What Do These Terms Mean
Tips for Patients from the
Strategies for Success in Health Management **Program**

How Doctors Check Heart Rate

The doctor feels a patient's pulse in order to check for heart's rate and rhythm. Each pulse matches up with a heartbeat that pumps blood into the arteries. The force of the pulse also helps evaluate the amount (strength) of blood flow to different areas of the patient's body. One can tell how fast one's heart is beating (heart rate) by feeling one's pulse. A person's heart rate is the amount of times the heart beats in one minute.

Measuring Heart Rate

Age	Target HR Zone 50-85%	Average Maximum Heart Rate, 100%
20 years	100-170 beats per minute	200 beats per minute
30 years	95-162 beats per minute	190 beats per minute
35 years	93-157 beats per minute	185 beats per minute
40 years	90-153 beats per minute	180 beats per minute
45 years	88-149 beats per minute	175 beats per minute
50 years	85-145 beats per minute	170 beats per minute
55 years	83-140 beats per minute	165 beats per minute
60 years	80-136 beats per minute	160 beats per minute
65 years	78-132 beats per minute	155 beats per minute
70 years	75-128 beats per minute	150 beats per minute

Measuring Your Own Heart Rate

To measure their own pulse, all patients need is a watch with a second hand. They place their index and middle finger of their hand on the inner wrist of the other arm, just below the base of the thumb. They should feel a tapping or pulsing against their fingers. They then count the number of taps they feel in 10 seconds. They then multiply that number by six to find out their heart rate for one minute (pulse in 10 seconds x six = _____ beats per minute). When feeling their pulse, patients can also tell if their heart rhythm is regular or not.

Checking Heartbeat
Doctors listen to patients' heartbeat with the aid of a stethoscope. The opening and closing of the valves make a "lub dub" noise known as heart sounds. Doctors can evaluate the patients' heart and valve function and hear the patients' heart's rate and rhythm by listening to the heart sounds.

8 Ways to Lower Patients' Heart Disease Risk*
1. Quit smoking
2. Improve cholesterol levels
3. Control high blood pressure
4. Get active with exercise
5. Follow a heart-healthy diet
6. Get to a healthy weight
7. Control diabetes
8. Manage stress and anger

*Recommendations from the American Heart Association

Blood Pressure Chart

Blood Pressure	Systolic		Diastolic
Low Blood Pressure (Hypotension)	50-90		35-60
Normal	Less than 120	and	Less than 80
High Normal (Pre-hypertension)	120-199	or	80-89
High Blood Pressure (Hypertension) Stage 1	140-159	or	90-99
High Blood Pressure (Hypertension) Stage 2	160 or higher	or	100 or higher
High Blood Pressure(Hypertension)Stage3/4	Higher than 180	or	Higher than 110

Hypertension Facts
Causes of Hypertension
1. **Age:** High blood pressure is more common in older people. At age 45, more men have hypertension than women. By age 65, this is reversed and more women are affected.
2. **Diabetes:** People with diabetes have a greater risk of hypertension than those without diabetes. About 60% of all people with diabetes also have hypertension
3. **Genetics:** having a close family member with high blood pressure increases risk of developing it
4. **Race:** African-Americans are at greater risk of developing hypertension than people of other races
5. **Sodium:** chemical found in salt, raises blood pressure by promoting the retention of fluid

6. **Overweight:** increases risk of getting hypertension & increases workload required of heart
7. **Drinking:** Drinking too much alcohol is a risk factor for high blood pressure

Behavioral Medicine Treatments of Hypertension
1. Low sodium diet
2. Exercise can lower blood pressure. It's recommended: adults get about 150 minutes per week of moderate exercise such as: walking, bicycling, gardening, or other aerobic exercise. Muscle-strengthening activities are recommended at least twice a week.
3. Meditation and other relaxation techniques can help lower blood pressure.
4. Yoga, tai chi, and breathing exercises can also help reduce blood pressure.

For all of these Treatments it is best when these are combined with changes in diet and exercise.

Facts about Cholesterol

Cholesterol is a natural substance made by the body & Most of cholesterol in bloodstream (75%) is produced by liver and remaining 25% comes from foods eaten. Elevated blood cholesterol levels are not good for health, but right levels of cholesterol actually play a vital role in maintaining cell membranes and synthesizing hormones.

