



SHAPING THE  
**BUSINESS** OF  
WELLNESS

**GLOBAL WELLNESS SUMMIT 2018**



# The Latest Innovation in Light Based Technology Significantly Increases Human Potential

LightStim<sup>®</sup>





*light*

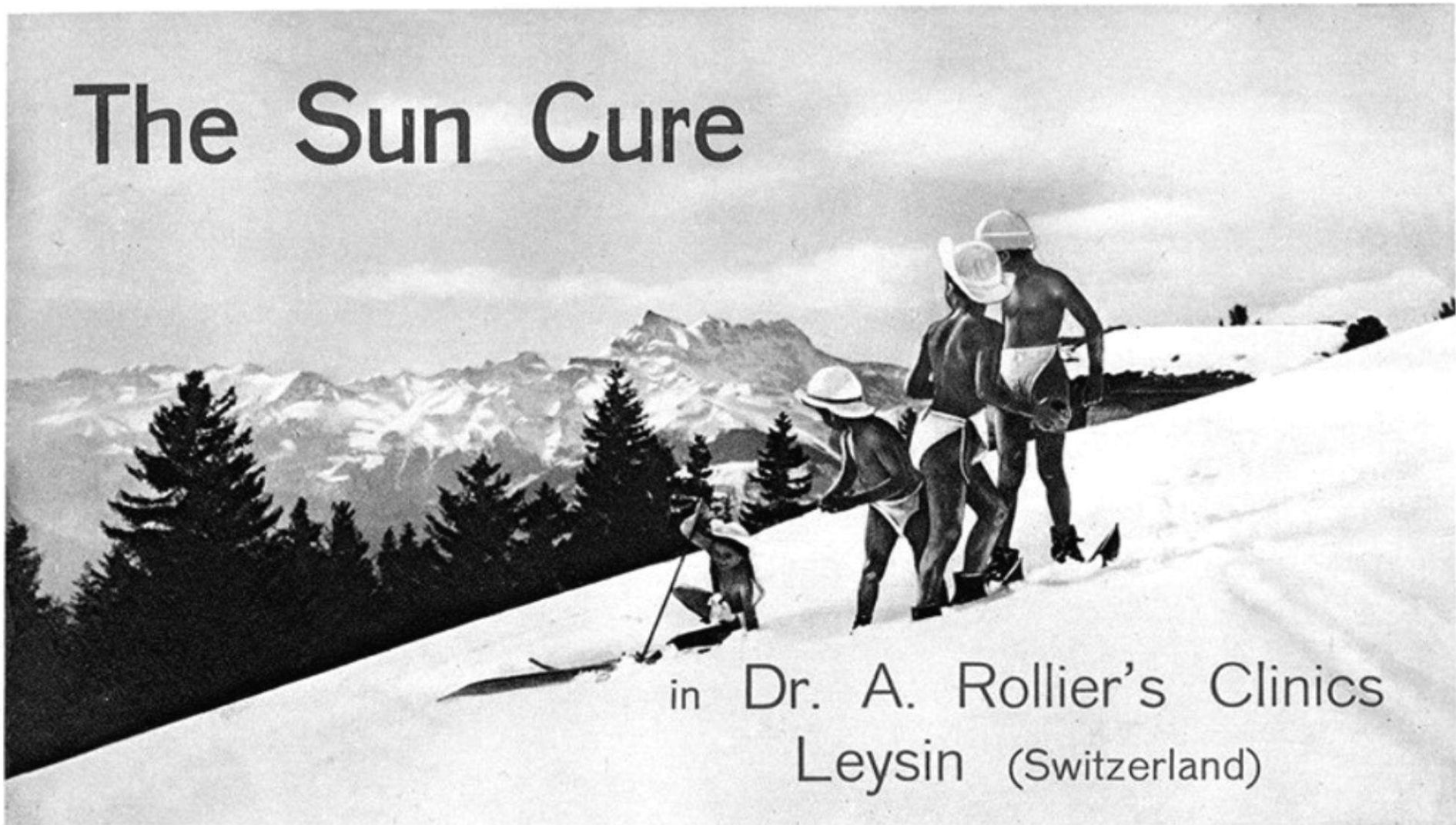
*mind*

*body*

*Technology*



# The Sun Cure

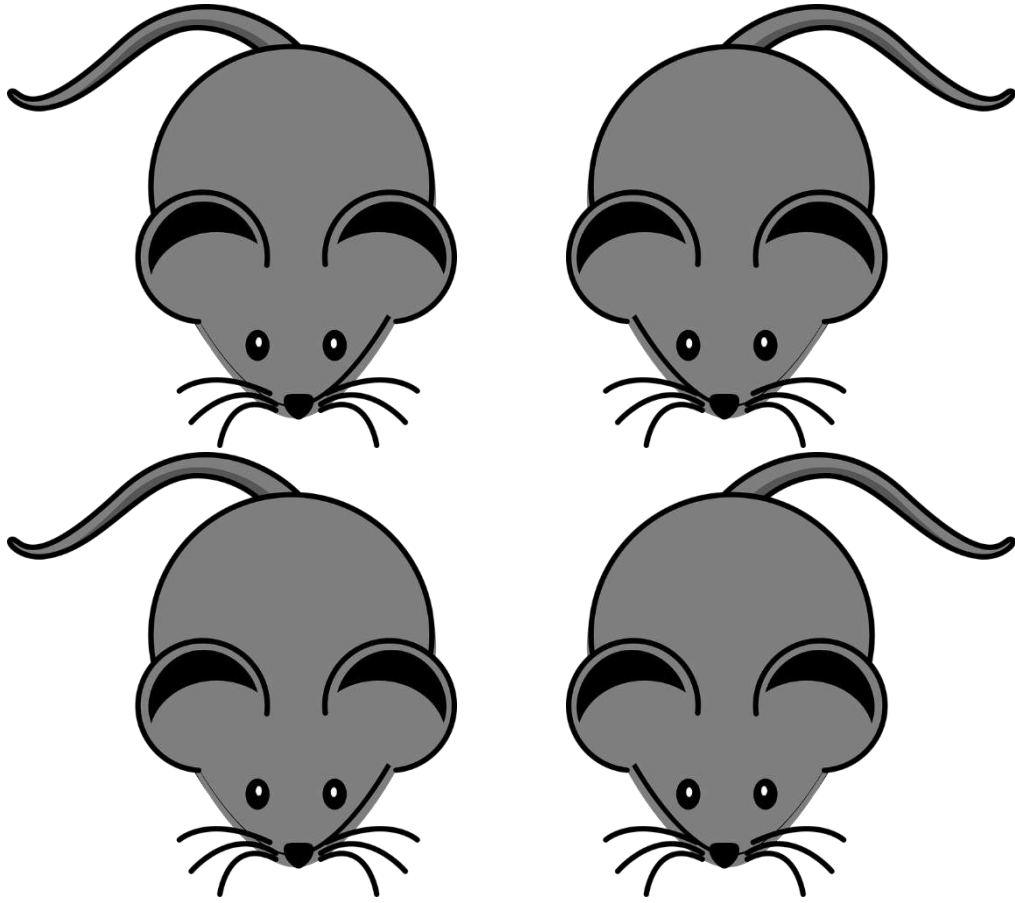


in Dr. A. Rollier's Clinics  
Leysin (Switzerland)

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SWISS ALPINE HELIOTHERAPIC RESORT ◦ ALT.: 4500 FT

