserved just for you. Meditation, self-care nights, reading, or doing other hobbies are great for relieving stress.



# Social Isolation

## CONTRIBUTING FACTORS

Pregnancy can feel **lonely** when your social networks change or disconnect. Physical changes combined with emotional changes, and other pregnancy needs can disrupt typical social activity and increase feelings of **isolation**:



**Physical Limitations:** Some pregnant women are encouraged to reduce physical demands like high intensity activities and heavy lifting to avoid potential miscarriage, preterm birth, or injury. This may especially discourage women during the last trimester when their mobility might be restricted and impacting participation in usual social activities.



**Restricted Travel:** While most travel guidelines (for planes, cruises, etc.) allow pregnant women onboard until about 24-28 weeks, many choose to delay unnecessary travel until after giving birth. This may cause them to go months without seeing long-distance friends and family.



**Maternity Leave:** For working mothers, taking time off from their jobs is a drastic social shift. Going from daily social stimulation at work to a different pace at home can feel disjuncting.



**Emotional Withdrawal:** The physical and hormonal challenges of pregnancy can lead to varying moods, body dissatisfaction, and a discouraged mindset. All of these may lower a mother's motivation to socialize. While sometimes unintentional, that emotional withdrawal can impact in their social network.



**Women experiencing social isolation are at a higher risk for death during or after pregnancy**

## TIPS TO AVOID ISOLATION

You may not be able to participate in all of your normal pre-pregnancy social events, but it's still important to stay connected. Find alternative ways to maintain contact and lean on friends for support.



### Plan regular activities with friends

Commit to regular activities with your friends. Whether that be low-impact outings or a movie night in, remember that your friends are here for you.



### Stay virtually connected

For those long-distance friends, stay connected online. Social media and video calls make it easier to maintain those relationships. This is also helpful for women on bedrest.



### Find your local pregnancy support group

Find other mothers in your community through local pregnancy support groups. These can be great for sharing pregnancy tips, getting advice, and surrounding yourself with others going through similar experiences.

Having support after birth is just as important as during pregnancy. Postpartum Support International has multiple chapters that offer peer support and resources.



POSTPARTUM SUPPORT  
INTERNATIONAL



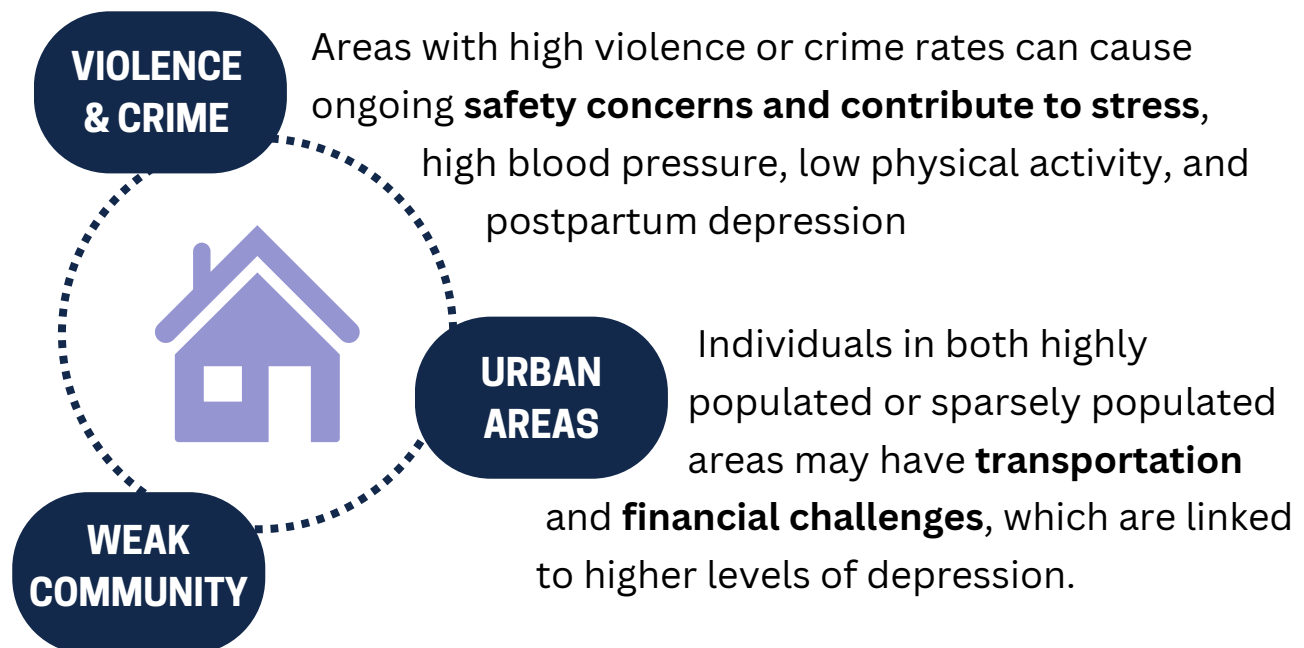
Postpartum  
Support Virginia  
*Hope and help for new mothers*

Click above for local virtual  
support groups  
Resources in Spanish

# Neighborhood

## CONTRIBUTING FACTORS

It's important to examine a pregnant woman's surrounding **community** and **neighborhood**. Characteristics such as the neighborhood's unique **qualities**, **safety**, and **density** contribute to emotional and physical distress and wellbeing.



Neighborhoods with a **weak sense of community** can further socially isolate pregnant women. Not having reliable, supportive neighbors to call in cases of emergency can also be stressful for expecting mothers.

## EMERGENCY RESOURCES

Know what emergency resources are available in your area and make sure they are easily accessible in case of an emergency.



Emergency/Disaster Services (by phone or hotline)



Medical Support (OBGYN, your practitioner, local hospital)

# SOCIOECONOMIC STATUS

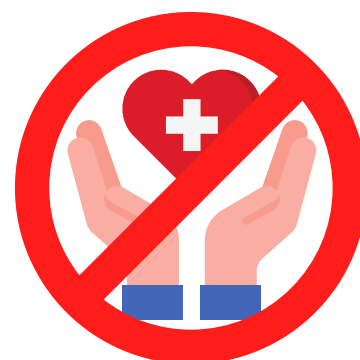
*Socioeconomic status (SES) attempts to describe how a combination of social and economic factors impact a person's experience in society.*

## SES IS INFLUENCED BY



these create  
inequalities in  
**POWER**  
**PRIVILEGE**  
**OPPORTUNITY**

Socioeconomic status impacts  
access to health care and can  
create disparities and barriers  
quality care.



# MATERNAL AND CHILD HEALTH IMPACTS



Gaps in perinatal care



Lack of pre-natal screening to detect complications



Lack of health care provider or peer support



Lack of lifestyle and nutrition advice



Limited tools to prepare for labor and delivery



Pre-term birth



Intrauterine growth restriction



Infant mortality

Prenatal care provides benefits to babies before and after birth, including positive impacts to neurological development.