The Centers for Disease Control reports that one-third of adults have high cholesterol levels. Usually, high cholesterol does not produce any symptoms and one may not know one's blood cholesterol is too high. Too much cholesterol can build up in arteries, causing atherosclerosis, or hardening of the arteries. This restricts blood flow through the arteries and can lead to serious medical problems such as heart attack or stroke Cholesterol screening is done with a blood test that measures levels of high-density lipoprotein (HDL) cholesterol ("good" cholesterol), low-density lipoprotein (LDL) cholesterol ("bad" cholesterol), and triglycerides

LDL-Cholesterol	HDL-CHOLESTEROL	TRIGLYCERIDES	TOTAL CHOLESTEROL LEVEL
VERY HIGH: 190 mg/dL or higher		VERY HIGH: 500 mg/dL or higher	
HIGH: 160–189 mg/dL	HIGH: 60 mg/dL or higher	HIGH: 200–499 mg/dL	HIGH: 240 mg/dL or higher
BORDERLINE HIGH: 130–159 mg/dL		BORDERLINE HIGH: 150–199 mg/dL	BORDERLINE HIGH: 200–239 mg/dL
NEAR OPTIMAL/ ABOVE OPTIMAL: 100–129 mg/dL			
OPTIMAL: Less than 100 mg/dL	LOW: Less than 40 mg/dL	NORMAL: Less than 150 mg/dL	DESIRABLE: Less than 200 mg/dL
Generally, a lower LDL-cholesterol level is better	Generally, a higher HDL-cholesterol level is better	Like LDL-cholesterol, Goal is to keep triglycerides low	Generally, a lower total cholesterol level is better

Results of Cholesterol Screening

A cholesterol test will measure the total cholesterol in the blood, and total cholesterol levels are made up of a combination of LDL, HDL, and VLDL (very low density lipoprotein,"bad" cholesterol) levels.

1. A total cholesterol score of 200 mg/dL or lower is considered optimal. Levels above 200 mg/dL are considered high and can mean you are at greater risk for developing heart disease.
2. When health-care professionals order blood cholesterol levels to be checked, they will interpret and discuss the results such as cholesterol ratio and total cholesterol numbers (HDL, LDL, and VLDL), and what they each mean.
3. To calculate one's cholesterol ratio, divide the total cholesterol number by the HDL cholesterol number. For example, if one has a total cholesterol score of 200 and an HDL score of 40; divide 200 by 40 and this equals a ratio of 5 to 1. The lower the ratio, the lower is the risk of heart disease. Doctors recommend keeping the ratio 5 to 1 or lower. The optimal ratio is 3.5 to 1. While this ratio can be helpful in assessing risk for heart disease, doctors will take into account patients' entire cholesterol profiles and tell them what treatment is best for them.

Risk factors for high cholesterol

Risk factors that can be controlled include:

- Diets high in trans fats, saturated fats, and cholesterol
- Being overweight or obese
- Sedentary lifestyle
- Other risk factors which cannot be controled include age (risk increases as people age), gender (women's risk for high cholesterol increases postmenopause), and family history

Why High Cholesterol Matters

- High cholesterol puts patients at risk for heart disease and stroke, leading causes of death in the U.S.
- High levels of LDL ("bad") cholesterol can contribute to plaque buildup on the walls of the arteries, narrowing the arteries and restricting blood flow.
- If some of this plaque breaks off and gets stuck in a narrowed artery, it can block the artery and cut off blood supply to the heart or brain, resulting in heart attack or stroke

When seeking to lower total cholesterol, what number should be aimed for?
- A total cholesterol score of 200 mg/dL is desirable. Aim for an LDL ("bad") cholesterol level of 100 mg/dL or lower, and an HDL ("good") cholesterol level of 60 mg/dL or higher.
- If a patients have high risk factors for heart disease or stroke, including high blood pressure, smoking, family history of heart disease, are over the age of 45 for men and age 55 for women, have low HDL cholesterol (below 40 mg/dL), and/or are obese or inactive, they may need to aim for LDL levels of 70 mg/dL or lower.

