

Envirotech Solutions Pvt. Ltd.

A new beginning in

Preventive Healthcare and

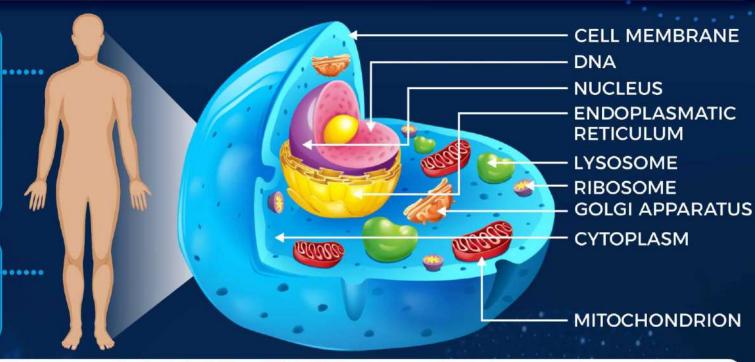
Personal Wellness

The Cell, Body and the Life...

The Cell:

"the smallest,
basic unit of life
that is responsible
for all of life's
processes."

Healthy life depends on our Cellular health.



Human being is a multicellular organism

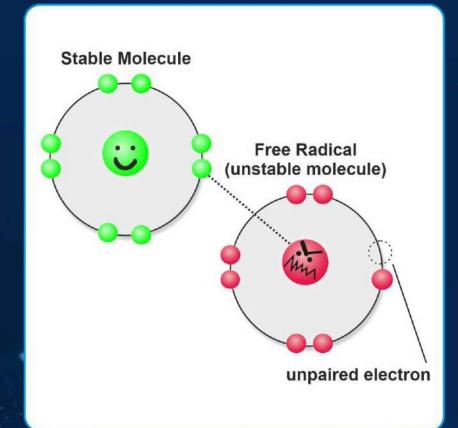
Cells are the building blocks of all living beings. They provide structure to the body and convert the nutrients taken from the food into energy.

Cells are the lowest level of organization in every life form. From organism to organism, the count of cells may vary. Humans have the number of cells compared to that of bacteria.

Cells comprise of several organelles. Every organelle has a specific structure that perform specialized functions to carry out life processes.



What are Free Radicals?



Free radicals are unstable atoms formed inside mitochondria (tiny power plants) in each of our cells.

Most dangerous Free radical Groups

Radical Oxygen Group (ROS)

ROS

- Ozone (O₃)
- Oxygen singlet (O2)
- Hydroxyl peroxide (H₂O₂)
- Hudroxyl radical (OH)
- Peroxide (ROOH)
- Hypochlorous acid (HOCI)
- Hydroperoxyl radical (HO₂)

Radical Nitrogen Group (RNS)

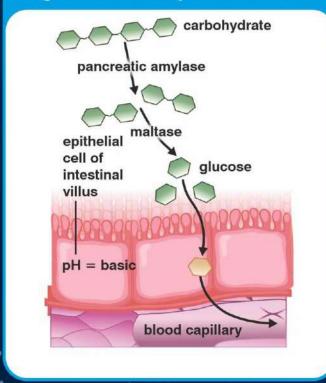
RNS

- Nitrous acid (HNO₂)
- Nitrous oxide (NO)
- Peroxynitrate (OONO)
- Nitryl Chloride (NO₂O₃)
- Dinitrogen dioxide (N₂O₃)
- Nitroxyl ion (NO)
- Nitrogen dioxide (NO₂)

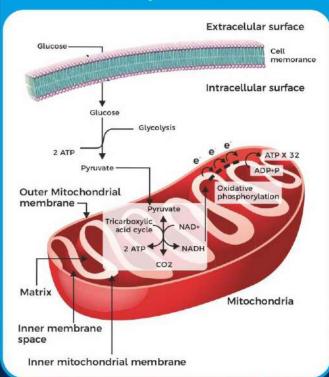


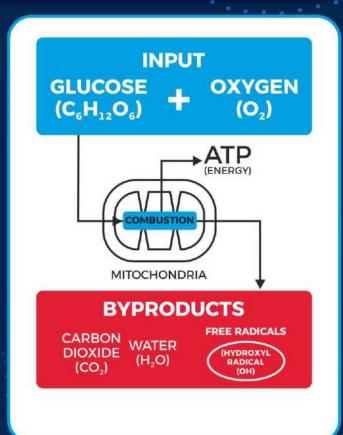
How Free Radicals are generated inside the body?

The food we eat converted in to sugars and transported to cells.



Basic overview of processes of ATP production





Oxygen is an element indispensable for life.

When the mitochondria use oxygen in combustion of glucose to generate energy ATP (Adenosine Tri Phosphate), free radicals are generated as by-products from the cellular redox process.



The importance and the Key role of Free radicals in our body:

Free radicals play dual role based on the quantity generated.

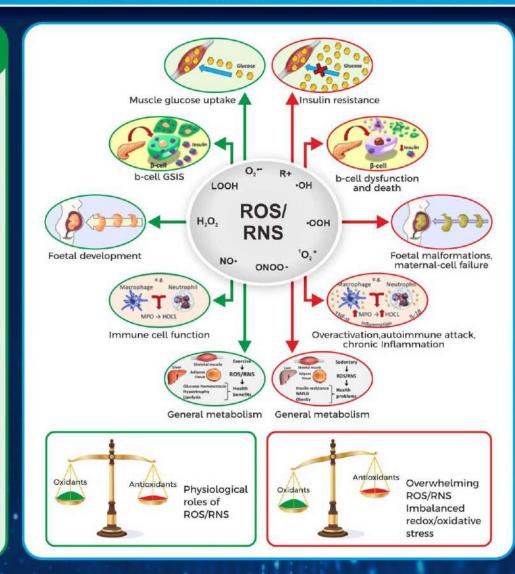
POSITIVE

At low or moderate levels, free radicals exert beneficial effects on cellular responses and immune function.

The important **Physiological** functions played by free radicals are:

- **⋖** Defense against
 - **✓** Pathogens
 - **✓** Apoptosis
- **Negulation** of
 - **▼** Vascular tone
 - Signal transduction, and
- Ensure the maintenance of redox homeostasis

Keeping Free radicals under control is the fundamental key to health, quality of life and longevity.



