

A top-down view of various healthy foods scattered on a white wooden surface. In the top left, there are several pecans and a piece of salmon. In the top center, there are almonds, hazelnuts, and a pile of flax seeds. In the top right, there is a whole cucumber and some green peas. In the bottom left, there are red kidney beans and yellow capsules. In the bottom center, there are soybeans and a pile of chia seeds. In the bottom right, there are walnuts.

Unhealthy Nutritional Patterns and Other Problematic Lifestyle Practices and Severe Mental Illness: A Behavioral Health, Lifestyle Medicine, and Nutritional Neuroscience Perspective

Jerrod Brown, Ph.D., M.A., M.S., M.S., M.S.

PRESENTER'S BIOGRAPHY

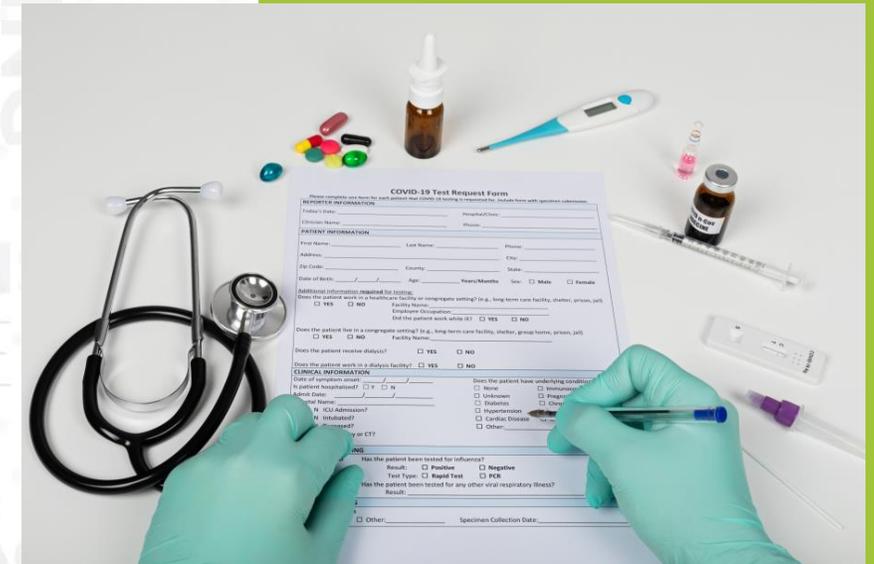
Jerrod Brown, Ph.D., M.A., M.S., M.S., M.S., is a professor, trainer, researcher, and consultant with multiple years of experience teaching collegiate courses. Jerrod is also the founder and CEO of the American Institute for the Advancement of Forensic Studies (AIAFS). Jerrod has also provided consultation services to a number of caregivers, professionals, and organizations pertaining to topics related to autism spectrum disorder (ASD), fetal alcohol spectrum disorder (FASD), confabulation, suggestibility, trauma and other life adversities, alexithymia, executive dysfunction, criminal recidivism, traumatic brain injury (TBI), and youth firesetting. Jerrod has completed four separate master's degree programs and holds graduate certificates in Dyslexia, Medical Biochemistry, Exercise Prescription, Neuroscience and the Law, Neuropsychology, Autism Spectrum Disorder (ASD), Other Health Disabilities (OHD), and Traumatic-Brain Injuries (TBI). In 2021, Jerrod completed a post-doctoral certificate in Leadership and Organizational Strategy from Walden University and a Professional Certificate in Forensic Psychology from San Diego State University Global Campus. In 2023, Jerrod completed a diabetes care and education certificate from Central Arizona College. Currently, Jerrod is pursuing his fifth master's degree in Applied Clinical Nutrition from Northeast College of Health Sciences. Jerrod has also conducted over 300 workshops, webinars, and on-demand trainings for various organizations and professional and student audiences. Jerrod has published several articles and book chapters, and recently, co-edited the book *Forensic Mental Health: A Source Guide for Professionals* (Brown & Weinkauff, 2018) with Erv Weinkauff. Jerrod has also been quoted in various magazines, newspapers, and other professional outlets. Jerrod is also regularly featured on several national and international podcast programs.



Email: Jerrod01234Brown@live.com

SOME OF MY CERTIFICATIONS AND OTHER CREDENTIALS

- Lifestyle Medicine Certification. Evidence in Motion, LLC..
- Certified Functional Nutrition Counselor (CFNC). Functional Nutrition Alliance.
- Tobacco Treatment Specialist Certification. Mayo Clinic Nicotine Dependence Center Rochester, Minnesota.
- Executive Functions Consultant (EFC). Sensational Brain LLC.
- Certified Digestive Health Specialist. Institute of Transformational Nutrition.
- Gut Health Specialist Certification. Holistic Wellness Coaching Academy.
- Holistic Health Coach Certification. Holistic Wellness Coaching Academy.
- Autism Direct Support Certification. Autism Society of Minnesota.
- Certified Fetal Alcohol Spectrum Disorders (FASD) Trainer. Great Lakes FASD Regional Training Center UW Department of Family Medicine.
- Youth Firesetter Prevention/Intervention Specialist. Minnesota Fire Service Certification Board.
- Certified Sleep Science Coach. Spencer Institute.
- Applied Suicide Intervention Skills Training (ASIST) Certification.
- Suicide Alertness for Everyone (safeTALK) Certification.
- Integrative Adult Sleep Coach Certification Program. A 12-month, in-depth, comprehensive training program.
- Certificate Program in Traumatic Stress Studies. Offered through the Trauma Research Foundation, in conjunction with PESI, Inc.
- Professional Certification in Trauma & Resilience: Level One. Florida State University.



GRADUATE AND PROFESSIONAL CERTIFICATES

- Certificate: **Diabetes Care and Education Certificate** (Central Arizona College)
- Post Graduate Certificate: **Autism Spectrum Disorder** (Hamline University)
- Post Graduate Certificate: **Other Health Disabilities** (Hamline University)
- Post Graduate Certificate: **Traumatic Brain Injury** (Hamline University)
- Post-Doctoral Bridge to Management Certificate program. Specialization: **Leadership and Organizational Strategy** (Walden University)
- Professional Certificate in **Forensic Psychology** (San Diego State University Global Campus)
- Graduate Certificate: **Neuropsychology** (Ball State University)
- Graduate Certificate: **Neuroscience and the Law** (Michigan State University)
- Graduate Certificate: **Exercise Prescription** (University of Connecticut)
- Graduate Certificate: **Medical Biochemistry** (The University of Mississippi Medical Center)



Training Objectives

- Define severe mental illness and poor nutritional patterns and describe how a broad understanding of this information can assist in providing care.
- Define behavioral health, nutritional neuroscience, and lifestyle medicine.
- Learn and understand the neurological, biological, emotional, social, and environmental risk factors for severe mental illness.
- Explain scientifically based research finding and how it can be used to inform the development of a holistically-informed approach to intake, screening, and intervention.

