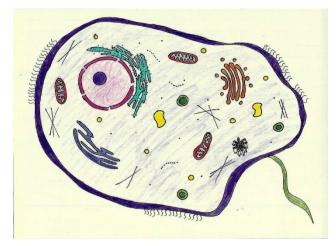


**Intestinal Cells** 

Kidney Cell



# Microglia are...

- The *macrophages* of the brain's immune system (WBC's that "EAT" foreign invaders)
- Critical to a specialized brain process called microglial pruning:
  - they gobble up "old" synapses, helping to resculpt the brain by eliminating unwanted connections
- Common immune cells in your brain that can over-react to environmental stressors, concussions, and other life traumas as *adverse inflammatory trigger events*
- This over-reaction can trigger excessive brain inflammation, neurodegenerative disorders, and psychological distress (anxiety, depression, bi-polar symptoms) and possibly brain cancers
- Now thought to offer to a revised understanding of mental illness, neurodegenerative disorders, (think MS or Parkinson's), cognitive decline (think Alzheimer's), and brain cancer.
- This new scientific perspective has only emerged in the last 10 years...relatively unknown!
- Currently the internet lists 168,000 "microglial" research articles

# Microglia = immune cells in the brain "Our Brain's *First Responders*"



#### Common Triggers

- 1. Infection...... Bacteria, viruses, fungi, amoeba, Lyme
- 2. Toxins......Glyphosate, Drug overdoses, snake bites, etc.
- 3. Physical Trauma...... Concussion, extreme heat, strokes, hypoxia, seizures
- 4. Psycho-Social Trauma....... Threats, worries, fears, anxiety, depression, bipolar, loss
- 5. **Deprivation of......** Sleep, nutrients, sun, fellowship, exercise, fun, play, work
- 6. Pseudo-nutrients......Excess sugar, oxidized seed oils, non-whole-synthetic foods, alcohol

#### How Microglia **Function in Your Brain**

**Activated** Lymphocytes Recruit Additional Microglial Cells to **Activated Status** 

Activates Nearby Lymphocytes

Secretion of ROS

> Microglial Cell

Microglial

**STRESS** Cell Inflammation Resting

Infection **TRAUMA** 

**Toxicity** 

Active !!!

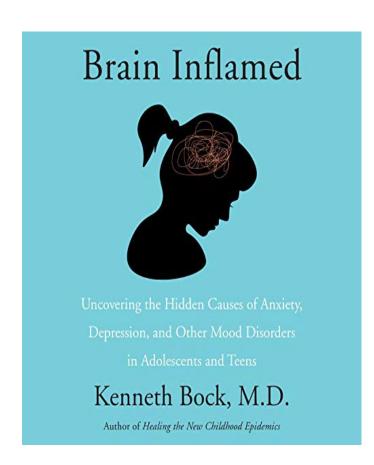
Acts like a Macrophage

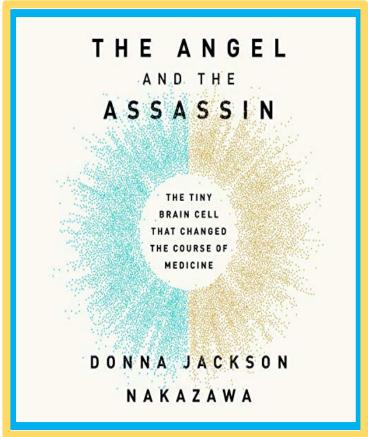
Antigen Presentation of DEBRIS

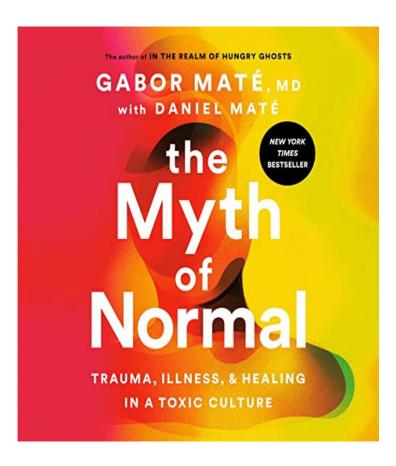
**Phagocytosis** of cellular DEBRIS including any injured neurons

