

Weigh to Diet

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Modern dictionaries define diet as: 1) food and drink regularly provided or consumed, 2) something used, enjoyed, or provided regularly, or 3) national or local legislative assemblies. However, a look at the root word for diet suggests that the word means much more. Diet is from the Latin *diaeta* or Greek *diaita*, meaning manner or way of living.

Study of weight management issues has shown our *manner of living* or *lifestyle* to be important. Physical activity, stress management, dining style, and biology stand with food intake as key influences on weight. This lesson focuses on weight through these lifestyle influences, also known as your diet.

A. Body Measures

Experts have identified two measures that are important to know: the body mass index (BMI) and waist circumference.

BMI is determined from a mathematical formula that compares your weight to your height. Not fond of math? Use the table on the next page to find your BMI. You can also go to www.nhlbisupport.com/bmi and enter your height and weight into the BMI calculator. Voila! Your BMI is calculated. The goal is to have a BMI between 18.5 and 25. A BMI between 25 and 30 is considered overweight, and obesity is defined as a BMI higher than 30. The BMI is not a useful measure of healthy weight for persons who are very muscular.

For BMIs between 25 and 35, waist circumference can help warn of increasing fatness. Place a flexible tape around yourself so it is level with the top of your hip bones (approximately at the navel). Be sure to read the tape after exhaling. Measurements of more than 35 inches for women and 40 inches for men signal a need to reflect on your overall health, then review eating and exercise habits.

B. Healthy Weight

Defining "healthy weight" is difficult because weight status reflects disease, body composition, age, and health-related behaviors such as smoking. Identifying a healthy weight

as one associated with fewer deaths is the basis for most height-weight tables. We know that, in addition to weight, amount of body fat, location of body fat, undetected disease such as cancer, level of physical and mental fitness, and tobacco use influence mortality.

Known risk factors that can exist with excess weight are high blood pressure, high cholesterol, high blood sugar, and a family history of heart disease. These factors confuse the relationship between weight and mortality. As a result, determining your *healthy weight* may require help from a health professional. A person who is overweight but has a normal waist circumference and only one risk factor has a different healthy weight than an overweight person with a large waist circumference and three risk factors.

Likewise, the healthy weight for a person with a BMI greater than 30, a high waist circumference, and no health problems will differ from an obese person with several health problems. Although BMI, waist circumference, and health are important factors, a *healthy weight* depends on your individual profile.

Achieving a healthy weight if you are overweight by BMI or waist circumference standards does not mean a need to be at the ideal weight. For many, the loss of only 5 to 10 percent of body weight will significantly decrease risk of disease. Another marker is to just decrease BMI by one unit.

A new approach to defining a healthy weight is to focus on "Health at Any Size" according to Frances Berg in *Children and Teens, Afraid to Eat* (2001, Healthy Weight Network). Rather than dieting for weight loss, the goal is to achieve well-being through eating, physical activity, and self-acceptance. HUGS (www.hugs.com) is an adult weight management program with a **H**ealth focus, centered on **U**nderstanding lifestyle behaviors, **G**roup support, and **S**elf-esteem building.

Ellyn Satter has linked emotional health and eating behavior in a concept called *Eating*

BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Height	Weight (in pounds)																
4'10" (58")	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	168
4'11" (59")	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
5' (60")	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
5'1" (61")	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
5'2" (62")	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
5'3" (63")	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
5'4" (64")	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
5'5" (65")	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
5'6" (66")	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
5'7" (67")	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
5'8" (68")	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
5'9" (69")	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
5'10" (70")	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
5'11" (71")	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
6' (72")	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
6'1" (73")	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
6'2" (74")	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
6'3" (75")	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279

Source: Evidence Report of Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults, 1998. NIH/National Heart, Lung, and Blood Institute (NHLBI)

My BMI is _____.
My waist measures _____ in.
Should I be concerned?

Competence, which is more than trying to lose or maintain weight or trying to get yourself to eat only healthy foods. It promotes being positive and comfortable with eating while making sure to get enough of enjoyable, nourishing food. (*Secrets of Feeding a Healthy Family*, 1999, Kelcy Press)

To you, what is a healthy weight? Is yours a healthy weight?

Learn more at: www.hsph.harvard.edu/nutritionsource/weight.html

C. Dieting

To most people “dieting” commonly means altering food intake to achieve a weight goal. After reflecting on your health needs and a weight goal, a change in your dietary patterns may be in order. Once you plan to alter your intake, meal plans promising weight loss, health, and self-esteem will seem to be everywhere: Eat only raw food! Wine and chocolate with each meal! Choosing one that is right for you will take some study. A “No” answer to the following questions signals a better plan. Does the plan . . .

- Promise rapid weight loss?
- Offer testimonials and personal stories as proof?
- Require laboratory tests before you can start?
- Criticize the medical or scientific community?
- Include many supplements and special ingredients?
- Promise you can eat all you want, especially of certain “good” foods?
- Ignore your food preferences, lifestyle, or budget?

Get additional guidance: www.consumer.gov/weightloss/index.htm
www.eatright.org/Public/NutritionInformation/92_nfs0200b.cfm
www.ftc.gov/bcp/conline/edcams/fitness/coninfo.html

Even if you can answer “No” to all, select your plan carefully. For example, a **high-protein, low-carbohydrate** diet is touted as the way to lose weight. Does this plan work? Is it safe? These diets lead to short-term weight loss because they are low calorie and promote dehydration. Carbohydrates are stored with water; a low-carbohydrate diet prompts us to use these stored carbohydrates, releasing large amounts of water. Without carbohydrates, we rely heavily on fat for energy. Using a lot of fat leads to a condition called ketosis, which can change electrolytes; leach calcium from bone; and cause fatigue, nausea, and bad breath. Metabolizing the high protein intake can harm kidneys. High-protein diets are high in harmful saturated fat, low in many vitamins, and – most important – boring. More studies are needed to learn about the long-term safety of such plans.