Facts about Triglycerides

Triglycerides are a type of fat found in the blood and an important source of energy in the body, but at high levels they can hurt the heart. Triglyceride troubles can lead to clogged arteries and possibly to a heart attack or stroke. High triglycerides can be part of an unhealthy condition called *metabolic syndrome.* Other parts of this illness can include:
- Low HDL "good" cholesterol
- High blood pressure
- Belly fat
- High blood sugar

Metabolic syndrome greatly increases chances of developing heart disease, stroke, and diabetes.

Normal levels of triglycerides are 150 mg/dL and lower. Levels higher than that can raise risk for heart disease and metabolic syndrome, which also is a risk factor for heart disease, diabetes, and stroke. Obesity, diabetes, smoking, alcohol abuse, and lack of exercise can all lead to high triglyceride levels.

Diet Can Change Cholesterol levels

Fiber: Diets high in fiber can reduce LDL ("bad") cholesterol. High fiber diets also may help with weight loss, and being overweight is a contributing risk factor for high cholesterol. Foods high in fiber include fruits, vegetables, whole grains, legumes, and beans.

Fats: The American Heart Association recommends that just 25% to 35% of daily calories come from fats such as those found in fish, nuts, and vegetable oils.

- For healthy people, saturated fat should comprise no more than 7% of total calories. On a 2,000 calorie-a-day diet, that's about 140 calories (or 16 grams) worth of saturated fat.
- If patients need to lower LDL cholesterol, they need to limit saturated fat to 5% to 6% of calories, or about 11 to 13 grams of saturated fat on a 2,000-calorie diet and reduce trans fats to less than 1% of total daily calories. This means avoiding fried foods and many junk foods.

Proteins: To reduce cholesterol, limit red meat and eat more fish and lean poultry. Trim all fat from meats, and remove all skin from poultry before cooking.

- Broil or bake, don't fry foods. Drain fat from any meats before serving. Avoid processed meats such as hot dogs or cold cuts, even those labeled "reduced fat," as many are still high in saturated fats and calories
- Oily fish such as salmon or trout are high in omega-3 fatty acids, which can reduce triglyceride levels and improve HDL ("good") cholesterol levels
- Soy proteins can also have a beneficial effect and help to reduce LDL ("bad") cholesterol and triglycerides, while raising HDL cholesterol levels

Measure of Oxygen in Blood

Normal	Low	Lower	Lowest
95-100%	90-95%	Below 95%	Below 80%
	But not necessarily a health issue	is considered low resulting in hypoxemia	may compromise organ function, such as brain and heart

The measure is an estimation of the oxygen saturation level
Oxygen saturation is a term referring to the concentration of oxygen in the blood
It measures the percentage of hemoglobin binding sites in the bloodstream occupied by oxygen.
Some causes of Hypoxemia can be the result of causes of

- Sleep apnea
- Asthma crisis

- Pulmonary infection
- Or other pulmonary disorders

Continued low oxygen levels below 80% may lead to respiratory or cardiac arrest

Facts about Asthma

- Asthma is a chronic lung disorder that can make breathing difficult. It causes inflammation, swelling, and narrowing of the airways (bronchial tubes).
- About 25 million people in the U.S have asthma; 7 million of those are children.
- Asthma involves narrowing of the airways caused by three major factors: inflammation, bronchospasm, and hyper-reactivity.
- Allergy plays a role in some, but not all, asthma patients.
- Allergens and irritants can cause asthma attacks.
- Asthma symptoms include shortness of breath,
- Asthma is diagnosed based physical exam, patient history, and confirmed with breathing tests.
- The best way to manage asthma is to try to avoid triggers such as allergens or irritants.

Asthma Classification

Mild Intermittent	This includes attacks no more than twice a week and nighttime attacks no more than twice a month. Attacks last no more than a few hours to days. Severity of attacks varies but there are no symptoms between attacks
Mild Persistent	This includes attacks more than twice a week, but not every day, and nighttime symptoms more than twice a month. Attacks are sometimes severe enough to interrupt regular activities
Moderate Persistent	This includes daily attacks and nighttime symptoms more than once a week. More severe attacks occur at least twice a week and may last days. Attacks require daily use of quick-relief (rescue) medications and changes in daily activities.
Severe Persistent	This includes frequent severe attacks, continual daytime symptoms, and frequent nighttime symptoms. Symptoms require limits on daily activities.