NEGATIVE

When produced in excess, free radicals generate a **Pathological** phenomenon called OXIDATIVE STRESS, a deleterious process that can seriously alter:

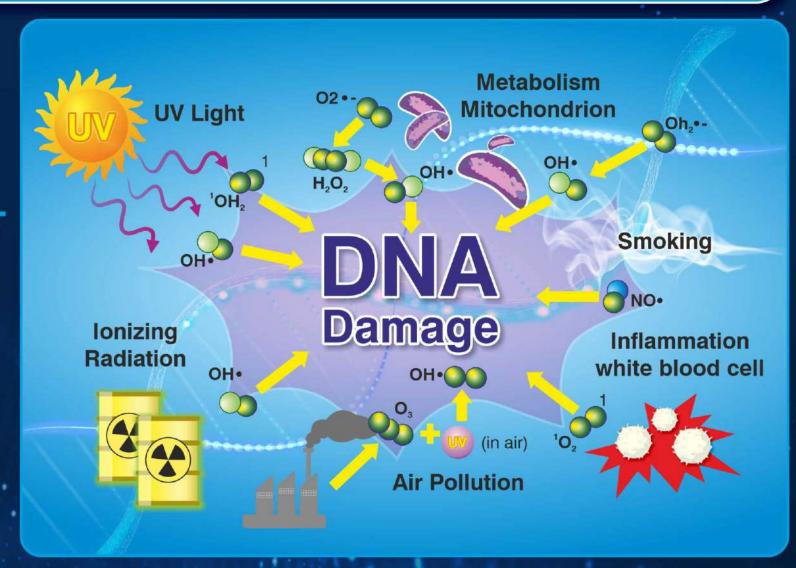
- ✓ The cell membranes
- ✓ Other fundamental structures such as
 - ✓ Proteins,
 - **€** Lipids,
 - **⋖** Lipoproteins, and
 - Deoxyribonucleic acid (DNA).

Depending on their cellular concentration, Free radicals can cause reversible or irreversible oxidation of biomolecules, thus triggering activation of Physiological or Pathological cell functions, respectively.



The key factors that trigger Excessive Free Radical generation in our body

Stressful / sedentary LIFESTYLE and the **POLLUTED** ENVIRONMENT we live in, triggers excessive free radical generation in our body and lead to cellular **Oxidative** Stress.



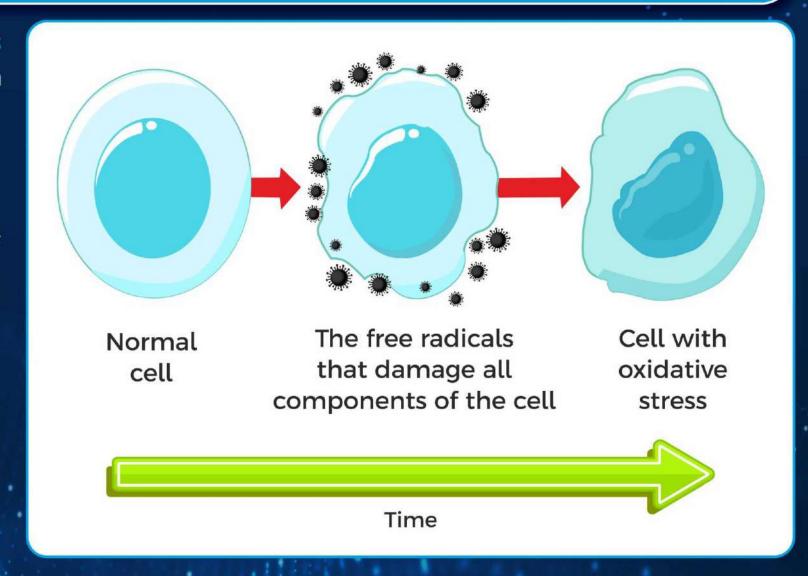


What is Oxidative stress and how it cause Cellular damage?

Oxidative stress is

"the state in which oxidation exceeds the antioxidant systems in the body and the subsequent loss of the balance between them"

Oxidative stress is the root cause of many modern diseases in the Human body.





Major Oxidative stress-induced diseases in human body

LUNGS

Asthma
Chronic bronchitis

JOINTS

Arthritis Rheumatism

BRAIN

Alzheimer's
Parkinson's
Memory loss
Depression
Stroke

KIDNEYS

Glomerulonephritis Chronic renal failure

Oxidative Stress

MULTI-ORGANS

Cancer
Aging
Diabetes
Inflammation
Infection

FETUS

Preeclampsia

IU growth restriction

EYES

Cataract Retinal diseases

HEART-VESSELS

Arteriosclerosis
Hypertension
Ischemia
Cardiomyopathy
Heart failure

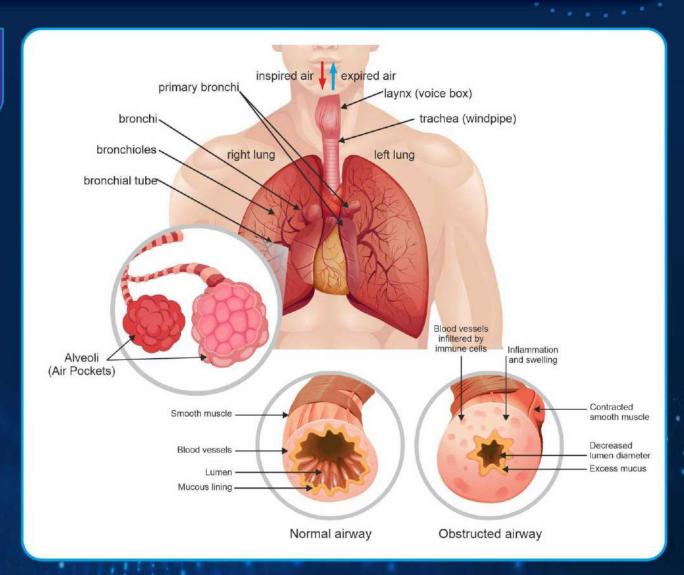


Some of the major Oxidative stress induced diseases as a reference

1. Oxidative stress and Pulmonary disease

Substantial evidence indicates that inflammatory lung diseases such as Asthma and Chronic Obstructive Pulmonary Disease (COPD) are characterized by systemic local chronic inflammation and oxidative stress.