# Photobiosimulation



Group 1

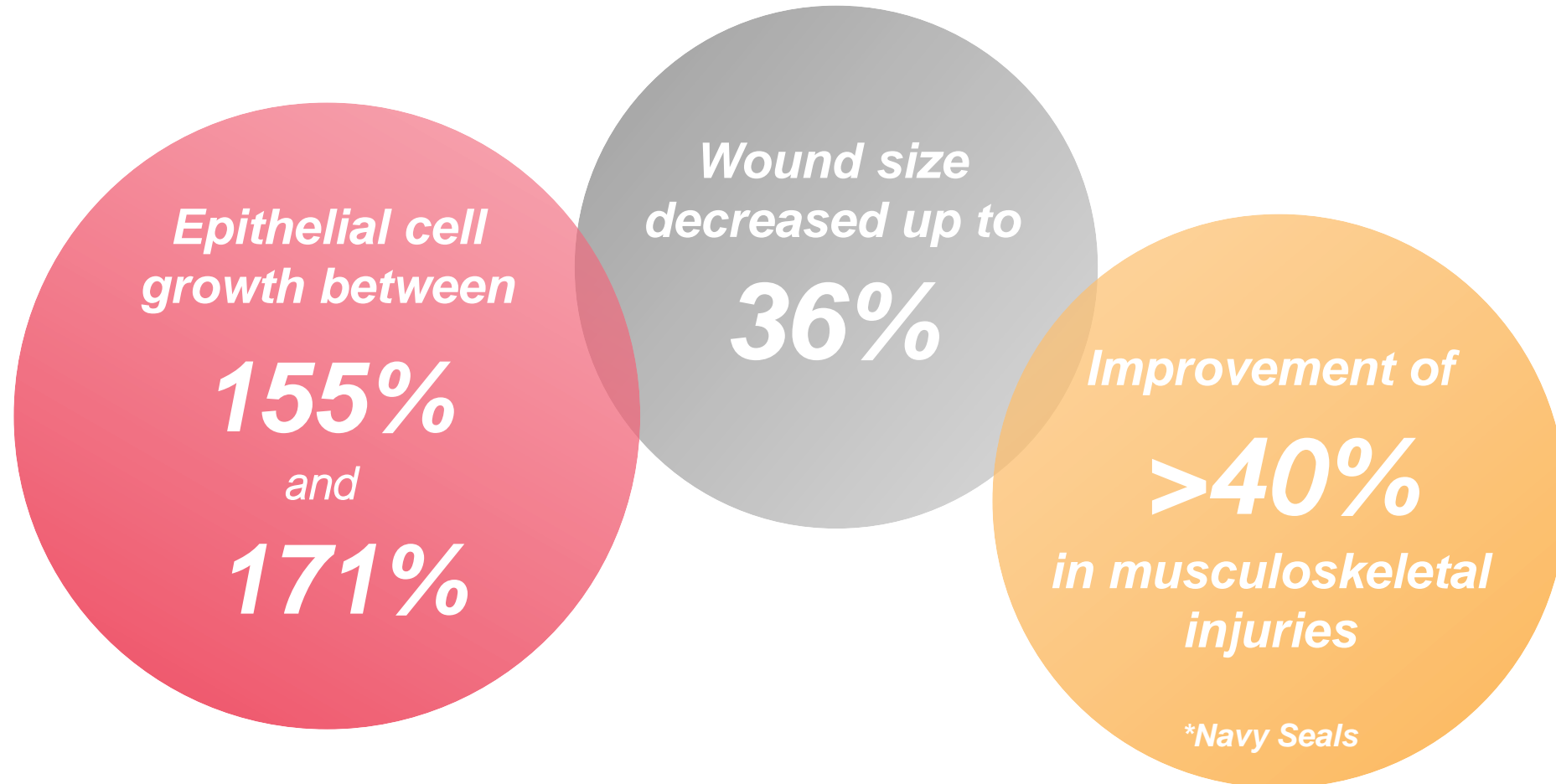


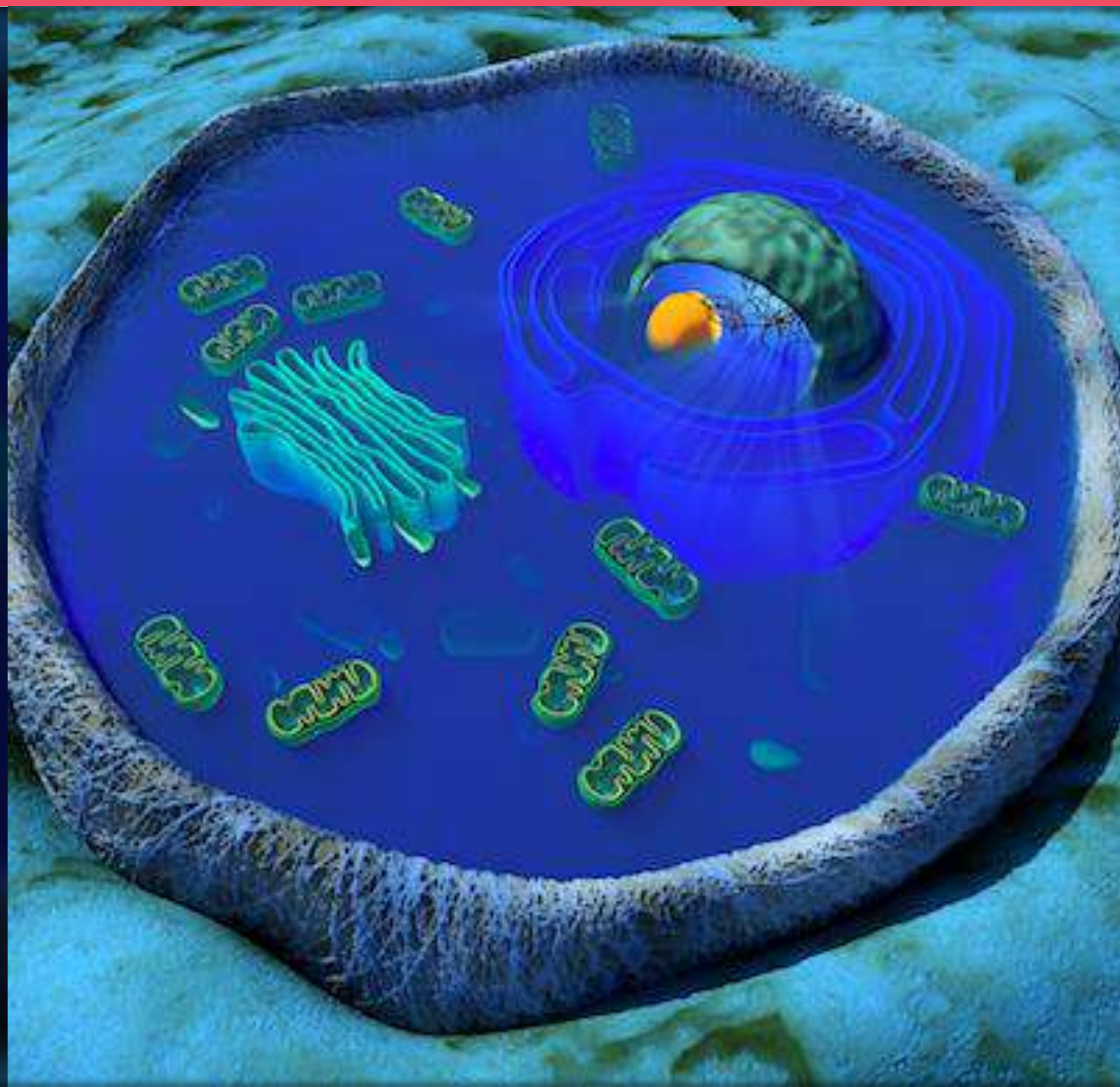
Group 2



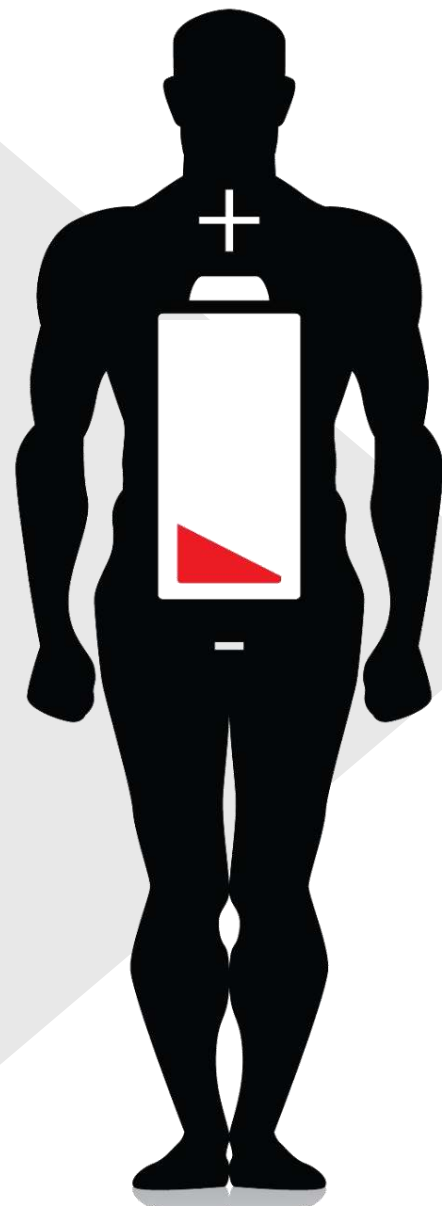
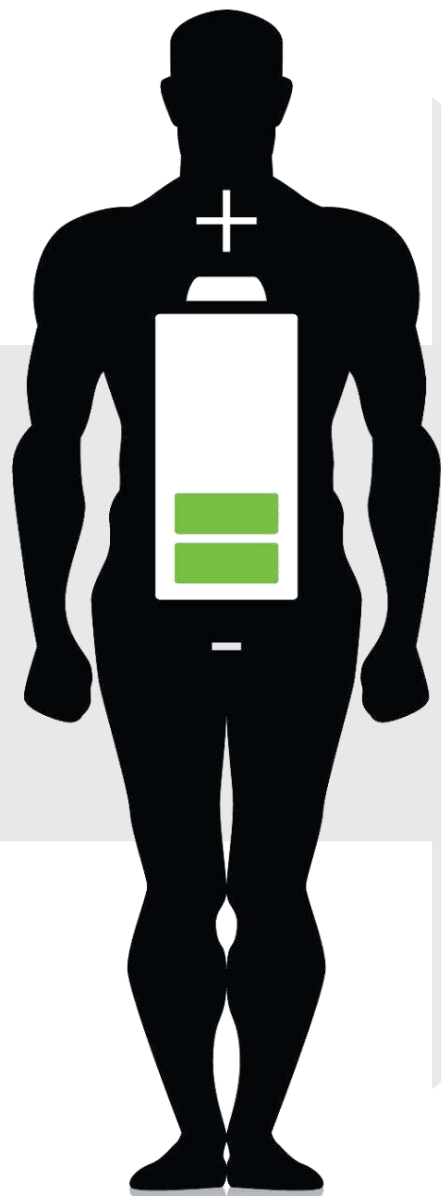
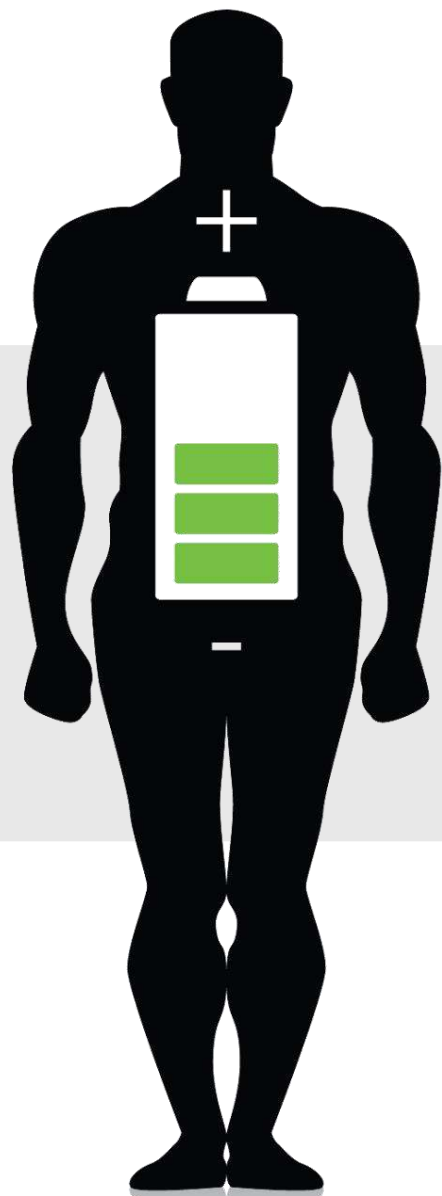
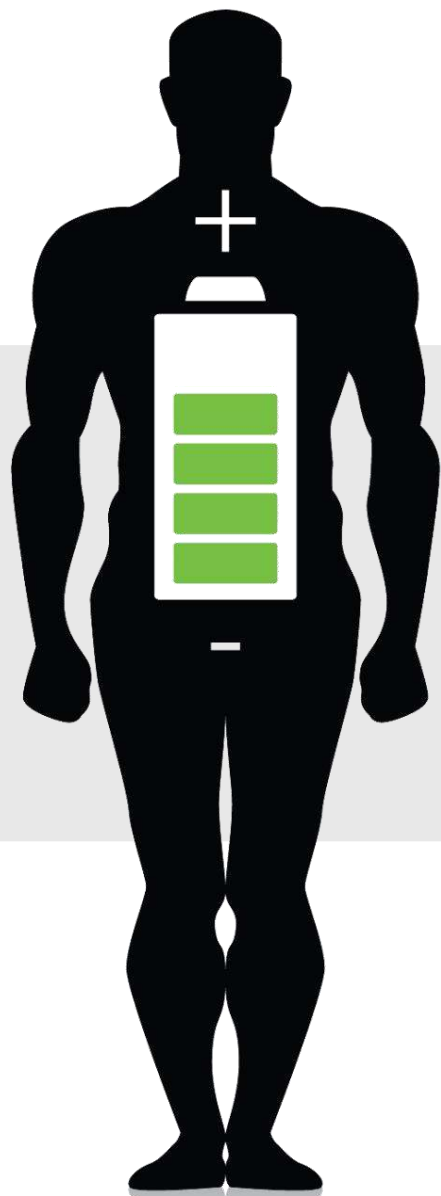
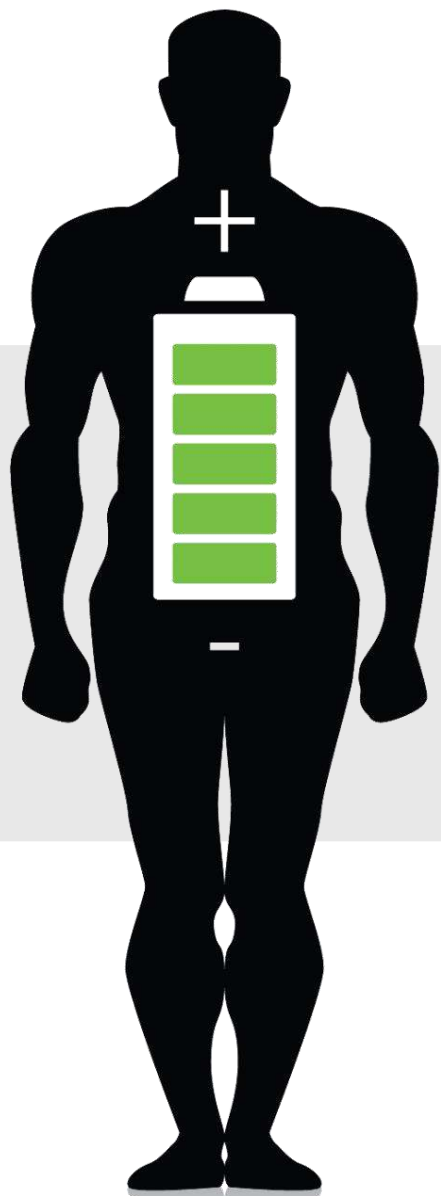


# Effect of NASA Light-Emitting Diode Irradiation on Wound Healing









# Studies Have Shown:

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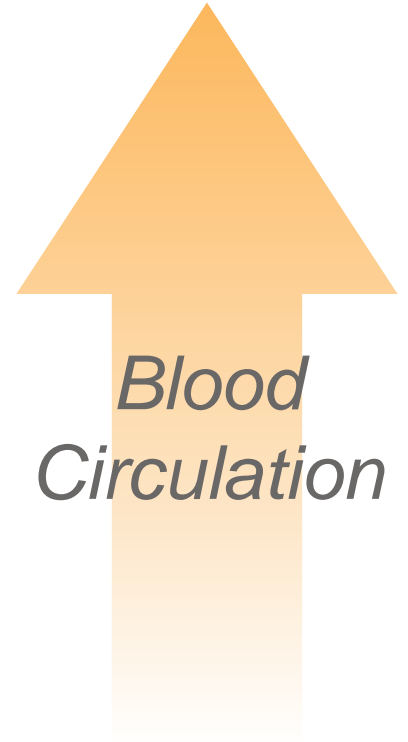
*ATP &  
Nitric Oxide*



*Oxidative  
Stress*



*Inflammation*



*Blood  
Circulation*



# The Physiological and Therapeutic Role of Nitric Oxide

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*Nathan S. Bryan, PhD.*

*Dept. of Molecular and Human Genetics  
Baylor College of Medicine*

The logo for Baylor College of Medicine, featuring the text "Baylor College of Medicine" in white serif font on a dark blue square background.

Baylor  
College of  
Medicine

# Financial Disclosures

- Founder and Shareholder of HumanN ([www.humann.com](http://www.humann.com))
- Shareholder and advisor for SAJE Pharma
- Receive royalties on patents from University of Texas Health Science Center at Houston

human<sup>n</sup>





**“A man is as old as his arteries.”**

*- Thomas Sydenham,  
English physician, 1624-1689*



# What Causes Arteries to Age?

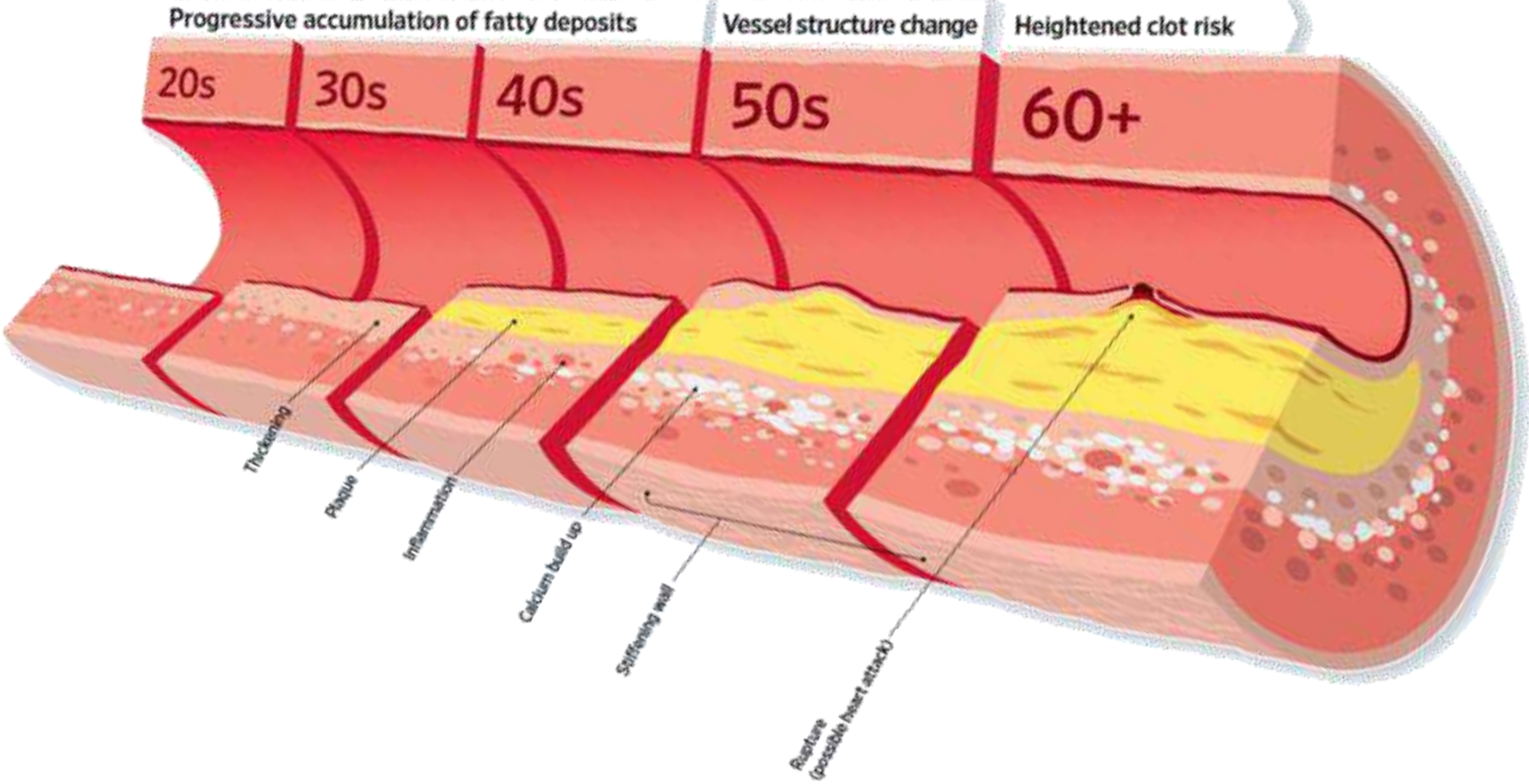


*Inflammation*

*Immune  
Dysfunction*

*Oxidative  
Stress*

# The Age of Your Arteries



Sources: Carl J. Pegima, University of Florida; WSJ reporting | Illustration: Erik Brynildsen/The Wall Street Journal

