

# Health Effects Associated with Older Homes

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# Overview

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- Health Effects Associated with Older Homes:
  - Mould
  - Asbestos
  - Lead
  - Radon
  
- Children's Environmental Health Issues

# Mould

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## ■ Definition:

- Any fungus that grows on food or damp materials.
- Can be black, white, or any colour.
- Can appear like a stain or smudge on surfaces.
- May smell musty.
- Needs moisture and a food source to grow.
- Commonly grows on window sills, fabrics, carpets, and walls in kitchens, bathrooms, and laundry rooms.

# Mould Continued...

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## ■ Sources:

- Condensation on surfaces due to excessive humidity, lack of ventilation, or low temperature.
- Steam or excess moisture in the air from baths/showers and cooking.
- Water leakage, such as from a roof or plumbing leak, a cracked basement, or flooding.

# Mould Continued...

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- Health Effects:

- Eye, nose and throat irritation
- Coughing and phlegm build-up
- Wheezing and shortness of breath
- Symptoms of asthma
- Allergic reactions

# Mould Continued...

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- Remediation:
  - Fix the source of the moisture.
  - Clean up small areas with bleach and water solution or detergent and water solution (while wearing PPE and following Health Canada's Guidelines [www.healthcanada.ca](http://www.healthcanada.ca))
  - Dispose of any items that cannot be cleaned.
  - Consult a professional if area is larger than 1 square meter.

# Mould Continued...

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## ■ Prevention:

- Ventilate your home.
- Keep your home warm and ensure good air circulation.
- Remove items that may cause mould.
- Keep your home clean and dry.
- Minimize other indoor moisture sources.
- Prevent water from entering your home.
- When you see water or moisture act quickly to remove and dry the areas.

# Asbestos

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- Definition:

- Asbestos is the generic name for a variety of fibrous minerals found naturally in rock formations around the world. Because asbestos fibres are strong, durable and non-combustible, they were widely used by industry, mainly in construction and friction materials.



# Asbestos Continued...

- Sources: (Pre- 1980)
  - Insulation
  - Fire-retardant coatings
  - Stucco & Stipple
  - Concrete & Bricks
  - Gaskets
  - Roofing
  - Flooring & Ceiling Tiles
  - Drywall & Joint Compound
  - Lawn furniture
  - Automobile Brake Pads (Pre-1990)



# Asbestos Continued...

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- Health Effects:
  - When inhaled in significant quantities, asbestos fibres can cause:
    - Asbestosis - scarring of the lungs which makes breathing difficult
    - Mesothelioma -a rare cancer of the lining of the chest or abdominal cavity
    - Lung cancer
    - Smoking increases your risk

# Asbestos Continued...

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## ■ Remediation:

- Research materials before renovating to determine if asbestos may be present.
- If in doubt, have it analyzed by a qualified professional first.
- Receive expert advice before removing materials that may contain asbestos.
- If you must remove small amounts of asbestos containing materials follow the Health Canada Guidelines ([www.healthcanada.ca](http://www.healthcanada.ca))
- If you must remove large amounts of asbestos seek a “qualified professional”.

# Asbestos Continued...

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## ■ Prevention:

- Maintain your homes finishes. Asbestos is only a hazard if it is damaged or friable.
- Know the types of finishes in your home and what year they were installed. Keep a list of potential materials that may contain asbestos.
- Wear PPE if you must handle any asbestos containing materials.
- Hire a qualified professional for large scale remediation.

# Lead

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- Definition:

- Lead is a poisonous metal that can damage nervous connections (especially in young children) and cause blood and brain disorders.
- Lead poisoning typically results from ingestion of food or water contaminated with lead; but may also occur after accidental ingestion of contaminated soil, dust or lead based paint.

# Lead Continued...

- Sources:
  - Drinking Water
  - Paint Finishes
  - Dust and soil
  - Food
  - Air



# Lead Continued...

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- Health Effects:
  - Appetite loss
  - Abdominal pain
  - Constipation
  - Fatigue
  - Sleeplessness
  - Irritability
  - Headache
  - Kidney damage
  - Exposure is especially damaging to infants, children and pregnant women.

# Lead Continued...

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## ■ Remediation:

- Replace lead pipes with newer copper or plastic pipes.
- Do not use solder or fittings that contain lead.
- Remove damaged or peeling lead based paints while following Health Canada's Guidelines ([www.healthcanada.ca](http://www.healthcanada.ca))
- Remove all lead based paints or furniture with lead based paints from areas where children frequent.
- If you are unsure if a paint in your home has lead in it, have it tested or use PPE when removing it.



