



## CELL STRESS: OXIDATIVE OR RADICAL?



## CELL STRESS: WHERE TO FIND IT?

Our life is in a state of continuous dynamic equilibrium. On a daily basis, our body is subjected to stresses of various kinds, **stressors that undermine the physiological balance.**

At the cell level, a stressor can:

- trigger an adaptive response >> stimulus to achieve a new balance with adaptive benefits
- create reversible damage >> stimulus to "fix" the condition that caused the stress
- create irreversible damage and lead to cell death (apoptosis).

Conditions such as intense **sports, psychophysical stress, infections, exposure to pollutants, sun or other sources of radiation, and smoking, combined with unregulated lifestyles and poor dietary intake of antioxidants,** can lead

the cell to increase free radical production. Conditions in which antioxidant defences are depleted and the stressed condition may not be compensated for.

## OXIDATIVE STRESS OR RADICAL STRESS: are the same?

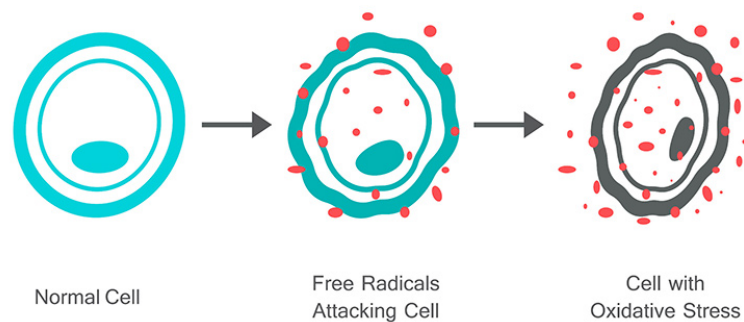
The term oxidative stress is often used to refer to the formation of free radicals.

**Oxidative stress and radical stress are two different molecular processes.**

During the stress phenomenon, reactive oxygen species (ROS) of two types are formed in the cell:

- 1) oxidizing molecules, such as hydrogen peroxide
- 2) free radicals, such as the "famous" hydroxyl radicals ( $\text{OH}\cdot$ ). Free radicals are "transient," i.e., unstable, species whose half-life is much shorter and reactivity quite different from oxidizing species.

Therefore, in the former case the term "oxidative stress" is used, while in the latter case it is more appropriate to speak of "radical stress."



Recognizing whether one is dealing with oxidative stress or radical stress is important when one has to choose the **ANTI-STRESS strategy**, but this distinction can only be

made by a specialist who will identify the most suitable ANTI-OXIDANT or ANTI-RADICAL synergy, including through membrane lipidomic analysis.

Consequently, "DO-IT-YOURSELF" in stress is definitely the worst choice, because resorting to antioxidants without knowing the molecular process may be useless or even deleterious.

## ANTIOXIDANT-THEMED INSIGHTS:

Some in-depth readings on the topic of antioxidants and dietary supplementation:

- Before purchasing a supplement, it is important to know that...  
[www.lipinutragen.it/en/food-supplements/](http://www.lipinutragen.it/en/food-supplements/)
- Antioxidant action supplementation:  
[www.lipinutragen.it/en/antioxidant-integration/](http://www.lipinutragen.it/en/antioxidant-integration/)
- Cell reinforcement with antioxidants:  
[www.lipinutragen.it/en/strengthening-the-body/](http://www.lipinutragen.it/en/strengthening-the-body/)
- Easy homemade ice-cream recipe with natural antioxidant action ingredient:  
[www.lipinutragen.it/en/antioxidant-ice-cream/](http://www.lipinutragen.it/en/antioxidant-ice-cream/)

---

Article edited by the Lipinutragen Editorial Group.

The information reported should in no way replace the direct relationship between health professional and patient.

---

**Photo:** 123RF Archivio Fotografico: 196865541 : ©zannagap |  
79736145 : ©fancytapis

---