GENERAL INTERNAL MEDICINE REVIEW COURSE

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COMMON CHRONIC ILLNESSES

- Hypertension

- Obesity

- Diabetes or metabolic syndrome

- Hyperlipidemia

- Chronic kidney impairment

- Osteoarthritis / degenerative joint disease

- Depression / anxiety

- Asthma / COPD

- Congestive cardiac failure

Figure 1. WHO estimates of proportions of deaths in Malawi 2002 causes by infectious and non-communicable diseases compared to other countries

Distribution of deaths by major cause group
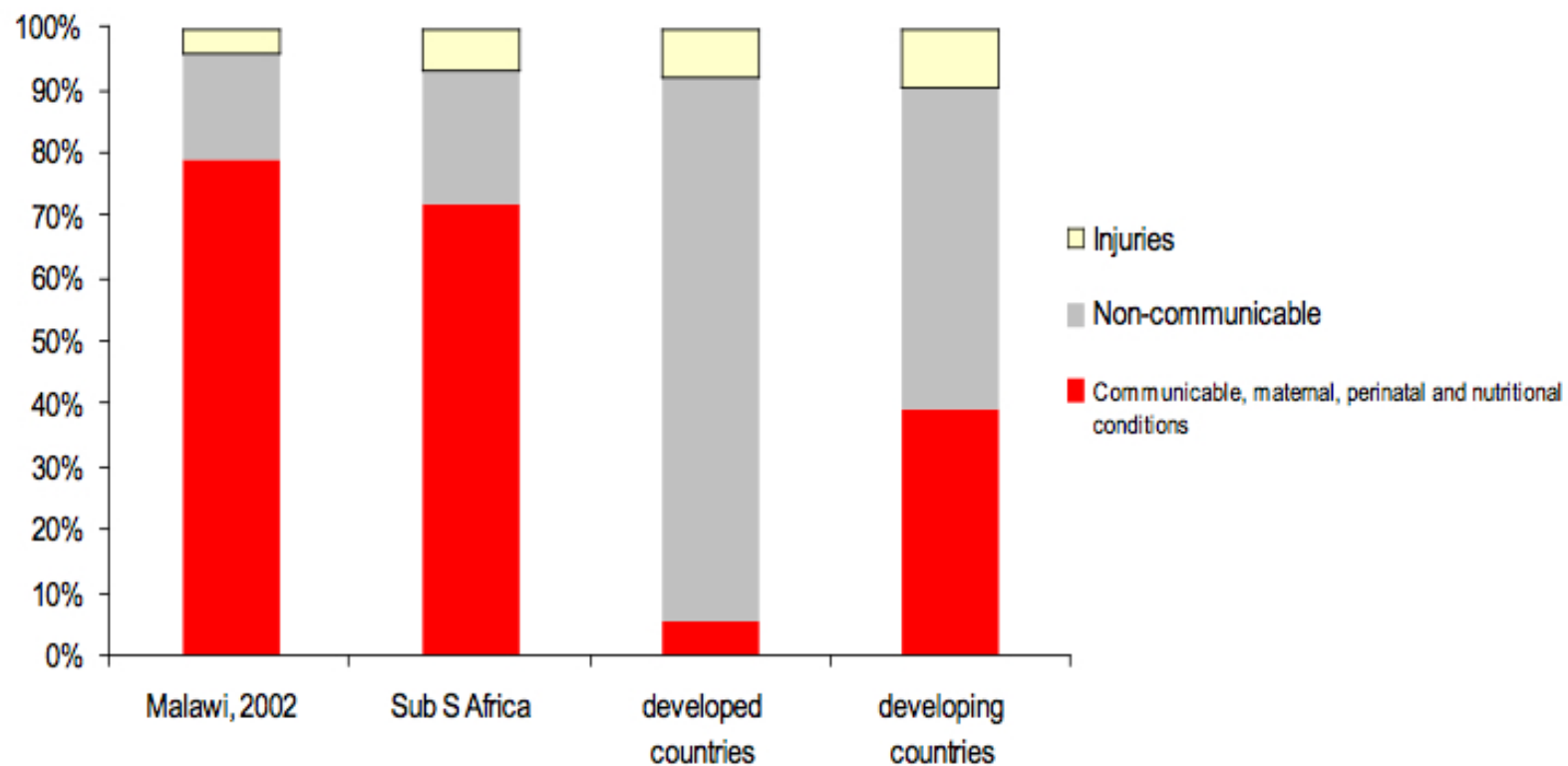Malawi and region, 2002

