What is Functional Medicine?
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Functional Medicine Colleagues
- Gene Gresh, R.Ph., FIACP, IFMCP
- Lauren Young, N.D.
- Ruth Benet, D.O.
Overall Objective

- The overall objective is to educate the participants as to what the commonly understood definition of functional medicine (FM) is, and from my perspective how it will enhance their practice and improve the quality of patient care, patient satisfaction and patient outcomes.

Objectives

- Provide a definition of functional medicine including a brief history of its evolution.
- Introduce some basic principles of functional medicine.
- To clarify the differences between a symptom treatment (acute care) model to the root cause (chronic care) model.
- Identify ways to incorporate functional medicine into their practice.

Objectives

- Demonstrate the benefits of identifying and collaborating with other functionally minded practitioners while continuing to be the overall coordinator of their patient’s care.
- Introduce various testing and other paradigms that we are not usually taught in our medical training.
- How to utilize the basic Osteopathic Principles of Mind-Body-Spirit Integration.
- Provide an example of the FM approach to patient care.
What is Functional Medicine?
Is It?

- CONVENTIONAL MEDICINE: Standard Model of Care in the USA.
- What is considered standard medical treatment in one culture may not be standard in another. For example, acupuncture is standard in China.
- Approximately 25% of today's health care dollar is spent on acute care and 75% on chronic care conditions.

What is Functional Medicine?
Is It?

- ALTERNATIVE: Treatments INSTEAD OF conventional
  - Chinese Medicine
  - Acupuncture and herbs
  - Dietary supplements
  - Naturopathy
  - Spiritual healing
  - Homeopathy
  - Chiropractic
  - Massage
  - Tai chi
  - Ayurveda

What is Functional Medicine?
Is It?

- COMPLIMENTARY: Treatments IN ADDITION to Conventional.
  - Reiki
  - Qi Gong
  - Vitamins & minerals
  - Probiotics
  - Enzymes
  - Massage therapy
  - Bioenergetics
  - Meditation & yoga
  - Prayer
  - Music-pet-laughter therapy
  - Natural products such as cinnamon for Diabetes Mellitus.
What is Functional Medicine? Is It?

HOLISTIC: View the person as whole and not just the symptoms or the disease. Incorporates MIND, BODY, SPIRIT and EMOTIONS.

PREVENTATIVE:
- Recommended check-ups by age groups
- Medical, laboratory, urine
- Dental, visual, hearing
- EKG
- Pap, pelvic, rectal, prostate
- Feet
- Mammogram or breast thermography
- Colonoscopy
- Biomechanical
- Skin
- Vaccinations
- Genetic Testing
- Bone densitometry
- Review of diet, weight changes, nutrition, exercise, sleep, hydration, habits and key activities

What is Functional Medicine? Is It?

INTEGRATIVE: COMBINES all of the above.
- Coordinated
- Cancer Centers of America use an integrative team approach
- Military/veterans in pain management and PTSD utilizes:
  - Acupuncture
  - Yoga
  - Emotional freedom technique (EFT)
  - Eye movement desensitization and reprocessing (EMDR)
  - Pharmaceutical, nutraceutical and compounded formulas

What is Functional Medicine? Is It?

OSTEOPATHIC MEDICINE: COMBINES all of the above including Osteopathic Manipulative Therapy (OMT).

- At one point in time we were considered both alternative and complementary.
- Osteopathic education in the ‘70s and ‘80’s approached patient care holistically and with the osteopathic tenants of mind-body-spirit integration.
FUNCTIONAL MEDICINE (FM): Combines all of the above and asks some very important questions and approaches the patients with increased time, patience and care. Functional medicine asks how and why illness occurs and restores health by addressing the root causes of disease for each individual.

FM stresses that one condition can have many causes and how one cause can lead to many different conditions. It also identifies the best approach to care based both on the cause and the condition.

Simplified: As an example a diagnosis of depression is one condition that may be caused by prediabetes, a low functioning thyroid, a deficiency in certain vitamins such as folate, vitamin D3, or omega 3, amino acids and unresolved emotional issues.

An example of a cause that can lead to many conditions is when chronic inflammation occurs and this may contribute to heart disease, depression, arthritis, cancer and diabetes mellitus.

“Functional medicine seeks to identify and address the root causes of disease, and views the body as one integrated system, not a collection of independent organs divided up by medical specialties. It treats the whole system and not just the disease”.  
(Doctor Mark Hyman)

A FM practitioner asks how and why illness originates/occurs and restores health by addressing the root cause of disease for each individual.

