

1989 - 2013 25 YEADS For A Healthier Lifestyle

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Wellness by the Numbers

Over the past 25 years, life expectancy has increased year after year for both men and women. Not only are people living longer, they are living healthy, active lives. People are staying healthy to a more advanced age partly because of improvements in the treatment of injury and illness and partly because researchers have focused on the prevention of disease.

The foundation of disease prevention includes being at a healthy weight, exercising regularly, eating a balanced diet, and having your health status evaluated during a physical examination. From your physical exam, there are some key numbers you can learn about yourself and your health. The numbers can reveal how well you are, and they can show in which areas you need improvement. Most importantly, the numbers can help you plan, set goals, and change habits to live a healthier, longer life.

Your weight

Excess weight can place you at a higher risk for certain diseases, such as heart disease, high blood pressure, type 2 diabetes, gallstones, breathing problems, and some cancers. For this reason, the first step toward a healthier life is to step on a scale. Once you know how much you weigh, you can determine if you are overweight, underweight, or at your ideal weight. Other basic numbers BLOOD PRESSURE 120/80 BMI 18.5-24.9 WAIST-TO-HIP RATIO % BODY FAT HDL 60-100 LDL 100 LDL 100 LDL 60-ESTEROL 200 OR LESS

FASTING BLOOD GLUCOSE 70-100

HEART RATE 60-100 BPM

EXERCISE 30-60 MINUTES 4 TO 5 DAYS A WEEK relevant to your weight include amount of body fat, body mass index, and waist-to-hip ratio.

Body fat

Determining the percentage of your body fat can help to determine your ideal weight. Some scales can calculate percentage of body fat, but you can get a truer number if you seek the advice of a fitness professional who can complete skinfold measurements and calculate it for you. **Table 1** shows the range of body fat percentages for men and women. The formula for calculating one's ideal weight is your percentage of body fat times your current weight, which equals your fat weight. Subtract your fat weight from your current weight to get your lean weight. For a female, divide .78 into your lean weight; for a male, divide .84 into your lean weight to get your ideal weight (**Fig. 1**).

Table 1. Body fat percentages			
Description	Men	Women	
Essential fat	2-5%	10-13%	
For athletes	6-13%	14-20%	
For fitness	14-17%	21-24%	
Acceptable	18-25%	25-31%	
Obese	26%+	32% +	

Fig. 1.

How to Calculate Ideal Weight

Step 1	Step 2	Step 3			
% of body fat	current weight	lean weight			
x current weight	- fat weight	÷ .78 (females) or .84 (males)			
= fat weight	= lean weight	= ideal weight			
Example for a female $100 \text{ bs} = 30 \text{ lbs fat weight}$					
26% body fat x 150 lbs = 39 lbs fat weight 150 lbs - 39 lbs fat weight = 111 lbs lean weight					

Example for a male

22% body fat x 200 lbs = 44 lbs fat weight 200 lbs - 44 lbs fat weight = 156 lbs lean weight 156 lbs lean weight ÷ .84 = 185.7 lbs

111 lbs lean weight \div .78 = 142.3 lbs

Body mass index

If you don't have access to a fitness professional who can complete skinfold measurements for you, body mass index (BMI) is often used instead due to its simplicity. BMI uses only body weight and height and does not take into account overall body composition, including body fat; therefore, although it is widely used, it can be a poor indicator of obesity in some populations. The normal BMI range for men and women is between 18.5 and 24.9 (**Table 2**). Some home digital scales can calculate BMI or you can go to the Internet and use an online calculator by keying in your height and weight. When stepping on the scale, keep in mind that you are weighing muscle, bones, and fat, that is why BMI can be misleading and not always a good way to determine healthy weight. BMI can be a poor measurement of body fat for athletes or people who have a muscular build, and it can be inaccurate in older people who have lost muscle mass.

Waist-to-hip ratio

Research has shown that people who have an "appleshaped" body, or who have more weight around the waist, face higher health risks than those with a "pear-shaped" body, or who carry extra pounds around the hips. To determine if you have a healthy waist-to-hip ratio, use a measuring tape to measure the circumference of your hips at the widest part of your buttocks. Then measure your waist at the smaller circumference of your waist, just above your belly button. Divide your waist measurement by your hip measurement to determine the ratio. If the ratio is greater than .86 in women and .95 in men, the measurement can be associated with an increased risk for heart disease.

Weight loss

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Weight loss can be accomplished by reducing the number of calories you consume or by increasing the number of calories you burn through exercise. In order to lose 1 pound a week, the formula is as follows:

Multiply 10 times your current body weight to get the calories you need to maintain your current weight. To lose 1 pound a week reduce your caloric intake by 500 calories a day. Females should not consume less than 1,200 calories a day and males should not consume less than 1,500 calories a day (**Fig. 2**).