Table 5.9   GBD Estimates of Leading Causes of Death, by Sex, 2000

Cause of death in all persons (10,778,044)	Total deaths (%)	Cause of death in males (5,557,783)
1 HIV/AIDS	20.4	1 HIV/AIDS
2 Malaria	10.1	2 Lower respiratory infections
3 Lower respiratory infections	9.8	3 Malaria
4 Diarrheal diseases	6.5	4 Diarrheal diseases
5 Perinatal conditions	5.1	5 Perinatal conditions
6 Measles	4.1	6 Measles
7 Cerebrovascular disease	3.3	7 Tuberculosis
8 Ischemic heart disease	3.1	8 Ischemic heart disease
9 Tuberculosis	2.8	9 Cerebrovascular disease
10 Road traffic accidents	1.8	10 Road traffic accidents
11 Pertussis	1.6	11 Violence
12 Violence	1.2	12 Pertussis
13 COPD	1.1	13 War
14 Tetanus	1.0	14 COPD
15 Nephritis and nephrosis	0.9	15 Tetanus
16 Malnutrition	0.9	16 Malnutrition
17 War	0.8	17 Drownings
18 Syphilis	0.8	18 Syphilis
19 Diabetes mellitus	0.7	19 Nephritis and nephrosis
20 Drownings	0.6	20 Prostate cancer
21 All other specific causes	23.2	21 All other specific causes

Source: Authors.

Note: COPD = chronic obstructive pulmonary disease.

CHRONIC DISEASES

- Leading cause of morbidity and mortality world-wide
- Major cause of morbidity and mortality in sub-saharan Africa
  - 50-60% communicable diseases
  - 40-50% non-communicable diseases
    - Cardiovascular (Hypertension, Stroke, Heart failure & valvular heart disease, Ischemic heart disease)
    - COPD/asthma
    - Diabetes
    - Kidney disease
    - Violence/trauma, accidents, pregnancy related

CARDIOVASCULAR

- Hypertension – End organ damage
  - Heart failure & Atrial fibrillation
  - Stroke
  - Nephropathy
  - Retinopathy
- Diabetes – End organ damage
  - Heart failure & ischemic heart disease
  - Stroke
  - Nephropathy
  - Retinopathy

CARDIOVASCULAR

- Chronic diseases and end-organ damage
  - Slowly progressive
  - Early reversible stage
  - Later irreversible stage
  - Often takes years to decades
- Often both patients and practitioners under treat both hypertension and diabetes
- Guidelines
  - Emphasis on screening
  - Emphasis on regular follow up and achieving goals of directed therapy

COMMON CHRONIC ILLNESSES

- Common underlying pathophysiology?
  - Diet & lifestyle > > > genetics
  - Reduced functional capacity an independent predictor of all cause mortality!!
- Polypharmacy!
- Effect of socioeconomic status, finances, and mental health

- The single BEST thing for the patient?
  - (In addition to medication compliance)
  - LIFESTYLE CHANGES

CHRONIC ILLNESS – MEDICATION ADHERENCE

- Many chronic illnesses cause cognitive impairment

- "Pill burden"

- Stigma/prediction for "natural remedies"

- Denial / long asymptomatic period

- Many of these things create a feedback loop
    - Obesity -> DJD -> can't exercise -> more obese
    - CCF -> CKD -> fluid retention/resistant HTN -> more CCF

- Many negatively affect other chronic illnesses
    - Ibuprofen for DJD worsens CCF and CKD
    - Frusemide for CCF worsens gout and CKD
    - Creatinine > 2.5 = can't use spironolactone or metformin

CHRONIC ILLNESS - APPROACH

1) Discuss the natural history of the diseases
2) Discuss expectations for response to treatment
3) Discuss lifestyle changes needed
4) Discuss long-term use of medications and why they help
5) Discuss potential outcomes of stopping medications
6) Write down medications to avoid error
7) Discuss frequency of visits/labs/tests
8) Plan of action for exercise
9) Healthy hobby

PHARMACOTHERAPY

- New study of polypill reducing mortality & morbidity in rural areas
  - aspirin/statin/HCTZ/enalapril
- Generalities
  - Nearly all should be on aspirin and statin (no aspirin for low risk)
  - Get them euvolemic (use as much diuretic as it takes)
  - Get them normotensive (average of 3 drugs)
  - Keep them on metformin if you can
  - Get them motivated and moving
  - Address mental health & sleep issues
- Follow the guidelines
- Think about both INDICATIONS and CONTRAINDICATIONS

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MOTIVATIONAL INTERVIEWING

- The following slides are selected from presentations found online
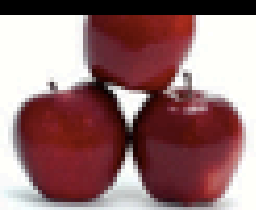
Motivating Employees to Make Lifestyle Changes
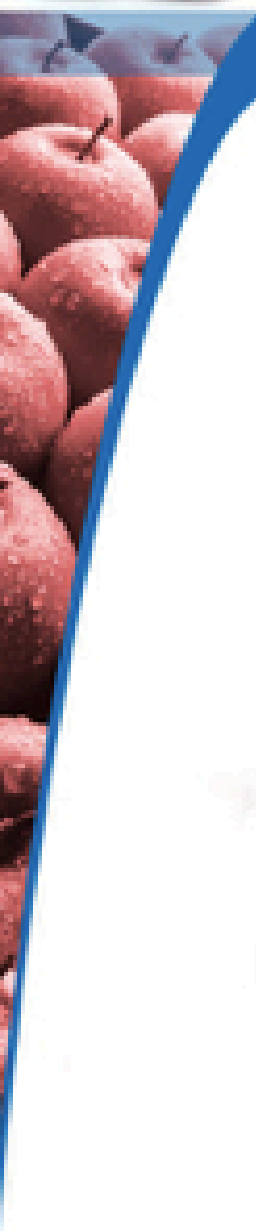
by
Elaine Frank, M.Ed., RD
Vice President
American Institute for Preventive Medicine

