Health Canada Santé Canada

Canada

Health Canada's Environment Health Program in Ontario

YOUR HEALTH AND SAFETY... OUR PRIORITY.

Goals for Today

- Overview of the Environmental Health Program
- Learn about the Environmental Assessment and the Contaminated Sites Program
- Learn about Chemicals
  - Identify strategies for reducing chemical related risks
- Learn about Radon
  - Why testing is important
- Learn about Outdoor Air
  - Understand the Air Quality Health Index
- Raise awareness of Health Canada's resources

Overview of Health Canada's Environmental Health Program in Ontario

Environmental Health Program

- The Environmental Health Program (EHP) is a national program that promotes healthy and safe living, working and recreational environments by

  - identifying and assessing health risks to Canadians caused by environmental factors

  - Reaching out to Canadians to raise improving awareness of risks and health impacts related to environmental factors and mitigation strategies to help address any risks

Environmental Health Program

- The Environmental Health Program is comprised of an overarching CORE program and five environmental health program areas

ENVIRONMENTAL ASSESSMENT PROGRAM

What Are Environmental Assessments?

- Environmental assessment is a process to predict environmental effects of proposed projects before they are started.

- An environmental assessment:
  - identifies potential negative environmental effects;
  - proposes measures to mitigate negative environmental effects;
  - predicts whether there will be significant negative environmental effects after mitigation measures are implemented
  - Follow-up program to verify the accuracy of the environmental assessment and the effectiveness of the mitigation measures.

The *Canadian Environmental Assessment Act, 2012*
(CEAA2012)

Who is Involved in Environmental Assessment?

Responsible authority (RA)

- Canadian Environmental Assessment Agency, Canadian Nuclear Safety Commission, National Energy Board
- Role
  - Ensuring environmental assessment are conducted in accordance with CEAA2012
  - Ensuring the public has opportunities to participate in the process

Federal authorities (FA)

- Health Canada, Environment Climate Change Canada, Fisheries and Oceans Canada, Natural Resources Canada, Transport Canada…
- Role
  - provide information and advice to support the carrying out of environmental assessments by the responsible authorities

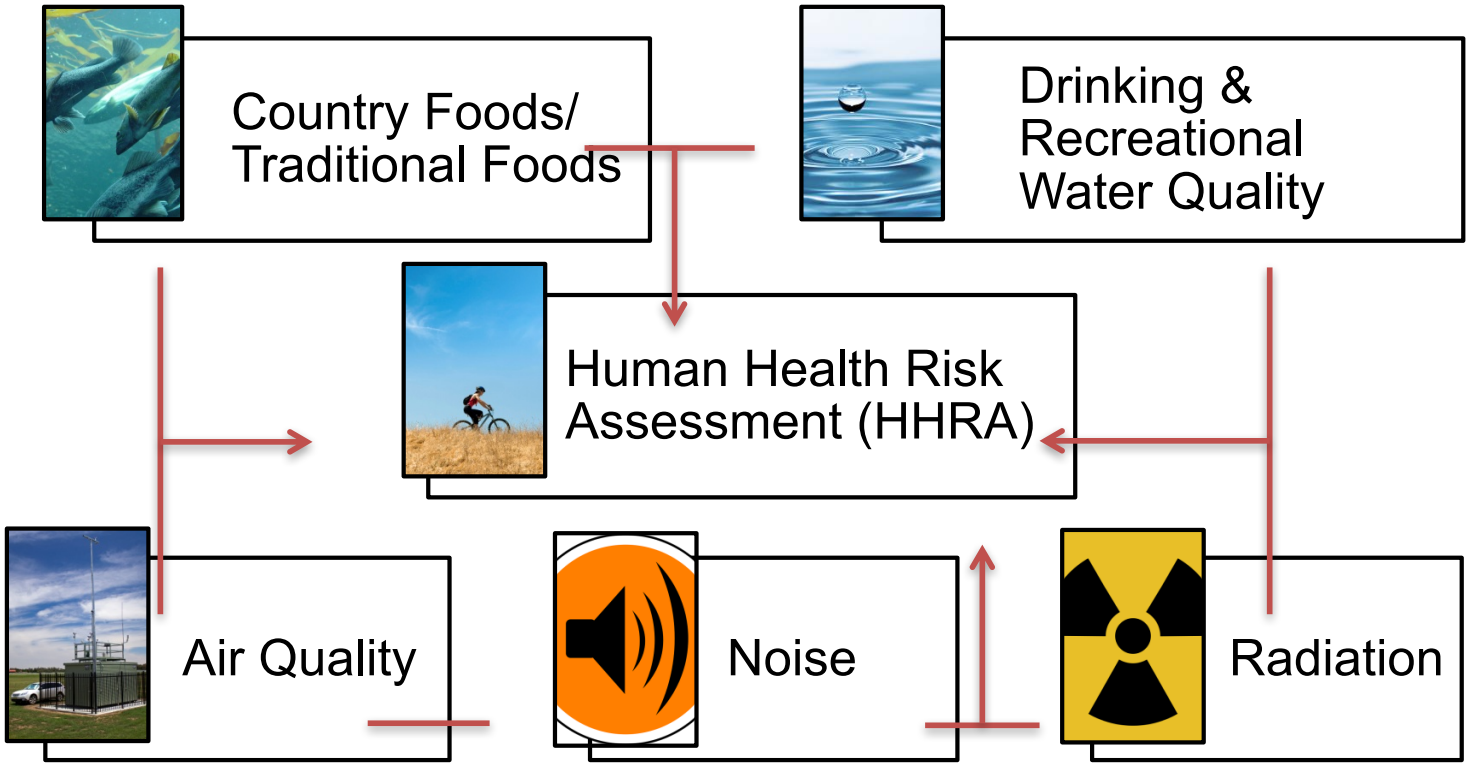
Proponents

- Companies with sites undergoing environmental assessment

What are Health Canada's requirements under the Act?

- Proved advice based on the areas of expertise in the department
- *CEAA 2012 notes that* HC's advice takes into account "environmental effects" as identified in
  - *Section 5(1)(c) – An effect of any change caused to the environment with respect to the health of Aboriginal peoples*
  - *Section 5(2)(b) – An effect of a change caused to the environment linked to a federal power, duty or function, on the health of all peoples*
  - *Section 67-Review of projects on Federal lands*

What does Health Canada look at?



