Convert Consumption Into Labor

Energy balance is when the calories you consume from food and beverages is 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.

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?), or you’ll 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 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 programmed to include a user’s weight.

The 2005 Dietary Guidelines for Americans report provides calorie expenditure information. It 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, as indicated in the table on page 2.
<table>
<thead>
<tr>
<th>Calories Expended in Common Physical Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moderate Physical Activity</strong></td>
</tr>
<tr>
<td>Hiking</td>
</tr>
<tr>
<td>Light gardening/yard work</td>
</tr>
<tr>
<td>Dancing</td>
</tr>
<tr>
<td>Golf (walking and carrying clubs)</td>
</tr>
<tr>
<td>Bicycling (&lt; 10 mph)</td>
</tr>
<tr>
<td>Walking (3.5 mph)</td>
</tr>
<tr>
<td>Weight lifting (general light workout)</td>
</tr>
<tr>
<td>Stretching</td>
</tr>
<tr>
<td><strong>Vigorous Physical Activity</strong></td>
</tr>
<tr>
<td>Running/jogging</td>
</tr>
<tr>
<td>Bicycling (&gt; 10 mph)</td>
</tr>
<tr>
<td>Swimming (slow freestyle laps)</td>
</tr>
<tr>
<td>Aerobics</td>
</tr>
<tr>
<td>Walking (4.5 mph)</td>
</tr>
<tr>
<td>Heavy yard work (e.g., chopping wood)</td>
</tr>
<tr>
<td>Weight lifting (vigorous effort)</td>
</tr>
</tbody>
</table>

Source: The 2005 Dietary Guidelines Advisory Committee Report

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 www.rce.rutgers.edu/money/taxinfo/default.asp) and the length of your average work week, including commuting time. Then you can do the math as shown in the example below:

1. Name of item to be purchased (e.g., coat)
2. Cost of item (e.g., $150)
3. Before-tax (gross) weekly income (e.g., $800)
4. Federal marginal tax rate: (e.g., 15%)
   \( ($800 \times 52 \text{ weeks} = $41,600 \text{ annual gross income; married filing jointly tax filing status} \)
5. Federal income tax: Line 3 \( \times \) Line 4 (e.g., $800 \times .15 = $120)
6. After-tax (net) weekly income: Line 3 \( - \) Line 5 (e.g., $800 - $120 = $680)
7. Number of hours worked per week, including commuting time (e.g., 50 hours)
8. Dollar value of an hour worked: Line 6 \( \div \) Line 7 (e.g., $680 \div 50 \text{ hours} = $13.60 \text{ per hour} )
9. Number of work hours needed to buy item: Line 2 \( \div \) Line 8 (e.g., $150 \div $13.60 = 11 hours)

Use Worksheet 7, Convert Consumption Into Labor – Health, and Worksheet 8, Convert Consumption Into Labor – Wealth, to create personalized calculations of the cost, in time spent to exercise or time spent in work, of eating or buying something.
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 above. A sample calculation is provided.

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Serving Size</th>
<th>Calorie Count</th>
<th>Approximate Time Required to Burn Off the Calories and Name of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ Brand Premium Ice Cream</td>
<td>½ cup</td>
<td>230 calories</td>
<td>½ hour of vigorous walking</td>
</tr>
</tbody>
</table>

Worksheet 8

Convert Consumption Into Labor – Wealth

Complete the following calculation for items that you wish to purchase following the sample on page 2:

1. Name of item to be purchased: ____________________________
2. Cost of item: $_______________________
3. Before-tax (gross) weekly income: $____________
4. Federal marginal tax rate: ___________%
   ($__________ annual gross income; ______________ tax filing status)
5. Federal income tax: Line 3 × Line 4:
7. Number of hours worked per week, including commuting time: _____________ hours
8. Dollar value of an hour worked: Line 6 ÷ Line 7: _______ ÷ _______ hours = $______ (per hour)
9. Number of work hours needed to buy item: Line 2 ÷ Line 8: _______ ÷ $______ = ______ hours
### Action Steps

#### Health

- Use the **Convert Consumption Into Labor – Health** 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 – Wealth** 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.

### References


Making workouts work (2005, Jan.). *Consumer Reports*, 70(1), 12-16.


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Prepared by Laura Connerly, Ph.D., Assistant Professor - Family Resource Management, University of Arkansas Division of Agriculture (lconnerly@uaex.edu).