Health screening numbers

During your physical exam, your doctor's office staff will conduct a number of health screenings, such as checking your blood pressure and drawing blood to send to a lab. Your doctor will then review your lab report and other test results and let you know if you have any areas of concern.

Blood pressure

One of the most dangerous aspects of high blood pressure, or hypertension, is that you may not know you have it. Ideal blood pressure is 120/80, or 120 systolic and 80 diastolic. Blood pressure that exceeds 139 systolic and 89 diastolic should be monitored by your physician.

Fig. 2. The Keys to Weight Loss				
Healthy Food Portions (Consumed Calories) =	or < Physical Activity (Burned Calories)	າc. ©2013		
10 x your weight (lbs) = calories needed to maintain current weight		Foundation, Inc. ©2013		
Weight Loss ExampleStarting weight: 200 lbsIdeal weight: 150 lbs				
	-			

Starting weight: 200 lbs	Ideal weight: 150
10 x 200 lbs	10 x 150 lbs
= 2,000 calories	= 1,500 calories

Rate of weight loss: This is a difference of 50 lbs and 500 calories per day. Safely reducing your diet by 500 calories per day = 1 lb of weight loss per week. Therefore, it would take approximately 50 weeks to lose the weight.

To maintain a weight of 150 lbs **Consuming** 1,500 calories = **Burning** 1,500 calories

Your healthcare provider should also check your heart rate. Your heart rate should be between 60 and 100 beats per minute. A low heart rate at rest implies that your heart is functioning effectively and that you have good cardiovascular fitness. Exercise and diet can help improve your resting heart rate and blood pressure.

Cholesterol

Know both your high-density lipoprotein (HDL) level, which is your good cholesterol, and your low-density lipoprotein (LDL) level, which is your bad cholesterol. The National Institutes of Health recommends that LDL numbers stay under 100 and HDL is kept above 40. The more HDL you have, the better your chances of not experiencing heart disease. Cholesterol/HDL ratio is the ratio of your total cholesterol to your good cholesterol. The ideal ratio is between 3.5 and 4 and the lower the ratio, the better. Research indicates that for every 1 unit increase in HDL the risk of heart disease drops by as much as 3%.

Triglycerides

Triglycerides are fats that come from the food you eat, as well as those produced by your body. Elevated triglycerides, in combination with high total cholesterol,

Table 3. Cholesterol and triglyceride levels					
Test	Desirable	Borderline	Undesirable		
HDL (Good)	60-100	50	39 or less		
LDL (Bad)	100	130-159	over 160		
Triglycerides	199 or less	200-400	over 400		
Total cholesterol	200 or less		240 & higher ndation, Inc. ©2013		

low HDL, and high LDL can cause an increased risk of developing heart disease. The fats can often be brought under control through a low fat diet and medication. Evidence shows that high cholesterol and triglyceride levels can be hereditary; therefore, it should be monitored regularly by your physician. Generally, no more than 10% to 20% of your diet should be fat.

Blood glucose

The American Diabetes Association has recently released new fasting blood glucose guidelines. Fasting blood glucose between 100 and 125 signals prediabetes and anything above 126 indicates a need for evaluation. Diet and exercise can help prevent or manage diabetes. If diabetes isn't managed, it can lead to disease and health complications, such as heart attack, stroke, amputation, blindness, kidney failure, and nerve damage.

Liver enzymes

Depending on your medical history and the medications you take, your doctor will check your liver enzymes. Elevation of the enzymes can be caused by alcohol, some over-the-counter drugs, prescription medications, and medical conditions, such as liver disease and heart disease. Acetaminophen (Tylenol), cholesterol reducing drugs, and blood pressure medications are common offenders.

Blood count

A complete blood count (CBC) provides information about your red blood cells, white blood cells, platelets, hemoglobin (the oxygen carrying capacity of the blood), and hematocrit (the percentage of red cells to the total volume of blood). The test results can help your physician determine why you are having specific symptoms.

Exercise

Last but not least, exercise is an essential part of a healthy lifestyle. Do some type of aerobic exercise, such as jogging, walking, swimming, cycling, or aerobic dance, 30 to 60 minutes a day, 4 to 5 times each week. Include some flexibility exercises in your program and some weight resistance exercise, as well. Find some type of activity or several activities you enjoy doing. Participating in something you enjoy doesn't seem like exercise, which means you are more likely to do it regularly.