# Lead Continued...

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## ■ Prevention:

- Have your drinking water tested for lead levels if your home was built before 1970 (max acceptable level = 10  $\mu\text{m}/\text{L}$ ).
- Flush taps each morning for 1 minute to remove high standing lead levels.
- Read the labels of paints (some specialty paints may still contain lead but must be labeled)

# Radon

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- Definition:

- Radon is a colourless, odourless, radioactive gas that occurs naturally in the environment. It comes from the natural breakdown of uranium in soils and rocks.

# Radon Continued...

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## ■ Sources:

- Dirt floors
- Cracks in concrete
- Sumps
- Joints
- Basement drains
- Under the furnace base and jack posts
- Concrete-block walls
- Exposed bed rock in basements
- Water from wells with high levels of uranium

# Radon Continued...

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- Health Effects:
  - Increased risk of lung cancer over a lifetime



# Radon Continued...

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## ■ Remediation:

\*Remedial measures should be taken in a dwelling if the average annual radon concentration in the normal occupancy area exceeds 200 becquerels per cubic meter.

- Renovating existing basement floors, particularly earth floors.
- Sealing cracks and openings in walls and floors, and around pipes and drains.
- Ventilating the sub-floor of basement floors.
- Placing home on “positive pressure” by use of fans.

# Radon Continued...

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- Prevention:
  - Have your home tested for radon.
  - Have your well tested for uranium.
  - The construction of new dwellings should employ techniques that will minimize radon entry and will facilitate post-construction radon removal.

# Questions...

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# References

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# Role of the Public Health Nurse and Children's Environmental Health Issues.



Sue Morris RN, Public Health Nurse  
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# Exposure to environmental hazards

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Can create consequences during preconception and pregnancy, and can directly impact on child health.

PLAYING IT SAFE: Service Providers Strategies to Reduce Environmental Risks to Preconception, Prenatal and Child Health (2006).



**Children are  
more vulnerable  
to harm from  
environmental  
exposures.**



# Children:

Drink and eat more  
per kilogram of body  
weight than adults.

Hidden Exposures (2000). South Riverdale  
Community Health Centre



# Children:

Breathe in  
contaminants faster  
than adults.

Hidden Exposures (2000). South Riverdale  
Community Health Centre



# Children:

Are active and  
explorative.

Hidden Exposures (2000). South Riverdale  
Community Health Centre



# Children:

Their developing systems are more vulnerable to contaminants.

PLAYING IT SAFE: Service Providers Strategies to Reduce Environmental Risks to Preconception, Prenatal and Child Health (2006).



## Some children are at greater risk:

- Living in poverty
- Exposed to environmental tobacco smoke
- Parental occupations
- Genetics.



# Exposure to toxic substances can have:

- Acute – immediate effects
- Chronic – delayed effects



[helpmydryeyes.wordpress.com](http://helpmydryeyes.wordpress.com)



[rjpreschool.com](http://rjpreschool.com)