Low Risk

Moderate Risk

High Risk

Oxidation

Plaque deposition

Plaque growth/  
vulnerable plaque

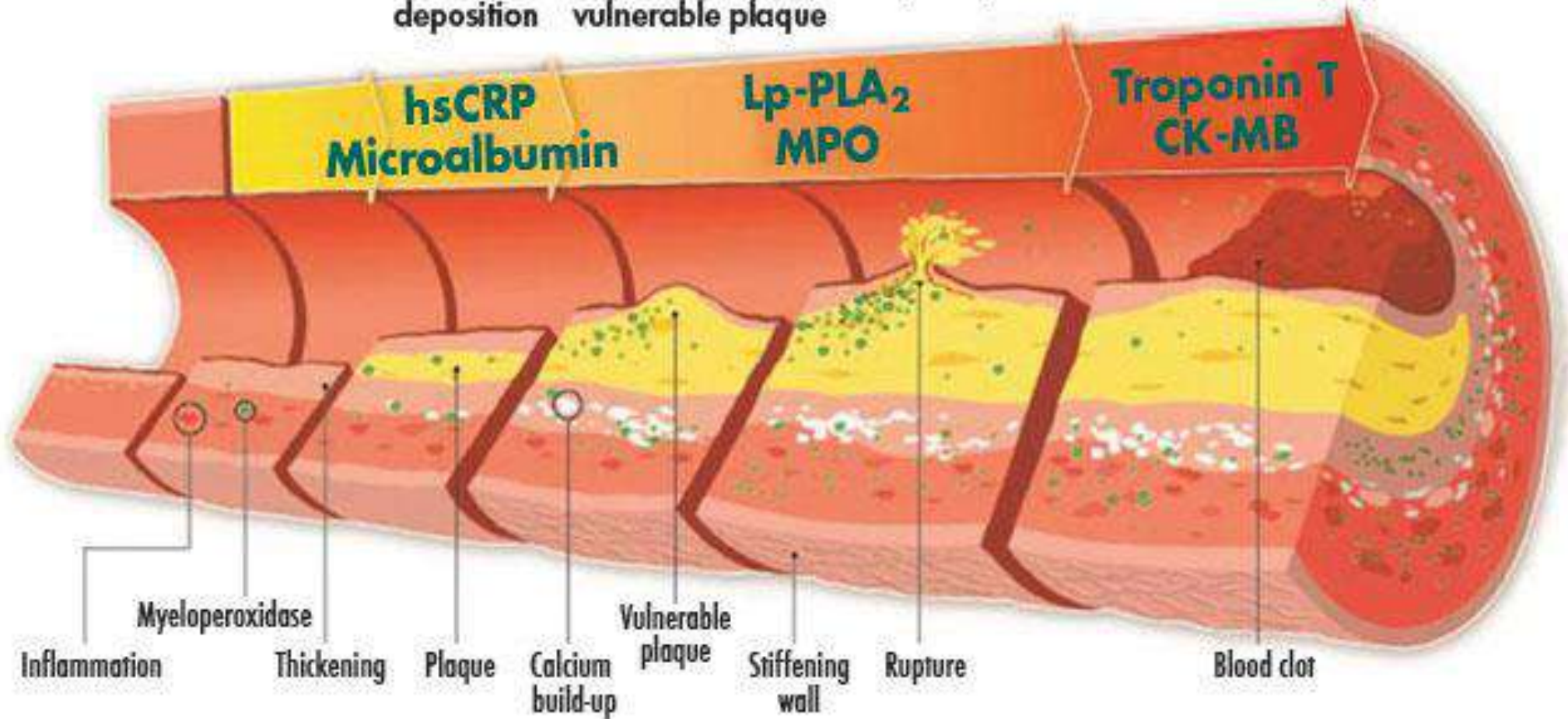
Plaque rupture

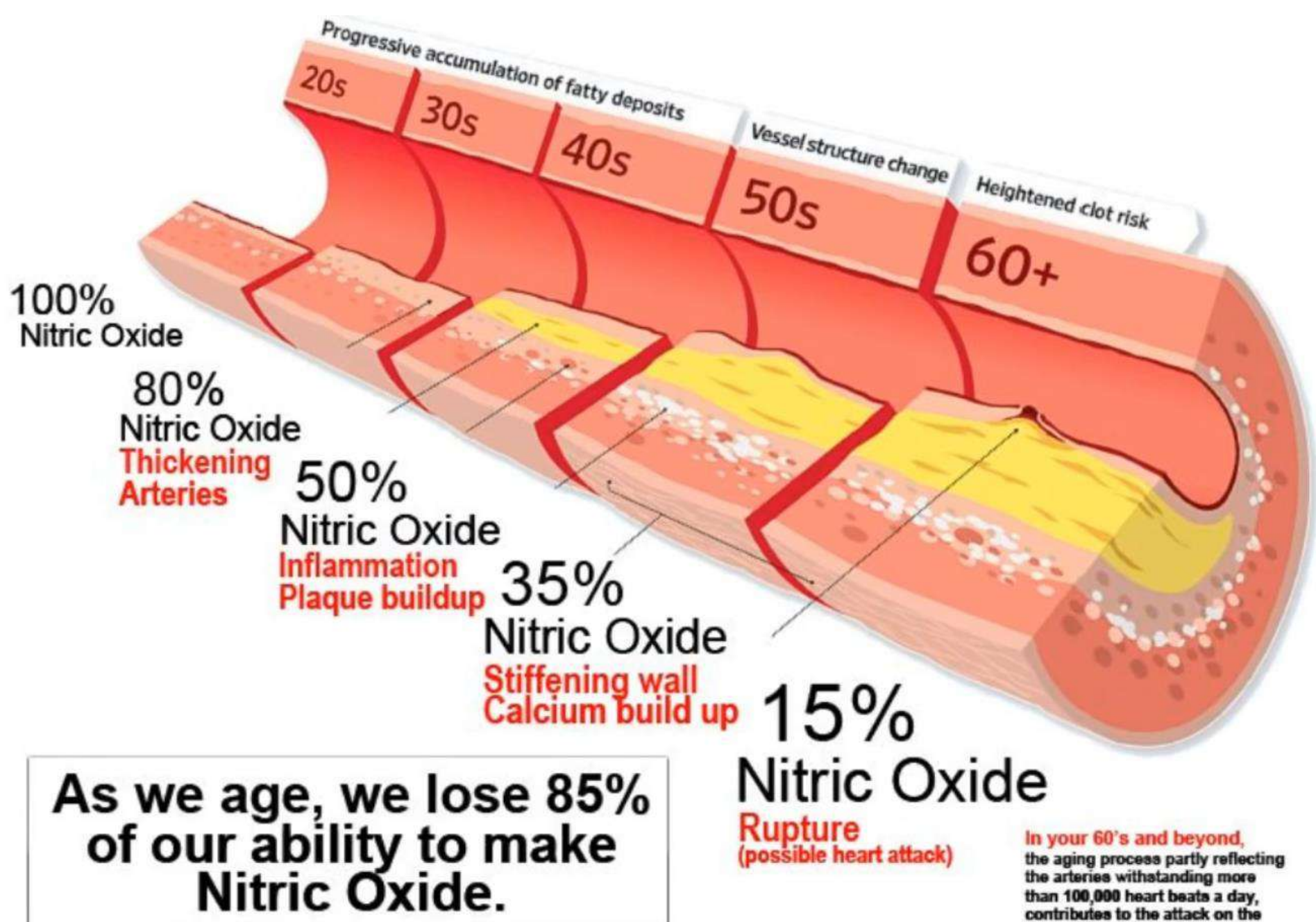
Acute coronary syndrome

hsCRP  
Microalbumin

Lp-PLA<sub>2</sub>  
MPO

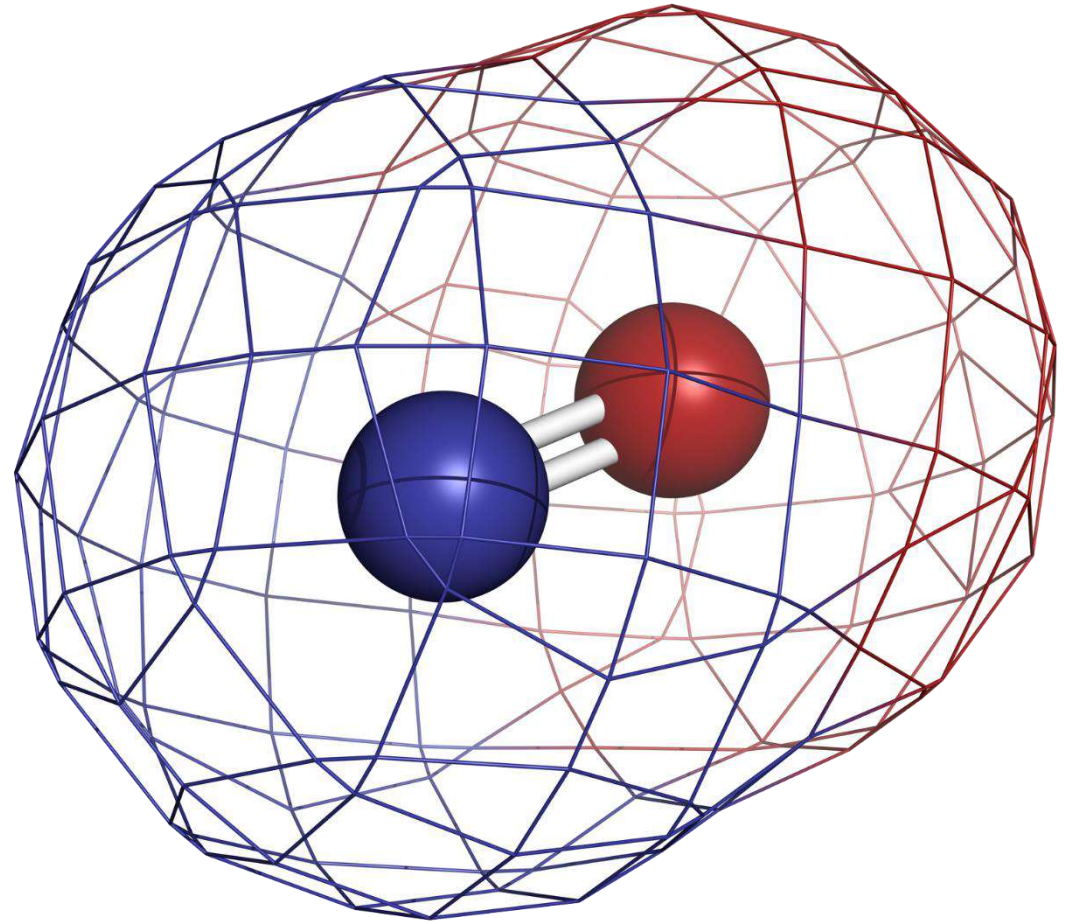
Troponin T  
CK-MB





**How do we prevent, slow down or reverse arterial aging?**

# Nitric Oxide



# What is Nitric Oxide

## What it is

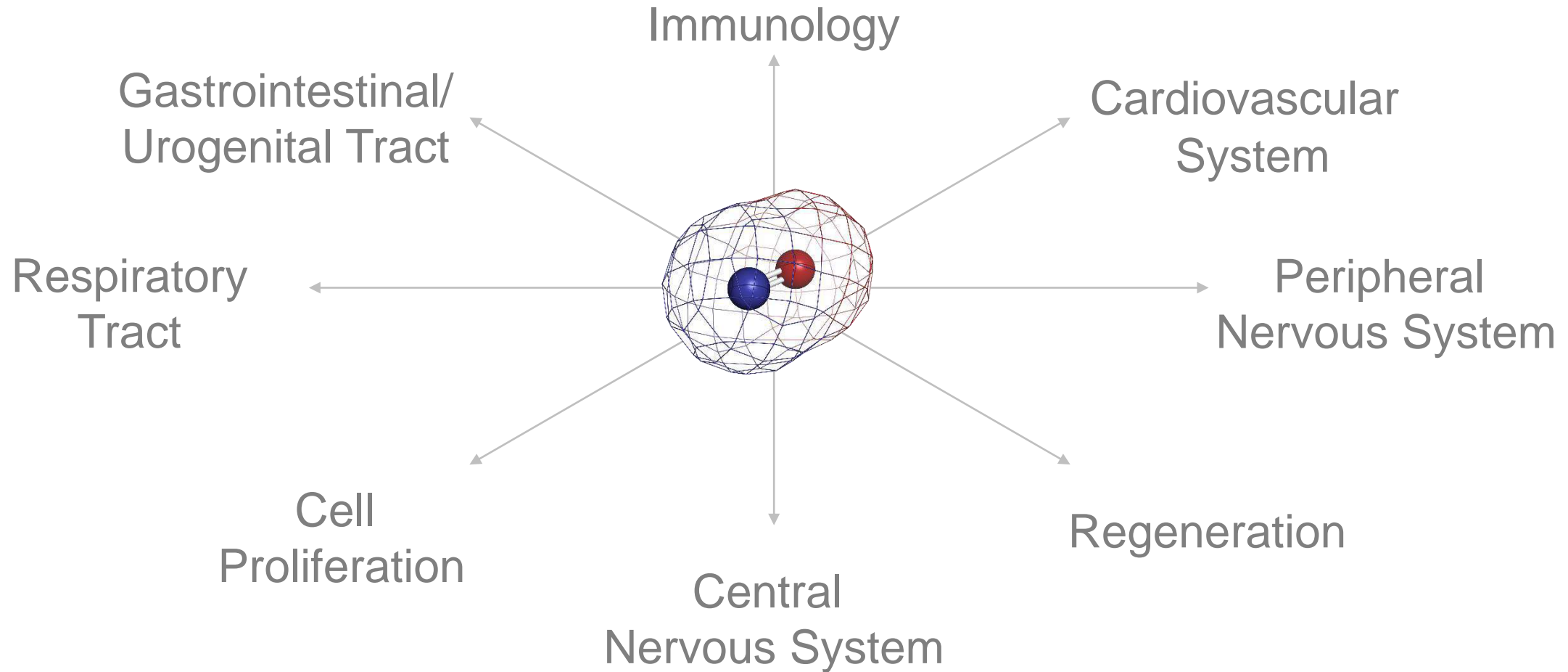
- Gas with chemical formula **NO**
- One of the most important human signaling molecules
- Useful free radical

## What it's Not

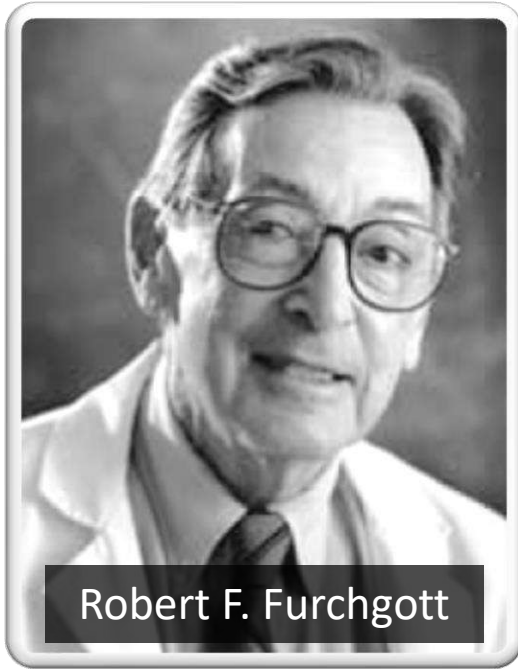
- Nitrous oxide (**N<sub>2</sub>O**)  
a general anesthetic
- Nitrogen dioxide (**NO<sub>2</sub>**)  
poisonous air pollutant



# Nitric Oxide Plays a Key Role in the Regulation of Numerous Vital Biological Functions



# Nitric Oxide Plays a Key Role in the Regulation of Numerous Vital Biological Functions

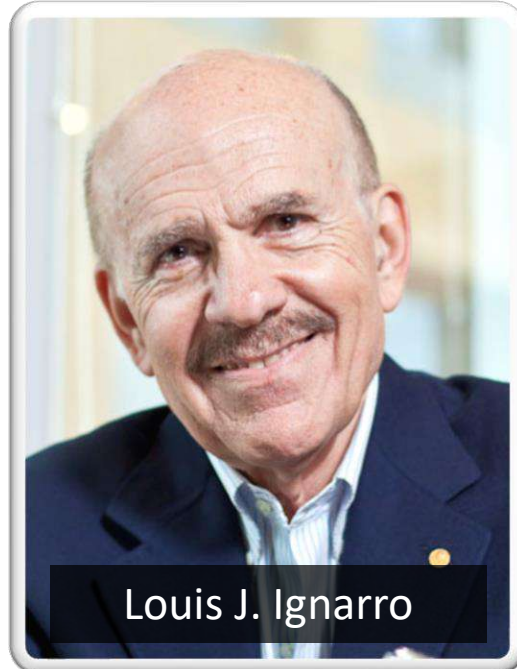


Robert F. Furchgott

1/3 of the prize

USA  
SUNY Health Science Center  
Brooklyn, NY, USA

Born: 1916

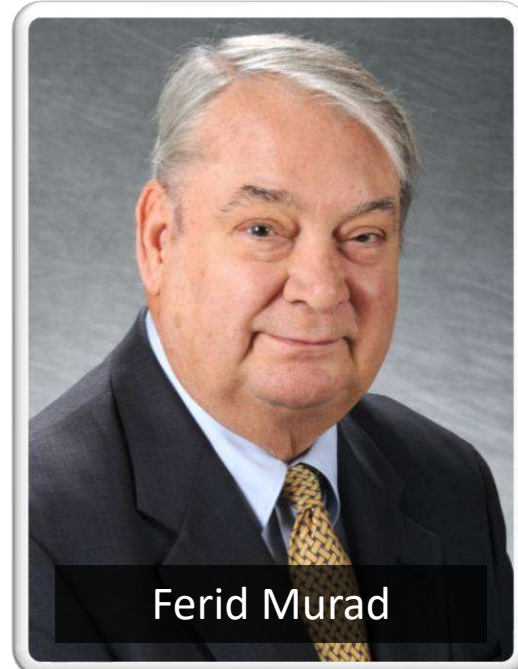


Louis J. Ignarro

1/3 of the prize

USA  
University of California School of  
Medicine - Los Angeles, CA

Born: 1941



Ferid Murad

1/3 of the prize

USA  
University of Texas Medical  
School at Houston, TX, USA

Born: 1936



The Nobel Prize in  
Physiology 1998

“For their discoveries  
concerning nitric oxide as a  
signaling molecule in the  
cardiovascular system.”

