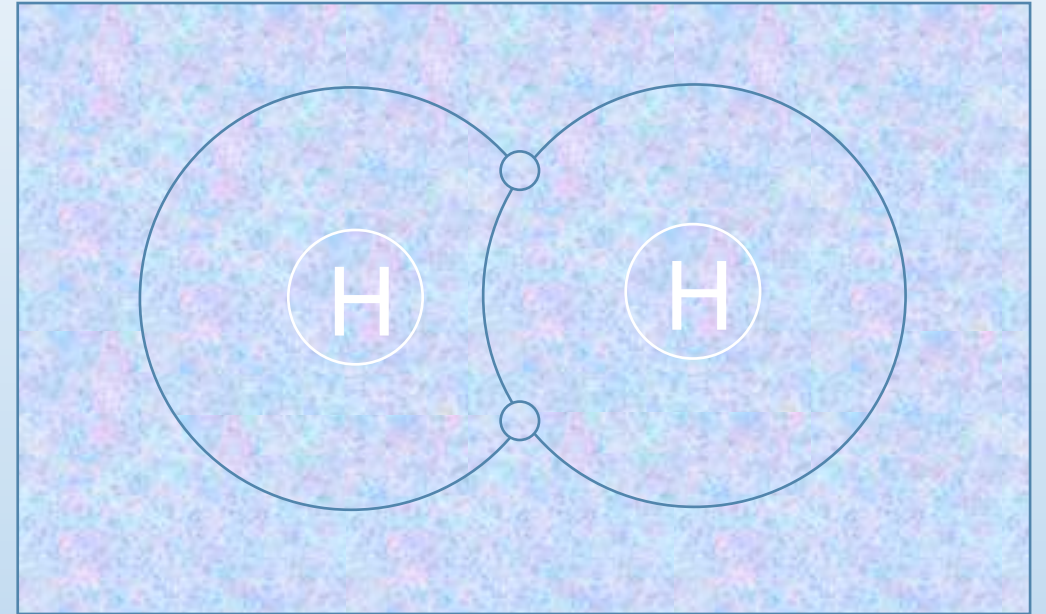


# Molecular Hydrogen

- ❖ Designated as  $H_2$
- ❖ The Lightest Gas & Smallest Molecule
- ❖ Two Hydrogen Atoms Bonded Together
- ❖ Very Stable & Non-Reactive
- ❖ Colorless, Tasteless, Odorless, Non-Irritating, and a Highly-Flammable Gas