Increased levels of ROS & RNS
Oxidants may play a role in
enhancing inflammation through
the activation of different kinases
and redox transcription factors such
as NF-kappa B and AP-1.



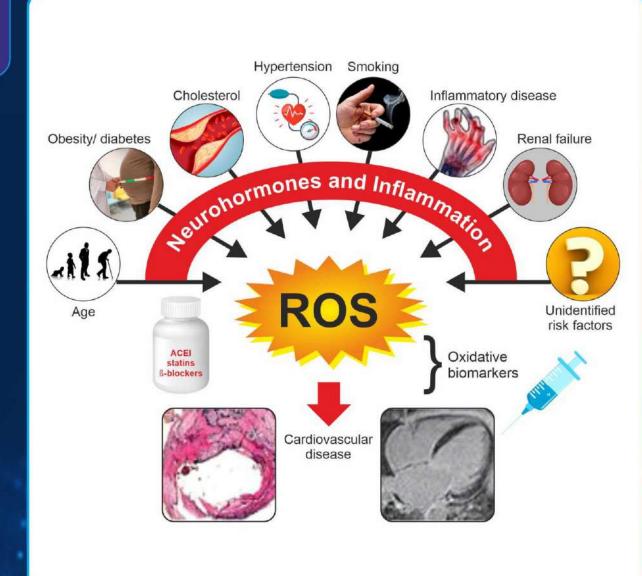


2. Oxidative stress role in Cardiovascular disease

Cardiovascular disease (CVD) is of multifactorial aetiology associated with a variety of risk factors for its development including:

- Hypercholesterolaemia.
- Hypertension.
- Smoking.
- Diabetes.
- Poor diet.
- Stress and physical inactivity amongst others.

Recent in vivo and ex vivo research studies have provided precious evidence supporting the role of Oxidative Stress in a number of CVDs such as atherosclerosis, ischemia, hypertension, cardiomyopathy, cardiac hypertrophy and congestive heart failure.





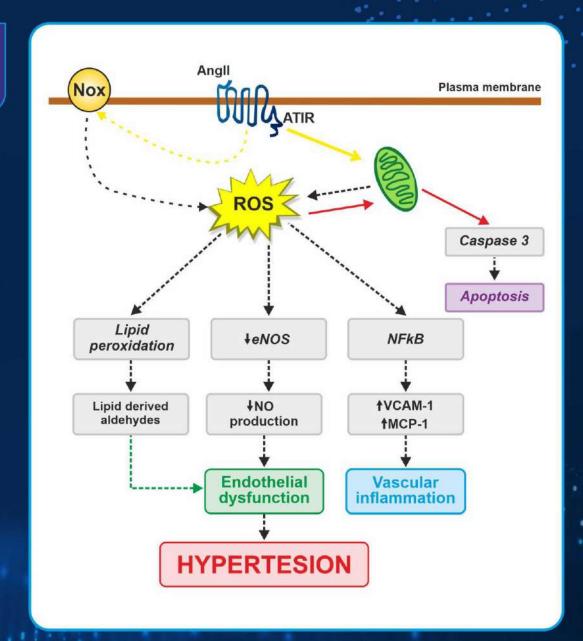
3. The involvement of ROS in the etiology of hypertension

The global prevalence of hypertension in adults is estimated to be 1.13 billion. Hypertension is a strong risk factor for cardiovascular disease and chronic kidney disease.

As hypertension accelerates, the decline in renal function and promotes the development of cardiovascular disease.

Endothelial dysfunction and vascular inflammation that trigger the development of the hypertensive state as below:

- Angiotensin II induces ROS production through the activation of mitochondrial enzymes and Nicotinamide Adenine Dinucleotide Phosphate (NADPH) oxidase (Nox).
- In turn a significant reduction of eNOS activity and NO (Nitric Oxide) production, lipid peroxidation, induction of apoptotic signaling, and NFkB activation.

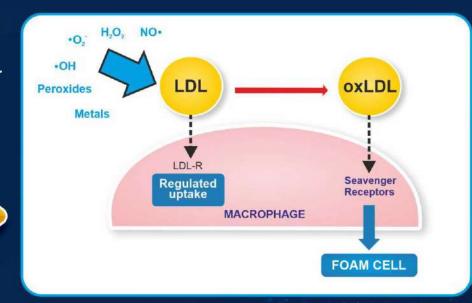




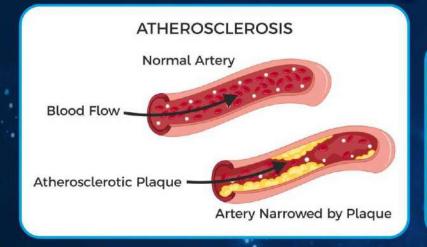
4. Role of oxidative stress in enhanced oxidation of circulating LDL in the development of atherosclerosis.

Increased Oxidative Stress is responsible for enhanced oxidation of circulating LDL, which are constantly taken up by scavenger receptors of macrophages, ultimately transformed into lipid-laden foam cells, the prototypical cells in the atherosclerotic plaque.

Progression of an Atherosclerotic Lesion



LDL
Low-density
lipoprotein;
oxLDL
Oxidized
low density
lipoprotein;
LDL-R
Low density
lipoprotein
receptor.







5. Oxidative stress and Diabetes as a disease and its impact on whole body

In case of catalase deficiency, beta cell of pancreas that contain large amount of mitochondria, undergoes oxidative stress by **producing excess ROS that** leads to β -cells dysfunction and ultimately diabetes.

Diabetes is a chronic disease with serious metabolic disturbances in carbohydrate, protein and fat metabolism arising due to insulin deficiency or insulin action.

It is not only common in older people but occurs frequently in younger generations as well.

Serious complications arise if the glucose level of the blood is not controlled in time.

Some of the complications are cardiovascular disease including heart attack, severe neuropathy, retinopathy, nephropathy, osteoporosis and foot damage.