Incentives Can Increase

- **Participation**
- **Compliance**
- **Behavior change**
- **Productivity**
- **Learning**
- **Achievement**
- **Awareness**

Health Belief Model
(Becker)

- **Recognize existence of risks**
- **Identify with risk**
- **Think behavior change reduces risk**
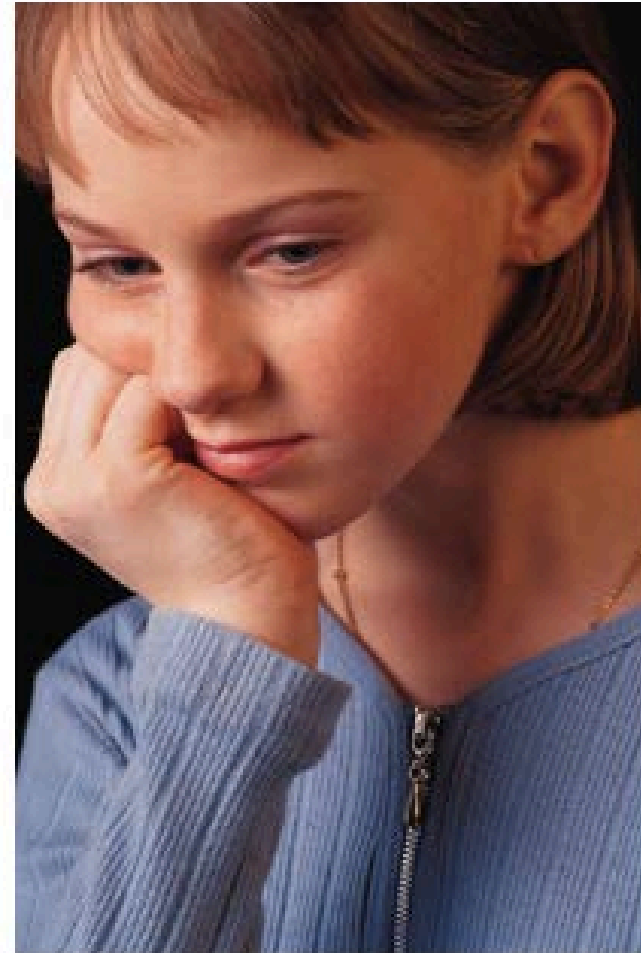- **Think behavior change is worth effort**

Source: American Journal of Health, 64:205-216, 1974

Stages of Change Model
(DiClemente and Prochaska)

- **Pre-contemplation**
- **Contemplation**
- **Preparation**
- **Action**
- **Maintenance**

American Institute for Preventive Medicine

An Apple A Day Isn't Enough!

Methods for Increasing Motivation/Compliance

- Make materials easy to use
- Use feedback system
- Model and practice techniques
- Provide materials for techniques
- Dramatize the concept
- Make activities enjoyable
- Make materials easy to read

Lifestyle Medicine:

Campaign by American College of Preventive Medicine and American College of Lifestyle Medicine to Inspire Local Champions to Action

Slides adapted with permission from:
Liana Lianov MD, MPH, FACPM
Eleanor Loomis, UC Davis Public Health Program
Michael D Parkinson MD, MPH, FACPM

Leading Health Indicators
Healthy People 2020

- Physical activity
- Overweight and obesity
- Tobacco use
- Substance abuse
- Responsible sexual behavior
- Mental health
- Injury and Violence
- Environmental quality
- Immunization
- Access to health care

