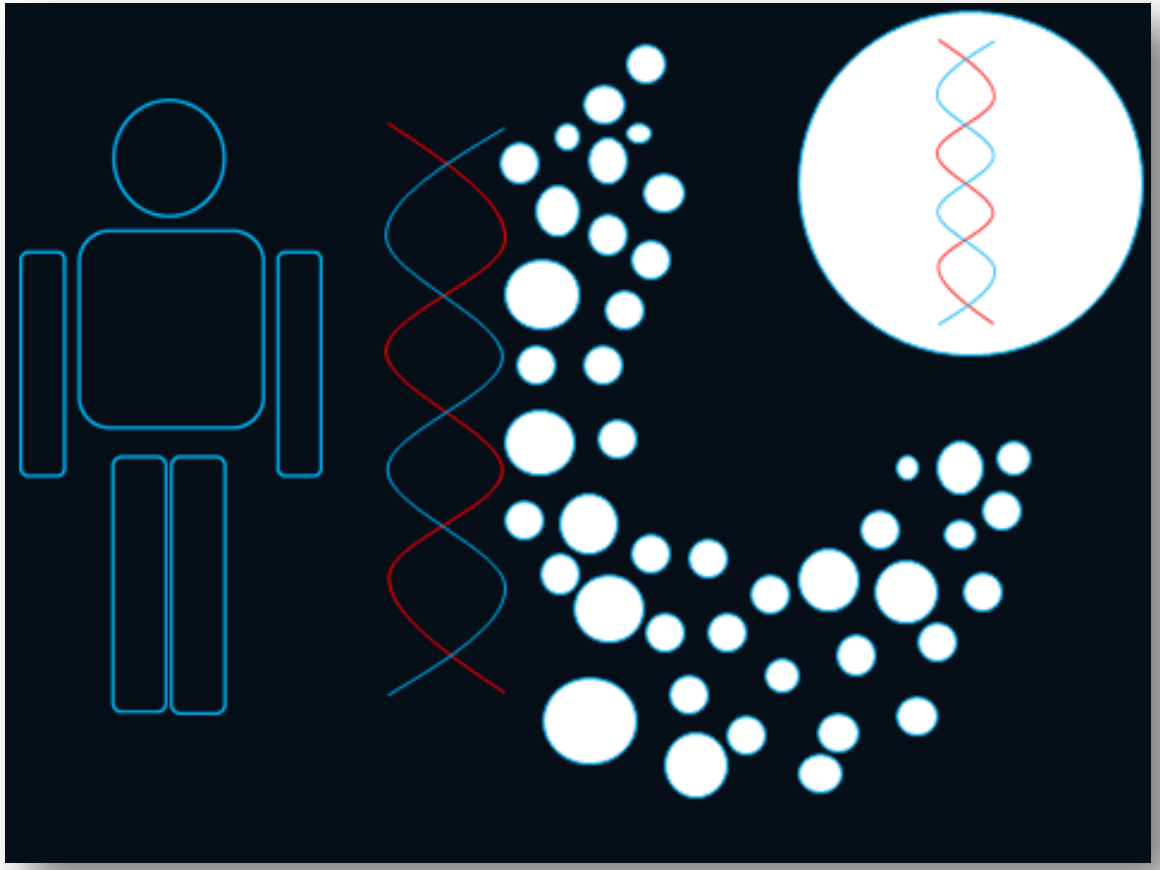
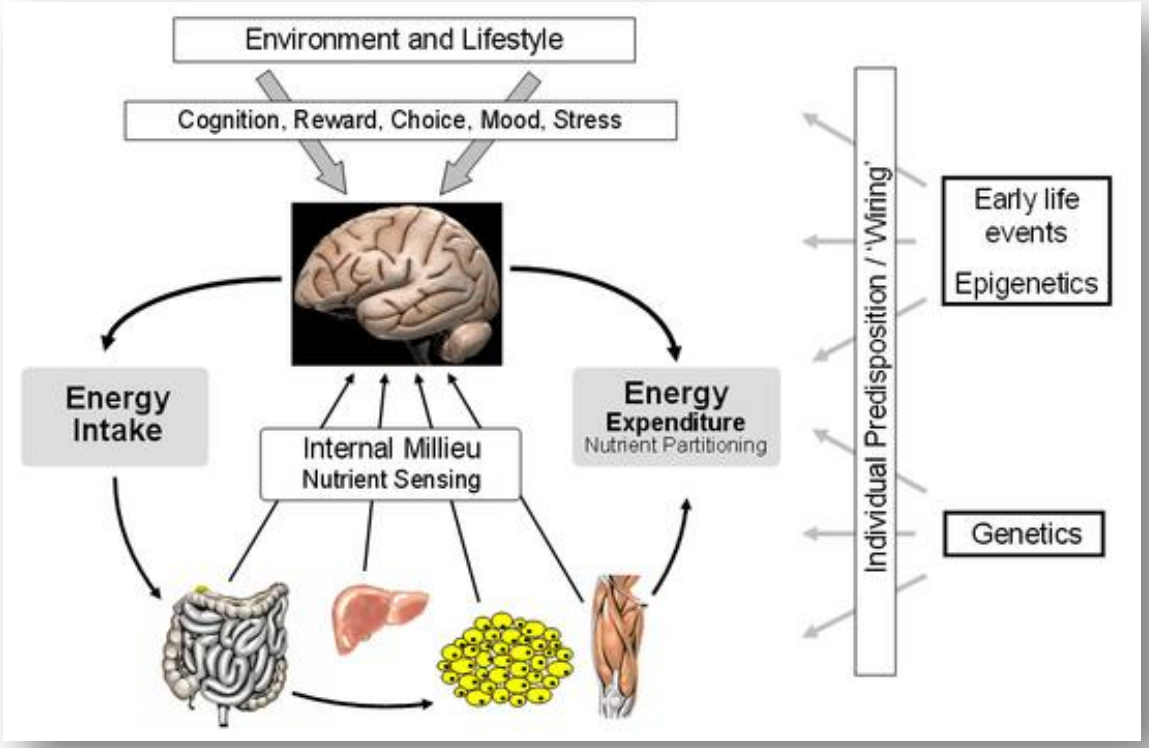
APPENDIX B:
A Scientific Understanding of Obesity