Diabetes-Blood Sugar Levels

Patients get a blood test called the A1c and the results of this testing reflect what stage of diabetes the patients are at:

Diagnosis	A1c level
Normal	Below 5.7 percent
Prediabetes	5.7-6.4 percent
Diabetes	6.5 percent or above

Facts on Diabetes

Risk factors related to both lifestyle choices and medical conditions can increase risk of developing type 2 diabetes. These include:

- Cigarette smoking
- Being overweight or obese, especially around the waist
- Lack of exercise
- Consuming a diet that is high in processed meat, fat, sweets, and red meats
- Triglyceride levels over 250 mg/dL
- Low levels of "good" HDL cholesterol (below 35 mg/dL)

Non-medical Treatment of Diabetes

People with type 2 diabetes are encouraged to do the following

- **Diet:** Need to monitor intake of carbohydrates and reduce calories as well as watching total fat and protein consumption
- **Exercise:** 30 minutes of moderate exercise daily including walking, to lower blood glucose levels. Physical activity also reduces body fat, lowers blood pressure, and helps prevent cardiovascular disease
- **Stress Reduction:** Stress not only increases blood pressure, but it can also increase blood glucose levels. Use relaxation techniques such as visualization, meditation, or breathing exercises.

Facts about Smoking

Physical Impact of Smoking

1. Lung Cancer
2. Oral Cancer
3. Heart Disease and Erectile Dysfunction
4. Cataracts
5. Brittle Bones
6. Skin: Uneven skin tone; sagging skin and wrinkles; lines and wrinkles around the lips; age spots; Psoriasis -thick, scaly skin patches most commonly s on elbows, scalp, hands, back, or feet
7. Appearances: Damaged gums and teeth; Stained nails and fingers; Hair Loss

People who quit smoking may gain a small amount of weight. Most people who quit gain 10 lbs. or less. The reasons are varied, without nicotine:

1. Feeling hungrier, although this effect tends to disappear after a few weeks
2. Metabolism may decrease
3. Person may enjoy food more or feel it tastes better, which could lead to overindulging
4. Person may eat more high fat or sugary snacks, or drink more alcohol

12 Health Risks from Heavy Drinking

1. Anemia
2. Cancer
3. Cardiovascular Disease
7. Seizures
8. Gout
9. High Blood Pressure
4. Cirrosis
5. Dementia
6. Depression
10. Infectious Disease
11. Nerve Damage
12. Pancreatitis

A1C to Blood Glucose Conversion Table:
Use this table to see how an A1C test result correlates to average daily blood sugar. Although this is as important as the A1C is, it's not a substitute for frequent self-monitoring. Only regular blood sugar checks show you how meals, activity, medications and stress affect your blood sugar at a single moment in time, as well as over the course of a day or week.

A1C	Glucose	A1C	Glucose	A1C	Glucose	A1C	Glucose	A1C	Glucose
4	**68**	**6**	**126**	**8**	**183**	**10**	**240**	**12**	**298**
4.1	71	6.1	128	8.1	186	10.1	243	12.1	301
4.2	74	6.2	131	8.2	189	10.2	246	12.2	303
4.3	77	6.3	134	8.3	192	10.3	249	12.3	306
4.4	80	6.4	137	8.4	194	10.4	252	12.4	309
4.5	83	6.5	140	8.5	197	10.5	255	12.5	312
4.6	85	6.6	143	8.6	200	10.6	258	12.6	315
4.7	88	6.7	146	8.7	203	10.7	260	12.7	318
4.8	91	6.8	149	8.8	206	10.8	263	12.8	321
4.9	94	6.9	151	8.9	209	10.9	266	12.9	324
5	**97**	**7**	**154**	**9**	**215**	**11**	**269**	**13**	**326**
5.1	100	7.1	157	9.1	215	11.1	272	13.1	329
5.2	103	7.2	160	9.2	217	11.2	275	13.2	332
5.3	105	7.3	163	9.3	220	11.3	278	13.3	335
5.4	108	7.4	166	9.4	223	11.4	281	13.4	338
5.5	111	7.5	169	9.5	226	11.5	283	13.5	341
5.6	114	7.6	171	9.6	229	11.6	286	13.6	344
5.7	117	7.7	174	9.7	235	11.7	289	13.7	347
5.8	120	7.8	177	9.8	235	11.8	295	13.8	349
5.9	123	7.9	180	9.9	237	11.6	295	13.9	352
								14	**355**
								>14	Yikes

