

BBC THE MISSION THAT WILL CREATE ECLIPSES ON DEMAND

Science Focus

How to deal with
IMPOSTOR SYNDROME

We may finally know
HOW THE PYRAMIDS WERE BUILT

Secrets of
THE LIVING FOSSILS

A CURE FOR AGEING

HOW MEDICINE IS TACKLING THE FINAL FRONTIER OF HEALTH



IN THIS ISSUE

Health

Why we should abolish
Daylight Saving Time

Climate

The Atlantic Ocean currents
on the verge of collapse

Space

The UFO hurtling
across our Galaxy

How to Die Young- As Late as Possible

The Secret to a Balanced Life

Joseph C. Maroon, MD, FACS

Professor and Heindl Scholar in Neuroscience
University of Pittsburgh
Consultant to the Pittsburgh Steelers and
WWE



“How seemingly inconsequential actions have life changing consequences”.

“All of our actions count because of the web of connectivity that envelopes us”.

“Chance redirects our lives and spins us into new orbits”.

#1 NEW YORK TIMES BESTSELLER

DAVID
BROOKS

Author of *The Road to Character*

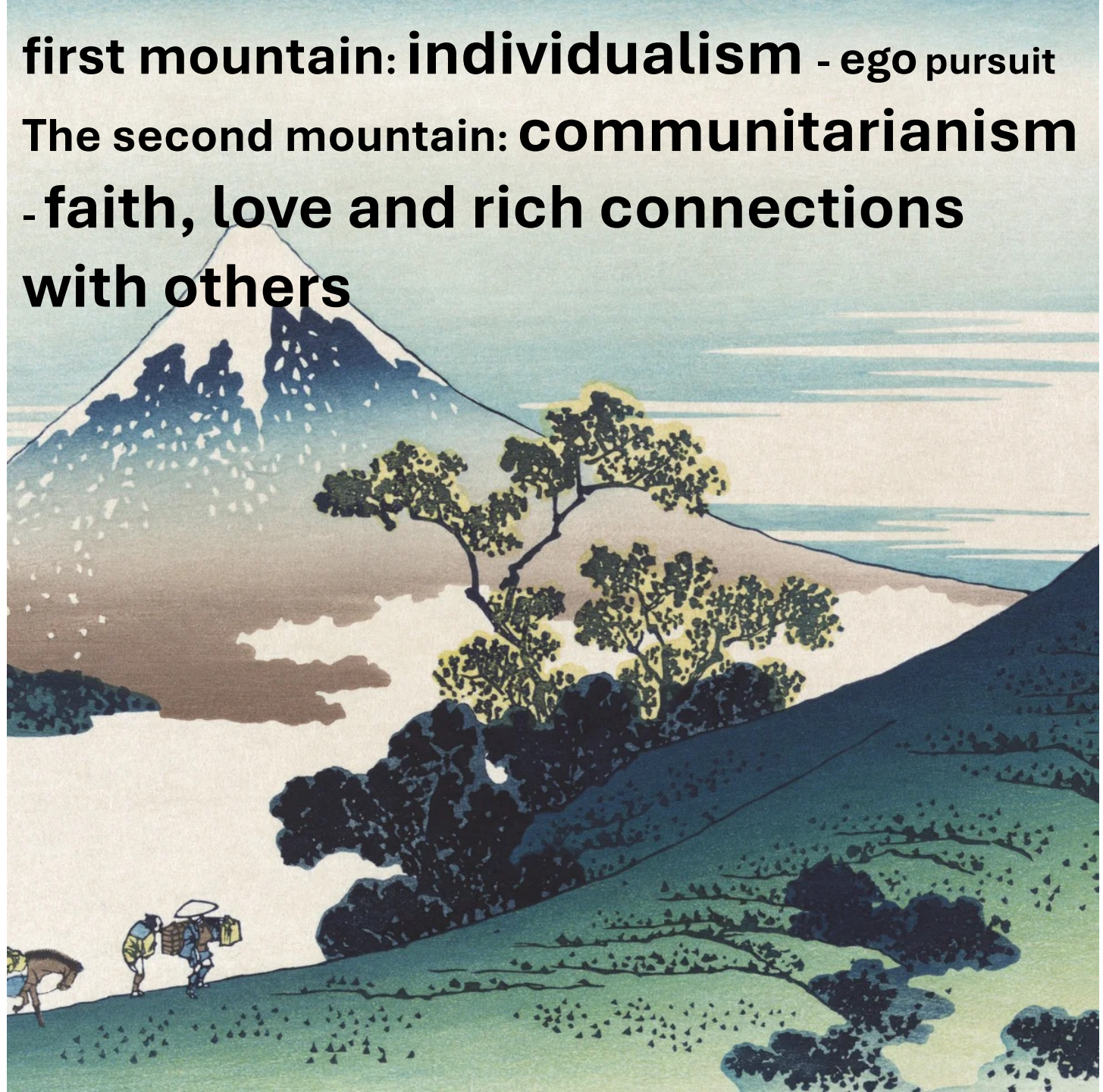
"Deeply moving, frequently eloquent
and extraordinarily incisive."
—*Washington Post*

THE SECOND MOUNTAIN

The Quest for a Moral Life

first mountain: individualism - ego pursuit

**The second mountain: communitarianism
- faith, love and rich connections
with others**





Fluid Intelligence

ability to solve novel problems using raw mental speed and innovation, peaking in youth and then declining



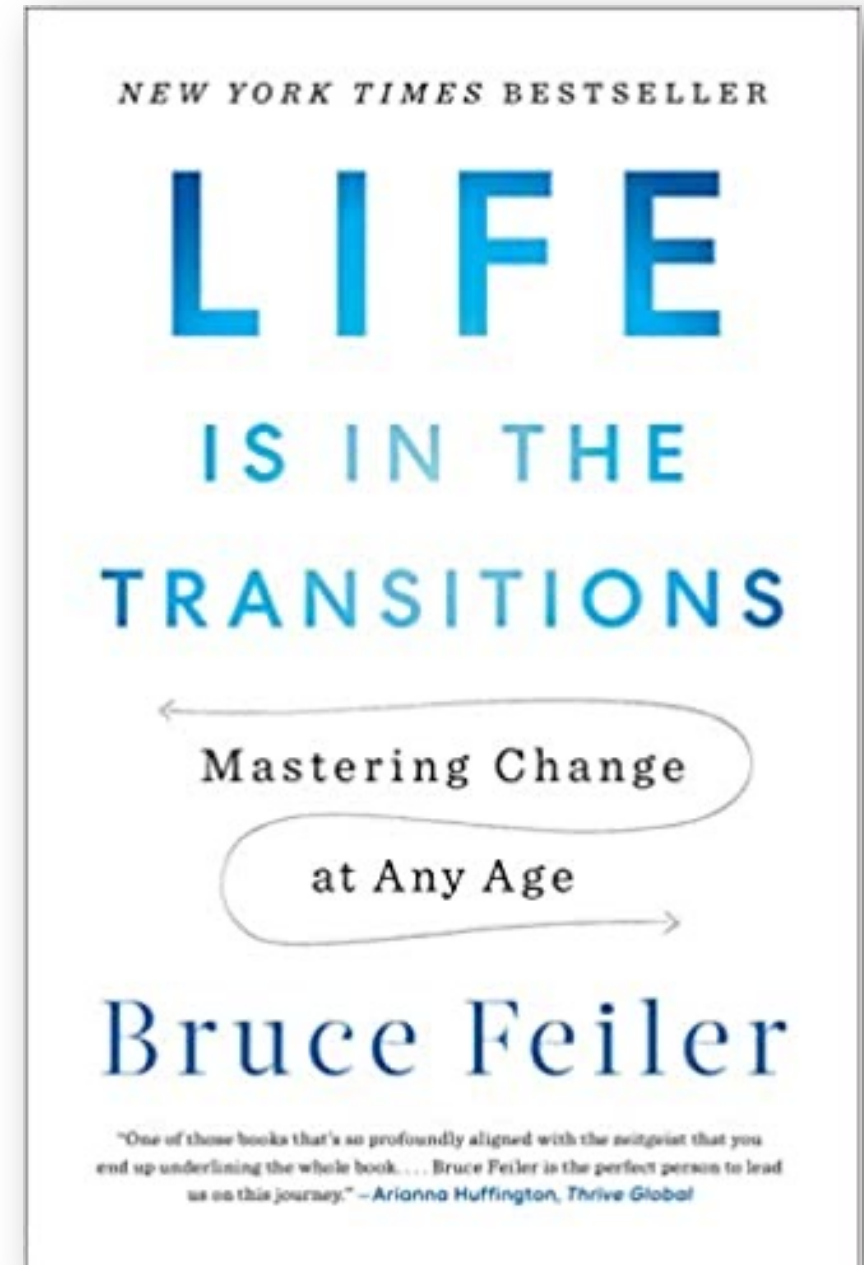
Crystallized Intelligence

is your accumulated knowledge and wisdom from life experience, which grows stronger with age

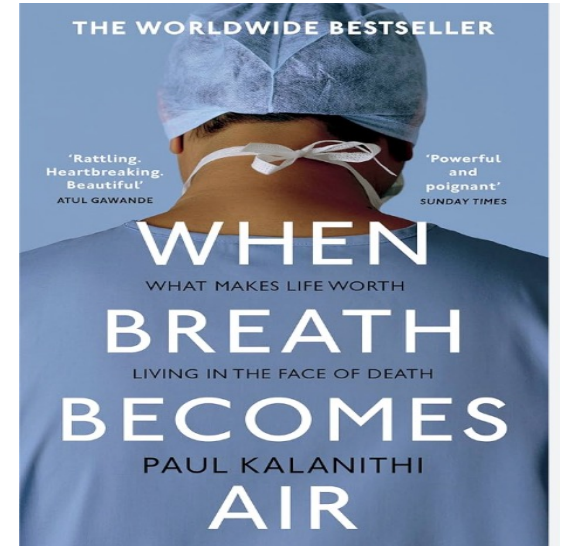
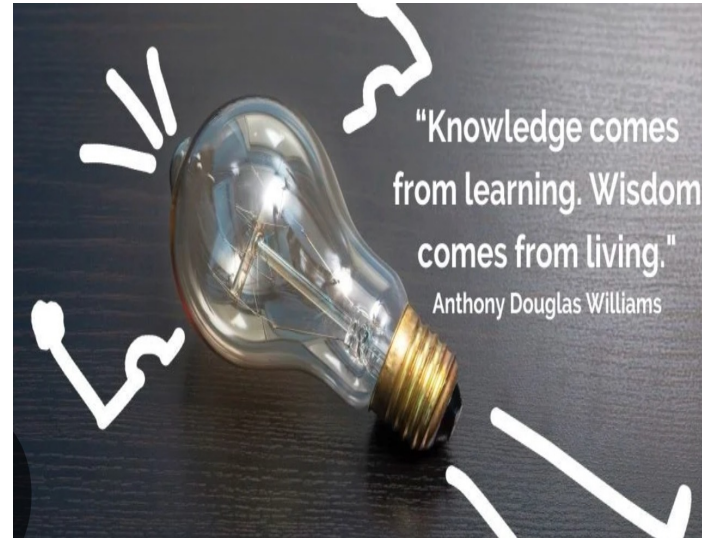
LIFE QUAKES

Calamitous Life events that lead to a period of upheaval, transition and renewal

Average – **3-5 per person/Lifetime**



Seasons of Our Life



FLUID INTELLIGENCE

Neuroplasticity, Problem Solving, and creativity until 40 +/_

“LIFEQUAKES

Cataclysmic life Change, Major Disruption
35-45 yrs old

CRYSTALIZED INTELLIGENCE

Knowledge, Experience based Wisdom, Mentor
40- 80+

“ARS MORIENTI”

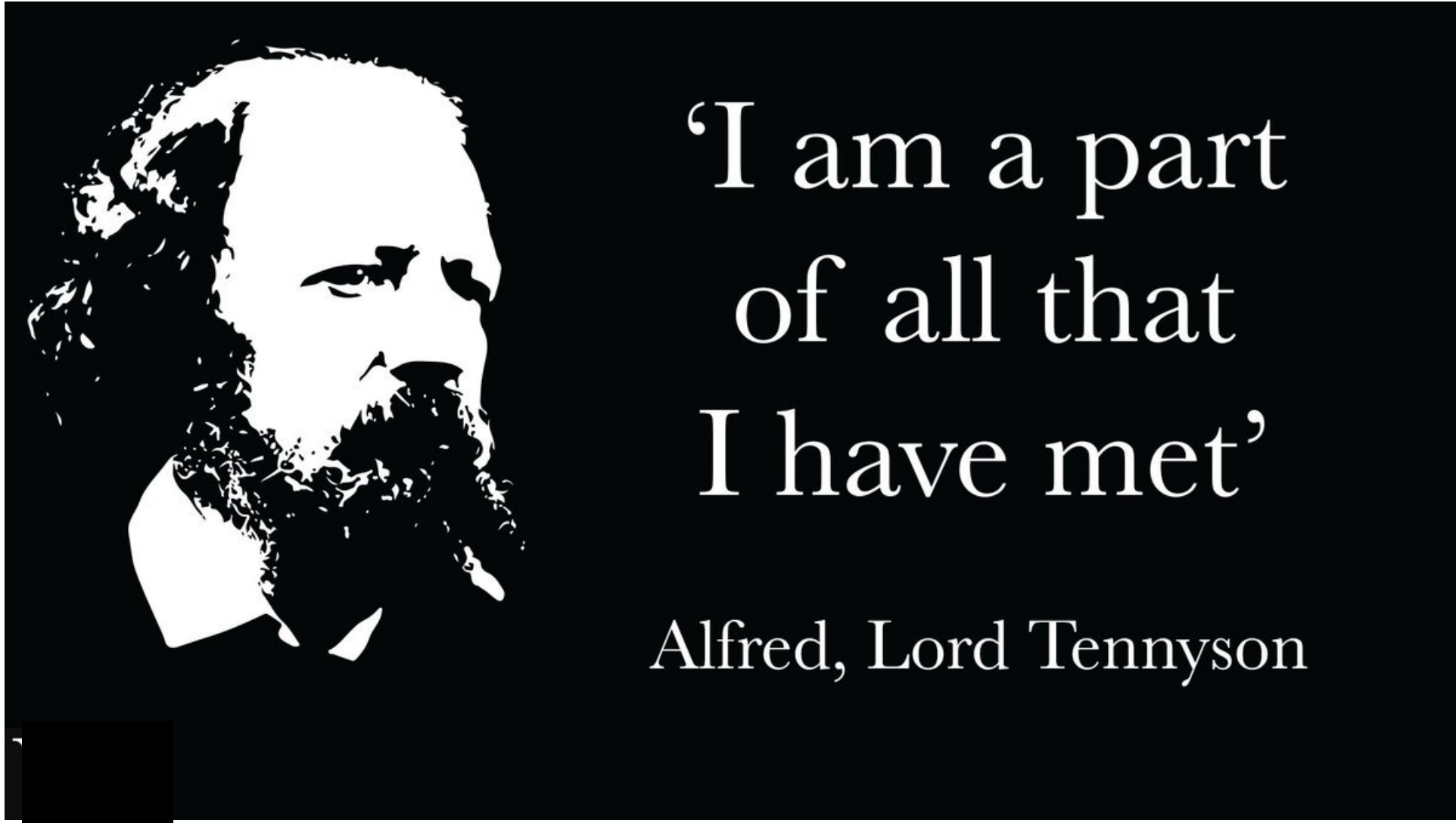
“The Art of Dying”
80+

How to Die Young... as Late as Possible

Personal Journey

Life Experiences

Medical Expertise

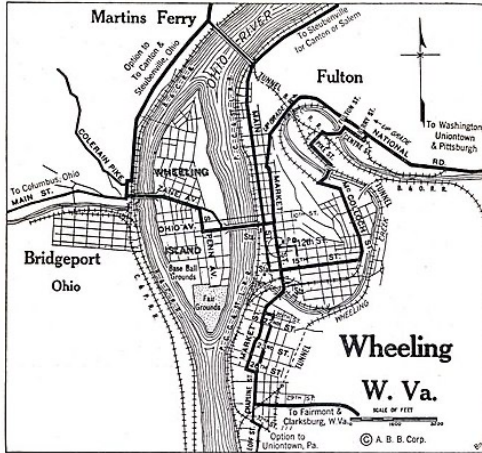


‘I am a part
of all that
I have met’

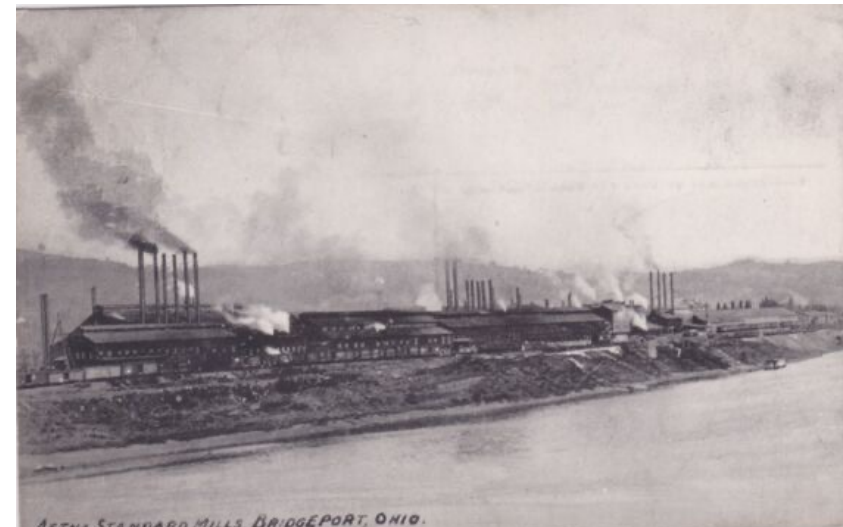
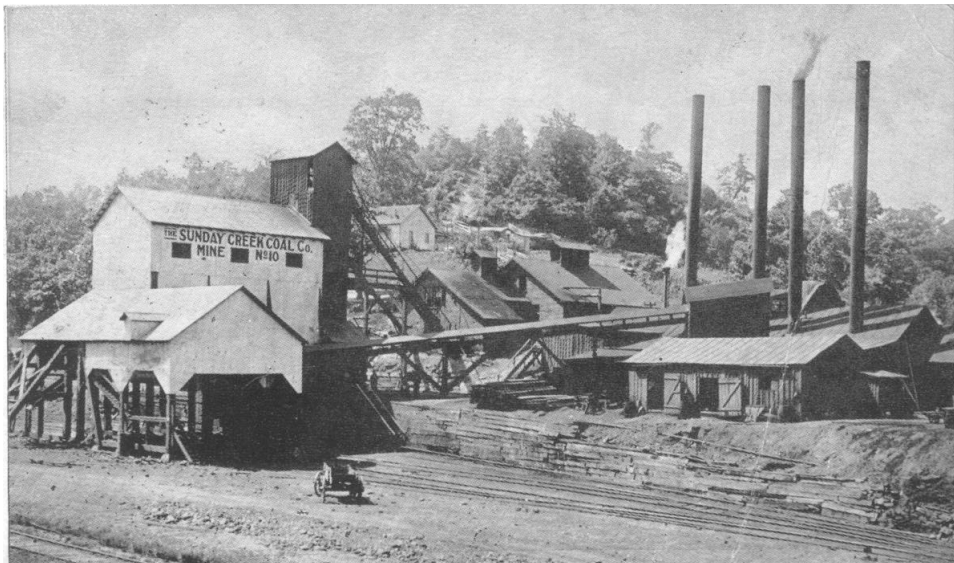
Alfred, Lord Tennyson

Our experiences and encounters shape who we are

Wheeling, W.Va.



**Bridgeport
Population 2900
5 Bars & 40 stray
dogs!!**



1957 OHIO state champions- American Legion Baseball



Post 227 Bridgeport, OH

Basketball HOF
John Havlicek



Baseball HOF
Phil Niekro



Joe Maroon Called Indiana's Chief Threat to Ohio's Bucks

COLUMBUS (UPI)—Ohio State football coach Woody Hayes said Monday the Buckeyes were puzzled on what to expect in Saturday's Big Ten game here with Indiana, because the Hoosiers switched from a straight single wing to a T-formation last weekend against Northwestern.

