



# ASSESSING AND REMEDIATING NUTRITION IN PRIMARY CARE IS FUNDAMENTAL TO MOVING FROM SICK CARE TO HEALTH CARE

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# CONFLICTS OF INTEREST

None to disclose



# OBJECTIVES.1

1. Learners will be able to recognize the prevalence of explicit malnutrition ailments in their practice as documented in Dr. Wallace's 2023 database, and apply routine nutritional assessments in primary care to swiftly identify and address acute micronutrient deficiencies, fostering expedited advancements in patient health.

2 - Learners will be able to analyze and interpret case studies demonstrating the effectiveness of micronutrient remediation in not only reversing malnutrition ailments but also alleviating conditions such as high blood pressure and metabolic syndrome, understanding the potential time frame and processes involved in mitigating long-latency chronic diseases.

3 - Participants will be able to devise strategies for incorporating routine nutritional assessments and remediation into their practices, potentially reducing the reliance on unnecessary tests, interventions, and medications, thereby mitigating social and financial costs and fostering individualized, nutrition/lifestyle-based approaches for more substantial improvements in patient health.



## OBJECTIVES.2

4 - Participants will develop strategies to implement routine nutritional assessments and remediation in healthcare settings, aiming to foster cost-efficiency in the healthcare system and prevent physician burnout through enhanced professional agency and efficacy.

5 - Learners will acquire the necessary skills and knowledge to amplify nutrition education in medical school curriculums, fostering a primary care focus that bridges the understanding and empathy gap between physician and patient, promoting cultural humility, as evidenced through case studies and examples from Dr. Wallace's functional medicine track for family medicine residents at W Med.



# FUNCTIONAL MEDICINE CURRICULUM

Bridging the Gap Between Sick Care and Health Care

The lens we view a problem through guides our therapeutic approach

Teaching the Functional Medicine Curriculum allows the learner to focus on root cause and not symptom masking



# BACKGROUND

A DO in an Allopathic world teaching about the Social Determinants of Health (SDOH)

Allopathic medicine definition is to treat the symptom using the opposite; Homeopathic medicine treats using the similar

MD uses medication, surgery, and radiation to treat symptoms

The balance comes from helping the person (host) heal by bringing balance and restoring function

# HIGH TECH MEDICINE'S OVERSIGHT: NEGLECTING NUTRITION

- ❖ Traditional nutrition in an agrarian society - common sense knowledge but a much more basic food supply
- ❖ Invention of processed foods - less work for mother!
- ❖ Widened choice - foods from all over the world, but often from countries with no environmental controls!
- ❖ Totally engineered “foods” and empty calories
- ❖ High tech medicine has not focused on nutrition
- ❖ Healthcare, but too little actual health
- ❖ Progressing backwards: tampering with nature’s perfection

## **TODAY: A growing recognition of the need to change course**

- ❖ Inventing nutrition-centric healthcare
- ❖ Over- and under-nutrition
- ❖ Nutritional deficiencies still exist, threaten health for too many



# AMERICA'S HIDDEN MALNUTRITION.1

Recent column, Nicholas Kristof, NY Times, *How Do We Fix the Scandal That Is American Health Care?*

*“Americans are among the least healthy people in the rich world, and among the most likely to die early.”*

<https://www.nytimes.com/2023/08/16/opinion/health-care-life-expectancy-poverty.html>

Comment by Robert Lustig, MD, Professor emeritus of pediatrics, Division of Endocrinology, UCSF, author of *Metabological: The Lure and the Lies of Processed Food, Nutrition, and Modern Medicine*

*“I am utterly shocked. I love Nicholas Krystof [sic]. But he's completely missed the boat in this article. Yes, all he says about the American Health Care debacle is true—diabetes, obesity, poverty, social disparity, yadda yadda. But NOT ONCE in this article does he mention the basic problem: FOOD. Nicholas, which processed food company is paying you off to bury the lede? We need people to want better nutrition. That means we have to make it a voting issue. Nicholas, you're always on the right side... how can you be so wrong on this?”*



## AMERICA'S HIDDEN MALNUTRITION.2

Marion Nestle, PhD, Professor Emerita, New York University, Author of *Food Politics*, *Unsavory Truth: How Food Companies Skew the Science of What We Eat*, and more. Longtime advocate for the importance of good nutrition to health, and avoiding over processed foods

Walter Willett, MD, Professor of Epidemiology and Nutrition, Harvard T.H. Chan School of Public Health. Published over 2,000 original research papers and reviews, primarily on lifestyle risk factors for heart disease, cancer, other conditions; author of textbook *Nutritional Epidemiology*, Oxford University Press, in third edition. Renowned authority on effects of diet on the occurrence of major diseases.