## POSITIVE DEVELOPMENTAL OUTCOMES IN CHILDHOOD

- The child's brain grows and develops well
- Positive behaviors
- Paying attention and learning in school

# SUPPORT SERVICES



## Low-Cost Prenatal Care Services

- Family-planning clinics
- Community health centers
- Medicaid
- Planned Parenthood

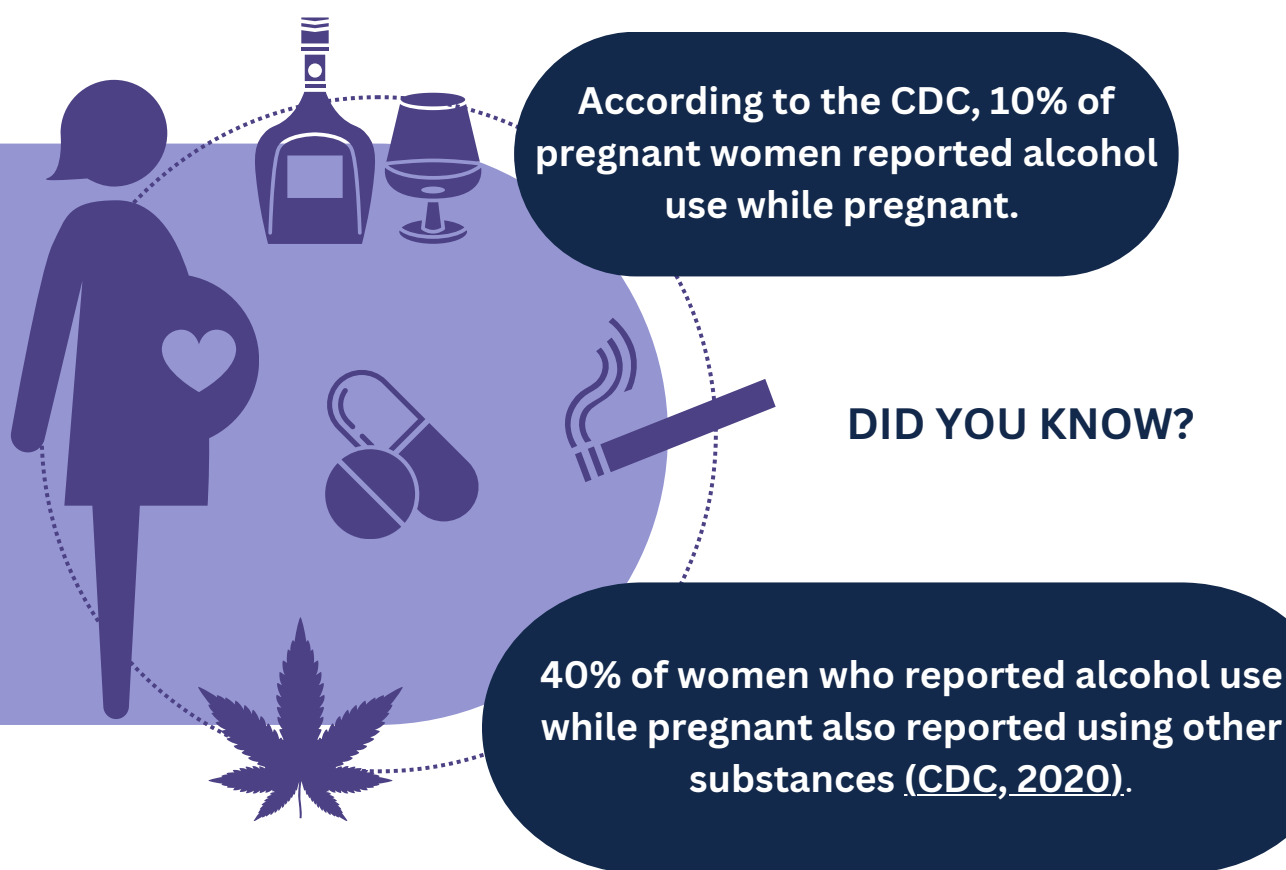


## Baby Supplies Distribution Centers/Organizations

- SERVE
- VDH Low Income Safety Seat Program
- National Diaper Bank Network
- Community food banks, shelters, etc.

# SUBSTANCE USE

*Substance use refers to the consumption, inhalation, injection, or absorption of substances into the body such as alcohol, tobacco, or other drugs.*



This section will cover alcohol, cannabis, smoking, and opioids.

Understanding the risks of these substances can help protect you and your family.

Utilize the resources in this toolkit to find out how you can get support.

# Alcohol

Alcohol is an ingredient that is found in beverages, such as beer, wine, and liquor. Drinking any alcoholic drink can lead to **intoxication** and other **serious health effects**.

**There is no safe amount of alcohol to consume during pregnancy.**

Alcohol passes to the fetus from the mother's blood through the umbilical cord.



## MATERNAL AND CHILD HEALTH IMPACTS

Alcohol use while pregnant can also impact the child.



**Increased risk of miscarriage**



**Fetal Alcohol Spectrum Disorders (FASDs)**

**Fetal alcohol spectrum disorders** can impact:

- facial features
- head size
- body weight
- behavior
- learning abilities
- speech and language development
- the heart, kidneys and bones

**FASDs last a lifetime and has no cure.** To prevent FASDs, **do not drink alcohol** during pregnancy.



# INTERVENTIONS



Understand the risks of using alcohol while pregnant

**VISIT:** <https://www.cdc.gov/alcohol/about-alcohol-use/>



Get help if you can't stop drinking

**VISIT:** <https://drughelpline.org/>



Know that it is never too late to stop drinking if pregnant

**VISIT:** <https://www.cdc.gov/ncbddd/fasd/alcohol-use.html>



Visit [page 77](#) to learn about more resources that can help

# Cannabis

Cannabis, also known as **marijuana**, is one of the **most widely** used drugs during pregnancy. Cannabis contains tetrahydrocannabinol (**THC**), which can cause **mind-altering** effects.

Cannabis can be **smoked** and/or **consumed**.

## MATERNAL AND CHILD HEALTH IMPACTS

THC is also known to **cross the placenta** during pregnancy, which means it **can** cause **harm** to a **developing baby**. Additionally, the act of smoking cannabis has other negative health effects. ***See page 57 to learn more.***

Cannabis can pose a danger to health, whether it is smoked or consumed by eating gummies or food with THC. Cannabis is **not recommended to use during pregnancy**, and may lead to:



Increases risk of preterm birth



Higher chance of stillbirth



Issues with brain development



Learning, memory, and decision making issues



Alters coordination and reaction time

If you or a loved one struggles with substance use, contact **SAMHSA's Helpline** at 1-800-622-HELP (4357)





Cannabis can also pass to breastfed babies through breastmilk, which can cause further complications for a baby's developing brain.

## CANNABIS AND BREAST MILK

Chemicals from cannabis products **can pass** to the **infant** through **breastmilk**.



It is **not advised** to use cannabis products while breastfeeding due to the potential **health impacts** on infants.

# INTERVENTIONS



Understand the risks of using marijuana while pregnant

**VISIT:** <https://www.samhsa.gov/marijuana/marijuana-pregnancy>



Know the risks of using marijuana if breastfeeding

**VISIT:** <https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/vaccinations-medications-drugs/marijuana.html>



Know that cannabis smoke can be as harmful as tobacco smoke

**VISIT:**

<https://www.lung.org/quit-smoking/smoking-facts/health-effects/marijuana-and-lung-health>



Visit [page 77](#) to learn about resources that can help

# Smoking

Nicotine is an addictive substance that is found in a variety of **e-cigarettes, hookahs, pipes** and tobacco products, such as **cigarettes** and **cigars**.