"We're caught in a quandary of whether they will go back to a single wing, stay with the new T-formation or use both," Hayes said at his weekly Monday press conference.

The Buckeyes returned from the 21-10 victory over Michigan State in good shape, with only bumps and bruises resulting from the East Lansing contest.

Guard Don Young and defensive back Bill German, both of whom sat out the Michigan State game due to injuries, should be ready this weekend. However, the result of the game will not count in the Western Conference standings as

games this year, although dropping a 21-3 decision to Northwestern Saturday.

Indiana's chief running threat will be little Joe Maroon, Bridgeport, Ohio. Although he was sidelined last week, he is expected to be ready for the Buckeyes.

Scout Frank Kremblas, who watched the Hoosiers in action against Marquette, Michigan State and Northwestern, said Maroon was a fine runner and the team's best breakaway threat.

Although Hayes did not mention

official figures for the 1960 season as part of a Big Ten penalty for recruiting violations.



Scholastic All American

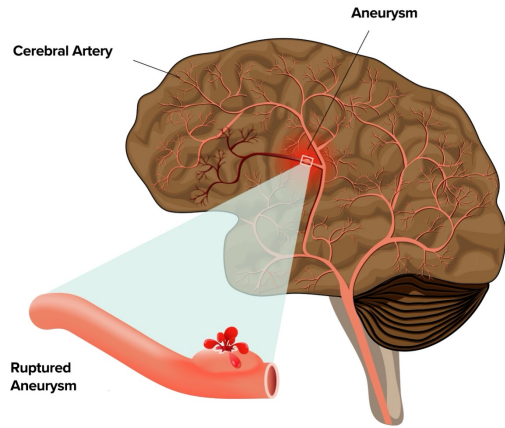
*“On the fields of friendly
strife are sown the seeds
that on other days and
other fields will bear the
fruits of victory.”*

General Douglas MacArthur
*US WWII general & war hero
(1880 - 1964)*

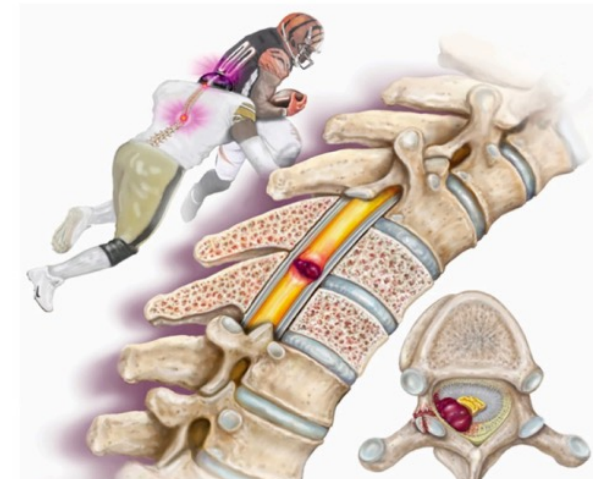
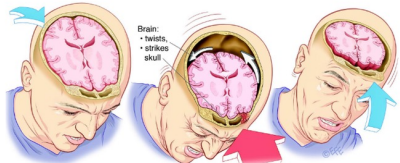
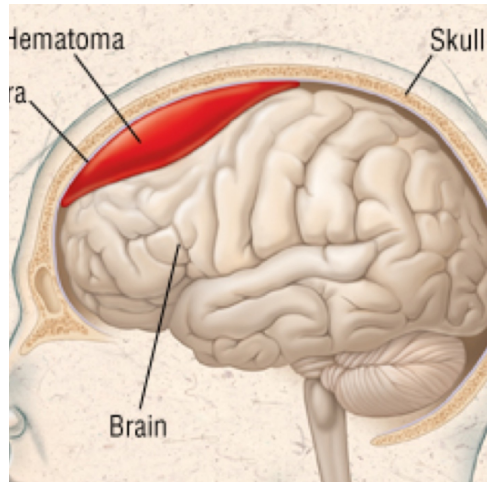
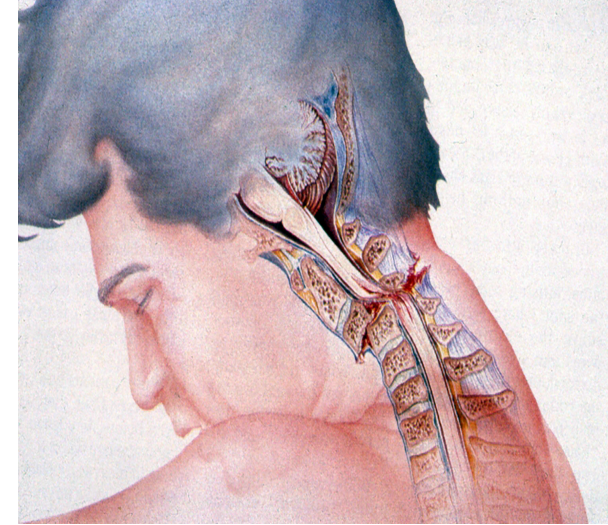
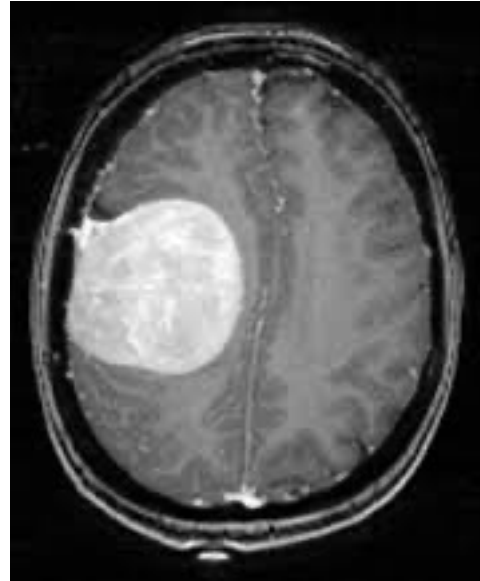


Brain and Spine Surgery

Brain Aneurysm



Brain tumor

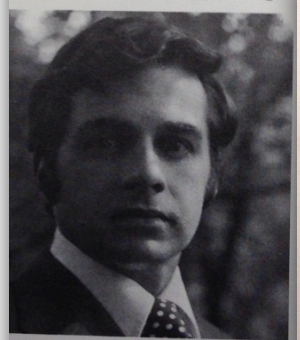


Presby Physicians Active Locally and Internationally

Joseph C. Maroon, M.D., Chief of Presby's Department of Neurological Surgery and associate professor of neurology, recently served as a visiting professor at the Venezuelan Institute of Social Services in Caracas, Venezuela.

Dr. Maroon was specifically invited to speak on the microsurgical approach for the removal of intraorbital tumors as developed by himself and Jack Kennerdell, D., of Eye and Ear Hospital. Dr. Maroon also spoke of a technique of using electronic radiography in neurosurgery, as performed in collaboration with Donald Shinn, Ph.D., an associate professor of radiology; Ralph

Dr. Maroon was specifically invited to speak on the microsurgical approach for the removal of intraorbital tumors as developed by himself and Jack Kennerdell, D., of Eye and Ear Hospital. Dr. Maroon also spoke of a technique of using electronic radiography in neurosurgery, as performed in collaboration with Donald Shinn, Ph.D., an associate professor of radiology; Ralph



Joseph C. Maroon, M.D., chief of Department of Neurological Surgery, Presbyterian-University Hospital.

Dr. Maroon, M.D., a member of Presby's active medical staff; David Herbert, B.S., an assistant professor of radiology; and A.

Maroon Appointed Chief of Presby Neurosurgery

Dr. Joseph Maroon has been appointed by the Board of Trustees as Chief of Neurosurgery for Presbyterian-University Hospital.

Dr. Maroon has been associated since 1965 with the world's most advanced neuro science program at the University of Pittsburgh Center of Presbyterian-University Hospital. He concurrently holds the position of Attending Surgeon at Children's Hospital, Veterans Affairs Medical Center, and the University of Pittsburgh Medical Center (UPMC).

In July of 1977, Dr. Maroon was made Associate Chief of the Department of Neurological Surgery, University of Pittsburgh. He has been the University of Pittsburgh's medical consultant for the Pittsburgh Steelers football team.

Dr. Maroon has achieved his success by working out under the guidance of reports Dr. F. of Presbyterian Hospital, Pittsburgh. On reading Vess's immediate



Maroon Leading Team In Miracle Surgery

By JEAN COLEMAN
News-Register Staff Writer

Surgical history with some of the aspects of science fiction is being made in Pittsburgh with a former Bridgeport resident taking a leading role.

Dr. Joseph C. Maroon, son of Charles and Anna Maroon of Bridgeport, has been a team leader since he played football at St. John's Central and at the University of Indiana where he was a "Scholastic All-American." Now he is an associate professor and chief of neurosurgery at Presbyterian-University Hospital.

Utilizing a technique perfected by two University of Pittsburgh School of Medicine neurosurgeons in which brain tissue is lowered by nearly 40 degrees and salt water flows through the arteries instead of blood, Dr. Maroon recently successfully removed an "orange sized" aneurysm

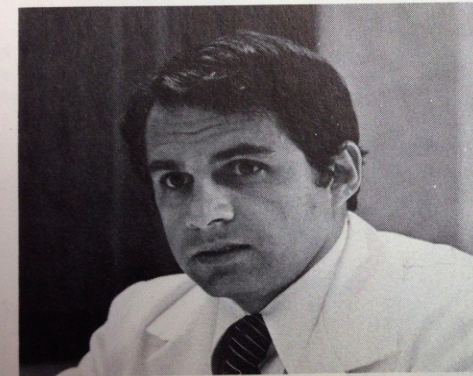


DR. JOSEPH C. MAROON

brain of a 54 year old man. In a telephone interview with the News-Register, Dr. Maroon

Dr. Maroon Named Steelers' Consultant

Joseph C. Maroon, M.D., chief, Neurosurgery, has been named



Joseph C. Maroon, M.D., chief, Neurosurgery.

neurosurgical consultant for the Pittsburgh Steelers for the 1977-78 football season. He has been a

neurosurgical consultant for the Pitt Panthers since 1972.

Dr. Maroon is a graduate of Indiana University in Bloomington, Indiana, where he was a scholastic All-American in football. He is a graduate of the Indiana University School of Medicine, and is an associate professor of Neurosurgery and a consultant in Sports Medicine for the University of Pittsburgh.

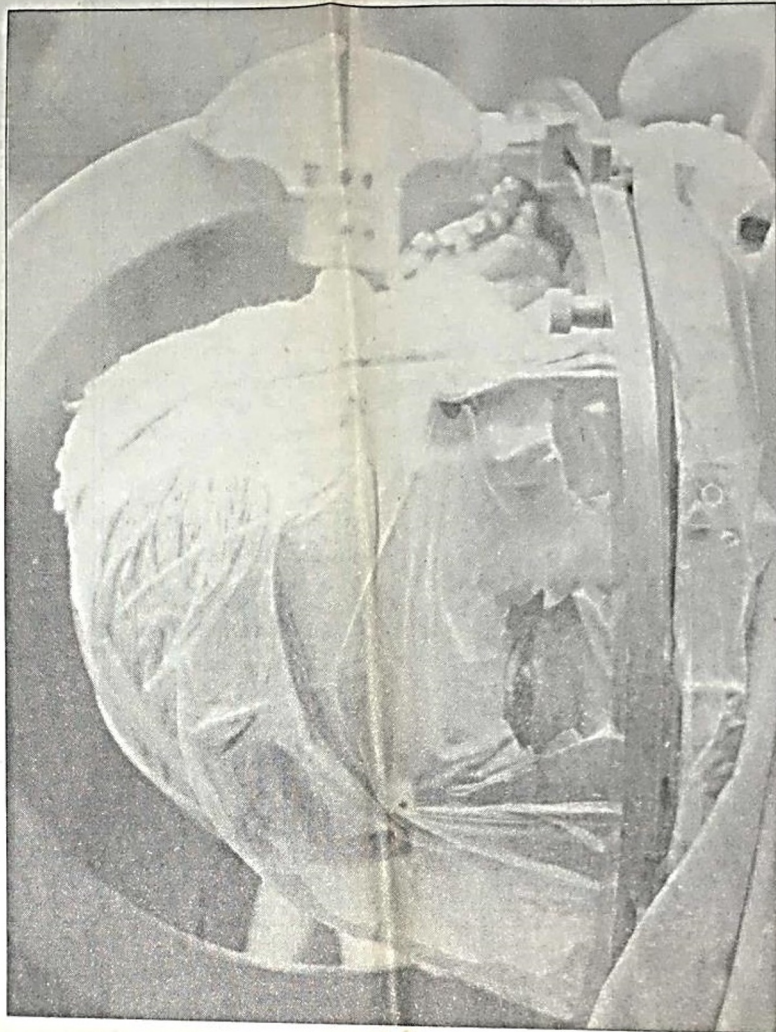
Dr. Maroon has recently co-authored a paper entitled "A New System for Preventing Athletic Neck Injuries" for the Departments of Neurosurgery and Sports Medicine at Pitt.

THE REGION

PITTSBURGH POST-GAZETTE ■ SUNDAY, AUGUST 22, 1993

Guiding
doctor
into her
brain

Drs. Gary Onick, top, and Joseph Maroon work . . .



. . . while patient Marilyn Nicholson, her head in a brace, remains alert.

Keith B. Sokol/Associated Press photos

Patient keeps surgeon on right path to tumor

By Tara Bradley-Steck

Associated Press Writer

An hour and 32 minutes into her brain surgery, Marilyn Nicholson complained of a slight headache.

The headache came long after the surgeon pulled back her scalp, cut out a piece of her skull and sliced open the membrane covering a tumor that was robbing her of speech and draining her reason.

It wasn't until the surgeon gave a gentle tap-tap-tap to the mushy gray lump invading the healthy pink cortex that she felt the first pangs of a headache.

It's also about the time she started to get restless.

"I'm getting bored," she whined to anyone within earshot.

In a way, the brain is like the arctic — a vast area still being explored. While much is known about major regions of the brain, there is a great deal still to learn about the minute parts.

Nicholson's tumor was insinuating itself into the very heart of her speech center. If it were cut so, would she lose her memory? If it were cut thus, would she ever speak again?

For an agonizing four hours on Sept. 23, 1992, without even a tranquilizer to take away the nervous edge, Nicholson had to remain alert enough to be able to lead the surgeon through the alleys and byways of her brain.

This was a landmark operation in brain surgery, incorporating "an incredible array of technology never before used in this combination," boasted Dr. Joseph Maroon, Nicholson's neurosurgeon at Allegheny General Hospital.

Ultrasound. Cat scans. MRIs. They helped define and locate the tumor. Cortical mapping and an EEG helped plot its removal. The forces of heat and cold —

electrocautery and cryosurgery — combined to cut it free.

But the keenest mind, the steadiest hand, could not anticipate what would happen to Nicholson's mind during the surgery.

One false move could mean disaster.

"Under general anesthesia, we could wipe out her speech entirely and not know it," Maroon said.

Going back home

For most of her 65 years, Marilyn Nicholson had been a nurse, supervising and teaching other nurses and running the operating room at hospitals in Pittsburgh and Cleveland.

She is a private, independent woman with a dry wit who likes fresh-cut flowers, fine clothes, the neighbor's big white dog and annual trips to Williamsburg, Va., and

Gatlinburg, Tenn.

When she retired in 1983 — single and with most of her close relatives dead — she returned to her late parents' home in Johnstown, where she is now recuperating from the operation.

Living on her own, Nicholson knew her future would be limited if she were unable to communicate or take care of herself.

"When this all started, I called 'he's' 'she's' and 'she's' 'he's,'" Nicholson said, weighing each word carefully, trying not to make mistakes. "I just get frustrated when I seek a word that I can't remember."

She had forgotten her multiplication tables. She had forgotten where she went on her last vacation. And as the days and months progressed, it became more and more of a struggle to form the simplest sentences.



Dr. Joseph Maroon talks with Marilyn Nicholson during the four hours of surgery.

"He said, 'Are you strong enough to do this?' And I said, 'I have to be.'"

— Marilyn Nicholson

"I miss talking because I like to talk a lot," she said just before the operation.

Maroon said he thought Nicholson an ideal candidate for brain surgery under local anesthesia because her medical background and stoical personality would help her remain calm and collected through the ordeal.

To Nicholson, the choice was simple.

"He said, 'Are you strong enough to do this?' And I said, 'I have to be.'"

The surgery begins

"We don't shave the head for this," Maroon said as he entered Operating Room 8 the morning of Sept. 23.

Among brain surgery patients, shaved heads are like the scarlet letter. "I have women tell me, 'I don't care if you take out my brain tumor or what you do, but I don't want my head shaved,'" Maroon said.

Instead, he clipped just a patch of hair on the left side of Nicholson's head.

Nicholson didn't seem to care one way or another about her hair. She was more preoccupied with the surgery itself and her role in it.

She lay on her right side on the operating table as technicians and physicians scurried around the chilly room like Santa's elves.