The **DASH** Eating Plan (**D**ietary **A**pproaches to **S**top **H**ypertension), which is much higher in carbohydrates, has been shown to lower blood pressure and also may lead to weight loss and improved cardiac risk factors. The plan calls for 7 to 8 servings of grains; 4 to 5 vegetables; 4 to 5 fruits; 2 to 3 dairy; 2 meat; and 4 to 5 nuts, seeds, or beans. Learn more about the plan, including recipes, from: www.nhlbi.nih.gov/health/public/heart/hbp/dash/.

D. Food Guides

A food guide is a tool to translate nutrition science into a form that can help people choose healthy eating patterns. Many healthful eating patterns have been found for humans, and controversy about nutrition science concepts have led to the development of several food guides. A well-known guide is the USDA Food Guide Pyramid (shown below).



Many other food guides and portion size help can be found on the Mayo Clinic Web page www.mayoclinic.com under Health Centers: Food and Nutrition. Two more food guides are shown below and at the right.

Willett WC, Stampfer M. Rebuilding the Food Pyramid. *Scientific American* 288(1):64-71;2003.



Following a food guide promotes a healthy lifestyle. Think about what you have eaten today or what you plan to eat.

- Do you think your intake is healthy according to one of these food guides?
- Which food guide is right for you to follow?



E. Appetite Control

With fluctuations in daily activity level, food intake, and health status, it is amazing that we maintain relatively stable weight. Weight stability appears to stem from molecular signals in the body. Appetite-regulating systems are designed to protect more against weight loss than weight gain. Appetite controllers show a tight connection between brain, gut, and fat cells. In a specific brain region (the arcuate nucleus), two nerve cell types keep balance. One type of nerve cell produces **Neuropeptide Y (NPY)** and **Agouti-Related Peptides (AgRP)** that send messages to increase appetite. The other nerve cell type, known as POMC/CART releases **alpha-Melanocyte Stimulating Hormone** that decreases appetite. What activates NPY/AgRP and POMC/CART nerve cells? Many factors, including Leptin, Insulin, Ghrelin, and PYY.

Leptin—(from Greek, *leptos*, meaning thin), a hormone produced in fat cells, leads to decreased food intake and appears to protect against weight loss because shrinking fat stores mean less leptin is available to lower appetite. Unfortunately, larger fat stores do not produce leptin levels high enough to decrease appetite and weight. Obese persons may not respond to leptin; current studies focus on problems with leptin receptors. Leptin production is higher in women and persons recovering from anorexia nervosa and is activated by a stress hormone.

Insulin—a hormone produced in specific cells of the pancreas. Insulin suppresses appetite by inhibiting NPY, the peptide that stimulates appetite. Appetite and weight are better controlled when the brain is insulin sensitive.

Ghrelin—a short-term appetite regulator peptide made in the stomach that stimulates the release of growth hormone. Ghrelin is a powerful appetite stimulator, peaking an hour or two before mealtime. Ghrelin levels are much lower after gastric bypass surgery.

PYY—another short-term regulator that decreases appetite, helping to end meals.

Marx J. *Science* 299:846-849; 2003. Myers M. *Eating Disorders Review* 13:1-3;2002. Cummings DE et al. *NEJM* 346:1623-1630;2002.

Food intake decreases because POMC/CART nerve cells are stimulated by leptin and insulin. Along with PYY, these hormones inhibit NPY/AgRP tracts. Food intake is increased when ghrelin stimulates NPY & AgRP nerve cells. Both types of nerve cells target a satiety center in the brain (the nucleus tractus solitarius), which promotes a feeling of fullness or gratification. Messages from the gut and liver are relayed via intestinal and spinal nerves to the satiety center. Cholecystikinin is a peptide produced by the small intestine in response to food digestion. It decreases appetite by stimulating a specific nerve to signal the satiety center that food is being digested.

Draw a chart or diagram on a sheet of paper to summarize appetite control.

F. Be Active and Stretch!

Finally, a healthy way of living *must* include physical activity. In addition to decreasing risk of chronic disease and overweight, physical activity reduces stress and anxiety, and enhances mental health, strength, and balance. Stretching is an ideal way to initiate a goal of increased physical activity.

Physical activity is for every body type. Check the *Active at Any Size* Web site for ideas and safety tips: www.niddk.nih.gov/health/nutrit/activeatanysize/active.html

Nancy Gyurcsik, Ph.D., Department of Kinesiology at Kansas State University, offers some answers to these important questions about stretching:

•Why should I stretch?

To keep your muscles and joints limber so that you can do all types of activities that you enjoy but involve your heart working harder than when you are at rest.

To lower your risk of falling and getting injured.

•How do I stretch?

Move slowly into your stretch.

DO NOT jerk into position or bounce when you stretch.

HOLD the stretch at the point of mild discomfort.

•Should I feel pain when I stretch?

Absolutely *not* – you should only feel mild discomfort.

•How long should I hold a stretch?

Hold each stretch for 15 seconds. Repeat two times.

•How many times in a week should I stretch?

Three to seven times.

•What equipment do I need to stretch?

Not much – only a towel and a chair.

Eager to try some stretching exercises? Get your doctor's approval, then select exercises shown on these Web sites.

www.agingwell.state.ny.us/fitness/stretch/index.htm
www.niehs.nih.gov/odhsb/ergoguid/chapiii.htm
nihseniorhealth.gov/exercise/stretchingexercises/01.html

After stretching, do you feel better ____ more active ____ healthier ____?

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