

## Molecular Hydrogen / Rheumatoid Arthritis Treatment/Therapy

The hydroxyl free radical is 100% responsible for the painful inflammation in Rheumatoid Arthritis attack. Although our body has an antioxidant defense system, it has no natural defense against the most harmful "hydroxyl" free radical. That's why doctors often prescribe antioxidants to try to slow down the progression of Rheumatoid Arthritis. The problem is, those prescribed antioxidants show only limited effectiveness. Sometimes, they aren't effective at all or worse, they produce negative side effects and must be stopped as they also attack important free radicals that our body needs for optimal body function. So, the problem with conventional antioxidants is that they cannot differentiate good from bad free radicals and additionally, that the molecules they are made of are too big which unable them to enter the cells where the hydroxyl radical is doing all the damage.

### OVERWHELMING SCIENTIFIC EVIDENCE

The molecular hydrogen molecule is the smallest molecule in the universe. It can easily penetrate cell walls and get to the harmful hydroxyl free radical. Unlike other antioxidants, molecular hydrogen is only attracted SELECTIVELY to the harmful hydroxyl free radical. As it does, it simply converts the harmful free radical into pure water, no toxic by-product and unpleasant side-effects whatsoever. For that reason, researchers now refer to molecular hydrogen as a novel 100% natural and safe medical gas.

Recent scientific studies demonstrated that daily consumption of Molecular Hydrogen Rich Water for four weeks improved Rheumatoid Arthritis symptoms in patients. Additionally, in early-stage cases of Rheumatoid Arthritis the studies found that the symptoms of Rheumatoid Arthritis disappeared completely. The studies also showed that the results lasted as long as 4 weeks even after the consumption was stopped entirely which indicated that Molecular Hydrogen was able to activate the patient's own antioxidant defence system.

Reference: <https://www.ncbi.nlm.nih.gov/pubmed/23031079>

### WHAT ARE FREE RADICALS?

A free radical is an unstable molecule that is missing an electron. A free radical may attack nearby molecules to satisfy itself. When a free radical attacks and steals an electron from another molecule it damages the other molecule in a process called **oxidation (stealing of electrons)**.

But not all free radicals are bad! Some free radicals like **Hydrogen Peroxide** (H<sub>2</sub>O<sub>2</sub>) and **Nitric Oxide** (NO•) have important functions inside your cells. For example, Hydrogen Peroxide is used by your immune cells to kill bacteria. Nitric Oxide is a signalling molecule that is involved in many processes inside your body, one of which is to relax your blood vessels.

## WHERE DO FREE RADICALS COME FROM?

Free radicals are formed naturally inside your mitochondria, which are the tiny power plants inside each of your cells. As mitochondria break down the food you eat for energy, they produce free radicals as waste.

## THE MOST DANGEROUS FREE RADICALS: HYDROXYL RADICALS

Free radicals such as hydrogen peroxide and nitric oxide are utilized by your cells or they are neutralized by antioxidant enzymes in your cells readily. However, when there is an excess of free radicals, these free radicals have a high chance of converting into hydroxyl radicals.

Hydroxyl radicals are **highly reactive**, meaning they will steal an electron from just about any molecule including DNA, protein, lipids, etc. Continuous free radical damage caused by hydroxyl radicals is directly linked to pre-mature aging and over 90% of **ALL** diseases.

Since hydroxyl radicals react with almost anything, typical antioxidants don't even have a chance to neutralize them before these free radicals damage your cells.

Hydroxyl radicals can damage DNA, which may lead to mutations. Hydroxyl radicals can damage Mitochondria, this makes the Mitochondria less efficient at producing energy which affects negatively every organ and body function. Additionally, damaged Mitochondria increase free radical production (snowball effect). Keeping free radicals under control is the fundamental key to health, quality of life and longevity.

## STOP THE OXIDATIVE STRESS. BRING BACK THE BALANCE.

Molecular Hydrogen has been found to be the most powerful and versatile **SELECTIVE** antioxidant. Molecular Hydrogen is the hero your cells need to bring back the balance in the war between free radicals and antioxidants.

## MOLECULAR HYDROGEN (H<sub>2</sub>) IS THE ANSWER

Free radicals affect each of us. Depending on which part of the body they create health symptoms, we have given those diseases different names such as Parkinson's or Alzheimer's if the brain is attacked, Heart disease if arteries and the heart is attacked, Rheumatoid Arthritis if the joints are attacked and so on.

Molecular Hydrogen is the hero that will vanquish free radicals (the ultimate threat to your health) and give you the antioxidant protection you need to live a healthy, happy life.

Molecular Hydrogen is the most superior antioxidant and also considered the "perfect" or "novel" antioxidant due to these 4 reasons:

## **1. SIZE – MOLECULAR HYDROGEN IS THE SMALLEST ANTIOXIDANT IN EXISTENCE**

The size of Molecular Hydrogen allows it to penetrate deep into cells, into the mitochondria (the engines of our cells) and even into the nucleus where our DNA is stored. It is there where it can eliminate free radicals where no other antioxidant can enter due to their size.

## **2. SELECTIVITY – MOLECULAR HYDROGEN TARGETS & NEUTRALIZES ONLY HARMFUL FREE RADICALS**

Most other antioxidants cannot distinguish between a good free radical (i.e. Hydrogen Peroxide, Nitric Oxide) and a bad free radical (i.e. Hydroxyl Radical). If all free radicals are neutralized it will disturb the balance which will affect health negatively. Molecular Hydrogen on the other hand, **SELECTIVELY** targets only the harmful free radicals such as Hydroxyl Radicals and neutralizes them into **water**.

## **3. SAFETY – MOLECULAR HYDROGEN IS COMPLETELY SAFE AND NON-TOXIC**

The great thing about Molecular Hydrogen is that it is 100% natural, contains or produces no toxic by-products, it is 100% safe, including for the use by pregnant women and babies. Has no side effects whatsoever! Can never be overdosed. The body will use what it needs and expel any excess through breath.

## **4. MOLECULAR HYDROGEN ACTIVATES THE ANTIOXIDANT DEFENCE SYSTEM**

Molecular Hydrogen also activates your cell's natural antioxidant enzymes such as:

- Glutathione peroxidase – neutralizes peroxide into water
- Superoxide dismutase – neutralizes superoxide anion into hydrogen peroxide
- Catalase – neutralizes hydrogen peroxide into water

**So not only does Molecular Hydrogen eliminate harmful free radicals directly, but it also boosts your body's own antioxidant defence system for long term protection.** This is the fundamental reason for Molecular Hydrogen having therapeutic efficacy for over 170 disease models and to be beneficial for every organ in the human body.

### **Molecular Hydrogen Therapies**

Molecular hydrogen can be administered via inhalation, ingestion of dissolved hydrogen-rich water or flavoured beverages, intravenous injection of hydrogen-rich saline, bathing in hydrogen-rich water and rectal insufflation.