Behavioral Determinants

- Virtually ALL of the top 10 leading causes of death in US adults are moderately to STRONGLY influenced by lifestyle patters and behavioral factors
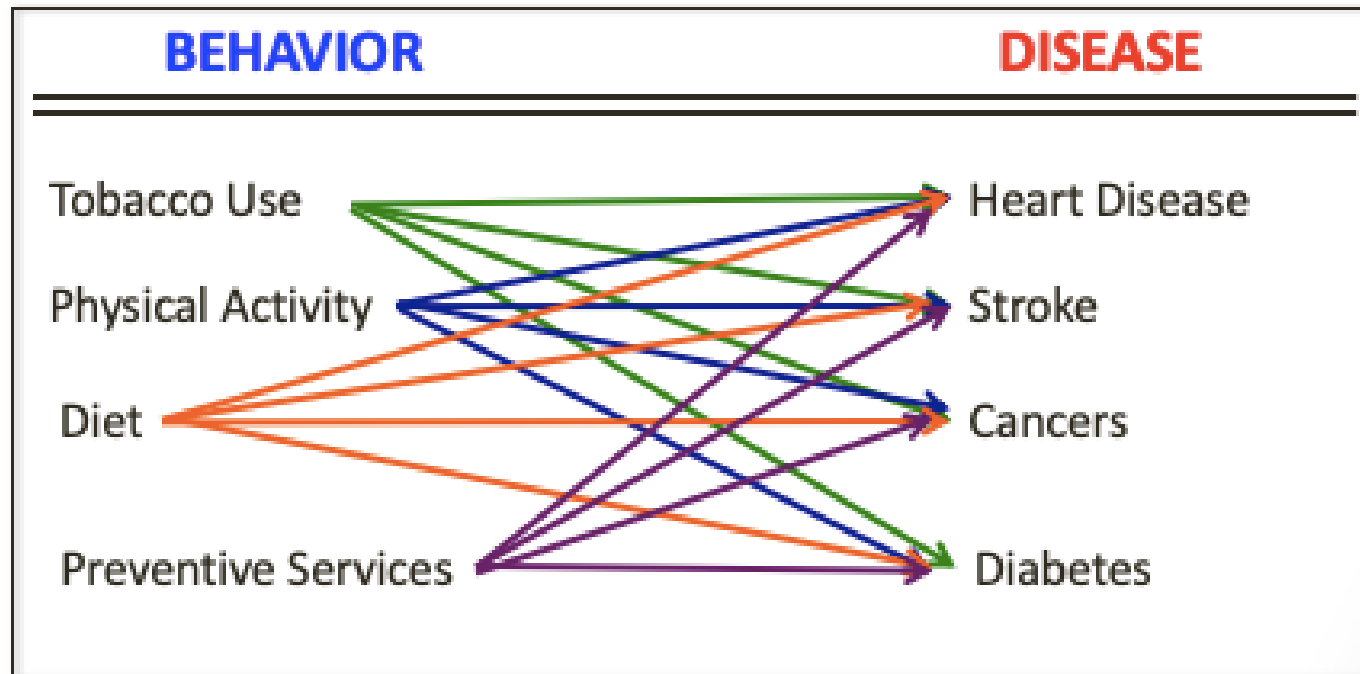
Physician Counseling

- Evidence is mixed about impact of physician counseling on health behavior change (Cochrane)

- May be due to study design: Variety of health behaviors, interventions, application of approaches, length and intensity, statistical power

- US Preventive Service Task Force (USPSTF)

  - In general, the recommendations are in favor of physician counseling

  - Recommendations vary for specific health behaviors

Examples of the Impact of Physician Counseling

- Patients who make behavior change often cite that the physician's advice influenced them (Galuska)

- Sedentary patients increased weekly walking exercises by 5 times when counseled by physician and received health educator booster call (vs. standard of care) (Calfas)

- Patients who were counseled to lose weight more likely to (Huang):

  - Understand risks of obesity

  - Understand benefits of weight loss

  - Higher stage of change of readiness for weight loss

Physician Barriers to Counseling

- Lack of time
- Reimbursement issues
- Insufficient confidence
- Insufficient knowledge
- Insufficient skills
- Others?

- From previous examples
  - Patient's note counseling has significant effect of understanding and motivation
  - BUT physicians often provide insufficient guidance

Examples of Tools for Physicians

- 5 A's- Assess, Advise, Agree, Assist, Arrange

- Americans in Motion—Healthy Interventions (American Academy of Family Physicians)

- Healthier Life Steps (American Medical Association)

- Screening, Brief Intervention, Referral and Treatment (Substance Abuse and Mental Health Services Administration)

- Others

BUT WE NEED ADDITIONAL HELP...

Web Resources:

Michael Parkinson: Healthcare Reform, Preventive Medicine and the Future of Patient Care.http://www.acpm.org/MSS-webinars.htm

Liana Lianov: Lifestyle Medicine Approaches to Effective Employer Health ad Wellness Initiatives. https://live.blueskybroadcast.com/bsb/client/CL_DEFAULT.asp?Client=446569&PCAT=2719&CAT=2719

Liana Lianov: Prescribing Lifestyle Medicine http://www.medscape.com/viewarticle/747743

COMMON CHRONIC ILLNESSES

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SUCCESSFUL WEIGHT CONTROL

Long-term behavioral treatment, whatever form it takes, encourages patients to practice four key behaviors

1. Exercise regularly

2. Consume a lower-calorie diet

3. Monitor weight regularly

4. Record food intake and physical activity

Wadden TA and Butryn ML. Behavioral treatment of obesity. *Endocrinol Metab Clin N Am* 32 (2003) 981–1003.