What is our role in the regional office?

HC focuses on key program priorities:

- Prevent, reduce & mitigate the potential health impacts of project-related exposure to contaminants (chemicals of concerns, particulate matter, etc.) in water, air, or country food
- Provide information and analysis :
  - On whether the potential health effects of a project could impact an Aboriginal group's ability to exercise their potential or established rights
  - On the appropriate characterization of noise and the effects of changes in noise
  - to proponents on the current state of scientific knowledge regarding the possible health effects of exposure to electric and magnetic fields
  - to support the Canadian Nuclear Safety Commission regarding effect regarding project-related radiation

CONTAMINATED SITES PROGRAM

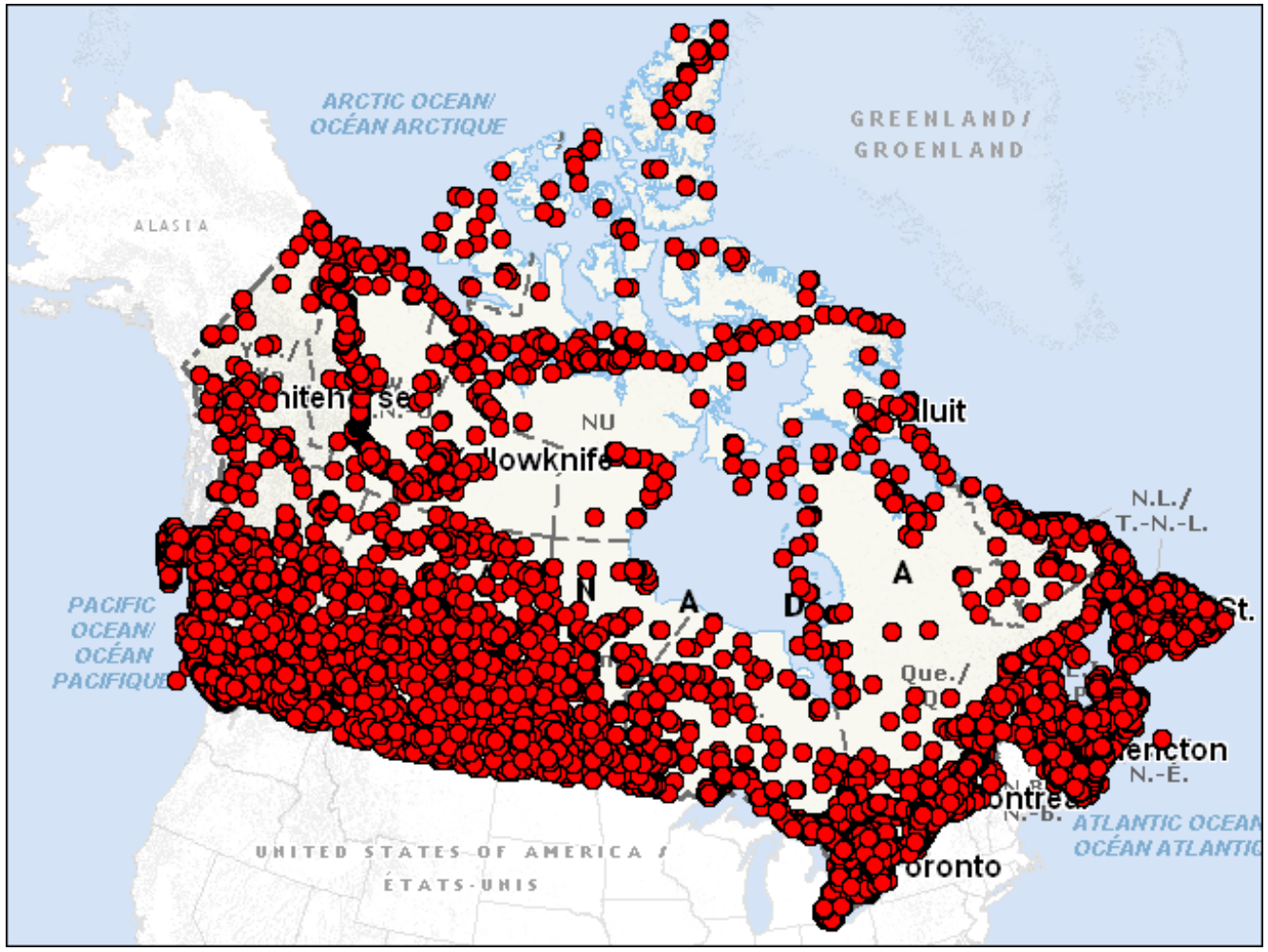
EHP Program Area – Contaminated Sites

What is the Federal Contaminated Sites Action Plan (FCSAP)?

- $3.5 billion, 15-year program established in 2005
- Reduce risks to human health and the environment

Fire Fighting Training Area, CFB Borden

What is a Contaminated Site?



April 2011: All known or suspected federal contaminated sites in Canada N = 20,000

A site where there are substances at concentrations higher than environmental guidelines

Who is involved in FCSAP?

Administration

Environment and Climate Change Canada / Environnement et Changement climatique Canada

Treasury Board of Canada Secretariat / Secrétariat du Conseil du Trésor du Canada

Expert Support

Health Canada / Santé Canada

Fisheries and Oceans Canada / Pêches et Océans Canada

Environment and Climate Change Canada / Environnement et Changement climatique Canada

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

Custodians

Federal government departments requesting funding for work to remediate contaminated sites: e.g. INAC, ECCC, TC

What is our Role?

