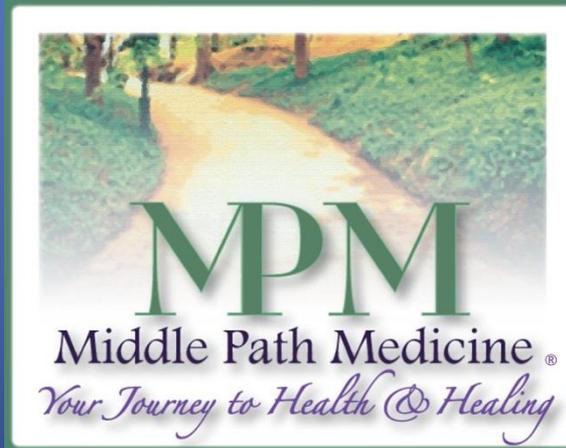


# Cancer Education Series

## So What is Cancer?

Gary E. Foresman, MD

September 2017



# What Is Middle Path Medicine?

- Our business provides the structure in a capitalistic culture to deliver a template for other integrative physicians to follow, whereby they can successfully practice integrative medicine.
- Truly, MPM represents a movement in consciousness which I am a part of.
- Although Functional and Orthomolecular Medicine training allows for a better approach to the “True” aspects to medicine, they don’t get to the heart of healing.
- I use to stand and put one hand in the air to the right, and the other hand to the left, and say Western medicine says this and Natural medicine says this, and the truth is somewhere in the middle (thus Middle Path Medicine), and that stepped closer to the truth....

# What Is Middle Path Medicine?

- **Gary E. Foresman, M.D.** : Board Certified Internal Medicine Physician, Board Diplomate Functional, Anti-Aging & Regenerative Medicine, Fellow Integrative Cancer Therapies, Founder and President of Middle Path Medicine
- **Jessica Joslyn, PA-C**: A graduate of Stanford University School of Medicine, Jessica is a Certified Physician Assistant, able to provide primary care, family medicine, as well as homeopathy.
- **Intravenous Nutrition Therapy** : a powerful form of therapy for healing, recovery, and rejuvenation.
- **MPM Supplement Shop** : carries only the highest quality vitamins and supplements. Each product is specifically selected and approved by Dr. Foresman.
- Our website **[www.MiddlePathMedicine.com](http://www.MiddlePathMedicine.com)** holds a vast wealth of knowledge, free to anyone who wants to better his or her own wellness.

# So What is Cancer?

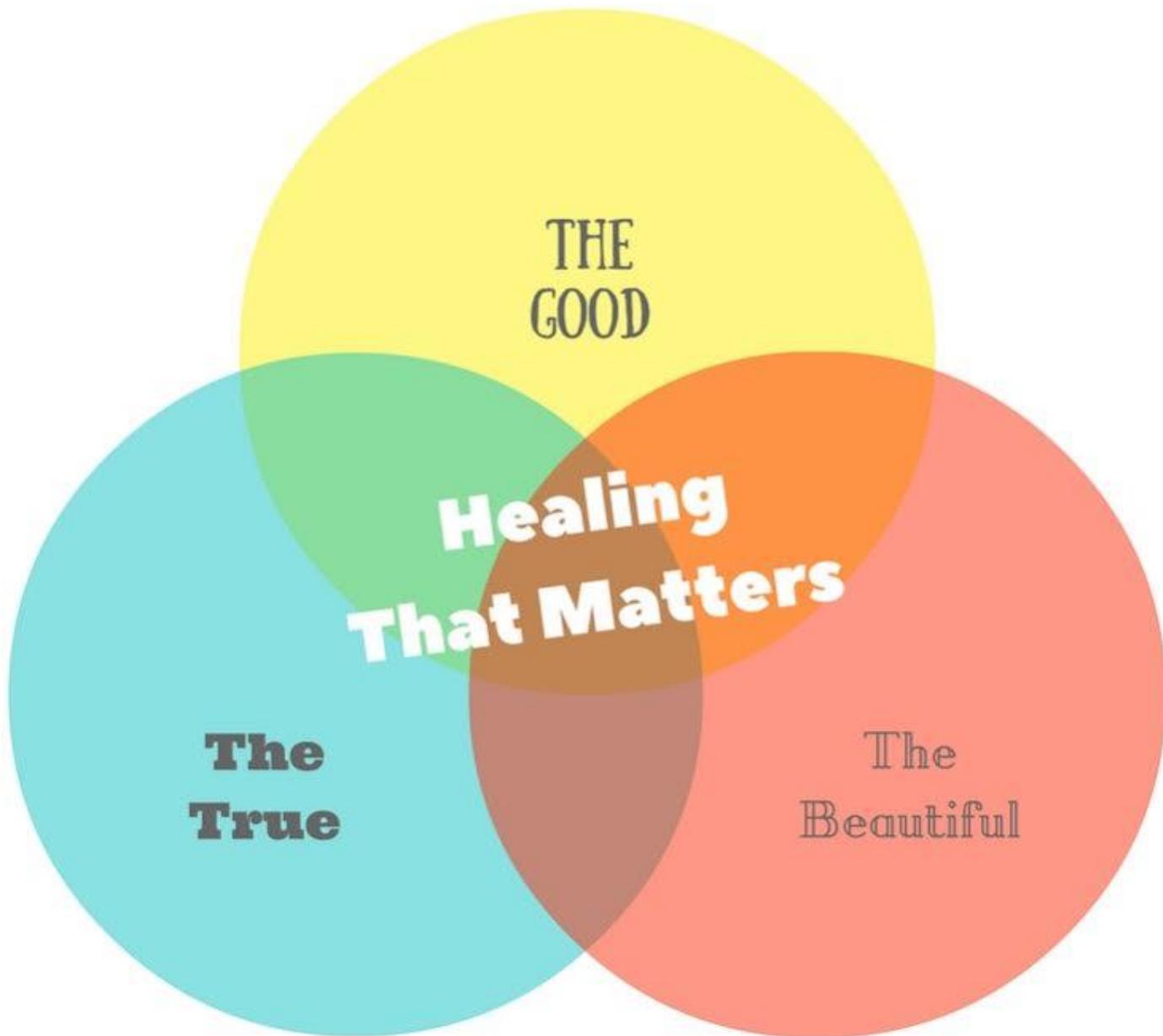
- I refer you first to the work of Ken Wilber ([www.integrallife.com](http://www.integrallife.com)), to assist in developing a better map of reality.
- Wellness and disease represent a continuum from vibrant wellness to disabling disease.
- The entirety of the universe develops holistically/holonically
- A holon is something that is whole yet part of a bigger truth.

# So What is Cancer?

- Using relatively simple subdivisions, atoms: molecules: cells: tissues: organs: organisms: communities: states: nations: earth: solar system: universe. You get the idea.
- Each holon is part of the one above it developing holarchically.
- A holon has two functions: agency and communion
- **Agency** means autonomy and functionality, the drive to survive and succeed. Classically linked to male energy.

# So What is Cancer?

- **Communion** represents functioning for the greater good, serving as part of the whole, listening to the context. Classically linked to female energy.
- Cancer represents a cell with aberrant attachment to agency with loss of communion. Truly “loss of sense of self” which is why cancer is also associated with anxiety, the other most - common condition caused by loss of sense of self. Cancer is **you** not seeing reality at a cellular/tissue level, anxiety disorder is you not seeing reality at a person level.
- The longer the cellular derangement exists the less and less “like itself” the cancer appears!



THE  
GOOD

**Healing  
That Matters**

**The  
True**

The  
Beautiful

INDIVIDUAL

**I**  
Subjective

thoughts, emotions,  
memories, states of mind,  
perceptions, and immedi-  
ate sensations

**IT**  
Objective

material body (including brain)  
and anything that you can see  
or touch (or observe scientifi-  
cally) in time and space

**WE**  
Intersubjective

shared values, meanings,  
language, relationships,  
and cultural background

**ITS**  
Interobjective

systems, networks, tech-  
nology, government, and  
the natural environment

INTERIOR

EXTERIOR

COLLECTIVE

# So What is Cancer?

- First let's start by providing a working roadmap to existence lovingly called **AQAL** (think aqua with an l at the end). It stands for all quadrants, all levels, all lines, all states and all types
- In order to understand any issue, wellness or disease, one must know from what quadrant the question pertains, which validity claim applies to that quadrant, and (as importantly) what level of development does that person you are asking exist within that line of development! The more complex the question, the more questions one must ask! As for the **validity claims** they apply as follows:
  - Upper Left: **I – Beautiful**/ Truthful
  - Lower Left: **We – Good**/ Justness
  - Upper and Lower Right: **It and Its - True**/ Objective Truth

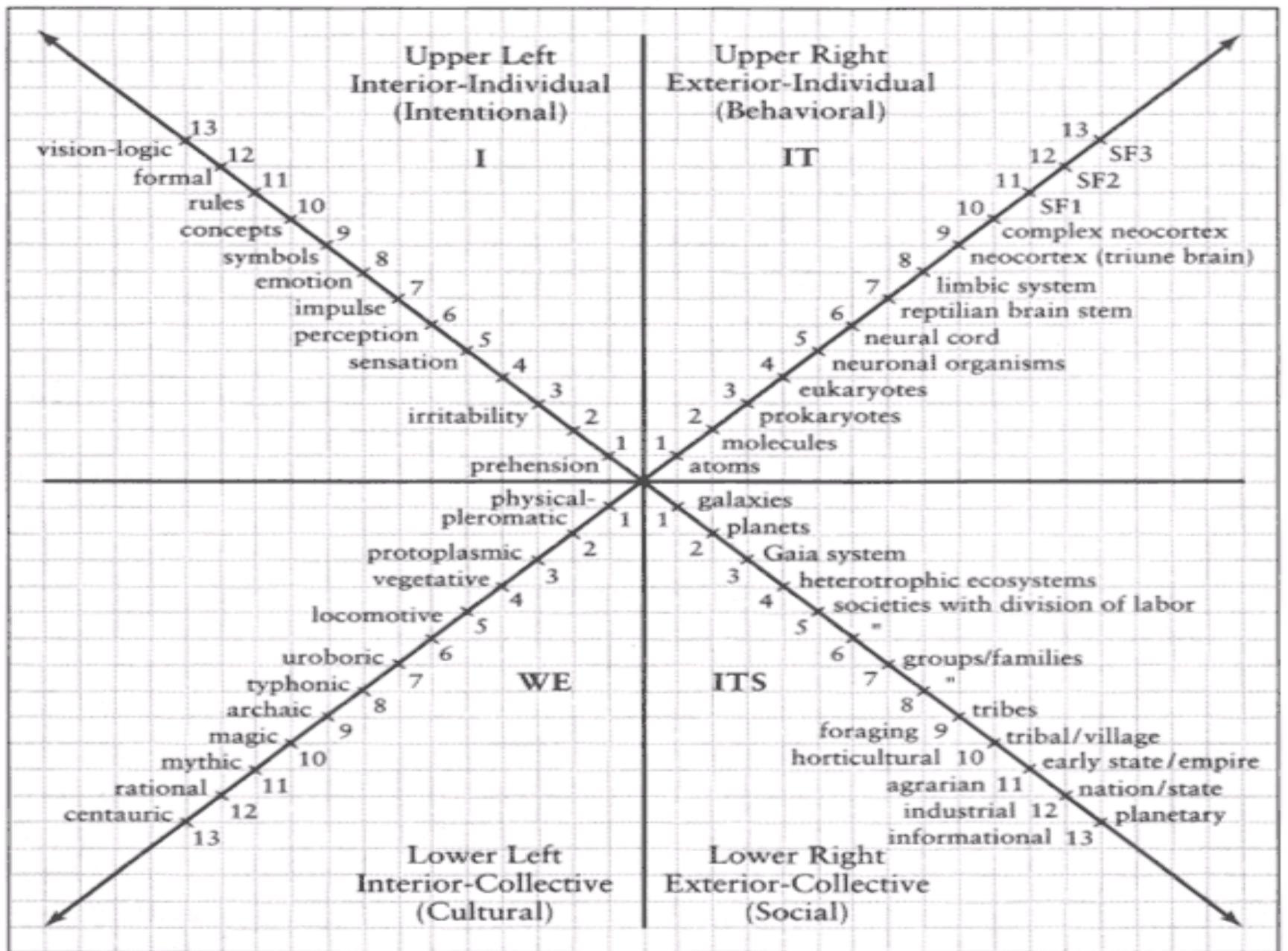
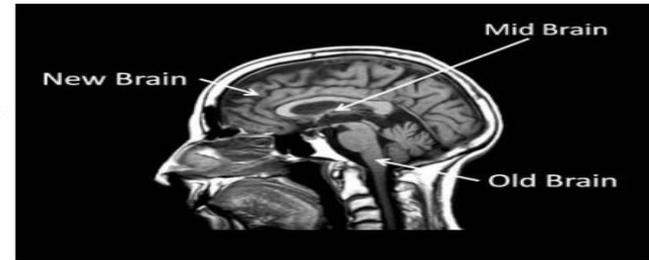
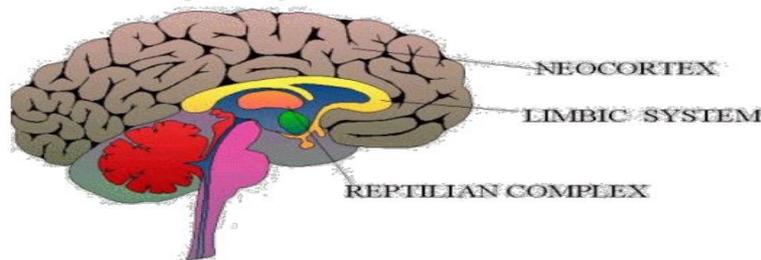