Source: Nobel e-Museum  
[www.nobel.se](http://www.nobel.se)

**“The discovery of NO and its function is one of the most important in the history of cardiovascular medicine.”**

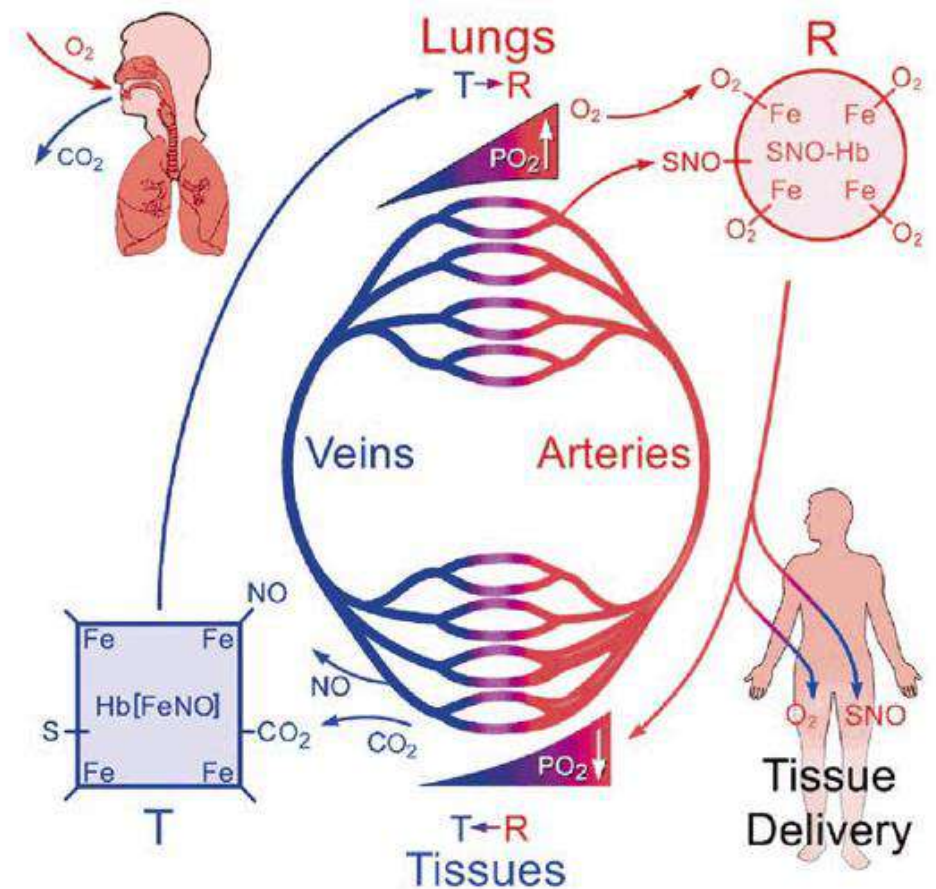
*- Dr. Valentin Fuster,  
President of American Heart Association, 1998*

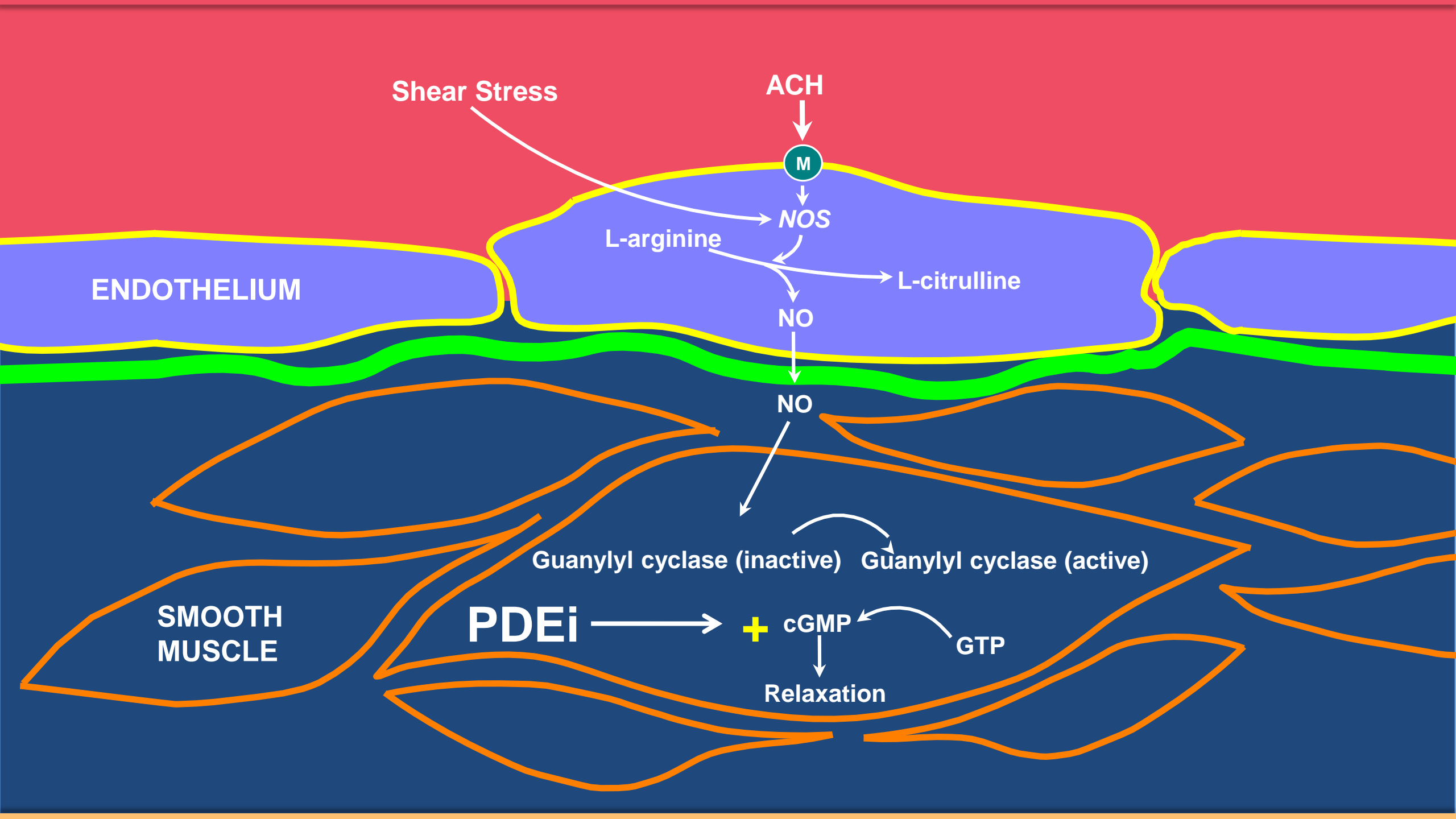


# Nitric Oxide is Required for Red Blood Cell Delivery of Oxygen From the Lungs to Tissue

“Blood flow to tissues is actually more important in most circumstances than how much oxygen is carried by hemoglobin. The respiratory cycle is actually a three-gas system.”

- Professor Stamler





# Mechanisms of NO on Skin and Anti-aging

Dilates capillaries & increases blood circulation to the skin

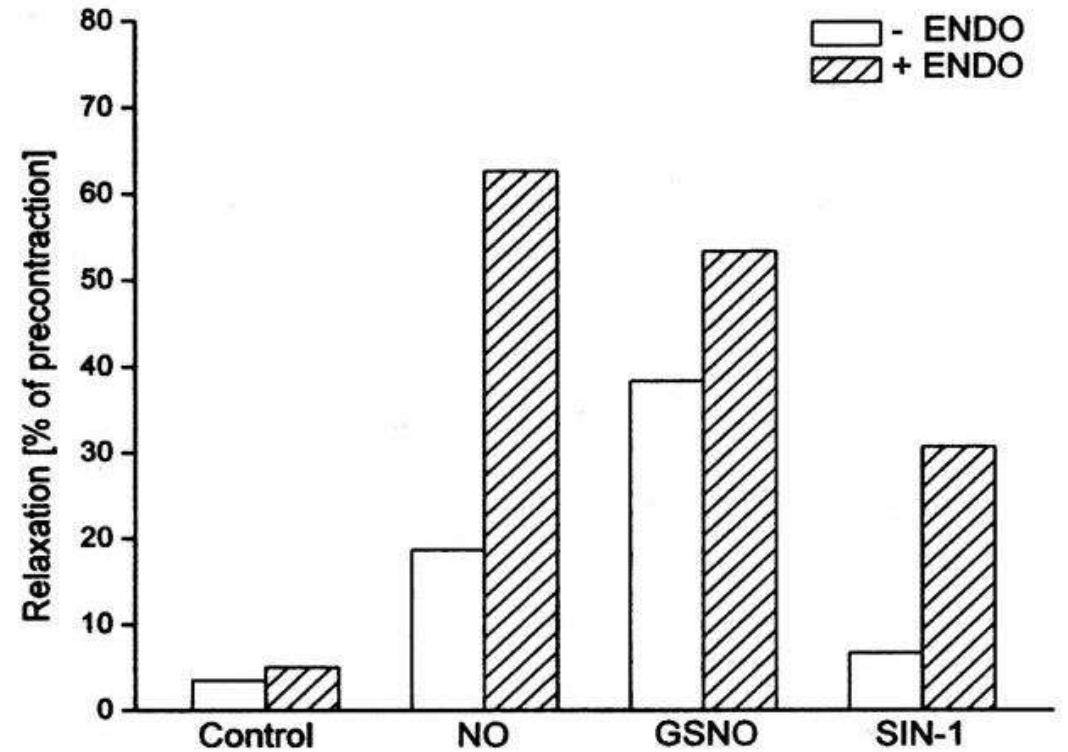
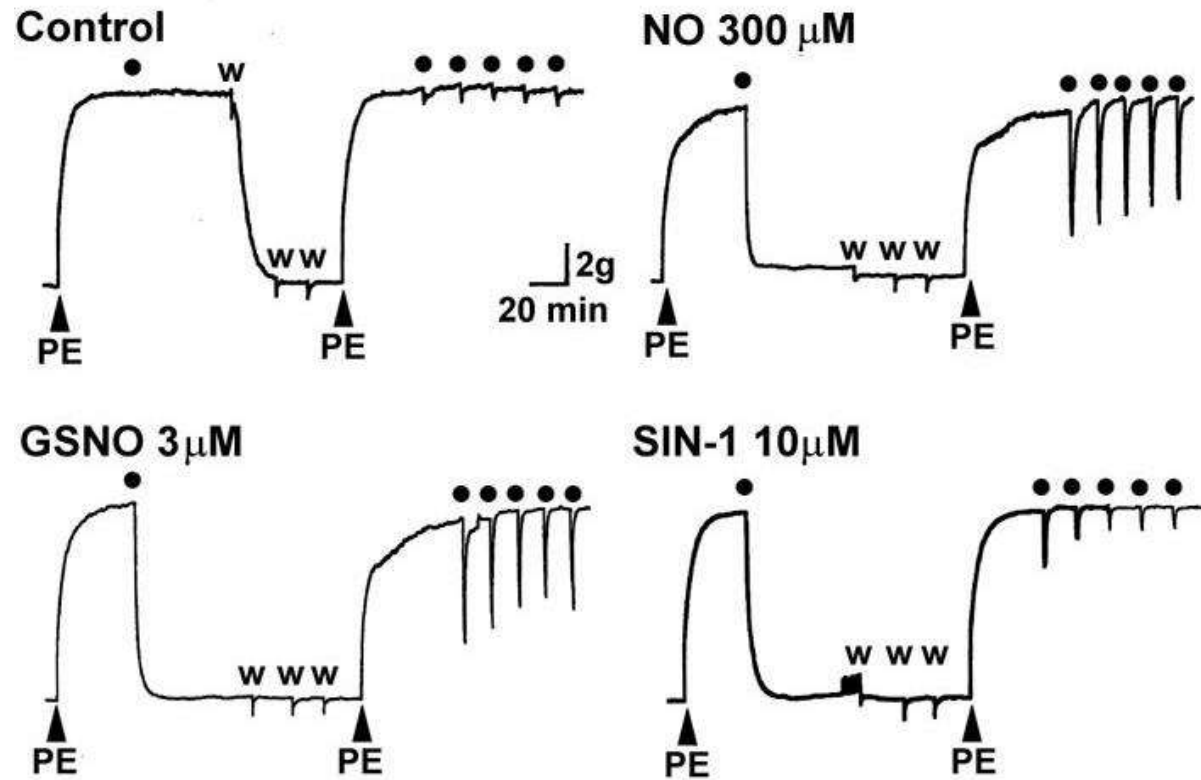
Circulation brings oxygen & nutrients to the skin