Account for 10-15% of brain cells

## Books That Portray "Microglial Madness"







# How Do Microglia Respond to a Concussion?



- Concussion! -- Our first thoughts go to military and football players:
  - Common occurrence of TBIs Traumatic Brain Injuries
  - Cause a high incidence of CTE Chronic Traumatic Encephalopathy
  - A single "moderate" TBI has been shown to cause inflammation to brew in the brain for years
- CTE can lead to memory loss, depression, confusion, and dementia, even many years down the road!

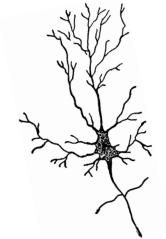
#### Five Key Points Regarding Microglial Madness

- 1. The "blood brain barrier" does NOT protect the brain from autoimmune dysfunction and brain inflammation.
- 2. Our "Second Brain" is the GUT. Inflammation in the gut is typically associated (if not causative) of inflammation in the brain.
- Inflammation in the brain is present in MOST if not ALL "psychiatric" illness.
- 4. The "abnormal neurotransmitters" theory of mental illness is rapidly losing ground in favor of "brain inflammation."
- 5. Microglial Madness has broad societal implications!

# To Recap Microglial Madness:

How Stress, Concussions, and Life Traumas

Can Trigger Chronic Brain Inflammation

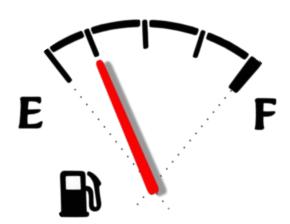


- Emerging science shows a link between the malfunction of a common immune cell in your brain and the rising incidence of chronic stress, concussions, and life traumas as <u>trigger events</u> for inflammation in your brain.
- This inflammation is too commonly misdiagnosed as strictly a mental health issue such as chronic anxiety and/or depression, when in fact, it is <u>bio-psycho-social</u> in origin.
- Over time, if left untreated, it can progress to more severe brain diseases such as Parkinson's, dementia, and possibly cancer.

# Real Health

The Real Causes
of Chronic Illness





RiordanClinic.org

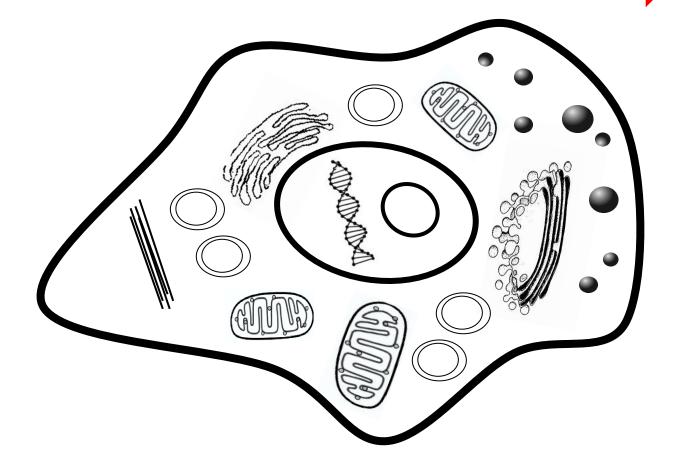
# Conquer Microglia Madness... ...with Whole Life Healing