The calories are the same. The volume is not!*

You Can Eat
This or This

three pounds of apples — four-ounce chocolate

five baked potatoes — five-ounce steak

five ears of corn — 10.7-ounce milk shake

25 medium carrots — a small brownie

Should I check labels for sugar?
Yes, but realize that sugar may also be hidden by giving it a different name. Sucrose, dextrose, lactose, fructose, and maltose, for

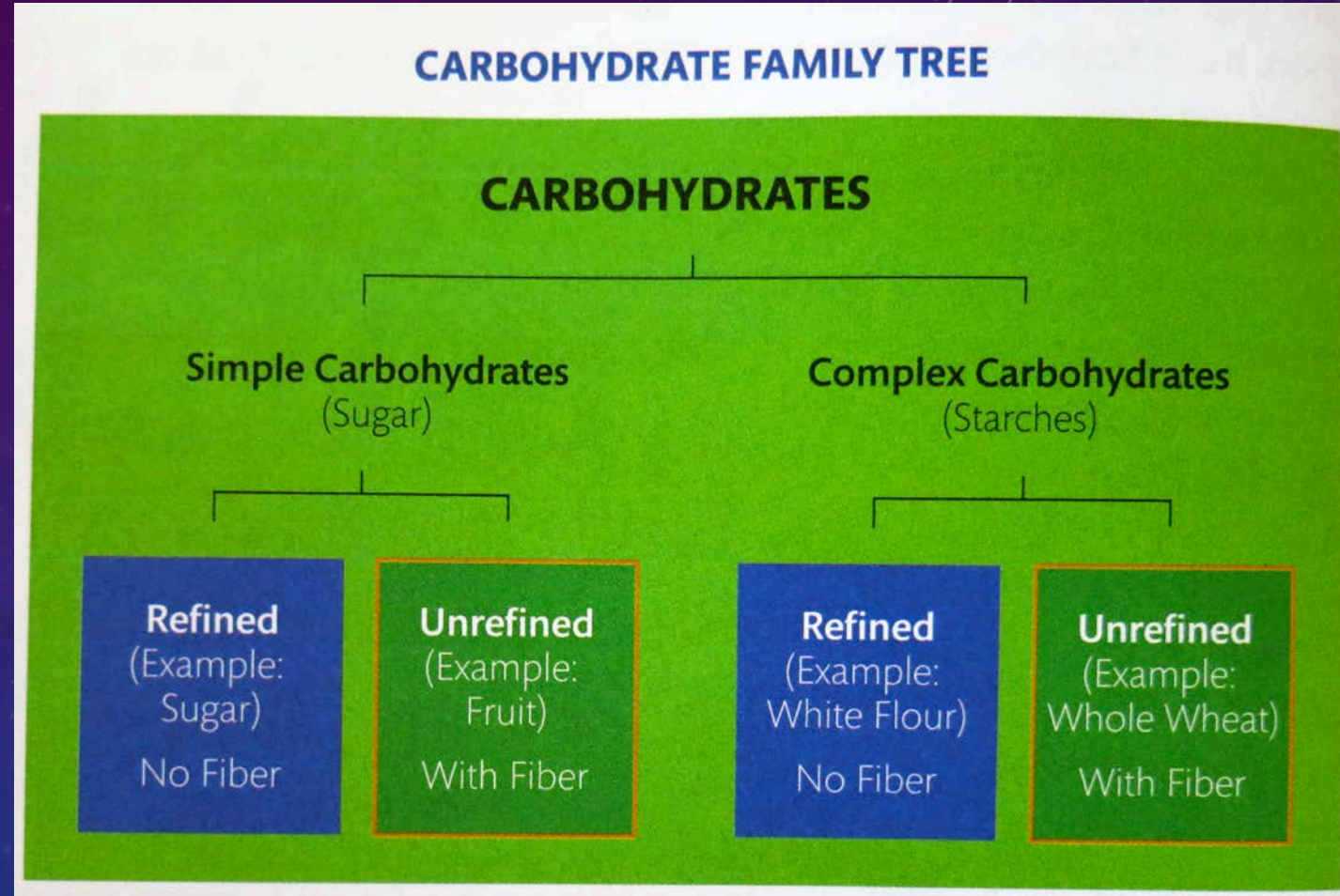**FOOD PROCESSING**
Concentrates Calories

75 Calories — 500 Calories

Health Power: Healthy by Choice, Not Chance!
By Diehl & Luddington.

CHOOSING FOOD WISELY

How many meters of sugar cane to make 1 can of coca cola or fanta?

How many apples to make 1 cup of apple juice?

How many kilos of maize to make 1 kilo of nsima flour?

