What are METS?

A MET is a measure of exercise intensity. It's formally known as a metabolic equivalent. METS are directly related to the intensity of physical activity and the amount of oxygen consumed. The larger the MET value the more calories burnt. Exercise physiologists use METS to determine what activity is appropriate for people given their current fitness level. One MET is equal to the amount of oxygen consumed at rest. Two METS means that you need twice the amount of oxygen to do a particular activity than you need at rest. And so on. Doctors use METS in a variety of ways including to help people return to exercise and other activities (e.g., sexual intercourse) after a heart attack. For example, walking up and down a flight of stairs is equal to 7 METS, which is approximately the same intensity as having sexual intercourse with a known partner. So, if someone who had a heart attack is able to safely walk up and down a flight of stairs, then he can be given the go-ahead to resume sexual relations.

The chart listed below is great to look at to determine how intense some activities are. For example running a 10 minute mile requires 10 x the amount of oxygen used at rest.

You can use METS to determine the caloric cost of exercise through the following equation.

Kilocalorie per minute (kcal/min) = (METS x 3.5 x body weight in kilograms) / 200

Example: How many calories does a 150 pound person expends walking 4 mph in 60 minutes?

1. Convert kilograms to pounds by dividing by 2.2
   150/2.2=68 kgs
2. (4.5 METS x 3.5 x 68) / 200
3. 5.4 kcal/min
4. 60 minutes x 5.4 kcal/min= 322 calories expended

LEISURE ACTIVITIES IN METS: SPORTS, EXERCISE, CLASSES, GAMES, DANCING

ACTIVITIES METS
(This is a short list)
REST 1.0
BILLIARDS 2.5
FISHING 2-4
BOWLING 2-4
TABLE TENNIS 3-5
WALKING 3-6
EXERCISE BIKE (LOW LEVELS) 3-6
VOLLEYBALL 3-6
LIGHT CONDITIONING EXERCISE 4-6
HANDBALL 3-7
DANCING (SOCIAL) 4-7
What are METS?

I heard if you want to build muscle you should not perform aerobic exercise?

Is anaerobic, aerobic and what is lactate threshold and why should I care?

Cardiovascular questions
Strength questions
Flexibility questions

SKIING (WATER) 5-7
SKIING (DOWNHILL) 5-8
BASKETBALL (NON GAME) 3-9
TENNIS 4-9
STAIR CLIMBING 4-8
SWIMMING 4-8
AEROBIC DANCE 6-9
CLIMBING HILLS 5-10
HEAVY CONDITIONING EXERCISE 6-8
EXERCISE BIKE (MODERATE-HIGH LEVELS) 6-12
SOCCER 6-12
SKIING (CROSS COUNTRY) 6-12
BASKETBALL (GAME) 7-12
SQUASH/RACQUETBALL 8-12
SNOWSHOEING 8-14
ROPE JUMPING (60-80 SKIPS/MIN) 9
WALKING 2.0 MPH 2 METS
WALKING 2.5 MPH 3 METS
WALKING 3.0 MPH 3.5 METS
WALKING 3.5 MPH 4 METS
WALKING 4.0 MPH 4.5 METS
RUNNING 5 MPH 8.0 METS
RUNNING 5 MPH 9.0 METS
RUNNING 5.5 MPH 9.5 METS
RUNNING 6 MPH 10.0 METS
RUNNING 6.7 MPH 11.0 METS
RUNNING 7.0 MPH 11.5 METS
RUNNING 7.25 MPH 12.0 METS
RUNNING 7.5 MPH 12.5 METS
RUNNING 8.0 MPH 13.5 METS
RUNNING 8.6 MPH 14.0 METS
RUNNING 9.0 MPH 15.0 METS
RUNNING 9.5 MPH 15.5 METS
RUNNING 10.0 MPH 16.0 METS
RUNNING 10.5 MPH 17.0 METS

You can use your VO2 max score to determine what activities and exercises you're suited to by determining maximum MET and MET range. See self test to learn how to measure your own VO2 max score.

In order to exercise in the proper range for your body according to METS, you divide your VO2 max score by 3.5. This is your maximum MET capacity. So, if your VO2 max score is:

\[
35 = \frac{10}{3.5}
\]

Ten METS is essentially equal to the maximum amount of physical activity you can withstand. This is not the intensity level that you want to perform at. Instead, unless you are a highly conditioned elite athlete, you are better off working out between 40/50-85% of your maximum MET level.
If you want to get technical the ACSM recommends the following equation. It is very similar to the HRR method.

$$((\text{Max MET} - \text{Rest MET}) \times \% ) + 1$$
Example 10 MET max MET range of 50 to 80 
$$((10-1) \times .50)+1=5.5$$
$$((10-1) \times .85)+1=8.7$$

The person in this example has a physical activity and exercise range of 5.5 to 8.7 METS.

See MET chart for appropriate exercises and activities suited for you.

The person in the past example can perform exercises that are less intense than running a 11 minute mile through interpreting the METS chart.