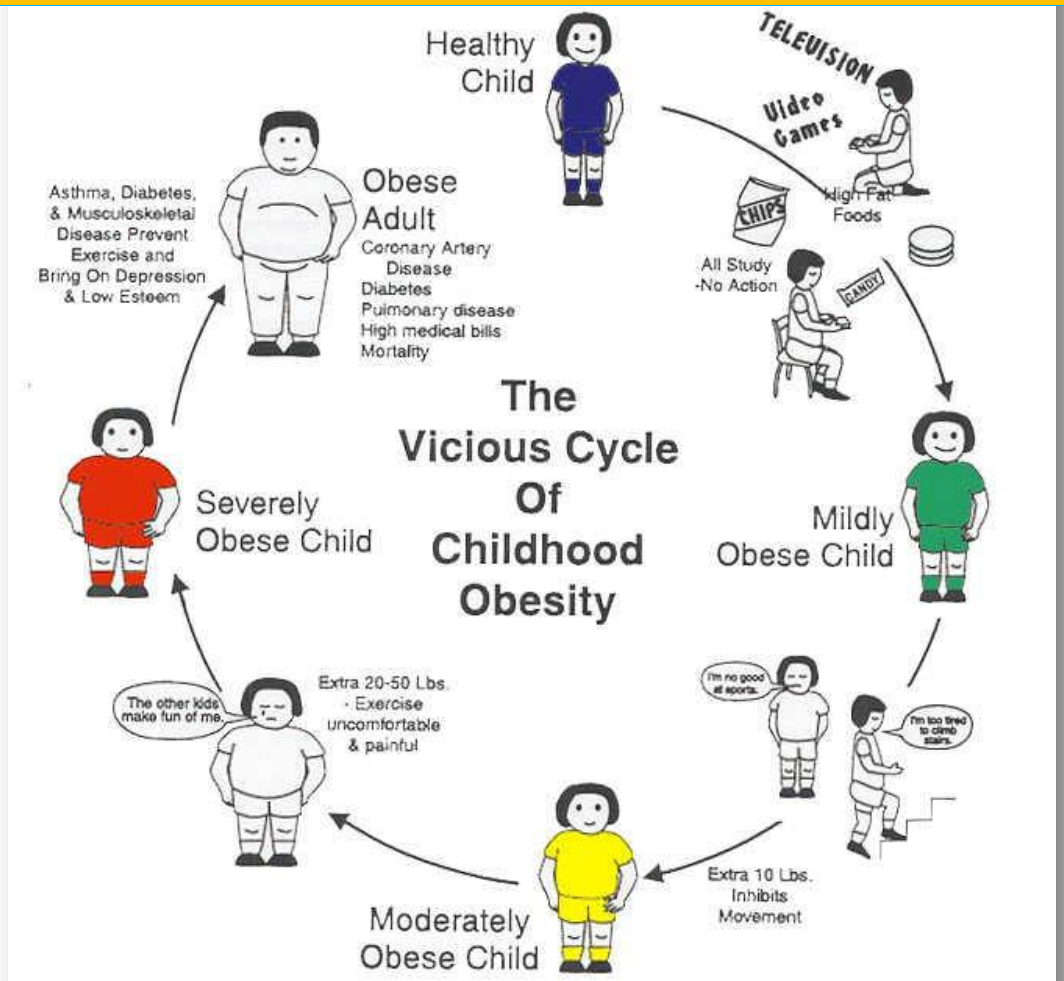


WEIGHT MANAGEMENT PROGRAM



The conditions of OVERWEIGHT and OBESITY are a response to an environment of too many calories and/or sedentary lifestyle in genetically susceptible individuals. At the moment, we cannot change our genes. We can influence EPIGENETICS (aka: early life events) of our children by maintaining a healthy weight or reducing weight in women and men *before* pregnancy.