CARBOHYDRATE FAMILY TREE

CARBOHYDRATES

Simple Carbohydrates (Sugar)

Complex Carbohydrates (Starches)

Refined (Example: Sugar) No Fiber

Unrefined (Example: Fruit) With Fiber

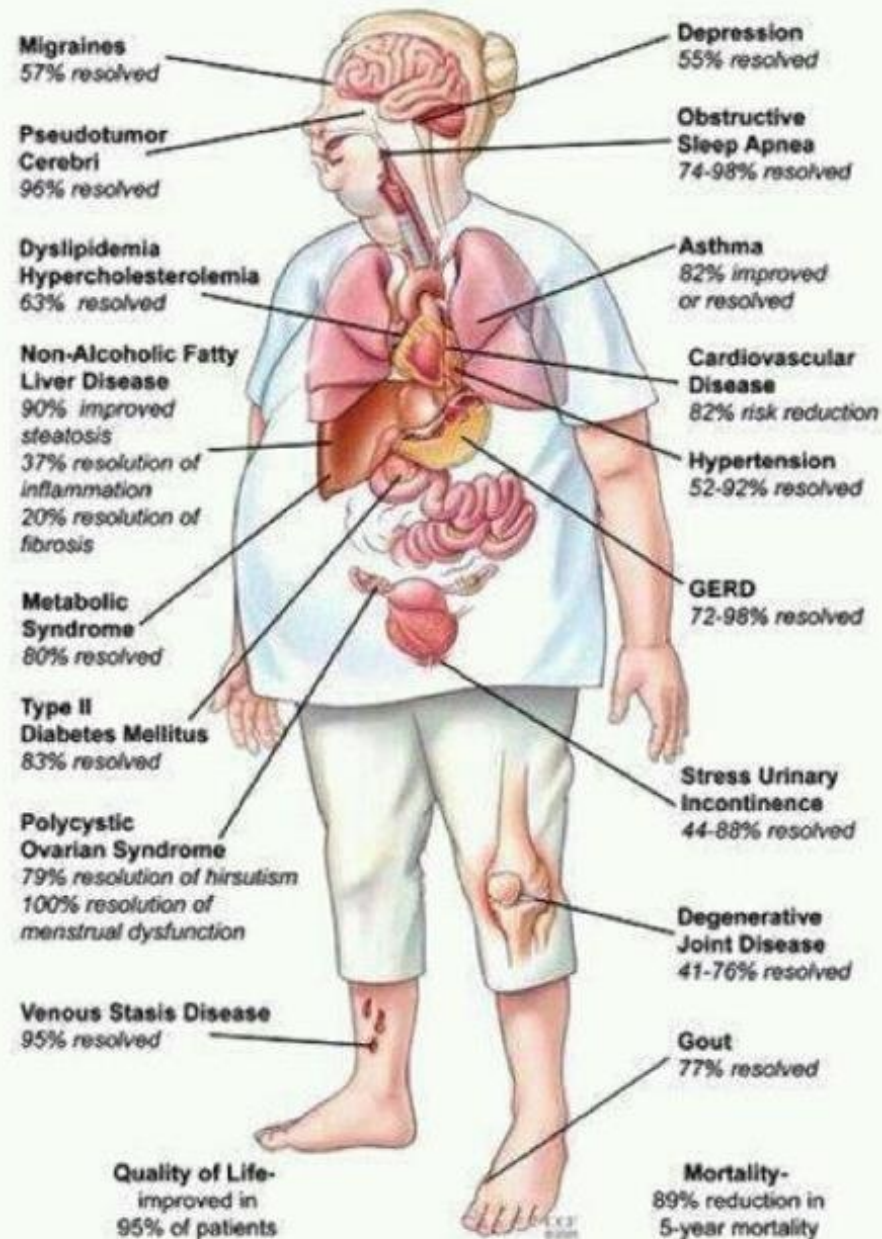Refined (Example: White Flour) No Fiber

Unrefined (Example: Whole Wheat) With Fiber

THE PLATE METHOD

- Easy to teach
- Easy to understand
- Based on dividing portions onto a normal sized plate

