Air Quality Health Index

The Air Quality Health Index (AQHI)[1] from Environment Canada is a tool to help protect Canadians from the harmful effects of air pollution. The scale goes from 1 (being clean air with relatively low risk to human health) to 10 (dirty air with a high risk to human health). When there are multiple forest fires in Alberta, the AQHI of Calgary can reach a high value. The current AQHI for Calgary can be viewed by following this link: http://weather.gc.ca/airquality/pages/abaq-002_e.html

Environment Canada uses three factors to determine the AQHI:

1. **Ozone at ground level**
   - Ozone at ground level mostly comes from exhaust from cars and from volatile organic compounds (VOCs) interacting with sunlight.
2. **Particulate Matter (size 2.5 and 10)**
   - The smoke particles created from the forest fires in our region are the most likely cause for cause a value of 10 on the AQHI scale. Smoke particles originated from a forest fire have a variety of sizes.
   - A particle size between 0.1 – 10 µm can deposit in the trachea-bronchial and alveolar regions of our lungs and by doing so will cause adverse health effects.
   - Particles with a size above 10 µm are filtered by our nose hairs. Particles with a size below 0.1 µm are exhaled from our lungs.
3. **Nitrogen Dioxide**
   - Nitrogen dioxide is linked to a number of adverse health effects and originates from cars, power plants and off road equipment.

With a high value on the AQHI scale, Environment Canada suggests that you reduce or reschedule strenuous outdoor activities. You may experience slight irritation in your respiratory tract, eyes or ears when the AQHI is at a high value. This irritation will most likely be from the particles that our bodies can filter. However you may not immediately feel the adverse effects from the particles our bodies cannot filter; the particles which have a size of 0.1 – 10 µm.

References:

1. **Air Quality Health Index – Home – Air – Environment Canada**, website: https://ec.gc.ca/cas-aqhi/ , *Environment Canada*, retrieved July 21, 2015.