# Health impacts from prenatal exposures

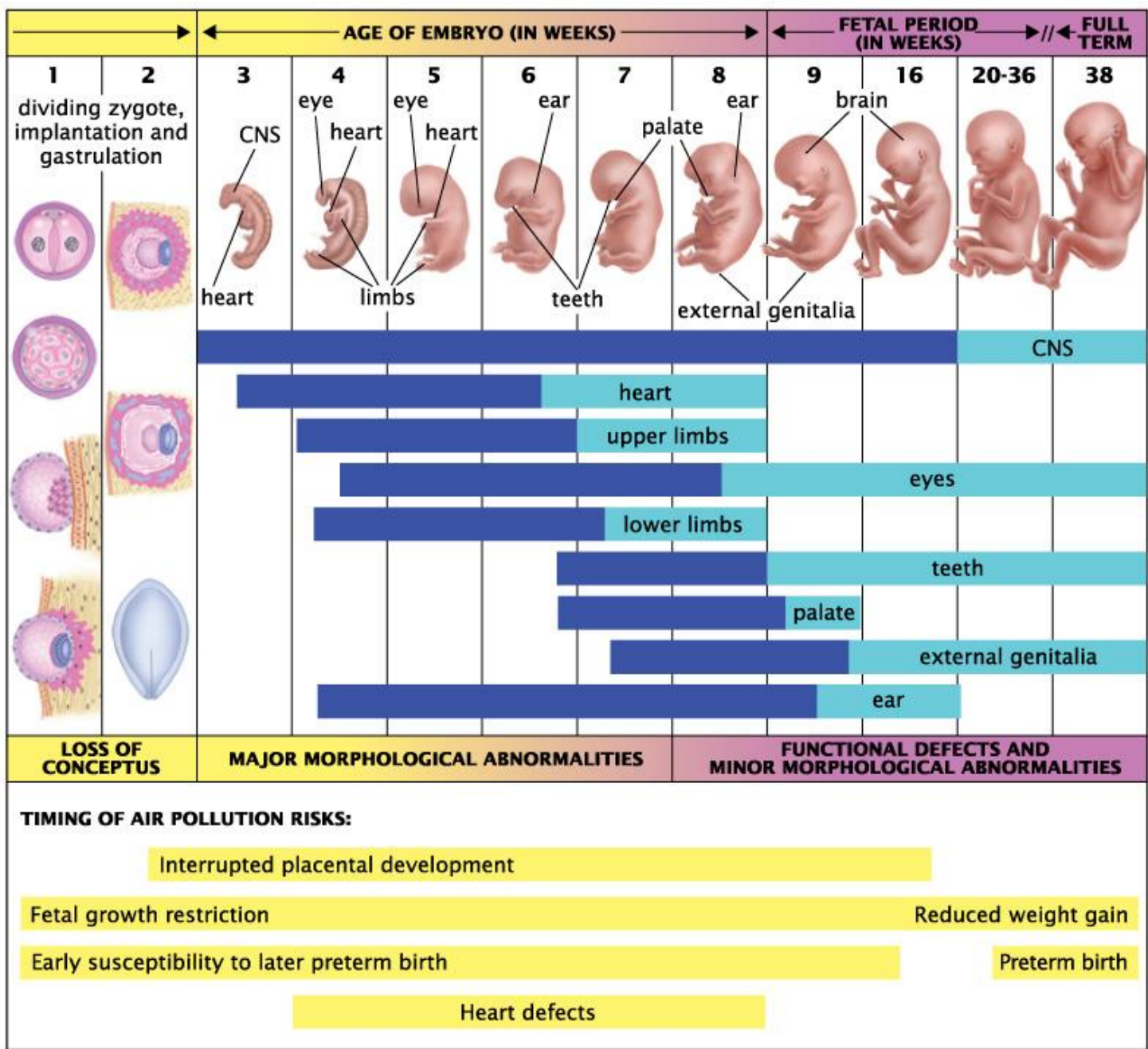
Can include:

- Permanent cell damage
- Low birth weight
- Asthma
- Impact on brain function
- Lifelong impacts such as birth defects, effects on learning and behaviour, or development of later life cancers.

# Exposure during pregnancy:

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In general, toxic exposures during early pregnancy are more likely to create structural impacts such as birth defects, since this is the time when the form and structure of the body develops.



Note: Blue bars indicate time periods when major morphological abnormalities can occur, while light blue bars correspond to periods at risk for minor abnormalities and functional defects.



[stemcellstherapy.tv](http://stemcellstherapy.tv)



Week 30

[new-baby-and-beyond.com](http://new-baby-and-beyond.com)

Toxic exposures during late pregnancy are more likely to result in functional impacts, such as learning difficulties resulting from impacts on fetal brain development.

PLAYING IT SAFE: Service Providers Strategies to Reduce Environmental Risks to Preconception, Prenatal and Child Health (2006).

# Health impacts from prenatal or childhood environmental exposures:

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- Are characteristically complex and difficult to verify with scientific certainty.
- Are most commonly measured following widespread exposure of the child population.

# Tips to reduce exposure:

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- Good hand washing.
- Wash all produce well.
- Peel the skin off fruits and vegetables.
- Grow your own food.
- Do not wear outdoor shoes inside.
- Wipe surfaces – ie. after art activities.

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- Dust with a damp cloth to collect dust rather than scatter it.
  - Vacuum regularly and change the vacuum bag frequently.
  - Vacuum when children are not in the room.
  - Keep children away from areas being repaired or renovated.
  - Do not store poisons in food containers.



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- Open windows to keep your home smelling fresh, empty garbage regularly to avoid use of air fresheners.
  - Air out new carpets, vacuum carpets regularly, wash throw rugs regularly, air out crib mattress.
  - Reduce the use of perfumes and scented personal care products or use them in well ventilated areas, particularly when children are present.

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- Be knowledgeable about the hazardous substances that may be used or within the house.
  - Check blinds – Polyvinyl chloride (PVC) blinds made before June 1996 contained lead.
  - Identify places where toxic materials may be exposed.
  - Be alert at all times.



- Action is needed: before children are conceived, during pregnancy and all life stages.
- Create awareness: childproofing our homes, schools and communities for environmental health.
- It is better to be safe than sorry.

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