Andrew Weil, MD, Founder & Director / Professor of Medicine and Public Health / Lovell-Jones Endowed Chair in Integrative Medicine, Andrew Weil Center for Integrative Medicine, University of AZ College of Medicine. Prolific author, advocate for decades for the importance to health of diet and lifestyle.

# AMERICA'S HIDDEN MALNUTRITION.3

COMMENTARY: Diet and the Brain: From Ultraprocessed Foods to the Farmers Market

Kathrin LaFaver, MD; Madhureeta Achari, MD. August 31, 2023, <https://www.medscape.com/viewarticle/994958>

- a patient with brain fog due to B1 deficiency from gluten-free diet
- the brain uses more vitamin C than any other tissue in the body
- other cases and data indicating need to assess micronutrients routinely
- **how much do you know about the myriad of roles micronutrients play in health?**
- medicine continues to uncover new ones

Wimalawansa SJ (2023). Controlling Chronic Diseases and Acute Infections with Vitamin D Sufficiency. Review. *Nutrients* Aug 18;15(16):3623. <https://pubmed.ncbi.nlm.nih.gov/37630813>

"...health departments, authorities, and health insurance companies should start assessing, prioritizing, and encouraging this economical, non-prescription, safe micronutrient [Vit D] to prevent and treat acute and chronic diseases. This approach will significantly reduce morbidity, mortality, and healthcare costs and ensure healthy aging."

# WORLDWIDE, A NEW FOCUS ON NUTRITION AS THE FUNDAMENTAL SOURCE OF HEALTH

**The Economist this weekend**

**A special edition on food**



# THE NEED FOR ROUTINE NUTRITIONAL ASSESSMENT IN PRIMARY CARE AND BEYOND

Implement a routine focus on nutrition in primary care in medicine

Growing awareness of the importance of gut health, healthy gut microbiome

- for physical health
- for mental health
- for successful aging and cognitive aging
- gut health is nutrition dependent

Growing awareness of widespread presence of micronutrient deficiencies

Testing for micronutrient deficiencies as a standard along with the routine CT and MRI when assessing acute and chronic conditions that present repeatedly as seen in ED and out patient



# WHAT IS MEDICINE?

Functional Medicine

Integrative Medicine

Lifestyle Medicine

Naturopathic Medicine

Ayurvedic Medicine

Chiropractic medicine

Traditional Chinese Medicine

*“Any Medicine is good medicine if it works”* Martin Kohlmeier MD Ph.D



# SIMILARITIES AMONG THE DISCIPLINES

Focus on Prevention

Emphasis on Lifestyle Improvements

Identifying **Exposome** as contributor



# DIFFERENCES

Specific tools, approaches, and methodologies

Unique to each discipline





# CASE EXAMPLE

Example of a patient and the outcome using Functional medicine

40 year old female, homecare nurse, previous full time

Developed progressively worsening fatigue, weakness, anxiety

Treated by Psychiatrist with multiple medications

Treated by Cardiologist with flurinef

Treated by Neurologist with gabapentin

I pulled up the anchor on POTS diagnosis





# WHAT WAS THE ROOT CAUSE?

Timeline not just the acute symptoms

Antecedents

Mediators

Triggers

MTHFR homozygous for C677T

Low B12

Addressed her exposome

Results: she has returned as a full time nurse, mother, and wife



# THE ROLE IN TRANSITIONING TO HEALTH CARE FROM SICK CARE

How each modality supports a move from reactive to proactive healthcare

Reduction in readmission

Improved Quality of Life for those who were attended to using the functional medicine lens

Discuss the case of the 72 year man who admitted for weakness



# THE “EXPOSOME”

What is the **exposome**?

SDOH and the exposome

Antecedents

Mediators

Triggers

Timeline

# SOCIAL DETERMINANTS OF HEALTH (SDOH)

## What Are Social Determinants of Health?

Social determinants of health (SDOH) are the nonmedical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies, racism, climate change, and political systems.

The Centers for Disease Control and Prevention (CDC) has adopted this SDOH definition from the [World Health Organization](#) (WHO).



[https://www.cdc.gov/about/images/sdoh/Framework\\_Simple-medium.png?\\_=90399](https://www.cdc.gov/about/images/sdoh/Framework_Simple-medium.png?_=90399)



# ANTIOXIDANTS - THEIR ROLE

## Exposomic Fingerprint in the Development of Diseases: The Role of Free Radicals and Multiomics

Kocić G, Veljković A, Sokolović D, Ulrih NP (2022). Exposomic Fingerprint in the Development of Diseases: The Role of Free Radicals and Multiomics. *Oxid Med Cell Longev*. Mar 20;2022:9851253.