Provides site-specific guidance and advice on potential risks to human health

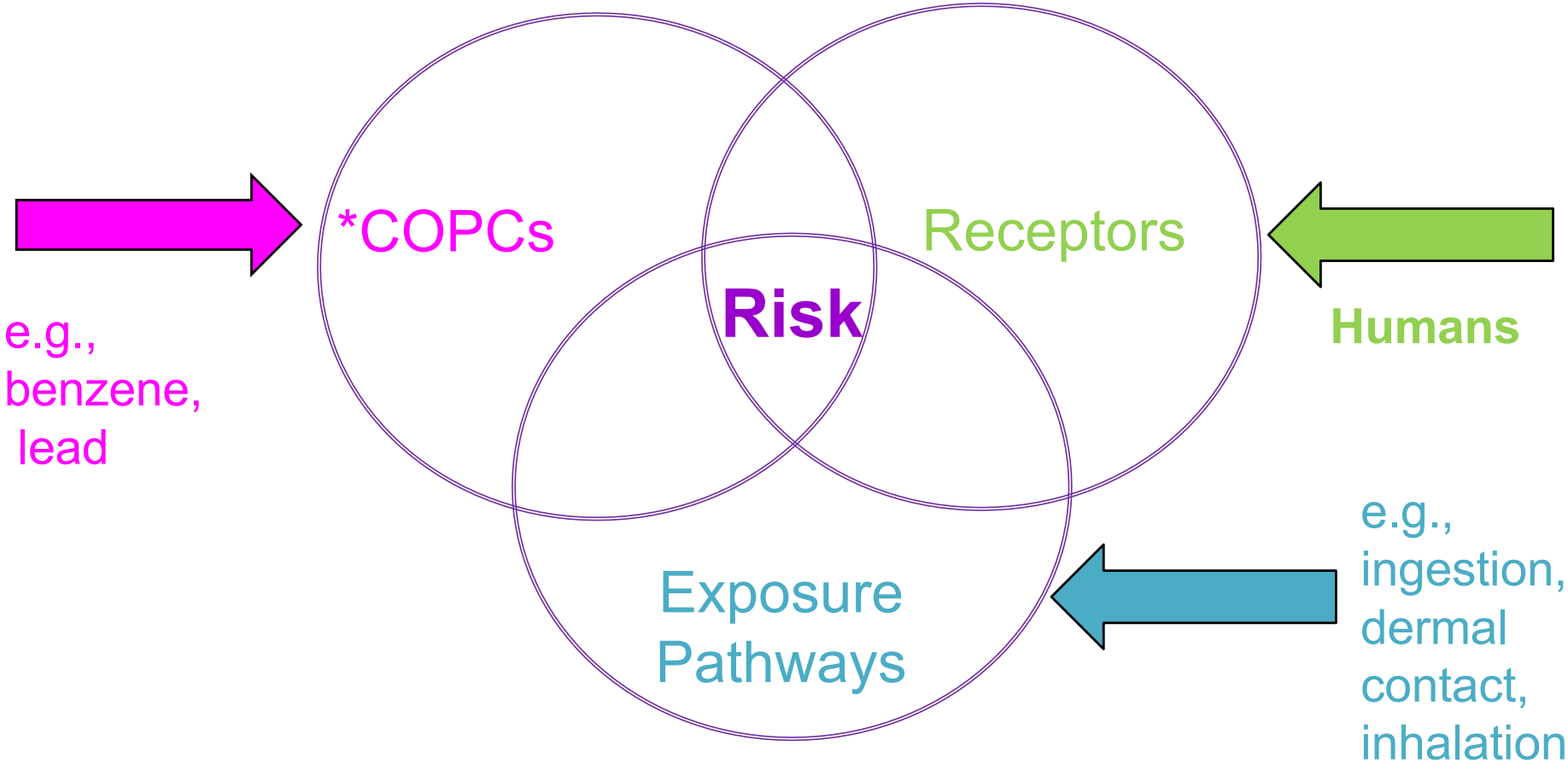
- Peer review of human health risk assessments and related reports from Custodians
- Input and/or advise on other health related issues, such as
  - Soil quality guidelines
  - HHRA guidance documents, etc.
- Provide input to help in determination of eligibility for FCSAP funding
- Provide advise to custodial departments, provincial government, consultants, etc.

Other roles

- Reviews reports for Environmental Assessment projects


Holding sediment at Thunder Bay Inner Harbour

WHAT IS RISK ASSESSMENT?



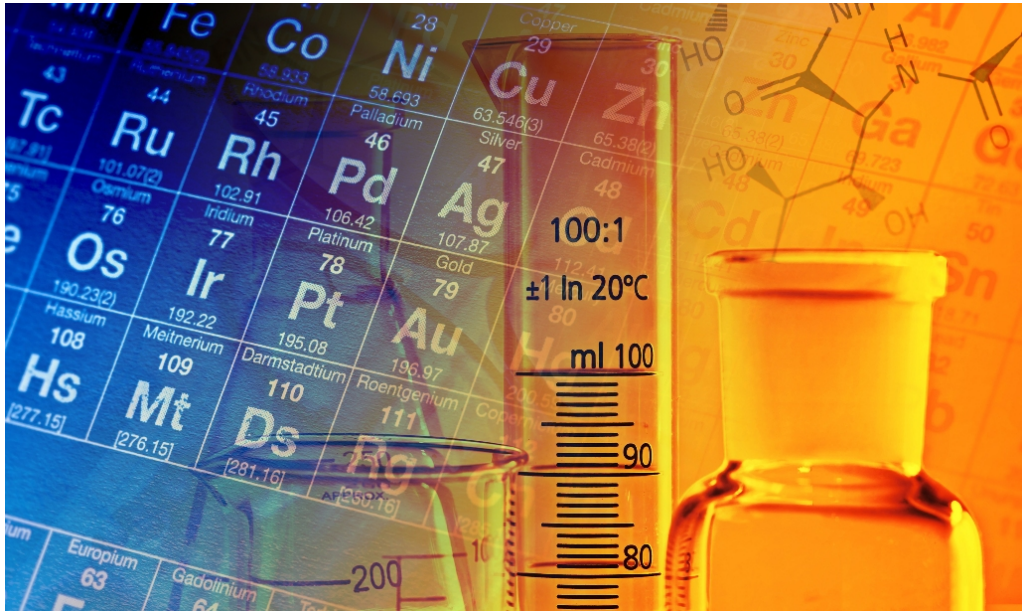
*COPCs: Chemicals of Potential Concern

CHEMICALS MANAGEMENT PROGRAM

Chemicals in your environment and impacts on human health

What are Chemicals?