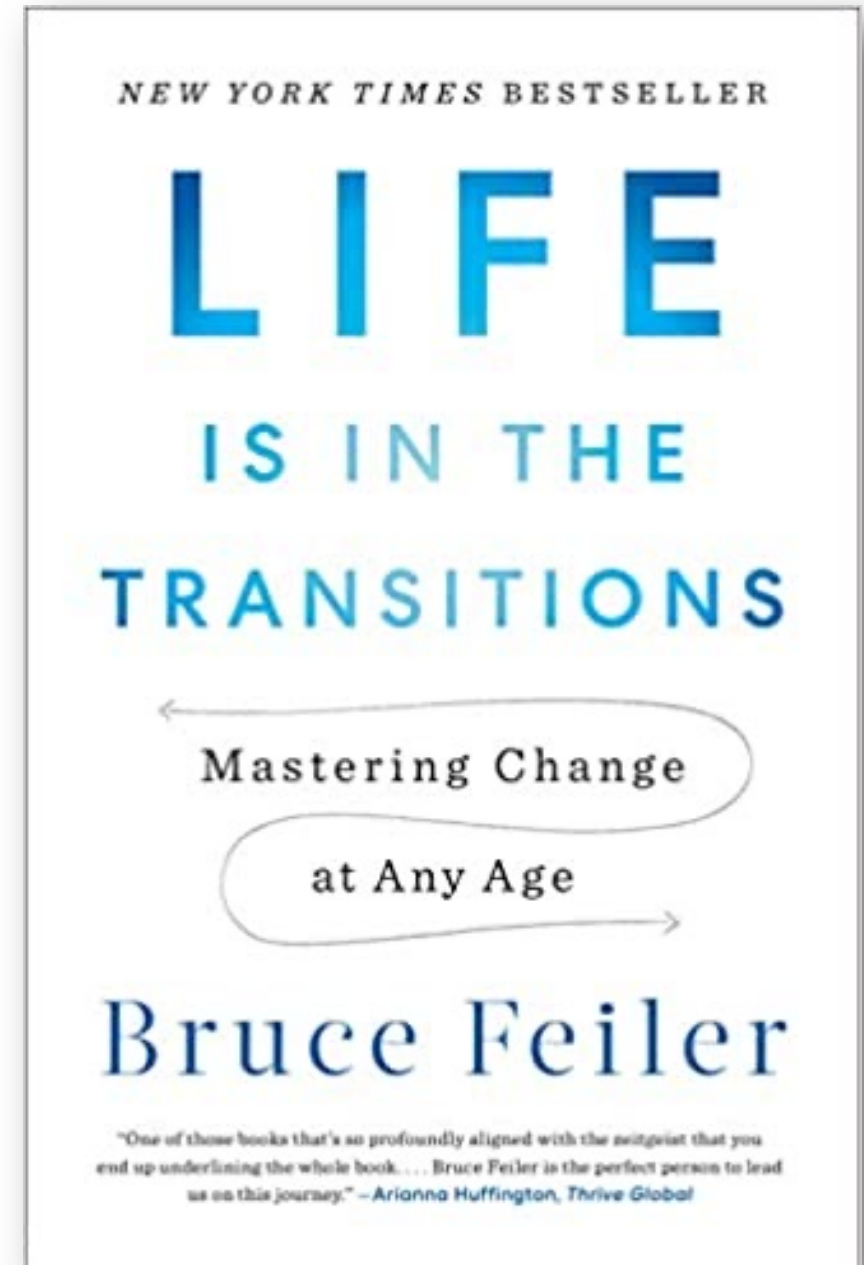
SEE TUMOR, PAGE B-2



LIFE QUAKES

Calamitous Life events that lead to a period of upheaval, transition and renewal

Average – **3-5 per person/Lifetime**

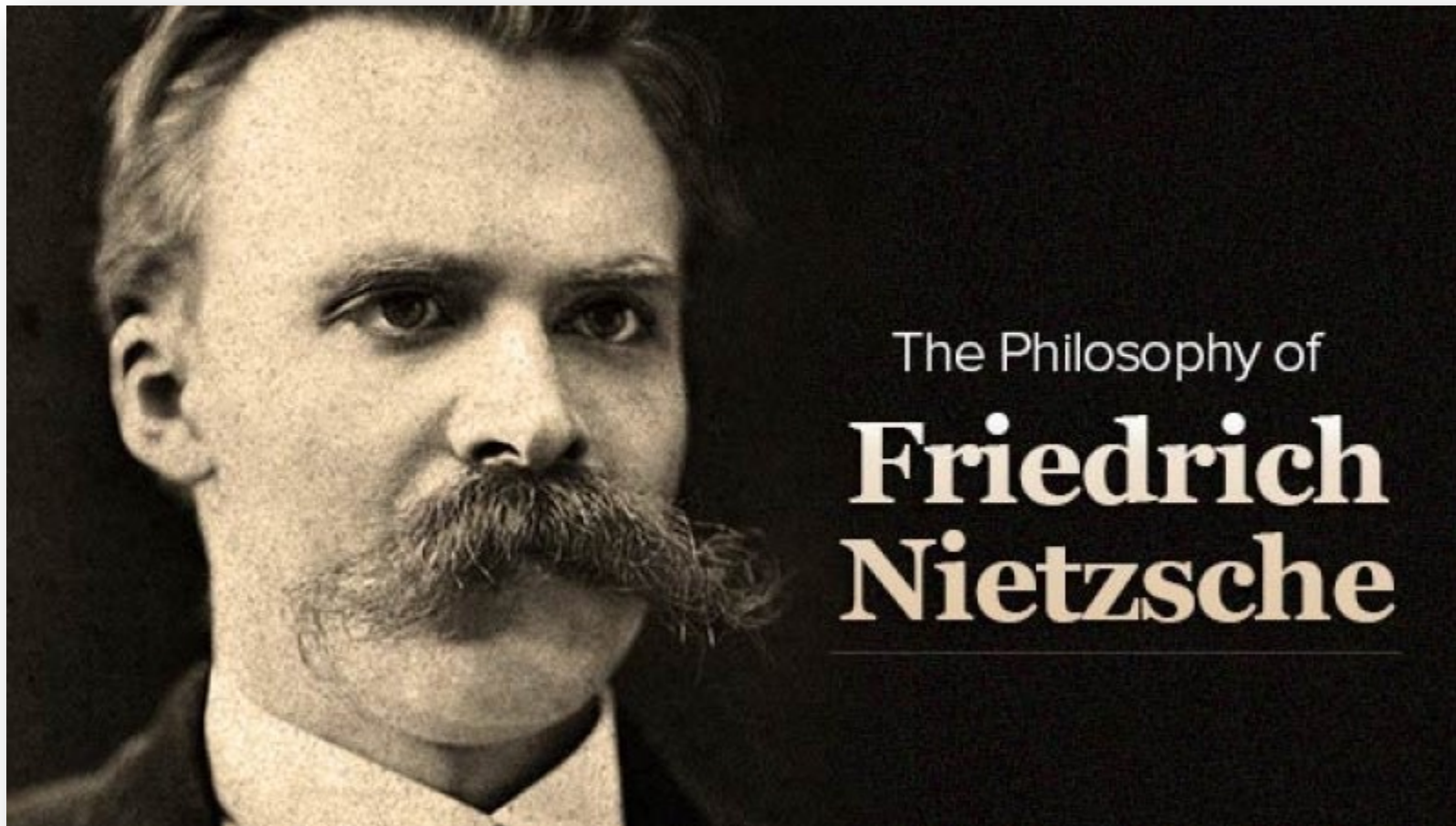








“All things must suffer, go dark and perish before they can live again...”





“The life of every man is a diary in which he means to write one story, and writes another;

His humblest hour is when he compares the volume as it is with what he vowed to make it.”

British author Sir James Barrie

Do Not Soar too high with Success Nor Plummet too Low with Failure

0148-396X/87/2101-0002\$02.00/0
NEUROSURGERY
Copyright © 1987 by the Congress of Neurological Surgeons

Vol. 21, No. 1, 1987
Printed in U.S.A.

Presidential address

From Icarus to Aequanimitas

Joseph C. Maroon, M.D.

Allegheny General Hospital, Pittsburgh, Pennsylvania

The theme of the 35th Annual Meeting of the Congress of Neurological Surgeons is new frontiers in neurosurgery. The scientific program is replete with learned discussions of the great advances in diagnostic imaging, laser technology, neurotransmitters, and innovative surgical procedures. Our honored guest, Professor Gazi Yasargil, has demonstrated, in a virtuoso fashion, the frontiers that one may reach with chisurgery, or work with our hands, under magnification.

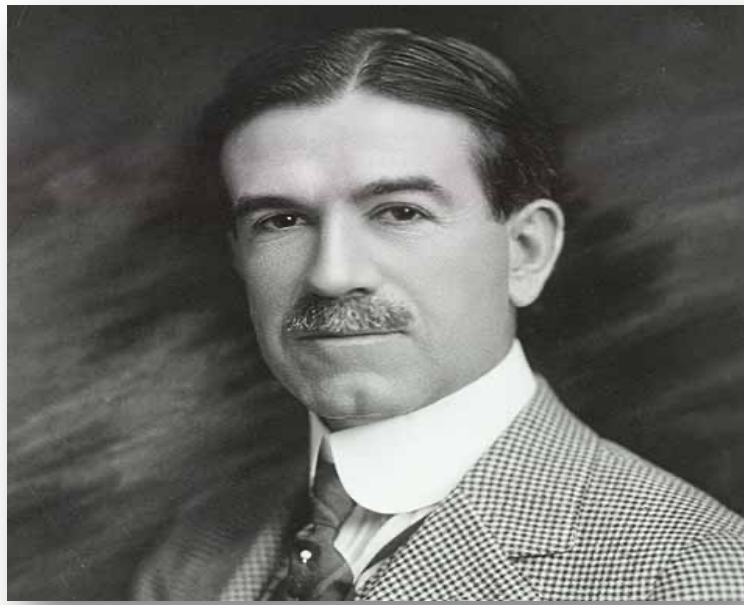
Rather than discuss additional technical frontiers, I will give time to reflection and perspective. We have heard the inspiring personal neurosurgical reflections of Dr. Yasargil and the historically steeped and erudite discussion of the social transformation of American medicine by Dr. Starr, further advanced by my good friend Dr. Donald Stewart. We have all looked at what has preceded in an attempt to understand the present and, perhaps, to glimpse the future.

(I'm an expert in that field!), and perhaps a suggestion for its attainment.

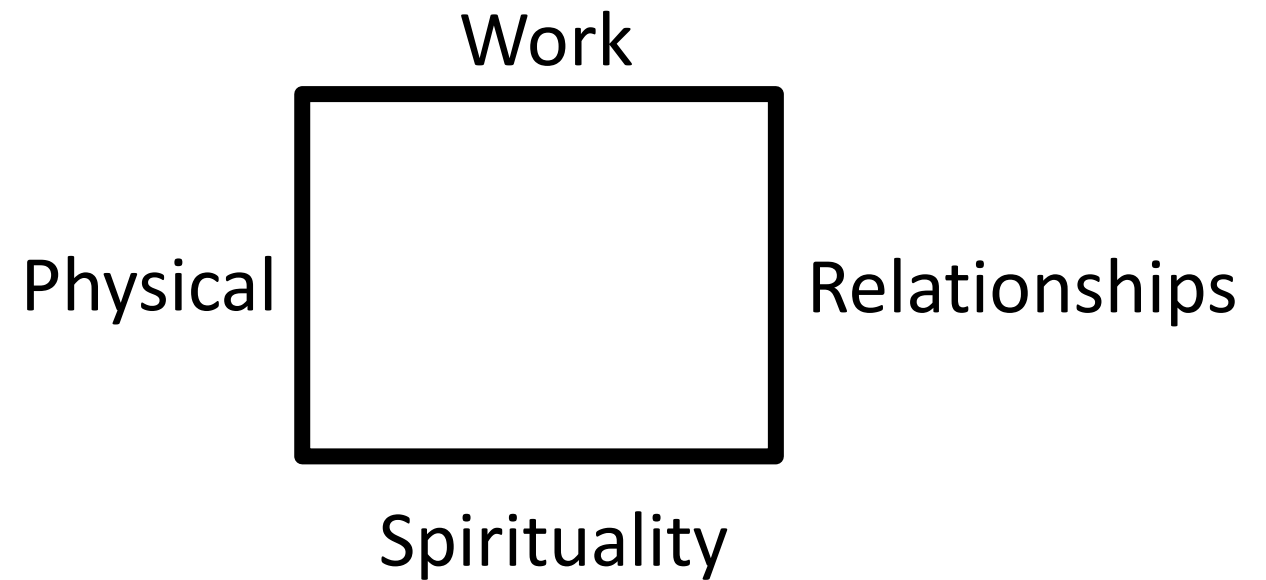
In my search better to understand "balance," Sir William's advice sent me further back in history and mythology to the Greek myth of Daedulus and his son, Icarus—the earliest example that I could find dealing with the problems and consequences of not attaining balance or equanimity in one's life (5).

Imprisoned by King Minos of Crete in a labyrinthian prison with no roof, Daedulus and Icarus escaped by ingeniously constructing wings of feathers and wax and flying out. Before attaining flight, Daedulus cautioned Icarus, his young, impetuous son, not to fly too low, lest the sea wet the feathers of his wings and make them too heavy to fly. Nor, Daedulus said, should Icarus fly too high, lest the sun melt the wax, scorch his wings, and cause him to fall to the earth. Above



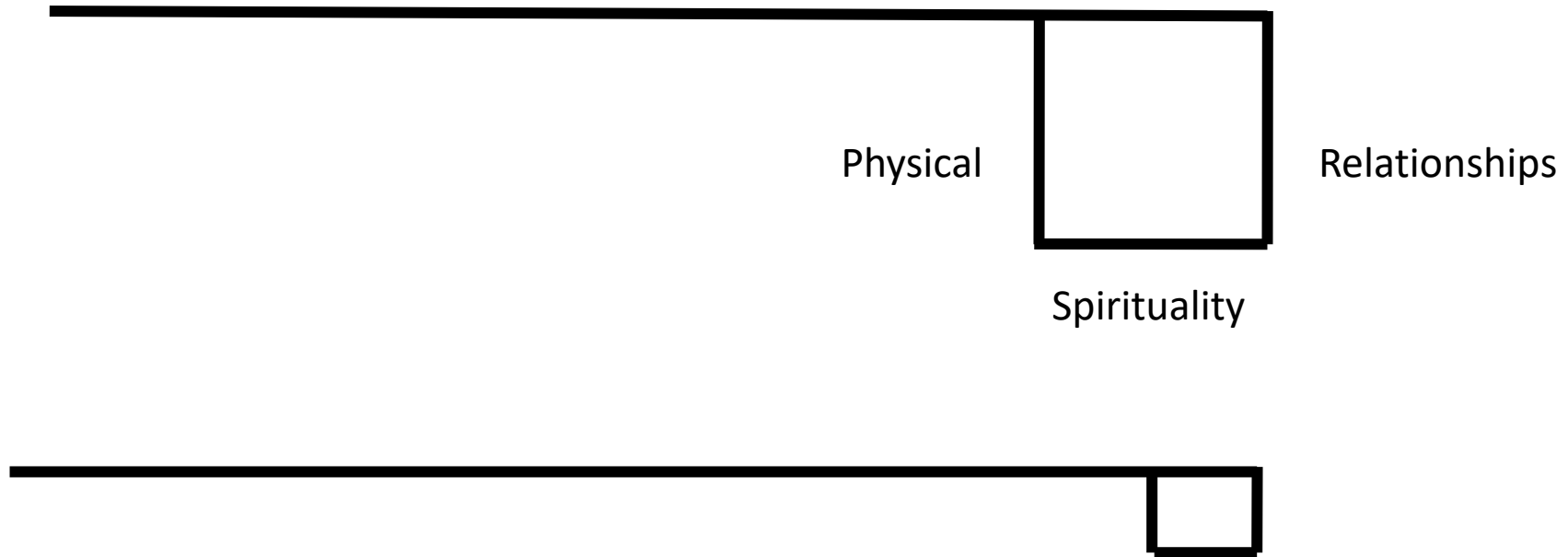


I Dare You!
1938 by William H. Danforth,
founder of the Ralston Purina
Company



“My Square”

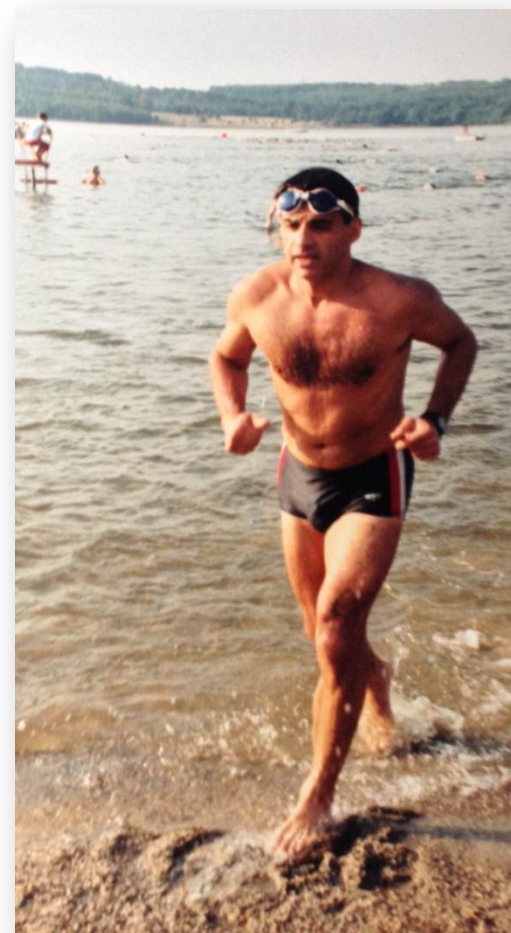
Work



The “run” that saved my life...



“C’mon, Joe,” he said. “It’ll be good for you.”



“Tin Man” Triathlon

Swim-1/2 , bike 15, Run 6.2

2.4 Mi



112 Mile



26.2 mile











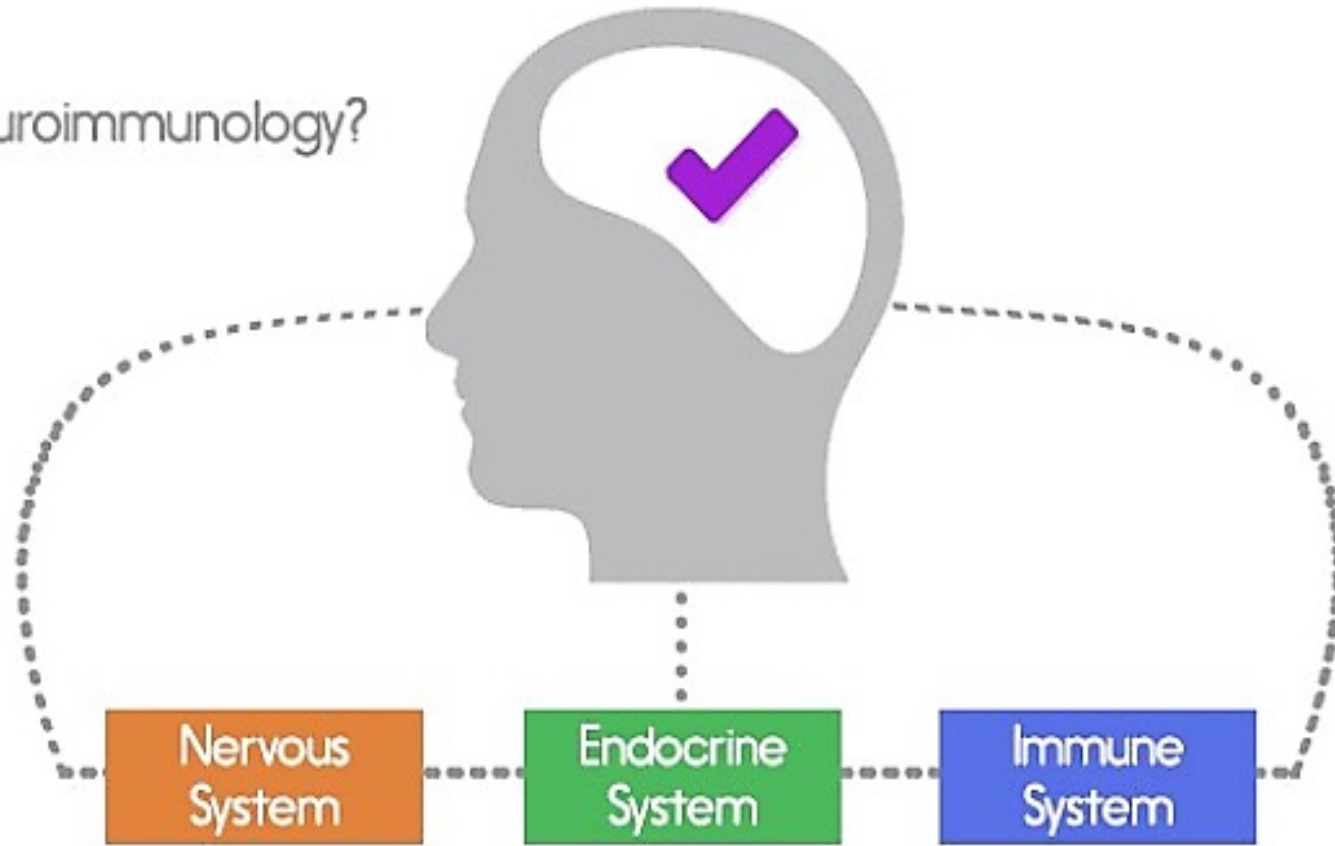
1993	2003
1996	2008
1999	2010
2001	2013

Muncie 70.3,
2016, 2017, 2019,
2020 2021, 2022

Mind-Body Connection

Psychoneuroimmunology

What is
Psychoneuroimmunology?



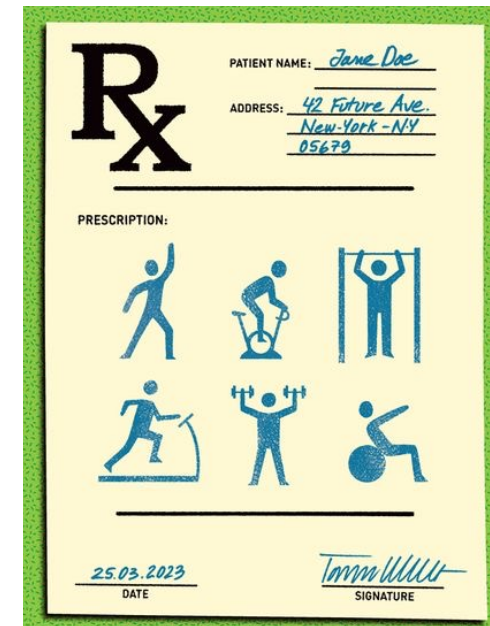
LIFE & WORK | IDEAS | MIND AND MATTER: SUSAN PINKER

Exercise Can Be the Best Antidepressant

New research finds that as little as 12 weeks of regular exercise can alleviate symptoms of depression as effectively as medication.

How the Body heals the Brain

“Exercise is free, rarely induces side effects and can muffle existing feelings of anxiety and depression, or even prevent their occurrence in the first place.”