A FM practitioner asks why has function been lost and what can we do to restore function?
Definitions of Functional Medicine

- Functional medicine practitioners may utilize the modalities mentioned previously along with a SCIENCE BASED approach including more advanced testing techniques.
- The National Center for Complimentary and Integrative Health functions within the National Institute of Health to test the safety and effectiveness of these treatments.
- DO NO HARM!

Brief History of the Origin of FM

- My experience:
  - Previously taught
  - Pharmaceutical pressures
  - Time constraints
  - A change in the way medical education was taught
  - The EMR
  - Patient, hospital, government and physician demands
- Sir William Osler, one of the first professors and later physician-in-chief at Johns Hopkins University School of Medicine. “The good physician treats the disease. The great physician treats the patient with the disease.”

Brief History of the Origin of FM

- Dr. Jeffrey Bland, Ph.D.
  - A nutritional biochemist
  - Degrees in synthetic organic chemistry and neurochemistry
  - An internationally recognized leader in the nutritional medicine field
  - Has authored a number of books on nutrition and health for both the public and professionals.
  - Along with his wife Susan, Dr. Bland established the Institute of Functional Medicine in 1991 and was granted accreditation by the Accrediting Committee for Continuing Medical Education in 1996.
Brief History of the Origin of FM

- Dr. Mark Hyman, M.D.
  - One of the main advocates of functional medicine
  - Chairman of the board of directors of the IFM
  - Director of the Cleveland Clinics Center for Functional Medicine.
  - A family physician
  - A ten time #1 New York Times best selling author
  - An internationally recognized leader, speaker, educator and advocate in his field.
  - A medical editor of the Huffington Post
  - A medical contributor to many TV shows including, CBS This Morning, Today Show, Good Morning America and the Dr. Oz Show.

Basic Principles that Define FM

Functional medicine

- is truly patient centered (holistic)/ personalized medicine
- Genetics
- Biochemistry
- Gender
- Lifestyle & nutrition,
- Environment
- Emotions and thought process.
- Supports the normal healing mechanisms of the body, preferably naturally
- The FM practitioner takes an extensive history and a thorough exam, including a mental health review

Basic Principles of FM

- FM combines the science and art of medicine that has been too often forgotten.
- “FM viewed from the genetic and biochemical aspect is science based. Latest research show us that what happens within us is connected in a complicated network or web of relationships. Understanding those relationships allows us to see deep into the functions of the body.” Dr. Will Cole, D.C.
- A simplified example is the conversion of inactive T4 to active T3.
Example:
- Iodine (other halides)
- Converting factors needed to T3 or reverse T3
- Vitamin D, selenium, zinc, iron and iodine
- Detox
- Status of liver, gall bladder and kidneys
- Adrenals

Basic Principles of FM

- The human body is intelligent and has capacity for self regulation
- The body has the ability to heal and prevent nearly all diseases of aging
- Health is not just the absence of disease, but state of intense vitality
- FM is a true combination of conventional medicine and many different alternative and complimentary therapies
- Special attention to diet, exercise, nutrition, sleep, play, hormones, inflammatory factors, and the workings of the mind we give a patient the tools to create sustainable wellness and vitality

Basics Principles of FM

- FM looks for the cause/s, either inward or outward.
- FM truly incorporate the mind, body, spirit and emotions into the equation of healing.
- FM utilizes advanced laboratory testing not usually taught in medical schools such as
  - Extensive allergy testing
  - Inflammatory markers
  - Various saliva tests
  - Urine testing such as for neurotransmitters
  - Gut analysis
  - Heavy metal and other mineral analysis
  - Advanced biochemical tests such as in extensive lipid testing
  - Genetic analysis
  - Food sensitivity testing
- A FM practitioner will follow the patient closely and be a MEDICAL LIFE COACH. Referral to other specialists is common.
Basic Principles of FM

- A functional medicine practitioner utilizes often forgotten examination techniques such as:
  - The Chapman reflex points
  - Thorough eye, skin, nail, foot, mouth, and tongue inspection
  - Breathing patterns
- Other considerations:
  - Safety and efficacy of products and modality used
  - Caution with children, pregnancy, nursing, and geriatric patients and patients with concomitant or comorbid conditions
  - Concerns for drug to drug or drug to supplement or supplement to supplement interactions
- Always “DO NO HARM”

Acronym for our thought Process
BG SHINED

- The acronym SHINE Pioneered by Dr. Jacob Teitlebaum, MD
- B: Breathing: Blood Work: Balance (vocation, play fun, laugh, dance, sing, family, community, religion, relationships)
- G: Genetics: Gut (Restore to health): Gender: Lifestyle
- S: Sleep: Safety: Stress: Sugar: Spiritual: Sex: SNP
BG SHINED