Your overall fitness level and your health often determine your outlook on life. If you feel good, life is always brighter. A friend of mine once said "We live our lives between first and second base. You will never know what it is like to steal second if you don't give it a try. So put on your best shoes and your most comfortable britches and just do it." Consistency is the foundation of any diet and exercise program; it can determine your success or failure. Your goal should be to be healthy at any size.

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Exercising During Pregnancy A HEALTHY START FOR YOU AND YOUR BABY

A healthy start for you and your baby begins with prenatal care, a balanced diet, and moderate exercise. Exercising can help you adjust to the physical changes that occur during pregnancy. As you gain weight during pregnancy, your center of gravity changes, which can cause problems with balance and increase your risk of falling. Relaxin, a hormone that helps to relax and stretch soft tissue during pregnancy can predispose you to tendon and ligament injuries. During the last months of pregnancy, you can experience soft-tissue swelling and fluid retention that can lead to compression neuropathies, such as carpal tunnel syndrome in the wrist and tarsal tunnel syndrome in the foot.

Your cardiopulmonary system also changes by increasing the amount of blood pumped by the heart and the volume of air exchanged while breathing. These changes can sometimes lead to problems with anemia, varicose veins, and high blood pressure.

Exercising can help to reduce some of the problems that can arise during pregnancy and it can have a positive effect on your and your baby's health. Before you start exercising, consult your obstetrician to make sure you have no underlying condition that could put you or your baby at risk. **Table 1** lists some health conditions that can keep you from exercising.

Table 1. Conditions that can prevent you from exercising

- Severe anemia (low red blood cells)
- Significant heart disease
- Restrictive lung disease
- Incompetent cervix or cervical cerclage
- Morbid obesity (BMI> 40)
- Extremely underweight (BMI<12)
- Growth restricted fetus
- Poorly controlled hypertension
- Poorly controlled type 1 diabetes
- Poorly controlled seizure disorder
- Poorly controlled hyperthyroidism
- Multiple gestation (twins, triplets, etc.)
- Persistent 2nd or 3rd trimester bleeding
- Placental abruption or previa after week 26
- Premature labor
- Ruptured membranes
- Pre-eclampsia (pregnancy-induced hypertension) BMI= Body Mass Index

The benefits of exercising during pregnancy

The benefits gained from exercising include decreased maternal swelling, lower rates of high

blood pressure, reduced weight gain and varicose vein development.

Exercise helps to stabilize your mood swings and reduce fatigue, insomnia, anxiety, and depression. Exercising during pregnancy has been shown to lower the risk of Caesarean sections, pre-eclampsia (very high maternal blood pressure), and fetal distress during labor. Exercise can also help to shorten active labor and prevent excess weight gain of the baby (a risk factor for childhood obesity and type 2 diabetes). Moderately exercising does not cause premature labor, birth defects, or fetal growth problems.

Your goal is good health not weight loss

The goals of exercising during pregnancy are to improve your health and that of your baby, to help you adapt to the physiologic changes of pregnancy, and to improve the ease of delivery. You should

exercise moderately 3 to 4 days each week in a heart rate zone of around 65% of your maximum heart rate. You can use the equation: **target heart rate during exercise =** (**220 – your age in years**) **x 0.65** or you can tell when you are moderately exercising when your breathing quickens, but you're not out of breath.

Pregnancy requires an extra 300 calories of nutrition each day because maternal fat stores are needed for lactation and fetal growth. Therefore, if you exercise you need to replace the burned calories that exceed your normal calorie intake plus the additional 300 calories. For example, if you consumed 1,200 calories a day before you were pregnant, now you need to consume 1,500 calories. If you burn an additional 150 calories during exercise, your required daily caloric intake would now be 1,650 calories.

What type of exercise should I do?

The American College of Obstetricians and Gynecologists has developed guidelines for exercising during pregnancy. Women of childbearing age should exercise at moderate levels (well below levels that cause exhaustion) for at least 30 minutes most days, if not everyday. It is safe for sedentary women to start exercising during pregnancy, but you should start at a low intensity and slowly build to a moderate intensity. Stretching before and after exercise helps improve agility and balance and reduce the risk of a tendon or ligament injury. During exercise, you should wear cool, breathable clothing, and exercise indoors or early or later in the day. Drink at least 8 glasses of water each day (more if you feel thirsty) to help maintain blood volume and cooling mechanisms.