Exercise and the Brain

Lowers stress-induced cortisol



Rewires the Brain

Increased my BDNF

- Neuronogenesis
- Synaptogenesis
- Brain plasticity

Enhanced neurotransmitters

- Serotonin
- Acetylcholine
- Dopamine
- Norepinephrine
- Anandamide

Weight and Resistance Training shields the Aging Brain from Dementia

**Neuro-Imaging Clinical
2020**



SCIENTIFIC AMERICAN

MIND

BEHAVIOR • BRAIN SCIENCE • INSIGHTS

January/February 2017
\$6.99

Mind.Science.American.com

THE EXERCISE CURE

Why it may be
the best fix for
depression

THE CHEMISTRY
OF DESIRE

HOW TO LEARN A
NEW LANGUAGE

Regular physical exercise

**The Best
antidepressant
And
Anxiolytic**

Joe Klein:
The CIA's
Afghan Disaster

Yemen: The
New Center
Of Terror

Why the Recession
Hasn't Been Cool
To Teens

TIME



WHY YOUR DNA ISN'T YOUR DESTINY

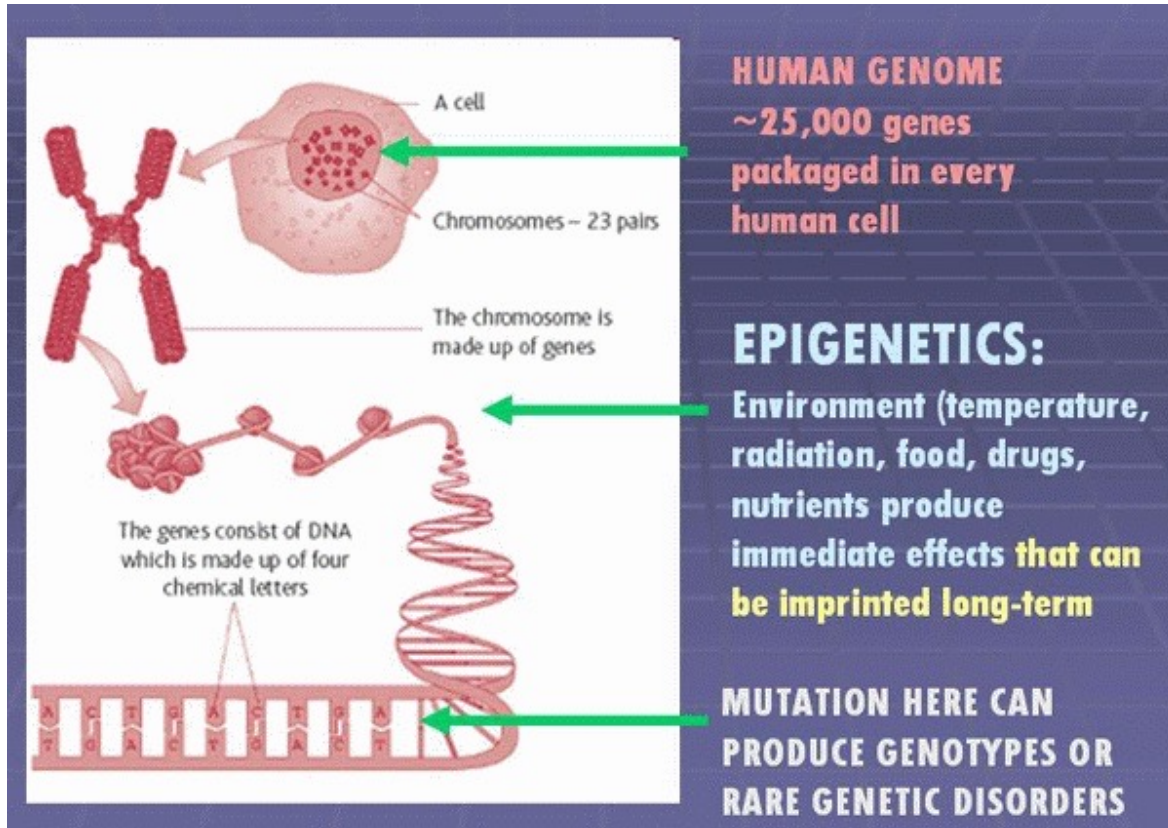
The new science of epigenetics
reveals how the choices you
make can change your genes
—and those of your kids

BY JOHN CLOUD



www.time.com

Unmasking the Genetic Myth of Disease



- Epigenetics-- the missing link between the **70% -80%** of diseases environmentally* induced
- and the **10- 20%** inherited through our DNA.

*pollution, toxin ingestion, smoking, radiation
lifestyle issues - stress, nutrition, weight

Pillars of Anti-Aging

Diet

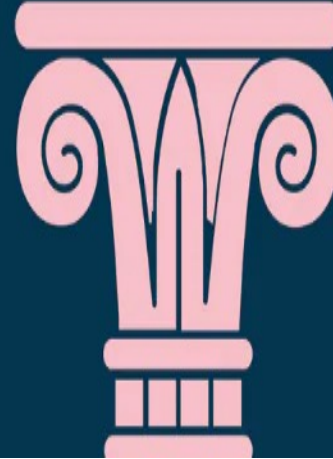
Exercise

**Avoid
Toxins**

**Control
Stress**

Sleep

**Use it or
Lose it**

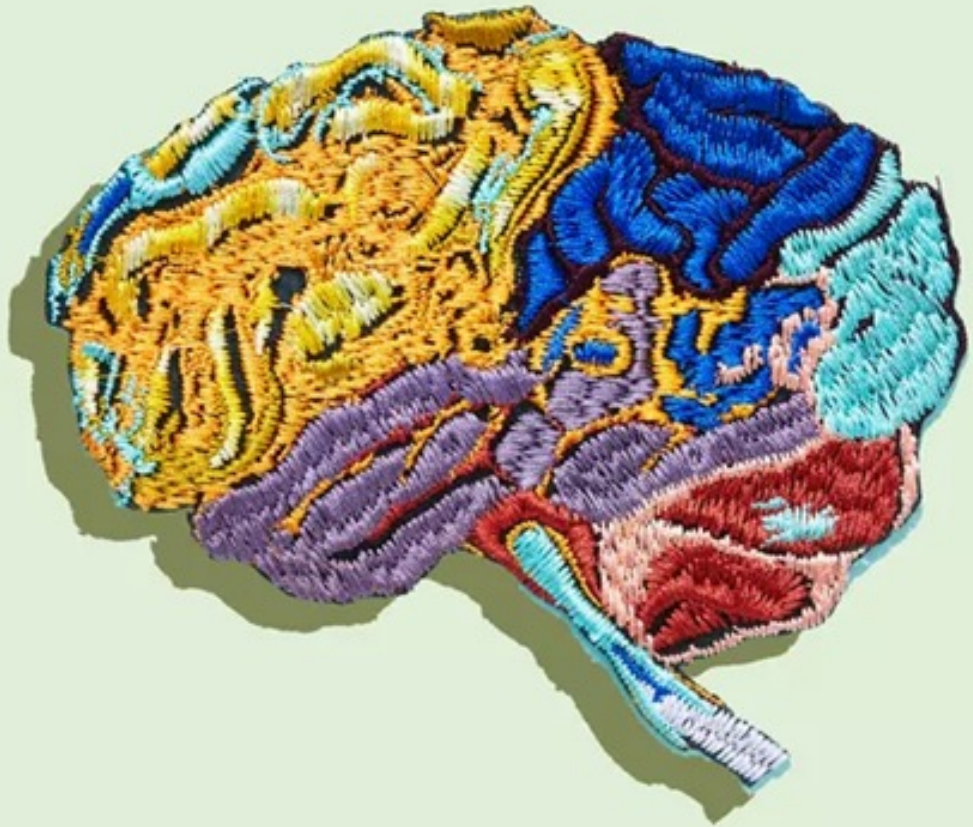


Scientists Pinpoint the Age When Your Brain Declines the Fastest

There's new research behind aging.

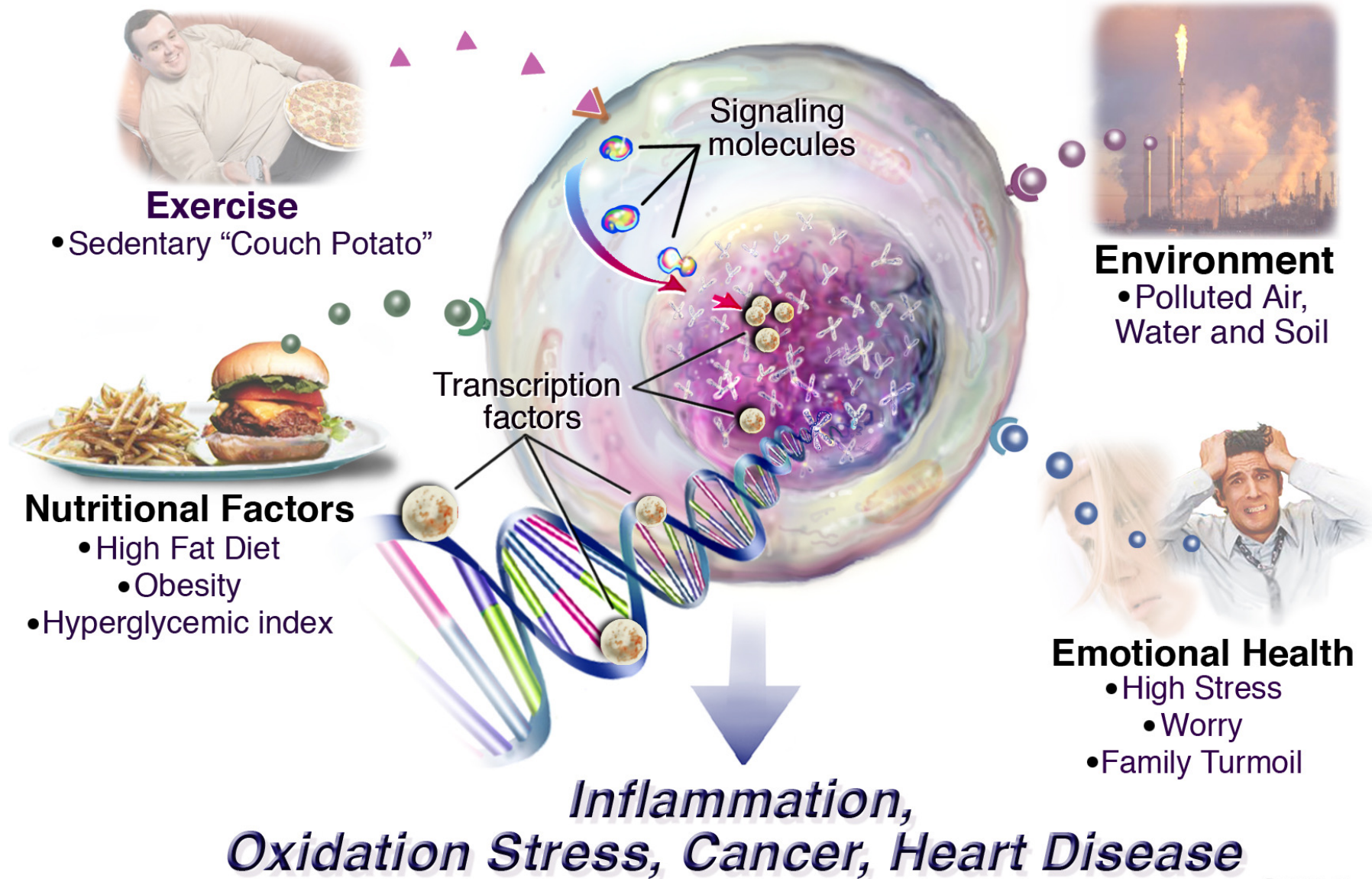
By [Ria Bhagwat](#) | Published on March 31, 2025

***“40 to 60
critical for
intervention”***

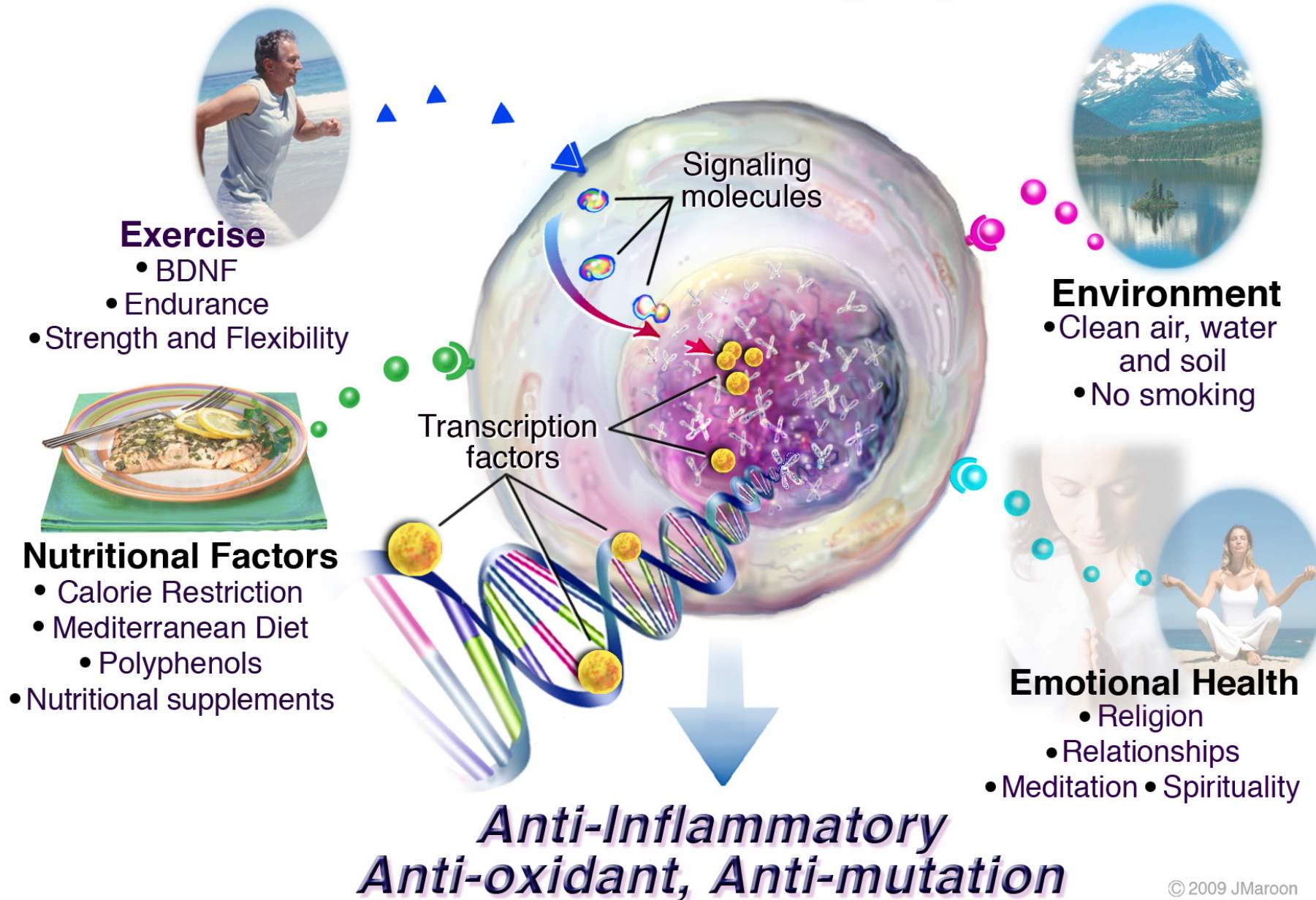


Epigenetics and Gene Activation

Poor Health and Reduced Longevity



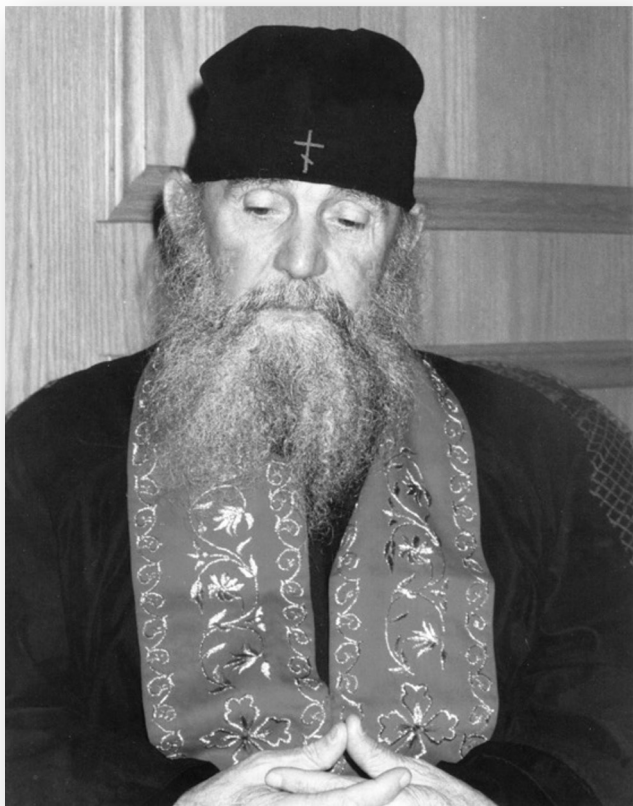
Epigenetics and Gene Activation For Health and Longevity





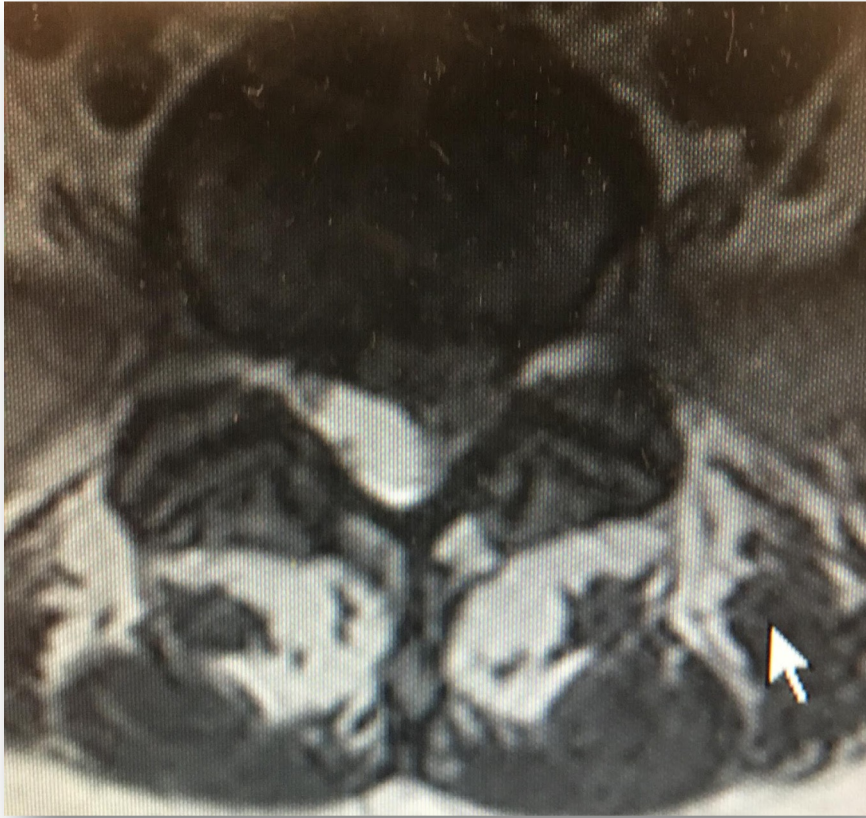
Supplements for Healthspan

- Metformin
- Rapamycin
- DHEA
- Quercetin
- Fisetin
- Glyteine
- Omega 3's
- Magnesium
- Vitamin D3
K2 and B12
- Turmeric
- Co-Q10



A goal of all spiritual practices—whether it's worship, yoga, prayer, community service, mindfulness, or meditation—*is to gain some perspective on the greater purpose of our lives.*





Most Clinicians Comfortable Praying With Patients

Medscape Nurses

Marcia Frellick

August 22, 2018

https://www.medscape.com/viewarticle/900982?nlid=124533_4622&src=WNL_mdplsnews_180824_mscpedit_nurs&uac=147166DX&spon=24&implD=1721048&faf=1

46 Read Comments



+ Add to Email Alerts

Most healthcare providers and medical students answered in a Medscape [poll](#) that they were very or somewhat comfortable with the idea of praying with or for patients.