# RELEVANCE OF SDOH TO HEALTHCARE

Influence on patient health outcomes and care strategies

Exposome and the SDOH

Example: Farmers and pesticides

Working indoors and low vitamin D

And also...

# SDOH BEYOND ECONOMIC CONSTRAINTS

Addressing the misconception that SDOH only matters in poorer communities:

s/p cholecystectomy and decreased ability to absorb fat soluble vitamins

Bariatric surgery

Crohn's disease and Vit C deficiency risk

Fad diets

Being a regular night shift worker

Chronic use of many Rx and OTC medications

Physicians can be very deficient in Vit D due to indoor lifestyle

Physicians and other very busy people often consume substandard nutrition on the fly despite knowing better





# INTERSECTION WITH FUNCTIONAL/NATUROPATHIC MEDICINE

How understanding SDOH complements functional medicine approaches.

Acute care and need to walk hand in hand with modern medicine

We need to understand each discipline, it helps us to understand the patient's belief systems and that is the basis for healing

Having cultural humility is patient centered. I see people that want radiation and they still want to work with their Naturopath. I have to be open to learn and understand in order to effectively inform the patient. If I rebuke their ideology, I lose their confidence and am no longer an effective partner in their care, that is not shared decision making if I just say NO



# **THE NEED FOR FM/ND-TRAINED, NUTRITION-CENTRIC PCPs IN TECH-DRIVEN HEALTHCARE**

Ensuring comprehensive patient care amidst the tech revolution

Dr Google is ever present



# DR. WALLACE'S PRACTICE & SDOH.

With the social determinants of health, drew upon 6000 patient to discover...

Workforce development was the main gap

Story of my 72 year old man who was admitted for weakness and no significant medical findings other than osteoarthritis on MRI, CT, Ortho evaluation

Significant finding on the SDOH that revealed underlying cause



# MICRONUTRIENT DEFICIENCIES

Addressing common illnesses with micronutrient interventions

Does Beri Beri exist?

Do we have patients with scurvy?



# MICRONUTRIENT REMEDIATION

The importance of micronutrients

Real-life examples from Dr. Wallace's database

Addressing common illnesses with micronutrient interventions



# FINANCIAL & SOCIAL IMPACTS

Cutting unnecessary medical costs through nutritional assessments

Reducing the over-prescription of medications

Enhancing physician satisfaction and preventing burnout



# NUTRITION EDUCATION IN MEDICAL SCHOOL

The critical need to integrate nutritional education in medical curricula

Family medicine residents reported only a few hours of nutrition curricula in all of medical school

There have been many advances in understanding the impact of nutrition on health, mental health, and aging

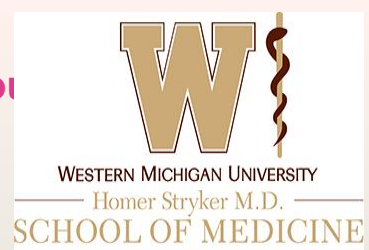
There is a need for clinical nutrition medicine to be taught; FM, ND and other primary care physicians can lead the way

# My Chief Resident, Layth Tumah, MD (L.) at American Academy of Family Physicians (AAFP) Conference July 2023





# Implementing the Functional Medicine Certification Program in Family Medicine Residency: Enhancing Medical Knowledge and Patient Care while Reducing Burnout



L. Tumah<sup>1</sup>, and R. Wallace <sup>1,2</sup>  
<sup>1</sup> Western Michigan University, Kalamazoo, Michigan  
<sup>2</sup> Family Medicine Residency program core faculty

## OBJECTIVES

To share the experience of implementing IFMCP training in family medicine residency program.

Functional Medicine is a patient-centered, systems-oriented approach to healthcare that focuses on identifying the root causes of chronic diseases and promoting optimal health through personalized and evidence-based interventions. Despite the growing demand for Functional Medicine among patients and healthcare providers, many medical schools and residency programs do not provide adequate training in this field. This gap in training may contribute to physician burnout, as physicians often feel ill-equipped to address complex and chronic health issues.

To address this gap, we propose implementing the Institute For Functional Medicine Certification Program (IFMCP) in Family Medicine Residency.

## Aim

By implementing the IFMCP in Family Medicine Residency, we aim to enhance medical knowledge and patient care while reducing burnout.

The IFMCP is a comprehensive training program designed to equip physicians with the knowledge and skills necessary to provide effective patient-centered care. The IFMCP includes online coursework, in-person training, and mentoring by experienced FM practitioners.

