**3. Obesity & Clinical Nutrition By Danny Mays**

**Overview:**

* Weight is all about **energy balance**: resting energy expenditure (organ and muscle function) + additional expenditure from physical activity.
  + **Weight gain**: 5% energy mismatch (intake>expenditure) for 1 year = 15kg weight gain.
  + **Weight loss**: energy balance must be net negative. Goal deficit ~3500 calories/week ≈ 1 lb body fat, achieve through calorie restriction (more vegetables, whole grains) and increased physical activity.
  + Muscle is highly metabolically active, even at rest, so **add strength training** to maintain healthy weight.
* **BMI**:
  + “Normal” weight 18.5-20
  + **Overweight 25-30**
  + **Obese 30+** (class I 30-35, II 35-40, III 40+)
    - These cutoffs are somewhat arbitrary, don’t account for things like muscle mass and don’t apply to all populations equally, e.g. a healthy maximum BMI for Asians tends closer to 20. But we use to this to approximate disease risk.
* **Nutrition essentials:** 
  + The **type of fat** (unsaturated, fish oils) is more important than total fat.
  + **Fruit/vegetables** (~5 servings daily) associated with decreased risk of CVD, breast cancer, mortality.
  + **Limit refined carbs/sugar** (↑CHD and DM risk).
  + High **salt** intake linked with HTN, CVD…increases intravascular volume🡪increasing afterload and ultimately long-term vascular remodeling.
  + **Food labels**: ingredients are listed by weight. Avoid food with sugar in the first 3 ingredients.

**Obesity at IMA**

* Cannot fix at 1 visit! Must build rapport and bring the patient back often to monitor progress
* **Initial assessment** can be a **24-hr diet recall** or the **3-day food diary**.
* Assess how food is obtained and prepared.
* Assess **cultural norms** and **time/financial constraints**.
* Assess the stage of change and ask “what do you think you can do to improve your diet?”
* Set attainable goals
* **No compelling evidence for one diet vs. another** (low fat, low carb, etc.).
* **Goal = energy deficit** through healthy eating and regular exercise.
* Referral to **“IMA Nutrition”** and can make an appointment at the front desk.

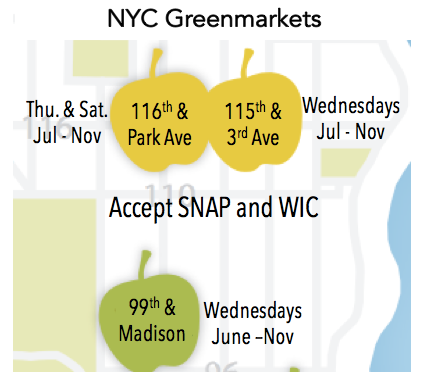
**Population Health**

* Nationwide, **71%** overweight and **38%** obese.
* In recent decades, large increases in obesity with parallel increases in diabetes, CVD
* **Disproportionately high obesity prevalence in populations of color, notably Black and Hispanic.**
* **Disproportionately high obesity prevalence in Harlem and the Bronx, where most IMA patients live.**
* **Population health impact of healthy lifestyle change**: Huge, better than putting all pre-diabetics on metformin (Diabetes Prevention Program, NEJM 2002).
* Sustained weight loss of 3-5% body weight produces clinically meaningful reductions in CV risk factors. Recommend 5-10% weight loss as initial 6-month goal for greater benefits.

**Socioeconomic barriers to healthy nutrition**:

* Poor availability of healthy foods, high availability of unhealthy foods. Poverty, lack of safe green space, and stress (↑cortisol🡪glycemia)

**Community Resources:**



**Nutrition resources**: **SNAP** (food purchasing assistance for low income people, ~$125/month), **WIC** (supplemental nutrition program for Women, Infants, and Children).

**City Health Works**: Health coaching for diabetics with A1c > 8 in Manhattan. Referral forms in the preceptor rooms.

**YMCA Diabetes Prevention**: For patients overweight with pre-diabetic range A1c. Epic dotphrase to refer patients: .diabetesprevention (type in patient instructions in the wrap-up tab).