The effects of diabetes can be felt from head to toe. Eves Gums Diabetic Retinopathy Poorly controlled diabetes which can cause vision can lead to gum disease. Kidnevs. Heart 2X more likely to have Diabetic Nephropathy highblood pressure means your kidneys are increasing risk for heart not working well. Sex organs Increased risk of dry/itchy skin calluses fungal blood vessels caused by diabetes infection and bactria Bladder Foot problems Nerve damage from Nerve damage and diabetes can effect foot wounds. bladder control



6. Oxidative stress and Diabetic Nephropathy

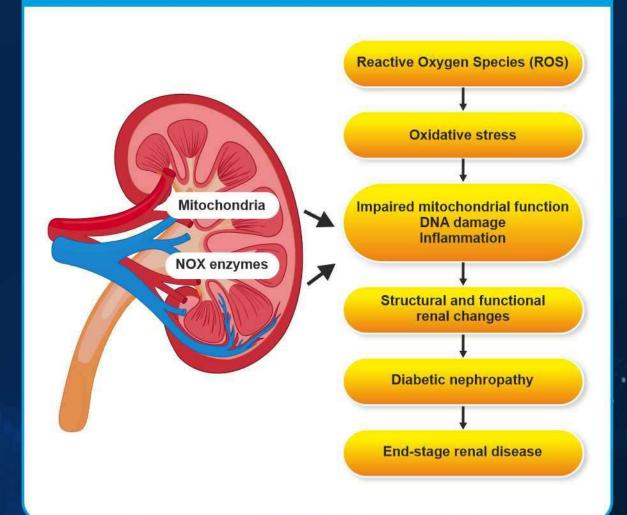
Diabetic nephropathy is the leading cause for end-stage renal disease, which requires dialysis or renal transplantation.

Oxidative Stress plays a critical role in the development and progression of diabetic nephropathy.

Oxidative Stress is created by reactive oxygen species (ROS), which are being mainly produced by mitochondria and NADPH oxidases (NOXs) in renal cells under pathological conditions, damage functional mitochondrial DNA and induction of inflammatory pathways.

These lead to structural and functional changes in the renal tissue, and thus to the development of diabetic nephropathy.

Diabetic nephropathy





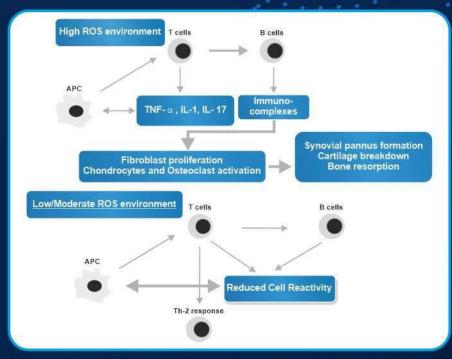
7. Oxidative stress and Rheumatoid arthritis

Rheumatoid arthritis, or RA, is an autoimmune and inflammatory disease, which means that your immune system attacks healthy cells in your body by mistake, causing chronic inflammation (painful swelling) of the joints and tissue around the joints with infiltration of macrophages and activated T cells.

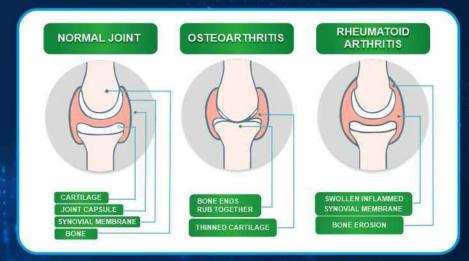
The pathogenesis of this disease is due to the generation of ROS and RNS at the site of inflammation. Oxidative damage and inflammation in various rheumatic diseases were proved by increased levels of isoprostanes and prostaglandins in serum and synovial fluid compared to controls.

In an environment in which ROS levels are high, T and B cells become autoreactive and cause the activation of fibroblasts, chondrocytes, and osteoclasts. On the contrary, when ROS levels are low or moderate, such autoreactive responses are reduced, and T cells can be even polarized to Th-2.

https://www.researchgate.net/profile/Valerio-Chiurchiu/publication/50362307/figure/fig10/AS:668901771841542@1536490018381/Oxidative-stress-and-rheumatoid-arthritis-In-an-environment-in-which-ROS-levels-are.png



TNF-a, tumor necrosis factor-a; IL-1, interleukin-1; IL-17, interleukin 17; Th-2, T helper-2.





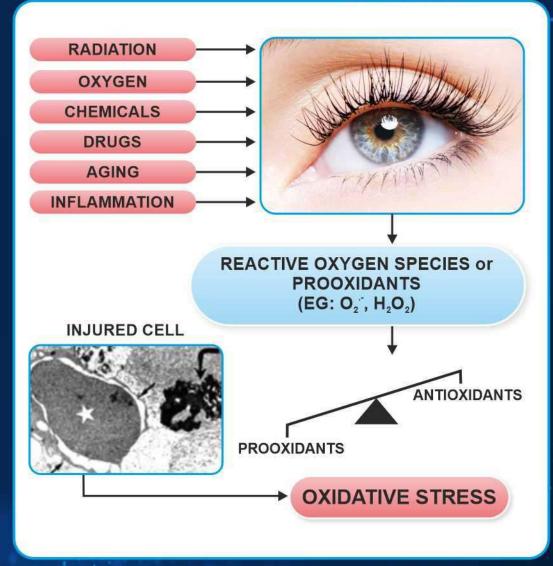
8. Risks and consequences of oxidative stress in Ocular disease

The eye is an organ that is predisposed to great levels of oxidative stress.

The eye is constantly exposed to factors such as radiation, chemicals, oxygen, drugs, which induce the formation of reactive oxygen species (ROS) that can ultimately damage cells.

Oxidative stress is implicated in age-related macular degeneration and cataracts by altering various cell types in the eye either photochemically or non photochemically.