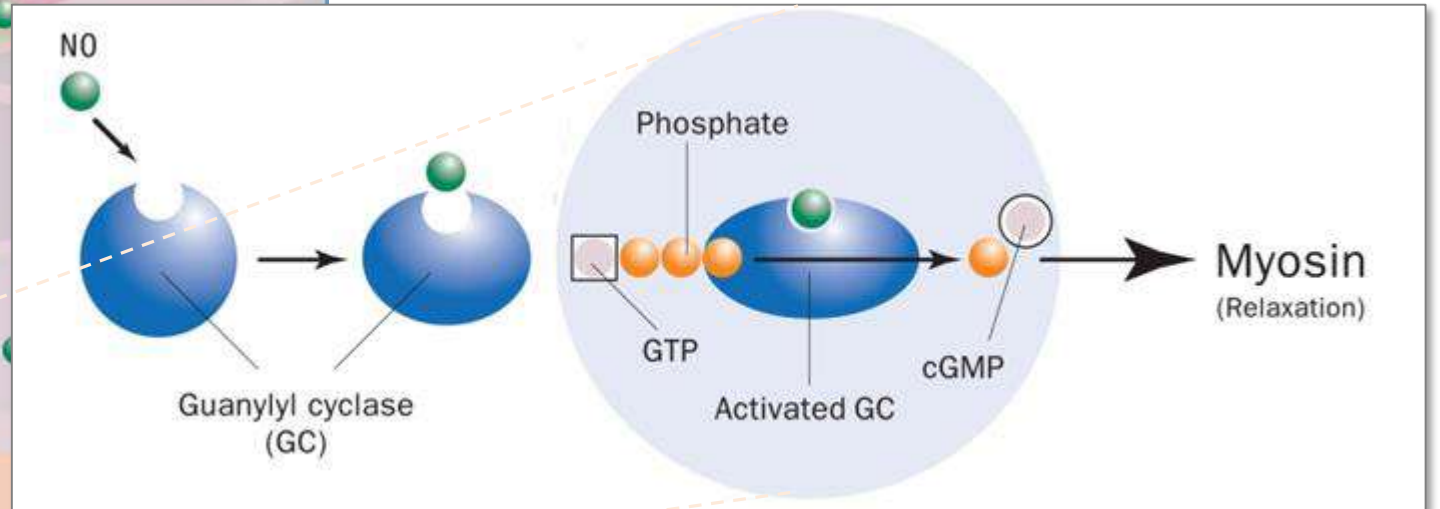
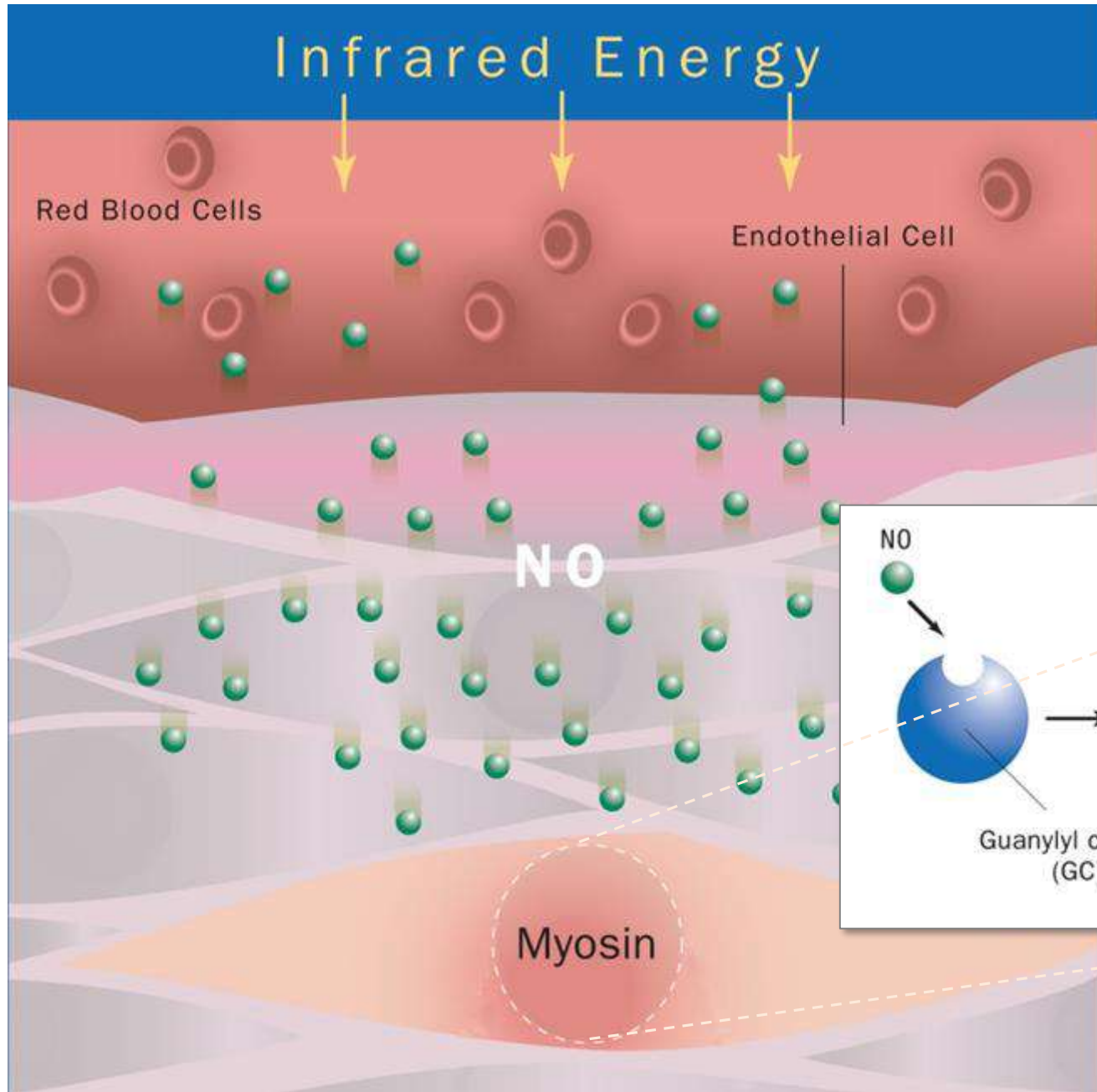
Improves skin texture, elasticity & thickness

Stimulates cell regeneration and restores moisture

Helps reduce wrinkles and create tighter, smoother skin

# Photorelaxation



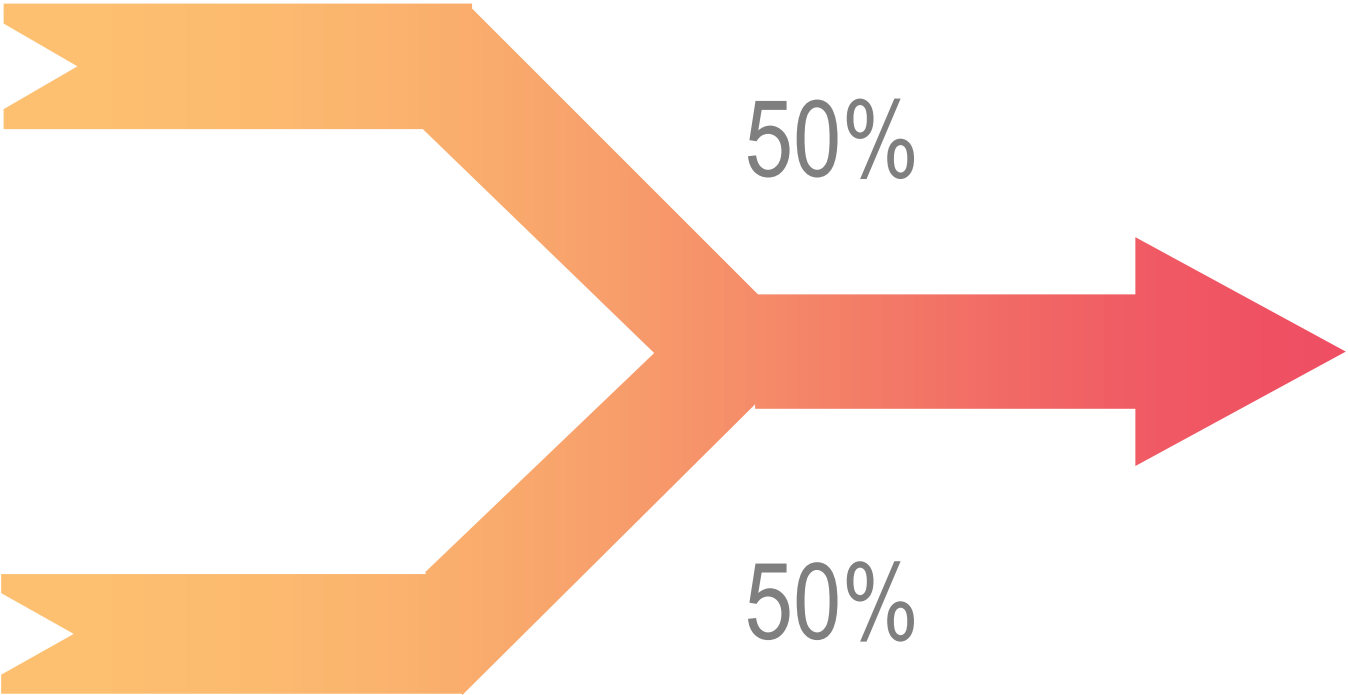




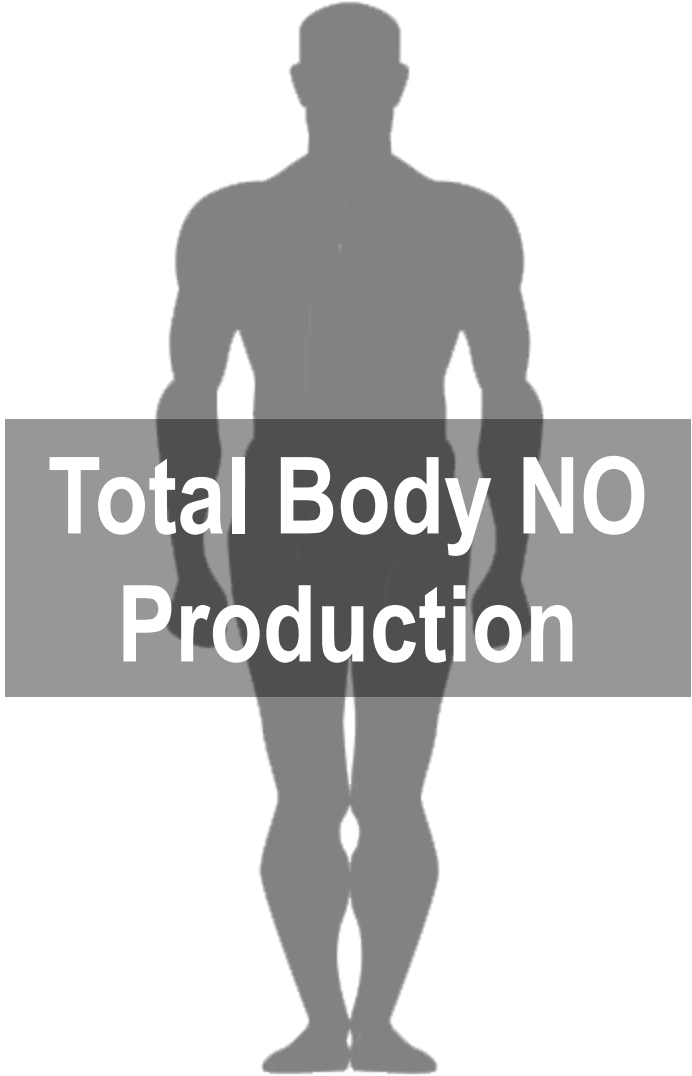
**How do we control and regulate  
NO production?**

# Two NO Production Pathways

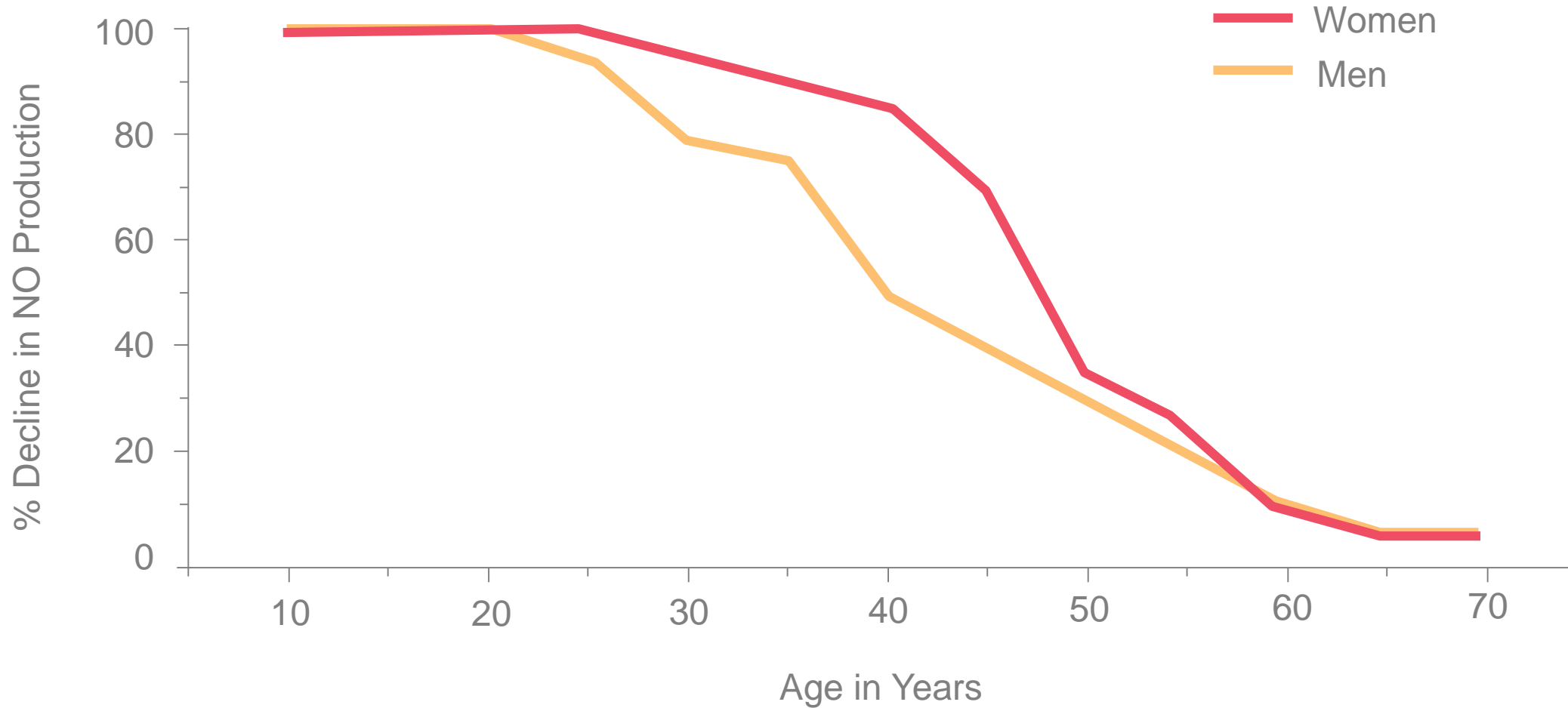
1. Oxidation of L-arginine (NOS)



2. Nitrate-Nitrite-Nitric Oxide



# NOS Derived NO Declines With Age



# Consequences of NO insufficiency

Hypertension

Atherosclerosis

Thrombosis

Alzheimer's

Erectile  
Dysfunction

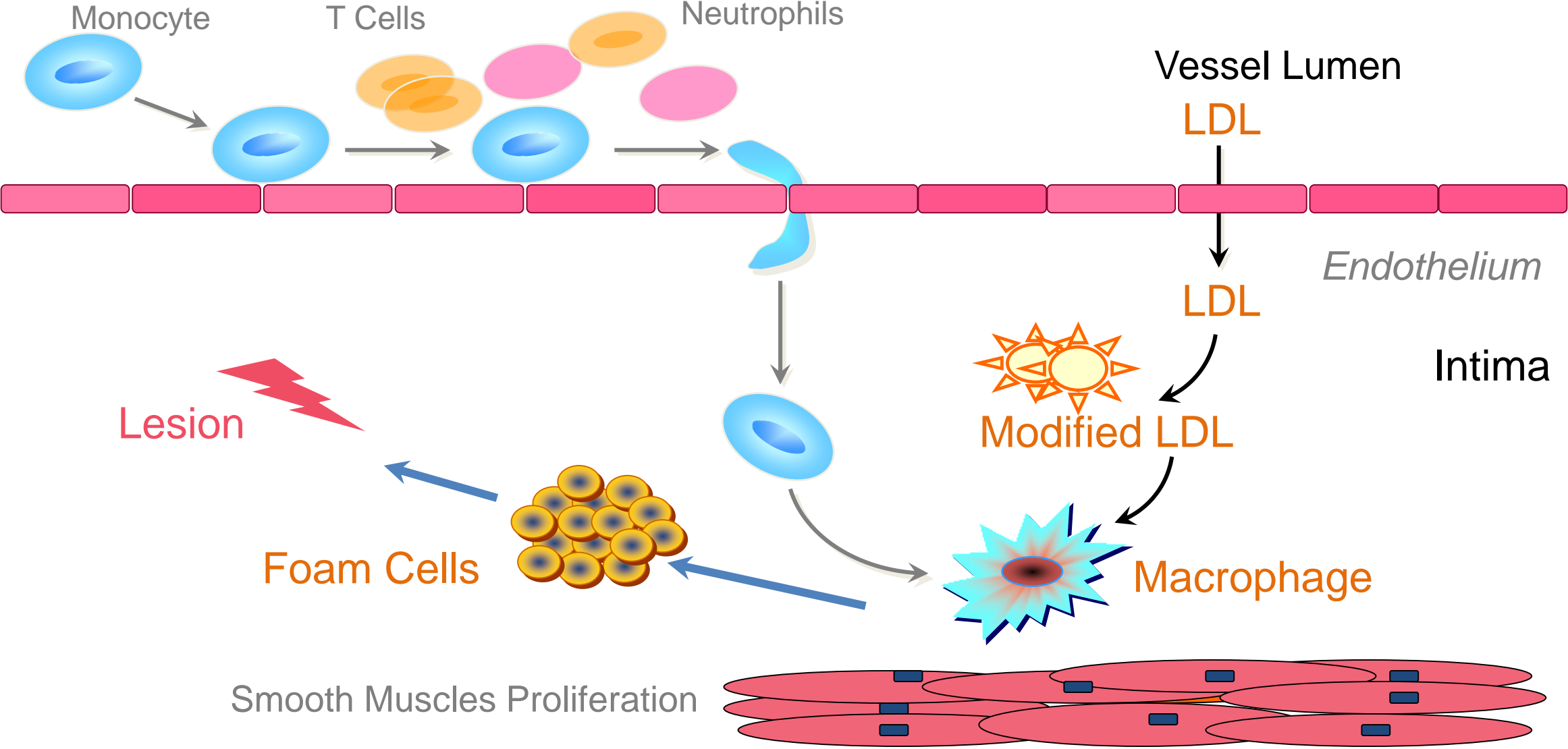
Peripheral Artery  
Disease

Immune  
Dysfunction

Uncontrolled Cell  
Proliferation – Cancer

Chronic  
Inflammation

# Atherogenesis



# Atherogenic Diet



# Atherogenic Diet + NO



# Who Needs NO Based Therapies?

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- Anyone who is aging
- Anyone over the age of 40
- People with circulation issues
- Diabetics
- People with low energy
- People with sexual dysfunction or who desire improved performance in bedroom
- Anyone on antacids
- Anyone interested in disease prevention