Figure 1. *Four Quadrants.*

# THE TRIUNE BRAIN

A system according to Dr. Paul Maclean,  
Chief of the Laboratory of Brain Evolution and Behavior at the NIMH, 1971-1985



## The Brain Stem (a.k.a. Reptilian Brain)

- Always on the alert for life-threatening events
- Controls basic life functions: heart rate, breathing, pain response, etc.
- We “downshift” when responding to life-threatening conditions
- “Flight or Fight” level of the brain (self preservation / aggression)
- Action takes place without thinking;
- Anything that is a threat – real or perceived – causes brains to “downshift”
- When “downshifting” occurs, learning cannot take place

## The Limbic System (a.k.a. Paleo-mamillian System)

- This is the home of the emotions, pleasure, memory formation, sense of smell
- This part of the brain has visual memory, but language is limited to yells, screams, expletives
- Threats can cause downshifting, but not to “blinking out” stage of the brain stem
- Military trainers deliberately provoke this system in trainees

## The Cerebral Cortex / Neocortex (a.k.a. Neo-mamillian)

- Conducts intellectual / rational tasks
- Processes thousands of bits of information per minute
- Six levels deep and is 76% of human brain
- Slowest response time of the three levels of the brain
- The home of academic learning and cognitive thinking
- Students must be in this level if learning is to take place (therefore, learning environment must be absent of threats)

# So What is Cancer?

- This is where the “**Three Strands of Knowledge**” come to play, some might understand this as the scientific method! One can apply the scientific method to any quadrant, not just the right hand side of objective truth. The strand follows:
  - Injunction (Exemplar-Experiment)
  - Illumination (Data)
  - Confirmation (Reproducibility)

# So What is Cancer?

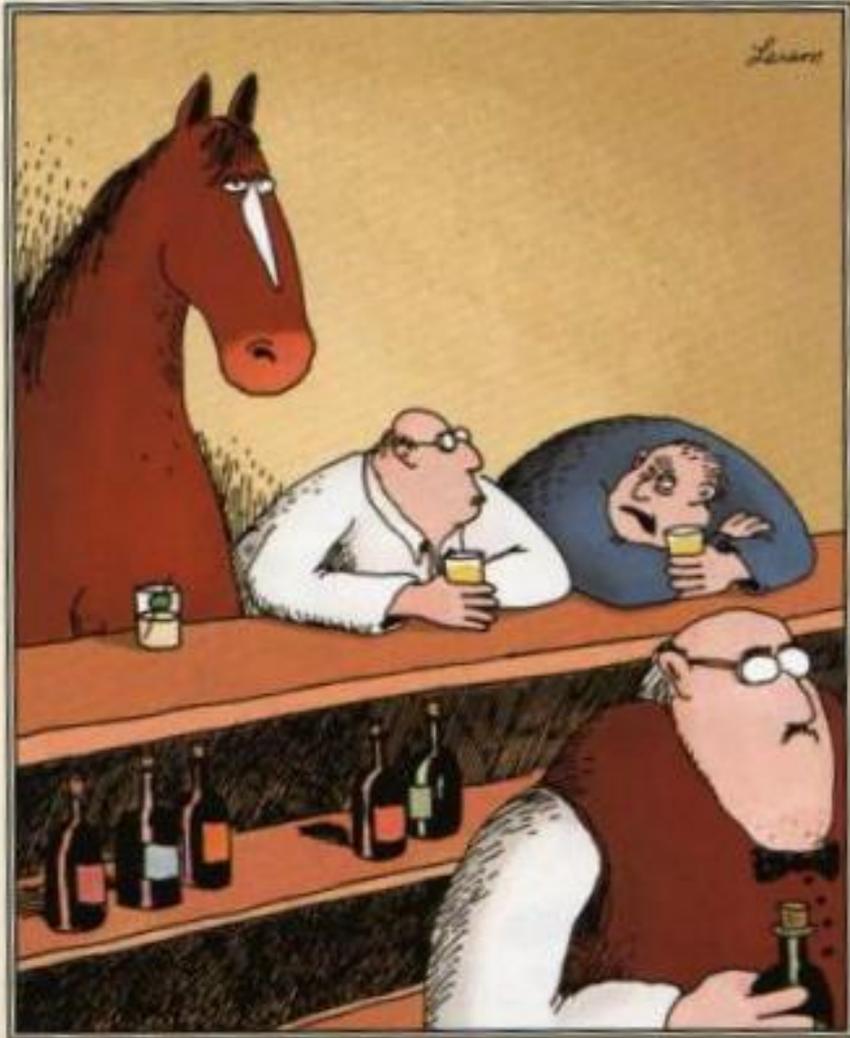
- Finally today we must apply this methodology to the **“Three Eyes of Knowing”**:
- **Eye of Flesh**
- **Eye of Mind** (Reason)
- **Eye of Contemplation** (Spirit/Gnosis)
- With insight comes **wisdom**, each level of development, each holon, transcends and includes the level beneath it. True knowledge *always* engenders **compassion!**

# So What is Cancer?

- The inductive as well as the deductive approach to inquiry must coexist in the approach to complex illnesses such as cancer, opening all the eyes of knowing.
- Imbalances at any quadrant of our existence are the true diseases for any individual, each person's cancer has a different etiology, interpretation, and treatment. Only you can heal yourself.
- Fear and misinformation drive the cancer industry, which is why cancer cure rates remain so low, medicine/poisons treat the symptom not the disease.

1/22/81

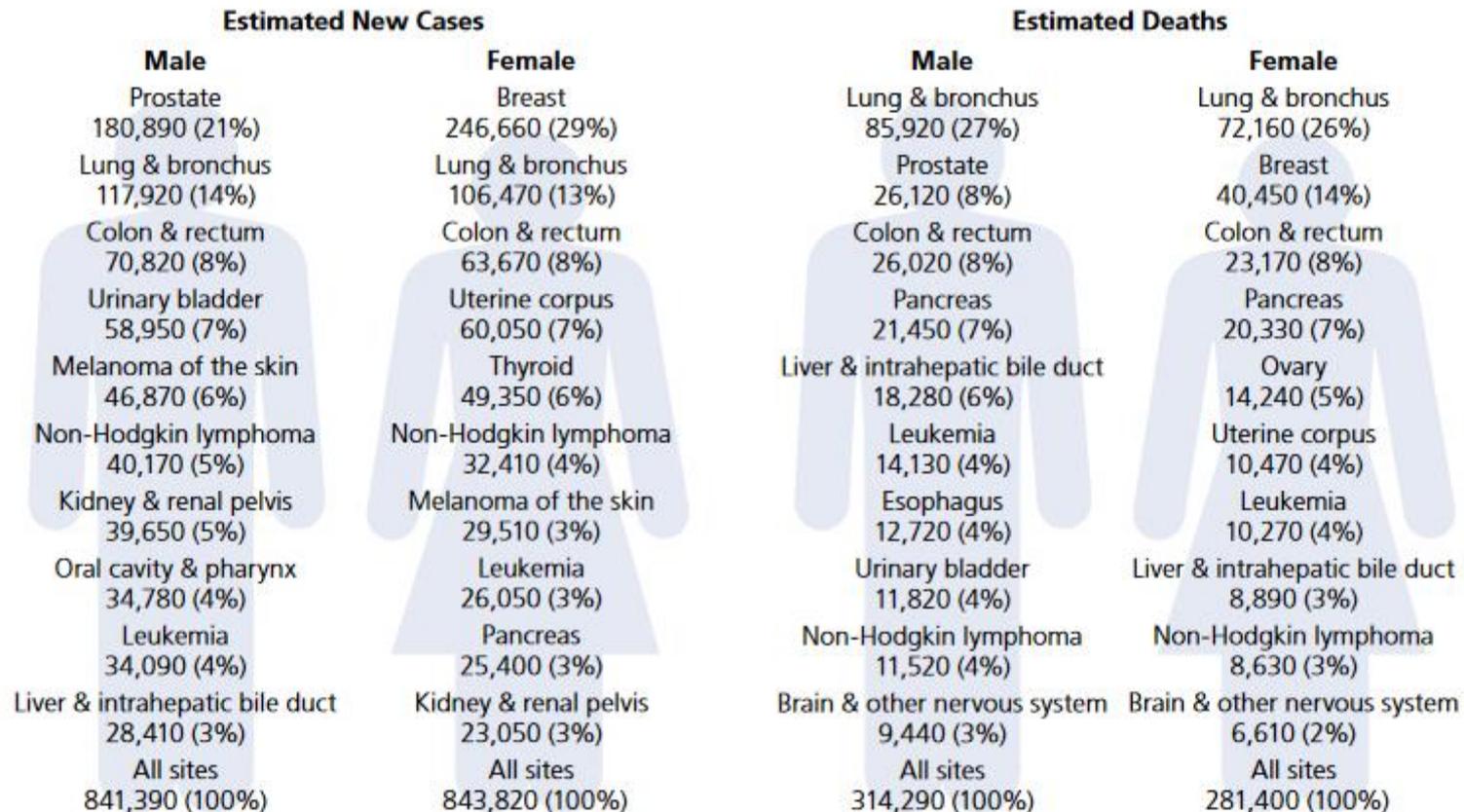
*Levan*



“Sure—but can you make him drink?”