## MATERNAL AND CHILD HEALTH IMPACTS

Smoking tobacco causes a variety of negative health outcomes for pregnant people and their children:



More likely to develop heart disease



Higher risk of stroke



Higher risk of lung cancer



Higher risk of abnormal bleeding



Low birth weight



Premature birth



Damage to lungs and brain



Higher chance of developing birth defects



Increase risk of Sudden Infant Death Syndrome (SIDS)

**Sudden Infant Death Syndrome (SIDS)** is used to describe **unexplained deaths among infants** less than one year old. Lifestyle habits, such as quitting smoking can help reduce the odds of SIDS occurring.

## SECONDHAND SMOKE

Even people who do not smoke can suffer from the health consequences caused by smoke. There is no amount of secondhand smoke that is safe to be exposed to.



Secondhand smoke is when nonsmokers breathe in smoke from people smoking tobacco or marijuana products nearby.

## MATERNAL AND CHILD HEALTH IMPACTS

Secondhand smoke can have severe health consequences for pregnant people and their children during and after birth:



Lung cancer



More likely to have a newborn with low birth weight



Changes in the way the brain regulates breathing



Severe asthma that can be life-threatening



Neonatal abstinence syndrome (NAS) - [see page 62](#)



Increase risk of Sudden Infant Death Syndrome (SIDS)

# INTERVENTIONS

Lifestyle changes to **quit smoking** can:

- Reduce the risk of developing smoking-related illnesses
- Improve oxygen flow and growth of the baby
- Decrease the risk of preterm birth



## DID YOU KNOW?

Prenatal cigarette exposure is the **leading cause of infant morbidity and mortality** in the United States.



Understand the risks of smoking while pregnant

**VISIT:** <https://www.cdc.gov/maternal-infant-health/pregnancy-substance-abuse/>



Understand the risks of secondhand smoke

**VISIT:** <https://www.cdc.gov/tobacco/secondhand-smoke/health.html>



**Eliminate secondhand smoke from the home**

**VISIT:** <https://www.cdc.gov/tobacco/secondhand-smoke/home.html>



**Talk to your doctor or find a resource to help quit**

**VISIT:** <https://quitnowvirginia.org/>



**Know that it is never too late to stop smoking if pregnant**

**VISIT:**

<https://www.cdc.gov/tobacco/campaign/tips/diseases/pregnancy.html>



**Visit page 77 to learn about resources that can help**

**Thinking about quitting?**  
**Quit Now Virginia is a FREE service for**  
**Virginians 13 years & older looking to quit.**





# Opioids

Opioids are a class of drugs including:

- **prescription opioids** (oxycodone, hydrocodone, morphine)
- **heroin**
- **fentanyl**

Prescription opioids may be given to patients by doctors to treat moderate to severe pain.

Opioids have a **high potential for abuse** and have dangerous side effects, such as overdose.

**An overdose is when a drug overwhelms the body, often making it more difficult to breathe, and can result in death.**

## MATERNAL AND CHILD HEALTH IMPACTS

The use of opioids during a pregnancy can have severe health consequences for pregnant people and their children:



! Opioid use disorder

! Higher chances of experiencing overdose or death



! Pre-term birth

! Stillbirth

! Neonatal abstinence syndrome (NAS)

# NEONATAL ABSTINENCE SYNDROME

**Neonatal abstinence syndrome** (NAS) occurs when babies are exposed to **substances in the womb**. Upon birth, these babies show symptoms of **withdrawal** that can last between **4 and 6 months**.

Symptoms of NAS includes:



Seizures



Birth defects



High-pitched crying



Overactive reflexes



Sweating, vomiting, diarrhea



Sleep issues

## QUICK FACTS

- 75% of drug overdoses that occurred in 2020 were caused by opioids.
- Among pregnant women, opioid use disorder **QUADRUPLED** between 1999 and 2014.

If you or a loved one struggles with substance use, contact SAMHSA's Helpline:



**1-800-622-HELP (4357)**

# OPIOID OVERDOSE



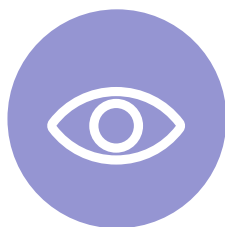
## SIGNS OF AN OVERDOSE

- Color of the **skin is lighter** than usual
- Skin is very **damp or moist**
- **Fingernails** or **lips** appear **blue** or **purple**
- **Vomiting** or making **gurgling noises**
- **No response** to **sound** or **noise**
- **Breathing** is **slow** or has **stopped**
- **Pin point** sized **pupils**

*If these signs are present, IMMEDIATELY CALL 9-1-1.*

- If the person is not breathing, **begin CPR**
- **Treat** the person with **Narcan/Naloxone** if it is available

**1**



IF YOU SUSPECT SOMEONE HAS OVERDOSED,

**2**



IMMEDIATELY CALL 9-1-1,

**3**



GIVE THEM **NARCAN** NASAL SPRAY & PERFORM CPR IF NEEDED

# INTERVENTIONS



## Understand the risks of opioid abuse

- Be aware that opioids have high potential of misuse and can lead to addiction.
- Use opioids as prescribed.
- Do not share your prescription with others. Keep opioids in a safe place away from children.



## Talk to your doctor

- If you are prescribed opioids and find out you are pregnant, be sure to discuss this with your doctor.
- Creating a plan to prevent opioid use disorder before getting pregnant is recommended by the CDC to promote a healthy pregnancy.



## Learn about Narcan

- Narcan, also known as Naloxone can help reverse opioid overdose.
- If possible, get trained in how to administer Narcan.



## Visit page 79 to learn about resources that can help

- Get trained to administer Narcan
- Find out how to get free Narcan
- Get support

## DID YOU KNOW?

**Virginia has a Safe Harbour Law that protects those who get help for anyone who overdoses.**

# RESOURCES

## EMERGENCIES

If you or anyone with you is in immediate danger, call 911.

If you or anyone with you is experiencing a crisis, call or text the  
**988 Suicide & Crisis Lifeline**

*24/7 free, confidential support & resources for people in distress.*

**CALL OR TEXT: 988**

**WEBSITE:** <https://988lifeline.org/>

## NAVIGATING THIS SECTION

*Please use this legend to find resources near you*

**Name\*** resource services Prince William County

**Name<sup>NV</sup>** resource services the Northern Virginia Region

**Name<sup>VA</sup>** resource services Virginia - see website for more details

**Name<sup>US</sup>** resource services the nation

**Resources are organized by the type of environmental hazard. If you are looking for services specific to information you read in the EH & MCH Toolkit, they will be under the same topic name.**

**Resources compiled July 2023. Reviewed November 2024.**

# Chemical Exposures

## GENERAL

- **Local Health Department**<sup>VA</sup>

**WEBSITE:** [vdh.virginia.gov/health-department-locator/](http://vdh.virginia.gov/health-department-locator/)

- **Region 3 Pediatric Environmental Health Specialty Unit**<sup>VA US</sup>

*Services VA, DC, MD, WV, DE, and PA*

*Answering questions about children and exposure to hazards.*

**CALL:** (610) 519-3478

**WEBSITE:** [epa.gov/children/region-3-childrens-environmental-health-mid-atlantic-states](http://epa.gov/children/region-3-childrens-environmental-health-mid-atlantic-states)