# Take Home Message

1. Nitric oxide production is complex and complicated

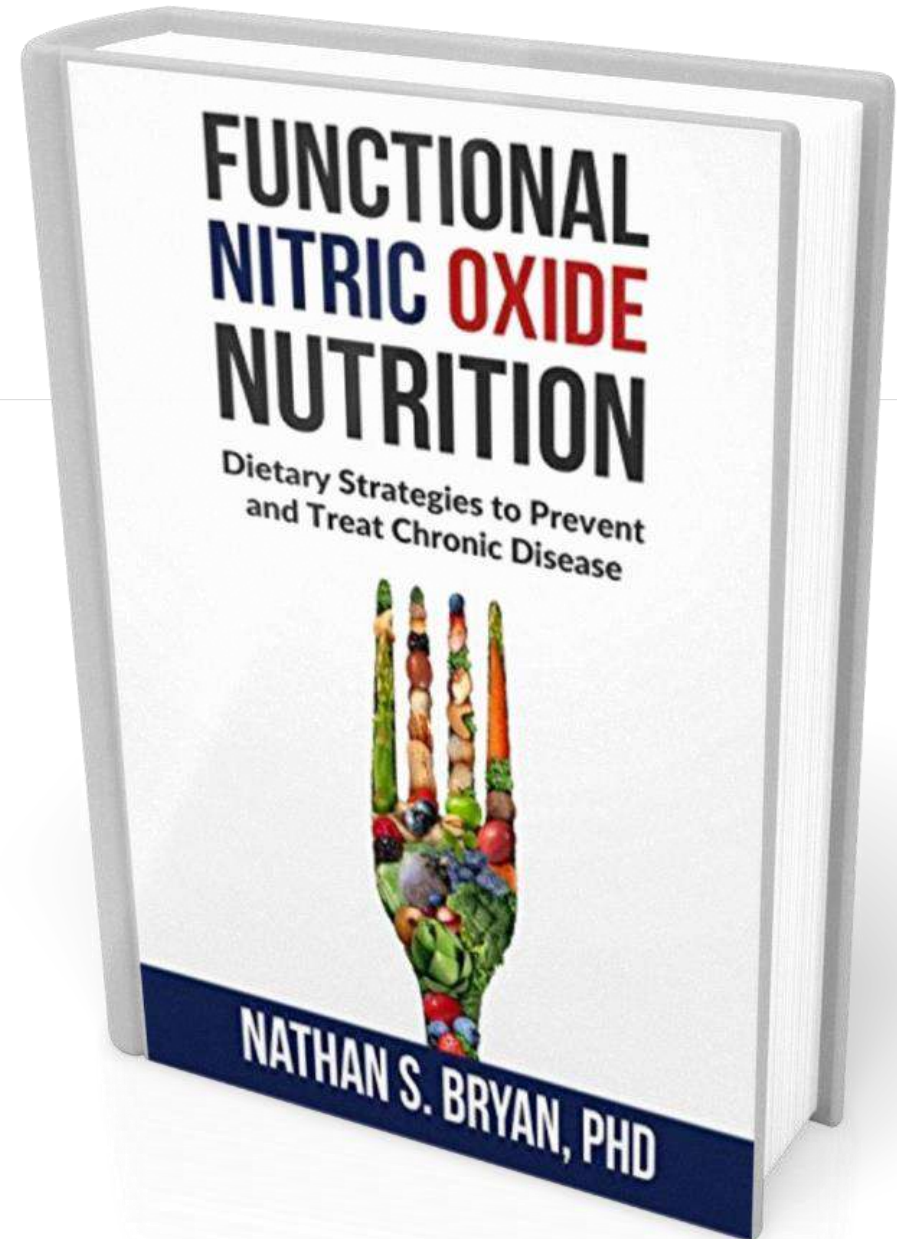
2. Specific wavelengths of light can lead to activation of endogenous NO release

3. Subjects must have sufficient photo-active NO stores

4. Your patients and clients will not heal or perform to their full potential unless you optimize NO

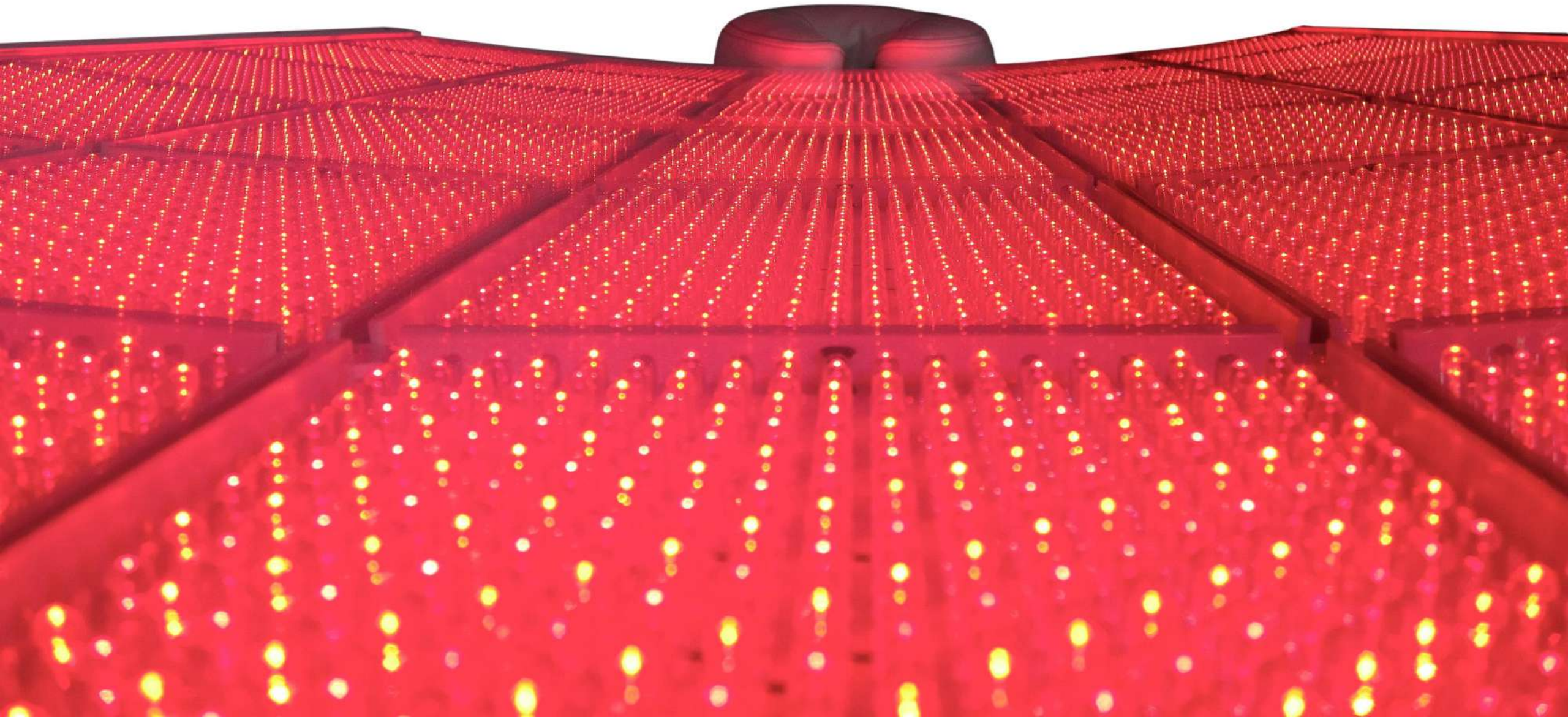
Questions:

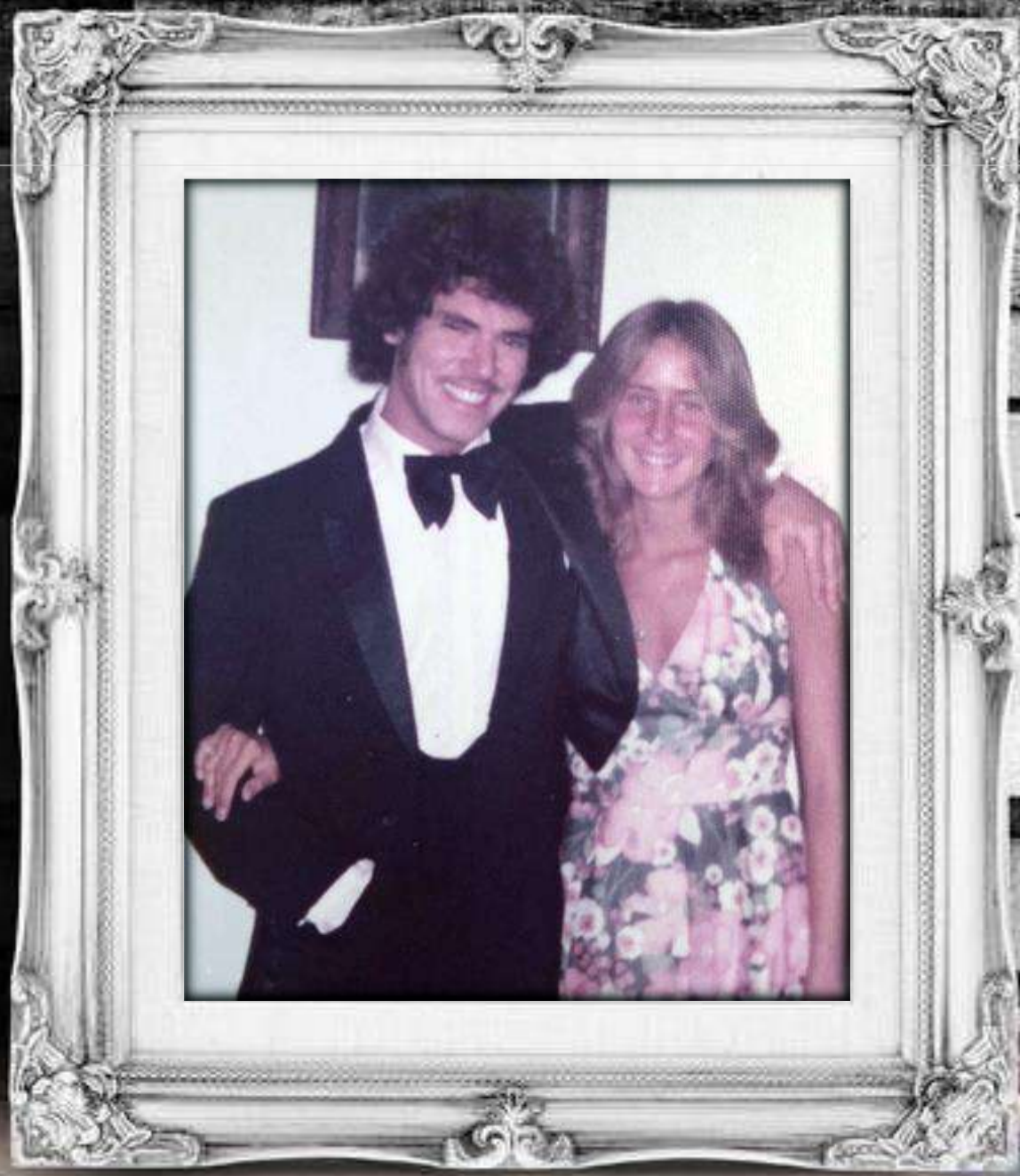
nathan.bryan@bcm.edu



# The Story of the Bed

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Seafood City Supermarket

Red Ribbon Bakeshop

Redb

MoneyGram

Sal

Westcliff Univer

Lawyers Title

Armed ve Center

ranca Pkwy

pkwy

Barr



LightStim

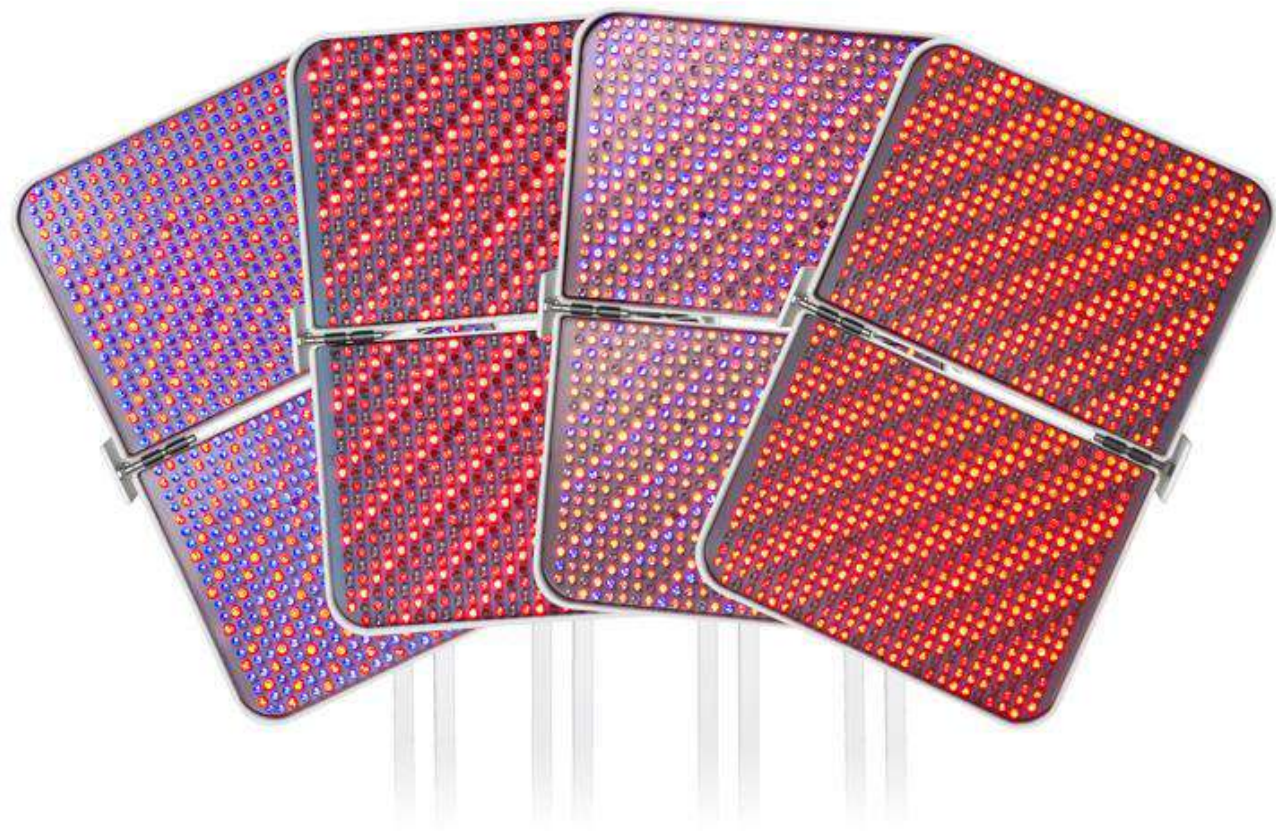
Ave

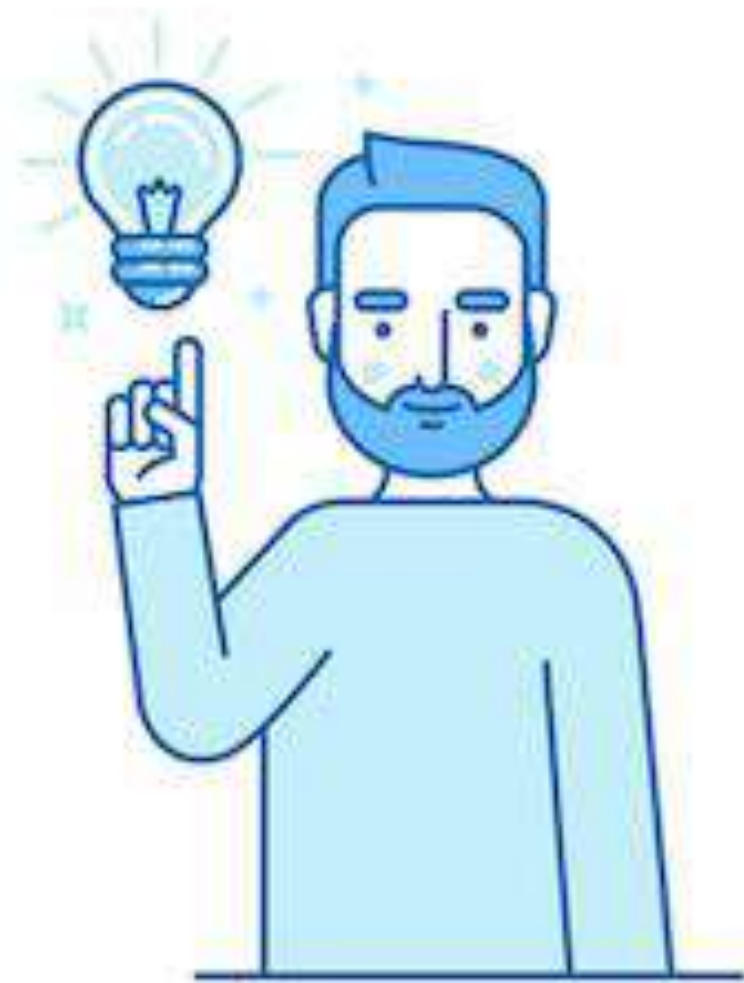








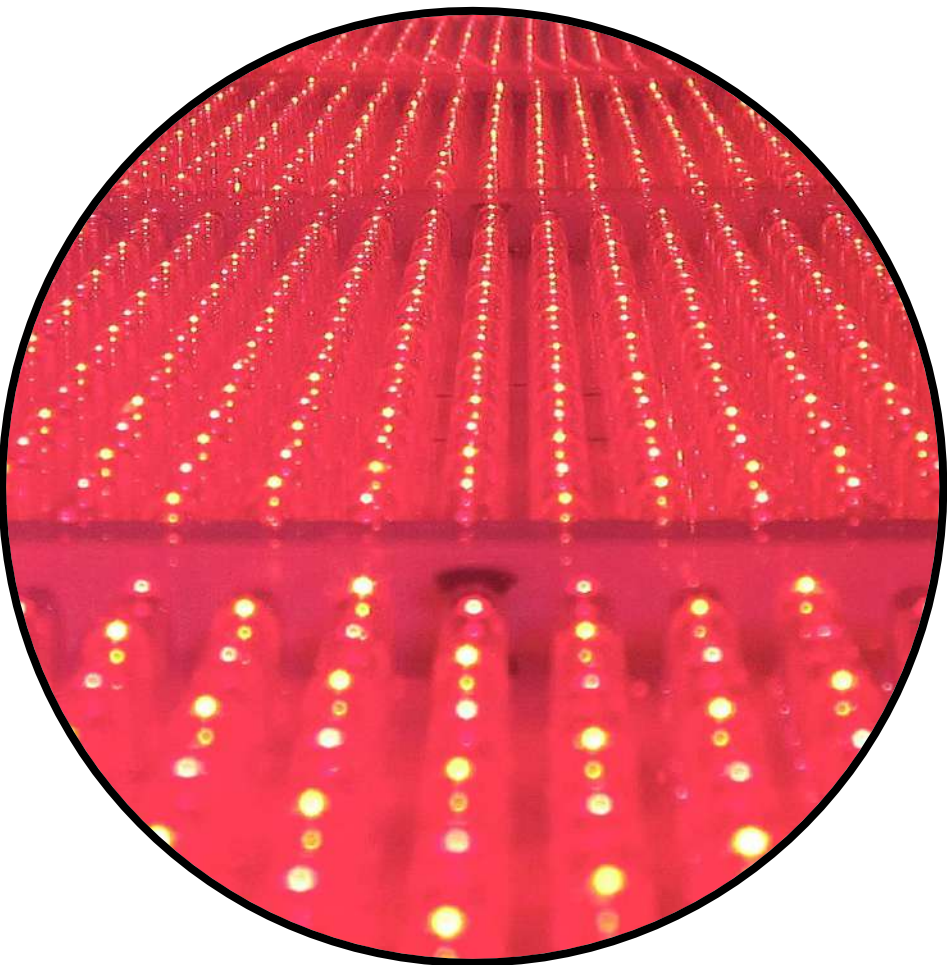


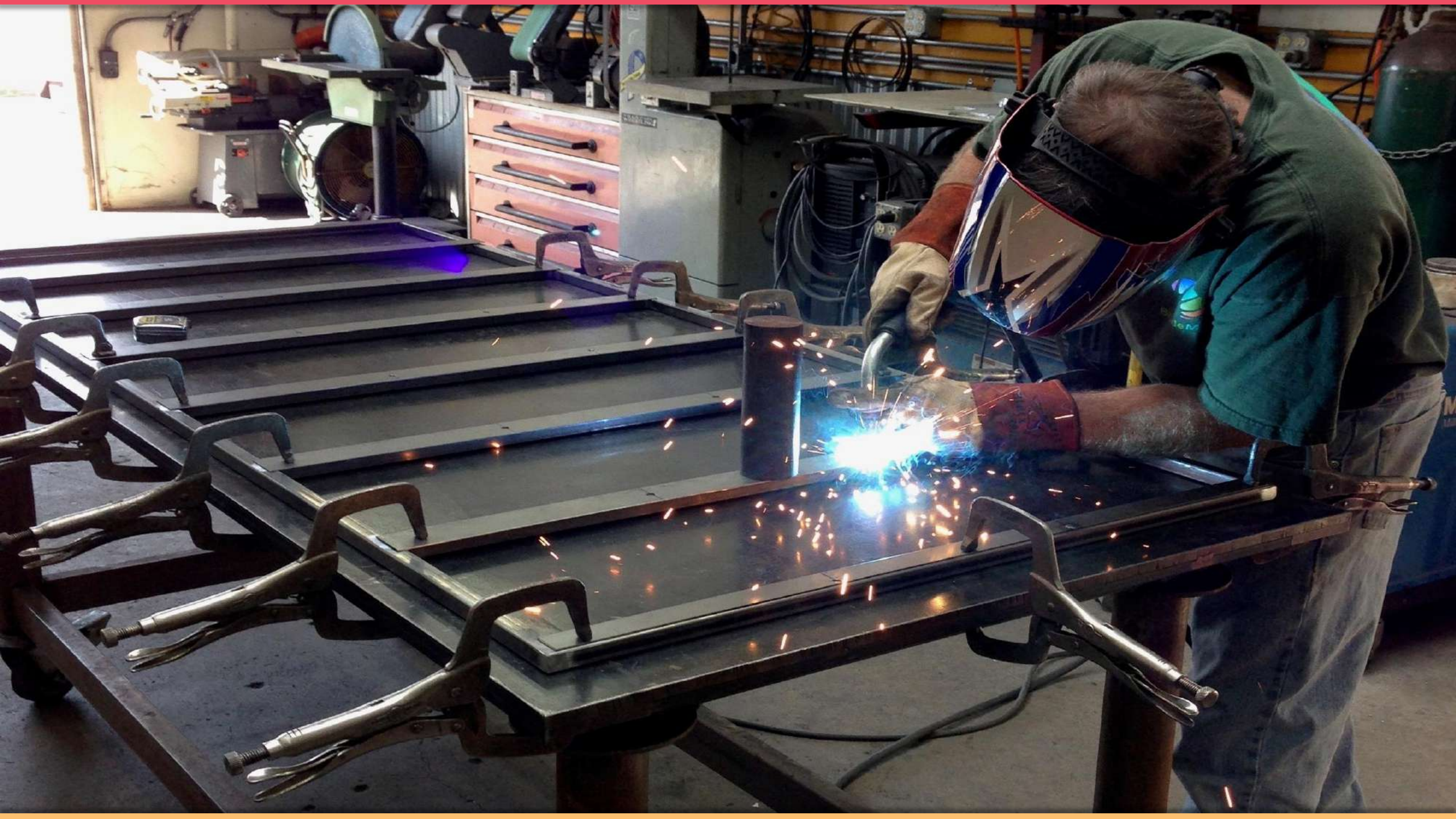




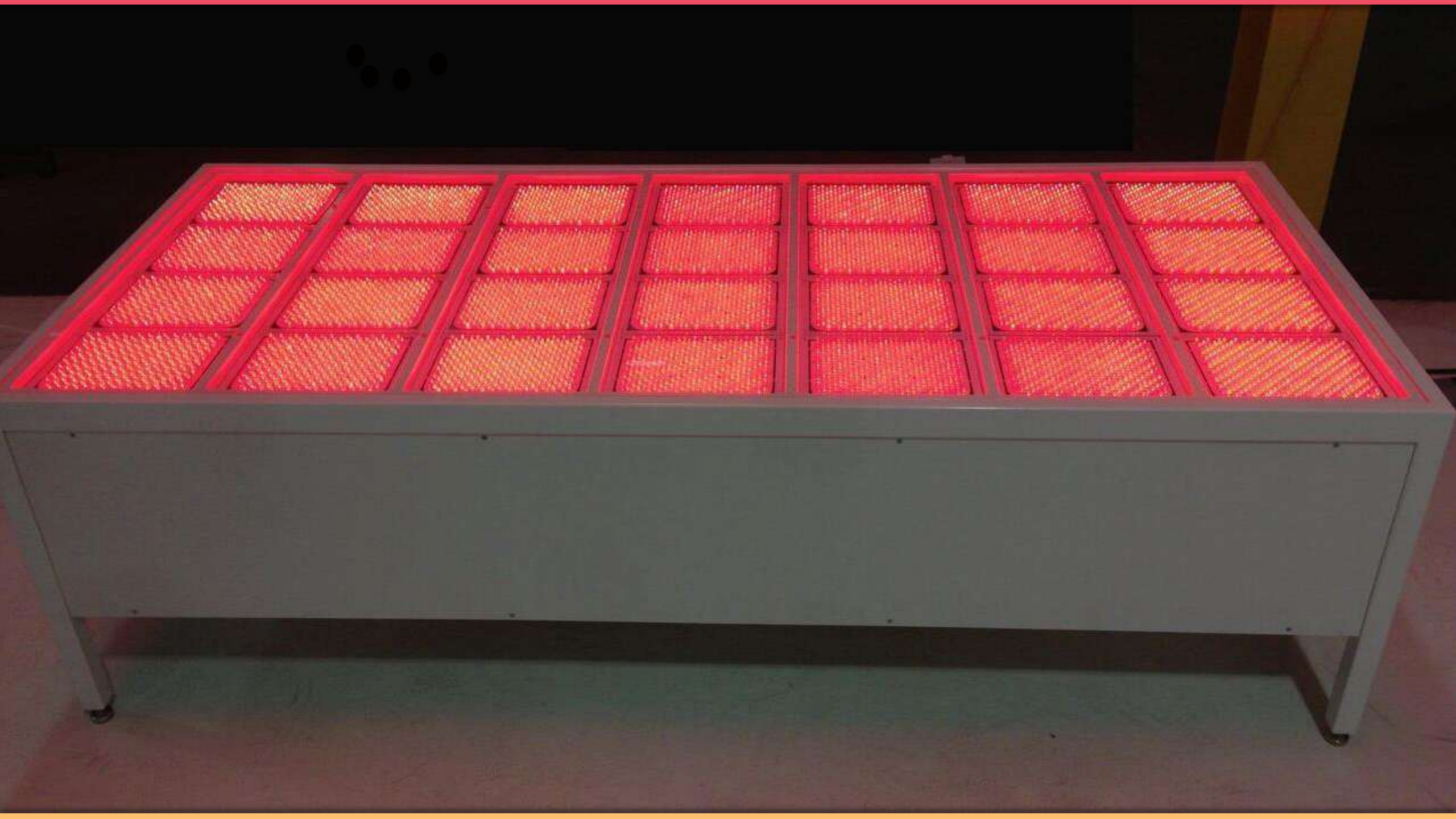
# LightStim MultiWave<sup>®</sup> Patented Technology

- Infrared  
(855nm)
- Deep Infrared  
(940nm)
- Light Red  
(630nm)
- Deep Red  
(660nm)