- I: Inflammation: Infections (bacteria, viruses, yeast, fungus, others): Immune System

- N: Nutrition: Nutrigenomics: Neurotransmitters: Needs (are they being met)

- E: Exercise: Emotions (along with anxiety and depression are the basic emotions of sadness, anger and fear able to be emoted in a healthy manner?): Enzymes: Environmental (EMF’s, landfills, pesticides, GMO’s): Excess (alcohol, caffeine, smoking, others)

BG SHINED

- D: Detoxification: Methods for detox:
  - Increased water intake
  - Detoxification drinks
  - Infrared saunas
  - Sunshine
  - Chelation
  - Coffee enemas
  - Real Salt (Mineral Salt)
  - Fasting
  - Foods and food elimination
  - Exercise - Sweating
  - Emotional Releaes – Crying

- Toxin consideration:
  - Heavy metals
  - Antibiotics
  - Oxidants
  - Radiation
  - GMOs
  - Pesticides
  - Mold, Fungus
  - Parasites
  - EMF
  - Opioids/Tramadol
Functional Medicine Modalities, Tools and Therapies

- Acupressure
- Acupuncture
- Alexander Technique
- Allopathic Medicine
- Applied Kinesiology
- Aromatherapy
- Ayurvedic Medicine
- Bach Flowers
- Behavioral Medicine
- Bioenergetics
- Biofeedback
- Bioidentical Hormone Replacement
- Breathing Techniques
- Chakra Healing
- Chelation Therapy (Oxidative)
- Chinese Herbal Medicine
- Chiropractic Medicine
- Colon Hydrotherapy
- Color Therapy
- Compounding Pharmacy
- Cranial Social
- Crystal Therapy
- Dental Care
- Detoxification
- Diet
- Earthing
- Emotional Freedom Technique (EFT)
- Energy Medicine
- Enzyme Therapy
- Essential Oils
- Exercise
- Eye Movement Desensitization and Reprocessing (EMDR)
- Family Constellation
- Feldenkrais
- Gender Medicine
- Gestalt
- Gerson
- Heart Math
- Hydrotherapy
- Hypnosis
- Laboratory Ordering & Interpretation
- Light Therapy
- Magnet Therapy
- Massage
- Meditation all types
- Mindfulness
- Music Therapy
- Osteopathic Medicine
- Oxygen Therapy (Oxidative)
- Past Life Regression
- Patient Specific Medicine
- Pastel Rich Therapy (PRP)
- Physical Therapy
- Positive Affirmation
- Power of Prayer
- Prolotherapy
- Platelet Rich Therapy (PRP)
- Play Therapy
- Positive Affirmation
- Power of Prayer
- Prolotherapy
### Functional Medicine Modalities, Tools and Therapies

- Qi Gong
- Quick Remap
- Reflexology
- Reiki
- Reverse Therapy
- Sleep Therapy
- Support Groups
- Tai Chi
- Twelve Step Programs
- Vibration
- Visualization Techniques
- Yoga
- Zero Balancing

### Functional Medicine Testing inside/outside the Box

- Blood/Serum: Optimized Levels
  - Zinc
  - Iodine
  - 25 D OH
  - Selenium
  - Progesterone
  - Magnesium to RBC magnesium
  - Fas T3, Fas T4, Reverse T3, and Thyroid Autoantibodies (anti peroxidase and anti thyroid antibodies) when other tests are in the normal range
  - Heavy metals
  - VAP test or Boston Heart Panel
  - MTHFR/Hereditary
  - Iron/Titin

- Food Sensitivity Testing: Allergy Testing
  - ALCAT/KIMO FIT and others
  - saliva Testing: Estradiol/Estrone/Estrin
  - Progesterone
  - Estrogens
  - Testosterone
  - DHIAA: Cortisol as well
  - Generic testing (23 and Me and Genetic Genie)
  - Urate:
  - Neurotransmitters: 5HT, dopamine, serotonin, epinephrine, norepinephrine, dopamine
  - Gut Analysis
  - Polymerase Chain Reaction (PCR) of the microbiome

### A FM Approach to DX and TX

- A 43 y/o white male with a history of tick bite. He is married with 3 children, is a one pack a day smoker in a high pressure job, has two classes of wine each night and lives in an older Victorian home. He has three animals, frequent colds and decreased libido. He does not eat or sleep well nor have time to play and be with his family. He is a world traveler and has had travelers diarrhea in the past.