Nurses/advanced practice nurses (APRNs) were the most open to the idea, with 88% saying they were comfortable or very comfortable with the practice. Physicians were next at 77%, followed by medical students at 73%.

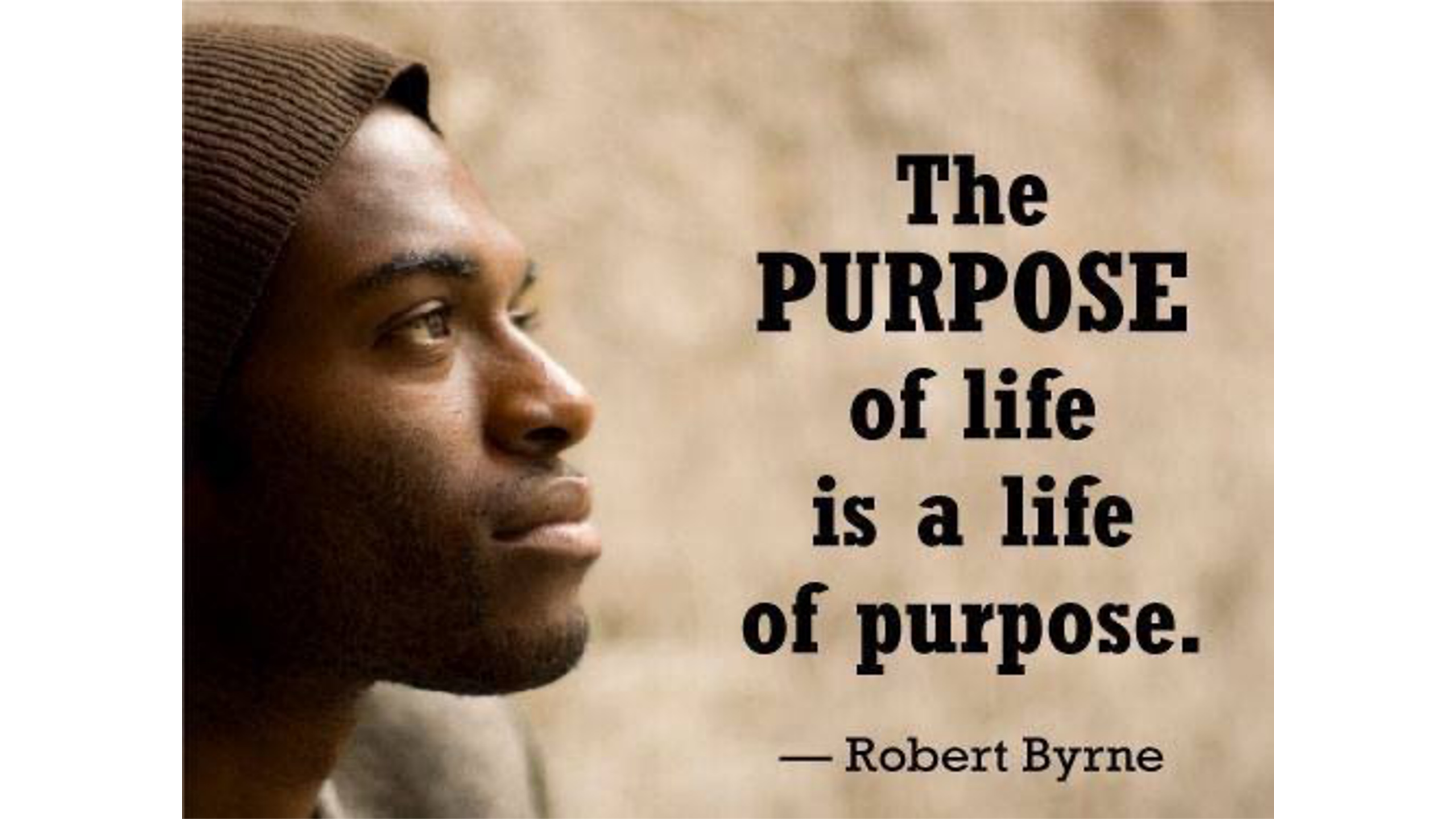
Medical students and physicians were much more likely to report they were very uncomfortable with praying with or for patients (9% for both groups vs 3% for nurses).

The gap between those who were comfortable and those who were not was largest among physicians, with 6% saying they would never say yes vs 2% of nurses/APRNs. Three percent of medical students would never say yes.

88% Nurses/advanced practice nurses (APRNs) were the most open to the idea. Physicians were next at 77%, followed by medical students at 73%.

"But those who wait
on the LORD shall
renew their strength:
they shall mount up
with wings like
eagles, they shall
run and not be
weary, they shall
walk and not faint."

ISAIAH 40:31

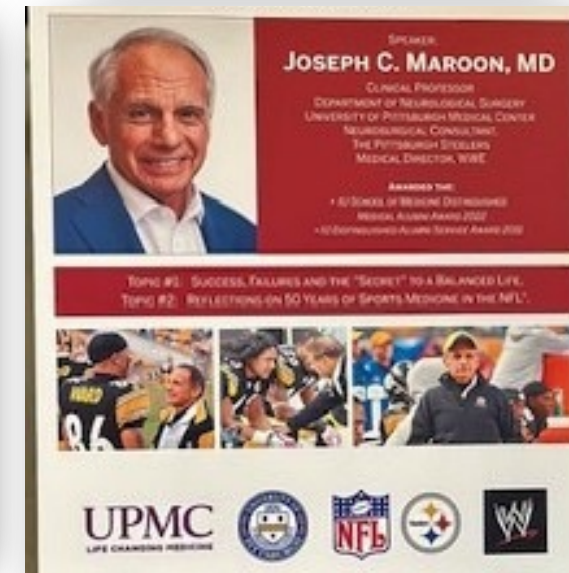
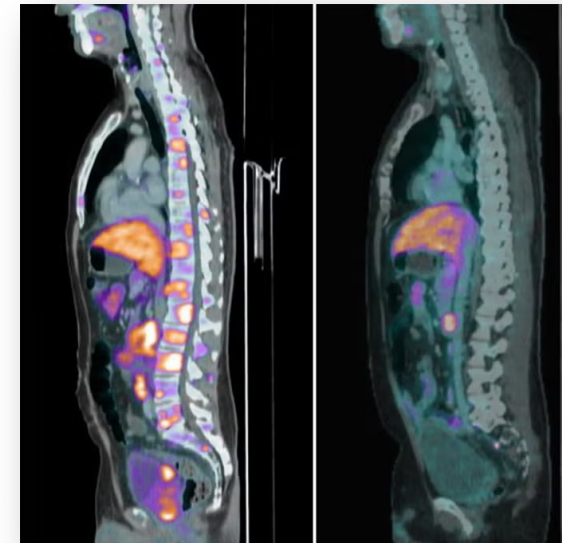
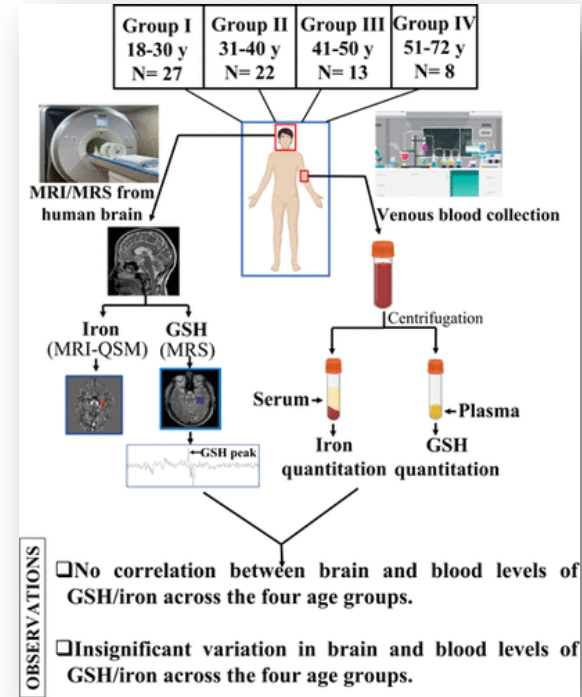


**The
PURPOSE
of life
is a life
of purpose.**

— Robert Byrne

Present Research

- Hyperbaric Oxygen Therapy (HBOT)
- Immunotherapy for Cancer
- Diagnoses and Treatment of Alzheimer's and Parkinson diseases
- Treatment of Traumatic Brain Injury



Hyperbaric Oxygen-A Renaissance

TBI, Stroke, Aging, Cognition

Long Covid



Joseph C. Maroon, MD

Clinical Professor and Vice Chairman
Department of Neurosurgery
Heindl Scholar in Neuroscience
Senior Vice Pres. A4M
Neurosurgeon, The Pittsburgh Steelers



HBOT Chambers



Mono Place

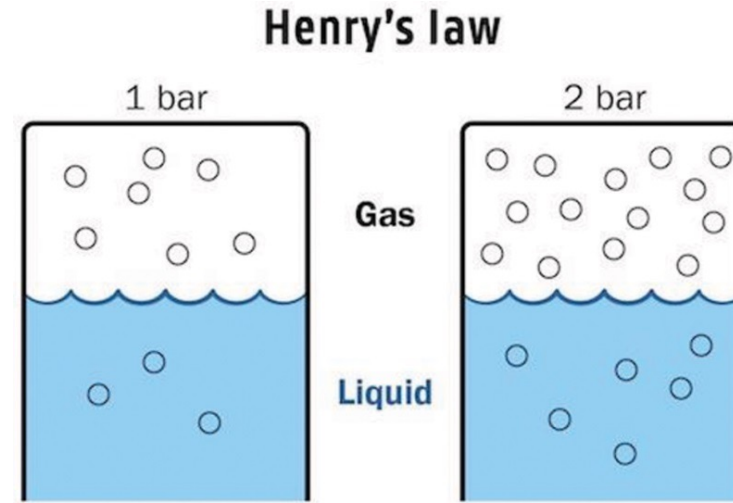


Multi Place

Hyperbaric Oxygen-A Renaissance

TBI, Stroke, Aging, Cognition, Memory

Long Covid, Peak Performance



HBOT

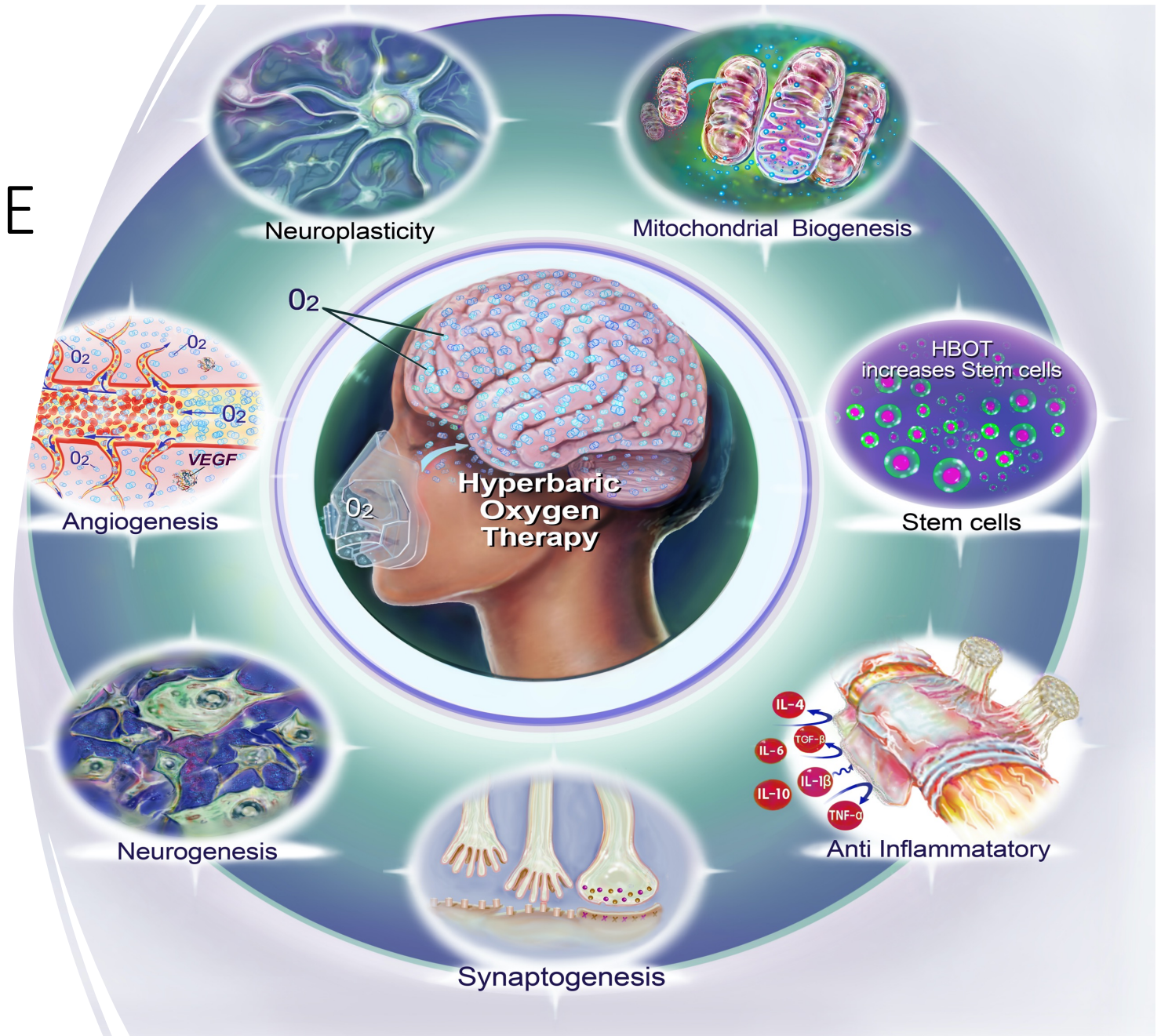
More Pressure= More
O₂ in Blood &
Intercellular Space



NEUROTHERAPEUTIC USE AND Mechanism of action



ABOU-AL-SHAAR,H, MAROON,JC.ET AL
2024.



(2022) Effects of hyperbaric oxygen therapy on
mitochondrial respiration and physical
performance in middle-aged athletes: a blinded,
randomized controlled trial

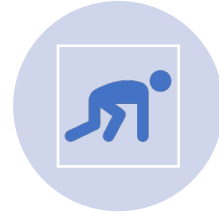
HBOT Boosts Athletic Performance

Hadanny et al. Sports Medicine - Open (2022) 8:22
<https://doi.org/10.1186/s40798-021-00403-w>

Cardio-Pulmonary Post HBO Results



3% IMPROVEMENT IN
LUNG CAPACITY
(SPIROMETRY)



15% IMPROVEMENT
IN EXERCISE
ENDURANCE (CPET)*



10% IMPROVEMENT
IN ANAEROBIC
THRESHOLD (CPET)*



13% IMPROVEMENT
IN EXERCISE POWER
OUTPUT (CPET)*



29% REDUCTION IN
FALL RISK (TUG TEST)*



7% IMPROVEMENT IN
MUSCLE STRENGTH
(SIT TO STAND TEST)