WEIGHT MANAGEMENT PROGRAM



In addition, lifestyle habits adopted in childhood can result in excess weight and poorer health in adulthood perpetuating the vicious cycle.

What are some of the EXTERNAL FACTORS contributing to the rise in obesity?

ECONOMIC & ENVIRONMENTAL FACTORS

- Reduction in job strenuousness (physically)
- Hours spent in our cars commuting
- Reduction in food prices introduced by technological change

ECONOMIC & ENVIRONMENTAL FACTORS

- Increased demand for inexpensive convenience food and one-stop shopping
- Habit/pattern of food consumption
- “Addiction” to macronutrients
- Increased food-away-from home
- Domestic Appliances
- Increase in tobacco prices leading to smoking cessation (yay!), but leading to increase in food intake (boo!)

REGULATION OF EATING

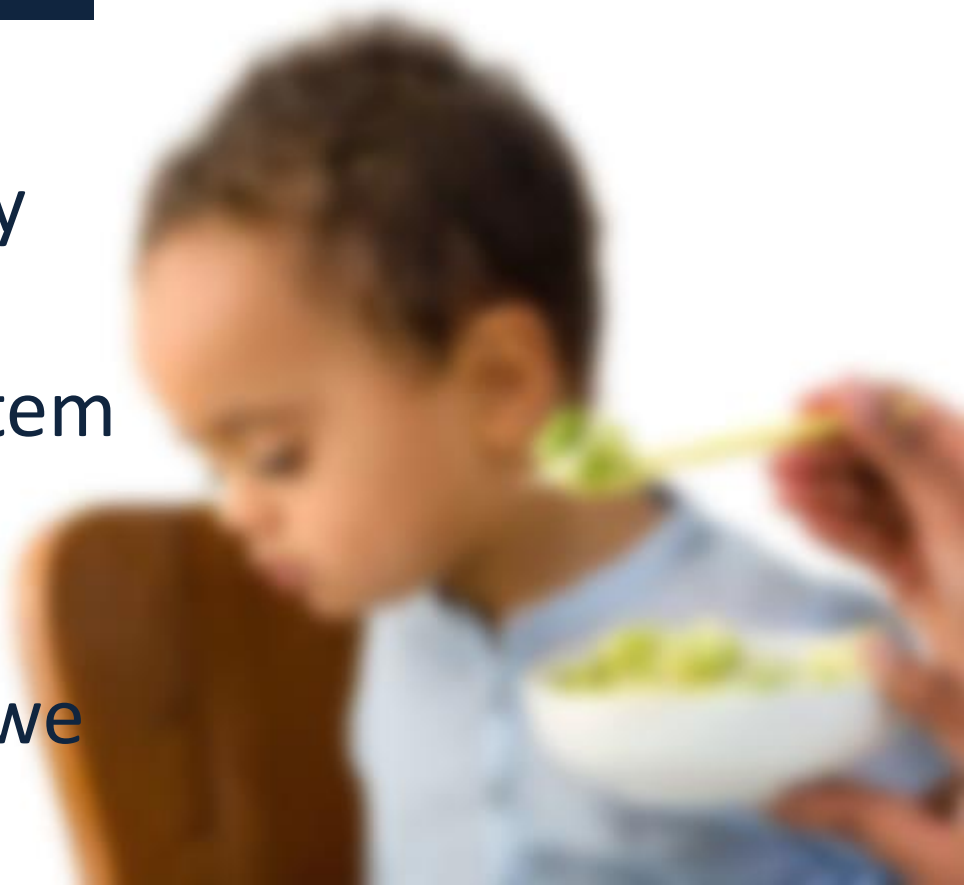
Food intake is a complex process.
The AMOUNT AND TYPE of food ingested is determined by:

- Genes
- Environmental setting
- Experience

REGULATION OF EATING

Why we eat, what we eat and the amount we eat is governed by:

- Taste perception
- Meal size, calorie density
- Environmental setting
- Signals from our gut system and fat tissue relay information to our brain and visa versa to tell us we are hungry or full.



