

**AIR Product Overview and Q & A**  
**With Ruth Mayne and Mary Esther Gilbert**  
**9/11/23**

**1. Why is the product called AIR?**

All of the phytochemical compounds in AIR's botanicals contain nutrient factors known to:

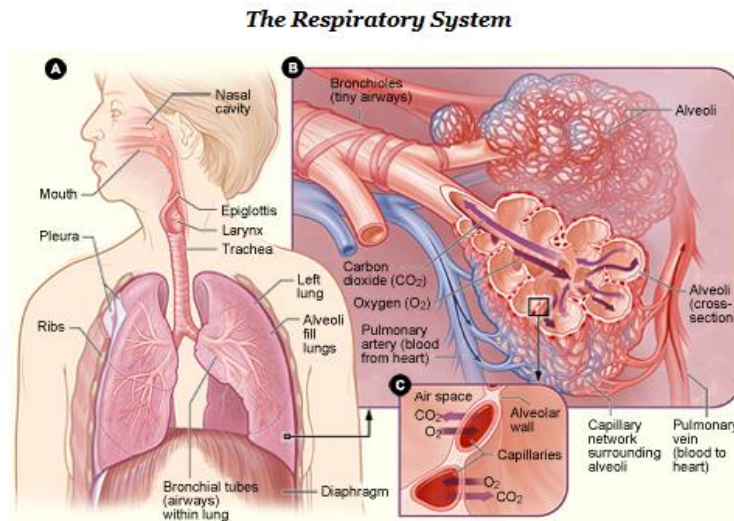
- Keep all body systems free flowing with proper oxygenation in the circulatory system for maximizing energy and physical endurance.
- Help maintain a strong immune system against invasive microbials.
- Protect the body's cells by controlling inflammation associated with scavenging free radicals (toxins, stress reactions) that damage cells and tissues and their vital functions.

**2. Describe or provide an overview of the functional benefits of AIR's ingredients.**

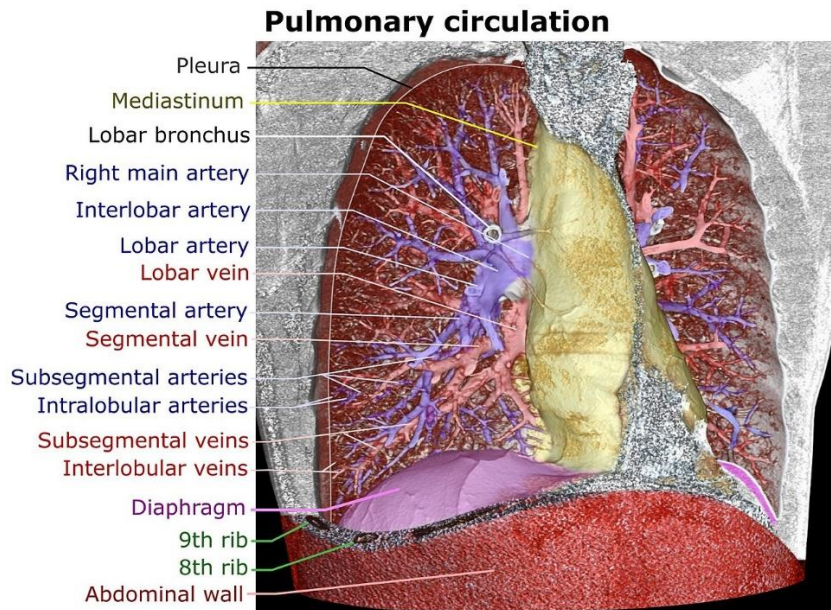
- The vast array of phytochemical compounds synergistically support the immune system's detection systems that prevent and halt various types of illness-causing microbials (bacteria, viruses) by:
  - Stopping their proliferation.
  - Readily attacking and destroying those microbials.
- Stop inflammatory responses by maintaining a higher level of antioxidants to keep damaging free radicals in check, such as:
  - Exogenous toxins that are absorbed, ingested, or inhaled (synthetic chemicals, toxic chemicals in the air and that are applied to non-organic crops, polluted water, toxic effects of drugs, alcohol, tobacco smoke).
  - Neutralizing endogenous stress chemicals that are also free radicals formed through normal metabolic processes, and mental and emotional reactions to stress.
- Ultimately, AIR's botanical constituents cleanse and restore the body's ecology or biochemical balance to properly and efficiently control inflammatory responses.

### 3. Explain the respiratory system functions.

- Delivers oxygen to the body's cells to perpetuate their biological activities.
- Warms and moisturizes the air to match the body's temperature and proper humidity level.
- Removes carbon dioxide and other waste gases upon exhaling.
- Protects the airways from foreign particles, irritants, and allergens.
- Allows the olfactory sense of smell.



