



Principles of Biomedical Science

Virtual Learning

9-12/ PLTW[®] PBS

April 13, 2020



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Lesson: April 13 2020

Objective/Learning Target:

Students will be able to: Locate pulse points on their body, find their own heart rate and measure it, use a heart rate chart to determine what their range is, evaluate a patient based on their heart rate and give advice based on that rate.
(Reference: PLTW[®] 4.2.1 Heart Rate)



Let's Get Started (Bell Ringer):

Watch Following Videos:

[How to Find, Count, and Check a Carotid Pulse Rate | Nursing Clinical Skills](#)

[How to Check Your Pulse | Finding the Radial Pulse](#)



Lesson/Activity:

Start by visiting the [How to Calculate Your Training Heart Rate Zones](#) read about how to calculate the following heart rates:

- Maximum Heart Rate
- Resting Heart Rate
- Heart-Rate Reserve
- Aerobic Training Heart-Rate Range for Fat Burning

Write down in your notebook or on a piece of paper how to find and make these calculations.

Lesson/Activity continued:

Find your resting heart rate by using your carotid or radial pulse and compare it to the chart below. (Refer back to the videos in the bell ringer if you forgot how). Where do you belong according to the chart? Write it down in your Notebook or piece of paper.

Sorry if your not 18, according to [Medical News Today](#) [“What should my heart rate be?”](#) if your age is 10-18 your range should be 60-100 but does not break it down categories from poor-athlete.

Resting Heart Rate Chart						
Men (beats per minute)						
Age	18 - 25	26 - 35	36 - 45	46 - 55	56 - 65	65 +
Athlete	49 - 55	49 - 54	50 - 56	50 - 57	51 - 56	50 - 55
Excellent	56 - 61	55 - 61	57 - 62	58 - 63	57 - 61	56 - 61
Great	62 - 65	62 - 65	63 - 66	64 - 67	62 - 67	62 - 65
Good	66 - 69	66 - 70	67 - 70	68 - 71	68 - 71	66 - 69
Average	70 - 73	71 - 74	71 - 75	72 - 76	72 - 75	70 - 73
Below Average	74 - 81	75 - 81	76 - 82	77 - 83	76 - 81	74 - 79
Poor	82 +	82 +	83 +	84 +	82 +	80 +

Women (beats per minute)						
Age	18 - 25	26 - 35	36 - 45	46 - 55	56 - 65	65 +
Athlete	54 - 60	54 - 59	54 - 59	54 - 60	54 - 59	54 - 59
Excellent	61 - 65	60 - 64	60 - 64	61 - 65	60 - 64	60 - 64
Great	66 - 69	65 - 68	65 - 69	66 - 69	65 - 68	65 - 68
Good	70 - 73	69 - 72	70 - 73	70 - 73	69 - 73	69 - 72
Average	74 - 78	73 - 76	74 - 78	74 - 77	74 - 77	73 - 76
Below Average	79 - 84	77 - 82	79 - 84	78 - 83	78 - 83	77 - 84
Poor	85 +	83 +	85 +	84 +	84 +	85 +

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Answers:

Based on the following patients data and the heart rate chart provided, what would you say to them as their doctor about their heart rates, and what they should do about them. Write down your thoughts in your notebook or your separate piece of paper.

Patient	Resting Heart Rate	Age	Weight/Height
David	50	44	195 lbs 72 inches
Josh	83	30	155 lbs 73 inches
Tina	74	65	106 lbs 63 inches
Debbie	66	48	138 lbs 71 inches

Resting Heart Rate Chart						
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Athlete	49 - 55	49 - 54	50 - 56	50 - 57	51 - 56	50 - 55
Excellent	56 - 61	55 - 61	57 - 62	58 - 63	57 - 61	56 - 61
Great	62 - 65	62 - 65	63 - 66	64 - 67	62 - 67	62 - 65
Good	66 - 69	66 - 70	67 - 70	68 - 71	68 - 71	66 - 69
Average	70 - 73	71 - 74	71 - 75	72 - 76	72 - 75	70 - 73
Below Average	74 - 81	75 - 81	76 - 82	77 - 83	76 - 81	74 - 79
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Women (beats per minute)						
Age	18 - 25	26 - 35	36 - 45	46 - 55	56 - 65	65 +
Athlete	54 - 60	54 - 59	54 - 59	54 - 60	54 - 59	54 - 59
Excellent	61 - 65	60 - 64	60 - 64	61 - 65	60 - 64	60 - 64
Great	66 - 69	65 - 68	65 - 69	66 - 69	65 - 68	65 - 68
Good	70 - 73	69 - 72	70 - 73	70 - 73	69 - 73	69 - 72
Average	74 - 78	73 - 76	74 - 78	74 - 77	74 - 77	73 - 76
Below Average	79 - 84	77 - 82	79 - 84	78 - 83	78 - 83	77 - 84
Poor	85 +	83 +	85 +	84 +	84 +	85 +

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Answers:

Patient:	Recommendations:
David	Amazing job keep it up, I wish I could be like you!
Josh	I am a little concerned about your resting heart rate, we should be looking at some ideas to help lower that quite a bit. Your weight is good for your height, so we should start with some diet changes see where that takes us and then look into some moderate exercise if the diet changes don't help.
Tina	You are average for your age, keep up with what you are doing. We are going to want to keep an eye on that to make sure you are staying on the right track.
Debbie	Doing a great job on your heart rate, keep up the good work.



Practice:

1. Go online and find (1) reliable resources that explains heart rate, and what yours should be based on your age, weight, sex. You may not find one about all three but try your best. Write the site location down in your notebook or on your separate piece of paper and jot down your thought and ideas from the article. Share them with your teacher when you turn in your notebook, or with a classmate.



Answers:

Answers will vary based on student



Additional Practice:

2. Use the following link [LifeSpan “Target Heart Rate Calculator”](#) find your Karvonen target heart rate. The Karvonen formula is to be the most precise method to calculate your target heart rate. Find out what your is and see where it puts you. Write down your results in your notebook or seperate paper. When your done with your Target Heart Rate Training Zones and what effort you should put in to reach them.



Answers:

Answers will vary based on student



Additional Practice:

3. Let see what you have learned? Use the link to take the 7 questions quiz over Heart Rate. Report how you did in your notebook or on your seperate paper.

[Quizzizz](#)



Additional Practice:

4. Check the pulse rate of you family members. Compare them to one another, how similar are they. Do you think the differences may be based on any of the following factors: age, sex, weight, activity level. Do you see any similarities or differences? Write down your data and observation in your notebook or on your piece of paper. Did you notice anything that really stuck out?