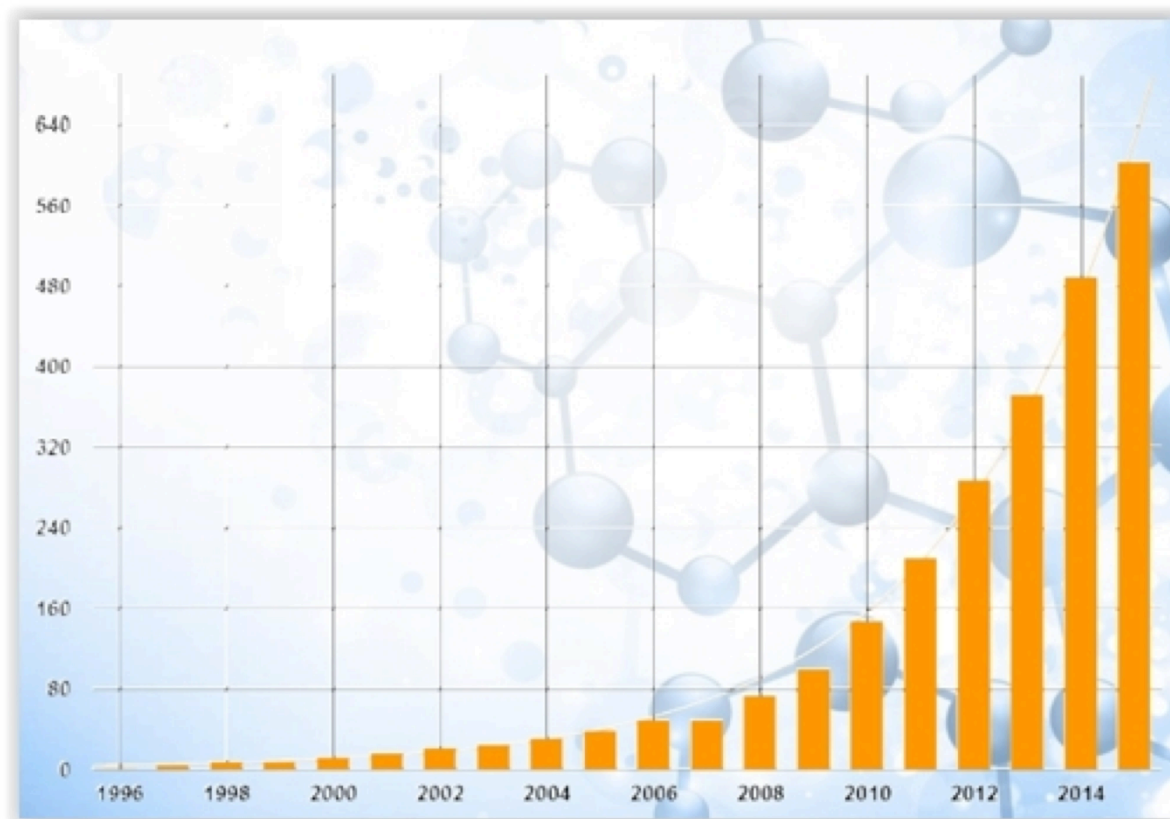


Hydrogen Gas –  $H_2$

# Benefits of Molecular Hydrogen

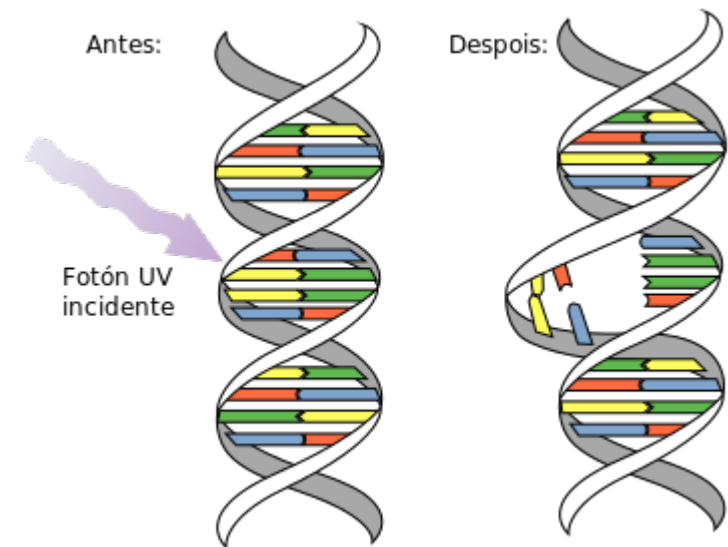
- ❖ Selective Anti-Oxidant/Anti-Inflammatory Agent
- ❖ Easily Penetrates the Cell Membrane and Neutralizes Cytotoxic Free Radicals (OH or Hydroxyl Radical), Protecting DNA, RNA & Proteins from Damage
- ❖ Up-Regulates our body's own Antioxidant Enzymes via the Nrf2 Pathway
- ❖ May act as a Novel Signaling Molecule to Influence Cell Metabolism & Gene Expression