* significant

Triathlon time-before and post HBOT-- 24 Minute or 9.2% improvement



Time: 3:42:15 July
10, 2021

Swim: 36:30
TR 1: 6:32
Bike: 1:25:45
TR 2: 2:49
Run: 1:30:39

Time: 3:17:42
September 11, 2021

Swim: 27:08

TR 1: 7:35

Bike: 1:15:22

TR 2: 1:46

Run: 1:25:51

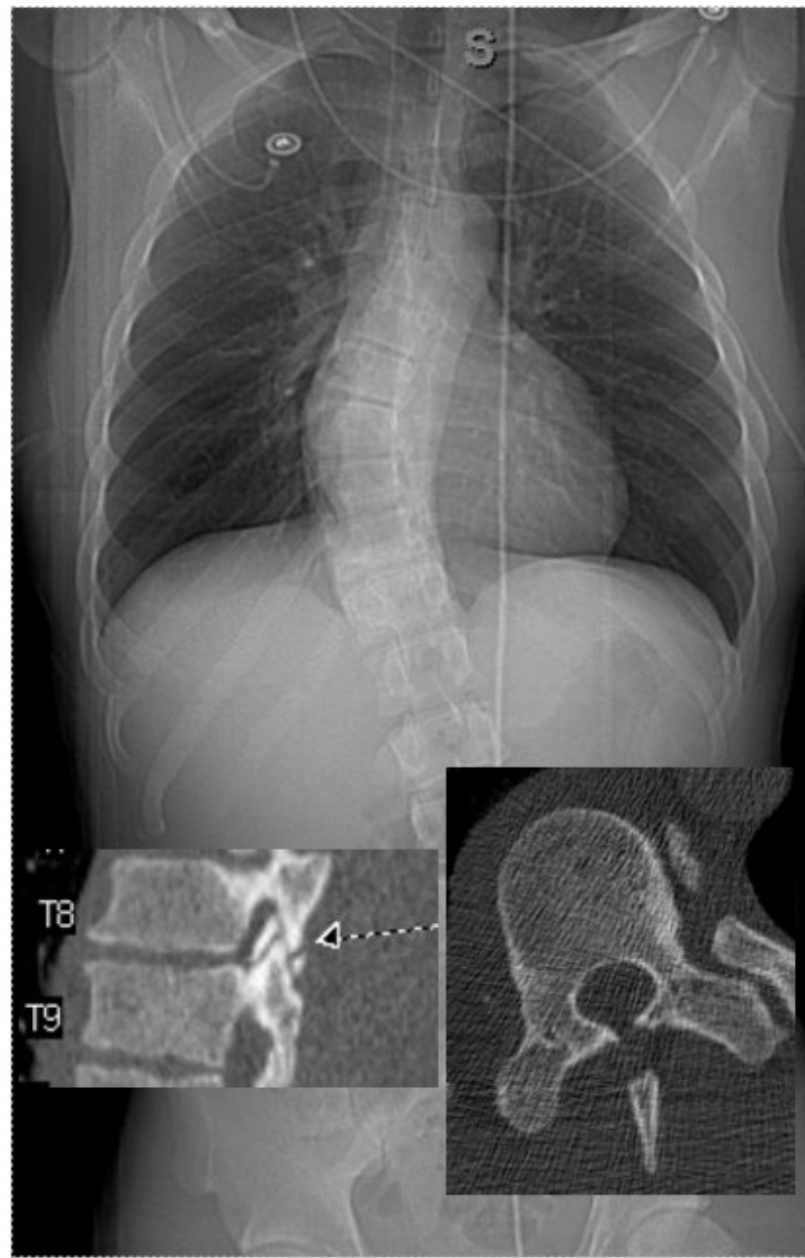
Triathlon

May 15, 2022

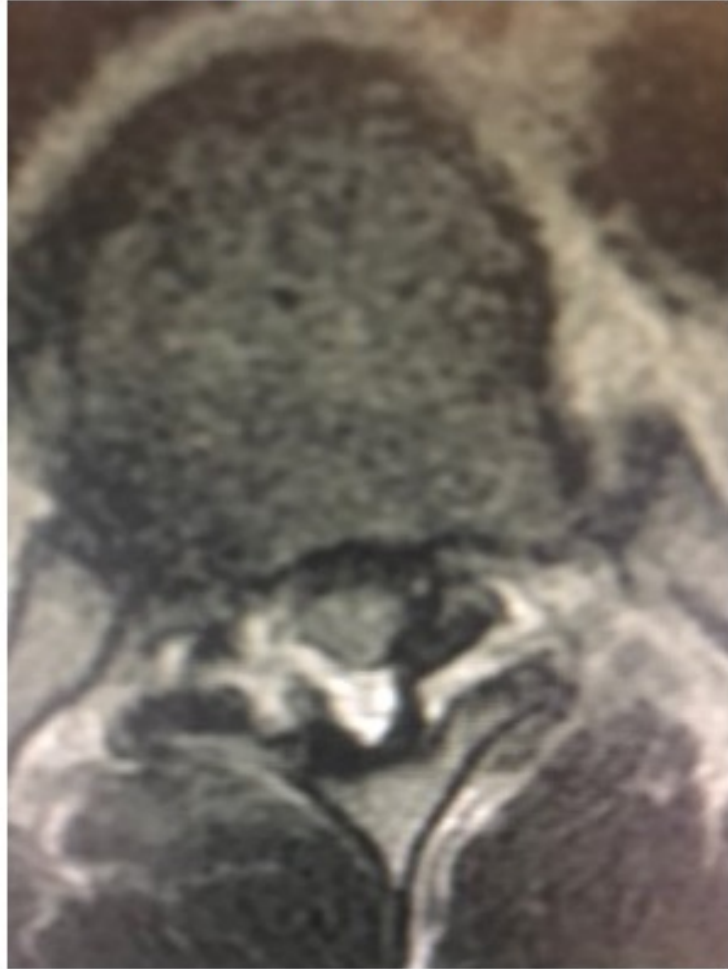




**athlete has granted permission for details of his case to be presented in this forum*



12/04/2017



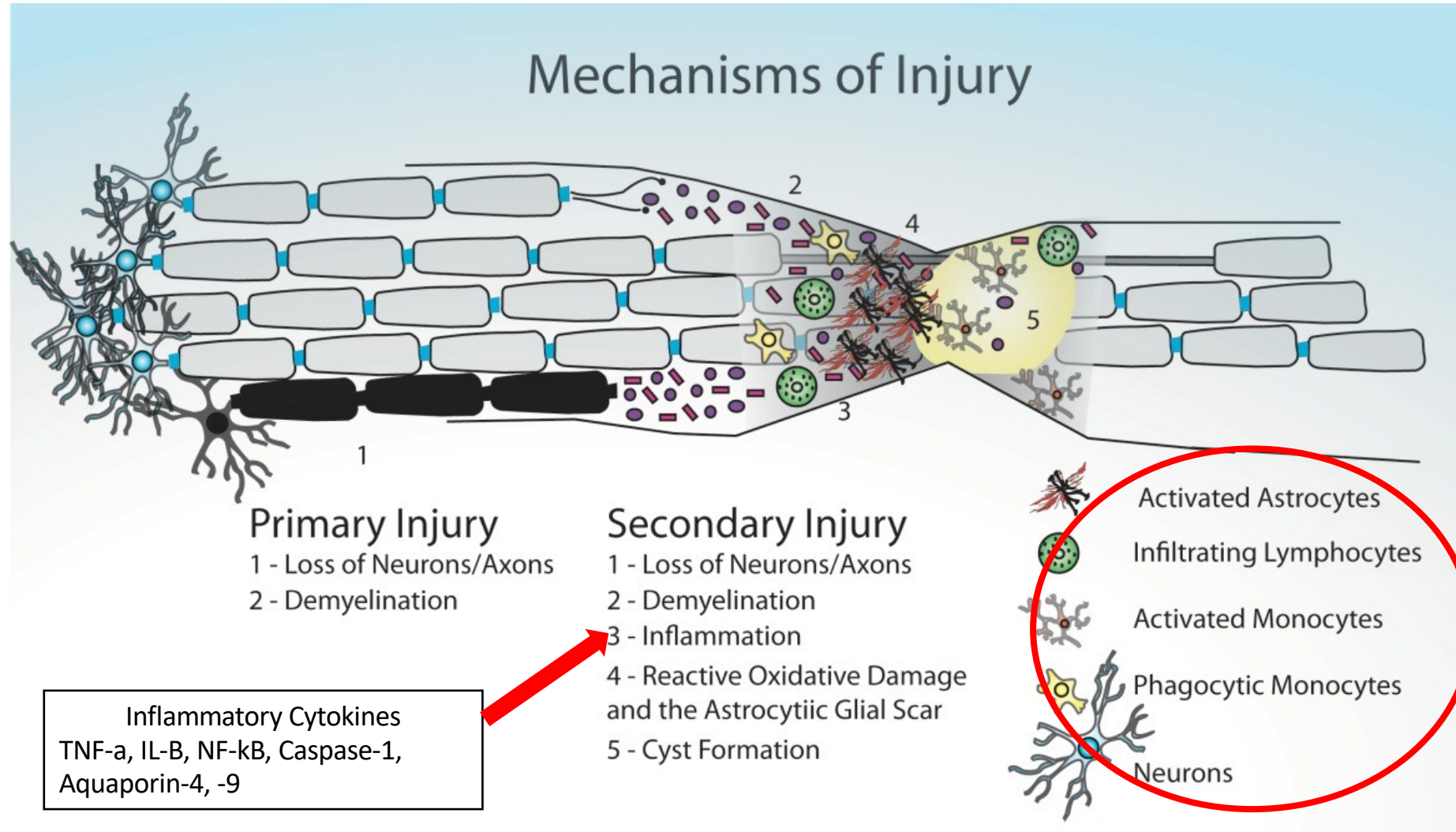
12/06/2017



post-op



Spinal Cord Injury





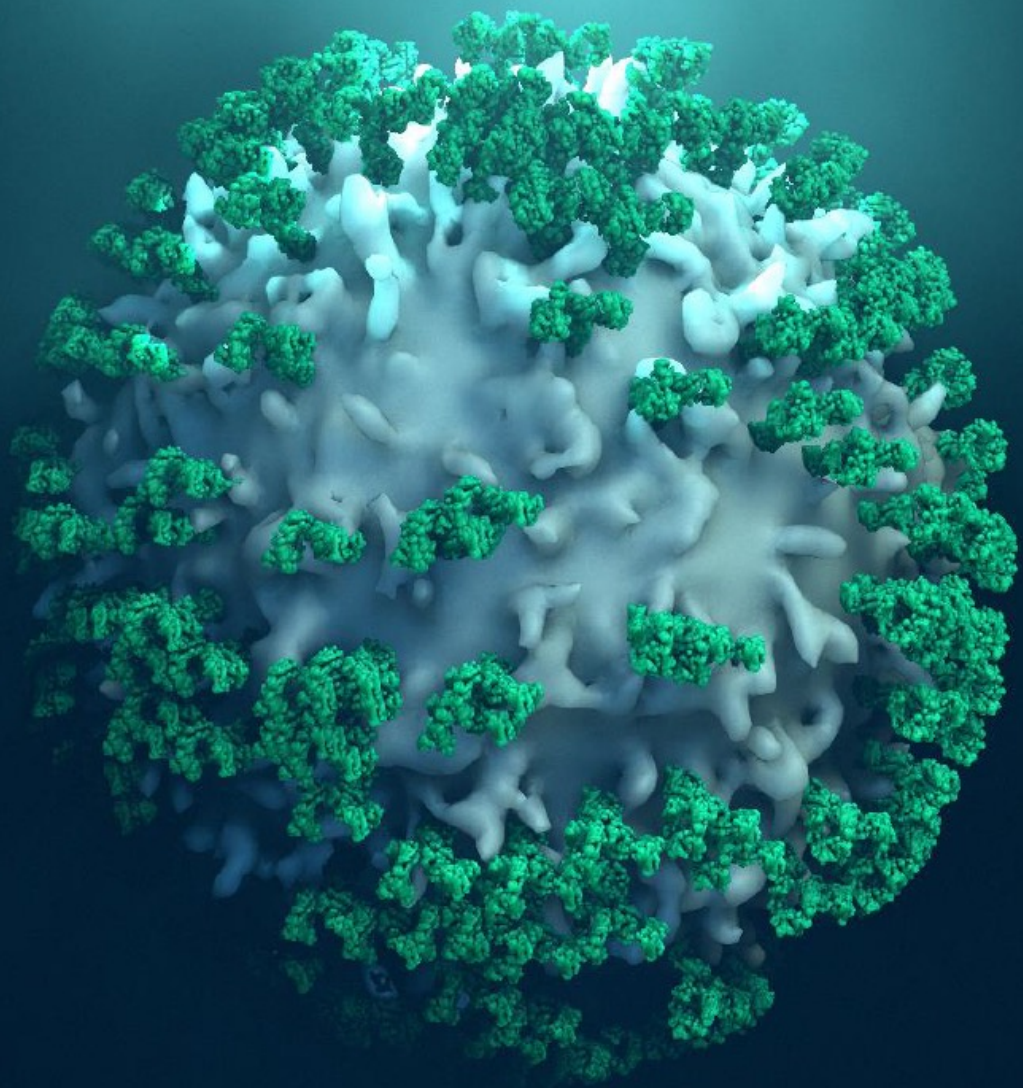


**athlete has granted permission for details of his case to be presented in this forum*

Management of Thoracic spinal cord injury in a Professional American Football Athlete

Neurosurgery 2022





SYNCHRONIZING THE POWER OF INTRATUMORAL IMMUNOTHERAPY



SYNCROMUNE IS BRINGING HOPE TO METASTATIC CANCER PATIENTS.

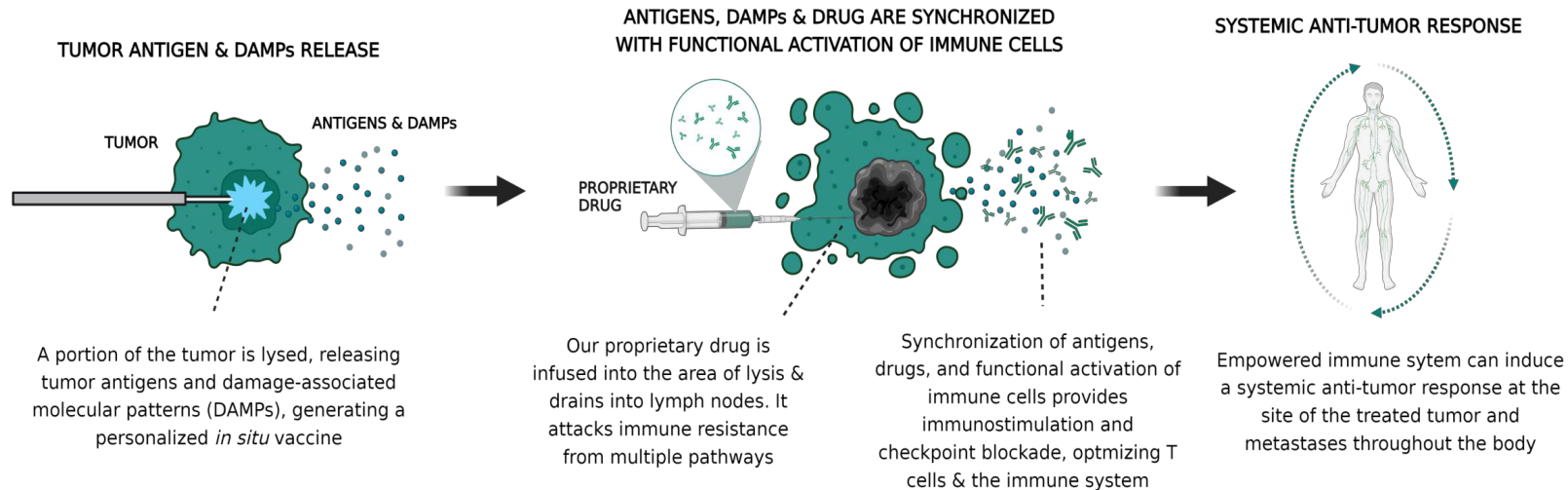
- The body's immune system has the power to fight cancer.
- Cancer evades the immune system with several defenses.
- We are developing a next generation multi-component medicine to enable a specific & robust anti-tumor immune response.

Advancing intratumoral immunotherapy to attack cancer in a new way.



SYNC-T[™]: In Situ T Cell Education and Immunostimulation To Treat Solid Tumor Cancers

3 STEP PROCESS



Platform promotes in situ immune activation while battling immunosuppression

Syncromune SYNC-T Animation

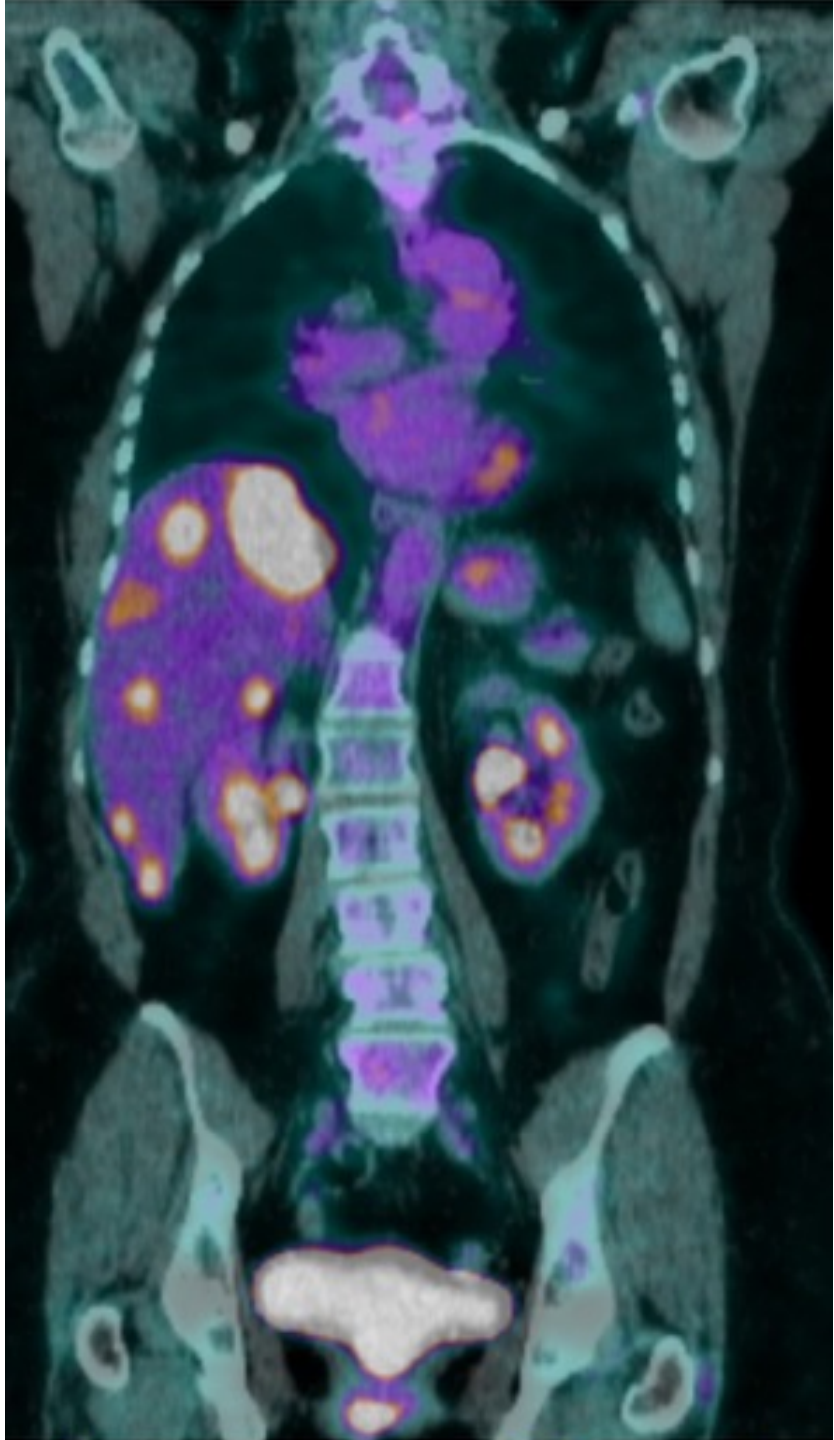
SYNC-T™ Combination Drug / Device Immunotherapy Platform

...

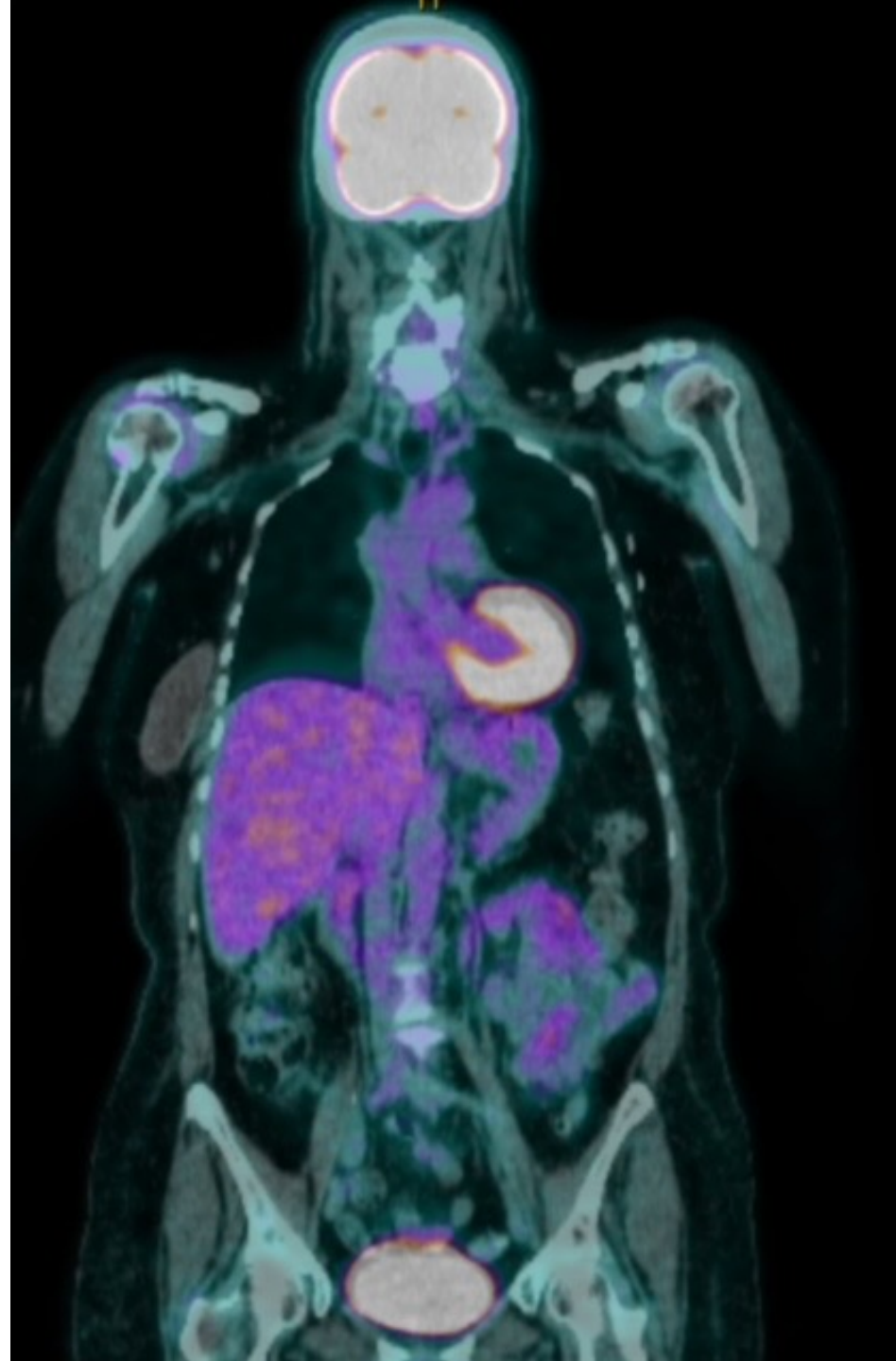


Synchronizing The Power of Immunotherapy®

Pre-Op



Post-Op

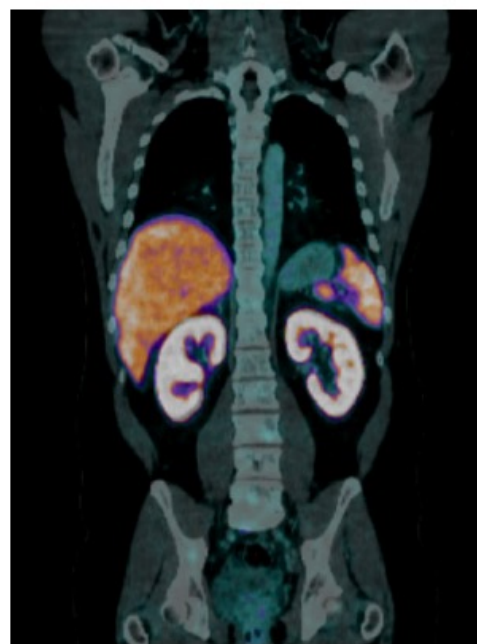


Subject SV-102-09: Complete Response

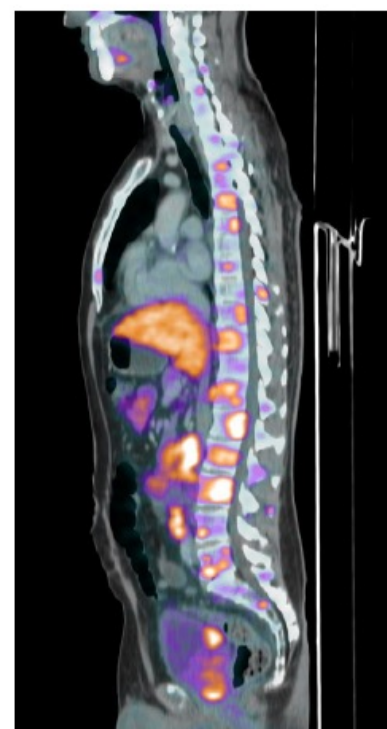
- Subject was confirmed via RECIST as a Complete Response
- Tumor was PD-1/ PD-L1 NEG and proficient MMR
- rPFS: 200+ days