- Everything is made of chemicals



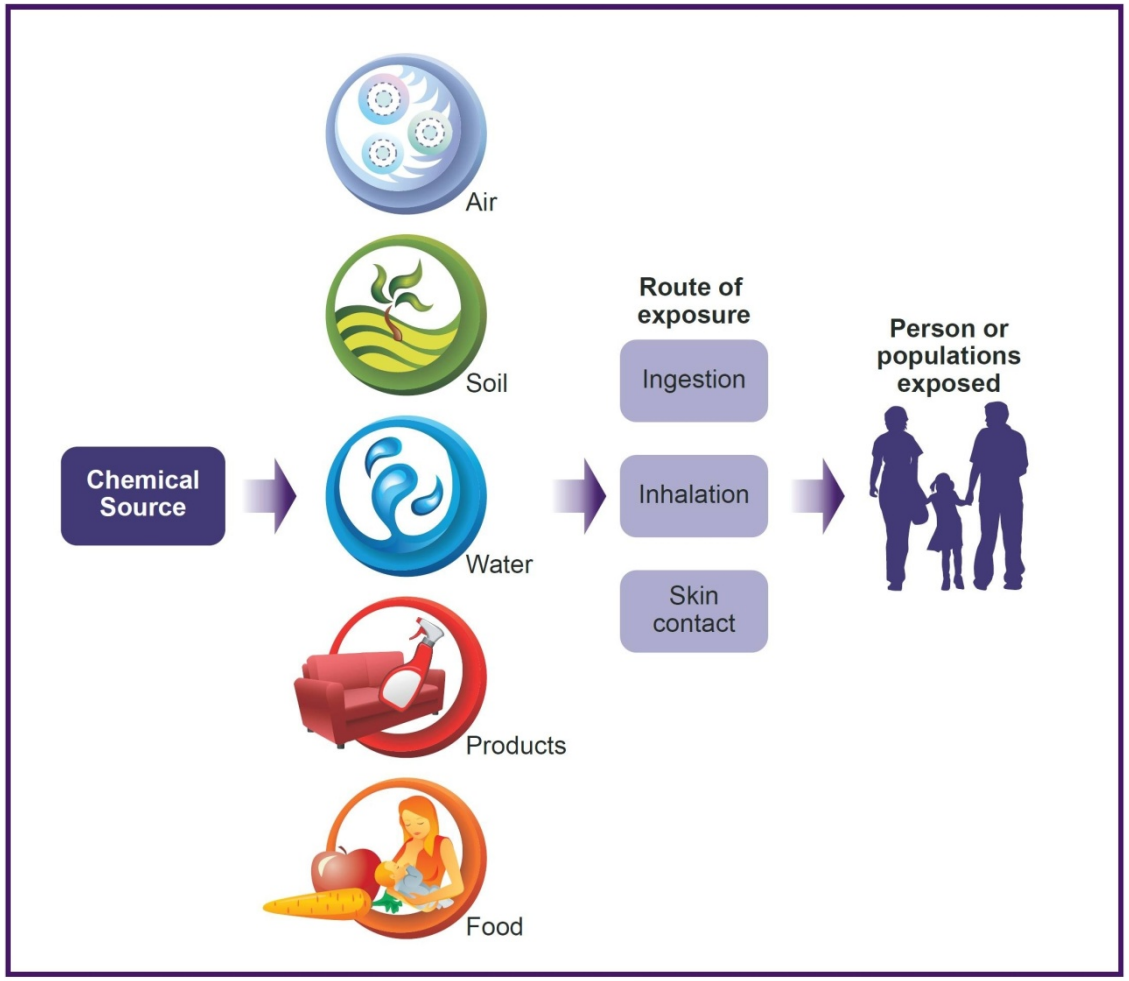
Chemicals Can Be Positive

- Chemicals can have beneficial or protective effects, e.g.:
  - Nutrients
  - Medicines
  - Disinfectants
  - Sunscreen
  - Insect repellant

Chemicals Can Impact Your Health

- Adverse effects from exposure to chemicals can be:
  - Short-term or long-term
  - Mild or serious
  - Reversible or permanent
  - Fatal

How are humans exposed to chemical substances?



What is Exposure?

- Pathways
  - Where the exposure comes from
- Routes
  - How a chemical enters the body (swallow, inhale, skin contact)
- Duration
  - Length of exposure
- Frequency
  - Daily, weekly, monthly, occasionally…
- Amount
  - Concentration or dose

Indoor Air – What you can do to reduce risk

Smoke

- Minimize exposure to wood and cigarette smoke
- Install smoke detectors (on each level of your home)

Mould

- Clean up small areas (size of a garbage bag folded in half) with water and dish detergent
- Get help with larger areas
- Prevent mould from growing

Dust

- Dust regularly using a damp cloth
- Vacuum regularly

Keep Carbon Monoxide Out

- Install a carbon monoxide detector according to directions
- Maintain and inspect furnaces, fireplaces, gas and wood stoves, chimneys and water heaters
- Carefully follow directions when using kerosene, oil space heaters or oil lamps
- Don’t idle in garage, even if the door to the outside is open
- Never use barbecues or outdoor camping stoves indoors

Consumer Products (bleach, paint, solvents, glues, bathroom/kitchen cleaners, pesticides etc.) – **What you can do to reduce Risk**

- Read the labels (Use, Storage and Disposal). Look for hazard symbols
- Carefully follow all label instructions
- Ensure adequate ventilation
- Buy only what you need
- Store chemical products in their original containers
- Never mix chemicals together
- Dispose of properly

Soil – What you can do to reduce risk

- Wash hands after contact with soil
- Avoid tracking soil indoors on shoes and clothing
- Remove shoes at door

Food Safety – What you can do to reduce risk

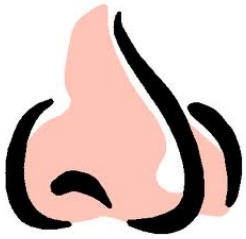
- Always wash your hands, dishes and cooking surfaces with soap and hot water before and after you handle food
- Wash all fresh fruits and vegetables under cool running water before you eat or cook them
- Peel or scrub root vegetables
- Wash your re-usable grocery bags
- Use microwaveable safe containers in the microwave