INTRODUCTION AND OVERVIEW





Lifestyle Medicine

Lifestyle medicine focuses on altering a client's lifestyle to prevent and treat chronic conditions (e.g., obesity and type 2 diabetes). This can include the utilization of behavioral, emotional, environmental, and medical principles to assist clients. Lifestyle medicine emphasizes six pillars: (a) diet focused on whole foods and plants, (b) regular physical activity, (c) healthy and consistent sleep, (d) stress management, (e) avoidance of drugs and alcohol, and (f) positive social relationships.

BEHAVIORAL HEALTH



Behavioral health is an umbrella term that includes mental health and substance abuse conditions, life stressors and crises, stress-related physical symptoms, and health behaviors. Behavioral health conditions often affect medical illnesses



INTEGRATED BEHAVIORAL HEALTH

“Integrated behavioral health care blends care in one setting for medical conditions and related behavioral health factors that affect health and well-being. Integrated behavioral health care, a part of “whole-person care,” is a rapidly emerging shift in the practice of high-quality health care. Integrated behavioral health care is sometimes called behavioral health integration,” “integrated care,” “collaborative care,” or “primary care behavioral health.” No matter what one calls it, the goal is the same: better care and health for the whole person.”

<https://integrationacademy.ahrq.gov/about/integrated-behavioral-health>

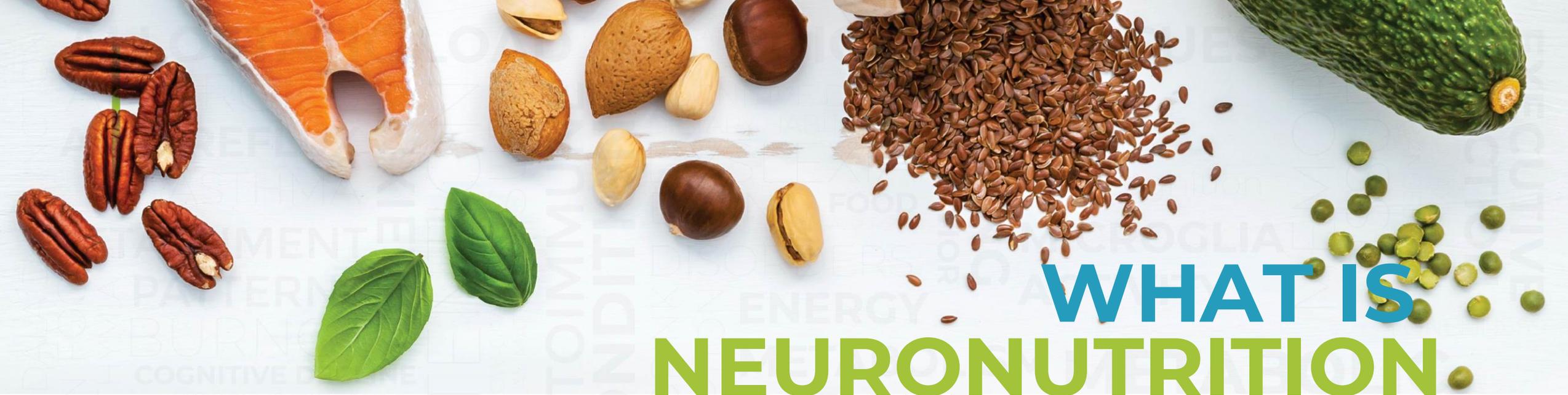


NEURONUTRITION

NUTRITIONAL NEUROSCIENCE

- Brain health
- Cognition
- Neurodevelopment
- Neurochemistry
- Behavior
- Physiology and metabolism of neurons
- Neurotransmitters and their receptors
- Hormonal regulations.
- Food agents and supplements (both macro and micro)
- Phytochemicals
- Antioxidants
- Dietary supplements
- Food additives





Multidisciplinary in nature, neuronutrition draws from:

- Holistic approaches
- Mind-body approaches
- Functional medicine approaches
- Neurobiopsychosocial approaches

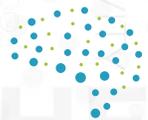
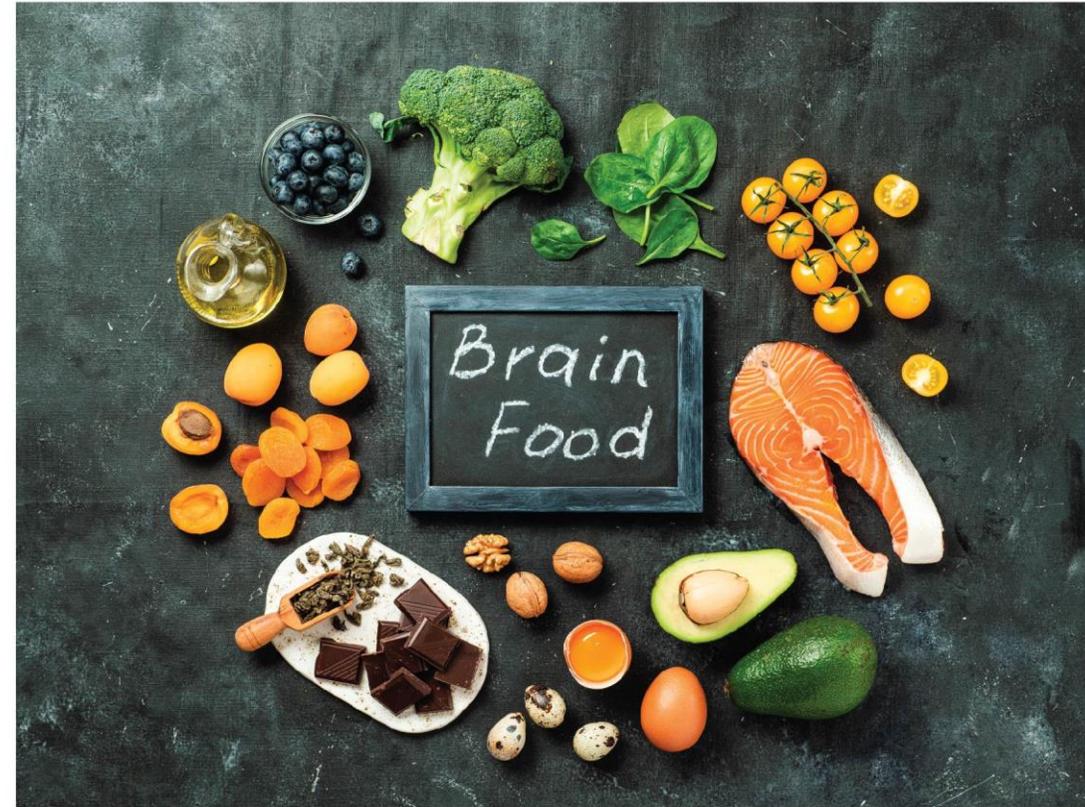
Neuronutrition incorporates information from diverse domains including but limited to:

- Biology
- Genetics and epigenetics
- Physiology
- Environment
- Home settings
- Social settings
- Behavior
- Dietary
- Substance use