- **Virginia Department of Health Tox Line**<sup>VA</sup>

*The toxicology department can help you identify potential health impacts of chemical or biological agents.*

**CALL:** (804) 864-8182

**WEBSITE:** [vdh.virginia.gov/environmental-health/public-health-toxicology](http://vdh.virginia.gov/environmental-health/public-health-toxicology)

- **Poison Control**<sup>US</sup>

*If you suspect poisoning, contact right away.*

*Call 911 in emergencies.*

**CALL:** 1-800-222-1222

**WEBSITE:** [poison.org](http://poison.org)

- **Mother to Baby**<sup>US</sup>

*Evidence based risk/benefit during pregnancy/breastfeeding. No cost information about medications, vaccines, chemicals, herbal products, substances, maternal health.*

**WEBSITE:** <https://mothertobaby.org/>

**SITIO WEB:** <https://mothertobaby.org/es/>

## AIR POLLUTION

- **Air Quality Index<sup>US</sup>**

*Get air quality data where you live.*

**WEBSITE:** [airnow.gov](http://airnow.gov)

## HEAVY METALS

- **En Español - Información sobre el plomo CDC<sup>US</sup>**

*In Spanish - Information about lead CDC*

**WEBSITE:** [cdc.gov/lead-prevention/es/communication-resources/informese.html](http://cdc.gov/lead-prevention/es/communication-resources/informese.html)

- **Five things you can do to lower your child's lead level<sup>US</sup>**

*Information sheet from the CDC*

**WEBSITE:** [cdc.gov/nceh/lead/docs/5things-508.pdf](http://cdc.gov/nceh/lead/docs/5things-508.pdf)

- **Lead Safe Virginia VDH<sup>VA</sup>**

*Providing education about preventing lead poisoning in Virginia.*

**WEBSITE:** [vdh.virginia.gov/leadsafe](http://vdh.virginia.gov/leadsafe)

- **Virginia Household Water Quality Program<sup>VA</sup>**

*Provides water testing for in private wells throughout Virginia.*

**WEBSITE:** [wellwater.bse.vt.edu/index.php](http://wellwater.bse.vt.edu/index.php)

## PESTICIDES

- **Pesticides and their Impact on Children EPA<sup>US</sup>**

*EPA factsheet about pesticides.*

**WEBSITE:** [epa.gov/sites/default/files/2015-12/documents/pest-impact-hsstaff.pdf](http://epa.gov/sites/default/files/2015-12/documents/pest-impact-hsstaff.pdf)

# PFAS

- **Approved Laboratories for PFAS Testing EPA<sup>US</sup>**

*Please note private water testing for PFAS can be expensive. For all other water testing needs in Virginia, we recommend using the Virginia Household Water Quality Program (see Heavy Metals).*

**WEBSITE:** [epa.gov/system/files/documents/2022-01/ucmr5-approved-lab-list.pdf](https://epa.gov/system/files/documents/2022-01/ucmr5-approved-lab-list.pdf)

- **ODW PFAS Tracking Tool<sup>VA</sup>**

*Find out what PFAS levels look like near you.*

**WEBSITE:**

[arcgis.com/apps/dashboards/c7067bdff7ba4f08ab7e99d069e4c6ba](https://arcgis.com/apps/dashboards/c7067bdff7ba4f08ab7e99d069e4c6ba)

- **Virginia Office of Drinking Water (ODW)<sup>VA</sup>**

*FAQs, resources, and information about PFAS in Virginia water.*

**WEBSITE:** [vdh.virginia.gov/drinking-water/pfas/](https://vdh.virginia.gov/drinking-water/pfas/)

# ENDOCRINE DISRUPTORS

- **Endocrine Disruptors NIH<sup>US</sup>**

*General information regarding endocrine disrupting chemicals from the National Institute of Environmental Health Sciences.*

**WEBSITE:** [niehs.nih.gov](https://niehs.nih.gov)



# Climate Change

## GENERAL

- **Effects of Climate Change (CDC)**<sup>US</sup>  
*Learn more about how a changing climate can impact our health*  
**WEBSITE:** [cdc.gov/climate-health/php/effects/index.html](https://cdc.gov/climate-health/php/effects/index.html)
- **Environmental Public Health Tracking (VDH)**<sup>VA</sup>  
*Explore environmental and health data in Virginia*  
**WEBSITE:** [vdh.virginia.gov/environmental-public-health-tracking/](https://vdh.virginia.gov/environmental-public-health-tracking/)
- **National Environmental Public Health Tracking Network (CDC)**<sup>US</sup>  
*Data on environment and hazards, health effects, and population health*  
**WEBSITE:** [vdh.virginia.gov/environmental-public-health-tracking/](https://vdh.virginia.gov/environmental-public-health-tracking/)

## EMISSIONS

Refer to Air Pollution resources on [Page 67](#).

## FLOOD/DISASTER PREPAREDNESS

- **Disaster Distress Helpline**<sup>US</sup>  
*24/7 national hotline for disaster\* crisis counseling, coping strategies, and referrals.*  
*\*tornados, hurricanes, floods, wildfires, earthquakes, violence, disease outbreaks*  
**CALL OR TEXT:** 1-800-985-5990  
<https://www.samhsa.gov/find-help/disaster-distress-helpline>
- **Virginia Department of Environmental Quality \***  
*Disaster preparedness plans and resources for debris, hurricanes, animal emergencies, and droughts.*  
**WEBSITE:** [deq.virginia.gov/our-programs/disaster-preparedness](https://deq.virginia.gov/our-programs/disaster-preparedness)

# FOODBORNE INFECTIONS

US

- **Food Safety FDA**

*Food safety and handling guide by the Food and Drug Administration. Recommendations for cooking temperatures.*

**WEBSITE:** [fda.gov/food/people-risk-foodborne-illness/lifelong-food-safety-food-safety-moms-be](https://www.fda.gov/food/people-risk-foodborne-illness/lifelong-food-safety-food-safety-moms-be)

- **Meat and Poultry Hotline USDA** <sup>US</sup>

*Report a problem with store-bought meat, poultry, or eggs to the United States Department of Agriculture.*

**CALL:** 1-888-674-6854

**WEBSITE:** [foodcomplaint.fsis.usda.gov/eCCF/](https://foodcomplaint.fsis.usda.gov/eCCF/)

- **My Meal Detective** \* <sup>VA</sup>

*Foodborne illness complaint form that sends report the Virginia Department of Health for evaluation. Local health district will contact for follow-up if necessary.*

**WEBSITE:** [redcap.vdh.virginia.gov/redcap/surveys/?s=PJACE4A4EY](https://redcap.vdh.virginia.gov/redcap/surveys/?s=PJACE4A4EY)

# OUTDOOR AIR QUALITY

Refer to Air Pollution resources on **Page 67**.

