

## The Air We Breathe

By Dr. Arthur Furst

Any pollutants we inhale must be dealt with by the body's defense mechanisms. Scientists believe that years of exposure to airborne contaminants can greatly undermine our immune systems and our overall health.

### Where do these contaminants come from?

Although some contaminants come from natural sources, those we have created during our rapid industrial development pose the greatest risk. The burning of any fossil fuel (coal, oil, diesel or gasoline) results in a large number of organic compounds, usually hydrocarbons, being released into our atmosphere. The antiknock ingredient used in gasoline, an organic lead compound, results in measurable amounts of lead in the air from exhaust. Industrial smoke stacks spew out so many compounds it is virtually impossible to measure all of them. Natural disasters like volcano eruptions and forest fires can also liberate tons and tons of hydrocarbons. In my research, I have shown that it only takes a few milligrams of some of these hydrocarbons to induce lung cancer in experimental animals. The burning of coal to generate electricity liberates tremendous

now become too airtight. Ventilation is minimized and indoor air pollutants are trapped and build up. Indoor air pollution currently equals or exceeds the problems of outdoor air.

Simply using a gas stove results in liberating "combustion products." Cooking on a gas stove also releases carbon monoxide which, in concentrated amounts, can cause headaches and even death. Smoke and gases from burning wood contain the aromated hydrocarbons which are associated with forest fires.

There are lots of other sources of indoor air pollution, too. In studies comparing indoor air quality in New Jersey, Los Angeles and Holland, 52 different gases were identified in our indoor air — a staggering number.

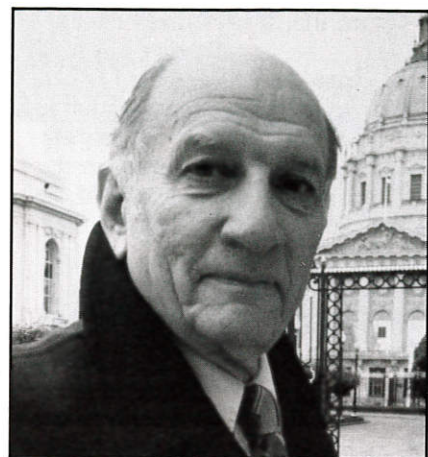
Additional contaminants include items such as dust, cigarette smoke, pollen and other "allergens" that are common factors of our indoor air.

### What is being done?

In 1987, the U.S. Congress, for the third time in five years, set more amendments to the Clean Air Act of 1970. The intent of these amendments, directed primarily at industry, is to further control the amount and number of contaminants that enter our air. The Environmental Protection Agency (EPA) has also just begun preliminary studies on the health effects of 37 high priority air pollutants. How long all of this will take to have a positive impact on the air we breathe is anyone's guess.

Scientists and researchers are showing us that we can take measures to reduce the risks of our exposure to air contaminants. We can open our windows and ventilate our homes from time to time. We can install exhaust hoods over our stoves and ovens. We can take the intervention step of placing efficient air filtration systems in our homes, and we can choose to assure our diets are rich in the antioxidant nutrients known to reduce our exposure to the effects of certain airborne contaminants. These factors combined give us the beginnings of some form of protection during the uncertain years ahead.

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***"Articles...have related excess deaths from cancer to air pollution."***

From the scientist's perspective, the air we breathe is the single most essential element to life. We can get along without just about everything else, at least for a short period of time. But, without air, our life expectancy would be measured in terms of minutes.

Air is a mixture of several different gases including nitrogen, oxygen, carbon dioxide and trace amounts of several inert gases. Ninety-nine percent of its composition, however, is made up of nitrogen (78%) and oxygen (21%). It is the oxygen portion of air that sustains life. With each breath we take, oxygen is absorbed by our lung tissue and carbon dioxide (the exhaust product of metabolism) is given off to be exhaled from the body. Once absorbed, the oxygen is transported via the bloodstream to each and every cell in the body where it plays a vital role in cellular energy production.

In its pure form, our air is truly "the breath of life." Unfortunately, our air can no longer be considered pure. Depending upon where we live, a great number of different contaminants permeate the air we breathe.

amounts of gases like sulfur oxides, and automobile exhaust liberates complex nitrogen oxides. The latter are extremely toxic to lung tissue. Newer regulations have resulted in extensive decreases in the amount of these gases liberated, but have not eliminated them.

Thus, with every breath we take, we inhale varying amounts of air pollutants. Articles in scientific publications have related excess deaths from cancer to air pollution.