# So What is cancer?

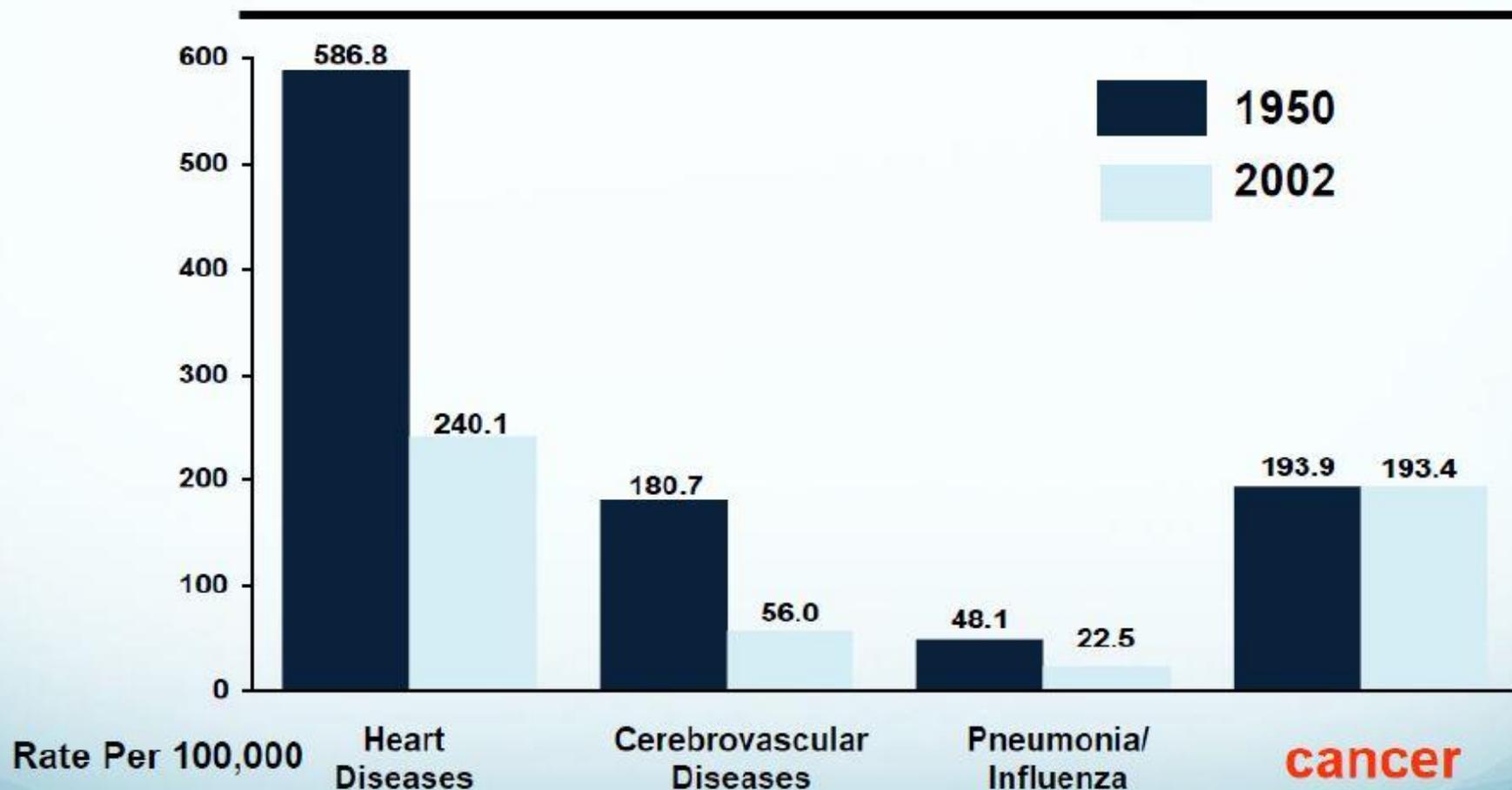
Figure 3. Leading Sites of New Cancer Cases and Deaths – 2016 Estimates



Estimates are rounded to the nearest 10, and cases exclude basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder.

## Change in the US Death Rates\* by Cause, 1950 & 2002

(A 2005 Presentation From the American Cancer Society)



\* Age-adjusted to 2000 US standard population.

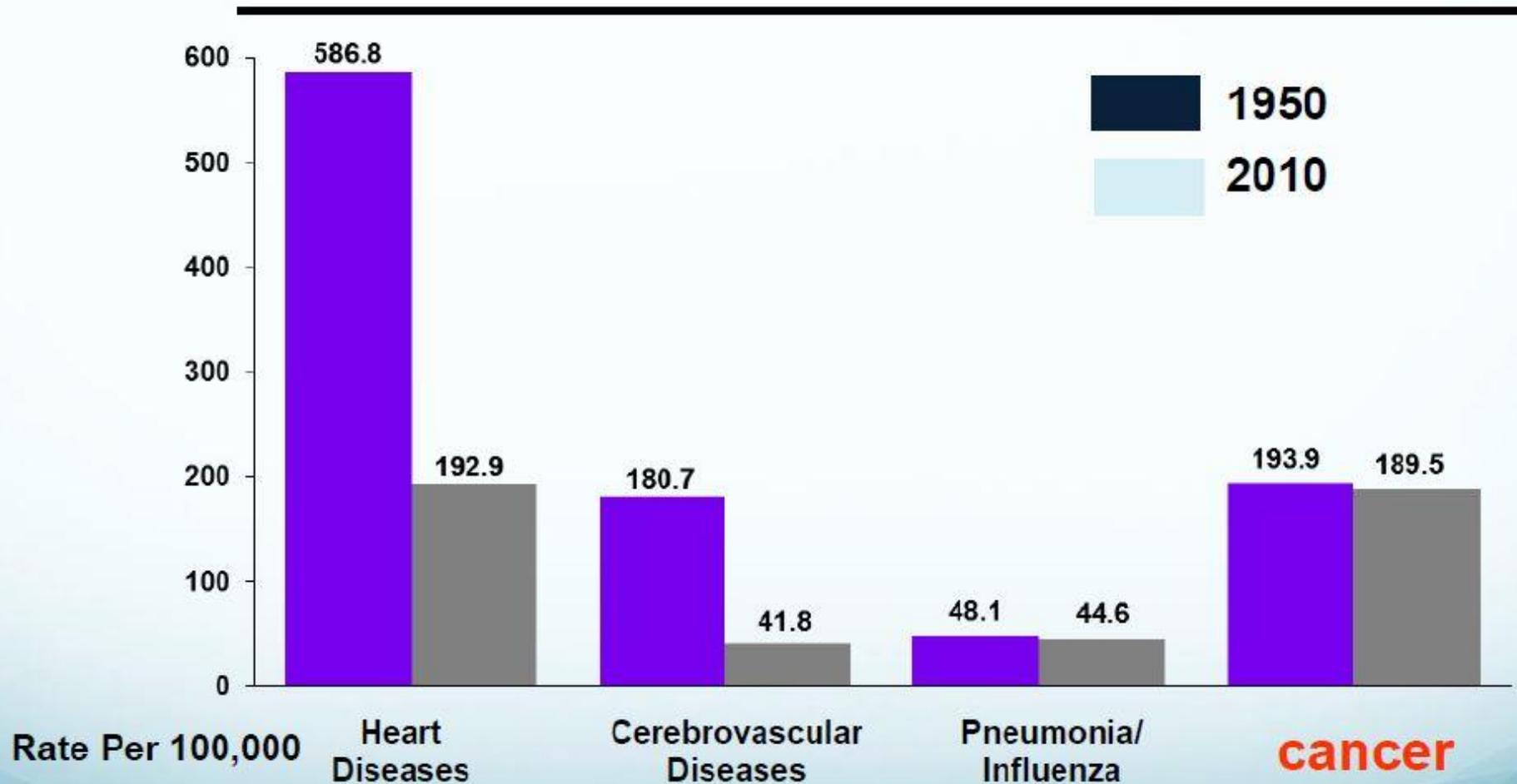
Sources: 1950 Mortality Data - CDC/NCHS, NVSS, Mortality Revised.

2002 Mortality Data: US Mortality Public Use Data Tape, 2002, NCHS, Centers for Disease Control and Prevention, 2004

©2005, American Cancer Society, Inc.

# Change in the US Death Rates\* by Cause, 1950 & 2010

(A 2005 Presentation From the American Cancer Society plus 2010 Data from the CDC)



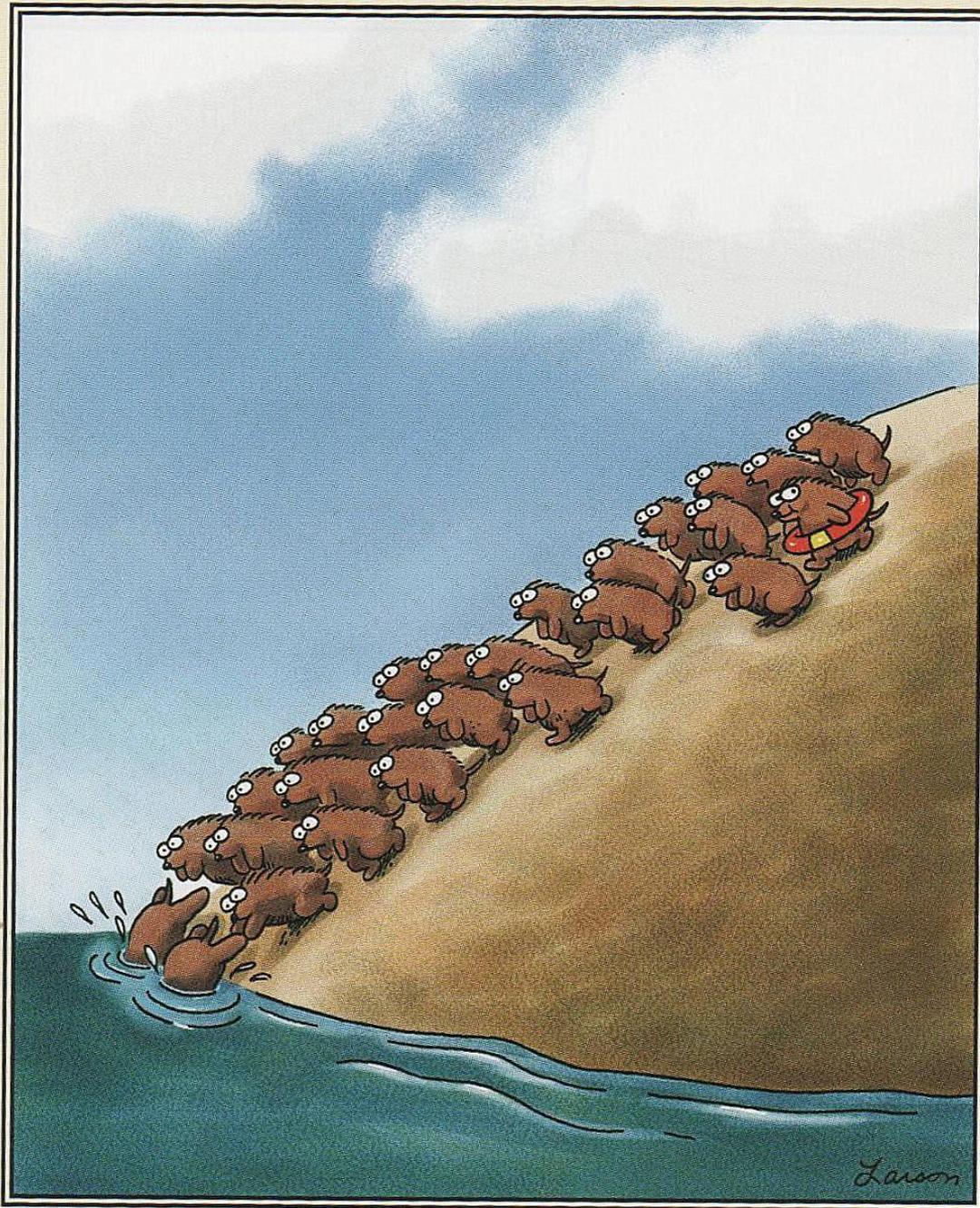
\* Age-adjusted to 2010 US standard population.