Under the action of free radicals, the crystalline proteins in the lens can cross-link and aggregate, leading to the formation of cataracts.



https://www.researchgate.net/publication/5517248/figure/fig2/AS:202870763855876@1 425379567205/Risks-and-consequences-of-oxidative-stress-The-eye-is-an-organ-that-ispredisposed-to.png

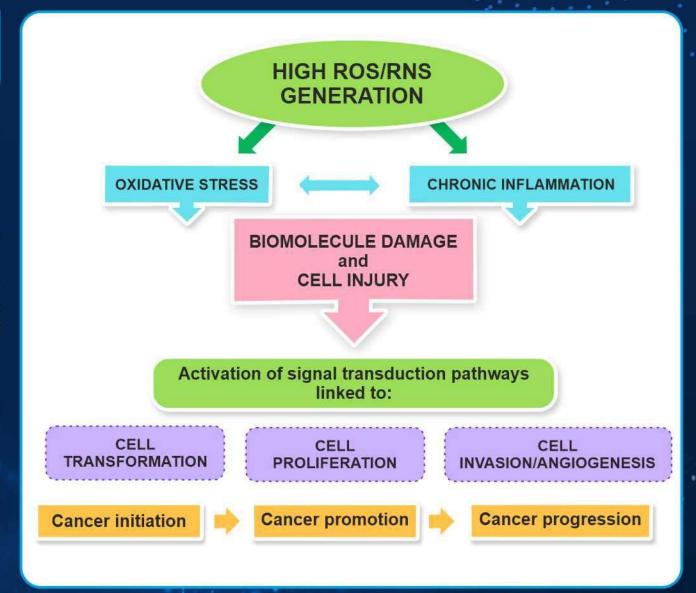


9. Oxidative stress and Cancer

It is well established that oxidative DNA damage is responsible for cancer development.

Cancer initiation and promotion are associated with chromosomal defects and oncogene activation induced by free radicals. A common form of damage is the formation of hydroxyl bases of DNA.

The highly significant correlation between consumption of fats and death rates from leukemia and breast, ovary, rectum cancers among elderly people may be a reflection of greater lipid peroxidation.

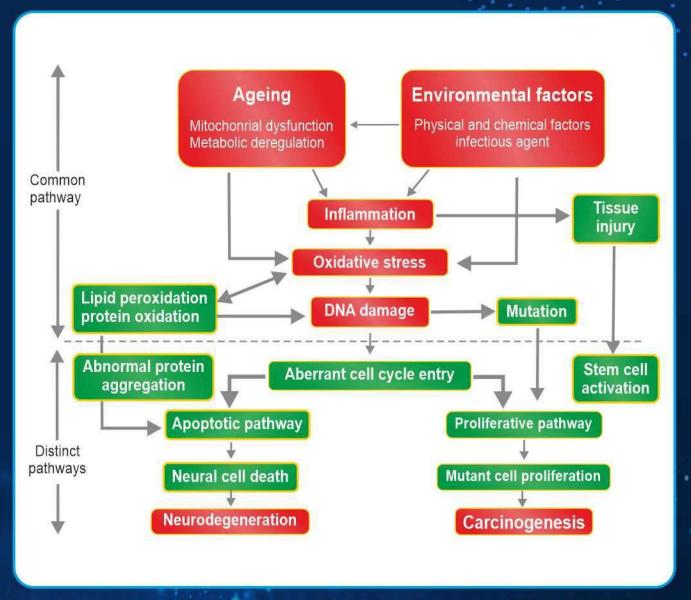


ArticleinOncotarget · June 2015 DOI: 10.18632/oncotarget.4253



10. Role of Oxidative stress in neurodegenerative diseases and Cancer

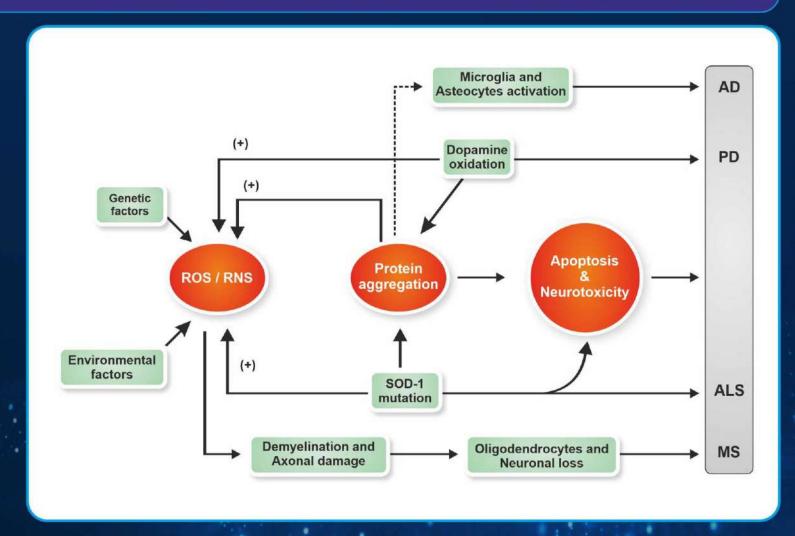
Schematic representation of the establishment of neurodegeneration, taking in consideration that ageing, environmental factors and oxidative stress play a key role in those processes.



https://www.researchgate.net/profile/Shosuke-Kawanishi/publication/273956641/figure/fig5/AS:670464930217998 @1536862704406/Roles-of-oxidative-stress-in-neurodegenerative-diseases-and-cancer.png



11. Role of Oxidative stress in neurodegeneration



Alzheimer's disease (AD) is the most prevalent neurodegenerative disorder affecting the aged population, which is characterized by progressive deterioration of behavior, cognition, and functionality.

Parkinson's disease (PD) is the second most prevalent neurodegenerative disorder. The aging-related mitochondrial decline and the increasing mtDNA damage/mutations are also been associated with the increased risk for PD.

Amyotrophic lateral sclerosis (ALS) is a neurodegenerative disease characterized by progressive loss of motor neurons in the anterior horn of the spinal cord, leading to muscle weakness, wasting, and spasticity.

Multiple sclerosis (MS) is a neurodegenerative disease in which axonal loss is the major cause of irreversible neurological disability.