## VECTOR-BORNE INFECTIONS

- **Insect Repellent Regulations EPA<sup>US</sup>**

*Environmental Protection Agency insect repellent guide. Identify which repellants are EPA registered, methods for application, and tips for preventing bites.*

**WEBSITE:** [epa.gov/insect-repellents](https://epa.gov/insect-repellents)

- **Lyme Disease Fact Sheet CDC<sup>US</sup>**

*Quick fact sheet for ticks and Lyme disease during pregnancy provided by the Centers for Disease Control.*

**WEBSITE:** [cdc.gov/lyme/media/pdfs/Lyme-disease-fact-sheet-for-pregnant-women-English.pdf](https://cdc.gov/lyme/media/pdfs/Lyme-disease-fact-sheet-for-pregnant-women-English.pdf)

# Community & Relationships

## FAMILY STRESS

- **ACTS Domestic Violence Support \***

*Free anger management, conflict resolution, and healthy relationship development for children and youth affected by domestic violence.*

**WEBSITE:** [actspwc.org/services/domestic-violence](https://actspwc.org/services/domestic-violence)

- **National Domestic Violence Hotline<sup>US</sup>**

*24/7 hotline for relationship conflict and domestic violence. Advocates provide confidential support services either by phone call or chat.*

**CALL:** 1-800-799-7233

**TEXT "START" to:** 88788

- **Virginia Sexual and Domestic Violence Action Alliance<sup>VA</sup>**

*Non-profit advocacy organization providing a network of resources, support, and communities for survivors of sexual and intimate partner violence.*

**WEBSITE:** [vsdvalliance.org](https://vsdvalliance.org)

- **Youth Initiatives\*<sup>NV</sup>**

*Intervention, Prevention, & Education (IPE), family reunification, and Violence Prevention and Intervention Program (VPIP).*

**WEBSITE:** [nvfs.org/our-services/early-childhood-development/healthy-families/](https://nvfs.org/our-services/early-childhood-development/healthy-families/)

# SOCIAL ISOLATION

- **Doula Registry** <sup>VA</sup>

*Search for doulas licensed with the Virginia Certification Board.*

**WEBSITE:** [vacertboard.org/doula-registry](http://vacertboard.org/doula-registry).

- **MIS Share Fairfax** <sup>VA</sup>

*Support groups for women experiencing the loss of child through miscarriage, stillbirth, or infant death.*

**WEBSITE:** [misshare.org](http://misshare.org)

- **Pregnancy & Postpartum Psychosis Community Mosaic** <sup>US</sup>

*Online community blog for mothers to submit personal essays, creative writing, poetry, artwork, and videos sharing their pregnancy or postpartum psychosis.*

**WEBSITE:** [pppawarenessday.org/community-mosaic-submission](http://pppawarenessday.org/community-mosaic-submission)

- **Postpartum Support Virginia** <sup>VA US</sup>

*Peer support, resources, and referrals for postpartum mothers. Multiple chapters by region and across the U.S. under Postpartum Support International.*

**WEBSITE:** [postpartumva.org](http://postpartumva.org)

## NEIGHBORHOOD

- **Prince William County Coordinated Entry System \***

*Homeless, facing eviction, living in a car/street/unsuitable housing. Rapid Re-housing program available.*

**WEBSITE:** [pwcva.gov/departments/social-services/homeless-and-winter-shelters](http://pwcva.gov/departments/social-services/homeless-and-winter-shelters)

- **Prince William County Transitional Housing \***

*Families with children. Fee 30% of household income.*

**WEBSITE:** [pwcva.gov/departments/housing-community-development/transitional-housing](http://pwcva.gov/departments/housing-community-development/transitional-housing)

- **SERVE \***

*Shelter, housing, and utilities. Prescriptions and dental help.*

**WEBSITE:** [nvfs.org/our-services](http://nvfs.org/our-services)

## Socioeconomic Status

## INFANT & BABY SUPPLIES

- **Fairfax Diaper Bank Network<sup>NV</sup>**

*Works with distribution organizations to provide families in Northern Virginia free diapers. See website for list of partners.*

**WEBSITE:** [fairfaxdiapers.com/partners](http://fairfaxdiapers.com/partners)

- **Low Income Safety Seat Program VDH<sup>VA</sup>**

*Free car safety and booster seats for income-eligible families provided by the Virginia Department of Health.*

**WEBSITE:** [vdh.virginia.gov/child-passenger-safety/low-income-safety-seat-program](http://vdh.virginia.gov/child-passenger-safety/low-income-safety-seat-program)

# FOOD & CLOTHING

- **ACTS Food Assistance \***

*Monthly food pick-up on walk-in basis.*

**WEBSITE:** [actspwc.org/services/food-assistance](https://actspwc.org/services/food-assistance)

- **ACTS Thrift Store \***

*Assists with loss of possessions due to floods, fires, bed bugs.*

**WEBSITE:** [actspwc.org/thrift-store](https://actspwc.org/thrift-store)

- **Capital Area Food Bank \* NV**

*Direct food distribution to those in need.*

**WEBSITE:** [capitalareafoodbank.org/find-food-assistance](https://capitalareafoodbank.org/find-food-assistance)

- **Creating Foundations for Hope \***

*Food distributed at East End Mobile Home Park.*

**WEBSITE:** [cfhva.org](https://cfhva.org)

- **Haymarket Regional Food Pantry \***

*Weekly food pick-up (3-4 meals) for registered clients.*

**WEBSITE:** [haymarketfoodpantry.org](https://haymarketfoodpantry.org)

- **House of Mercy Thrift Store \***

*Clothes once a month for each registered family member.*

*One time special occasion wear for teens.*

**WEBSITE:** [houseofmercyva.org/programs/food-pantry-client-services](https://houseofmercyva.org/programs/food-pantry-client-services)

- **Northern Virginia Family Service \* NV**

*Emergency food assistance, nutrition information, & budgeting.*

**WEBSITE:** [nvfs.org/our-services/health-well-being/food-assistance](http://nvfs.org/our-services/health-well-being/food-assistance)

- **SERVE Food Assistance \* NV**

*Tuesday and Thursday intakes, appointment and ID needed.*

**WEBSITE:** [nvfs.org/our-services/homelessness-housing/serve-campus](http://nvfs.org/our-services/homelessness-housing/serve-campus)

- **St. Francis Bill Mehr Drop-In Shelter \***

*Food, showers, clothing, tents, blankets.*

**WEBSITE:** [stfrncis.org/meals-for-the-homeless](http://stfrncis.org/meals-for-the-homeless)

- **St. Vincent de Paul \***

*Food, finances, utilities, prescriptions, gas cards, coats.*

**WEBSITE:** [olasvdp.org](http://olasvdp.org)

- **Women, Infants, and Children (WIC) \***

*Provides supplemental food and health care referrals to eligible women in Virginia.*

**WEBSITE:** [vdh.virginia.gov/wic](http://vdh.virginia.gov/wic)



# Substance Use

## GENERAL

- **Community Healthcare Coalition of Greater Prince William \***

*Aims to prevent substance abuse and promote mental health and healthy behaviors. Provides resources to the residents of Prince William County, Manassas, and Manassas Park.*

**WEBSITE:** [preventioncoalitionofgpw.org/](http://preventioncoalitionofgpw.org/)

- **Controlled Substance Public Disposal Locations<sup>US</sup>**

*Locations for safe dispose of unused or expired medicines near you.*

**WEBSITE:** [apps.deadiversion.usdoj.gov/pubdispsearch/spring/main?execution=e1s1](https://apps.deadiversion.usdoj.gov/pubdispsearch/spring/main?execution=e1s1)