©2012 Best Answer for Cancer Fund

Sources: 1950 Mortality Data - CDC/NCHS, NVSS, Mortality Revised.

2010 Mortality Data: US Mortality Public Use Data Tape, 2002, NCHS, Centers for Disease Control and Prevention, 2011

12/15/80



# So What is Cancer?

- As we delve into the biology of cancer you might be developing a sense of dread... I will refer you to our “Must Reads” article ([MiddlePathMedicine.com](http://MiddlePathMedicine.com)) and briefly touch on just a few points from each.
- The current understanding of cancer as a metabolic disease, most solid tumors that occur with age representing an aberration in the healthy aging process.



THE  
EMPEROR  
OF ALL  
MALADIES



A BIOGRAPHY OF CANCER

SIDDHARTHA  
MUKHERJEE

# The Metabolic Approach to Cancer

Integrating Deep Nutrition, the Ketogenic Diet,  
and Nontoxic Bio-Individualized Therapies



**Dr. Nasha Winters, ND, L.Ac., FABNO**  
**Jess Higgins Kelley, MNT**

Foreword by Kelly Turner, author of *Radical Remission*

*"A wake-up call for all those who have accepted the poisons  
of our age of plenty without a blink."—Discover*

THE  
SECRET HISTORY  
OF THE  
**WAR**

ON

**CANCER**

**DEVRA DAVIS**

*Author of When Smoke Ran Like Water*

# *Hallmarks of Cancer: The Next Generation*

*Douglas Hanahan, Robert A. Weinberg*

*Cell*

Volume 144, Issue 5, Pages 646-674 (March 2011)

DOI: 10.1016/j.cell.2011.02.013

Figure 1

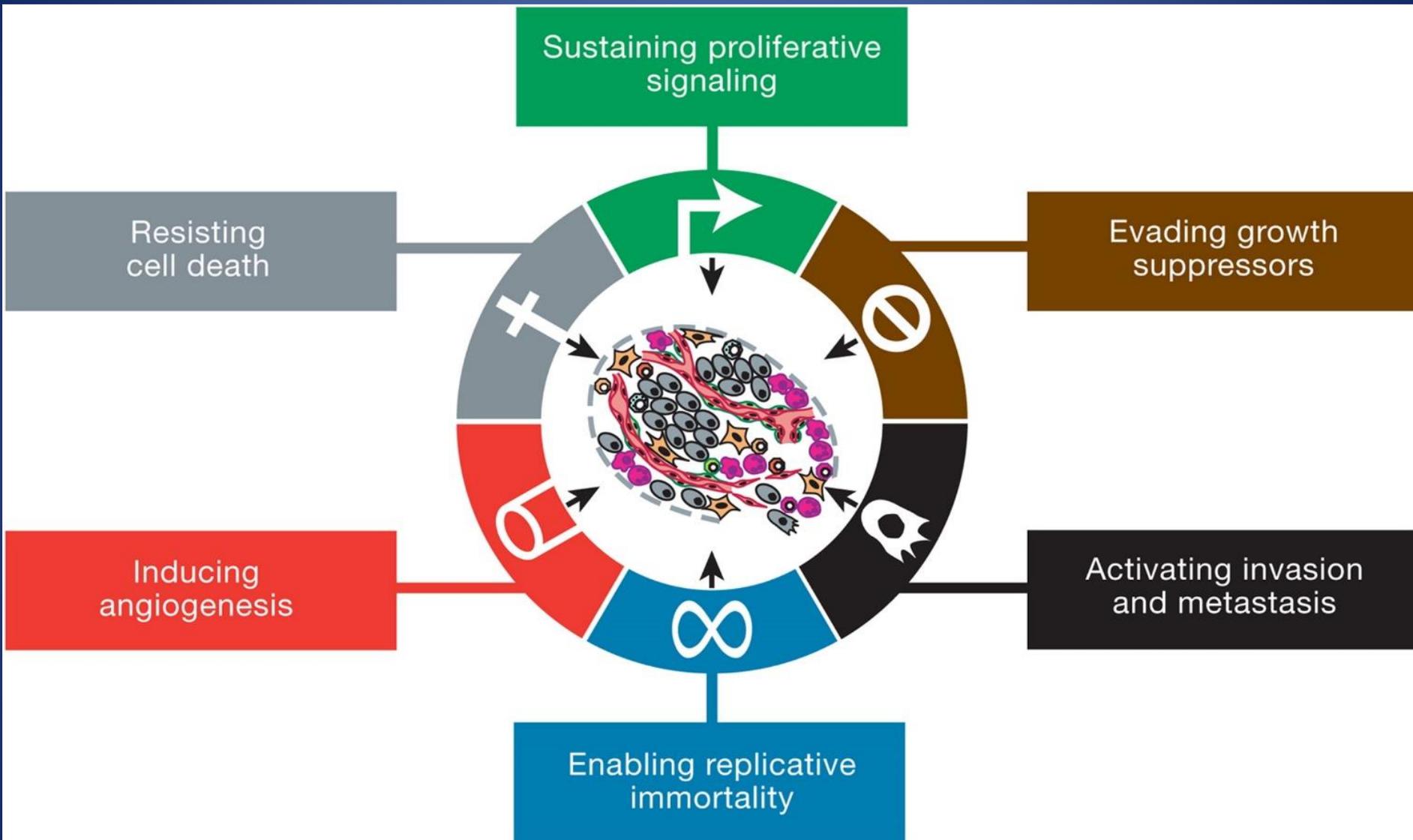


Figure 3

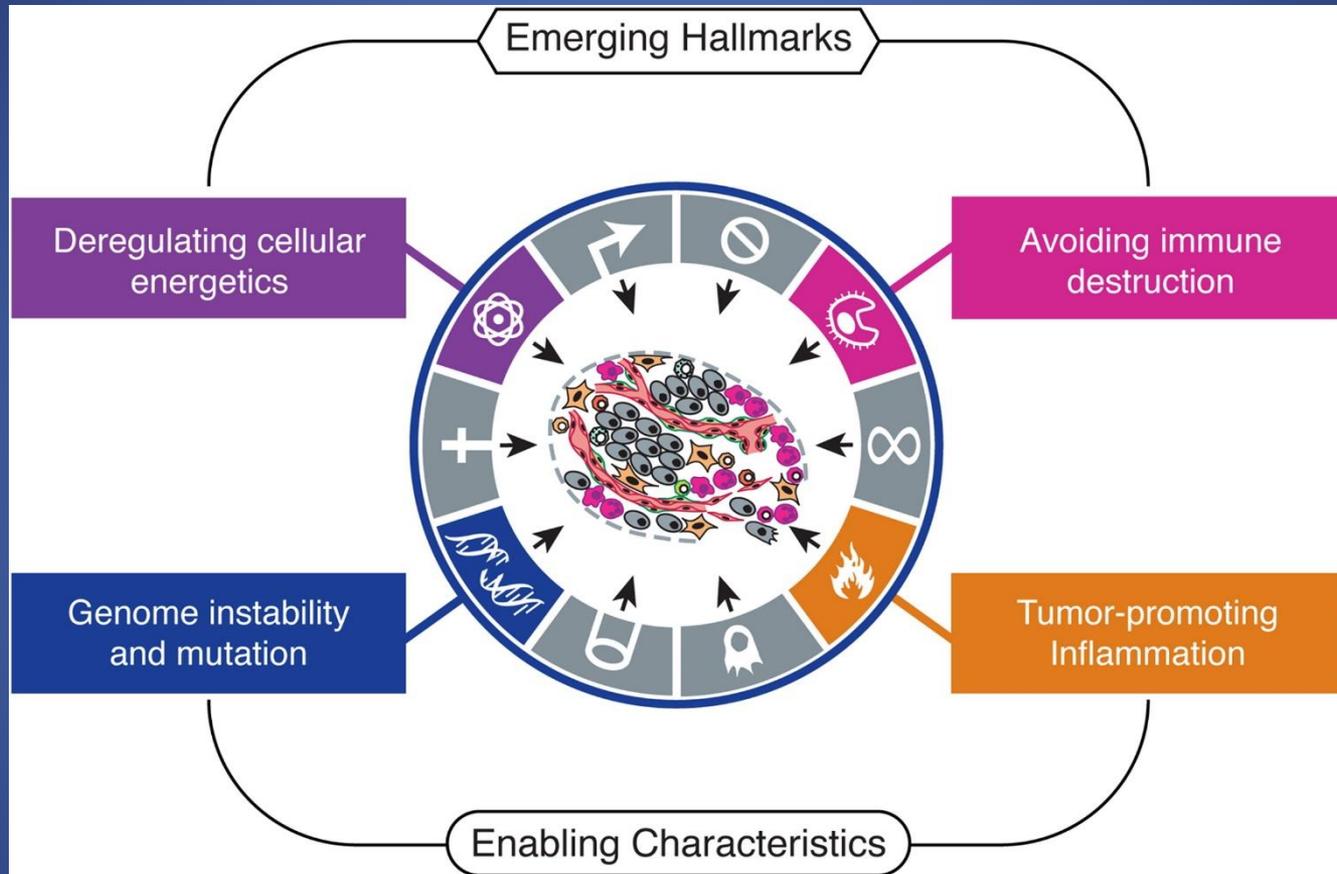
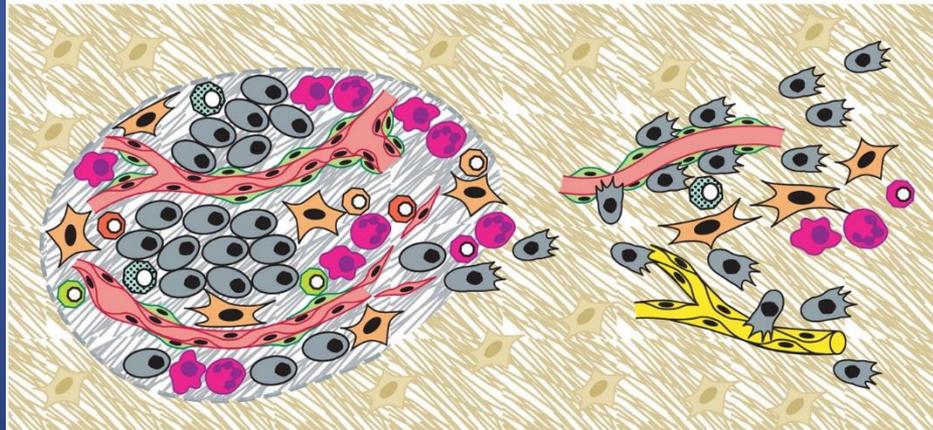
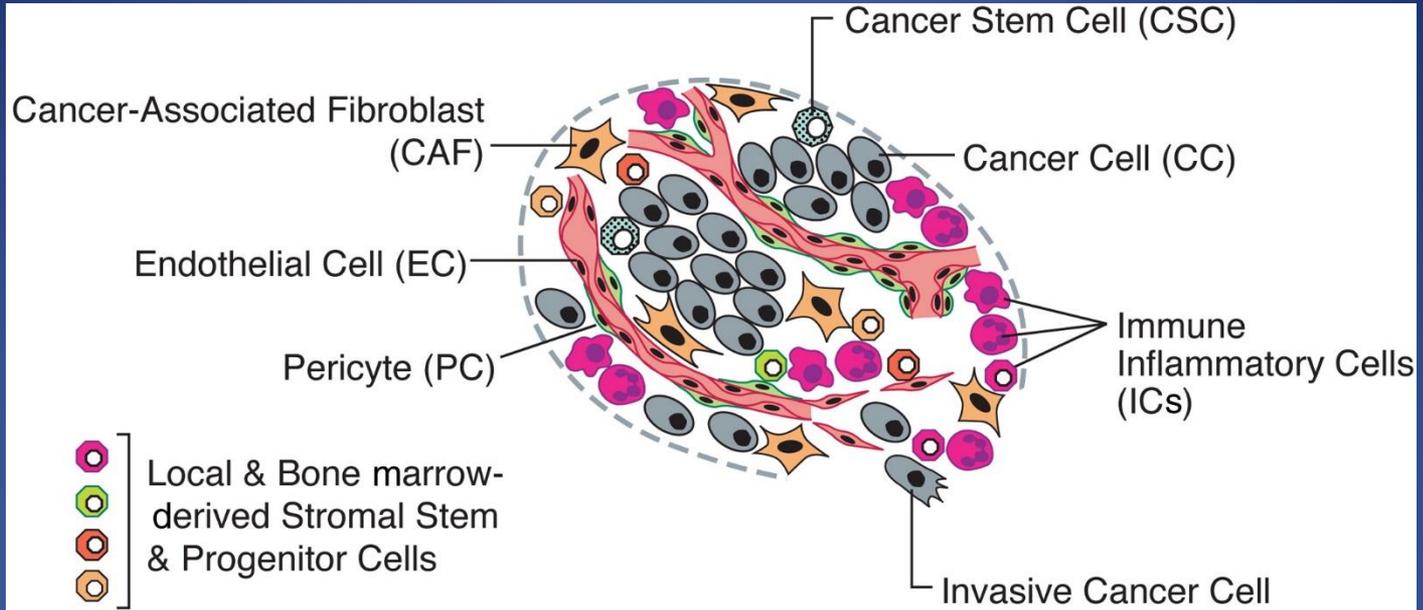
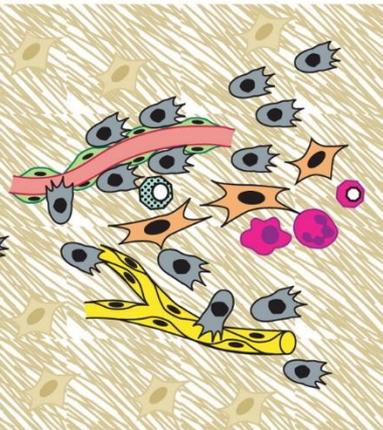