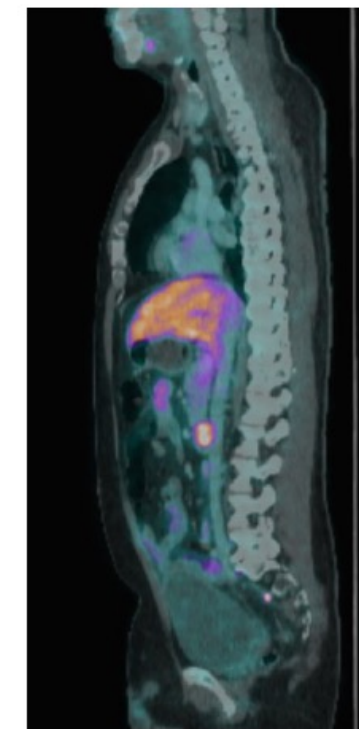
PRE-THERAPY. 5/2023 coronal PSMA PET/CT shows extensive bone metastases (greater than 50)



POST-THERAPY. 12/2023 coronal PSMA PET/CT shows complete resolution of all bone metastases



PRE-THERAPY. 5/2023 sagittal PSMA PET/CT shows extensive bone metastases



POST-THERAPY. 12/2023 sagittal PSMA PET/CT shows complete resolution of all bone metastases



UPMC



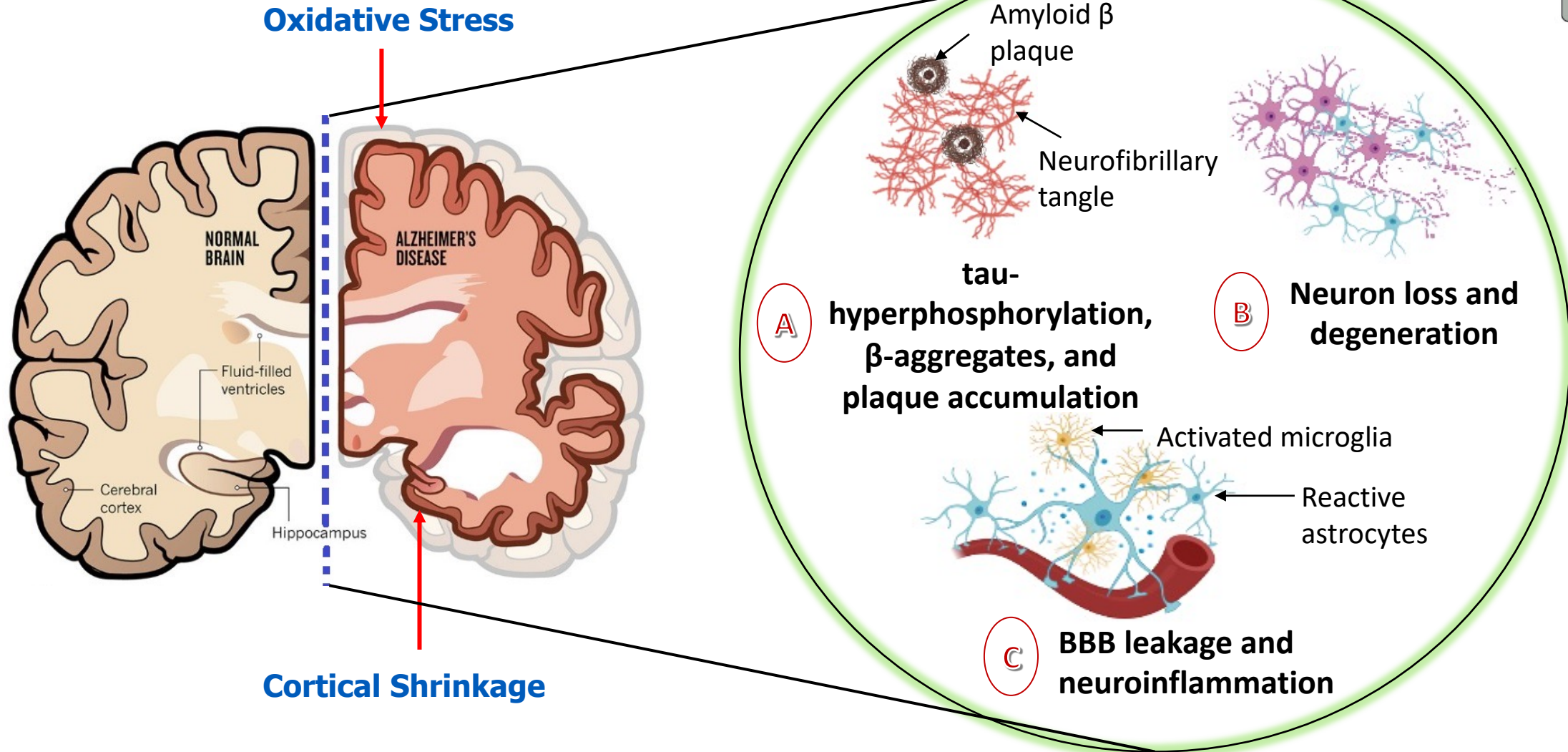
Pravat Kumar Mandal, MD

***Professor and Director in charge,
National Brain Research Centre***

GURGAON, INDIA

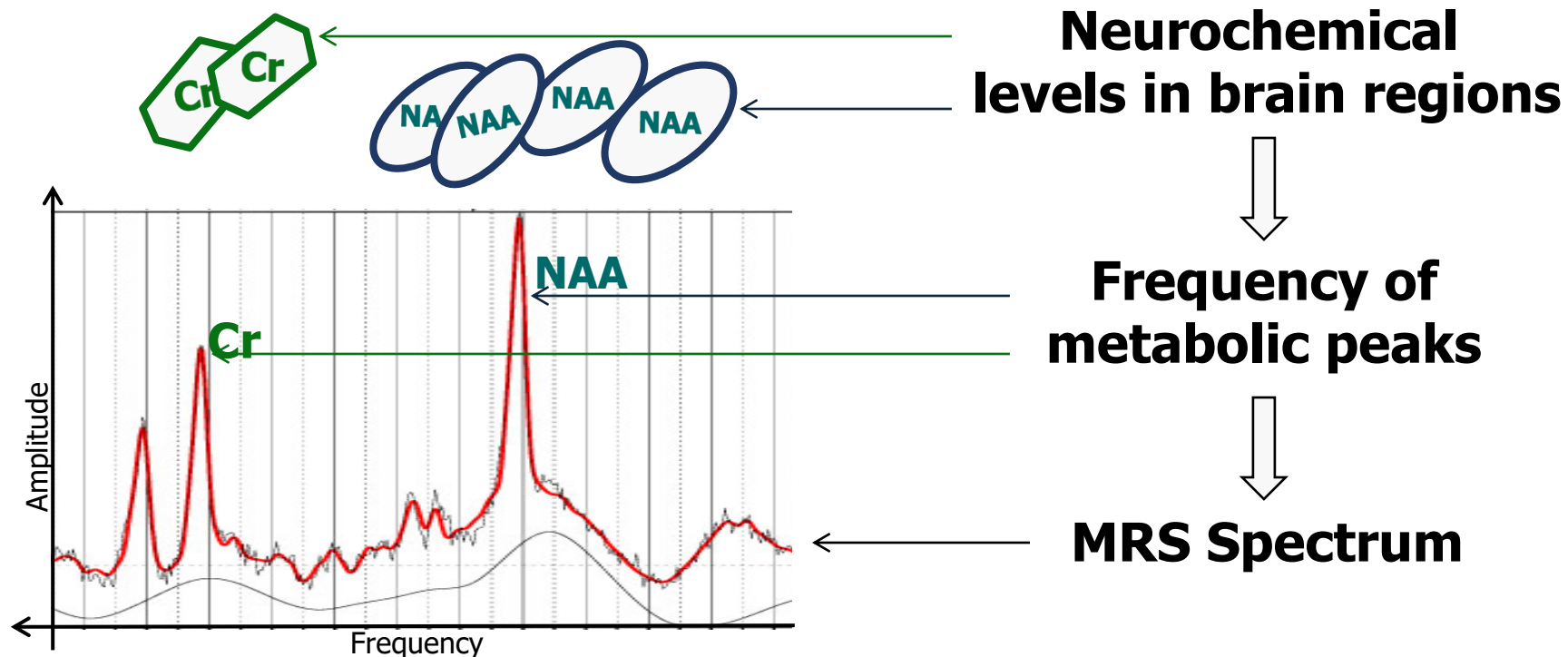
***Brain scientist involved in Clinical
research using state-of-the-art
Neuroimaging techniques***

Alzheimer's Disease - Neuropathological Features



Magnetic Resonance Spectroscopy

- A non-invasive method of studying metabolism *in vivo*
- Extracts qualitative and quantitative information about the chemicals that reside on the frequency scale between water and fat
- Signal intensity (height of peak) can be used for relatively quantify neurochemical levels in an MRS "spectrum"



Glutathione deficiency in MCI, Alzheimer's and Parkinson's Disease

<https://doi.org/10.1093/braincomms/fcac215>

BRAIN COMMUNICATIONS 2022: Page 1 of 11 | 1

BRAIN COMMUNICATIONS

Hippocampal glutathione depletion with enhanced iron level in patients with mild cognitive impairment and Alzheimer's disease compared with healthy elderly participants

Pravat K. Mandal,^{1,2} Anshika Goel,¹ Ashley I. Bush,^{2,3,4} Khushboo Punjabi,¹ Shallu Joon,¹ Ritwick Mishra,¹ Manjari Tripathi,⁵ Arun Garg,⁶ Natasha K. Kumar,⁶ Pooja Sharma,⁷ Deepika Shukla,¹ Scott Jonathan Ayton,^{2,3,4} Amir Fazlollahi,⁸ Joseph C. Maroon,⁹ Divya Dwivedi,¹ Avantika Samkaria,¹ Kanika Sandal,¹ Kanu Megha¹ and Sandhya Shandilya¹

Oxidative stress has been implicated in Alzheimer's disease, and it is potentially driven by the depletion of primary antioxidant, glutathione.

ACS Chemical Neuroscience

Open Access

This article is licensed under [CC-BY-NC-ND 4.0](#)

pubs.acs.org/chemneuro

Research Article

Glutathione Depletion and Concomitant Elevation of Susceptibility in Patients with Parkinson's Disease: State-of-the-Art MR Spectroscopy and Neuropsychological Study

Deepika Shukla, Anshika Goel, Pravat K. Mandal,* Shallu Joon, Khushboo Punjabi, Yashika Arora, Rajnish Kumar, Veer Singh Mehta, Padam Singh, Joseph C. Maroon, Rishu Bansal, Kanika Sandal, Rimil Guha Roy, Avantika Samkaria, Shallu Sharma, Sandhya Sandhilya, Shradha Gaur, S. Parvathi, and Mallika Joshi

Cite This: *ACS Chem. Neurosci.* 2023, 14, 4383–4394

Read Online

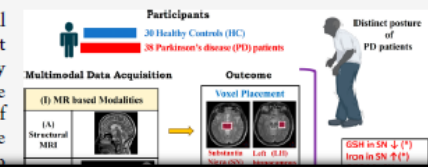
ACCESS |

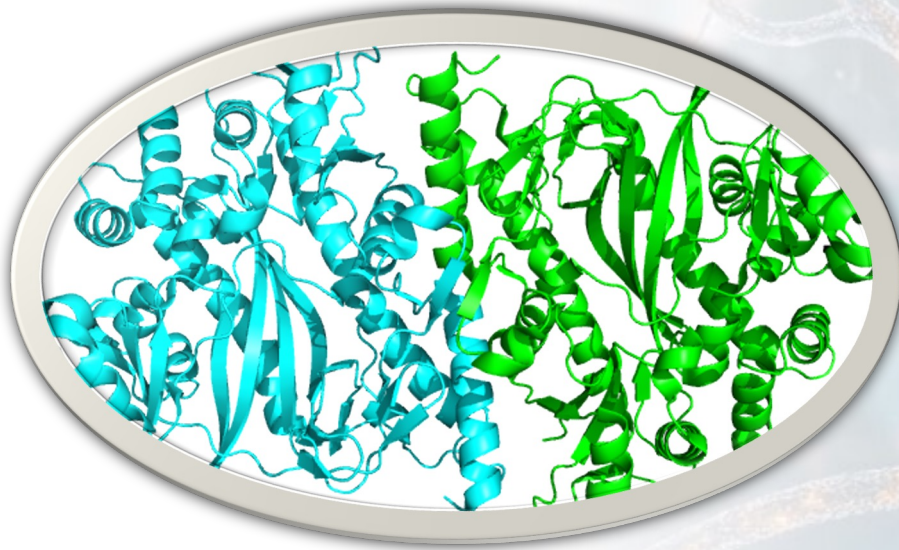
Metrics & More

Article Recommendations

Supporting Information

ABSTRACT: Parkinson's disease (PD) is characterized by extrapyramidal motor disturbances and nonmotor cognitive impairments which impact activities of daily living. Although the etiology of PD is still obscure, autopsy reports suggest that oxidative stress (OS) is one of the important factors in the pathophysiology of PD. In the current study, we have investigated the impact of OS in PD by measuring the antioxidant glutathione (GSH) levels from the substantia nigra (SN), left hippocampus (LH), and neurotransmitter dopamine (DA).





What is Glutathione?

The Master Anti-Oxidant
in the Brain



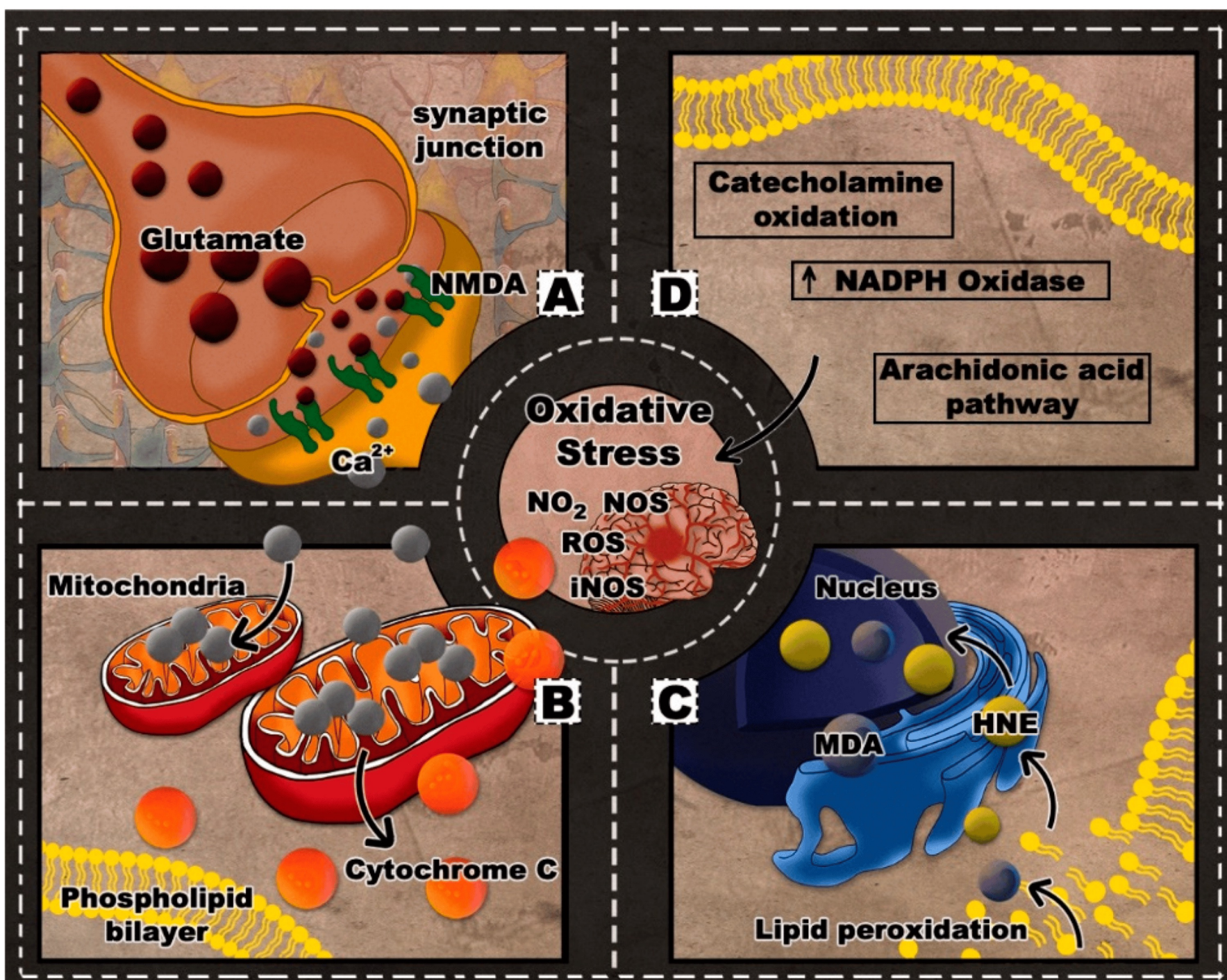
Why does an
apple turn
brown?



J. Antioxidants
2020

Oxidative stress **PRIMARY** in AD, PD Traumatic Brain Injury (TBI)

- (A) excitotoxicity;
- (B) Ca^{2+} sequestration and cyt c release;
- (C) lipid peroxidation;
- (D) oxidative stress pathways.



Study Populations with History of Symptomatic Traumatic Brain Injury

- Former NFL players
- Former Navy SEALs Swift Boat Operators (SWCC)





September 23, 2024

Perceived Chronic Traumatic Encephalopathy and Suicidality in Former Professional Football Players

Rachel Grashow, PhD, MS^{1,2}; Douglas P. Terry, PhD³; Grant L. Iverson, PhD^{4,5,6,7}; [et al](#)

» [Author Affiliations](#) | [Article Information](#)

JAMA Neurol. 2024;81(11):1130-1139. doi:10.1001/jamaneurol.2024.3083

Conclusion:

One-third of former NFL players with RHI reported perceived CTE





Chronic Brain Trauma Is Extensive in Navy's Elite Speedboat Crews

The pounding that sailors' brains take from years of high-speed wave-slamming in the Special Boat Teams can cause symptoms that wreck their careers — and their lives.

***Navy's Special Warrior Boat Teams
experience sudden jerks of up to 60-100
times the force of gravity.***



By **Dave Philipps**
Reporting from San Diego



Published Nov. 12, 2024 Updated Nov. 14, 2024



Symposium/Proceedings/Workshop

OPEN

Does Military High-speed Boat Slamming Cause Severe Injuries and Disability?