POTENTIAL OUTCOMES OF NEURONUTRITION

Potential outcomes of neuronutrition include

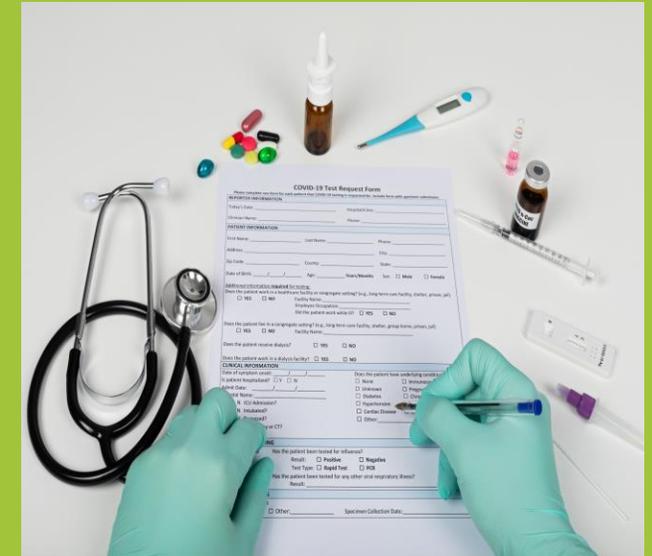
- Prevention of neurological conditions
- Brain health preservation and enhancement
- Balanced and nutritious diet
- Encouragement of mental health
- Strengthening of the immune system
- Improved behavioral health functioning



BIOLOGICAL DESPAIR

“ ... biological despair occurs when the body's stress reactive systems no longer function homeostatically and show signs of dysregulation or depletion, which constitutes a biological correlate of, and sometimes a basis for, cognitive, emotional, and behavioral despair.”

Shanahan, L, Hill, S. N., Gaydos, L. M., Steinhoff, A., Costello, E. J., Dodge, K. A., ... & Copeland, W. E. (2019). Does despair really kill? A roadmap for an evidence-based answer. American journal of public health, 109(6), 854-858.

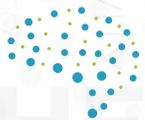


Patients with Major Mental Illnesses Compared to the General Population

- Increased prevalence of overweight and obesity
- Hyperglycemia
- Dyslipidemia
- Hypertension
- Smoking
- Substantially greater mortality
- Poverty
- Reduced access to medical care
- Adverse metabolic side effects associated with psychotropic medications



Li, C., Zhan, G., Rao, S., & Zhang, H. (2014). Metabolic syndrome and its factors affect cognitive function in chronic schizophrenia complicated by metabolic syndrome. *The Journal of Nervous and Mental Disease*, 202(4), 313-318.



SCREENING CONSIDERATIONS



THREATS TO EMOTIONAL HEALTH

- Alexithymia
- Attachment problems
- Blood sugar dysregulation
- Body pain
- Burnout
- Circadian Rhythm Misalignment
- Confusion
- Digestive health issues
- Emotional invalidation
- Environmental toxins
- Emotional suppression
- Executive dysfunction
- Fear
- HPA axis dysfunction
- Inflammation



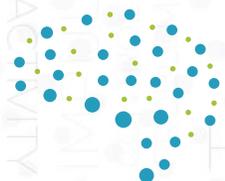
NEURONUTRITION

- Irritability
- Loneliness
- Low self-worth
- Mental illness
- Nutritional deficits
- Overcommitting
- Over-exercising
- Pessimism
- Poor sleep
- Rumination
- Sedentary behaviors
- Sensory overload
- Shame
- Stress
- Trauma
- Under or over-eating
- Unresolved conflict
- Worry



SCREEN FOR MODERN LIFESTYLE HABITS

- Exposure to unhealthy diets
- Being sedentary with prolonged sitting times
- Irregular times of eating
- Skipping meals
- Chronic psychological stress
- Emotional eating
- Food consumption late at night



FACTORS CONTRIBUTING TO POOR HEALTH

LACK OF INSURANCE

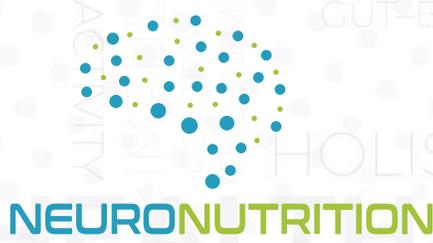
UNSAFE LIVING CONDITIONS

POVERTY



CRIME

ENVIRONMENTAL CONTAMINATION



DeHaven, M.J., Gimpel, N.A., Gutierrez, D., Kitzman-Carmichael, H., & Revens, K. (2020). Designing health care: A community health sciences solution for reducing health disparities by integrating social determinants and the effects of place. *Journal of Evaluation in Clinical Practice*, 26(5), 1564-1572.

ESTABLISHED BARRIERS TO BEHAVIORAL HEALTH CARE



- 1 Cost of treatment
- 2 Geographic distance to nearest provider
- 3 National provider shortages
- 4 Poor physical health
- 5 Privacy concerns
- 6 Stigma
- 7 Time constraints during weekday hours
- 8 Transportation challenges
- 9 Challenges finding high quality care
- 10 Uncertainty about how treatment could help

ADVERSE ENCOUNTERS WITH HEALTHCARE PROFESSIONALS

JUDGMENTAL

1

DISPARAGING

2

SCRUTINIZING

3

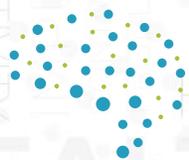


4

DISEMPOWERING

5

DEFICIENT-CARE



NEURONUTRITION

Renbarger, K M., Shieh, C., Moorman, M, Latham-Mintus, K., & Draudker, C. (2020). Health care encounters of pregnant and postpartum women with substance use disorders. Western journal of nursing research, 42(8), 612-628.

INADEQUATE COPING SKILLS

- Inability to manage stressful situations
- Inability respond to stressful situations
- Inability to make decisions surrounding a stressful situation
- Poor self-concept
- Poor choice making
- Lack of problem-solving skills
- Lack of support
- Self-criticism
- Substance abuse
- Being perfectionistic
- Frequent feelings of envy or jealousy
- Adjusting one's persona to fit in with others
- Self-sabotage
- Fear of rejection
- Hiding personal faults



SOCIAL EXCLUSION: ASSOCIATED CONSEQUENCES



- Feelings of meaninglessness
- Mental health problems
- Sense of dehumanization
- Reduced happiness
- Increased depression and aggression
- Academic deficiencies