RADON PROGRAM

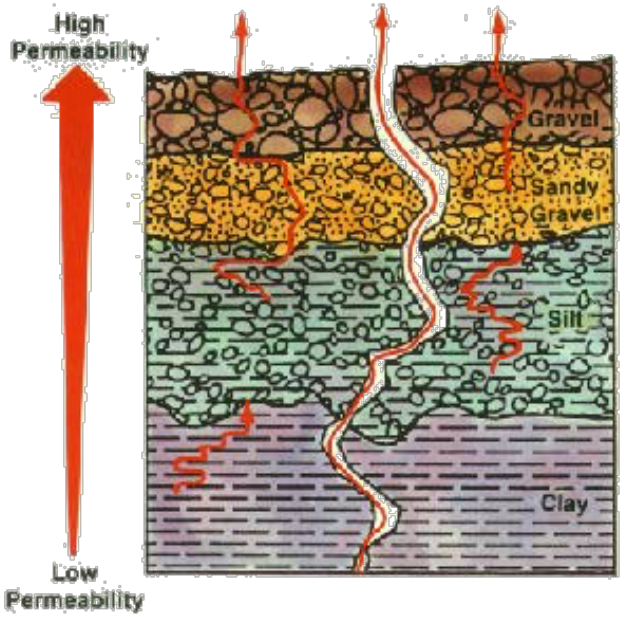
What is Radon?

- Naturally occurring radioactive gas
- It is colourless, tasteless and odourless
- Our human senses cannot detect radon

- ***You can't***



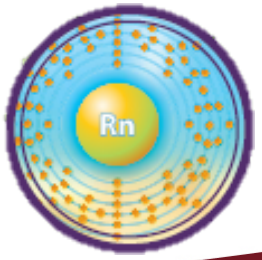
How is Radon Produced and Measured?



- Produced from decay of uranium in soils and rocks
- Radon gas can easily move through the pours of soils such as sand and gravel
- Radon is short lived; has a half-life of 3.8 days

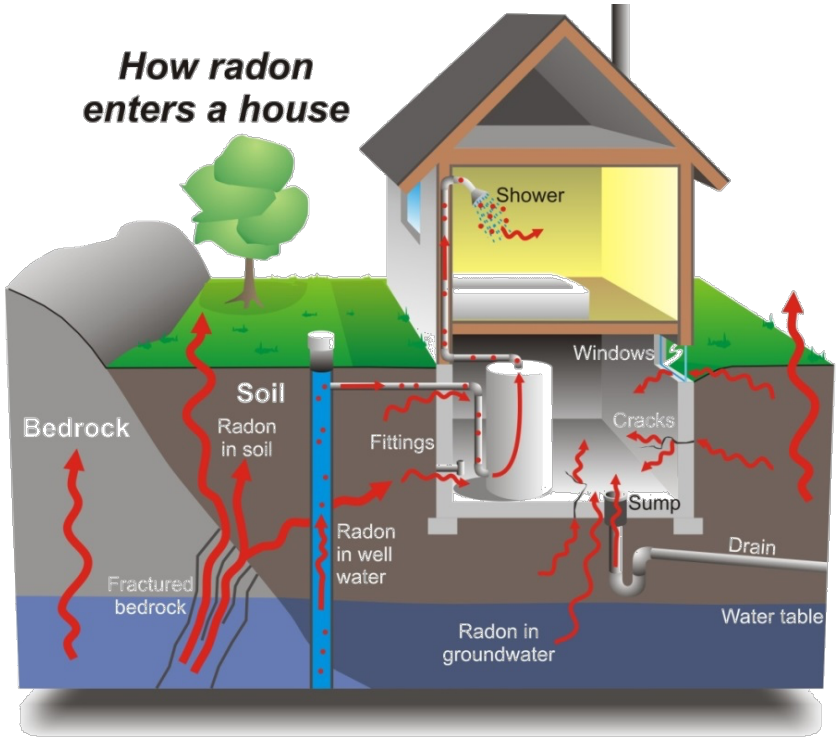
- After 3.8 days or at the end of each half-life, radon converts to a new element called polonium (Po)

- In Canada radon is measured in the SI units of **becquerels per cubic metre** (Bq/m^3)

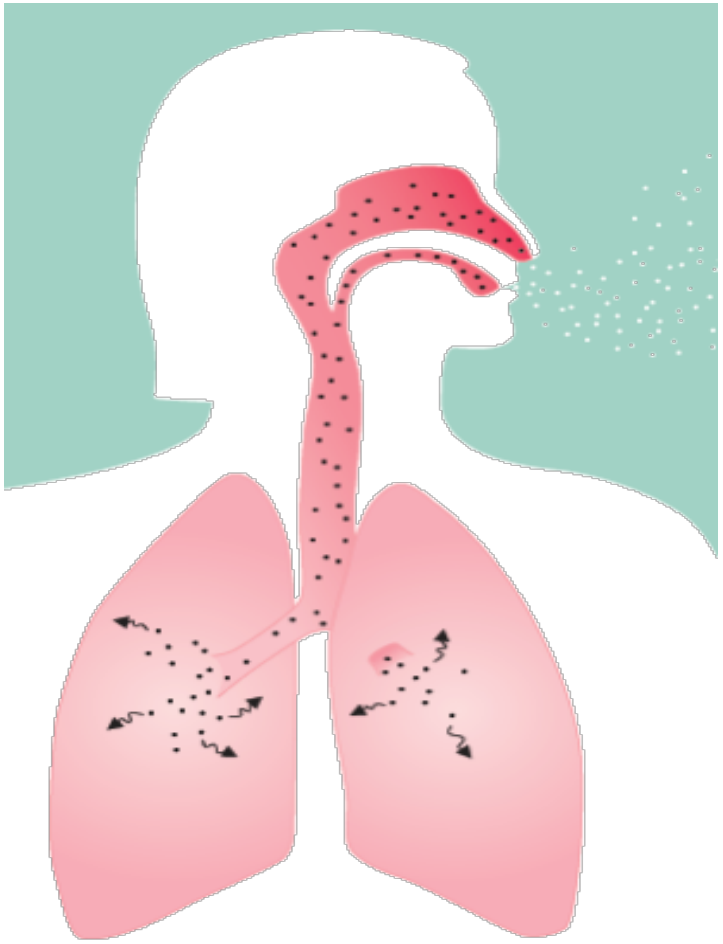


How Radon Enters A Home

- **Primary routes:**
  - Cracks on foundation and floor-wall joints
  - Open drains
  - Open sump pit
  - Exposed soil
  - Loose fitting pipes (openings around sump pumps, floor drains, pipes)
- Radon is soluble in water and can be found in groundwater from small wells
- Once inside the home, radon can build up to dangerous levels



Why Worry About Radon?