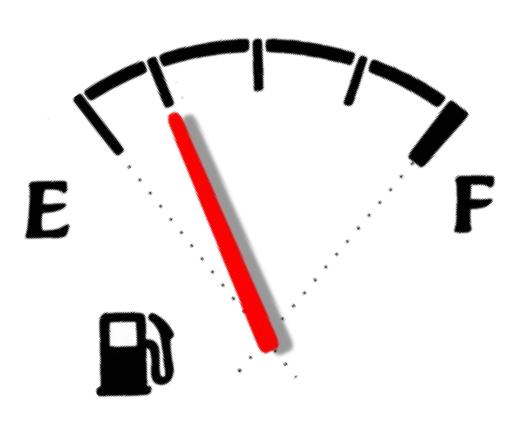
- Strive for Good "Connectivity"
- Stress & Trauma Repair
- Sleep Optimization
- Exercise Regularity
- Food as Medicine

- Detoxification Strategies
- Targeted Supplementation
- Nutrigenomic Awareness
- Microbiome Repair
- Fix Low Cellular Reserves

# Fix Low Cellular Reserves

Microglia are cells!





## Orthomolecular Medicine Pioneers

James Lind

Albert Szent-

Gyorgyi

Irwin Stone

Abram Hoffer

Linus Pauling

Fredrick Klenner

**Lendon Smith** 

Claus Jungeblut

William McCormick

**Ewan Cameron** 

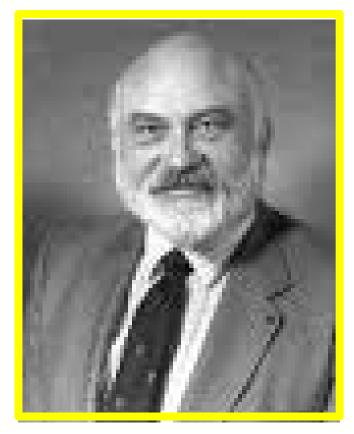
**Robert Cathcart** 

**Hugh Riordan** 



# Dr. Hugh Riordan (founder)

Health is having the (cellular) reserve to do what you need to do and want to do... with energy & enthusiasm.



"Measure, Measure, Measure..."



#### **Brain Health Profile**

Amino Acids

**Antioxidants** 

Methylation B's

**Fatty Acids** 

1. Glutamine

1. Vitamin A

1. Vitamin B1

2. Taurine

- 2. Vitamin C, plasma
- 2. Vitamin B3

2. Omega 3

3. Omega 9

1. Omega 6

- 3. 10 Essential AA
- 3. Vitamin C, urine
- 3. Folate

Zinc & Pyrroles

#### Minerals

5. Vitamin D

4. Vitamin E

5. Vitamin B6

4. Vitamin B5

2. Magnesium

1. Selenium

6. Beta Carotene

6. Vitamin B12

- 1. Zinc
- 2. Urine Pyrroles

Chem Profile CoQ10 Lipid Profile CRP-hs Homocysteine

<u>Special Offering – The Brain Health Profile is available for purchase by TODAY's ATTENDEES ONLY!</u>



#### LifeCare Hormones

#### Thyroid Profile

- 1. Free T3
- 2. Free T4
- 3. Thyroid Signaling Hormone

#### **Anti-Aging Hormones Profile**

- 5. Testosterone
- 6. Estradiol
- 7. Progesterone
- 8. DHEA (adrenal)



316.682.3100



#### **Basic Wellness**

#### Thyroid Profile

- 1. Free T3
- 2. Free T4
- 3. TSH

#### Two Super Nutrients

- 1. Vitamin D
- 2. Magnesium

#### BioChem Check-up

- 1. CBC
- 2. CRP-hs
- 3. Lipid Profile
- 4. Chemistry Profile
- 5. Hemoglobin A1c
- 6. Estimated AverageGlucose



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## Advanced Wellness

#### Thyroid Profile

- 1. Free T3
- 2. Free T4
- 3. TSH

#### **Super Nutrients**

- 1. Vitamin D
- 2. Magnesium
- 3. Coenzyme Q10

#### BioChem Check-up

- 1. CBC
- 2. CRP-hs
- 3. Lipid Profile
- 4. Chemistry Profile
- 5. Hemoglobin A1c
- 6. Estimated AverageGlucose