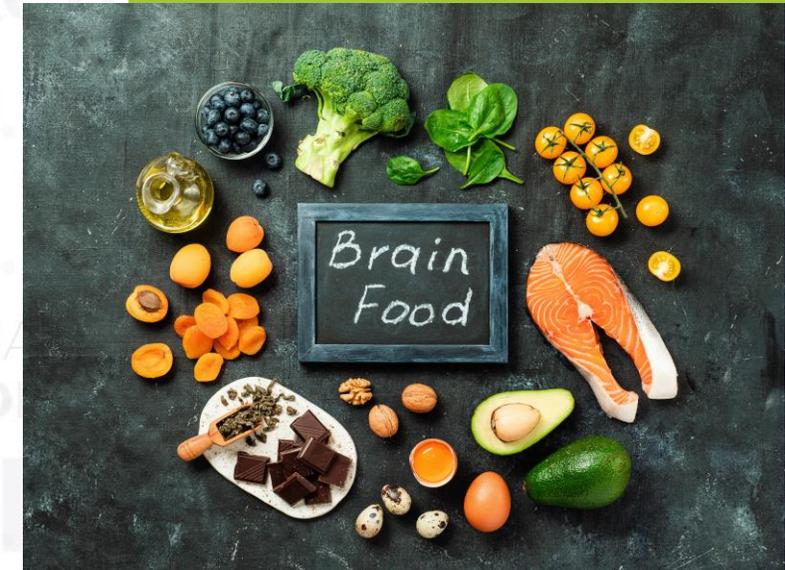
- Negative affect
- Cognitive impairments
- Self-regulation problems
- Riskier decision-making
- Alcohol addiction
- Self-defeating behaviors
- Unhealthy behaviors



ALEXITHYMIA AND POOR HEALTH OUTCOMES

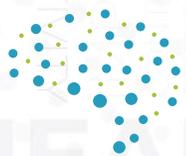
Alexithymia is likely to affect health in different ways as follows:

- (1) by influencing affective states, e.g., altered eating-related behavior
- (2) through somatosensory amplification leading to low tolerance to painful stimuli (e.g., chronic pain)
- (3) through a post-traumatic shutdown of emotions (e.g., acute reactions to illness)
- (4) by altered autonomic, endocrine, and immune activity leading to tissue damage (e.g., increased vulnerability to inflammatory processes)



Kooiman et al., 2000; Lumley et al., 2007

Carrozzino, D., & Porcelli, P. (2018). Alexithymia in gastroenterology and hepatology: a systematic review. *Frontiers in psychology*, 9, 470.



A COMPREHENSIVE LIFESTYLE AND SOCIAL HISTORY

- Current and past physical activity levels
- Current ability to perform physical activity
- Preferences for physical activity options
- Intake of fruits, vegetables, processed foods, alcohol, and soft drinks
- Availability of fresh food
- Sleep history
- Cultural background
- Employment
- Family and home support
- Social networks
- Ability to pay for treatment
- Individual preferences and values regarding treatment



NEURONUTRITION

Ee, C., Lake, J., Firth, J., Hargraves, F., de Manincor, M., Meade, T., ... & Sarris, J. (2020). An integrative collaborative care model for people with mental illness and physical comorbidities. *International journal of mental health systems*, 14(1), 1-16.

FACTORS ASSOCIATED WITH POOR QUALITY DIETS

- Lack of knowledge about nutrition
- Lack of planning skills
- Lack of skills to select healthy foods
- Lack of skills to prepare healthy meals



PERCEIVED STRESS AND EATING BEHAVIORS

- Skipping meals
- Stress-eating
- Uncontrolled emotional eating
- Consuming higher energy portions



Harris, C L., Haack, S., & Miao, Z. (2022). Everyday discrimination is a stronger predictor of eating competence than food insecurity or perceived stress in college students amidst COVID-19. *Appetite*, 179, 106300.

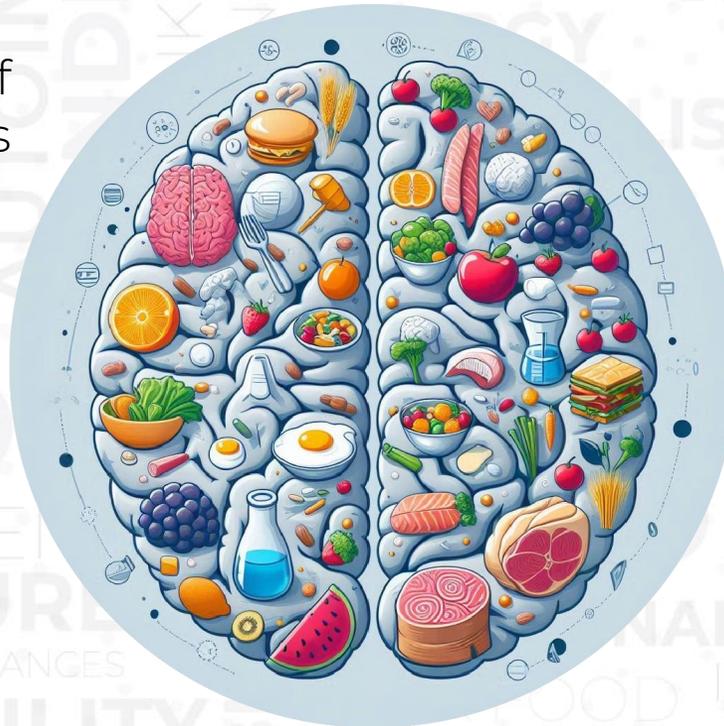
THE MAIN TRAITS OF THE WESTERN DIET

High consumption of saturated fats

High consumption of processed foods

High consumption of sugars

Low intake of fibers



High consumption of red meat

THE WESTERN DIET

A WD pattern rich in fats, sugar, and salt alters gut microbiota composition and is associated with ...

- Obesity
- Chronic inflammation
- Allergies
- Diabetes
- Autoimmune disorders
- Depression
- Metabolic syndrome
- Neuropsychiatric disorders



López-Taboada, I., González-Pardo, H., & Conejo, N. M. (2020). Western diet: implications for brain function and behavior. *Frontiers in Psychology, 11*, 2895.

Dietary Patterns High in Ultra-Processed Foods: Potential Adverse Consequences

Dietary patterns high in ultra-processed foods (and/or high fat/sugar) have recently been linked to

- 1 Mental distress
- 2 Various mental disorders
- 3 Diminished concern for future consequences



- 4 Impulsivity
- 5 Antisocial/aggressive behavior

JUNK FOOD ITEMS

The most consumed junk food items are

Bakery products

Beverages

Burgers

Sugar-sweetened drink



Chips

Noodles

Pizza

Caffeinated drinks



Mehar, P., Bera, R., Swamin, S., & Mishra, D. (2023). Composition of Common Junk Food Items and Their Contribution to the Dietary Requirement of Children and Adolescents. *Indian Pediatrics*, S0974-75591600-478-S0974-75591600-478

Excessive Dietary Sugar Intake: Associated Consequences

- Obesity
- Type-2 diabetes
- Cardiovascular disease
- Altered brain and behavioral functioning
- Poor self-regulation of food intake
- Impaired cognitive capacities



Yamazaki, M., Yamada, H., E., Ishikawa, H., Mizuno, G., Mukuda, T., ... & Munetsuna Ohashi K. (2018). Excess maternal fructose consumption impairs hippocampal function in offspring via epigenetic modification of BDNF promoter. *The FASEB Journal*, 32(5), 2549-2562



