WORKSHEET: The Effects of Different Levels of CO₂ and Blood Pressure on Heartbeat Rate and the Diameter of Blood Vessels

Each of the following flowcharts gives you a choice as to which receptor, nerve etc., is appropriate for a correct impulse pathway and consequence. At each decision point along the flowchart, circle what you believe to be the correct alternative.

**HIGH** → A&C sinuses → more impulses → glosso. nerve → cardiac center → accelerateatory center →

CO₂ A&C bodies fewer impulses vagus nerve vasomotor center inhibitory center

more impulses along the vagus → heartbeat rate decreases → increase in B.P. → lower CO₂

fewer impulses along the vagus → heartbeat rate increases → decrease in B.P.

more impulses along the cardiac n. → vasoconstriction

fewer impulses along the cardiac n. → vasodilation

more impulses along vasomotor fibers

fewer impulses along vasomotor fibers

**LOW** → A&C sinuses → more impulses → glosso. nerve → cardiac center → accelerateatory center →

CO₂ A&C bodies fewer impulses vagus nerve vasomotor center inhibitory center

more impulses along the vagus → heartbeat rate decreases → increase in B.P. → higher CO₂

fewer impulses along the vagus → heartbeat rate increases → decrease in B.P.

more impulses along the cardiac n. → vasoconstriction

fewer impulses along the cardiac n. → vasodilation

more impulses along vasomotor fibers

fewer impulses along vasomotor fibers

**HIGH** → A&C sinuses → more impulses → glosso. nerve → cardiac center → accelerateatory center →

B.P. A&C bodies fewer impulses vagus nerve vasomotor center inhibitory center

more impulses along the vagus → heartbeat rate decreases → increase in B.P.

fewer impulses along the vagus → heartbeat rate increases → decrease in B.P.

more impulses along the cardiac n. → vasoconstriction

fewer impulses along the cardiac n. → vasodilation

more impulses along vasomotor fibers

fewer impulses along vasomotor fibers
LOW → A&C sinuses → more impulses → glosso. nerve → cardiac center → acceleratory center → B.P.  
A&C bodies  fewer impulses  vagus nerve  vasomotor center  inhibitory center  cardiac nerve

more impulses along the vagus  →  heartbeat rate decreases  →  increase in B.P.
fewer impulses along the vagus  →  heartbeat rate increases  →  decrease in B.P.
more impulses along the cardiac n.  →  vasoconstriction
fewer impulses along the cardiac n.  →  vasodilation

more impulses along vasomotor fibers
fewer impulses along vasomotor fibers