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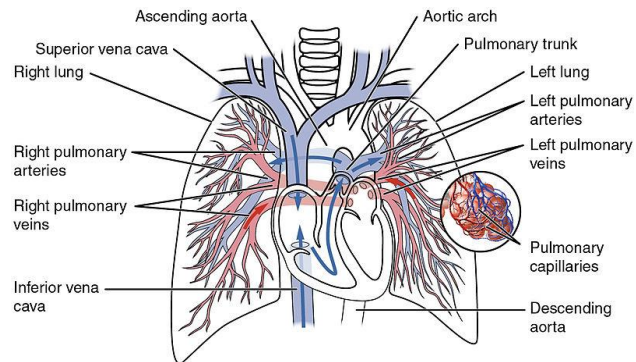
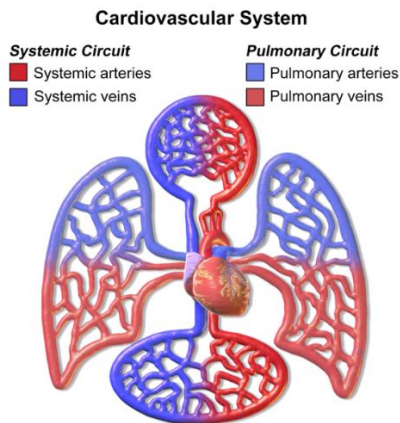


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4. The botanicals in AIR contain anti-inflammatory and antimicrobial properties; explain how these conditions can be helped by AIR's ingredients.

- **Proanthocyanidins in Black Currant and Cranberry:**
  - Aid asthma and other air-way related problems by disrupting the pathways of inflammatory proteins, including cytokines and cyclooxygenase (COX-1 and COX-2).
  - Prevent the effects of immune cell signaling that mobilize inflammatory actions.
  - Have demonstrated potent antioxidant activity that protects DNA against free radical damage, such as from ultrasound and other kinds of radiation.
  - Aid in disabling the proliferation of illness-causing bacterial and viruses (Cortiz, 2019).

5. How is the heart or cardiovascular health connected to the respiratory system?



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- Oxygenated blood from the lungs as the result of breathing is delivered directly to the blood vessels of the heart, from which fresh oxygenated blood is distributed to all cells and tissues via the vascular circulatory system.
- Any obstructions to oxygen and nutrient delivery via blood flow affects the heart's ability to pump blood throughout the vast network of blood vessels down to the micro capillaries.
- Any blood vessel/capillary damage detected by the monitoring hormonal and nervous system activates a cascade of inflammatory reactions by the immune system via various species of inflammatory proteins.
- If left unchecked (nutrient deficiencies), inflammatory reactions can become free radicals that continue to progressively cause more damage and impair proper functioning.
- These reactions in response to various kinds of stressors can damage tissues of the respiratory, cardiovascular, and that of any other system.
- Phytochemical antioxidant compounds in AIR are known to limit and prevent many inflammatory reactions by helping to repair tissue damage and restore

proper cell functioning, and therefore halt the damage-detecting, inflammatory responses.

- **Dog Rose (*R. Canina L*):**
  - Research found potent antioxidant activity from polyphenolic, phenolic acid, and flavonoid compounds as well as the beneficial organic acids: gallic, protocatechuic, vanillic, chlorogenic, syringic, *p*-coumaric, ferulic, sinapic, cinnamic, quercetin, rutin, and rosmarinic acid.
  - Those biochemical compounds in *R. canina L* have been shown to contain antioxidant, anti-inflammatory, chemopreventive, antimutagenic, and anticarcinogenic actions, as well as anti-obesity, antidiabetic, antinociceptive (blocking pain), antiulcerogenic, and antiproliferative properties.
  - *R. canina L* was tested for its effective antibacterial activity against various strains of *Staphylococcus*, *Streptococcus*, *Escherichia coli*, and *Pseudomonas* bacteria (Polumackanycz, et. al., 2020).
- **Amla Berry Fruit (*Phyllanthus emblica L.*):**
  - Found to limit LDL cholesterol oxidative damage and improve total cholesterol, and reduce the inflammatory marker C-reactive protein (CRP).
  - Cardioprotective actions: polyphenols, gallic acid, myricetin, kaempferol, emblicanin A and B, punigluconin, pedunculagin, chebulagic acid, geraniin, ellagic acid, corilagin.
  - Anti-inflammatory compounds: emblicanin A and B, gallic acid, corilagin, ellagic acid, pedunculagin, quercetin, rutin, mucic acid, beta-glucogallin (Gul, et. al., 2022).

## 6. What does oxidative damage and oxidation mean, and how do AIR's botanicals prevent damage to cells in the respiratory system?