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Weightbearing exercises, such as walking or jogging, are good during the first trimester and low-impact aerobics, such as riding a stationary bike and swimming, are recommended during the second and third trimesters. Aerobic exercise intensity should progress from low to moderate exertion. Start by stretching, followed by some easy warm-up up exercises, and then increase to moderate intensity exercises. Swimming and aquatic exercises can help reduce swelling and fluid retention and improve lower back pain. Start core workout regimens and pelvic floor exercises during your first trimester and continue throughout your

Cat back stretch

Begin on your hands and knees with your hands directly under your shoulders and your knees directly under your hips. Engage your abdominal muscles to support your spine so you have a straight line from your ear to your hip. As you exhale, pull your abdominal muscles in and up as you arch your back like a stretching cat and let your head and tailbone drop down toward the floor.



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pregnancy to help prepare you for the rigors of labor. Strength training using light weights or resistance bands can be done in an upright position (seated or standing) while lifting. **Table 2** lists some exercises you can do during your pregnancy.

Table 2. Types of exercise you can do during your pregnancy

- Weightbearing: walking, jogging, running
- Low impact using machines: stationary bike, elliptical, cross country skiing, rowing, climbing, upper extremity cycle machine
- Aquatics: swimming, water aerobics
- Stretching: shoulder, calf, heel cords, hamstring
- Balance: tai chi, yoga, mini squats
- Resistance: aerobic weight training, weight lifting in an upright and seated position
- Prepare for delivery: core strength (abdomen, lower back, pelvis) pelvic floor strength (Kegel exercises)

What type of exercise should I avoid?

To avoid problems with blood circulation, during the first trimester, you should avoid motionless standing and after the first trimester, you should avoid any exercise that requires lying flat on your back.



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Side-lying straight-leg raises

Lift your top leg until your foot is about 12 inches off the floor. Hold for 6 seconds and slowly lower your leg. Keep your hip and leg in line with the rest of your body and don't roll towards your back.

Any exercise that can cause a fall or can cause trauma to the abdomen should be avoided. Keeping cool is important to fetal well-being; therefore, saunas and warm pools should be avoided. Because of the hazards of decompression sickness, you should not scuba dive during pregnancy. Stop exercising and see your doctor if you experience dizziness, nausea, shortness of breath, or if you feel overheated.

Exercising during your pregnancy is safe for you and it is beneficial to your baby's health. It can improve long-term maternal and fetal health and ease the physical discomfort of pregnancy and labor. You should meet with your obstetrician before initiating an

> exercise plan to make sure there is nothing that would prohibit you from exercising.

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Triceps exercise

Hold a small weight in both hands and bend your knee while leaning forward about 10 degrees. Keeping your opposite arm close to your body straighten it behind you. Begin the movement by bending at the elbow and straighten the arm out behind you and hold. Then hold the pose for 5 seconds.

Partial Knee ReplacementARE YOU A CANDIDATE?Fig

Total knee replacement (TKA) is one of the most successful surgeries performed by orthopaedic surgeons. It has helped millions of patients who have osteoarthritis regain function and reclaim their lives. However, a partial knee replacement (PKR) or unicompartmental knee arthroplasty, may be a viable option for carefully selected patients. Your surgeon can determine whether you are a candidate for the surgery.

What is PKR?

Unlike TKA, PKR is designed for patients with arthritis in only 1 part, or compartment, of the knee joint. During surgery, your surgeon removes the damaged cartilage surface of the compartment and replaces it with a prosthetic made of metal and plastic components.

PKR can often be performed through a smaller incision than a total knee replacement, and it requires less dissection of the soft tissues surrounding the bones of the knee. As a result, patients often experience a shorter hospital stay and a faster recovery period. As do patients who undergo TKA, PKR patients often go through a comprehensive postoperative physical therapy program to regain their strength and range of motion.

Are you a candidate?

If nonsurgical treatments, such as physical therapy, nonsteroidal anti-inflammatory medication, or corticosteroid injections fail to alleviate your pain, you may be a candidate for PKR if you have moderate joint disease or have had an injury in which only 1 compartment (unicompartmental) the medial (inside), the lateral (outside), or the patellofemoral (front) compartment—of your knee is damaged (**Fig. 1**). During a physical examination, your physician will ask questions about your medical history, current and past activities, lifestyle, and future goals to help determine if you are a candidate for the procedure. Your physician will

Fig. 1. Compartments of a partially arthritic (left) knee.



Fig. 2. Partial left knee replacement.

Prosthetic components Femoral Meniscal Tibial

> Hardware image courtesy of Stryker.

examine your knee, assessing for function, range of motion, and movement that produces pain. After reviewing your x-rays, your physician can make a recommendation for either a TKA or PKR procedure, depending on which compartments are affected.

