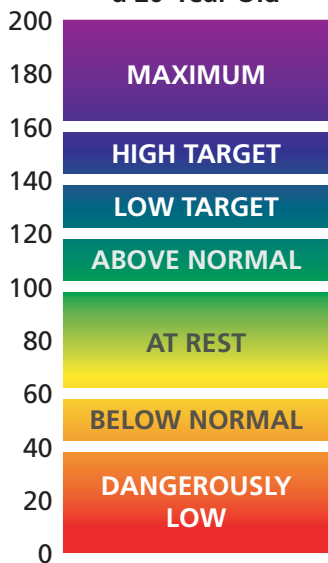


Heart Rate Levels for a 20-Year-Old



### Heart Rate and Metabolism

Your **heart rate** is the number of times your heart beats in 1 minute. Your heart rate is lower when you are at rest and increases when you exercise because your body needs more oxygen-rich blood when you exercise. Here is the normal heart rate for a person at rest.

Ages 1–10: 70–120 beats per minute

Ages 11+: 60–100 beats per minute

#### EXAMPLE 3 Finding a Target Heart Rate

An estimate for your maximum heart rate is

$$\text{Maximum heart rate (MHR)} = 220 - (\text{your age}).$$

Many fitness specialists recommend staying within 60–80% of your maximum heart rate during exercise. This range is called your target heart rate zone. Create a table showing the target heart rate zones for different ages.

#### SOLUTION

	A	B	C	D
	Age	Maximum Heart Rate	Low Target Rate	High Target Rate
1	20	200	120	160
2	30	190	114	152
3	40	180	108	144
4	50	170	102	136
5	60	160	96	128
6	70	150	90	120
7	80	140	84	112

For instance, when a 30-year-old exercises, his or her heart rate should be between 114 and 152 beats per minute.

#### ✓ Checkpoint

Help at [Math.andYOU.com](http://Math.andYOU.com)

The *24/5 Complete Personal Training Manual* suggests that there is a “fat burning zone.” This zone is 60–65% of your maximum heart rate, as indicated in the following table.

Estimates for a 130-pound woman during exercise	60–65% MHR	80–85% MHR
Total calories expended per minute	4.86	6.86
Fat calories expended per minute	2.43	2.70

Fat burning zone

With more fat calories being burned at the higher rate, why is the 60–65% zone called the “fat burning zone”?