SUGAR SWEETENED BEVERAGE (SSB) CONSUMPTION: CONFOUNDING FACTORS

A marker of poor lifestyle habits

Ultra-processed food consumption

Overall poor diet quality

Western type diet

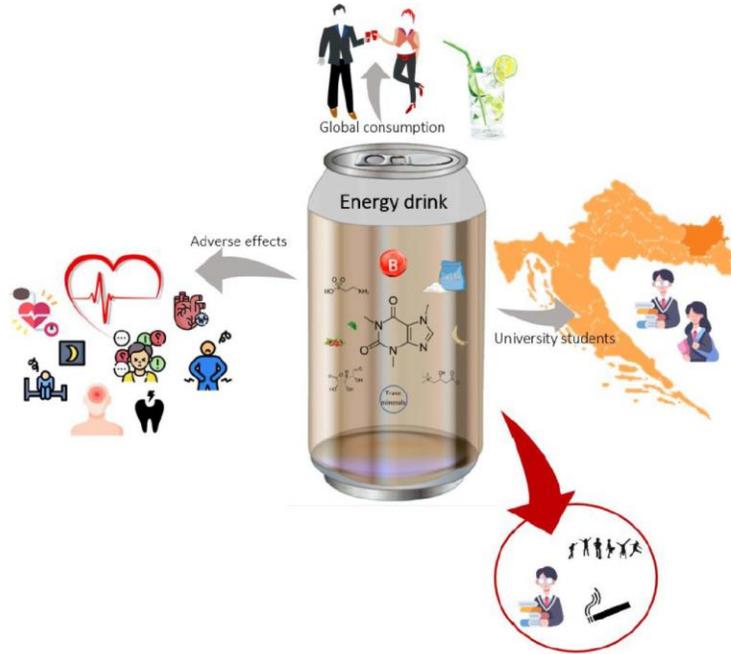
Smoking

Less exercise



ENERGY DRINK CONSUMPTION: ASSOCIATED CONSEQUENCES

Insomnia
Obesity
Mental health problems
Late bedtime
Short sleep
Unhealthy diet



Higher BMI
Lower BMI
Sedentary behaviors
Higher video game use
Higher screen time

LOW SELF-CONTROL AND

UNHEALTHY EATING HABITS

- Poor nutrition quality
- Low vegetable intake
- Low fruit intake
- High fast-food consumption

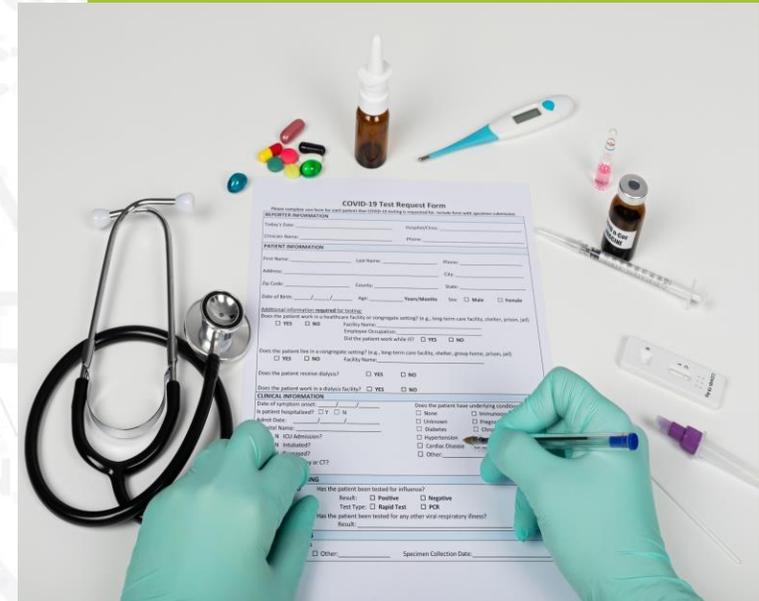


- High sweets consumption
- High salty snacks consumption
- High soda consumption



SOCIAL DETERMINANTS OF MENTAL HEALTH

- Discrimination and social exclusion
- Adverse early life experiences
- Low educational attainment
- Poor educational quality
- Educational inequality
- Poverty
- Income inequality
- Neighborhood deprivation
- Food insecurity
- Unemployment
- Underemployment
- Job insecurity
- Poor housing quality and housing instability
- Climate change
- Adverse features of the built environment
- Poor access to health care



POOR MENTAL HEALTH: CONTRIBUTING FACTORS

1 Lower capacity to implement lifestyle interventions

1

3 Social isolation
(often due to stigma)

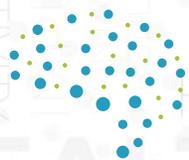
3

2 Lower patient activation and engagement

2

4 Low social capital

4



NEURONUTRITION

Ee, C., Lake, J., Firth, J., Hargraves, F., de Manincor, M., Meade, T., ... & Sarris, J. (2020). An integrative collaborative care model for people with mental illness and physical comorbidities. *International journal of mental health systems*, 14(1), 1-16.

POOR MENTAL HEALTH LITERACY

- Insurance literacy issues
- Internalized stigma
- Increased mental health symptoms
- Poor mental health awareness
- Increased functional impairments
- Increased caregiver burden



Tambling R.R., D'Aniello, C., & Russell, B. S. (2021). Mental health literacy: A critical target for narrowing racial disparities in behavioral health. *International Journal of Mental Health and Addiction*, 1-15.

DIETARY HABITS OF SMOKERS

Higher intake of energy

1

Higher intake of total fat

2

Higher intake of saturated fat

3

Higher intake of cholesterol

4

5

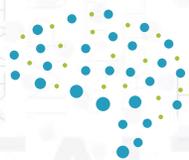
Higher intake of alcohol

6

Lower intake of antioxidant vitamins

7

Lower intake of fiber



ALCOHOL USE DISORDERS AND NUTRIENT DEFICIENCIES

Research has shown that subjects with AUD are deficient in or have inadequate intake of most nutrients, including:

Thiamine

Riboflavin

Niacin

B5

Pyridoxine

Folic acid

Selenium



Vitamin A

Vitamin C

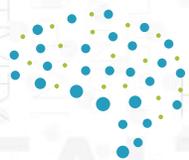
Vitamin D

Vitamin E

Vitamin K

Magnesium

Zinc



NEURONUTRITION

Jeynes, K. D., & Gibson, E. L. (2017). The importance of nutrition in aiding recovery from substance use disorders: A review. *Drug and alcohol dependence, 179*, 229-239.