Figure 4



Core of Primary Tumor microenvironment



Invasive Tumor microenvironment



Metastatic Tumor microenvironment

Figure 5

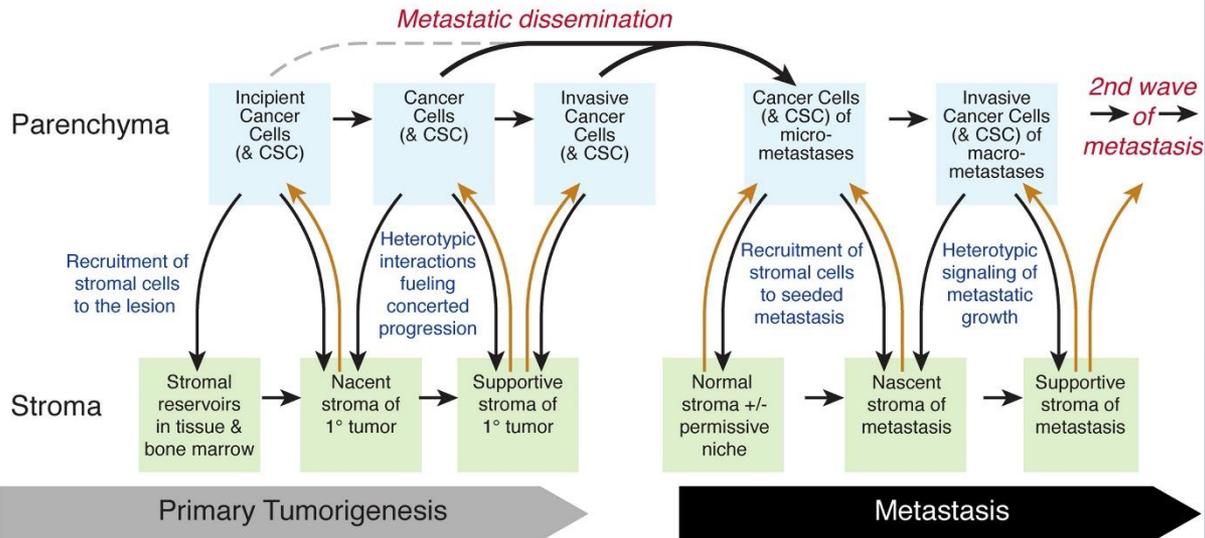
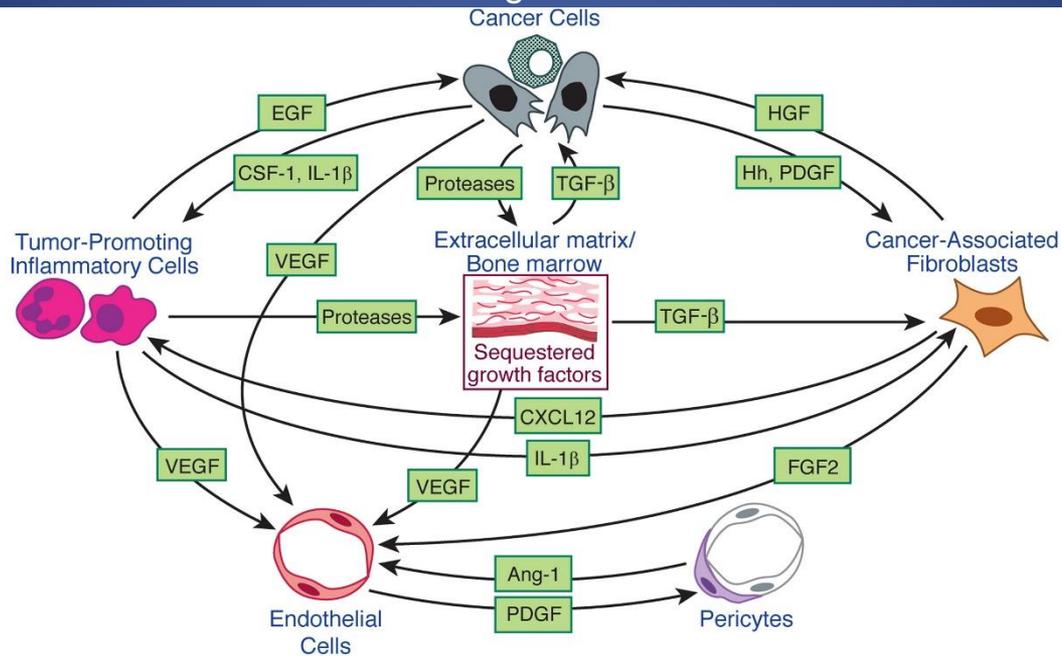
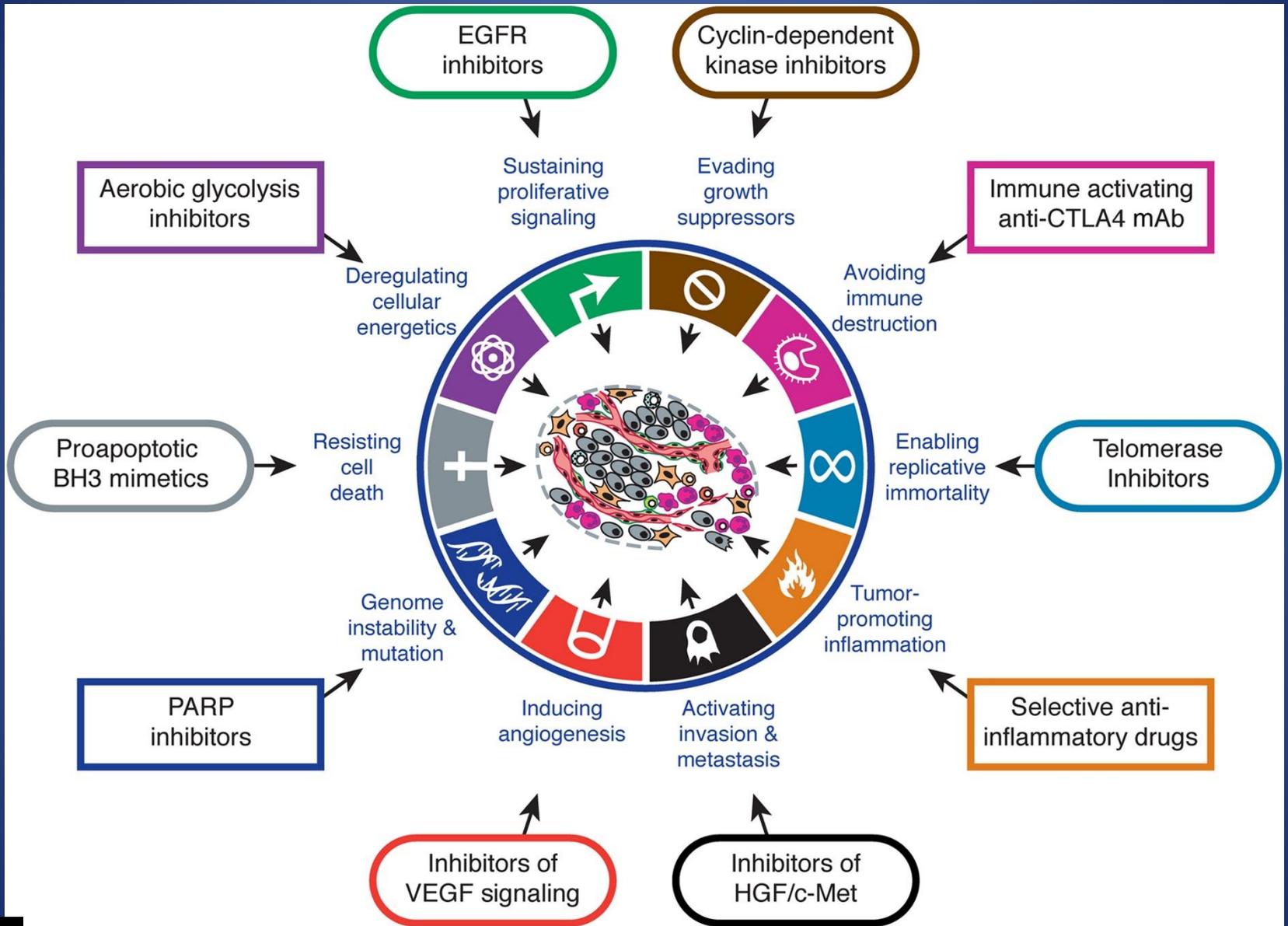
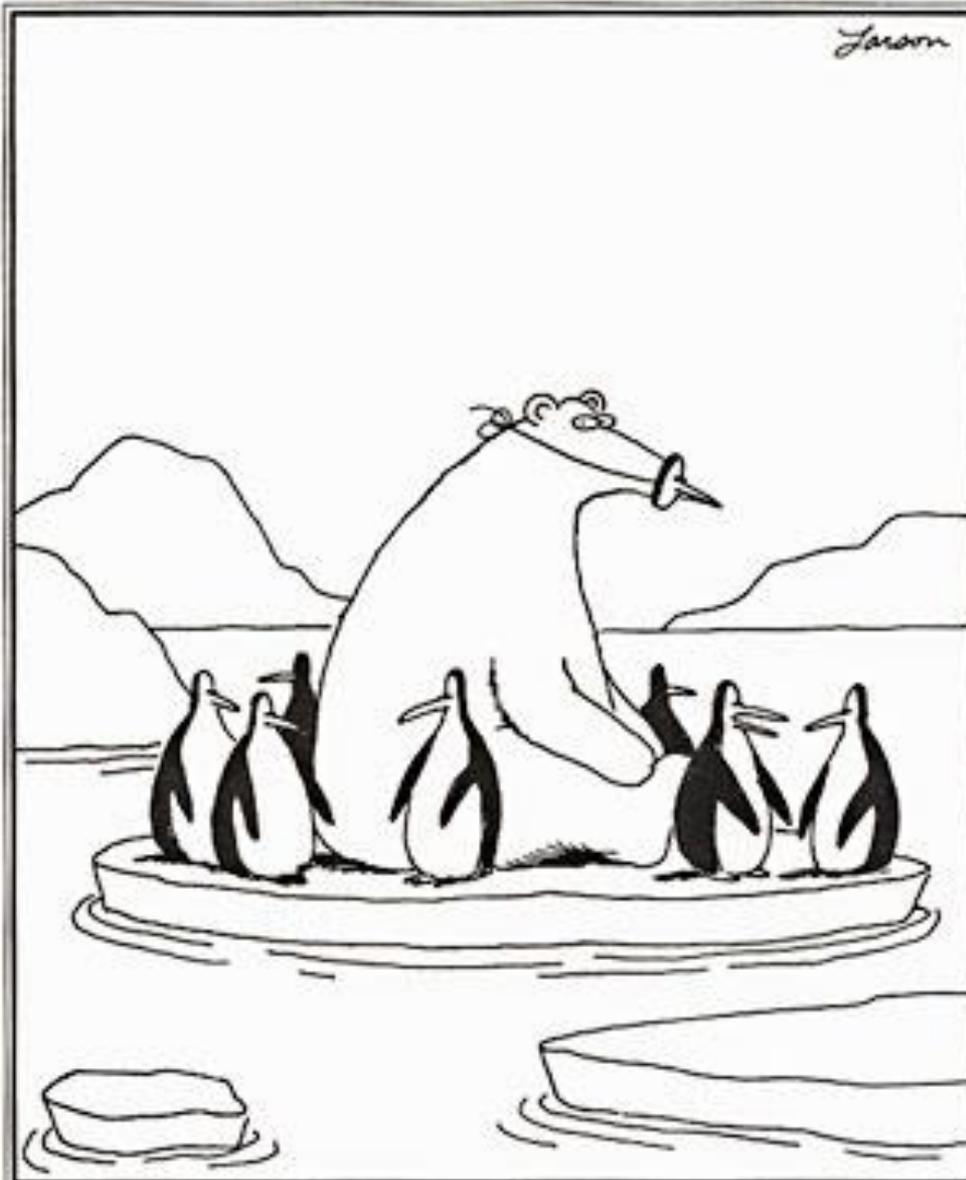