Plate Method

Vegetables

Potatoes
Rice
Pasta

Meat
Poultry
Fish
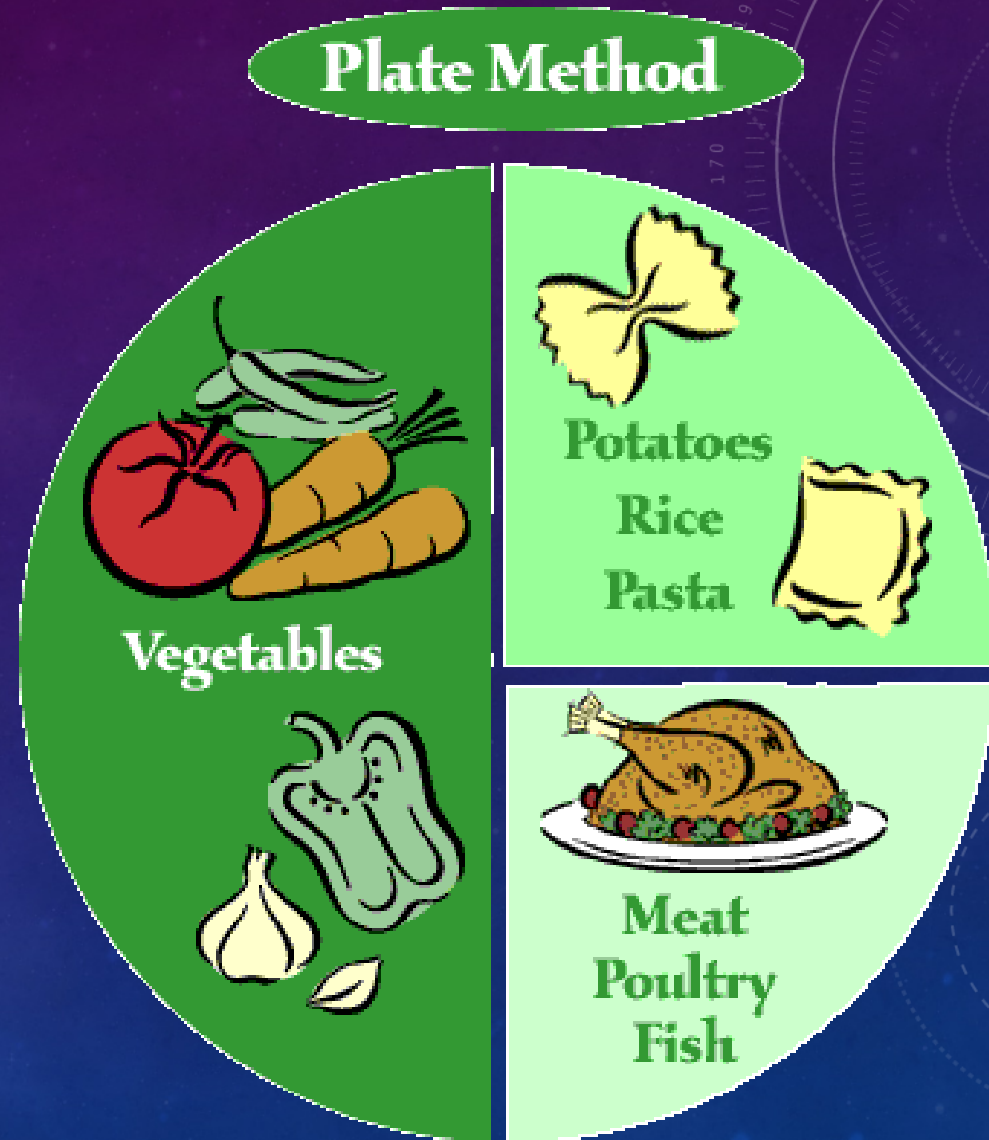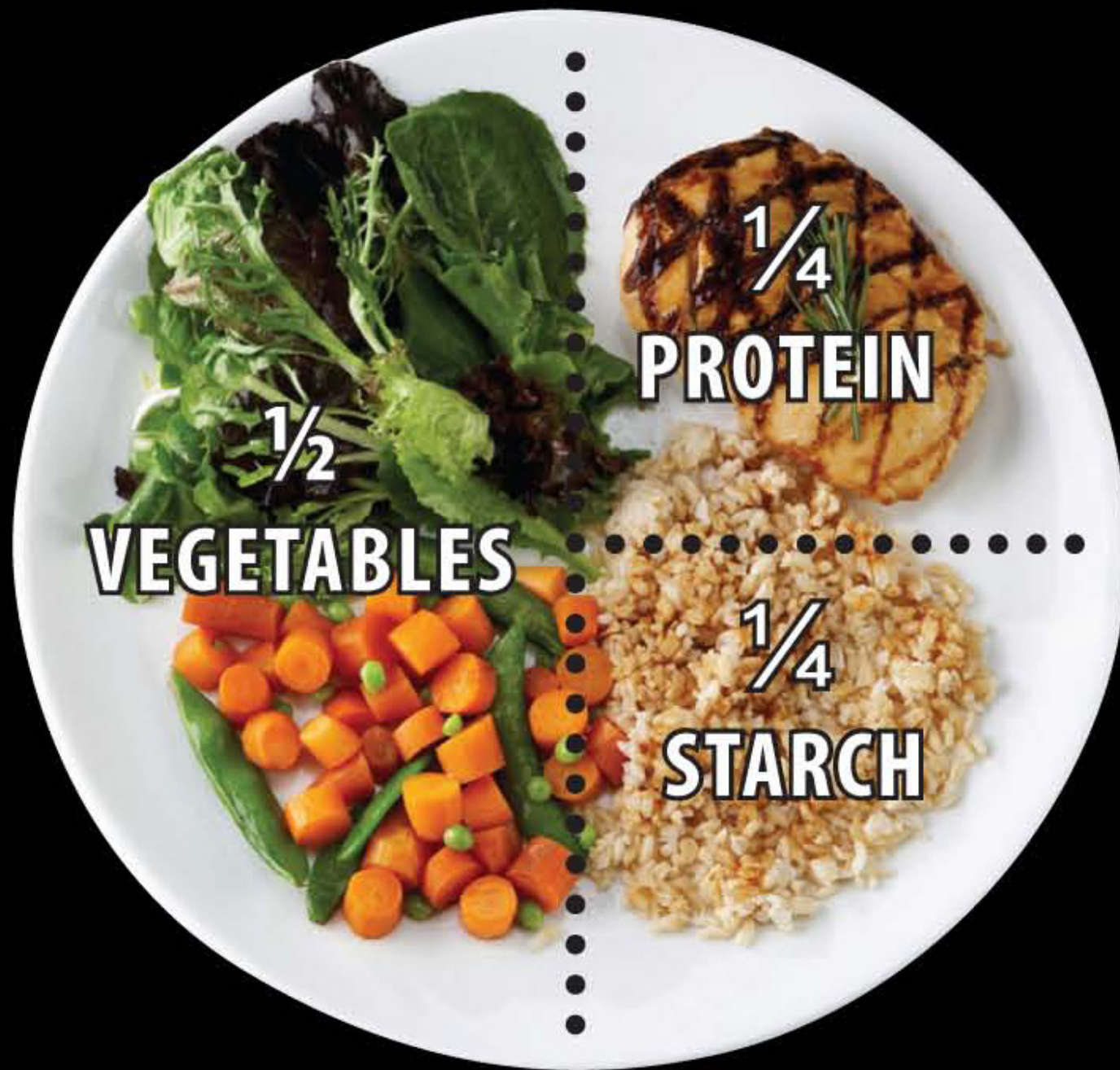
WEIGHT LOSS