MEDICAL NUTRITION THERAPY FOR INDIVIDUALS WITH CO-OCCURRING EATING AND SUBSTANCE USE DISORDERS

Assessment

Planning

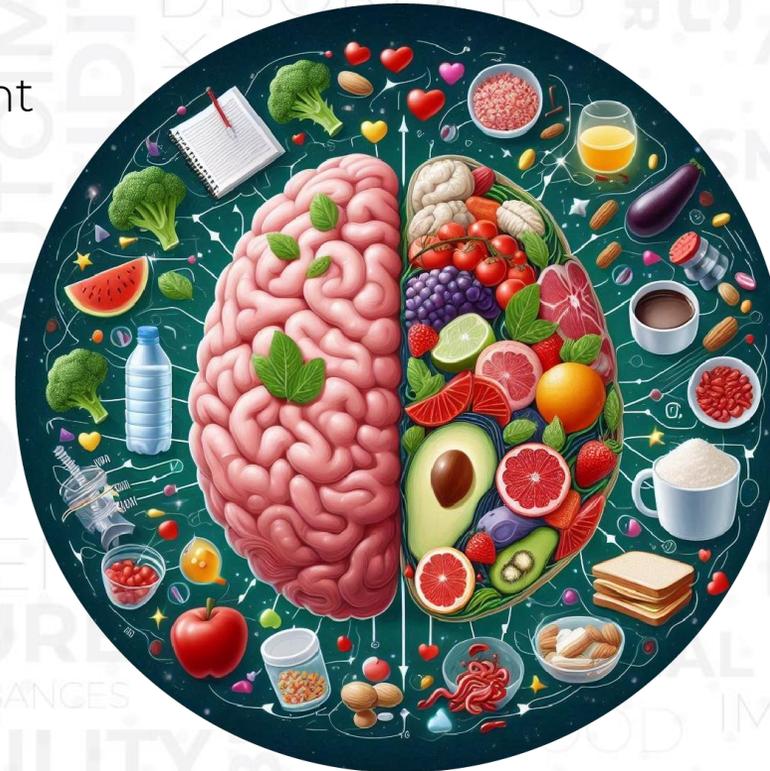
Nutrition intervention

Nutrition Counseling

Individual education

Meal planning

Monitoring of compliance



Wiss, D. A., & Waterhous, T. S. (2014). Nutrition therapy for eating disorders, substance use disorders, and addictions. *Eating disorders, addictions and substance use disorders: Research, clinical and treatment perspectives*, 509-532.

FACTORS HIGHLY PREVALENT AMONG INDIVIDUALS WITH SUBSTANCE USE DISORDERS

Disordered eating habits



Poor nutritional status

Poor dietary intake

Altered body composition

Whatnall, M. C., Skinner, J., Pursey, K., Brain, K., Collins, R., Hutchesson, M. J., & Burrows, T. L. (2021). Efficacy of dietary interventions in individuals with substance use disorders for illicit substances or illicit use of pharmaceutical substances: a systematic review. *Journal of Human Nutrition and Dietetics*, 34(6), 981-993.

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NUTRITIONAL FACTORS ASSOCIATED WITH DEPRESSION

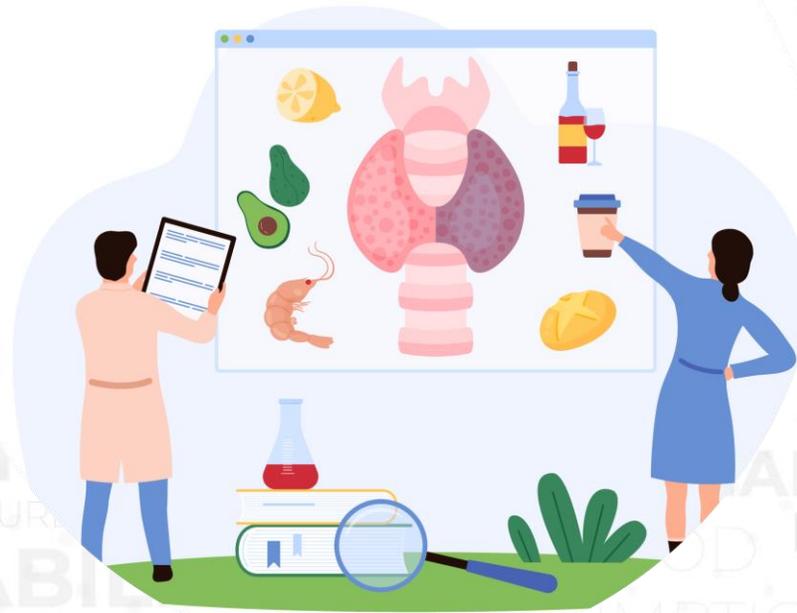
- The consumption of sweetened beverages

Processed foods

Sweetened desserts
Refined grains
Fried foods
Processed meats
High-fat dairy products

Processed pastries

Muffins
Doughnuts
Croissants
Other commercial baked goods



Gangwisch, J.E., Hale, L., Garcia, L., Malaspina, D., Opler, M.G., Payne, M.E., ... & Lane, D. (2015). High glycemic index diet as a risk factor for depression: analyses from the Women's Health Initiative. *The American journal of clinical nutrition*, 102(2), 454-463.

FACTORS THAT CAN NEGATIVELY IMPACT COGNITION

- Hypertension
- Dyslipidemia
- Midlife obesity
- Diabetes mellitus
- Smoking
- Physical inactivity
- Depression
- Low educational level



Skurvydas, A., Lisinskiene, A., Majauskiene, D., Valanciene, D., Dadeliene, R., Fatkulina, N., & Sarkauskiene, A. (2022). Do physical activity, BMI, and wellbeing affect logical thinking?. *International journal of environmental research and public health*, 19(11), 6631.



BRAIN UNHEALTHY FOODS

Butter
Margarine
Cheese
Red meat
Fast fried foods
Pastries and sweets
Animal fats



Hamburger
Sausages
French fries
Pizza Biscuit
Ice cream
Cake
Confections

Askarpour, M., Yarizadeh, H., Sheikhi, A., Khorsha, F., & Mirzaei, K. (2020). Associations between adherence to MIND diet and severity, duration and frequency of migraine headaches among migraine patients. BMC research notes, 13, 1-6.

INSOMNIA: IMPLICATIONS FOR POOR DIETARY PATTERNS AND HABITS

- Increased intake of high-energy drinks
- Increased intake of sugar-sweetened beverages
- Increased confectionery intake
- Lower consumption of fruits and vegetables
- A preference for fatty foods
- Altered behaviors such as skipping breakfast and eating outside the home
- Inadequate zinc, vitamin C, and total dietary fiber intakes



Arab, A., Karimi E., Garaulet, M., & Scheer, F.A (2024). Dietary patterns and insomnia symptoms: A systematic review and meta-analysis. Sleep Medicine Reviews, 101936.

CHRONONUTRITION AND SOCIAL MEDIA

Social media have also a great impact on chrononutrition and their role cannot be neglected. The impact of social media on chrononutrition can be multifaceted:

- Information dissemination
- Influence on eating habits
- Digital detox challenges
- Cultural influence
- Social jet lag



Carbone, S., & Pozzilli, P. (2024). Chrononutrition in cardiometabolic diseases: Current evidence and future perspectives. *Diabetes/Metabolism Research and Reviews*, 40(2), e3779.

DISORDERS THAT ARE INTIMATELY CONNECTED TO A DISRUPTION IN CIRCADIAN RHYTHMS

- Alcohol addiction
- Mood disorders
- Depression
- Pain
- Chronic inflammation
- Neurodegeneration
- Metabolic dysregulation and disease
- Sleep quality/disorders
- HPA axis dysregulation
- Elevated risk of atherosclerosis
- Diseases of the skin
- Tumorigenesis
- Increased risk of asthma
- Promotion of allergic diseases



Dieterl, R. R., & Dieterl, J. M. (2022). Using microbiome-based approaches to deprogram chronic disorders and extend the healthspan following adverse childhood experiences. *Microorganisms*, 10(2), 229.