- Oxidation occurs when there is an imbalance between the production of various inflammatory reactive oxygen species normally generated as by-products of oxygen metabolism, versus the ability of the immune system to attenuate or control them.
- The body produces a disproportionate amount of inflammatory chemicals or free radicals when over inundated with mental or emotional stress, and from constant exposure to free radicals from pollutants, heavy toxic metals, synthetic chemicals (Pizzino, et. al., 2017).
- AIR's abundant supply of antioxidant compounds effectively neutralize those free radicals.
- **Amla Berry Fruit (*Phyllanthus emblica L.*)**
  - Shown to improve the body's antioxidant defenses: limiting the formation of reactive oxygen species (ROS) free radicals, preventing oxidative damage and lipid peroxidation, improving cell oxygenation and therefore cell functions.
  - The body's antioxidant defenses include mobilizing glutathione GSH, and the enzymes catalase (CAT), GSH reductase, glutathione peroxidase (GPx), and superoxide dismutase (SOD).

- Research indicates may prevent oxidative damage to lung cells in smokers (Gul, et. al., 2022).
- **Lycium Berry** (Goji Berry, Wolfberry) (*Lycium barbarum*)
  - Contains a potent amount of antioxidant phenolic compounds such as phenolic acids, flavonoids, carotenoids (including zeaxanthin,  $\beta$ -carotene, neoxanthin, and cryptoxanthin), and organic acids known for their antioxidant, antimicrobial, anti-inflammatory, prebiotic, immunomodulatory, and anticancer actions.
  - Above antioxidants protect against membrane lipidic peroxidation of essential polyunsaturated fatty acids, including linoleic acid, oleic acid, and palmitic acid (Teixeira, 2023).

## 7. How do the phytochemical compounds in AIR neutralize free radicals, and explain what they are and why they are so damaging to our cells.

- Although oxygen is critical to every cellular action, it is also a way to perform degenerative tasks as long as the immune system can instigate the body's own antioxidants, or regularly take in antioxidant nutrient factors.
- There is normally a balance between the normal production of free radicals (ROS) in normal byproducts of metabolism in response to inflammation, and the body's capacity to neutralize them.
- The body's ability to detoxify these metabolic byproducts depends on immune capacity. **Reactive Oxygen Species (ROS) free radicals include:**
  - Superoxide radicals
  - Hydrogen peroxide
  - Hydroxyl radicals
  - Singlet oxygen
- When the accumulation of oxidative biochemical reactions in the body caused by environmental stressors becomes overwhelming for the immune system, it leads to cell and tissue damage, also known as **oxidative stress**.
- **Free radicals are synonymous with oxidative stress**, meaning that any harmful substance that is foreign to the body are missing electrons at the atomic level, and as they circulate, they attach themselves to healthy cells and confiscate their electrons of their atoms, thus rendering cells damaged or destroyed, leading to tissue or various system malfunctions.
- **The body's natural antioxidant defenses against ROS include:**
  - Mobilizing glutathione GSH, and the enzymes catalase (CAT), GSH reductase, glutathione peroxidase (GPx), and superoxide dismutase (SOD).
- AIR contains a vast array of antioxidant phytochemical compounds known to neutralize free radicals, halt the inflammatory response, and return the body systems to normal. The main classes of these compounds are listed below, although the scientific literature lists their many subclasses and their effectiveness on human cells and systems.
- AIR contains an abundance of the phytochemical compounds, which major classifications are listed below.
- There are thousands of subclassifications of those compounds.

- They are also known as secondary metabolites since their actions do not require immune system assistance.
  - Polyphenols
  - Phenolic acids
  - Organic acids
  - Polysaccharides
  - Flavonoids
  - Carotenoids
  - Tocopherols
  - Phytosterols (Gul, et. al., 2022)

## 8. Do AIR's nutrient factors help provide more energy for everyday life, and how do they work?

- AIR's botanical phytochemicals are known for their oxygenating, nutrient-carrying actions that are delivered to every cell where energy is produced and all system functions originate.