- Radon is the largest source of natural radiation exposure (50%)

- The known health effect of radon exposure is the risk of developing **Lung Cancer**

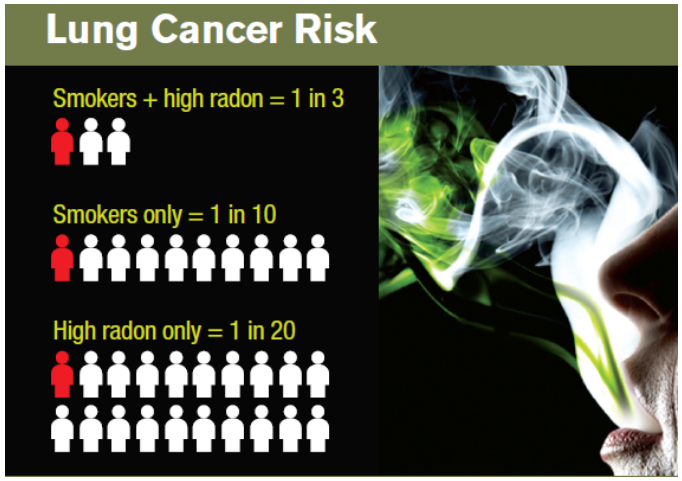
In Canada

- Approximately 16% of lung cancer related deaths every year equivalent to approximately **3200 deaths** per year

In Ontario

- Approximately 13.6% of lung cancer related deaths every year equivalent to approximately **850 deaths** every year

Radon and Smoking: Higher Risk of Lung Cancer



The combined effects of radon exposure and smoking create a RISK greater than the two actions separately

Factors Affecting Lung Cancer Risk

- The concentration of radon in the house
- The length of time exposed to high radon levels
- Ventilation rate of the house/building
- Smoking habits of individuals

2007 Radon Guideline from Health Canada

- *"Remedial measures should be undertaken in a dwelling whenever the average annual radon concentration exceeds 200 Bq/m³ in the normal occupancy area"*

What is a Dwelling?

Residential homes and buildings with a high public occupancy rate such as schools, hospitals, long-term care residences, and correctional facilities

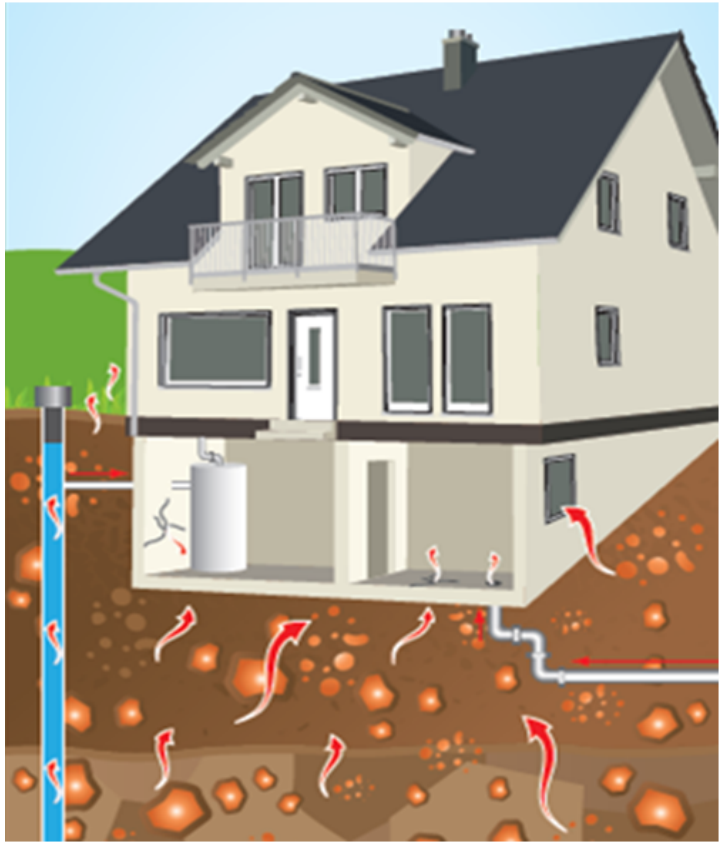
What is Normal Occupancy?

Occupied for greater than 4 hours per day

Test for Radon

Health Canada recommends conducting long-term radon tests for a minimum of 3 months

Fall and Winter are the most optimal seasons to test



Two options for radon testing:

1. Hire a Canadian – National Radon Proficiency Program (C-NRPP) certified radon measurement professional (http://c-nrpp.ca/ or 1-855-722-6777)

2. Purchase a long-term, do-it-yourself test kit

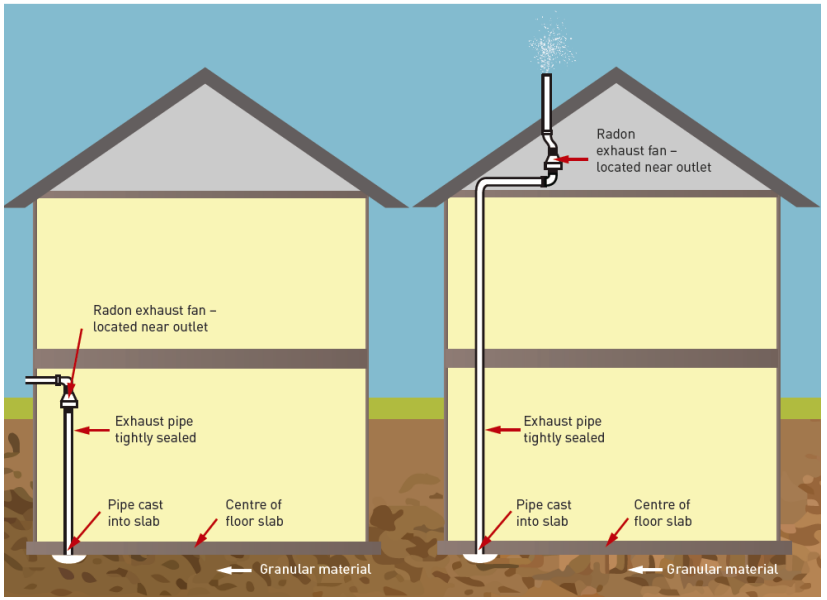
When to Reduce Radon Levels

200 - 600 Bq/m³
fix your home
within 2 years

Above 600 Bq/m³
fix your home
within 1 year

How to Mitigate/Reduce Radon Levels?