#### Methylation B's

- 1. Vitamin B6
- 2. Vitamin B12
- Vitamin A 3. Folate
- 2. Vitamin C, plasma
- 3. Vitamin C, urine Fatty Acids
- 4. Vitamin E

Antioxidants

5. Beta Carotene

#### 1. Omega 6

- 2. Omega 3
- 3. Omega 9



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### **Nutrition Profile**

#### Amino Acids

#### 1. Glutamine

2. Taurine

#### **Phytonutrients**

- 1. Lutein
- 2. Lycopene

#### Zinc: Copper Ratio

- Zinc (RBC)
- 2. Copper (RBC)

#### **Antioxidants**

- 1. Vitamin A
- 2. Vitamin C, plasma
- Vitamin C, urine 3. Folate
- Vitamin E
- Beta Carotene

#### **Added Minerals**

- 1. Selenium (RBC)
- Manganese (RBC)
- Chromium (serum)
- K/Na Ratio

#### Methylation B's

- 1. Vitamin B6
- 2. Vitamin B12

#### Added B-Vitamins

- 1. B1
- 2. B2
- B3
- 4. B5

#### Fatty Acids

- Omega 6
- Omega 3
- Omega 9

#### Chemistry

**Profile** 

## Mega Profile = Everything Plus...

Bone Minerals All Amino Acids

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Methylation B's

**Lipids Panel** 

1. Boron

2. Strontium

- 1. 8 Essential
  - 2. 12 Conditional
  - 3. Glutamate
  - 4. Taurine

- 1. Vitamin B6
- 2. Vitamin B12
- 3. Folate
- 4. Homocysteine
- 5. Pyrroles

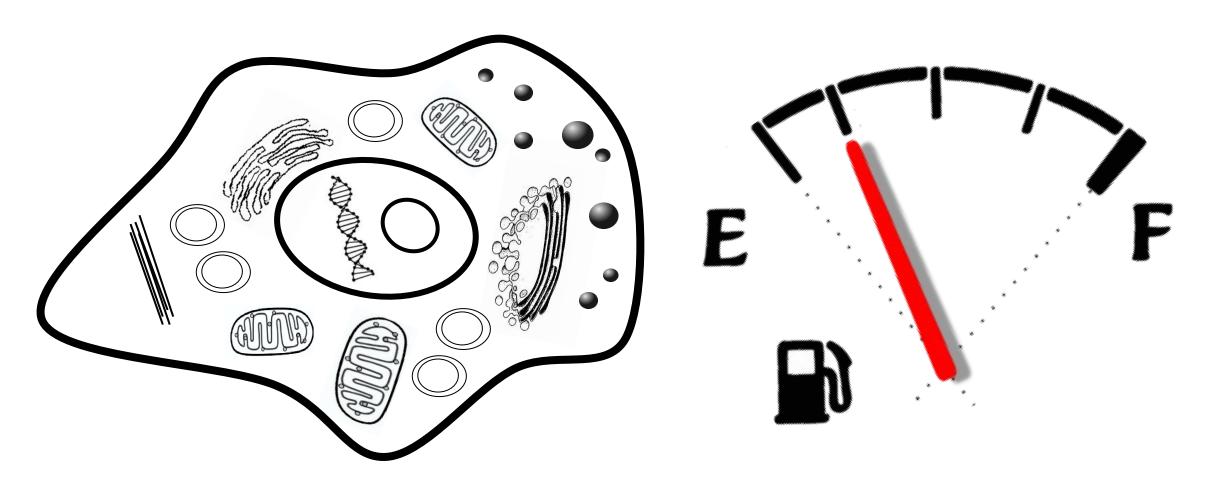
- 1. Cholesterol
- 2. Fatty Acids
- 3. HDL
- 4. LDL
- 5. Lipoprotein (a)

Thyroid Panel

Hormone Panel

Check-up Testing

# Fix Low Cellular Reserves



# Real Health Questions?





RiordanClinic.org