

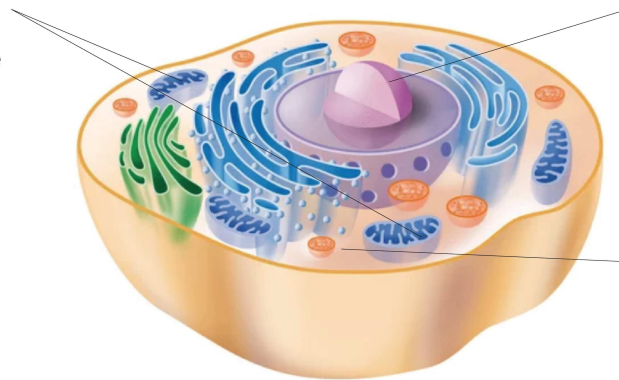
# Biochemical Effects of Red & Near-Infrared Light

As light penetrates through tissue, its associated energy is absorbed by the cells it travels through. In particular, the light energy is absorbed by the mitochondria, which is contained in every cell in the human body. Through a photo-chemical process similar to photosynthesis, this causes the mitochondria to release **adenosine triphosphate (ATP)** which is the fundamental form of cellular energy. This cellular energy boost results in cells which function better and are able to more readily create new, healthy cells. With abundant ATP available, the overall effect is a body that is able to heal and restore itself at an accelerated rate and an overall higher level of functioning.

## Improved Cellular Functioning

### Increased mitochondrial energy production:

This is the main site where nutrients are converted into cellular energy. This is increased immensely during PBM treatments where molecules like ATP and NO are produced in abundance.

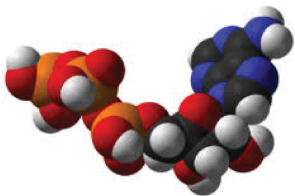


### Enhanced gene transcription:

Conditions are created for optimum gene transcription and DNA replication.

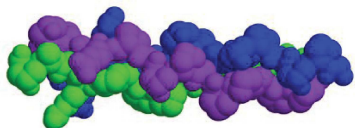
### Heightened hormesis:

This is the process of fortifying the cell's anti-oxidant and anti-inflammatory defense systems.



ATP is a biochemical way to store and use energy for organ regulation, metabolism, nerve and cell function and maintenance.

Nitrus Oxide (NO) is a vasodilator, reduces lactic acid & helps to manage intercellular processes for every cell in the body.



Collagen is the body's most abundant protein and makes up over 80% of the dry weight of tendon. PBM therapy has shown to improve collagen production and synthesis.