- Active Soil Depressurisation (ASD) system is the most effective radon reduction method
- Hire a C-NRPP certified radon mitigation professional (visit: http://c-nrpp.ca/find-a-professional or call: 1-855-722-6777)



Other actions that can be taken to reduce radon:

- Seal radon entry routes - cracks in the foundation, sump holes, gaps around pipes and drains
- Increase the exchange of air – air exchanger or HRV

OUTDOOR AIR & AIR QUALITY HEALTH INDEX (AQHI)

Outdoor Air & Air Quality Health Index (AQHI)

What is outdoor air pollution?

- A mixture of harmful gases or particles in the air, such as
  - dust, pollen, smoke, soot, etc.
- Strongly influenced by weather conditions and topography
- Carried by winds for hundreds of kilometres

What are key sources of air pollutants?

Natural sources:

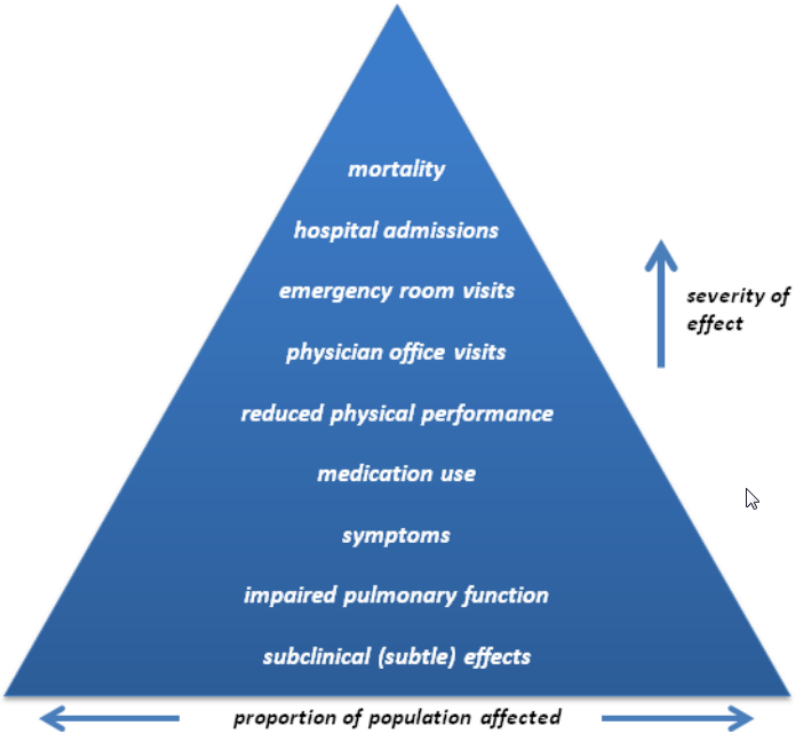
- Forest fires
- Dust from soil and volcanoes

Human Sources:

- Motor Vehicles
- Industrial processes
- Burning of fossil fuels (cooking, heating, etc.)

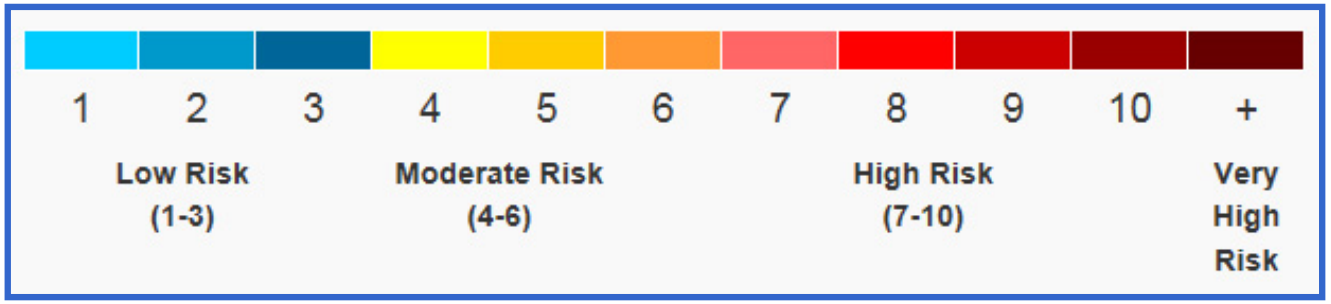
What are health effects of air pollution exposure?

- Irritated **eyes**
- Increased mucus in the **nose** or **throat**
- Sore throat
- Cough
- Difficulty **breathing**, especially during exercise
- Worsening of existing **heart** and **lung** conditions



What is the Air Quality Health Index?

- A scale (1-10, 10+) showing the relative health risk associated with the air you breathe.
- Updated every hour
- Recommended actions for each population (*general* or *at-risk* population)



AQHI – A closer look

Health Risk	Air Quality Health Index	Health Messages	
		At Risk Population*	General Population
Low Risk	**1 - 3**	**Enjoy** your usual outdoor activities.	**Ideal** air quality for outdoor activities.
Moderate Risk	**4 - 6**	**Consider** reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.	**No need to modify** your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
High Risk	**7 - 10**	**Reduce or reschedule** strenuous activities outdoors. Children and the elderly should also take it easy.	**Consider** reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
Very High Risk	**Above 10**	**Avoid** strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	**Reduce or reschedule** strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

***People with heart or breathing problems are at greater risk.**
Follow your doctor's usual advice about exercising and managing your condition.

How do you use the AQHI?

1. **Determine which group** you belong to:

   – **General Population:** healthy people, and those not exerting themselves outdoors.