Figure 6



Jarom



"And now Edgar's gone. ... Something's going on around here."

# General Treatment Principals

- All Senses For Healing

As your patient and their family is in so much of a fear-based state, never has there been a more important time for wholism and 'center-stage' principals.

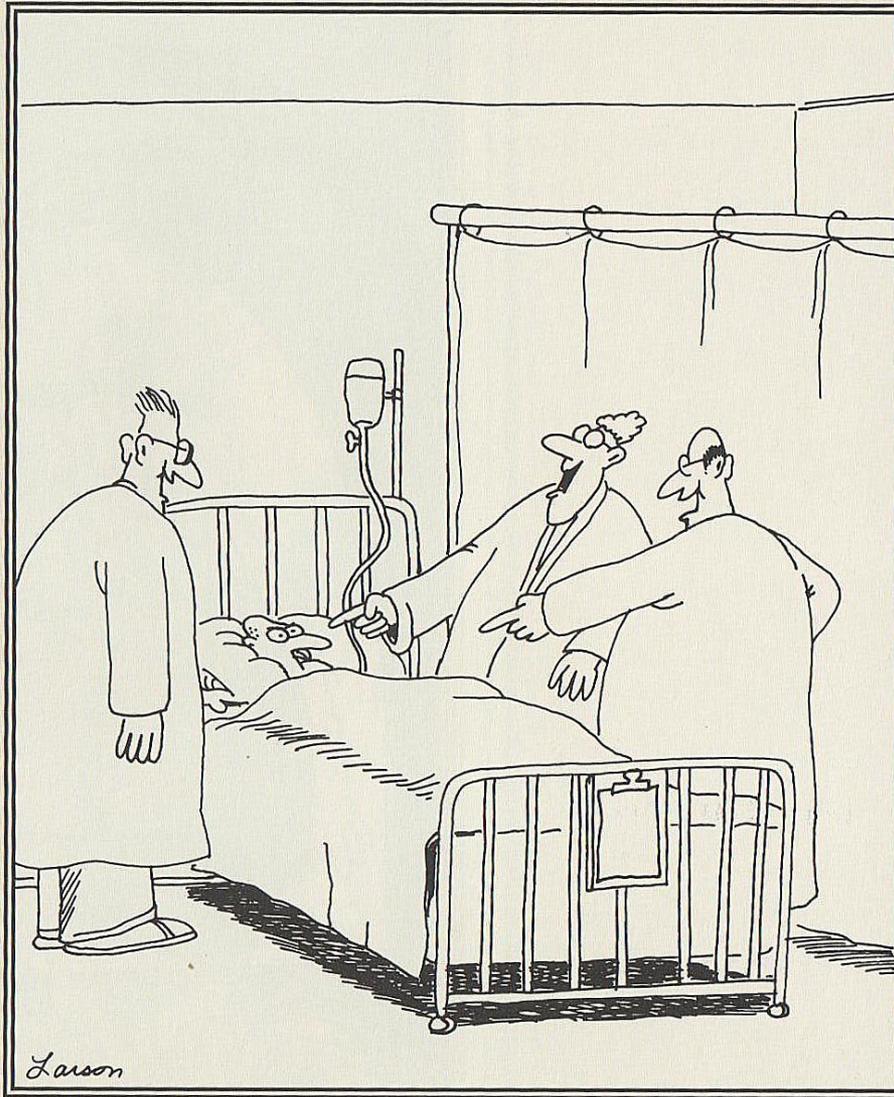
- **Visual**: discuss all videos/TV/news programs that they watch. Focus on time in nature, home beauty, Feng Shui
- **Auditory**: music as medicine, singing bowls, the non-local effects of harmony

# General Treatment Principals

- **Laughter**: the audio-visual continuum
- **Smell**: Essential Oils/aromatherapy, the power of personal experience
- **Taste**: the conscious use of spices; healthy shopping and cooking
- **Touch**: how touch deficiency exists whereas chemotherapy deficiency does not. All organic skin care and home care products.

The life –transforming power of cancer to heal.

6/30/84



Testing whether laughter *is* the best medicine.

# General Treatment Principals

- Meditation / Stress-Reduction / **Self-Realization**

Perceived stress has been linked to almost every tumor type and more aggressive tumors. Every study on stress-reduction shows improved quality of life and some show improved survival as well.

– **Techniques:**

- Transcendental Meditation (TM) [www.tm.org](http://www.tm.org)
- Primordial Sound Meditation (PSM) [www.chopra.com/meditation](http://www.chopra.com/meditation)
- HeartMath-Biofeedback technology: [www.heartmath.com](http://www.heartmath.com)
- Middle Path Medicine: Stress Management Series: online at [MiddlePathMedicine.com](http://MiddlePathMedicine.com)

# General Treatment Principals

- Nutrition:
  - Medical oncologists are under tremendous pressure to treat with medicines that are often ineffective. They are routinely taught to ignore information within their own literature which proves that good nutrition improves outcomes better than many chemotherapy regimens.
  - On the other hand, many nutritionally oriented practitioners overstate the benefits of their particular belief system about nutrition.
  - This leaves the patient confused and disempowered.

I'LL HAVE THE  
HALF-POUND  
DOUBLE-DELUXE  
BACON STEERBURGER,  
PLEASE...

YOU WANT  
CHEMOTHERAPY  
WITH THAT?



# General Treatment Principals

- Nutrition:
  - A “Paleo” organic, whole-food diet emphasizing vegetables, fruits, nuts, wild-caught fish, and organic lean proteins is preferred.
  - Most patients need to repair their “gut”, lose weight and repair the high-glycemic and pro-inflammatory diet that partially caused and is currently feeding their cancer.
  - Nutrition treats the person who has cancer, not cancer itself
  - A word on ketogenic diets
  - A word on biologic dentistry

# General Treatment Principals

- Exercise:
  - This might be more important than prescribing appropriate nutrition.
  - Every trial shows that even a modest exercise regime when compared to sedentary lifestyle improves survival, often more than chemotherapy.
  - All levels of fitness are important.
    1. “Yogic” fitness—flexibility, core, balance
    2. Aerobic fitness—this is not the time, however, for high-intensity interval training.
    3. Resistance fitness—maintenance of lean body mass is critical.
    4. Skill set – improves compliance and enjoyment

J Natl Cancer Inst. 2012 May 8. [Epub ahead of print]

# Physical Activity, Biomarkers, and Disease Outcomes in Cancer Survivors: A Systematic Review.

Ballard-Barbash R, Friedenreich CM, Courneya KS, Siddiqi SM, McTiernan A, Alfano CM.

## Source

Affiliations of authors: Applied Research Program (RB-B, SMS) and Office of Cancer Survivorship (CMA), Division of Cancer Control and Population Sciences, National Cancer Institute, National Institutes of Health, Bethesda, MD; Department of Health and Human Services, National Cancer Institute, National Institutes of Health, Bethesda, MD (RB-B, SMS, CMA); Faculty of Physical Education and Recreation, University of Alberta, Edmonton, AB, Canada (KSC); Department of Population Health Research, Alberta Health Services-Cancer Care, Calgary, AB, Canada (CMF); Program in Epidemiology, Division of Public Health Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA (AM).

## Abstract

### Background

Cancer survivors often seek information about how lifestyle factors, such as physical activity, may influence their prognosis. We systematically reviewed studies that examined relationships between physical activity and mortality (cancer-specific and all-cause) and/or cancer biomarkers.

## Physical Activity, Biomarkers, and Disease Outcomes in Cancer Survivors: A Systematic Review.

Ballard-Barbash R, Friedenreich CM, Courneya KS, Siddiqi SM, McTiernan A, Alfano CM.

### Methods

We identified 45 articles published from January 1950 to August 2011 through MEDLINE database searches that were related to physical activity, cancer survival, and biomarkers potentially relevant to cancer survival. We used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement to guide this review. Study characteristics, mortality outcomes, and biomarker-relevant and subgroup results were abstracted for each article that met the inclusion criteria (i.e., research articles that included participants with a cancer diagnosis, mortality outcomes, and an assessment of physical activity).