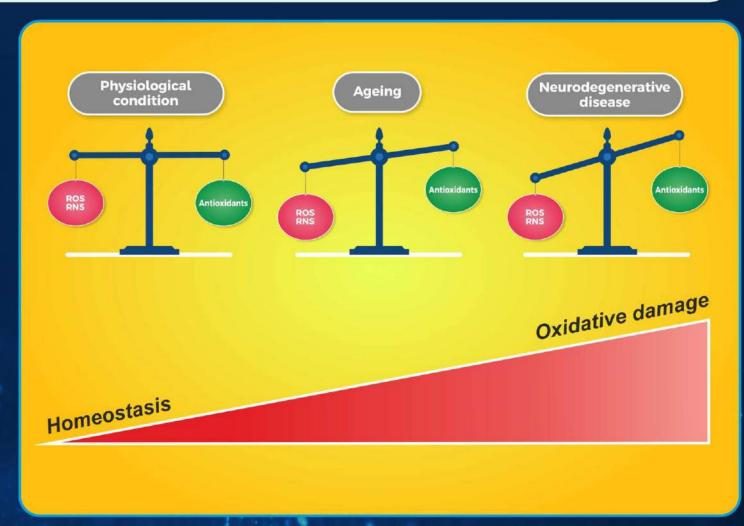
Oxidative-stress-and-neurodegenerative-diseases-Schematic-representation-of-the-basic ND0



Schematic representation of oxidative stress in health, ageing, and neurodegenerative diseases

In healthy conditions, the oxidant levels mainly produced in mitochondria are kept under control due to efficient mechanisms of defense that counterbalance the excessive production of oxidants and keep the homeostasis.

However during the ageing, the oxidant levels increase, while the antioxidant efficiency decreases generating an imbalance that leads to oxidative stress and damage of the main biomolecules leads to a intensified neurodegenerative conditions.

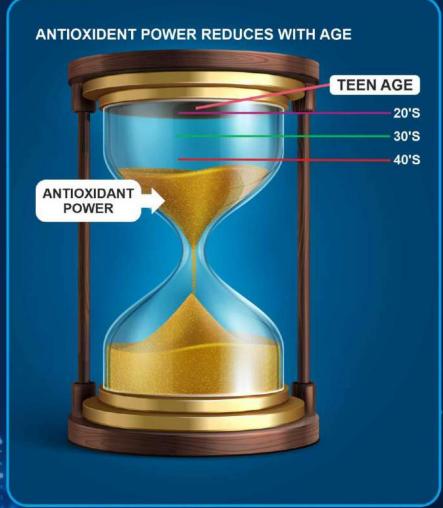




There is a Constant War waging inside our Cells for making our Body healthy!



As we age, from a teen to your 40's, 50's and, 60's, the antioxidant power of your cells decreases significantly. Less antioxidant power means our cells become more and more susceptible to Oxidative damage caused by free radicals.



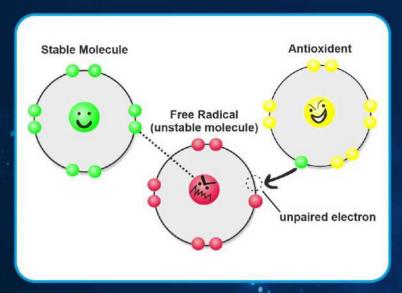
Oxidative Stress = Rusting of your Cells

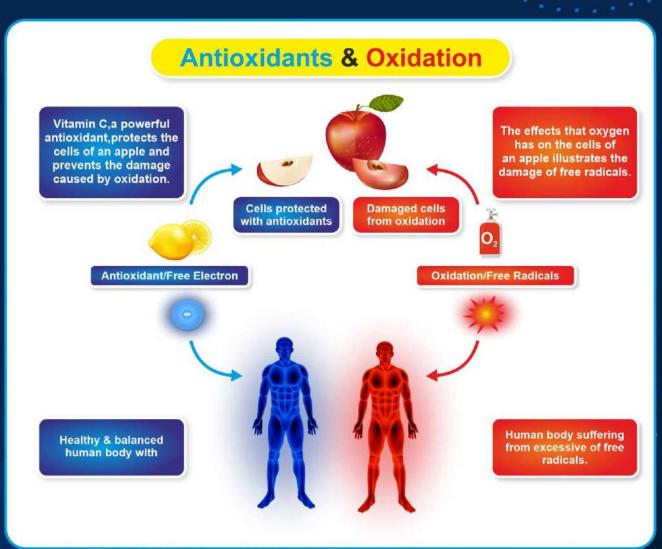


Importance of the Antioxidants in our Health maintenance!

The body has several mechanisms to counteract oxidative stress by producing antioxidants, either naturally generated in situ (endogenous antioxidants), or externally supplied through foods (exogenous antioxidants).

The roles of antioxidants are to neutralize the excessive free radicals, to protect the cells against their toxic effects and to contribute to disease prevention.







In human life, every individual wish to lead a healthy life, age gracefully with lesser health problems! But...

We all know antioxidants are great for us. They act as a force to fight free radicals. Without antioxidants, free radicals can run rampant throughout the body causing damage as they go.

Our cellular health depends on what we eat and drink (Antioxidant rich-food).

Various researchers suggest an optimal intake to be 3000-5000 ORAC units (Oxygen Radical Absorbance Capacity) per day.

But the average individual doesn't eat that many antioxidant-rich foods.

The antioxidants found most abundantly in food are vitamin E, Vitamin C, Selenium, and Beta-carotene.





Antioxidants and Health maintenance: a therapeutic strategy



The implication of oxidative stress in the aetiology of several chronic and degenerative diseases suggests that antioxidant therapy represents a promising avenue for treatment.

A therapeutic strategy to increase the antioxidant capacity of cells may be used to fortify the long term effective treatment. Indeed, our health also depends on our lifestyle choice.

Molecular Hydrogen is a buzz word in present wellness segment. Hydrogen inhalation therapy is growing rapidly because of its immediate medical benefits and applications to help with many prominent health issues the world is currently facing.



Comprehensive categorization of natural antioxidants

Natural Antioxidant System

Enzymatic (e.g. catalase, superoxide dismutase) Non-enzymatic OR low molecular weight antioxidants

Molecular Hydrogen falls into this category

Directly acting antioxidants e.g. Scavengers,

Indirectly acting antioxidants e.g. Chelating agents



Hydrogen Gas as an antioxidant - An invention Backed by Science

- Japanese Professor, Dr. Shigeo Ohta identified potent antioxidant properties of Molecular Hydrogen, and the same published in Nature (2007).
- This gained the attention from academic researchers, medical doctors, and physicians around the world.
- Hydrogen has so far demonstrated in over 1500 high quality scientific studies to have therapeutic potential for the prevention and treatment of more than 170 human and animal disease models.
- Hydrogen gas restores balance in the battle between the constant onslaught of free radicals and our health with antioxidant protection.
- In November 2016, the Department of Health and Human Services, Japan approved the hydrogen inhalation treatment, and the device registered as an advanced medical tool. A number of hospitals implement hydrogen inhalation therapy in ambulances for emergency patients.