CALORIC DENSITY as a concept

Think of foods in terms of CALORIES PER POUND

490

Fresh corn

980

Tortillas

2450

Tortilla chips

CALORIC DENSITY as a concept

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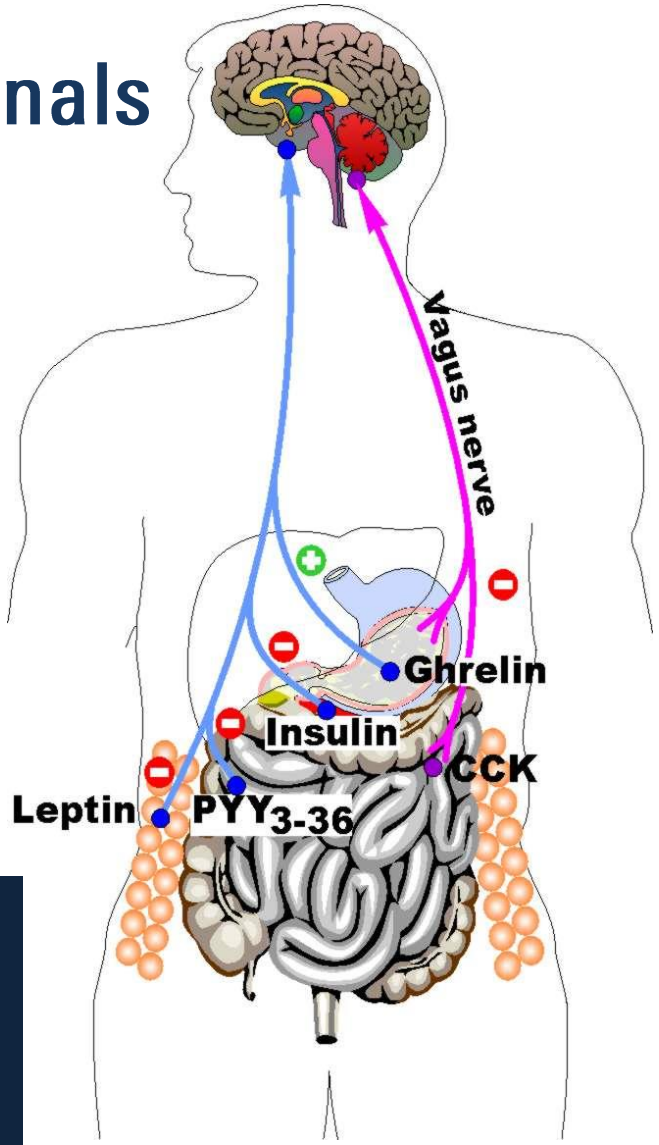
The lower in caloric density, the greater the volume and the fewer the number of calories. Fresh corn has far fewer calories than a similar serving size of tortillas (made from corn) and Tostito's® (a product of corn).

Gut Peptides - Satiety Signals

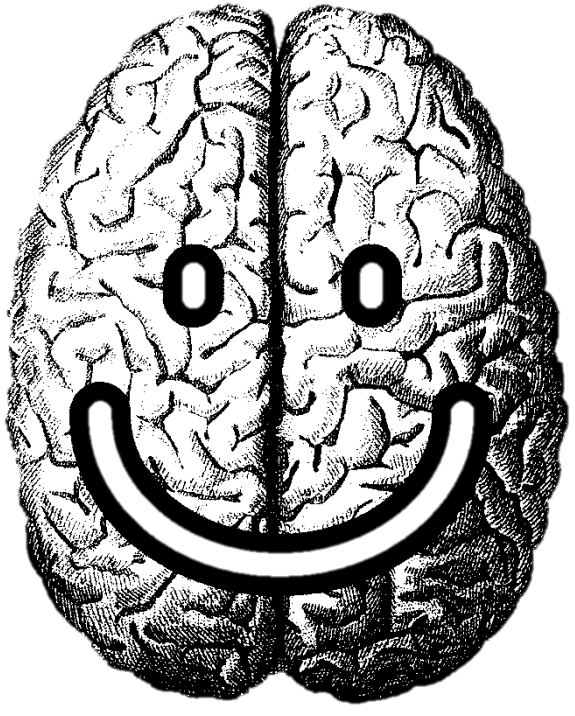


Mountjoy, Kyiv 2003

Our sense of hunger and fullness are determined by complex interactions between a number of peptides (proteins) and hormones (such as leptin, PYY, CCK, ghrelin, and insulin) that relay signals from our gut to our brain . We are studying these signals and processes.

As you may know, our eating patterns are affected by more than the caloric and nutritional value of food. The emotional and pleasurable aspects of feeding affect food intake.

It will come as no surprise, then, that the brain (particularly parts of the brain called the hypothalamus and the brainstem) has a central role in coordinating the many nutrient, hormonal, and behavioral signals to regulate food intake, metabolism, and ultimately body weight.



There are other parts of the brain involved in mediating the motivational (drive to eat), cognitive, and emotional components of food intake. Gaining a better understanding of the brain's role in weight is one of our goals.