ADA Recommended target = <7% ACE Recommended target = <6.5%

FASTING/Before meals = 70-130 mg/dL

2 hours after meal = < 180 mg/dL

Height in Feet and Inches

Weight in Pounds

	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
4'	30.5	33.6	36.6	39.7	42.7	45.8	48.8	51.9	54.9	58.0	61.0	64.1	67.1	70.2	73.2	76.3
4'2"	28.1	30.9	33.7	36.6	39.4	42.2	45.0	47.8	50.6	53.4	56.2	59.1	61.9	64.7	67.5	70.3
4'4"	26.0	28.6	31.2	33.8	36.4	39.0	41.6	44.2	46.8	49.4	52.0	54.6	57.2	59.8	62.4	65.0
4'6"	24.1	26.5	28.9	31.3	33.8	36.2	38.6	41.0	43.4	45.8	48.2	50.6	53.0	55.4	57.9	60.3
4'8"	22.4	24.7	26.9	29.1	31.4	33.6	35.9	38.1	40.4	42.6	44.8	47.1	49.3	51.6	53.8	56.0
4'10"	20.9	23.0	25.1	27.2	29.3	31.3	33.4	35.5	37.6	39.7	41.8	43.9	46.0	48.1	50.2	52.2
5'	19.5	21.5	23.4	25.4	27.3	29.3	31.2	33.2	35.2	37.1	39.1	41.0	43.0	44.9	46.9	48.8
5'2"	18.3	20.1	21.9	23.8	25.6	27.4	29.3	31.1	32.9	34.7	36.6	38.4	40.2	42.1	43.9	45.7
5'4"	17.2	18.9	20.6	22.3	24.0	25.7	27.5	29.2	30.9	32.6	34.3	36.0	37.8	39.5	41.2	42.9
5'6"	16.1	17.8	19.4	21.0	22.6	24.2	25.8	27.4	29.0	30.7	32.3	33.9	35.5	37.1	38.7	40.3
5'8"	15.2	16.7	18.2	19.8	21.3	22.8	24.3	25.8	27.4	28.9	30.4	31.9	33.4	35.0	36.5	38.0
5'10"	14.3	15.8	17.2	18.7	20.1	21.5	23.0	24.4	25.8	27.3	28.7	30.1	31.6	33.0	34.4	35.9
6'	13.6	14.9	16.3	17.6	19.0	20.3	21.7	23.1	24.4	25.8	27.1	28.5	29.8	31.2	32.5	33.9
6'2"	12.8	14.1	15.4	16.7	18.0	19.3	20.5	21.8	23.1	24.4	25.7	27.0	28.2	29.5	30.8	32.1
6'4"	12.2	13.4	14.6	15.8	17.0	18.3	19.5	20.7	21.9	23.1	24.3	25.6	26.8	28.0	29.2	30.4
6'6"	11.6	12.7	13.9	15.0	16.2	17.3	18.5	19.6	20.8	22.0	23.1	24.3	25.4	26.6	27.7	28.9
6'8"	11.0	12.1	13.2	14.3	15.4	16.5	17.6	18.7	19.8	20.9	22.0	23.1	24.2	25.3	26.4	27.5
6'10"	10.5	11.5	12.5	13.6	14.6	15.7	16.7	17.8	18.8	19.9	20.9	22.0	23.0	24.0	25.1	26.1
7'	10.0	11.0	12.0	13.0	13.9	14.9	15.9	16.9	17.9	18.9	19.9	20.9	21.9	22.9	23.9	24.9

Underweight Normal Overweight Obesity

http://www.freebmicalculator.net