SIGNS OF AN UNHEALTHY GUT

There are many signs of an unhealthy gut, which can often be misdiagnosed as something else:

- Digestive issues (bloating, gas, diarrhea or constipation)
- Weight changes
- Food sensitivities
- Fatigue
- Skin irritation
- Autoimmune conditions
- Hormonal imbalance



INTERVENTION CONSIDERATIONS



A HEALTHY DIET

A HEALTHFUL DIET IS



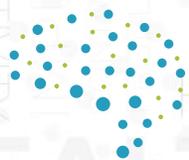
ADEQUATE

MODERATE

NUTRIENT DENSE

BALANCED

VARIED



NEURONUTRITION

NUTRITION COUNSELING AND INTERACTIVE EDUCATIONAL EXPERIENCES

- Grocery store tour
- Cooperative cooking
- Cafeteria meal
- Fitness trail walk
- Trip to a gym
- Practice selecting items from a menu—circle high-fat foods on a menu
- Simulations
- Interpret food labels—compare the labels of two similar products
- Jointly modify recipes (have client bring recipes)
- Create menus
- Measure and weigh portion sizes
- Analyze blood glucose records of previous clients
- Role play



Bauer, Kathleen D; Liou, Doreen. Nutrition Counseling and Education Skill Development (p. 160). Cengage Learning. Kindle Edition.

MEDITERRANEAN DIET

A Mediterranean diet can lead to changes in

Tryptophan metabolism

1

Cortisol-mediated stress response

3

Vagal activity

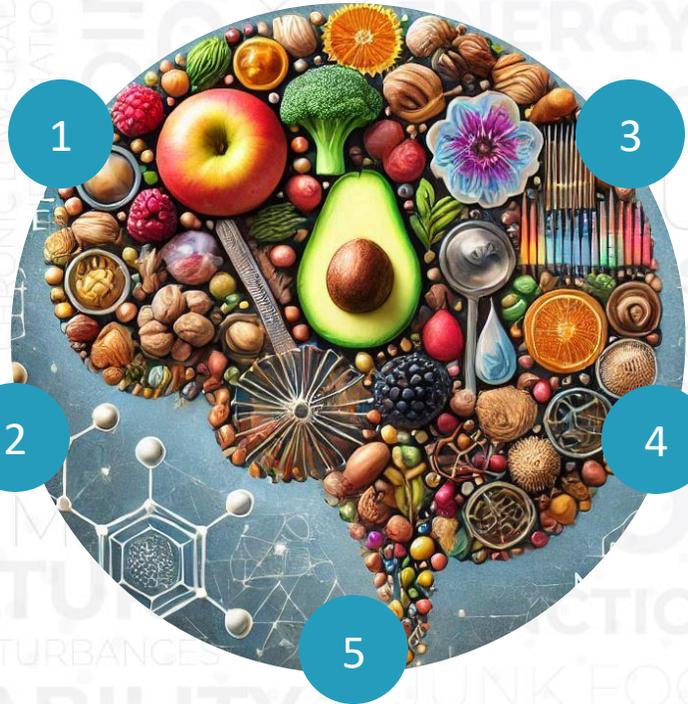
2

Microglia and neuroinflammation

4

Brain-derived neurotrophic factor (BDNF) activity

5



BREAKFAST CONSUMPTION: POSSIBLE BENEFITS

Cognitive benefits to children and adolescents

1

Creativity

2

Short-term memory

3

Arithmetic

4



5

Long-term memory

6

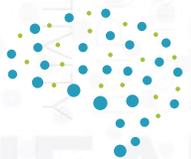
Improvements in attention

7

Mood

8

Behavior



NEURONUTRITION

Richards, G., & Smith, A. P. (2016). Breakfast and energy drink consumption in secondary school children: breakfast omission, in isolation or in combination with frequent energy drink use, is associated with stress, anxiety, and depression cross-sectionally, but not at 6-month follow-up. *Frontiers in Psychology*, 7, 106.

THERAPEUTIC LIFESTYLE CHANGES

Chapin & Russell-Chapin (2014), identified five of the most important Therapeutic Lifestyle Changes as...

NUTRITION

EXERCISE

WEIGHT MANAGEMENT

SCREEN TIME

SLEEP



LIFESTYLE FACTORS LIKELY TO INFLUENCE MENTAL HEALTH

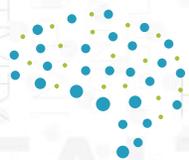
FINANCIAL STABILITY

TIME IN NATURE

PET OWNERSHIP

REDUCING
MATERIALISM

SOCIAL MEDIA AND
SMARTPHONE USE REDUCTION



NEURONUTRITION

THE SIX CORE FEATURES OF LIFESTYLE MEDICINE

REGULAR PHYSICAL ACTIVITY

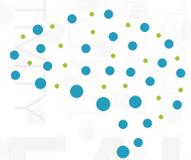
A WHOLE FOOD AND PLANT
PREDOMINANT DIET

RESTORATIVE SLEEP

STRESS MANAGEMENT

AVOIDANCE OF SUBSTANCE
ABUSE

POSITIVE SOCIAL
CONNECTION



NEURONUTRITION

PROMOTING PSYCHOLOGICAL WELLBEING

1 Self-esteem

2 Self-concept

3 Self-efficacy

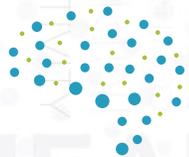
4 Self-image

8 Positive affect

7 Optimism

6 Happiness

5 Satisfaction with life



SOCIAL BELONGING: ASSOCIATED BENEFITS

Social belonging has been found to be associated with decreases in ...

Loneliness

Depression

Anxiety

Pain

Reduced likelihood of early
mortality

Sleep disruption

Hypertension

Fatigue

Cognitive dysfunction

Suicide



NEURONUTRITION

Slavich, G. M., Roos, L. G., & Zaki, J. (2022). Social belonging, compassion, and kindness: Key ingredients for fostering resilience, recovery, and growth from the COVID-19 pandemic. *Anxiety, Stress, & Coping, 35*(1), 1-8.

STRATEGIES TO REDUCE SEDENTARY BEHAVIORS IN ADULTS

- A personalized approach to motivation and behavior change
- Social support
- Goal setting
- Increases in exercise self-efficacy and control beliefs
- Self-management skills
- Self-regulation
- Action planning
- Promote positive affect
- Cognitive restructuring of negative and self-defeating attitudes and misconceptions



Lachman, M. E., Lipsitz, L., Lubben, J., Castaneda-Soeppa, C., & Jette, A. M. (2018). When adults don't exercise: Behavioral strategies to increase physical activity in sedentary middle-aged and older adults. *Innovation in aging*, 2(1), igy007.