- **Community Services Board \***

*Coordinated care for developmental delays, disabilities, mental illness, substance use.*

**WEBSITE:** [pwcva.gov/department/community-services](http://pwcva.gov/department/community-services)

- **Crisis Intervention Services \***

*Scheduled and walk-ins. Mental health, substance abuse and/or intellectual disabilities.*

**WEBSITE:** [pwcva.gov/department/community-services/crisis-intervention](http://pwcva.gov/department/community-services/crisis-intervention)

- **Family Insight<sup>NV VA</sup>**

*Behavioral therapy, in-home and outpatient services, substance use disorder services.*

**WEBSITE:** [familyinsight.net/](http://familyinsight.net/)

- **MommyMeds for Moms** <sup>US</sup>

*App for pregnant and breastfeeding mothers to ensure safe breastfeeding while using medication. Downloadable app.*

**WEBSITE:** [infantrisk.com/infantrisk-center-resources](http://infantrisk.com/infantrisk-center-resources)

- **MotherToBaby** <sup>US</sup>

*Fact sheets with frequently asked questions about common exposures during pregnancy and breastfeeding.*

*Medications, cosmetics, infections, vaccines, recreational substances, etc. In English and Spanish.*

**WEBSITE:** <https://mothertobaby.org/fact-sheets/>

- **New Horizons Clinic Based Services** \*

*Providing services for youth and their families regarding mental health, substance use, and more:*

**WEBSITE:** [pwcva.gov/department/community-services/nh-clinic-based](http://pwcva.gov/department/community-services/nh-clinic-based)

- **Partnership to End Addiction** <sup>US</sup>

*Online support meetings for parents & caregivers*

**WEBSITE:** [drugfree.org/](http://drugfree.org/)

- **SAMHSA National Helpline** <sup>US</sup>

*Providing support for mental health and substance use disorders.*

**CALL:** 1-800-622-HELP (4357)

**TEXT** your zip-code to 435748 (HELP4U)

**WEBSITE:** [samhsa.gov/find-help/national-helpline](http://samhsa.gov/find-help/national-helpline)

- **Shatterproof** <sup>US</sup>

*Education, resources, and ending the stigma about addiction:*

**WEBSITE:** [shatterproof.org/learn/addiction-resources/family-and-friends](http://shatterproof.org/learn/addiction-resources/family-and-friends)

- **Substance Abuse and Addiction Hotline** <sup>US</sup>

*Get free information about substance use or misuse 24/7.*

**CALL:** 1-844-289-0879

**WEBSITE:** [drughelpline.org/](https://drughelpline.org/)

## ALCOHOL

- **Alcoholics Anonymous** <sup>US</sup>

*Find a local AA chapter near you:*

**WEBSITE:** [aa.org/find-aa](https://aa.org/find-aa)

## CANNABIS

Refer to the general substance use resources on **page 77**.

## SMOKING

- **Quit Now Virginia** <sup>VA</sup>

*FREE service for all Virginians 13 and older looking to quit tobacco. Available for all tobacco/nicotine usage including cigarettes, cigars, e-cigarettes, vaping, and smokeless tobacco (snuff, snus, dip, etc.)*

**WEBSITE:** [quitnowvirginia.org/](https://quitnowvirginia.org/)

- **Quit Smoking CDC** <sup>US</sup>

*Tips from former smokers:*

**CALL** 1-800-QUIT-NOW (1-800-784-8669) **OR TEXT** QUITNOW to 333888

**LLAMAR** 1-855-DÉJELO-YA (1-855-335-3569) or **TEXT** O DÉJELO YA al 333888

**WEBSITE:** [cdc.gov/tobacco/campaign/tips/quit-smoking](https://cdc.gov/tobacco/campaign/tips/quit-smoking)

# OPIOIDS

- **Chris Atwood Foundation \* NV**

*Harm reduction program servicing the Northern Virginia region. Offering NARCAN training, and free services including sterile syringes, fentanyl testing strips, and more:*

**CALL:** (703) 662-6076

**WEBSITE:** [thecaf.org/](http://thecaf.org/)

- **NEXT Distro VA**

*Online and mail-based harm reduction service providing Naloxone. Virginia residents may receive a one-time Naloxone package via mail.*

**WEBSITE:** [nextdistro.org/virginia](http://nextdistro.org/virginia)

- **Opioid Response & Naloxone Education in Prince William County \***

*Attend opioid overdose response and Naloxone education in Prince William County.*

**WEBSITE:** [pwcva.gov/departments/community-services/naloxone-education](http://pwcva.gov/departments/community-services/naloxone-education)

- **REVIVE! VA**

*Learn how to save a life from an opioid overdose, get NARCAN, and more:*

**WEBSITE:** [dbhds.virginia.gov/behavioral-health/substance-abuse-services/revive/](http://dbhds.virginia.gov/behavioral-health/substance-abuse-services/revive/)

# GLOSSARY

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- **Allergens:** particles that cause allergic reactions
- **Acute:** presentation of immediate symptoms, short-term
- **Airborne:** existing in the air
- **Anxiety:** bodily response to stressful environments; feelings of uneasiness, distress, dread
- **Arthritis:** inflammation of the joints
- **Asthma:** respiratory disease that causes lungs and airways to close up; difficulty breathing, coughing, wheezing
- **Attention Deficit-Hyperactivity Disorder (ADHD):** brain disorder that causes difficulty focusing and sitting still
- **Bacteria:** small, single-cell organisms
- **Cardiac Arrest:** sudden cessation of the heart beating, interruption of blood circulation to body systems that can cause loss of physiological functions
- **Cardiovascular:** relating to the heart and blood vessels
- **Chronic:** illness that exists for a long period of time
- **Cognitive Stimulation:** exercises that target improving brain function
- **Combustion Sources:** products that burn substances, for example a gas stove or wood-burning fireplace
- **Dehydration:** condition where the body has a deficiency in water content; can impact normal functions
- **Depression:** mood disorder involving feelings of sadness, loss of interest, or prolonged emotional distress
- **Disparity:** (health) inequalities or gaps in access to adequate healthcare

- **Endocrine Disruptors:** natural or man-made chemicals that affect the body's hormones or endocrine system
- **Endocrine System:** group of organs (glands) responsible for secreting hormones and regulating functions throughout the body
- **Fetus:** an unborn baby at (8-10+ weeks) gestation; undergoes major growth and development to prepare for birth
- **Gastrointestinal:** relating to the stomach, large intestines, and small intestines
- **Hazardous:** risky or dangerous to human health
- **Heart Palpitations:** irregular, rapid heart activity
- **Immunocompromised:** having a weakened immune system that increases risk for contracting diseases or infections
- **Intersectionality:** how inequalities across gender, race, social class, ethnicity, and other identifying characteristics interact and impact a person's relationships, opportunities, and advantages in society
- **Intestinal:** relating to the intestines
- **Intrauterine:** situated within the uterus
- **Irritant:** particles or a substance that causes inflammation to the body
- **Low Birth Weight:** a weight at birth of less than 5.5 pounds. Infants with low birth weight are 20X more likely to die compared to infants with a higher weight
- **Malaria:** a parasitic disease carried by mosquitos; causes fevers, chills, and excessive sweating
- **Maternal Mortality Rate:** death of a woman during pregnancy or within 42 days after pregnancy, regardless of cause of death
- **Meningitis:** an infection that causes swelling and inflammation of the protective layers (meninges) surrounding the brain and spinal cord

