Exercise: Activity & Intensity

As pointed out in "The Basics of Nutrition and Exercise" lesson, regular physical activity is almost like a magic potion. It contributes huge benefits to our physical and mental health. Even modest amounts of dedicated physical activity can create impact.

Two of the biggest challenges people seem to face with physical activity is finding time to do it and performing it at a level that brings the most benefit. That's where interval training, which is simply alternating bursts of intense activity with intervals of lighter activity, may come in.

Interval training isn't complicated, doesn't require any special equipment, and it can be incorporated at multiple levels. It can help burn more calories in less time, add variety to your exercise routine, and touches on all 4 components of health-related fitness: 1) **Aerobic fitness** - ability of the heart and lungs to deliver blood to muscles, 2) **Muscular strength & endurance** – for normal activities & protect lower back, 3) **Flexibility** – ability to move body joints through their proper range of motion, 4) **Body composition** - not too much body fat, especially around the waist. Alternating bursts of intense exercise with easier intervals can also reduce the buildup of lactic acid in muscles which results in less muscle soreness and exhaustion.

The principles of interval training can be the same for everyone, but you personalize the length and speed of each high intensity interval based on your own fitness level and mood for the day. Let's take walking for example. If you are in good shape, you might incorporate 30 seconds to 1 minute bursts of jogging into your regular brisk walks. If you are less fit, you might alternate bursts of fast paced walking with a more leisurely period of walking. If you're walking outside, instead of keeping track of a certain time, you could walk faster between a certain number of mailboxes, power poles or landmarks.

Interval training incorporates "high intensity" exercises. So what exactly does that mean? According to research, most of us overestimate how intensely we are exercising. Recommendations state adults should include at least 150 minutes of **moderate** aerobic activity or 75 minutes of **vigorous** activity a week. Exercising at these levels and length of time give you the greatest benefit. What seems vigorous for one person may seem moderate for another, so using the heart rate method or Perceived Exertion Chart will help ensure you are on target.

Moderate exercise is between 64% and 74% of your maximum heart rate. Vigorous exercise is between 77% and 90% of your maximum heart rate. To find your heart rate zone, take your resting heart rate (RHR) after sitting quietly for about 10 minutes, having no caffeine or tobacco for at least 30 minutes prior. Count the number of pulses in the crevice in your neck, next to your windpipe or trachea, for 15 seconds. Multiply that number by 4 and that is your resting heart rate. Use this figure in the chart to the right to determine your maximum heart rate.

Most experts recommend healthy people exercise at an intensity between 60% and 80% of maximum heart rate. The guideline will be lower for people with health problems.

a. Resting Heart Rate (RHR) = ____

b. 220 - _____ (your age) =
Max Heart Rate (MHR) ____

c. MHR – RHR (b minus a) = ____

d. Multiply c by .70 = ____

e. Multiply c by .85 = ____

f. Add RHR to d and e for target
workout intensity range = ____

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Some medications lower heart rate, so people on medications, those with high blood pressure or new to activity, and children may find the RPE (Ratings of Perceived Exertion) or Borg Rating Scale easier to use. People rate their exertion on a scale of 0 to 10. Zero means "nothing at all" and an effort of "full out" is rated as a 10. Consider a combination of sensations and feelings of physical stress, effort, and fatigue, not just the feeling of leg discomfort or shortness of breath when choosing a number on the scale. The scale provides a guideline to know if you need to step up, maintain, or slow down your movements to reach the desired range of activity. This scale is also used when doing strength training.

Perceived Exertion Chart	
10	**Very, Very Hard Activity** Completely out of breath; unable to talk
9	**Very Hard Activity** Can speak only one word at a time
7-8	**Hard Activity** Out of breath; Can speak a sentence or two
4-6	**Moderate Activity** Can still carry a conversation
2-3	**Light Activity** Breathing is easy
1	**No Activity**

Intensity is one of the components of the **FITTS Principle** - another tool to help you get the most out of your planned activity. FITTS helps with motivation and figuring out an effective exercise routine. For example, you may start out walking three times a week for 30 minutes. After a few weeks, your body adapts. It becomes more efficient at exercise so it is easier to do and burns fewer calories than when you first started. If you lose weight it takes fewer calories to move your smaller body. Doing the same workout over and over ends up causing boredom as well as discouragement if you aren't seeing the results you originally had or what you are expecting. Changing one or more of the FITTS Principles can help.

F = Frequency – How often you exercise. The general recommendation is 150 minutes of moderate activity per week, or about 30 minutes most days.

- Cardio: moderate exercise suggested five or more days a week, or intense exercise three days a week. For weight loss, you may need to exercise up to six or more days a week.
- Strength: recommendation of 2-3 sessions per week in non-consecutive days.

*For walking example above - try adding another day of walking (*change Frequency*)*

I = Intensity – How hard you work during exercise

- Cardio: work in your target heart rate zone and focus on incorporating different levels of difficulty to increase fitness.
- Strength: The number of exercises (at least 8-10), the amount of weight lifted and the number of repetitions determine the intensity. Lift enough weight so only the desired number of reps can be completed (around 1-3 sets of 8-16 reps of each exercise).

*For walking example above – walk faster or add some running (*change Intensity*)*

T = Time – How long you exercise. Even small bouts of physical activity throughout the day can add up to a sufficient amount. For example, doing 3 ten minute sessions instead of one 30-minute session can be just as effective.

*For walking example above – walk longer (*change Time*)*

T = Type – What kind of physical activity. Include cardio/aerobic as well as strength training.

- Cardio: refers to any activity that gets heart rate up (walking, running, cycling, dancing, etc.)
- Strength: refers to any exercise using some type of resistance (such as bands, dumbbells, machines, your own body weight) to work and strengthen muscles.

*For walking example above – try something different like biking or swimming (*change Type*)*

S = Stretching – important for maintaining mobility and preventing injury. It increases flexibility, boosts circulation and decreases stress.

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Instead of thinking about physical activity as “exercise” involving spandex, special shoes or going to the gym, focus on things you enjoy doing that get your body up and moving and schedule it into your day just as you would a doctor’s appointment or important meeting. Try something new and keep the F.I.T.T.S Principle in mind to help it stay interesting and challenging.

Additional Resources:

America Council on Exercise - https://www.acefitness.org/education-and-resources/lifestyle/blog/5073/8-reasons-hiit-workouts-are-so-effective

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Applying the Lesson

Choose one of the following activities to apply what you learned about your health and your healthy goal setting. Write a short paragraph (3 to 5 sentences) to describe what you did and learned from the activity selected. Report your Applying the Lesson results by Online form, email, fax or hard copy to your county Extension Office.

Option 1: Determine your Maximum Heart Rate and moderate intensity range. Apply that to your exercise routine for the week and stay within that range. How does this differ from what you were doing before? Was your exercise intensity level in previous weeks more, less or about the same as you thought when comparing it to your calculated heart rate and intensity level?

Option 2: Plan your exercise routine for this coming week. Report on ways you could adapt at least 2 of the FITTS principles to change your routine for the following week.

Option 3: What keeps you motivated to stay physically active? How can you incorporate these in your everyday routine to keep you focused and challenged?