The government has mandated controls for the emission of at least 224 specific toxic air pollutants; insisting that newer technologies can be applied. The goal is to cut down any pollutant which is emitted in excess of 25 tons per year! When is this to be achieved? The answer — hopefully 10 years from now.

### Can we protect ourselves by staying inside?

Let's look indoors. Since the energy crisis, there has been great emphasis on heat-conservation and innovations to weatherize our homes, to the point that our houses have

Twenty thousand times a day, each and every day of our lives, the muscles of our diaphragms contract, causing life-giving air to rush into our lungs. Once full, the delicate lung tissues within instantly absorb vital oxygen and expel carbon dioxide to be exhaled as waste. This process is so subtle and so effective that we complete about 7,000,000 such actions each year without any conscious effort.

As vital as air is to our lives, we have, through ignorance and excess, managed to contaminate it with a wide array of pollutants in unbelievable amounts. From the highest levels of our atmosphere to the very surfaces of our planet, the actions and reactions of air pollutants are becoming more obvious each day. Potentially the greatest damage occurs unseen inside our lungs. With each of the 500 million or more breaths we can expect to take in our lifetime, pollutants rush in to attack lung tissues or be absorbed along with oxygen and circulated throughout the body. The health implications are obvious.

As if some foul trick was being played upon us, the very places we've always sought out as shelter are being shown to be the places of greatest risk. The time is passed when we can look at our homes as safe and passive environments. The time has come for each of us to take action to minimize the threats they contain and maximize the protection they provide. We need not wait until the damage is done. The choices are now, more than ever before, ours to make.

***An Informed Approach to Indoor Air***





# Filtration: The Healthy Choice

## Shutting out the Winter; Locking in Pollution

As fall and winter months approach, we add weather stripping, storm windows and extra insulation to our homes in the name of energy conservation. In doing so, we severely restrict circulation and ventilation processes that would allow airborne pollutants to escape. We snuggle up in our warm, cozy homes, unaware of the potential health hazard we have created. As time passes, our protected environment becomes filled with contaminants, some even toxic. As they accumulate, they can reach concentrations as high as 10 times those found in outdoor air. Concentrations this great would exceed the legal limits our government allows for outdoor air.<sup>1</sup>

## Should Houses Come with Warning Labels?

We expect a product that is dangerous to our health to possess a label warning us of its harmful effects. We are all aware of the Surgeon General's warning found on every pack of cigarettes. Household cleaners devote long paragraphs to the caution that must be taken when handling these everyday products. To imagine that our homes need warning labels is unthinkable. However, that certain smell of a brand new home may actually be the fumes of toxic chemicals used in construction and finishing materials. Maybe homes should come with the label "Beware home buyer. Living here may be hazardous to your health."

## We Can Choose to Breathe Cleaner Air

Government regulations do not exist for such indoor air quality problems, so we alone are responsible for dealing with our indoor air pollution. No one will do it for us. The only way we can reduce our risk of exposure to the contaminants found in indoor air is through greater awareness of hazardous situations and effective air filtration.



## The Hazards of Unregulated Air

With an estimated 4 million chemical compounds now in existence in our environment and another 1,000 being synthesized every day<sup>2</sup> the overwhelming prevalence of pollutants makes exposure inevitable. Today, more than 20% of our population suffers from chemically-induced environmental illness<sup>3</sup>, a condition that renders its victims ultrasensitive to their surroundings, including their homes.

The number of victims will continue to rise as long as government regulations for indoor air remain nonexistent. Hesitant to enter private homes, the government prefers to establish warnings and let us decide for ourselves if action must be taken. The inability of the government to enact and enforce effective regulations allows indoor air pollution to remain uncontrolled and potentially grow to lethal proportions.

## INDOOR AIR POLLUTANTS

The following list provides just a glimpse of the contaminants found indoors.

**Cigarette Smoking and Other Combustion Products** - Probably the most familiar indoor pollutants, these contaminants are created when anything is heated. They are composed of tiny airborne particles and toxic gases. Furnaces, fireplaces, candles and water heaters are primary contributors. Heating and cooking create such compounds as carbon oxides, nitrogen oxides and trace organic chemicals.

**Building Materials and Furniture** - These are often treated with highly toxic chemical compounds. Preservatives, sealers, solvents, drying agents and caulking have been shown to "gas off" into the air.