- Initial treatment with a two week course of antibiotics

- Months later still has symptoms of
  - Fatigue
  - Brain fog
  - Muscle aches
  - Headaches
  - Hearing
  - General malaise

An extensive and complete history is taken. We review the patient's medical (previous illnesses, diseases, disorders, signs, symptoms, exposure), surgical, allergy (food, environmental), medication and OTC's, smoking, alcohol and caffeine intake, exercise, play, NUTRITIONAL, vocational, religious, family, and emotional history.
A FM Approach to DX & TX

- We review use/effectiveness of all past and present pharmaceutical and nutraceuticals.
- We review a variety of environmental factors, sexual preferences, various housing/work issues (where located, mold etc.), and previous medical or surgical treatments for any reason.
- We ask questions to ascertain the status of their gut, hormone, endocrine and immune systems.
- The history includes a review of all lab studies to date while looking for changes and trends.

A complete physical is performed that includes some areas we normally do not concentrate on such as:
- Chapman reflex points
- All the Gland areas
- Examination of the patients eyes, nails, feet, teeth, gums and tongue
- Finding that extra time along with exceptional patience is at the forefront of FM

Based on the H&P a FM practitioner can determine which functional test is appropriate to diagnose imbalances in the body’s systems (saliva, urine, genetic, blood), and in this case the variants of typical Lyme disease. We also know that many patients have coinfections that need to be considered such as viruses, bacteria, yeast, and parasites.

We know that all of these may induce chronic inflammation in any body part, along with adrenal fatigue, immune compromise and emotional stress.

We know that Lyme is a spirochete and like syphilis can be a great masquerader with significant drug resistance today.

We know that 80% of the time infectious bugs may have a biofilm around them. Sort of like sludge, that we need to be able to strip away in order to have successful treatment.
A FM Approach to DX & TX

- We know that many infectious agents, such as the case with Lyme produce toxins and endotoxins that may need to be flushed from the body. If not, we know they may affect not only the brain but also the hormone, nervous and immune systems.
- We know that the Lyme bug can cross the blood brain barrier and we may need adjunct treatment to reach and treat this area as well.
- We know we need to avoid pain killers (opioid/tramadol) that compete for the same receptor sites as the toxins we are trying to eliminate.

A FM Approach to DX & TX

- And finally we know that we may need to restore the gut and immune system to optimal functioning.
- We have found that those patient's with the genetic SNP variant of HLA-DR makes a patient more susceptible to autoimmune disease.
- A FM practitioner will use both pharmaceutical and nutraceutical supplements in many of their treatments to address each area mentioned above.
- We may use the BG SHINED acronym.

A FM Approach to DX & TX

- The FM practitioner may encourage the patient to join support groups and have others in their life that can support them as they too follow the patient closely and offer support throughout out the treatment process.
- We introduce them to various web sites that may assist them in their recovery.
- We encourage and help the patient to not smoke, eat healthy and to reduce other stressors in their lives. We can give them tools such as the emotional freedom technique (EFT) to help with the stressors. Hypnosis for the smoking. Nutritional guidance.
A FM Approach to DX & TX

Treatment: In this case
- Four week course of antibiotics (doxycycline) along with a biofilm disrupter such as colloidal silver and garlic could be utilized
- Visualization techniques
- Breathing exercises
- Plenty of sleep using nutraceuticals, meditation, sleep tapes
- Increased water intake preferably spring water
- Avoidance of Opioid/Tramadol pain medications
- More fun in their life
- Adaptagens can be used to help restore adrenal balance such as Rhodiola

A FM Approach to DX & TX

- A gluten and dairy free diet may be suggested
- A natural anti-inflammatory such as an omega 3 and curcumin may be offered. Also brain favorable.
- A probiotic would be recommended to help restore gut function and enhance immunity along with other vitamins and minerals
- Epsom salt soaks may be recommended or other detox
- If deemed helpful mitochondrial enhancers may also be recommended which might include
  - d-ribose, Co Enzyme Q10, Magnesium and Carnitine.
  - Referral to advanced specialist as needed

Functional Medicine Summary

- I hope this presentation has encouraged you to explore functional medicine further for yourself and to collaborate with other FM practitioners so our long term goal of increasing patient care, satisfaction and outcomes along with our own satisfaction improves.
- I hope this has encouraged you to use the FM model in your approach to chronic conditions and their root cause/s.
- It is imperative that we get up to speed in todays medical climate as our patients are deserving the highest quality care possible. If I can be of further assistance please contact me at doctorpalermo@cox.net
- THANK YOU!
- QUESTIONS?
Functional Medicine Resources & References

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