Candidates for PKR are usually 55 or older, not obese, and lead a relatively sedentary lifestyle. If you have only 1 compartment of the knee affected by arthritis, have good range of motion, and have minor or no deformity of the knee, you could be a good candidate for the surgery. Disadvantages to partial knee replacement are somewhat less predictable pain relief and the need for more surgery if you later develop painful arthritis in the other compartments.

During surgery

During your surgery, you will be given either a general or a regional (spinal) anesthetic. An incision is made in the front of your knee, and the diseased bone is removed and replaced with the prosthetic components (Fig. 2). In rare cases, after beginning your surgery, your surgeon may see more damage inside your knee than was expected and opt to perform a total knee replacement instead. The alternatives and possibilities will be explained to you in detail before your surgery. After the procedure, your knee may be placed temporarily into an immobilizer (brace) or a cooling device, and you will be given medication to control pain. Often, you can begin physical therapy the same day of your surgery and go home the day after the surgery.

After surgery

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When you go home, you will be given medications to help prevent blood clots in your

legs, to prevent infection, and for relief of pain. You may have some combination of outpatient and home physical therapy. Rarely do patients need to stay in the hospital for short-term rehabilitation. Patients usually return to their regular activities by 6 weeks after surgery.

PKR helps to improve your function and to relieve your knee pain. Should your knee arthritis require surgery, your orthopaedic surgeon can provide the information and expertise necessary to help you make an informed decision about the best procedure for you.

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Smoking and Musculoskeletal Health

Tobacco use remains the single largest preventable cause of death and disease in the US. According to the Morbidity and Mortality Weekly Report, published by the Centers for Disease Control and Prevention (CDC), an estimated 19.3% (45.3 million) of US adults are current cigarette smokers. Of these, 78.2% (35.4 million) smoke every day, and 21.8% (9.9 million) smoke some days, and men smoke more than women. Tobacco use can cause or contribute to heart disease, multiple types of cancer, pulmonary disease, adverse reproductive effects; it can also exacerbate chronic health conditions. Each year in the US, approximately 443,000, or 1 out of every 5, people die from tobacco-related diseases. Smoking has an estimated cost of \$96 billion in direct medical expenses and \$9 billion in lost productivity each year.

Cigarette smoking not only affects the quantity and quality of the smoker's life, but also the lives of those who are exposed to secondhand smoke. Approximately 60% of nonsmokers in the US have biologic evidence of exposure to secondhand smoke, and studies suggest that even the smallest amount of exposure can have negative health effects. Bone density loss has also been found in people exposed to secondhand smoke. The rates of exposure to secondhand smoke have made it the third leading cause of preventable death in America.

The musculoskeletal system (bones, muscles, tendons, ligaments and nerves) can be significantly affected by tobacco exposure. Tobacco smokers experience a decrease in bone mineral density that increases the risk of osteoporotic (porous bone) fractures. Smokers have impaired bone and wound healing, which can result in slower healing after a fracture or after surgery.

Risk factors associated with tobacco use include the following:

• Nicotine, the most powerful substance in tobacco, causes a decrease in blood flow to all tissues in the human body. Proper blood flow is vital for wound and fracture healing and the overall good health of bone, muscles, tendons, and ligaments. • Each year more women die from hip fractures than from breast cancer. Smoking has been identified as a major risk factor for the development of osteoporosis and osteoporotic related hip fractures.

• Smoking is associated with rotator cuff disease in the shoulder.

• There is a strong association between decreased bone density and altered reproductive functions in women caused by reduced estrogen production secondary to tobacco exposure.

• Studies show that mothers who were exposed to tobacco delivered babies with low birth weight and decreased bone development.

• Smoking has been identified as a risk factor in rheumatoid arthritis.

• Smokers have a greater chance of developing systemic lupus erythematosus, which is an inflammatory multisystemic autoimmune

disease of the connective tissue. It is

characterized by fever, skin lesions, joint pain or arthritis, and anemia, and can affect the kidneys, spleen, and various other organs.

Every tissue in the body is affected by smoking. So if you smoke, quit. If you quit smoking before surgery, it can help improve postoperative wound healing and decrease recovery time. It can also improve pulmonary function and decrease the risk of complications, such as pneumonia, stroke, heart attack, blood clots, and death, all of which can occur during the perioperative period.

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Resources for smoking cessation: 1. American Lung Association- Smoking Cessation Support

http://www.lungusa.org/site/ 2. U.S Department of Health and Human

Services- http://www.surgeongeneral.gov/ tobacco/ 3. Centers for Disease Control and

3. Centers for Disease Control and Prevention

http://www.cdc.gov/tobacco/quit_ smoking/

 American Cancer Society http://www. cancer.org/health/stayawayfromtobacco/
 National Cancer Institute http:// www.smokefree.gov/

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