# OZONE - IS IT GOOD OR BAD?

Ozone is a highly reactive gas consisting of 3 oxygen atoms (O3). Ozone is frequently mentioned in the news these days. You may hear "the ozone layer is being depleted; don't use products containing CFCs that harm the protective ozone layer". Next you hear "the air quality index is high today due to ozone pollution; ground level ozone causes breathing difficulties for sensitive population groups." So which is it - good or bad? The answer is both! The protective ozone layer in the upper atmosphere is very different from ground level ozone pollution, also known as photochemical smog.

## GOOD UP HIGH:

The ozone layer in the stratosphere occurs more than 10 miles above the surface of the earth. This thin, high altitude, shield protects the earth from the sun's ultraviolet rays. The ozone molecules block many of the harmful rays. The thicker the ozone layer, the greater the protection. Scientists know that chlorofluorocarbons (CFCs) deplete the ozone layer. Use of CFCs is decreasing, but the chemical can still be found in many air conditioning and refrigerant systems, industrial processes such as plastic foams and in cleaning solvents. CFCs were also previously used as propellants in spray cans. Scientists predict there will be increased numbers of people with skin cancer and depressed immune systems as the size of the ozone layer decreases. There could also be reduced crop yield, an increase in ground level smog, and reductions in oxygen producing microorganisms in the oceans.

## BAD DOWN LOW:

Ozone that occurs at ground level - where people breathe - can be a very serious problem. In the Great Lakes region, ground level ozone is a warm-weather phenomenon which develops through the reaction of sunlight with nitrogen oxides and volatile organic compounds (VOCs). Ozone can occur hundreds of miles from where VOCs and nitrogen oxides are emitted into the atmosphere: it's not just a big city problem. Ozone damages crops, forests, and materials such as plastics and rubber. Adverse health effects include eye irritation, decreased vision, increased asthma and chronic lung disease incidence, coughing, dizziness, nausea, and reduced heart and lung capacity. People who exercise heavily during periods of elevated ozone levels are included in the most sensitive category. Many scientists believe the air quality health standards for ground level ozone provide little margin of safety and need to be strengthened to reflect current ozone research.

### WOULDN'T IT BE GREAT IF ...

"Why not build a giant fan to blow all the ground level ozone into the stratosphere to patch up the ozone layer?" Unfortunately, solutions to our ozone problems are not that simple. But there ***is*** something we all can do to reduce the ozone problem ...

- Drive less, consolidate trips, walk, bicycle, use mass transit
- Purchase fuel efficient vehicles
- Keep vehicles tuned up; repair faulty emission control equipment
- Keep paint cans and solvent products tightly sealed when not in use
- Don't burn refuse
- Support environmentally conscious manufacturers and products
- REDUCE, REUSE, RECYCLE

For more information on what the DEQ is doing about ozone, check out the internet web site at:

**http://www.michigan.gov/deq and click on AIR**

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