   OR:

   – **At-risk Populations:** people with existing heart or lung conditions, seniors, children or people participating in sports or strenuous work outdoors

2. **Read and follow actions** recommended for you

3. **Use the forecast to plan** outdoor activities

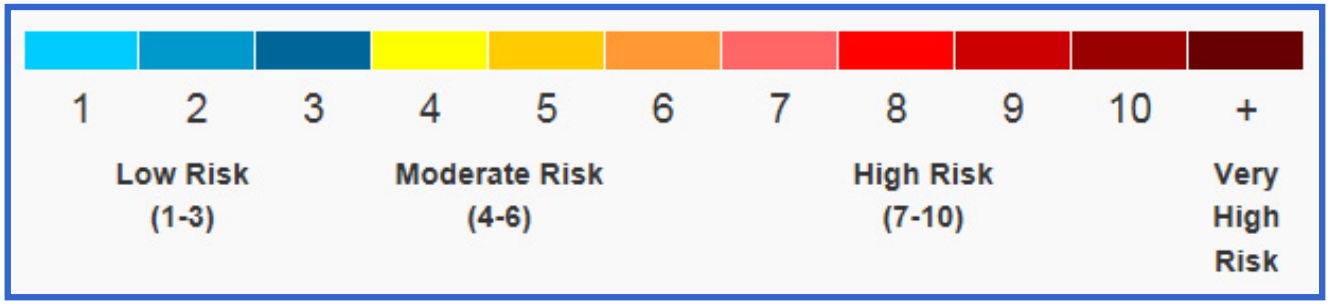
Self-calibrating to the AQHI

Find out how the AQHI works for you:

1. Check the Index number when you notice symptoms

2. Keep track of your symptoms as the AQHI changes

3. Determine which number on the scale triggers worsening of your health condition or symptoms



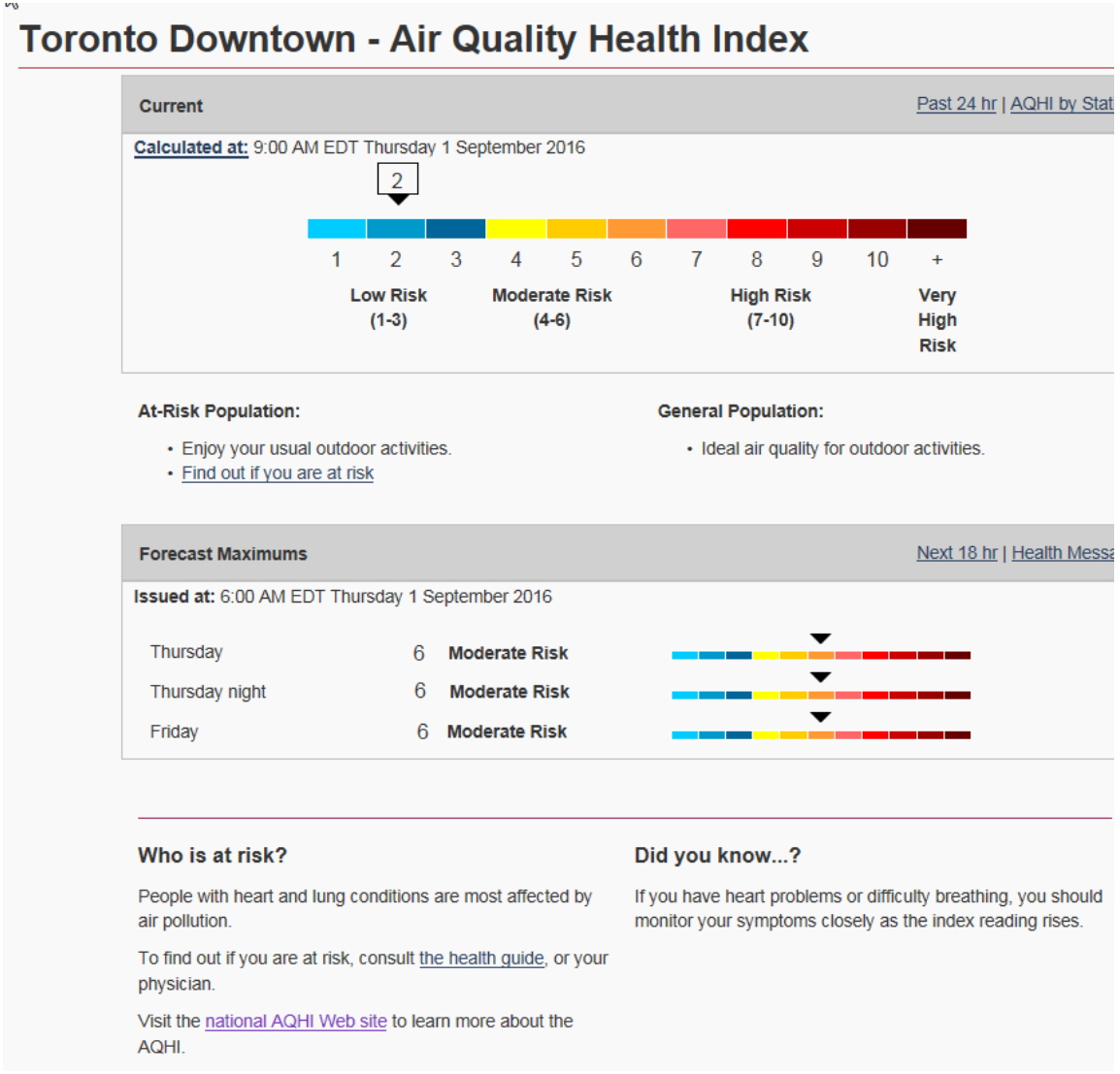
Case Study

Judy's mother is 40 years old and has no pre-existing heart or lung conditions.

She is planning on joining Judy on her outdoor run Thursday afternoon.

The AQHI indicates a level of 6.

What should she do?



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More Information

AQHI Canada

- App created by:

Government of Alberta

- App available through: Android, Apple

RESOURCES & CONCLUSION

Using Health Canada Resources

http://www.hc-sc.gc.ca/ewh-semt/radiation/radon/index-eng.php

http://www.healthycanadians.gc.ca/healthy-living-vie-saine/environment-environnement/home-maison/hazard-risque-eng.php

http://healthycanadians.gc.ca/healthy-living-vie-saine/environment-environnement/air/quality-air-qualite-eng.php

Recap

- Individuals can take an active role in managing risks
- Risk can be managed by reducing exposure
- You can take simple actions to reduce your risk
  - Read Labels
  - Test your home for Radon
  - Consult the AQHI
- Contact professionals when help is required
- Review Health Canada Resources for more information

Questions?

Please complete the learning survey

Thank you!


Is your
environment
healthy?
Votre
environnement
est-il sain?