Johan Ullman MD^{1,2} , David Hengst MD², Ronald Carpenter CWO5 (ret) SWCC³,
Yohan Robinson MD, PhD, MBA^{1,2} 

- 70% (149 of 214) REPORTED IMPAIRMENT DUE TO IMPACT INJURY

Abstract

Background Many operators of professional high-speed boats suffer severe, acute, and permanent injuries caused by slamming-induced hull impacts. As the number of professional high-speed boats and their speed capabilities increase, operators are reporting increasing numbers and severity of injuries. However, the actual incidence rate of acute injuries and the prevalence of chronic musculoskeletal disorders are still unknown.

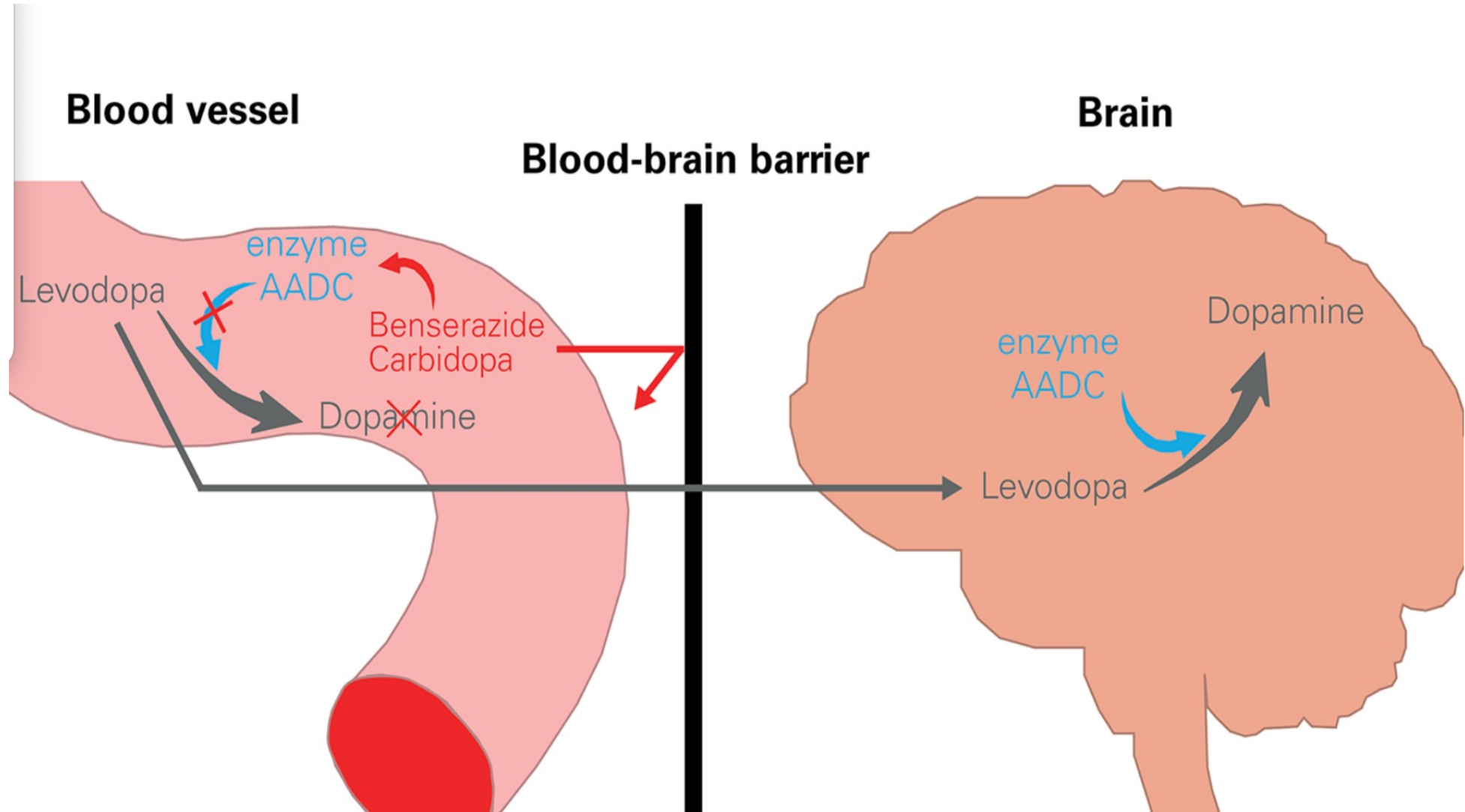
impact characteristics were reported, and (4) the prevalence of self-reported sick leave, disability, and medical or orthopaedic treatment.

Methods This study was an internet-based survey among retired military high-speed boat operators. The survey was given to members of the Combatant Craft Crewman Association online user group (360 members). Participants answered questions on demographics, service branch, service

PARKINSON'S DISEASE

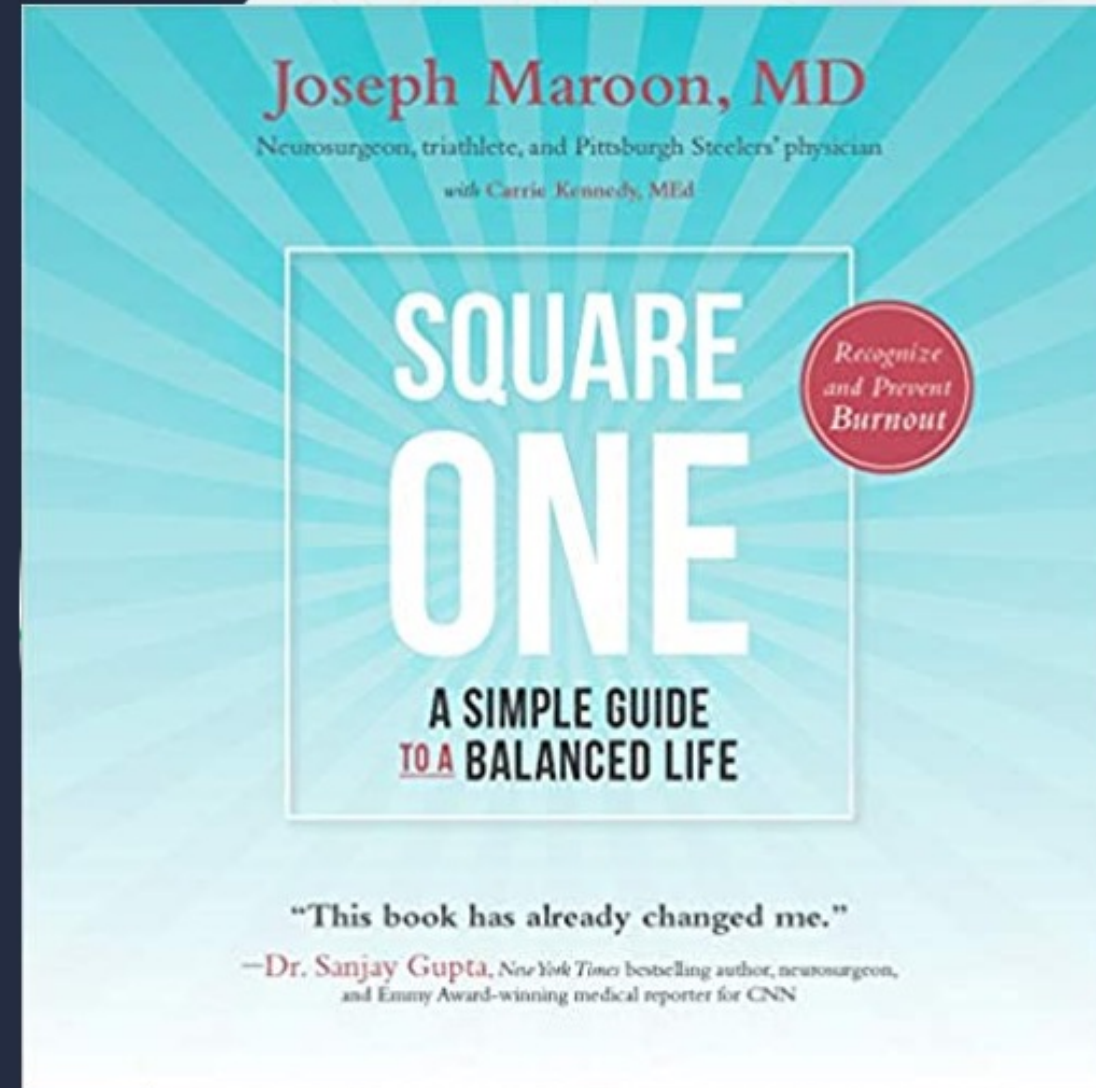
Rx

L-DOPA NOT Dopamine



How to compress morbidity into shortest possible time?

- **Diet**
- **Targeted supplements**
- **Exercise**
- **Stress management**
- **Brain training**
- **Detoxification**
- **Sleep**



3 Most Important Things in Life

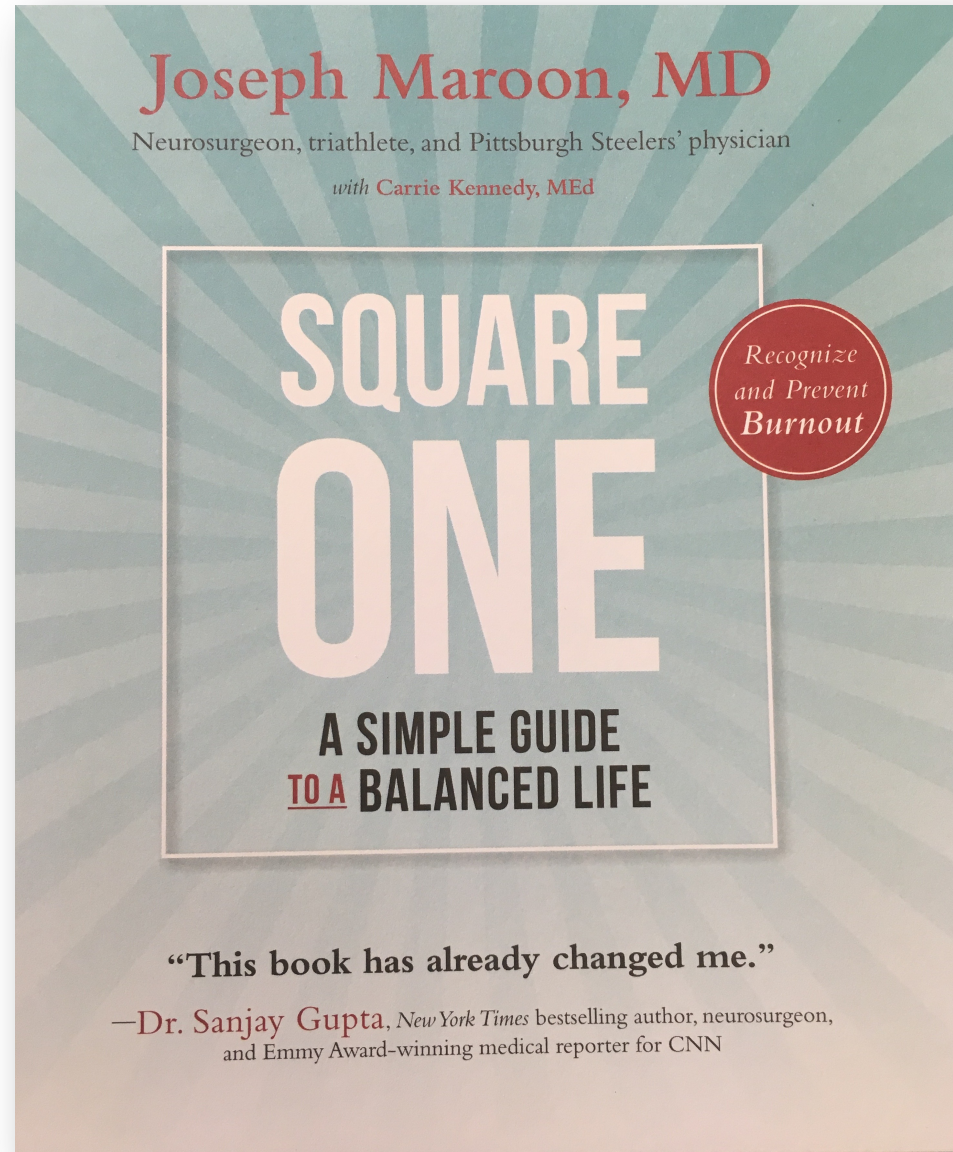
- Physical and Mental Health
- Relationships
 - God
 - Family
 - Friends/Colleagues
- Carpe diem

*Carpe
Diem*

The Long and
the Short of it!!

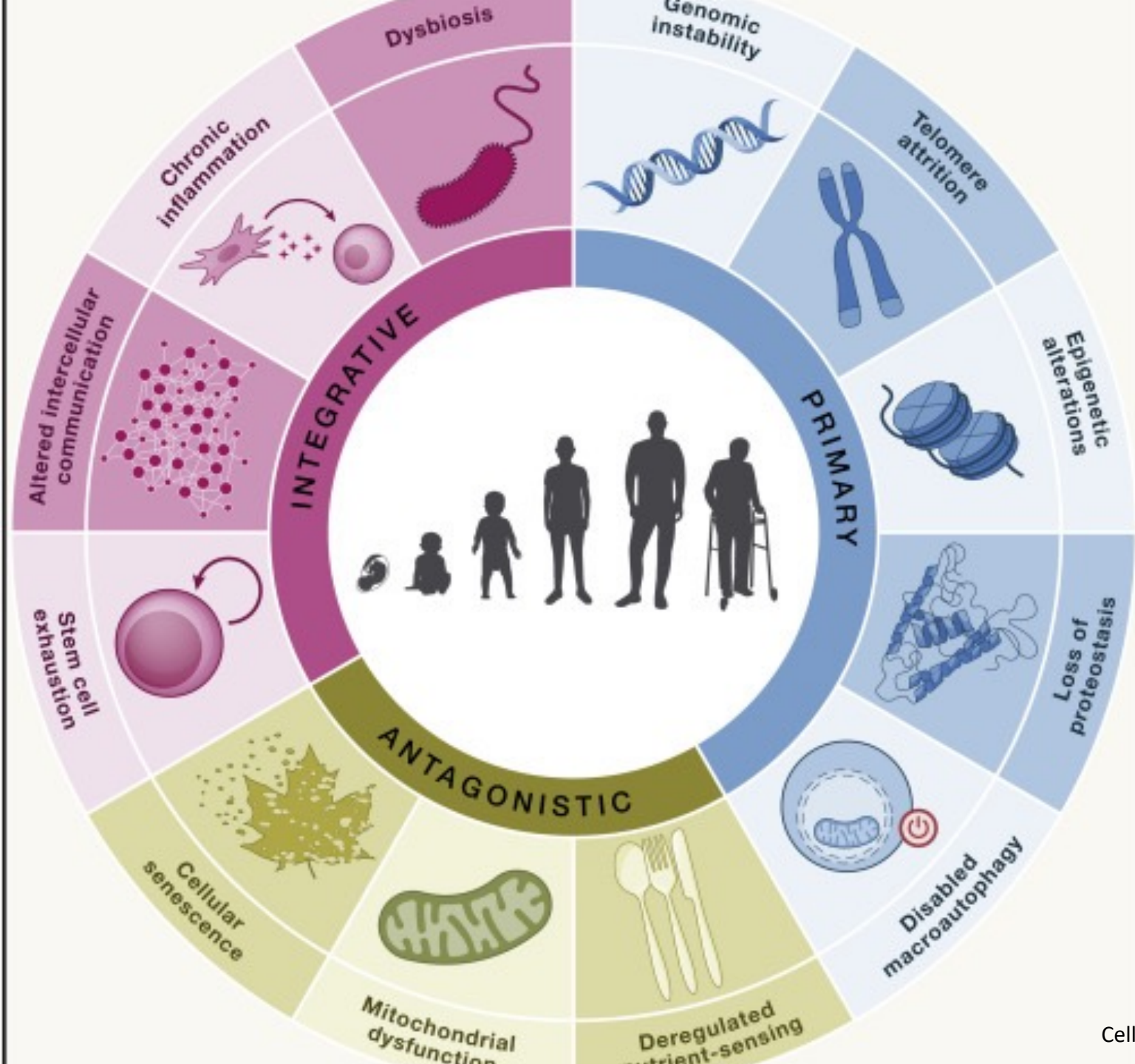


***Thank
You***



www.maroonsquareone.com

End of slide
presentation



‘Biological hallmarks’ of ageing

What if we could halt
ageing even reverse it?

BBC THE MISSION THAT WILL CREATE ECLIPSES ON DEMAND

Science Focus

How to deal with
IMPOSTOR SYNDROME

We may finally know
HOW THE PYRAMIDS WERE BUILT

Secrets of
THE LIVING FOSSILS

A CURE FOR AGEING

HOW MEDICINE IS TACKLING THE FINAL FRONTIER OF HEALTH



IN THIS ISSUE

Health

Why we should abolish
Daylight Saving Time

Climate

The Atlantic Ocean currents
on the verge of collapse

Space

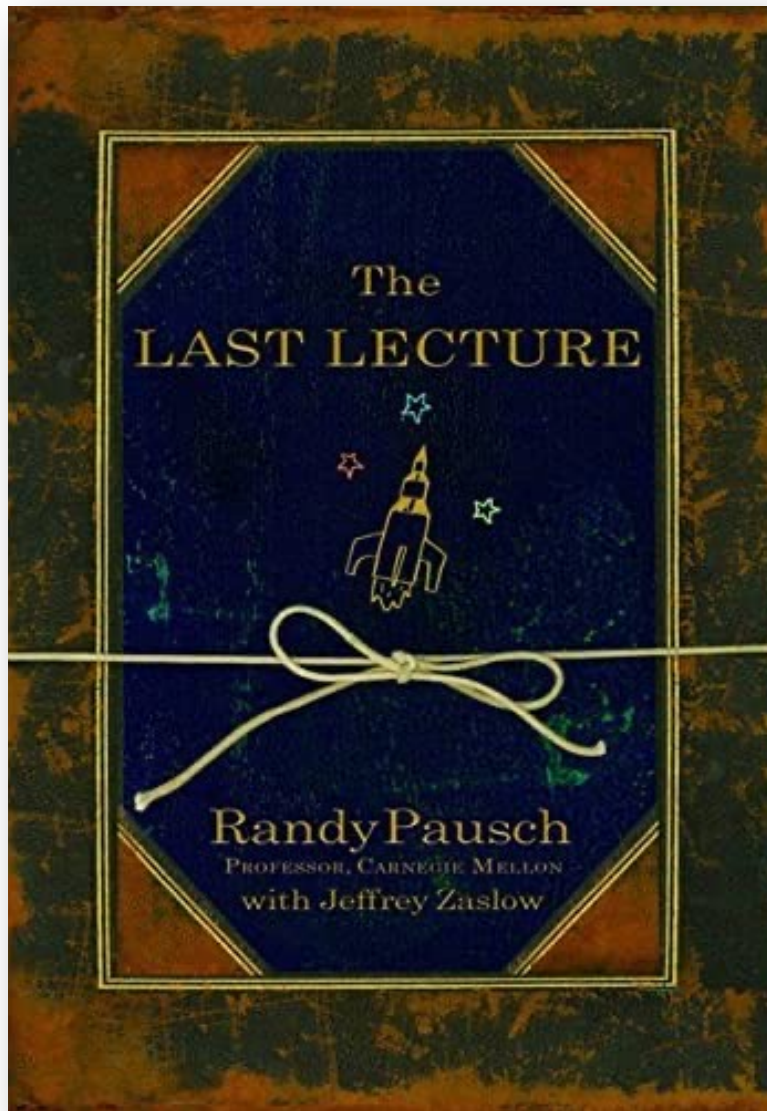
The UFO hurtling
across our Galaxy

How to Die Young- As Late as Possible

The Secret to a Balanced Life

Joseph C. Maroon, MD, FACS

Professor and Heindl Scholar in Neuroscience
University of Pittsburgh
Consultant to the Pittsburgh Steelers and
WWE



Randy Pausch, PhD 1960 – 2008

Professor and Computer scientist who taught
the “Building Virtual Worlds” at Carnegie
Mellon University from 1997 to 2007

What wisdom would you impart to the world
if you knew it was your last chance—Sept. 2007

The Final Message

The importance of
overcoming obstacles

Of enabling the dreams of
others

When connected to others,
we become better people

Carpe Diem--seize every
moment.