## Method/Process

- IFM offered residency membership rates to allow residents to participate without financial burden.
- A Functional Medicine instructor conducted regular follow-up sessions with each cohort every two weeks to review the material and enhance practical understanding of the knowledge.
- Conducted functional medicine elective rotations to expand the residents' experience and expose them to different functional medicine practices.
- Implemented functional medicine and wellness topics during formal didactics, emphasizing the connection between what residents learned through the certification program and daily clinical practices.

By providing IFMCP training in residency, we are proposing improvements in following aspects:

- Overall health
- Well-being and resilience
- Better lifestyle; diet, exercise, and mindfulness practices
- Confidence in treating patients using new methods and a different perspective
- Burnout rates and better Productivity
- Patients' satisfaction

## RESULTS

- Three cohorts of residents participated in IFMCP.
- Residents who participated in the IFMCP showed high levels of satisfaction with the evidence-based knowledge and new perspectives in treating patients, allowing them to develop additional skills in patient care.
- A deeper understanding of functional medicine learning led to improvements in residents' well-being, resulting in better health, improved resilience, and increased confidence in treating patients using new methods and a different perspective.
- The benefits extended beyond residents themselves and were noticed by their families and partners.
- Improvements in overall knowledge in integrative and functional medicine which reflected in the In-training Exam scores, with residents better able to appreciate the information learned during the IFMCP and answer related questions more effectively.

## Discussion

Throughout this presentation we wanted to share our experience as the first residency program to implement IFMCP during family medicine residency training as an optional pathway, we shared the way how we applied this program into our residency, furthermore we listed some observational results that were shared by residents who joined this pathway. Through this presentation we hope to inspire more residency programs to adapt the IFMCP pathway which will allow us to perform a formal study emphasize the suggested benefit from adding this pathway

## Contact Information

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# CULTURAL HUMILITY & BRIDGING GAPS

Encouraging understanding and respect between patients and physicians

Dr. Wallace's functional medicine track at WMed as example





# THE ROLE OF EDUCATION & COMMUNITY ENGAGEMENT

Emphasis on patient, family, and community education

Role of healthcare providers in facilitating this education

Workforce development - JOBS! - and the community being part of getting better

# THE CHALLENGE OF MULTIPLE MORBIDITIES

Addressing patients with multiple health concerns through integrative functional / naturopathic medicine

Preparing for the challenges ahead

It is really about host health not the pathogen

Long latency chronic disease

What if we actually helped the patient's host defenses?

# CONCLUSION

Recap: the importance of functional medicine in the future of healthcare

Functional medicine an ally of naturopathic medicine

Functional medicine physicians also use botanicals, may recommend medicine of other traditions, e.g., acupuncture

Call to action for physicians and all healthcare professionals

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# RESOURCES

Institute for Functional Medicine, IFM.org

American College of Lifestyle Medicine (ACLM),  
<https://lifestylemedicine.org/>

Andrew Weil Center for Integrative Medicine, University of Arizona  
College of Medicine, <https://integrativemedicine.arizona.edu/indexhtml>

National Center for Complementary and Integrative Health, NIH,  
<https://www.nccih.nih.gov/>

NIH Human Microbiome Project,  
<https://hmpdacc.org/>

# IN NATURE'S BALANCE

Ramona Wallace, DO

In the whispered winds of ancients past, Naturopathic wisdom, vast and vast,  
From Ayurveda's herbs to Taoist streams, Restoring function, chasing dreams.  
Hippocratic oaths and Arabian tales, Monastic chants where healing prevails.  
In Scotland's embrace, in 1880's dawn, Hygienic medicine was birthed and drawn.  
With natural diets and exercise pure, Avoiding the vices, the allure.  
Tobacco and overwork, pushed to the side, In Nature's balance, we confide.  
Dr. Lust, with a tale to unfurl, Bringing naturopathy to the New World.  
Cured by its touch, by its gentle embrace, Passion ignited, he found his place.  
For oftentimes, in pain and strife, We stumble upon a new lease of life.  
Through healing, discovering passions anew, In Nature's wisdom, so timeless and true.  
Who takes the credit? It matters not, For ancient truths cannot be bought.  
Study with reverence, heal with grace, Seek not for gain, but the human race.  
Teach the power of Nature's hand, Across every mountain, sea, and land.  
Share shamelessly, wisdom profound, First, do no harm, let love resound.  
Treat the whole, not just a part, Identify causes, healing to start.  
Strengthen the host, empower their core, Bestow wisdom, love, and so much more.  
With gratitude deep, hope ever bright, Naturopathic paths illuminate the night.  
Guided by traditions, old and wise, In Nature's embrace, we all rise.



# THANK YOU!



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