



## Challenge: PUMP YOUR BODY

**The Scoop:** The heart is the most important muscle you have; it pumps blood throughout your entire body, delivering essential nutrients to organs and tissues. An average person's heart will beat 100,000 times every single day! One of the most important nutrients carried in blood is oxygen, which enters the body every time you breathe air into your lungs. In this challenge, you will learn about how exercise changes heart rate (pulse) and breathing rate, and make predictions about the effects of exercise on the body.

### **What You'll Need:**

- A timer or stopwatch
- A pen or pencil
- Room to exercise – outside or a large indoor space

**The Challenge:** Test how your body responds to exercise by measuring your pulse and breathing rate before and after different kinds of physical activity like walking, jumping jacks, running, dancing or sit-ups.

1. Take your pulse and breathing rate before doing any exercise (see instructions below).
2. Perform an exercise for 3 minutes, then stop.
3. Take your pulse and breathing rate immediately, then again at 1 and 5 minutes later.
4. Make sure you rest at least 5 minutes before doing the next exercise.



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Find your **pulse** by taking two fingers and placing them on either side of your neck, just under your jaw line; **count the number of beats in 10 seconds.**

Exercise	Pulse Before Exercise	Pulse Immediately After Exercise	Pulse 1 Minute After Exercise	Pulse 5 Minutes After Exercise

For **breathing rate**, have a friend or family member watch your stomach rise and fall to **count how many breaths you take in 30 seconds.**

Exercise	Breaths Before Exercise	Breaths Immediately After Exercise	Breaths 1 Minute After Exercise	Breaths 5 Minutes After Exercise

### **Stuff to Think About:**

- Why does your pulse or breathing rate change when you exercise? Why does it change again 5 minutes after exercise?
- Do all activities affect your pulse or breathing rate in the same way?
- Some people have sore muscles after exercising; why do you think that is?
- Why is raising your heart rate good for the body?

### **We want to hear from you!**

Tell us about your challenge experiences. Were you surprised by what you discovered? Was your hypothesis confirmed by the challenge you did? Did you make up a challenge you'd like to share with others? Send us an email, video or a digital photo of your challenge results.

Email [DrRabiah@sciencechicago.com](mailto:DrRabiah@sciencechicago.com). Make sure to include your name, age, neighborhood or town, daytime phone number and email address. If you're under 18, we also need your parent/guardian's name, daytime phone number and email address.