## 9. Which botanicals in AIR help with exercise and improve physical endurance?

- **Maca Root** (*Lepidium meyenii*)
  - Scientific evidence has shown the plant sterols, fatty acids, and other plant compounds in maca are energizing, raise metabolic functions, are fertility-enhancing, and contain sexual functioning properties.
  - Experimental rodents given maca resulted in increased sperm count and sperm motility, was anti-stress, prevented prostatic hyperplasia, reversed osteoporosis, showed neuroprotective effects, protection against UV radiation, improved antioxidant activity, and lipid and glucose metabolism. Maca also showed an increase in male sexual behavior, increased embryo survival, increased the number of offsprings, and improved memory and learning.
  - Maca is associated with low body mass index (less body fat), lowering systolic blood pressure to normal levels, maintaining normal hepatic and kidney functions, normal lipid profiles and normal blood sugar levels (Gonzales, 2012).
- **Black Currant** (*Ribes nigrum* L.)
  - BC's proanthocyanidins have been proven to: aid asthma and other air-way related problems by disrupting the pathways of inflammatory proteins, including cytokines, cyclooxygenase, and prevent the modulating effects of immune cell signaling that mobilize inflammatory actions.
  - Proanthocyanidins have demonstrated antioxidant activity against free radical damage from ultrasound irradiation through protecting against DNA damage
  - In both human and animal studies, BC demonstrated increases in athletic performance: in endurance-trained athletes, moderate-intensity cycling and other athletes such as high intensity repeated sprints showed reduced strain

on fatigued tissues that can otherwise result in stress-related injuries (Cortez, 2019).

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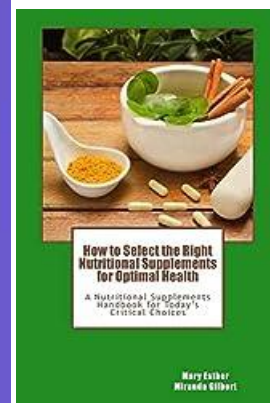
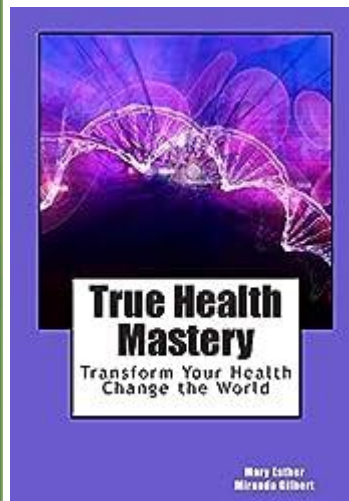
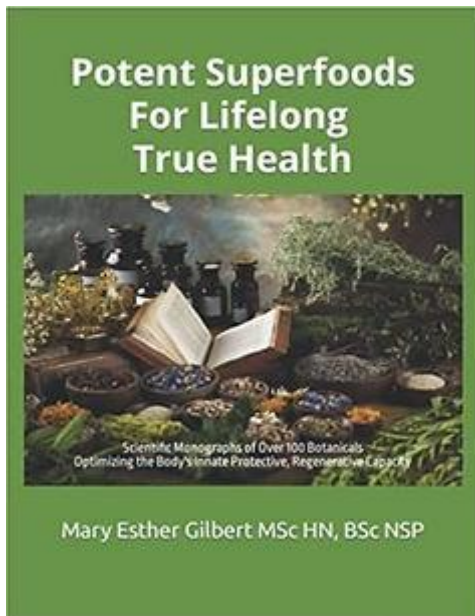
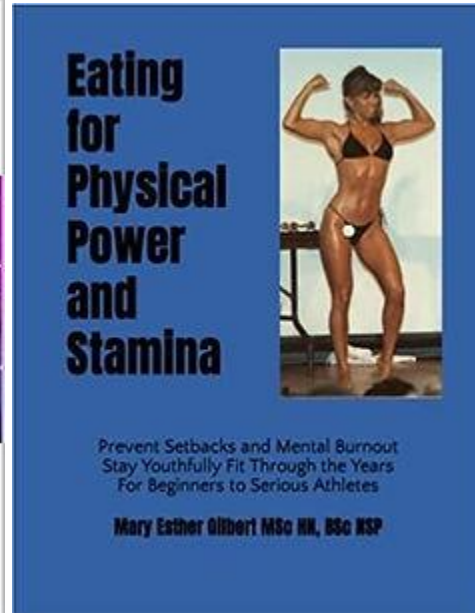
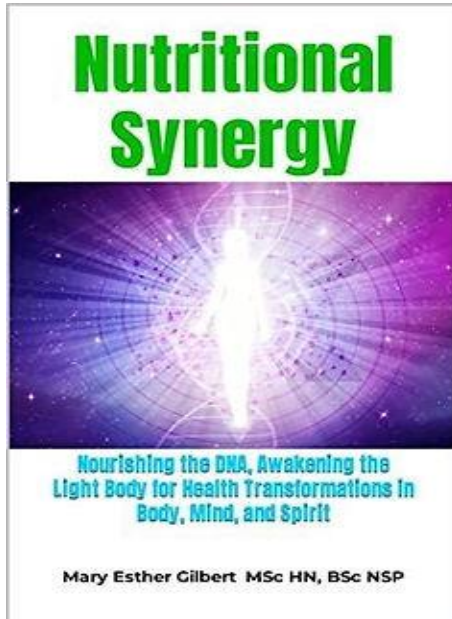
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