**Formaldehyde** - Probably the most common chemical contributor to indoor air pollution and potentially the most dangerous. An inexpensive and effective preservative, formaldehyde is used freely in building materials including: wood paneling, particle board, carpeting, adhesives, drapes, furniture fabrics, fiberglass, oil-based paints, wallpaper, caulking and insulation. "Levels of formaldehyde are highest in new residences and decline steadily as the emission rates of these materials decline."<sup>4</sup>

**Other Chemical Contaminants** - Cleaning fluids, pesticides, lighter fluids and fireplace logs all contain chemicals known to "gas off" into the air.

**Other Sources of Pollution** - Dust, pollen, animal hair, bacteria, fungi and viruses are found literally everywhere and are virtually unavoidable.

**Asbestos Fibers** - Hazardous, airborne fibers may be found in older buildings.

## OUR VULNERABLE LUNGS

When we consider the structure and functions of the lungs, it is easy to understand why air pollution has such potential for devastating effects. We take in a large volume of air, not at each breath, but over time. On an average day, we will breathe about 20,000 times, taking in approximately 500 cubic feet of air which is equivalent to 4000 gallons. During exercise, this volume may increase by a factor of 20 times or more. With each breath, we are "consuming" any toxic pollutant present, and it can't be avoided.

The lungs are a perfect medium for air pollutants to attach and attack - a fibrous, moist, warm surface designed to "take things out of the air." They contain an elaborate network of blood vessels and capillaries whose primary design and function is to take things rapidly from the lungs to the circulatory system. Medication taken by inhalation is almost as rapid as intravenous injections! Absorption into the metabolic system is much more rapid through the lungs than through the digestive system.

Air pollution is the primary cause of many diseases and conditions that are among the most devastating to strike mankind. Some are caused by specific air pollutants while others have unspecific causes.

## SPECIFIC AIR POLLUTION DISEASES

**Silicosis** - exposure to silicon dioxide  
**Asbestosis** - exposure to asbestos dust  
**Black Lung Disease** - exposure to coal dust  
**Berylliosis** - exposure to beryllium products

## UNSPECIFIC AIR POLLUTION DISEASES:

**Occupational Asthmas** - caused by the inhalation of irritant or allergenic particles or vapors from industrial processes.  
**Lung Disease, Discomfort or Asthma** - caused by irritant gases such as chlorine, phosgene, sulfur dioxide, hydrogen sulfide, nitrogen dioxide and ammonia.  
**Allergic Pulmonary Diseases** (including hypersensitivity pneumonitis) - caused by things as diverse as animals, mushrooms, coffee beans, grass, straw.  
**Pleurisy** - the inflammation of the lung pleura tissue, may be caused by airborne infectious agents or irritating substances.  
**Primary carcinoma (cancer) of the lung** - the most common fatal cancer and its frequency is increasing.

*Dr. Fred Hooper*

## Air Filtration Something We Can Do

The only thing we know for sure about our indoor air pollution is that it is here to stay. Air filtration is an option we can choose to help protect ourselves and our families from exposure to the potentially hazardous contaminants we breathe every day. Contaminants of all sizes, from gases to physical fibers, are emitted constantly and are all sensitive to different filtration removal processes. Filtering, therefore, must also be a continuous process and one that will provide the right removal methods for the particular pollutants. The best choice is an informed choice. We must investigate the types of pollutants present in our air and the best mechanisms of filtration available.

## The Dawning of A New Era In Health Care

Today we realize more than ever before that our future health lies, for the most part, in our own hands. We cannot expect government agencies to solve our nation's massive air pollution problems, and we cannot ignore the harmful effects associated with the toxic chemicals present in our air. However, we can choose an effective method to filter the air we breathe to reduce our potential for disease in the years ahead.

## Protecting the Present and Future Health Of Our Children

A child born today will never know pollution-free air. From their first breath, their bodies must deal with far greater numbers of pollutants than we faced as children. The best we can do is minimize their risk of exposure. Although we cannot control the air outside, we can incorporate an effective air filtration system in our homes that will remove or reduce the most common chemical pollutants found in our air. An air filtration system will protect our children in three ways. First, it minimizes their long-term exposure to potentially harmful contaminants found in our air. Second, it establishes an awareness in them that air pollution is a real, personal threat. Finally, it reinforces the point that we are individually responsible for our own health.

## Clean, Healthier Air With Neo-Life

In a continuing drive to protect the health of the American family, Neo-Life has investigated the problems of indoor air pollution and has addressed the many mechanisms of air filtration. Consolair represents the culmination of years of research and development to bring you the best air filtering system possible.



1. Fossell, P. Sick Home Blues. Harrowsmith, p. 48  
2. Fossell, P. Sick Home Blues. Harrowsmith, p. 46.  
3. ibid, p. 49  
4. Mellinger, P.J., Lowell L. Sever. Formaldehyde. Environmental Sciences and Future Research. 5th Ed., Vol. 1 1988, p. 327.