- As little as 5-10% weight loss results in
  - improved blood tests (glucose, cholesterol)
  - improved blood pressure
  - reduced cardiovascular mortality

- Set realistic goals with patients
  - 10% in 3-6 months
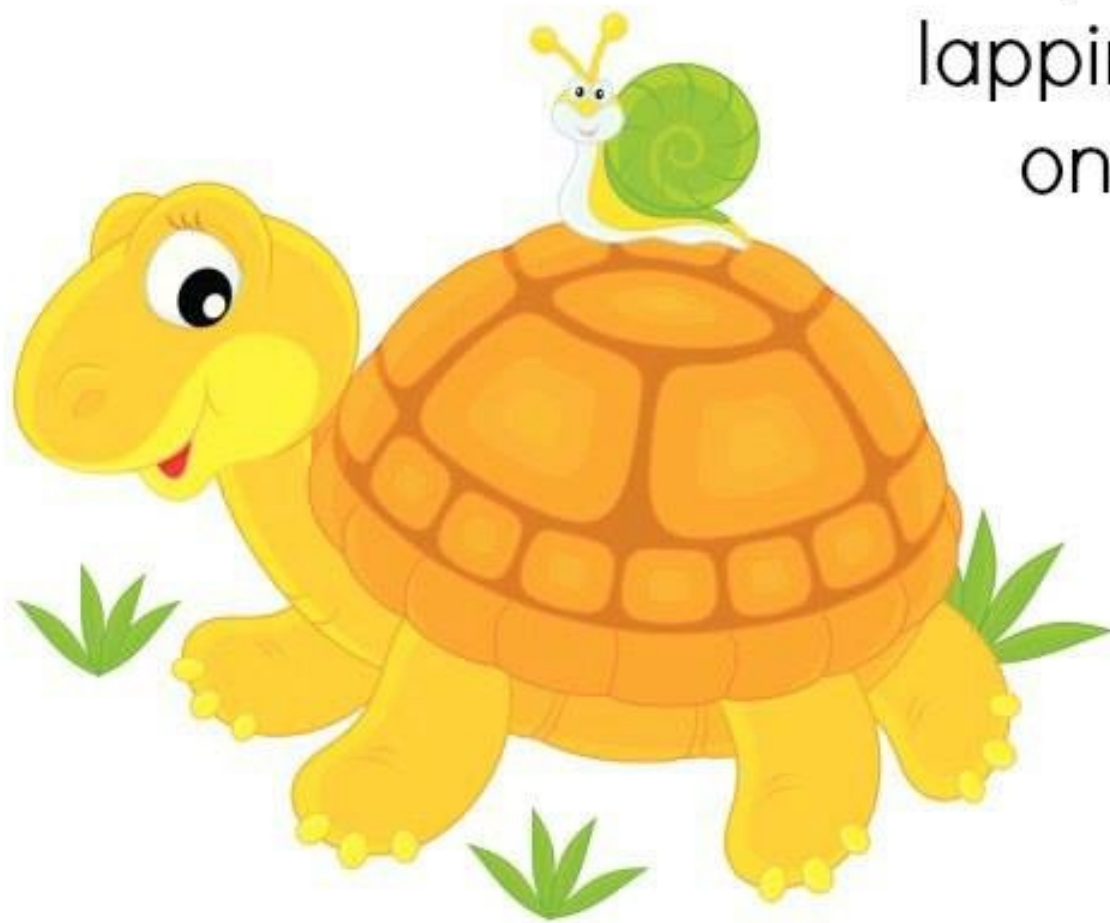 - From 110kg to 100kg or from 100kg to 90kg

THIS ONE RUNS ON MONEY AND MAKES YOU FAT

THIS ONE RUNS ON FAT AND SAVES YOU MONEY