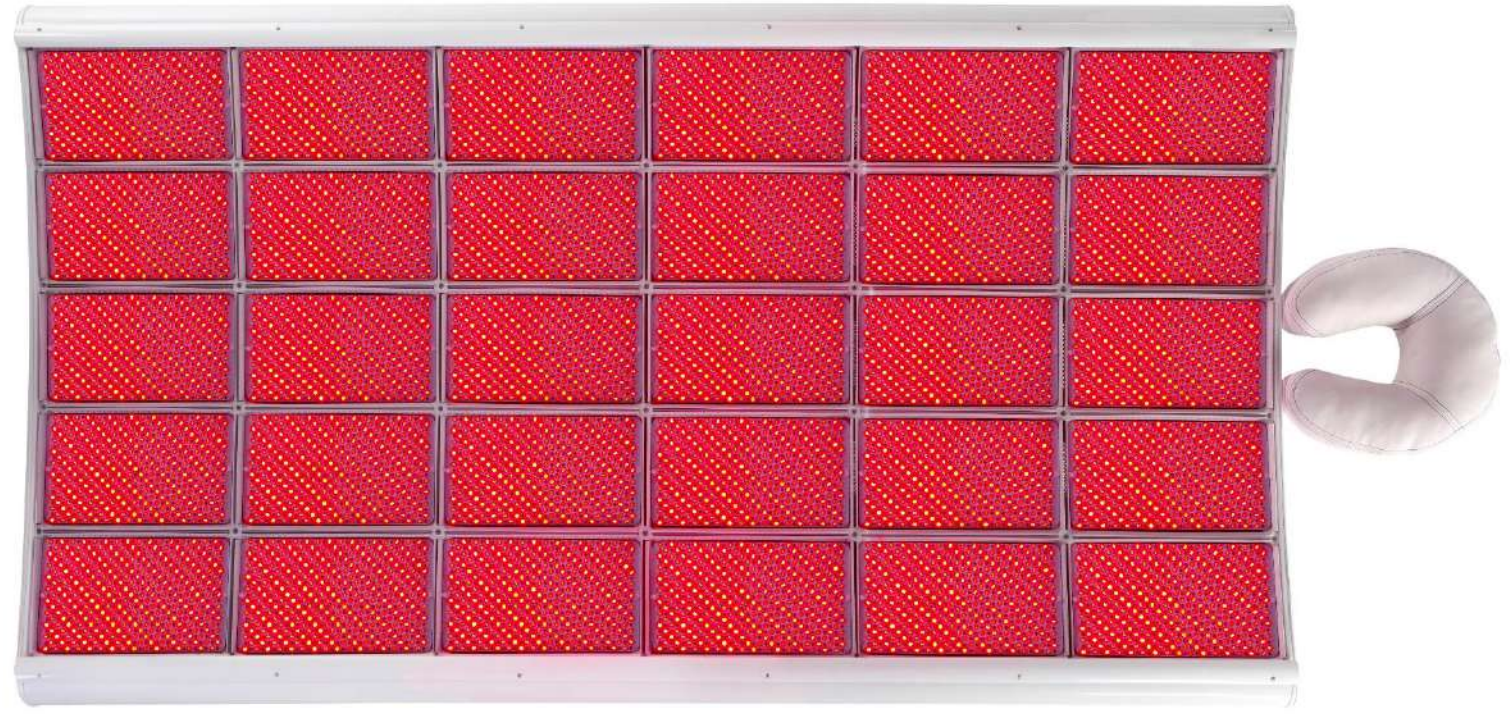


SYS  
mmHg

130

DIA  
mmHg

80



1 2 3 4 5 6 7 8

Week

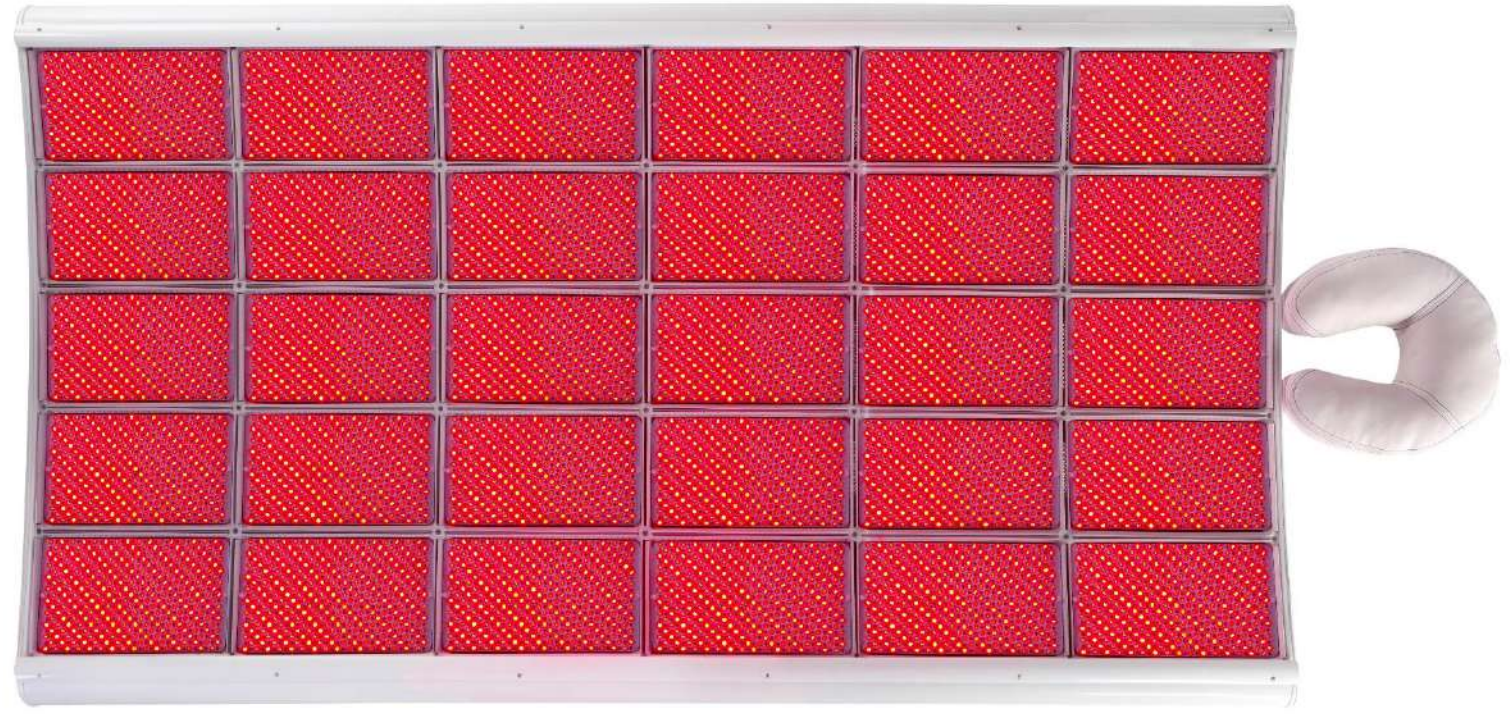


SYS  
mmHg

130

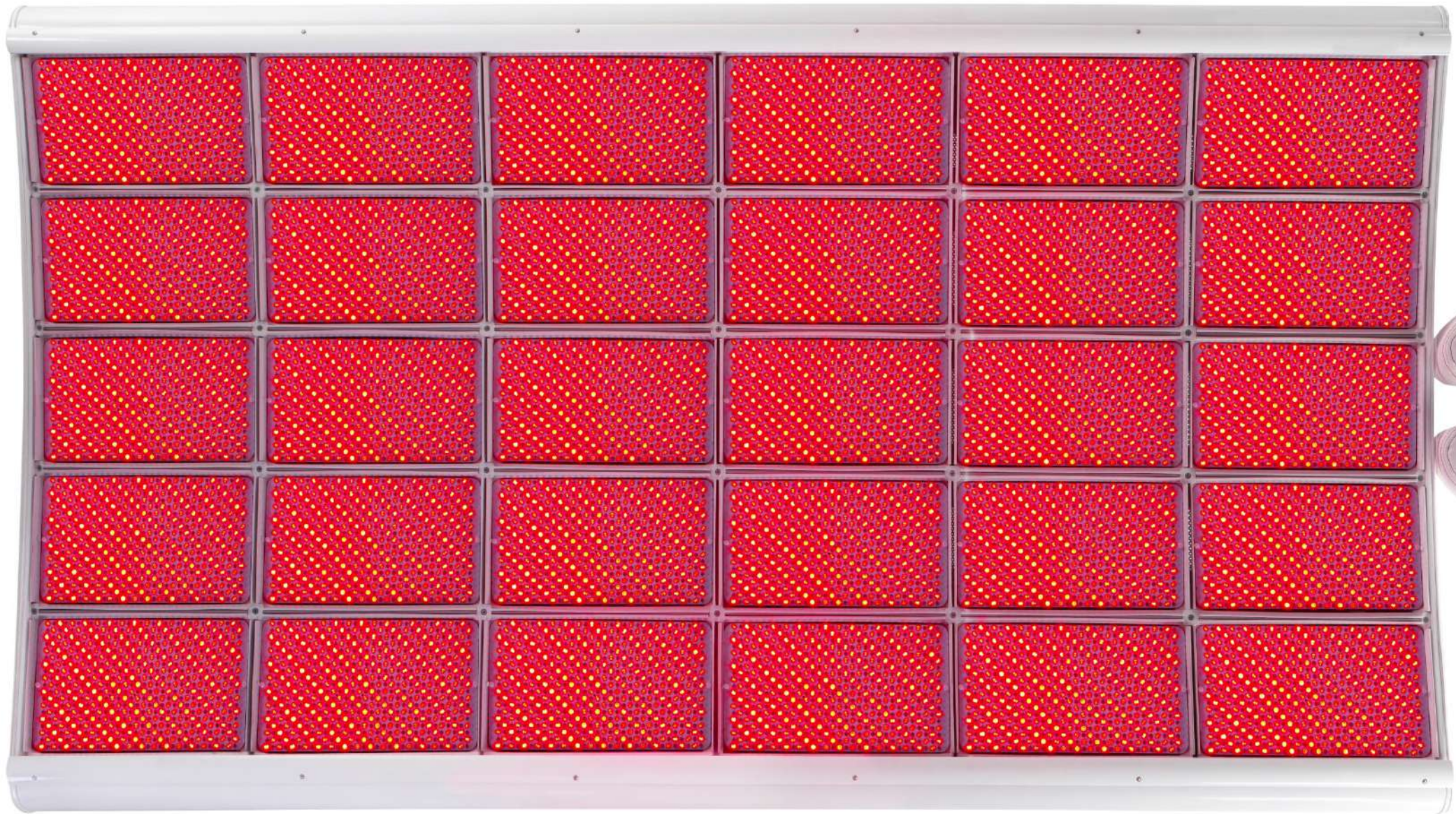
DIA  
mmHg

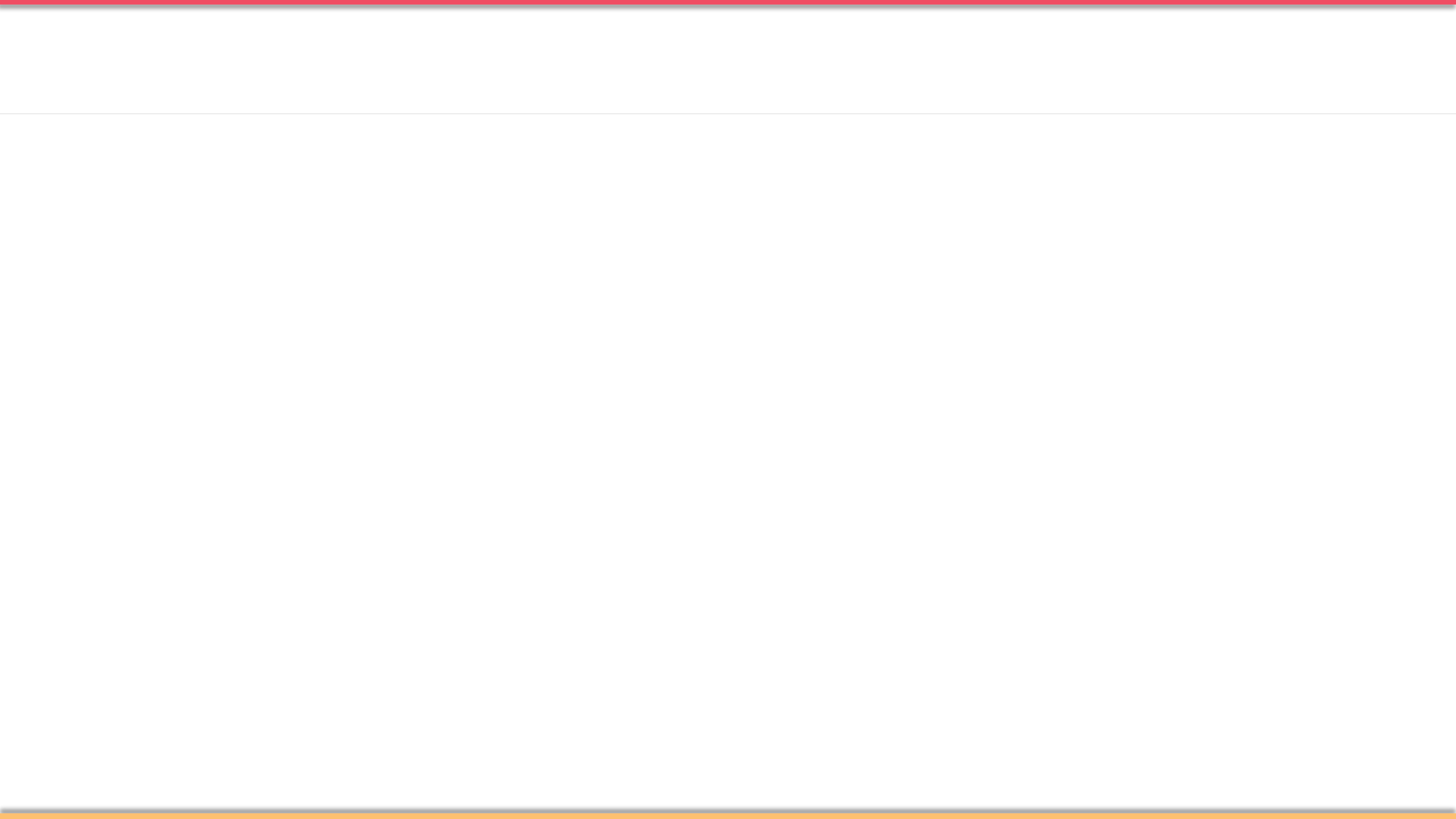
80



1 2 3 4 5 6 7 8

Week

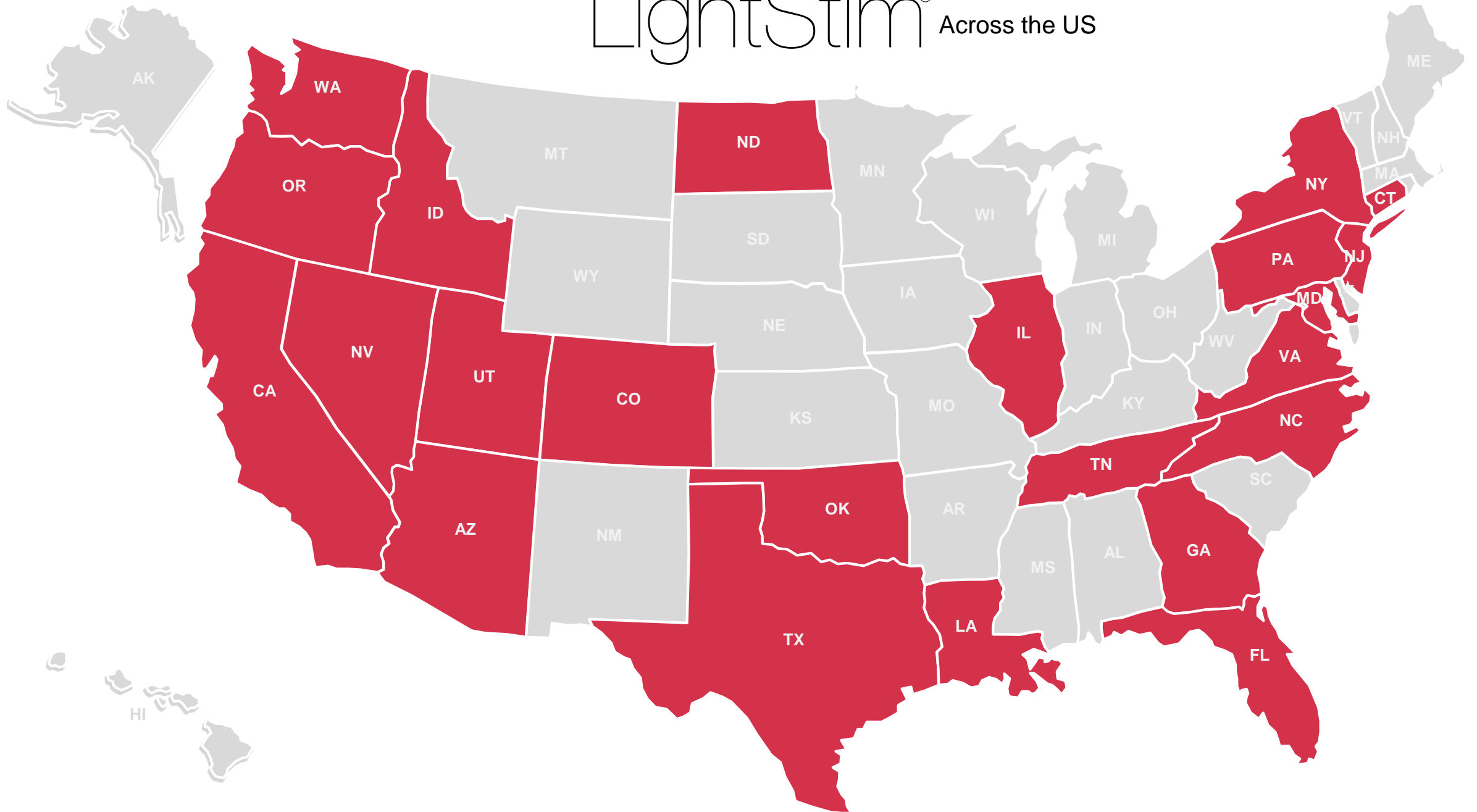




# Shaping the Business of Wellness



# LightStim® Across the US



# LightStim<sup>®</sup>

Across the Globe



United Kingdom

Germany

Australia

