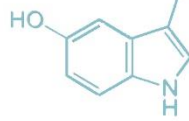


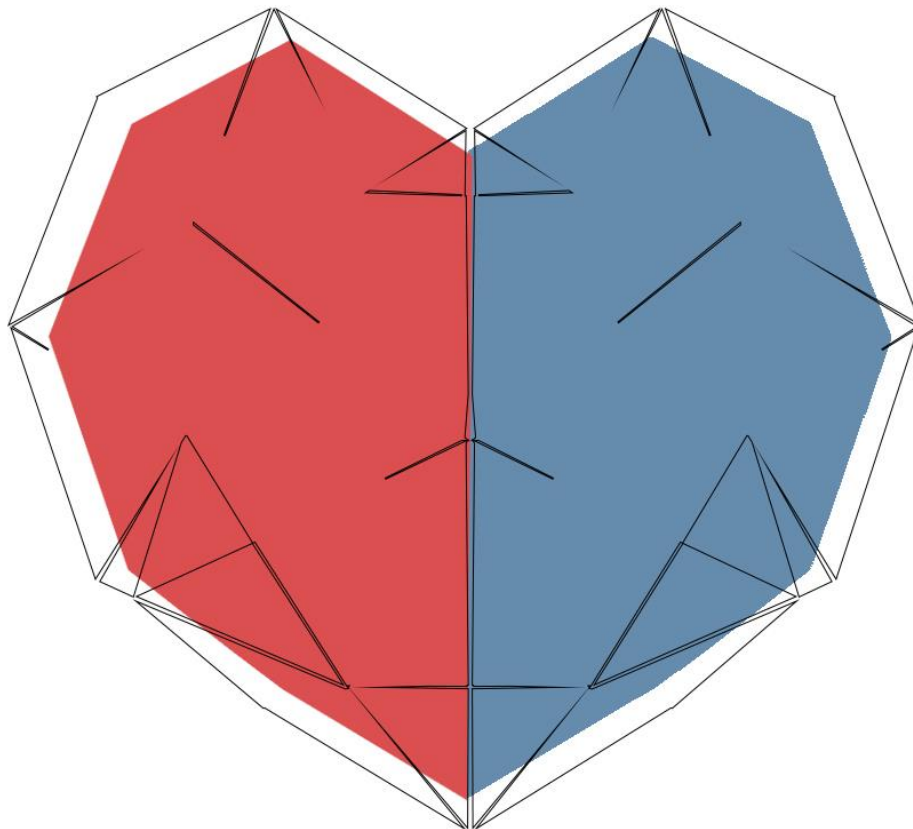
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BAU#1



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Physiology

#18

LECTURE NAME: EXERCISE

WRITTEN BY: SHATHA KHTOUM

Our topic today will be the exercise:

When we start exercise, what will happen?

At the beginning of the exercise we have the sympathetic stimulation, so it'll lead to vasoconstriction to increase the heart rate, so the contractility of heart will increase. But the vasoconstriction won't continue because of hypoxia; the metabolism of skeletal muscle will increase, so there is a reduction in oxygen supply to the skeletal muscle so there's hypoxia (so there will be vasodilation instead of vasoconstriction)

But still during exercise we have sympathetic stimulation (vasoconstriction) but the vasoconstriction will not continue because of the hypoxia (reduction of the oxygen supply), so what will happen that:

- Cardiac output increase
- Venous return increase
- Circulatory filling pressure increase
- Stroke volume increase
- Pulse pressure increase
- Systolic blood pressure increase

The only thing that won't be increased is the diastolic blood pressure, the diastolic blood pressure could be decreased because of vasodilation (because of hypoxia) but normally it's not change (NOT increase for sure).

As we know, the systolic period is shorter than the diastolic period, but when the heart rate increases, the period of both of them will decrease but the most affected one is the diastolic period.

When the heart rate increases, the blood flow is supposed to increase the blood flow to all of the body, but this isn't developed because of the autoregulation so the blood which goes to the GI (the metabolism isn't increased there) will be decreased by the autoregulation that will cause vasoconstriction in the GI, kidneys, skin.... So it'll reduce blood flow to these tissues. But the blood flow will increase to skeletal muscle (where the metabolism increased).

So during exercise the blood flow will be shifted from nonactive tissue to the active tissue by the autoregulation, so an increase in blood pressure doesn't mean that there's an increase in the blood flow because of the autoregulation, the blood flow will increase to the skeletal muscle due to hypoxia that leads to vasodilation.