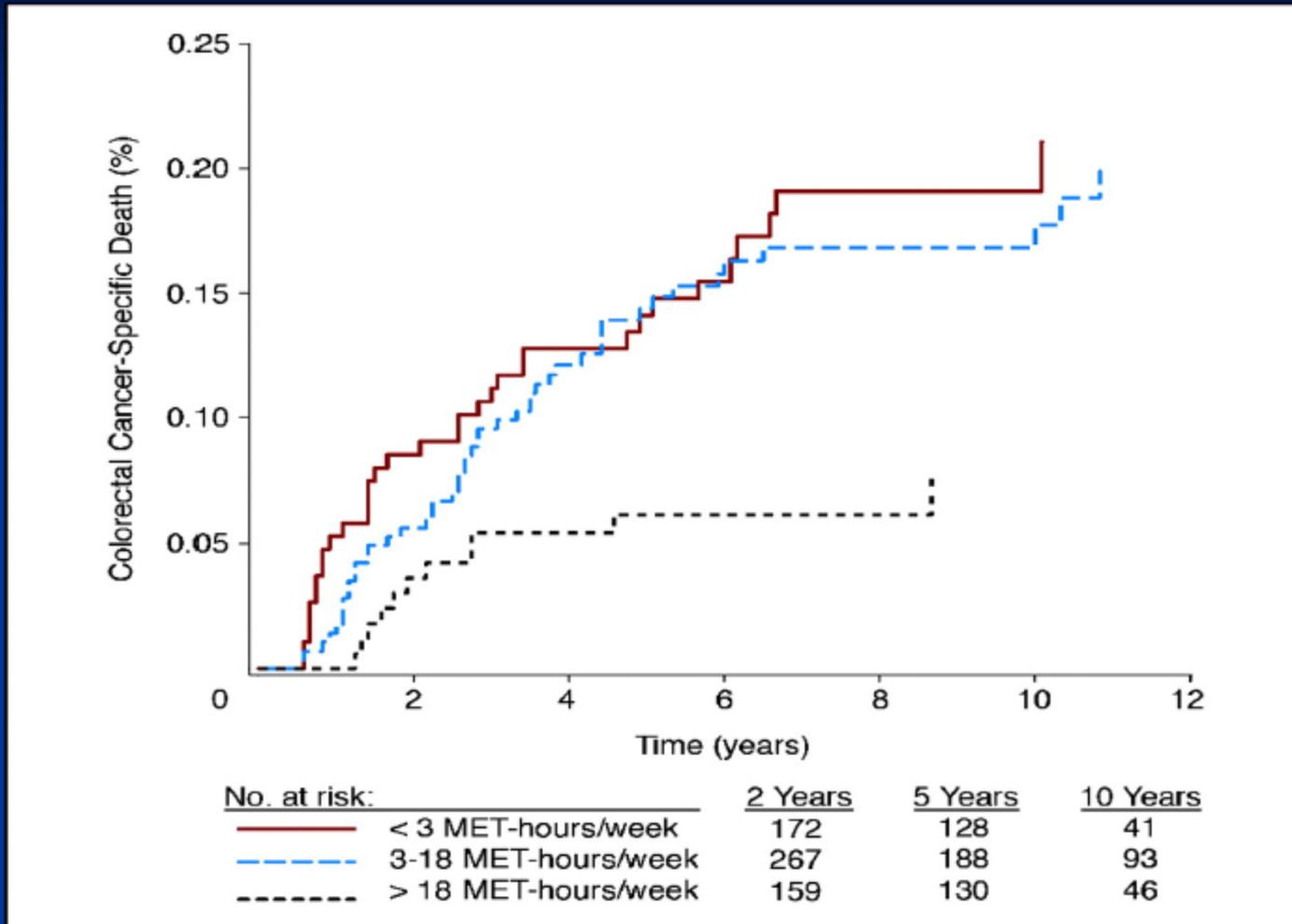
### Results

There was consistent evidence from 27 observational studies that physical activity is associated with reduced all-cause, breast cancer-specific, and colon cancer-specific mortality. There is currently insufficient evidence regarding the association between physical activity and mortality for survivors of other cancers. Randomized controlled trials of exercise that included biomarker endpoints suggest that exercise may result in beneficial changes in the circulating level of insulin, insulin-related pathways, inflammation, and, possibly, immunity; however, the evidence is still preliminary.

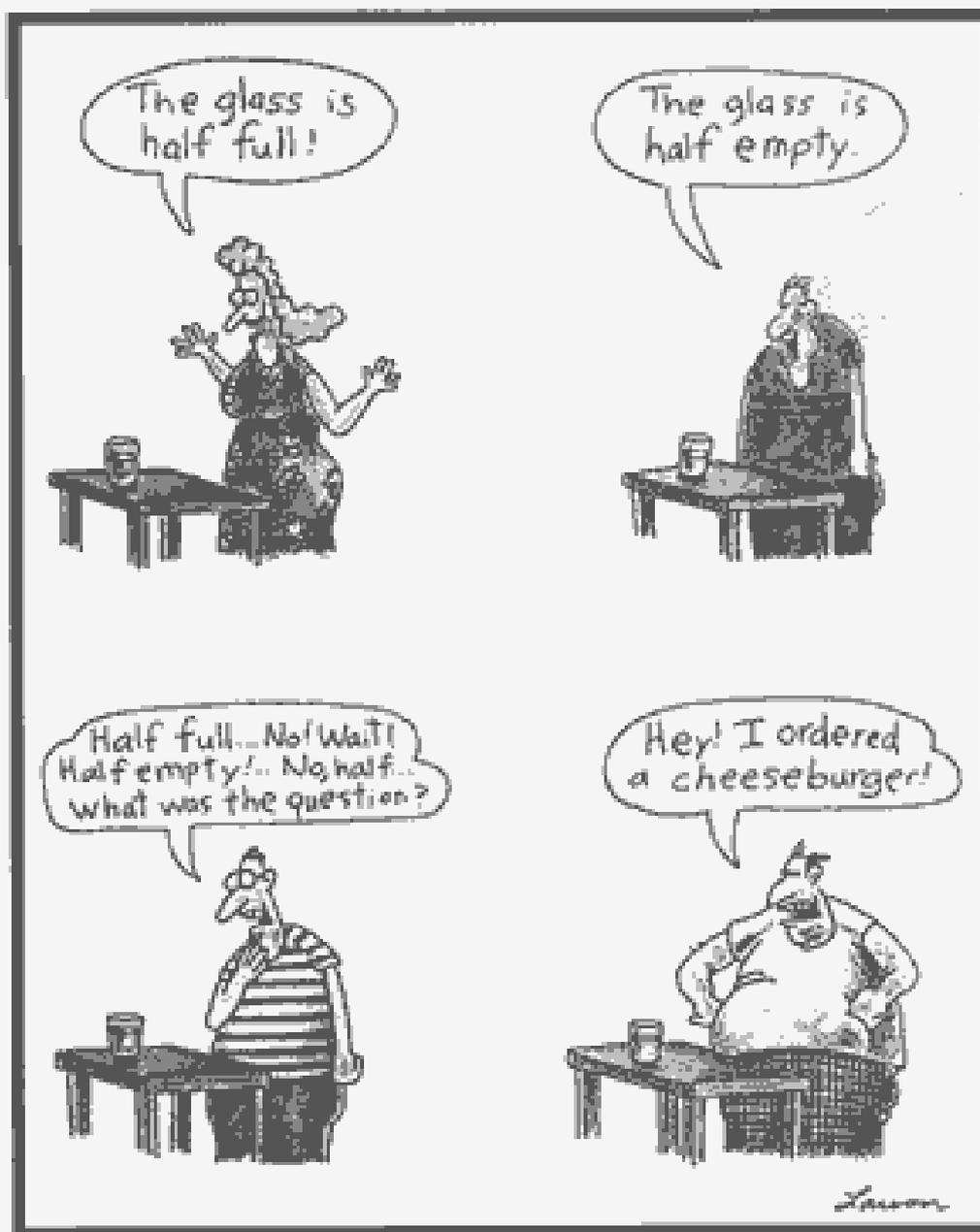
A MET or metabolic equivalent is the amount of energy used by the body to perform a physical activity or daily task. At rest, the average person has an oxygen consumption of 1 MET (or 3.5 ml/kg-min). MET values increase as more activity is performed.

Physical Activity	MET
<b>Light Intensity Activities</b>	
sleeping	0.9
watching television	1.0
writing, desk work, typing	1.8
walking, 1.7 mph (2.7 km/h), level ground, strolling, very slow	2.3
walking, 2.5 mph (4 km/h)	2.9
<b>Moderate Intensity Activities</b>	
bicycling, stationary, 50 watts, very light effort	3.0
walking 3.0 mph (4.8 km/h)	3.3
calisthenics, home exercise, light or moderate effort, general	3.5
walking 3.4 mph (5.5 km/h)	3.6
bicycling, <10 mph (16 km/h), leisure, to work or for pleasure	4.0
bicycling, stationary, 100 watts, light effort	5.5
<b>Vigorous Intensity Activities</b>	
jogging, general	7.0
calisthenics (e.g. pushups, situps, pullups, jumping jacks), heavy, vigorous effort	8.0
running jogging, in place	8.0
rope jumping	10.0

# Exercise (18 met-hrs) Reduces Colorectal Mortality



Meyerhardt, J. A. et al. J Clin Oncol; 24:3527-3534 2006



The four basic personality types

# General Treatment Principles

- Extensive Laboratory Evaluation including **True Health Diagnostics**, <https://truehealthdiag.com/> I have found this tool invaluable in regards to metabolic health as markers of methylation, glycation, inflammation, and nutritional status prove necessary for determining efficacy and compliance of our interventions.
- **Nagalase**, and appropriate tumor markers as indicated by cancer type. (good overview : <https://www.cancer.gov/about-cancer/diagnosis-staging/diagnosis/tumor-markers-fact-sheet> )
- **Endocrine evaluation: Thyroid** to include FT4, FT3, RT3, TSH, TPO Ab, TgAb , **Adrenal** including DHEA-S and cortisol with preference for salivary profile and appropriate sex steroid profile.
- Heavy metal screens, GI evaluation as appropriate, and of course routine CBC, Chem panel, ferritin, UNTx.
- **Radiology** including Coronary Calcium Score (routinely for men over 45 and women over 55), Bone Density routinely in women over 50 and men over 70. I save PET/CT for patient where I have no other valid marker to assess success of our program.

# Supplements

- Always Heal the GI Tract FIRST
  - 4R Program utilizing your personal favorites.
  - Digestive Difficulties PowerPoint on [MiddlePathMedicine.com](http://MiddlePathMedicine.com)
  - Remember that many cancer patients are suffering from leaky gut and food allergies; consider ALCAT (or other food sensitivity testing) testing in all of your patients to help individualize your nutrition prescription.

Cancer Chemother Pharmacol. 2012 Jan 24.

## **The efficacy and safety of melatonin in concurrent chemotherapy or radiotherapy for solid tumors: a meta-analysis of randomized controlled trials.**

Wang YM, Jin BZ, Ai F, Duan CH, Lu YZ, Dong TF, Fu QL.

### **Source**

Department of Pharmacy, The First Affiliated Hospital of Xinxiang Medical University, 88 Jiankang Road, The City of Weihui, Xinxiang, Henan Province, China.