Dr. Shigeo Ohta.
Nippon Medical School, Japan

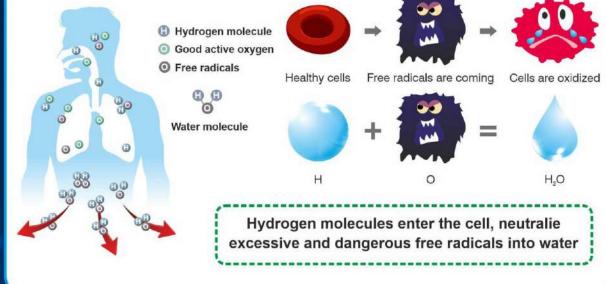


What makes Molecular Hydrogen - the most effective antioxidant?

- It's ionized from water and again one atom away from being water, makes it an effective ANTIOXIDANT candidate over prescription drugs.
- The Hydrogen molecule is up to 176 times smaller than vitamin C. This size advantage allows H₂ to quickly circulate and pass straight to the power centre of our cells, where its preventative, therapeutic antioxidant potential is needed.

The role of Hydrogen Schematic diagram of







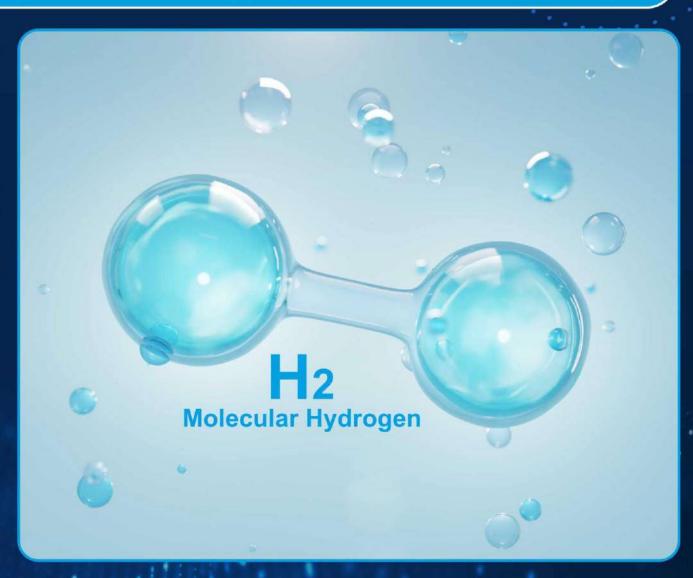
Why Molecular Hydrogen?

Recent Research findings demonstrated in clinical and preclinical studies that H₂ has novel antioxidant and antiinflammatory properties.

 H_2 is clean and causes no adverse effects in the body. The mechanism of H_2 is different from that of traditional drugs because it works on the root cause of many diseases.

H₂ selectively neutralizes only harmful free radicals. Other antioxidants such as Vitamin C cannot differentiate beneficial from harmful free radicals.

Due to its marked efficacy and no adverse effects, H₂ will be a next generation therapy candidate for medical applications.





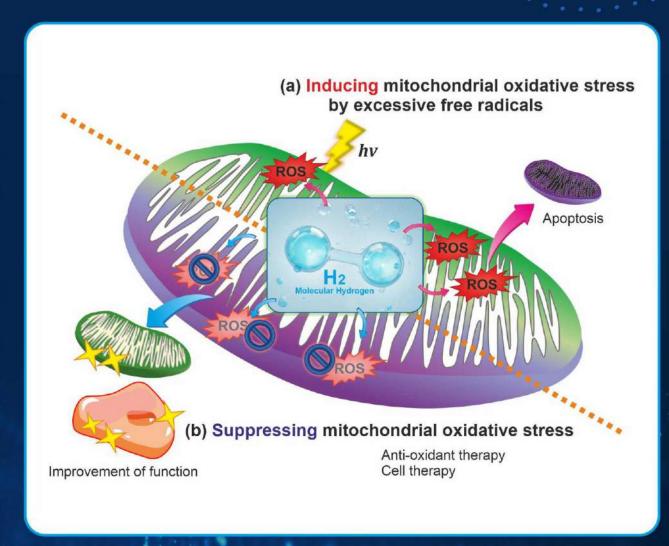
Molecular Hydrogen advantage over other Antioxidants?

Unlike other antioxidants:

- Molecular Hydrogen is a SELECTIVE antioxidant, targeting only HARMFUL FREE RADICALS.
- Besides oxidant neutralization, it also activates our natural antioxidantdefence-system for long term protection.

Due to its size advantage:

- Lighter, simplest non-polar covalent molecule with high bioavailability.
- With rapid diffusion rate molecular Hydrogen easily penetrates subcellular compartments in the cell, where its protective and therapeutic effect is needed.
- Molecular Hydrogen is the only antioxidant able to cross the bloodbrain-barrier to reduce OXIDATIVE STRESS in the brain.







How safe is Hydrogen inhalation?

- Unlike therapeutic Oxygen which need to be closely monitored and prescribed through a doctor, where as hydrogen inhalers can be easily managed at home without any medical supervision.
- Just require pure distilled water and electricity as ingredients to generate Molecular Hydrogen with udazH.
- An overdose of hydrogen has never been reported as it is a natural inert gas with zero toxicity.
- Based on scientific evidence it is a remarkably safe substance for human consumption without any side effects when inhaled at a slow rate of less than 4% (inhalation rate below 300cc per min).
- udazH generates maximum of 300cc per minute out flow of pure Molecular Hydrogen for safe inhalation.



Taking yet another step towards.. the well-being of the community...





The next-gen portable personal wellness tool.



Instant Antioxidant Power



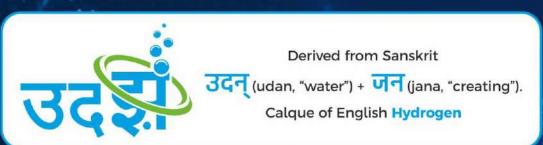


A new beginning in preventive healthcare and personal wellness

AT Serene, our mission is to constantly search for the latest science-based research and developments on natural therapies, technologies, equipment and make it available to the community for their wellness.