**The number of Molecular Hydrogen Research Publications has been growing exponentially since 2007**

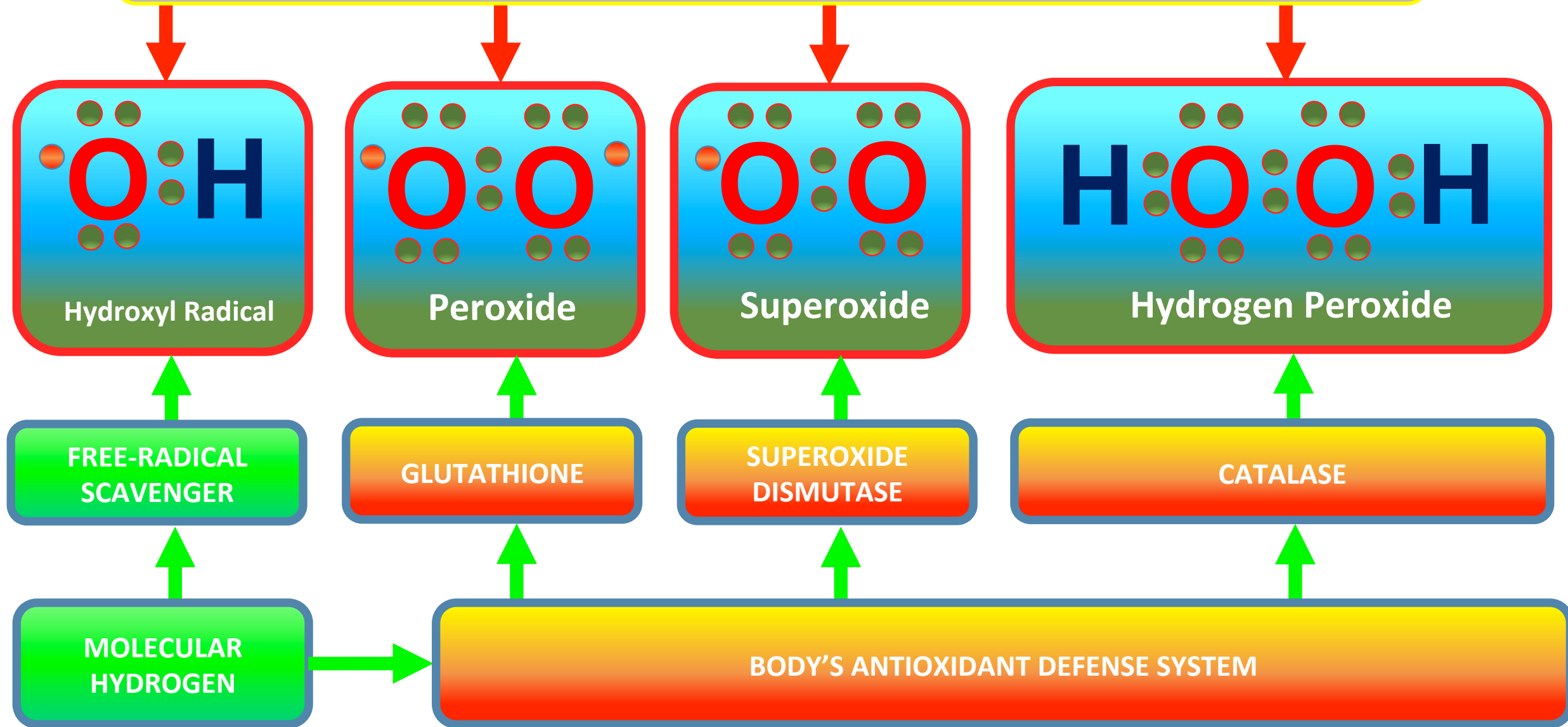


# Free radicals/oxidative stress

- Damage DNA, RNA, cell membranes, proteins
- Cause cell death and aging
- Linked to every disease:
  - Neurological disorders
  - Inflammatory disorders
  - Cancer
  - Diabetes
  - etc.



# PRODUCTION OF REACTIVE OXYGEN SPECIES



## NEUTRALIZATION OF HYDROXYL RADICAL BY H<sub>2</sub>

