

Energy In, Energy Out

Main objectives: To introduce the concept of energy balance with special emphasis on the importance of being active every day.

Essential Discussion Topics:

- *What is a calorie?* Ask students for their description or definition. A calorie is simply a measurement of the amount of *energy* in food - Like a measuring stick measures length, a scale measures weight, a measuring cup measures volume, etc. When you see calories listed at a restaurant, or on the side of a box of food, it is telling you the amount of energy in that food. The formal definition is something you may want to state – if only to make the idea more concrete for the class, clearly it isn't entirely relevant (the amount of energy needed to raise 1g of water 1 degree C).
- *Energy in versus energy out – Seesaw Diagram and Discussion:* Why is it important to know the amount of energy in food? Try to focus on the concept of balance. Negative things can happen to your health when you fall out of balance between the energy you take in and the energy you use.
 - Hold up a large piece of poster paper with a seesaw diagram in the middle. On one side, write energy in, on the other write energy out.
 - Describe energy in as the energy we take into our bodies. Ask where this energy comes from – the food we eat.
 - Describe energy out as the energy our body uses. Ask the class how we use energy – describe the many different ways, such as movement/activities, as well as our basic functions like breathing, and our heart beating. Growing also takes energy (this is especially important to the age group we deal with). Other non-active activities use energy too, like reading, though the amount used is very low. The amount of energy we take in should be balanced out with the energy we use.
 - What happens if you don't get enough energy in? Show an image of the seesaw out of balance. We would feel tired, cranky, upset, and wouldn't have the energy to do the things we like.
 - What happens if you take in more energy than you use? Your body can store the energy. Your body can store energy as fat (or glycogen – you can make this point if you'd like). Storing too much energy can cause health problems.
 - The real goal is to be at a good balance – this is a good way to feel great and do the things you like to do.
- *What 'energy out' activities do you like to do?*
 - Talk about ways to incorporate more activity into your everyday life – take the stairs, walk the dog, play with younger siblings (they like to move a lot), help out with chores around the house.

Supplemental Discussion Topics:

- *What are some of the health benefits of physical activity?* Emphasis here should be on how exercise makes you feel good, rather than look good. Improved health, improved fitness, stronger bones and healthier muscles, better posture and balance, stronger heart, healthy growth, increased concentration, better academic scores, lower stress, improved self-esteem, opportunities for socializing, learning new skills, prevention of chronic

disease later in life.

- *What are some healthy pre- and post-workout snacks?* There will be an entire lesson on snacks later on, but could do a brief discussion now. Basic definition of a snack: small meal eaten between breakfast, lunch and dinner that helps to keep us from getting overly hungry during the day and gives us energy throughout the day. Snacks are really just small meals. Thus, its best to try and incorporate the same healthy things you would add into a regular sized meal – whole grains, good sources of protein, and healthy fats. Since snacks aren't very large, a good goal is to try and incorporate at least 2 of these food categories. Why? Combining these different nutrients, aside from the obvious nutritional benefit, helps to make more satisfying snacks that will keep you from getting hungry later on. For instance, things like Greek yogurt with fruit, or nuts with dried fruit, or cheese and whole grain crackers all combine different nutrients. Chocolate milk is also a great option! The fiber in whole grains, as well as foods with protein, generally helps increase satiety.

Activities:

- *Get moving at home!* - Divide class into 3-4 small groups. Have groups rotate through stations that demonstrate different ways to exercise at home – stations could include jumping rope, using canned goods as weights, plyometric exercises (jumping jacks, burpees, etc.), stretching or yoga poses. Try to choose activities that require little to no equipment and are fun!
- *Pick a Card* - Assign each suit of a card deck an activity, such as jumping jacks, sit ups, push ups, burpees, running in place, high knees. Deal a card face up and everyone in the group must do the number of repetitions indicated on the card of the activity indicated by the suit. Take a minute to rest and then deal another card.
- *Just Dance!* – Clear a large area in the center of the room. Have the class stand up, turn on some music and show how dancing can be both fun and exercise at the same time.

Snack Ideas:

- *Mystery Smoothies* – Students seem to really enjoy using the blenders to make their own smoothies. Bring yogurt (low-fat Greek is a good option), milk or fruit juice, bananas, and an assortment of frozen fruits. Divide the class into 2-3 groups. Allow each group to choose what fruits to put in their smoothie. Pour small samples for each student and have them guess the ingredients in each smoothie.
- *Healthy pre- and post-workout snack* - Could do any of the ideas suggested above, such as Greek yogurt with fruit, nuts with dried fruit, or cheese and whole grain crackers.