### **Abstract**

#### **BACKGROUND:**

Recently, melatonin has been associated with cancer both in vitro and in vivo. However, the value of melatonin in the treatment of cancer remains disputable. Hence, we performed a systematic review of randomized controlled trials (RCTs) of melatonin in solid tumor cancer patients and observed its effect on tumor remission, 1-year survival, and side effects due to radiochemotherapy.

#### **METHODS:**

An electronic search was conducted using the databases Pubmed, Medline, EMBASE, Cochrane library, and CNKI, from inception to November 2011. Trials using melatonin as adjunct treatment concurrent with chemotherapy or radiotherapy for cancer were included. Pooled relative risk (RR) for the tumor remission, 1-year survival, and radiochemotherapy-related side effects were calculated using the software Revman 5.0.

## **The efficacy and safety of melatonin in concurrent chemotherapy or radiotherapy for solid tumors: a meta-analysis of randomized controlled trials.**

Wang YM, Jin BZ, Ai F, Duan CH, Lu YZ, Dong TF, Fu QL.

### **RESULTS:**

The search strategy identified 8 eligible RCTs (n = 761), all of which studied solid tumor cancers. The dosage of melatonin used in the 8 included RCTs was 20 mg orally, once a day. Melatonin significantly improved the complete and partial remission (16.5 vs. 32.6%; RR = 1.95, 95% CI, 1.49-2.54; P < 0.00001) as well as 1-year survival rate (28.4 vs. 52.2%; RR = 1.90; 95% CI, 1.28-2.83; P = 0.001), and dramatically decreased radiochemotherapy-related side effects including thrombocytopenia (19.7 vs. 2.2%; RR = 0.13; 95% CI, 0.06-0.28; P < 0.00001), neurotoxicity (15.2 vs. 2.5%; RR = 0.19; 95% CI, 0.09-0.40; P < 0.0001), and fatigue (49.1 vs. 17.2%; RR = 0.37; 95% CI, 0.28-0.48; P < 0.00001). Effects were consistent across different types of cancer. No severe adverse events were reported.

### **CONCLUSIONS:**

Melatonin as an adjuvant therapy for cancer led to substantial improvements in tumor remission, 1-year survival, and alleviation of radiochemotherapy-related side effects.

**J Res Med Sci.** 2017 Jan 27;22:2. doi: 10.4103/1735-1995.199092. eCollection 2017.

**Melatonin and human mitochondrial diseases.**

**Sharafati-Chaleshtori R<sup>1</sup>, Shirzad H<sup>2</sup>, Rafieian-Kopaei M<sup>2</sup>, Soltani A<sup>2</sup>.**

Mitochondrial dysfunction is one of the main causative factors in a wide variety of complications such as neurodegenerative disorders, ischemia/reperfusion, aging process, and septic shock. Decrease in respiratory complex activity, increase in free radical production, increase in mitochondrial synthase activity, increase in nitric oxide production, and impair in electron transport system and/or mitochondrial permeability are considered as the main factors responsible for mitochondrial dysfunction. Melatonin, the pineal gland hormone, is selectively taken up by mitochondria and acts as a powerful antioxidant, regulating the mitochondrial bioenergetic function. Melatonin increases the permeability of membranes and is the stimulator of antioxidant enzymes including superoxide dismutase, glutathione peroxidase, glutathione reductase, and catalase. It also acts as an inhibitor of lipoxygenase. Melatonin can cause resistance to oxidation damage by fixing the microsomal membranes. Melatonin has been shown to retard aging and inhibit neurodegenerative disorders, ischemia/reperfusion, septic shock, diabetes, cancer, and other complications related to oxidative stress. The purpose of the current study, other than introducing melatonin, was to present the recent findings on clinical effects in diseases related to mitochondrial dysfunction including diabetes, cancer, gastrointestinal diseases, and diseases related to brain function.

**KEYWORDS:**

Antioxidant; free radical; melatonin; mitochondrial dysfunction; neurodegenerative disorders; nitric oxide; pineal gland hormone

PMID:28400824

## **Melatonin for the prevention and treatment of cancer.**

Li Y<sup>1</sup>, Li S<sup>2</sup>, Zhou Y<sup>1</sup>, Meng X<sup>1</sup>, Zhang JJ<sup>1</sup>, Xu DP<sup>1</sup>, Li HB<sup>1,3</sup>.

### **Abstract**

The epidemiological studies have indicated a possible oncostatic property of melatonin on different types of tumors. Besides, experimental studies have documented that melatonin could exert growth inhibition on some human tumor cells in vitro and in animal models. The underlying mechanisms include antioxidant activity, modulation of melatonin receptors MT1 and MT2, stimulation of apoptosis, regulation of pro-survival signaling and tumor metabolism, inhibition on angiogenesis, metastasis, and induction of epigenetic alteration. Melatonin could also be utilized as adjuvant of cancer therapies, through reinforcing the therapeutic effects and reducing the side effects of chemotherapies or radiation. Melatonin could be an excellent candidate for the prevention and treatment of several cancers, such as breast cancer, prostate cancer, gastric cancer and colorectal cancer. This review summarized the anticancer efficacy of melatonin, based on the results of epidemiological, experimental and clinical studies, and special attention was paid to the mechanisms of action.

### **KEYWORDS:**

anticancer; apoptosis; mechanisms of action; melatonin; receptor

PMID:28415828

# Low Dose Naltrexone

- [www.lowdosenaltrexone.org](http://www.lowdosenaltrexone.org)
- Nighttime dosage of this narcotic antagonist leads to a brief suppression and subsequent dramatic increase in endorphins and enkephalins with subsequent improvement in cell regulation and apoptosis/ PCD.
- Contraindicated in patients on narcotics (morphine = love of death).
- My anecdotal experience.

## **Low Dose Naltrexone in the Treatment of Fibromyalgia.**

**Metyas SK<sup>1</sup>, Yeter K<sup>2</sup>, Solyman J<sup>3</sup>, Arkfeld D<sup>2</sup>.**

### **Abstract**

Fibromyalgia is a chronic pain disorder characterized by diffuse musculoskeletal pain, fatigue, sleep disturbance and cognitive impairment. A significant number of fibromyalgia patients do not respond adequately to the current drugs (pregabalin, milnacipran, duloxetine) approved for fibromyalgia treatment by the Food and Drug Administration (FDA). Thus, there is still a need for adjunctive therapies. Naltrexone is an opioid receptor antagonist used to treat alcohol and opioid dependence. It is hypothesized that low dose naltrexone causes transient blockade of opioid receptors centrally resulting in a rebound of endorphin function which may attenuate pain in fibromyalgia. Treatment with low dose naltrexone may be an effective, highly tolerable and inexpensive treatment for fibromyalgia. Further controlled trials are needed.

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### **KEYWORDS:**

Fibromyalgia; Treatment; low dose Naltrexone

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# The use of low-dose naltrexone (LDN) as a novel anti-inflammatory treatment for chronic pain.

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## Abstract

Low-dose naltrexone (LDN) has been demonstrated to reduce symptom severity in conditions such as fibromyalgia, Crohn's disease, multiple sclerosis, and complex regional pain syndrome. We review the evidence that LDN may operate as a novel anti-inflammatory agent in the central nervous system, via action on microglial cells. These effects may be unique to low dosages of naltrexone and appear to be entirely independent from naltrexone's better-known activity on opioid receptors. As a daily oral therapy, LDN is inexpensive and well-tolerated. Despite initial promise of efficacy, the use of LDN for chronic disorders is still highly experimental. Published trials have low sample sizes, and few replications have been performed. We cover the typical usage of LDN in clinical trials, caveats to using the medication, and recommendations for future research and clinical work. LDN may represent one of the first glial cell modulators to be used for the management of chronic pain disorders.

# GcMAF

- GCMAF.SE
- Nagalase (alpha-N-acetylgalactosaminidase) Nagalase is an extracellular matrix-degrading enzyme that is (increased) secreted by cancerous cells in the process of tumor invasion. It also is an intrinsic component of the envelope protein of various virions, such as HIV, Epstein-Barr virus (EBV), herpes zoster and the influenza virus. Thus, it is also secreted from virus-infected cells.

# GcMAF

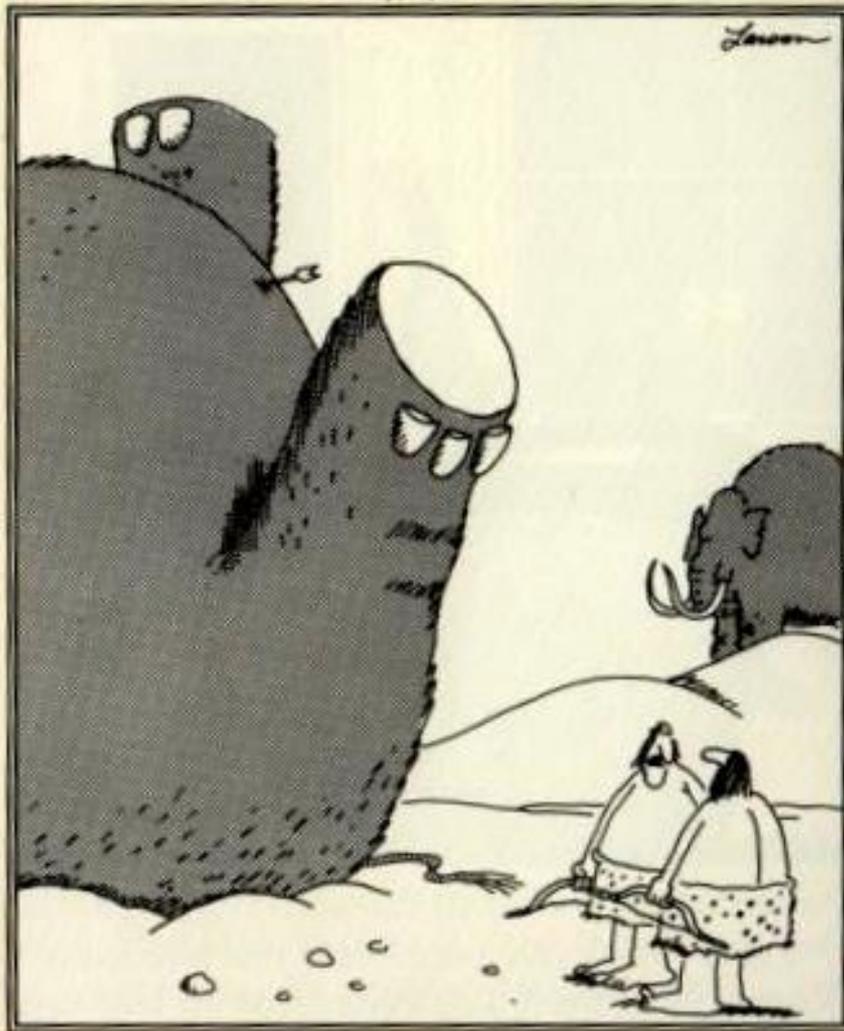
- Measuring nagalase and subsequent treatment with GcMAF and/or salicinium has dramatically affected my integrative oncology practice.
- Dose range of GOleic from 0.25 cc Q wk to 0.5 cc BIW ( in my practice ) others have used up to 2 cc QD without side effects. Obvious cost limitations exist.

# Salicinium

- [www.salicinium.com](http://www.salicinium.com)
- My first approach to overcoming nagalase has been GcMAF, but have found adding this agent orally or IV to be necessary for refractory cases. Of course we utilize this first line if GOleic is unavailable.

7/21/86

*Lawson*



“We should write that spot down.”