Serene proudly introducing two different state-of-the-art products under the brand name udaza:

- Portable personal Hydrogen inhaler with duel use technology.
 - Hydrogen inhaler is basically a therapeutic tool and we positioned this product for the age group 40+ as the therapeutic need to contain Oxidative Stress related ailments which my begin after 40+.
- 2 Hydrogen water bottles in Black and Pink colors (for Male & Female).
 - Hydrogen water bottles positioned for preventive purpose where any age group can use the hydrogenated water for relieving stress and improving the wellness.







Some of the major amazing health benefits of Molecular Hydrogen

- **Soosts internal antioxidant levels.**
- **▼** Restore energy levels, less body fatigue, faster recovery.
- **Onverts** free radicals to water for ultimate hydration.
- **Solution** Enhance better skin health, tone and controls Cellulite.
- **Improves allergies and asthma conditions.**
- **Solution** Eases autoimmune disease affecting your joints or skin.
- Augment athletic performance, healthy weight management.
- Verive, Renew and Rejuvenate overall cellular health.
- Instill the sense of well-being in the body.





Why udaz is the Best Hydrogen Inhaler?

Specially designed Portable Hydrogen Generating machine with state-of-the-art features for personal usage with Duel-use Technology.



99.99% Pure and Stable Hydrogen Outflow



Zero Additives



Long-life and Value for Money



Easy to Handle



Scientifically Proven, Safe and Efficient



Intelligent, Simple Monitoring and Reminder Display System

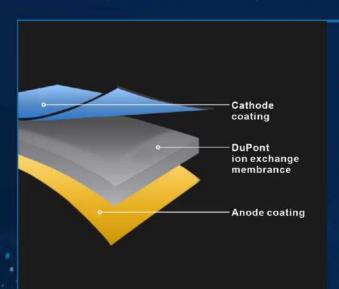
Hydrogen Inhalation Dosage:

• Preventive: One hour for 15 days in a month • Therapeutic: One hour twice a day for 30 days If you feel any discomfort while using this inhalation machine, please stop using it, consult our technical experts, or use it under the guidance of a medical practitioner.



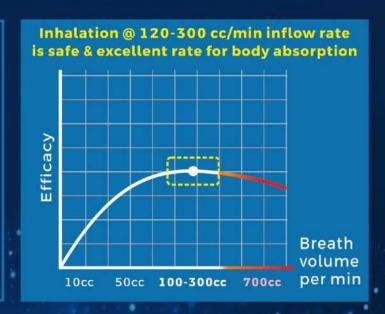
Why Udazi - Hydrogen Inhaler

udazH generates Molecular Hydrogen with an out flow of 300cc per minute, when a single person inhales. It is a duel use technology machine-two people can inhale at the same time with max inhalation inflow of 150cc per minute. As per the scientific observation, slow inhalation rate ranging in between 120-300cc per minute (less than 4%) is safe and best for the body absorption and effective results.



SPE-PEM Purewater Technology

With Precious, high tech, Perfluorinated ionomer double side Platinum, American DuPont N117 Membrane.



Certifications









What is Hydrogen Water? What are the benefits?



What is Hydrogen Water?

Hydrogen water is generally purified water that is infused with molecular Hydrogen. This water is quite different from regular water, as it is rich in antioxidants that are capable of fighting various inflammatory conditions.

It has undergone clinical research and is backed by scientific evidence. Today, the hydrogen water is widely used by athletes to improve athletic performance and for its unique properties that are beneficial to almost every organ in the human body including the brain, eyes, lungs, liver and heart.

Health Benefits of Drinking Hydrogen Water

Hydrogen Water health benefits includes improving mood, weight loss, regulating blood sugar levels, helps cancer prevention, eye health, relief from arthritis, oral health, protecting the skin, reducing muscle fatigue, protecting the brain, prolonging lifespan, promoting pH balance and wound healing.



Why Udazi - Hydrogen Water Bottles

PEM **Technology Platinum Titanium** Alloy **Electrode** >800ppb Hydrogen Food grade Plastic 99.99%

Pure Hydrogen



Hydrogen Molecule has antioxidant effect

> Neutralize free radicals from the body

Anti-ageing. Improve overall health





Recommended Hydrogen water intake per day

Pink Bottle (280ml): 1.5 to 3.0 litres (5 to 10 bottles) per day.

Black Bottle (500ml): 1.5 to 3.0 litres (3 to 6 bottles) per day.

Whether you take it while fasting or in between meals, it is beneficial at any time.

To enhance your sporting activity drink Hydrogen Water before and after workouts.

For effective results drink water immediately after electrolysis.

Certifications









Advantage of Udazi - Hydrogen Water

Consumption of 1.5 litre Hydrogen water a day gives your body antioxidant value which is equivalent to eating lots of vegetables and fruits as shown below:















udaz - Hydrogen Water Amazing role in Sports and fitness

Physical exercise generates mechanical energy, metabolites, and heat that affects steady state of body's internal environment by depleting energy reserves. Based on the form of exercise, sooner or later sensations of fatigue and exhaustion will occur.

Excessive free radicals are the root cause of many modern diseases and ageing in human body. Polluted environment, stressful lifestyles trigger excessive free radical generation in our body, which causes cellular oxidative stress that may lead to life threatening ailments.

Enormous amounts of research for the last two decades on Molecular Hydrogen role as a selective antioxidant, and anti-inflammatory molecule reassured that its usage can help with ageing, healing, fights oxidative stress and its capability to prevent over 170 human diseases. In addition, this powerful Hydrogen water is said to increase energy levels, reduce inflammation, and reduce recovery time after workouts or sports injury.

Recent research on Molecular Hydrogen's role in sports science has reinforced its popularity and is steadily becoming an essential part of life and fitness.

These studies indicate:

- Molecular Hydrogen is a natural booster of energy.
- Hydrogen has therapeutic value for its use in the athletic environment by counterbalancing biomarkers of exercise-induced inflammation and damage (e.g., creatine kinase, myoglobin, ferritin, C-reactive protein).
- Effective in preventing muscle fatigue by slowing down accumulation of lactate in blood.
- Improves overall athletic performance.
- Drinking Hydrogen Water is one of the easiest ways to get Molecular Hydrogen in to your body.







Portable Personal Wellness

Instant Antioxidant Power

Bhagyashree as Brand Ambassador