- **Miscarriage:** the sudden loss of fetus before week 20 of gestation
- **Mortality:** death, relating to death
- **Morbidity:** the state of being diseased, abnormality to healthy status
- **Nervous system:** includes the brain, spinal cord, and nerves responsible for sending signals throughout the body
- **Neurological:** relating to the nervous system
- **Obstructive Pulmonary Disease:** a chronic condition that blocks airflow to the lungs making it difficult to breathe and oxygenate the body
- **Ozone (O<sub>3</sub>):** a very reactive gas (can be either naturally occurring in environment or produced by humans); "good" ozone creates a protective layer in the atmosphere and shields the earth from ultraviolet sunrays; "bad" ozone occurring near ground level can be toxic to humans and contribute to air pollution
- **Pathogen:** a microorganism (bacteria or virus) that can cause infection or disease
- **Perinatal:** general period of time that includes before, during, and after pregnancy
- **Placenta:** an organ within the uterus; develops during pregnancy; delivers oxygen and other nutrients to fetus
- **Postnatal:** period of time after childbirth
- **Poverty:** lacking materials and resources (food, shelter, clothes, money, etc.) and other basic needs
- **Pre-eclampsia:** pregnancy complication that can be characterized by high blood pressure, high levels of protein in urine, or organ damage; early child delivery is often recommended
- **Pre-term Birth:** childbirth occurring before 37 weeks of pregnancy (full term is considered 40 weeks)

- **Public Health:** the science of promoting the health of people and their communities
- **Replication:** the biological duplication or reproduction of cells, pathogens, organisms, etc.
- **Respiratory:** relating to the organ system required for breathing; includes airways, lungs, and blood vessels
- **Schistosomiasis:** a disease carried by parasitic worms living in snails; causes inflammation to the intestines or urinary tract
- **Spores:** a single cell that can reproduce independently
- **Stillbirth:** the birth of a baby who has died in the uterus
- **Toxic:** a substance that is poisonous and harmful to the human body
- **Transmission:** the passing of pathogens from organism to organism
- **Vector:** an organism that spreads a pathogen (typically by biting or bloodsucking)
- **Waterborne:** existing in water sources



# REFERENCES

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A variety of resources provided by government agencies, scientific journals, and accredited organizations were used to inform this EH & MCH Toolkit. If you are interested in exploring these materials, view the full list of references below.

## GENERAL

- [Socially vulnerable populations overview](#)
- [Vulnerable populations - CDC](#)
- [Measures of social vulnerability](#)
- [Maternal and infant mortality rates - CDC](#)
- [Children as vulnerable populations - UVA](#)
- [Physical environment and hazards - CDC](#)
- [Social determinants of health - HHS/OASH](#)
- [Social ecological model for public health - Clark County PH](#)
- [Impacts of environmental and social exposures co-occurrence - Current Environmental Health Reports Journal](#)
- [Infant mortality - CDC](#)

## SHUTTERSTOCK IMAGES

- [Infographic nature care Stock Photo 785892688 | Shutterstock](#)
- [Lyme Disease Stock Photo 475469638 | Shutterstock](#)
- [Beefmaster Cattle Stock Photo 1125122366 | Shutterstock](#)
- [Border Collie Puppy Stock Photo 1840496137 | Shutterstock](#)
- [Meat Stock Photo 1031664748 | Shutterstock](#)
- [Aquarium Home Most Stock Photo 1135600916 | Shutterstock](#)
- [Lyme Disease Borreliosis Stock Illustration 451652944 | Shutterstock](#)
- [Tick Macro Photo On Human Stock Photo 1404869837 | Shutterstock](#)
- [Pregnant Woman Stock Vector 2154145433 | Shutterstock](#)
- [Repellent Bug Spray 2163136223 | Shutterstock](#)

## CHEMICAL EXPOSURES

### Air Pollution & Air Quality

- [Health effects of chemical exposures](#)
- [Indoor air quality - EPA](#)
- [Sources of air pollutants – NIH](#)
- [Sources of greenhouse gas emissions - EPA](#)
- [Particle pollution - CDC](#)
- [Impact of maternal air pollution exposure on children's lung health](#)
- [Childhood asthma and exposure to traffic and nitrogen dioxide](#)
- [AirNow](#)
- [Patient Exposure and the Air Quality Index - EPA](#)
- [Air Quality Index Basics](#)
- [Air pollution and your health - NIEHS](#)
- [Prenatal exposure of particulate matter](#)
- [Air quality index - AirNow](#)
- [Patient exposure and air quality index - EPA](#)
- [Actions you can take to reduce air pollution - EPA](#)
- [Emergencies and indoor air quality - EPA](#)
- [Air quality index for ozone and particle pollution - AirNow](#)
- [About Air Quality - CDC](#)
- [Air pollution and your health - NIH](#)
- [Air pollution and children's health - EH&PM](#)
- [Importance of outdoor air quality - EPA](#)
- [Air pollution and adverse birth outcomes - NIH](#)

## Heavy Metals (Lead & Mercury)

- [Lead and other heavy metals – reproductive health – CDC & NIOSH](#)
- [Lead and breastfeeding - CDC](#)
- [Lead poisoning - WHO](#)
- [Childhood lead poisoning prevention – people at higher risk – CDC](#)
- [Childhood lead poisoning prevention – pregnant women – CDC](#)
- [Health effects of lead exposure - CDC](#)
- [Lead poisoning prevention - CDC](#)
- [Who is at risk of lead exposure - ATSDR](#)
- [5 things you can do to help lower your child's lead level](#)
- [Lead safe – information for parents](#)
- [Toxicity, mechanism, and health effects of some heavy metals](#)
- [Mercury and pregnancy – March of Dimes](#)
- [How people are exposed to mercury - EPA](#)
- [Breastfeeding - CDC](#)
- [Advice about eating fish for pregnant people/young children - FDA](#)
- [Advice about eating fish factsheet - FDA](#)
- [Mercury and Breastfeeding - CDC](#)
- [What to do if a mercury thermometer breaks - EPA](#)

## PFAS

- [PFAS - EPA](#)
- [PFAS concentration in soil](#)
- [Stimulate PFAS fate and transport in air - EPA](#)
- [PFAS and your health - ATSDR](#)
- [ToxFAQs for Perfluoralkyls - ATSDR](#)
- [PFAS in drinking water VDH](#)
- [PFAS in private well water VDH](#)
- [How can I be exposed? - ATSDR](#)
- [Per- and Polyfluoroalkyl Substances - DEQ](#)
- [Web-based behavioral intervention - IJoFaEH](#)

- [Laboratories approved by EPA to support UCMR 5](#)
- [PFAS Analytics Tool EPA](#)
- [PFAS Exposure Reduction](#)
- [Reducing PFAS in drinking water with treatment technologies - EPA](#)