BENEFITS OF ENGAGING IN PHYSICAL ACTIVITY

- Improved quality of life
- Reduces morbidity and premature mortality
- Improved overall health and well being among individuals impacted by chronic illnesses
- Reduced health care costs and utilization
- Weight reduction
- Improved cardiovascular health
- Improved cognitive health
- Improved mental health



Cashin, A., Potter, E., Stevens, W., Davidson, K., & Muldoon, D. (2008). Fit for prison: special population health and fitness program me evaluation. *International journal of prisoner health*, 4(4), 208-216.

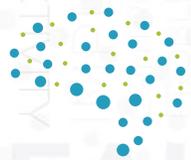
Loh, S. Y., Abdullah, A., Bakar, A. K. A., Thambu, M., & Jaafar, N. R. N. (2016). Structured walking and chronic institutionalized schizophrenia inmates: a pilot RCT study on quality of life. *Global journal of health science*, 8(1), 233.

Battaglia, C., di Cagno, A., Fiorilli, G., Giombini, A., Borrione, P., Baralla, F., ... & Pigozzi, F. (2015). Participation in a 9-month selected physical exercise program me enhances psychological well-being in a prison population. *Criminal Behaviour and Mental Health*, 25(5), 343-354.



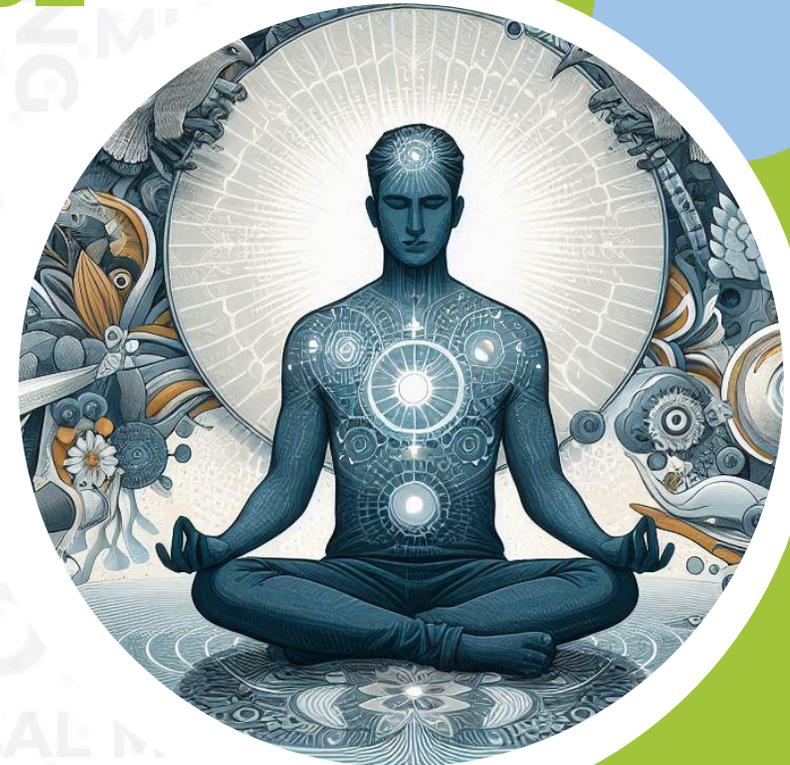
GREEN SPACE: ASSOCIATED BENEFITS

- Reduced likelihood of depressive symptoms
- Reduced stress
- Lower levels of anxiety symptoms
- Improved cognitive functioning
- Improved psychophysiological stress response
- Improved children's socioemotional health
- Physical health benefits
- Higher physical activity
- Reduced air pollution



SLEEP HYGIENE IN NEUROPSYCHIATRY PRACTICE

- Sleep at least 7 hrs per night, avoiding unnecessary daytime naps
- Try to go to bed and wake up always at the same hours
- Limit the use of mobile phones and television during bedtime
- Make sure that the sleep environment is relaxing (e.g., no light or noise, comfortable bed)
- Do not sleep excessively: a good nap is better than a bad sleep
- Avoid heavy food or strenuous physical activity close to bedtime
- Avoid methylxanthines (e.g., coffee, tea, guarana, energy drinks), smoking, or alcohol



Briguglio, M., Vitale, J. A., Galentino, R., Banfi, G., Dina, C. Z., Bona, A., ... & Glick, I. D. (2020). Healthy eating, physical activity, and sleep hygiene (HEPAS) as the winning triad for sustaining physical and mental health in patients at risk for or with neuropsychiatric disorders: considerations for clinical practice. *Neuropsychiatric Disease and Treatment*, 16, 55



HOW TO RESET YOUR CIRCADIAN RHYTHM

1 Gradually Adjust Your Schedule

2 Get Outside Early in the Day

3 Change Your Meal Times

6 Limit Alcohol and Caffeine

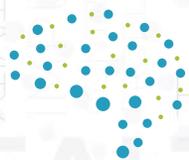
5 Avoid Exercising Too Late

4 Reduce Artificial Light Exposure



STRENGTH-BASED COACHING

- Using the client's strengths in goal planning and goal achievement
- Is a transformative approach
- Supportive
- Collaborative
- Encouraging
- Empowering
- Motivating
- Confidence building
- Promoting self-efficacy
- Learning how to solve problems more effectively
- Handling change more effectively



EMPOWERMENT

The key components of empowerment are:

Understanding by the patient of his/her role

Patient skills



Acquisition by patients of sufficient knowledge to be able to engage with their healthcare provider

Presence of a facilitating environment

Lucini, D., & Pagani, M. (2021). Exercise prescription to foster health and well-being: a behavioral approach to transform barriers into opportunities. *International Journal of Environmental Research and Public Health*, 18(3), 968.



NEURONUTRITION

FACTORS THAT MAY PROMOTE NEUROPLASTICITY

- Mindfulness meditation
- Cognitive training
- Physical exercise
- Sleep
- Stress management
- Social engagement
- Proper nutrition
- Cognitive behavioral therapy
- Gratitude practice
- Neurofeedback





RISK AND PROTECTIVE FACTORS FOR NEUROINFLAMMATION

ANTIINFLAMMATORY INFLAMMATORY

- Nature
- Exercise
- Healthy Diet
- Ketogenic Diet
- Mindfulness
- Medication
- Yoga
- Intermittent Fasting
- Healthy Gut Microbiota

- Stress
- Obesity
- Gut Inflammation
- Gut Dysbiosis
- Pesticide Exposure
- Pollution
- Early Life Stress
- Sleep Deprivation
- Heavy Metal Exposure
- High Fat Diet



SELF-COMPASSION AND ADAPTIVE COPING STRATEGIES

- Lower levels of defensiveness
- Reduction of self-blame that interferes with self-regulation
- Greater emotional energy and resources to devote to self-care
- More positive cognitive processes
- Less avoidant behaviors
- Greater healthy self-regulation
- More likely to engage in a health-promoting lifestyle



Holden, C. L., Rollins, P., & Gonzalez, M. (2021). Does how you treat yourself affect your health? The relationship between health-promoting behaviors and self-compassion among a community sample. *Journal of health psychology*, 26(12), 2330-2341.

THANK YOU!

Questions!

Jerrod01234Brown@live.com



NEURONUTRITION