

## CONVERT CONSUMPTION INTO LABOR

*Circumstances may cause interruptions and delays,  
but never lose sight of your goal.*

—Mario Andretti

Energy balance is when the calories you consume from food and beverages are equal to the calories that your body burns through physical activity. If you are overweight, this means that your energy balance is “out of balance.” You are eating more calories than your body needs to perform daily activities and the extra calories are being stored as fat. There are just three ways to improve energy balance: take in fewer calories, burn off more calories, or a combination of both. According to University of Nebraska nutrition educator, Alice Henneman, adding more activity to your lifestyle is like getting a free “loan” every day. It increases your “calorie salary” because you can eat more if you use your feet more. Many people work in sedentary jobs, however, so it is necessary to schedule daily physical activity to improve your energy balance.

The *2010 Dietary Guidelines for Americans* suggest you follow the *2008 Physical Activity Guidelines for Americans*. They recommend that adults 18-64 years of age avoid inactivity and take small steps to increase activity levels. For substantial health benefits, adults should do 150 minutes (2 hours and 30 minutes) per week of moderate intensity exercise or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity. Examples of moderate intensity exercise include: brisk walking, dancing, swimming or biking on level terrain. Vigorous-intensity activities include: jogging, singles tennis, swimming continuous laps, biking uphill. All aerobic activity should be performed in episodes of 10 minutes or more and spread throughout the week. For more information visit [HTTP://WWW.HEALTH.GOV/PAGUIDELINES/GUIDELINES/DEFAULT.ASPX](http://www.health.gov/paguidelines/guidelines/default.aspx)

Converting consumption into labor is a useful strategy to help improve energy balance. What this means is figuring out how much exercise is required to burn off a certain number of calories. If it takes two hours on the treadmill to work off a slice of apple pie, you might

think twice about having it (i.e., is it worth the calories?), decide to eat a smaller portion, or reduce calories elsewhere. In order to do the required calculation, you need to know the calorie content of foods (from nutrition facts labels or a calorie counter pocket book) and the number of calories expended per hour in common

— TABLE 3 —

### Calories Expended in Common Physical Activities

Moderate Physical Activity	Calories Expended per Hour for a 154-lb Person
Hiking	367
Light gardening/yard work	331
Dancing	331
Golf (walking and carrying clubs)	331
Bicycling (<10 mph)	294
Walking (3.5 mph)	279
Weight lifting (general light workout)	220
Stretching	184
<b>Vigorous Physical Activity</b>	
Running/jogging	588
Bicycling (>10 mph)	588
Swimming (slow freestyle laps)	514
Aerobics	478
Walking (4.5 mph)	464
Heavy yard work (e.g., chopping wood)	441
Weight lifting (vigorous effort)	441

Source: The 2005 Dietary Guidelines Advisory Committee Report

physical activities. You can also get a ballpark figure of calorie expenditure from the displays on exercise equipment, such as elliptical trainers and treadmills, especially those that are programmed to include a user's weight.

The *2005 Dietary Guidelines for Americans* report provides calorie expenditure information. Table 3, on the previous page, shows the number of calories burned per hour in various physical activities for a 154-pound individual. Calories burned per hour will be higher for persons who weigh more than 154 pounds and lower for persons who weigh less. This is because the energy expenditure for activities to move your own body weight (e.g., walking, running) is greater for heavier people because they have more weight to move. Thus, a person weighing 160 pounds would burn more calories walking a mile than a person weighing 130 pounds. For an accurate calculation, it is, therefore, very important to check the body weight assumptions used in calorie expenditure charts. In addition, check the intensity of the physical activity. Some activities (e.g., walking, bicycling) can be labeled “moderate” or “vigorous” depending on the rate/speed at which they are performed.

Type “calorie burning” into your favorite Internet search engine and review the resource list in Appendix 2, page 115, to discover more sources of information on calories expended for various activities. Then, fill out Worksheet 18, *Convert Consumption into Labor—Health*, page 56, to better understand the relationship between the calorie content of foods and the calories expended through exercise.

A comparable financial example is “converting spending into labor” by calculating how many hours of work are needed to earn the net (after-tax) income required to buy something. If you know how many hours of work

are needed to buy something, you might think twice about making the purchase or look for a less expensive alternative.

In order to do the calculation, you need to know the cost of an item, your federal marginal tax bracket (see [HTTP://NJAES.RUTGERS.EDU/MONEY/TAXINFO/](http://njaes.rutgers.edu/money/taxinfo/)), and the length of your average work week, including commuting time. Review the example in Worksheet 19, *Convert Consumption into Labor—Wealth*, page 57. Then fill in your information to better understand the work required to pay for a purchase.

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## — Action Steps —

### Health

- Use the *Convert Consumption Into Labor* worksheet to gain a better appreciation of energy balance.
- Make a list of foods that are “worth exercising for” and those that are not.
- Track your weight weekly to measure changes in energy balance over time.

### Wealth

- Use the *Convert Consumption Into Labor* worksheet to gain a better appreciation of the cost of purchases compared to the time spent to earn the money to pay for them.
  - Make a list of items that are “worth working long hours for” and those that are not.
  - Track your income and expenses periodically to measure changes in cash flow over time.
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Worksheet 18

Convert Consumption Into Labor—Health

List ten “temptation” foods, and their serving size and calorie count. Then list the approximate time that it would take to burn off the calories using one of the exercise methods listed previously. A sample calculation is provided.

Food Item	Serving Size	Calorie Count	Approximate Time Required to Burn Off the Calories and Name of Activity
<i>XYZ Brand Premium Ice Cream</i>	<i>1/2 cup</i>	<i>230 calories</i>	<i>1/2 hour of vigorous walking</i>

Worksheet 19

**Convert Consumption Into Labor—Wealth**

Complete the worksheet to determine the dollar value of an hour worked and the number of work hours needed to pay for items that you wish to purchase.

**STEP 1:** Calculate the dollar value of an hour worked.

	Example	You
1. Before-tax (gross) weekly income:	\$800	
2. Federal marginal tax rate:	15%*	
3. Federal Income tax (line 1 x line 2)/100	\$120	
4. After-tax weekly income (line 1 – line 3)	\$680	
5. Number of hours worked including commuting time	50	
6. Dollar value of an hour worked (line 4 ÷ line 5)	\$13.60	

\* 15% in line 2 is based on \$800 x 52 = \$41,600 annual gross income/married filing jointly tax filing status.

**STEP 2:** Calculate the number of work hours required to buy an item.

	Example	Item 1	Item 2	Item 3
7. Name of item	coat			
8. Cost of item	\$150			
9. Number of work hours needed to buy the item (line 8 ÷ line 6)	11			