## **Pesticides**

- [Basic information about pesticide ingredients - EPA](#)
- [Pesticides and their impact on children - EPA](#)
- [Tips to limit various types of pesticide exposure - CDC](#)
- [Effect of endocrine disruptor pesticides: a review - NIH](#)
- [Pesticides – NIEHS/NIH](#)
- [Endocrine Disrupting Chemicals](#)
- [Endocrine System – Endocrine Society](#)
- [Environmental health Endocrine Disruptors – NIEHS/NIH](#)
- [Lifestyle interventions to reduce endocrine-disrupting exposures – Environment International](#)
- [What you can do about EDCs – Endocrine Society](#)
- [Intervention to reduce exposure to phthalate metabolites, bisphenol A, triclosan, and parabens – International Journal of Hygiene and Environmental Health](#)
- [Interventions on reducing exposure to EDCs – Risk Management and Healthcare Policy](#)

## **CLIMATE CHANGE**

- [Climate change statistical projections - NOAA](#)
- [Climate change overview - IPCC](#)
- [Impacts of small global temperature increase - NOAA](#)
- [Climate Change Global Temperature](#)

## **Emissions**

- [Overview of greenhouse gases - EPA](#)
- [Recommendations for reducing prenatal exposure to environmental agents - ACOG](#)
- [Global temperatures historical data - NOAA](#)
- [Extreme weather human health impacts - NIEHS/NIH](#)

## **Flooding**

- [U.S. sea level report cards - VIMS](#)
- [Rising sea levels interactive map - SouthernEnvironment.org](#)
- [Estimate of Waterborne Disease Burden in US - CDC](#)

## **Foodborne Infections**

- [Climate change and Salmonella - NIH](#)
- [Salmonella overview - Mayo Clinic](#)
- [Treating Salmonella during pregnancy - AmericanPregnancy.org](#)
- [Food and Drug Administration \(FDA\) cooking temperature guide for reducing Salmonella - FDA](#)
- [Giardiasis overview - NIH](#)

## **Vector-borne Infections**

- [Viral infections during pregnancy - NIEHS](#)
- [Vector-borne diseases overview - NIH](#)
- [Lyme disease overview - VDH](#)
- [Ticks and Lyme disease - CDC](#)
- [Lyme disease and pregnancy - AmericanPregnancy.org](#)
- [U.S. top water-borne diseases - CDC](#)
- [Approved insect repellents - EPA](#)
- [Tickborne Diseases - Lyme - VDH](#)
- [Skin conditions - various skin tones - AAD](#)
- [Fleas - CDC](#)
- [Mosquitos - CDC](#)
- [Ticks - CDC](#)

## **Social Isolation**

- [Social support and mental health problems during pregnancy - Reproductive Health Journal](#)
- [Social support and pregnancy experiences - NIH](#)
- [Social support and pregnancy subjective well-being - NIH](#)
- [Complex social factors and pregnancy - NIH](#)
- [Social support and pregnancy subjective well-being - NIH](#)
- [Complex social factors and pregnancy - NIH](#)

## **Neighborhoods**

- [Neighborhood safety and MCH outcomes - NIH](#)
- [Neighborhood relations and environment on preterm birth - NIH](#)
- [Mother and infant self-reports on neighborhood quality - Journal of Child and Family Studies](#)
- [Comparison of urban and rural communities on adverse pregnancy outcomes - Gynecology and Obstetrics Clinical Medicine Journal](#)
- [Impacts of neighborhood stress - Syracuse University/NIMH](#)
- [Neighborhood violence and stress during pregnancy - NIH](#)

## **SOCIOECONOMIC STATUS**

- [Socioeconomic status overview - Maricopa Community Colleges](#)
- [Socioeconomic status basic definition - APA](#)
- [Poverty and adverse pregnancy outcomes - Drexel University College of Medicine](#)
- [Poverty during pregnancy - NIH](#)
- [Poverty and maternal mental health - The Lancet Global Health Journal](#)

## **SUBSTANCE USE**

- [Substance use - CDC](#)
- [Polysubstance use during pregnancy - CDC](#)
- [Substance use during pregnancy - CDC](#)
- [Substance Abuse and Mental Health - SAMHSA](#)
- [National Drug Helpline](#)

## Alcohol

- [Alcohol and public health - CDC](#)
- [Fetal alcohol spectrum disorders - CDC](#)
- [Fetal alcohol spectrum disorders – NIH](#)
- [Alcohol use in pregnancy and miscarriage - NIH](#)

## Cannabis

- [Prenatal, perinatal, and neonatal exposure to Cannabis – NIH](#)
- [Marijuana and Public Health - CDC](#)
- [Breastfeeding and special circumstances – marijuana - CDC](#)
- [Marijuana and pregnancy – SAMHSA](#)
- [Marijuana and cannabis use disorder - CDC](#)
- [Secondhand marijuana smoke - CDC](#)
- [Marijuana and pregnancy – March of Dimes](#)
- [Health effects of marijuana - CDC](#)
- [Know the risks of marijuana - SAMHSA](#)
- [Marijuana and Lung Health - ALA](#)

## Smoking

- [The Health Consequences of Smoking – US Surgeon General, US Dept. of Health and Human Services](#)
- [Sudden Unexpected Infant Death and Sudden Infant Death Syndrome - CDC](#)
- [SIDS – The American Academy of Pediatrics](#)
- [Substance use during pregnancy - CDC](#)
- [Infant Morbidity and Mortality Attributable to Prenatal Smoking – American Journal of Preventive Medicine](#)
- [Trends in smoking during pregnancy – BMC Pregnancy & Childbirth](#)
- [Maternal Cigarette Smoking & Cessation - Preterm Birth – JAMA](#)
- [Smoking, Pregnancy, and Babies - CDC](#)
- [Secondhand Smoke - CDC \[archived\]](#)
- [Health Problems Caused by Secondhand Smoke - CDC](#)
- [QuitNow Virginia](#)
- [Preventing exposure to secondhand smoke - CDC](#)

## Opioids

- [Opioid Basics - CDC](#)
- [Understanding the Opioid Overdose Epidemic - CDC](#)
- [Opioid Overdose Basics – National Harm Reduction Coalition](#)
- [Opioid Use Disorder Documented at Delivery Hospitalization - CDC](#)
- [Understanding Drug Overdoses and Deaths - CDC \[archived\]](#)
- [Neonatal Abstinence Syndrome – Stanford Medicine](#)
- [Opioid and Opioid Misuse Disorder – MedlinePlus/NIH](#)
- [Arrest and prosecution when experiencing or reporting overdoses – Code of Virginia](#)
- [About Opioid Use During Pregnancy - CDC](#)
- [Naloxone - SAMSHA](#)

## COMMON ACRONYMS

**ACOG:** American Congress of Obstetricians and Gynecologists

**APA:** American Psychological Association

**ATSDR:** Agency for Toxic Substance and Disease Registry

**CDC:** Centers for the Disease Control and Prevention

**EPA:** Environmental Protection Agency

**FDA:** U.S. Food and Drug Administration

**IPCC:** Intergovernmental Panel on Climate Change

**HHS:** Department of Health and Human Services

**NIEHS:** National Institute of Environmental Health Sciences

**NIH:** National Institutes of Health

**NIMH:** National Institute of Mental Health

**NIOSH:** National Institute for Occupational Safety and Health

**NOAA:** National Oceanic and Atmospheric Administration

**OASH:** Office of the Assistant Secretary of Health

**VDH:** Virginia Department of Health

**VIMS:** Virginia Institute of Marine Science

**WHO:** World Health Organization



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