# The Neo-Life Difference

Neo-Life has conducted extensive research to determine the measures that would provide the greatest health protection against indoor air pollution. Two separate approaches suggest the best intervention methods available. First, a diet rich in antioxidants assures the nutritional support the body needs to fight off airborne attackers. Second, the complete removal or drastic reduction of hazardous pollutants from the air we breathe is necessary.

## Consolaire's 3-Way Filtering Process

Because there are three distinct types of pollutants found in the air, Neo-Life researchers and engineers knew that one filtration system would not be sufficient to address all the problems effectively. Therefore, Neo-Life combined three of the most effective filtration processes known to science in Consolaire to produce the most convenient and affordable tool for reducing or removing the three distinct types of pollutants found in our air.

**STEP 1: Physical Particle Filtration** - As air passes through the filter, particles as small as 1 micron are physically filtered out. Human and animal hair, skin flakes, pollen, fabric fibers, plant spores, soil dust and asbestos fibers are removed this way.

**STEP 2: Molecular Adsorption of Volatile Organic Pollutants** Gaseous, organic chemicals become permanently attached or adsorbed to the specially activated carbon within the filter as air is drawn into the Consolaire. The vapors of solvents, paint thinners, gasolines, adhesives, pesticides and chlorinated hydrocarbons are removed this way.

**STEP 3: Electrostatic Precipitation** - As air passes through the filters, a pair of high output ionizer probes change the normal charge of particles as small as .01 micron to a negative charge. Once in the filter, these negatively charged particles are captured and become permanently attached, thereby further reducing air pollutants. Bacteria, some viruses, cooking and grease smoke, tobacco and wood smoke, household dust and insecticide dust are removed in this manner.

## Cleaner Air Each Hour of Use

Consolaire's real benefit is that you don't have to think about it. Hour after hour, day after day, Consolaire is continuously filtering the air you breathe. It is not a one-pass system, but a process of cleaning and recleaning the air. Consolaire utilizes two variable speed fans that combine to offer six different filtration speeds. This allows for the air in an average bedroom to be cleaned up to 5 or 6 times per hour, or 120 times each day. (Volume of the average bedroom determined as 12'x12'x8' = 1152 cubic feet divided into 6,000 cubic feet/hour = 5.2 room volumes per hour.) The combination of the three-way filtering system along with the continuous cleaning provide superior performance that can be relied upon for years to come.



## Consolaire's Special Features

**ALLERGY RELIEF** - reduces airborne allergens to bring respiratory relief for allergy, hay fever and asthma sufferers.

**3-WAY FILTRATION** - 3 different filtering processes allows for removal of the three types of pollutants.

**EASY MAINTENANCE** - filters last 4 to 6 months, depending on quantity and quality of air being circulated and take only seconds to replace.

**COMFORT ZONE CONTROL** - high, medium and low speeds let you adjust the amount of air filtration you need for continuous comfort.

**BROAD SPECTRUM PERFORMANCE** - removes or reduces contaminants as small as .01 microns

**ATTRACTIVE** - handsome, walnut-grained cabinet complements any decor.

**SPACE SAVING** - takes up less than one square foot of surface area.

**ECONOMICAL** - uses no more electricity than one light bulb.

**PORTABLE** - weighs less than 6 lbs. and plugs in to any 110-120 AC outlet.

**UL APPROVED** - tested and approved by Underwriters Laboratories.

**OZONE-FREE** - tested and UL certified not to emit ozone.

**SAFETY GRIDS** - under the cabinet help make Consolaire child-safe.

**CONTINUOUS PROTECTION** - day after day, hour after hour, the filtering process is cleaning and recleaning the air.

## Nothing Says Love Like A Gift of Health from Neo-Life



### A. Cook's Delight

Stir up a Holiday gift for a great cook; Premium Protein Powder, All Natural Fiber Supplement, a couple of baking accessories and your favorite homemade muffins baked with protein and fiber from Neo-Life

### B. Home Scents

Surround someone special with clean air; give a Consolaire, extra filters and add the sweet scent of home with a pretty bottle of potporri

### C. The Ultimate Refresher

Give the delicious taste of sparkling clean drinking water to the ones you love; wrap up a Water Dome and a set of attractive water glasses

### D. Family Favorite

Send holiday greetings to your friends and neighbors with baskets of Formula IV, All C, NouriShake, Kwik Meal Bars and fresh fruit