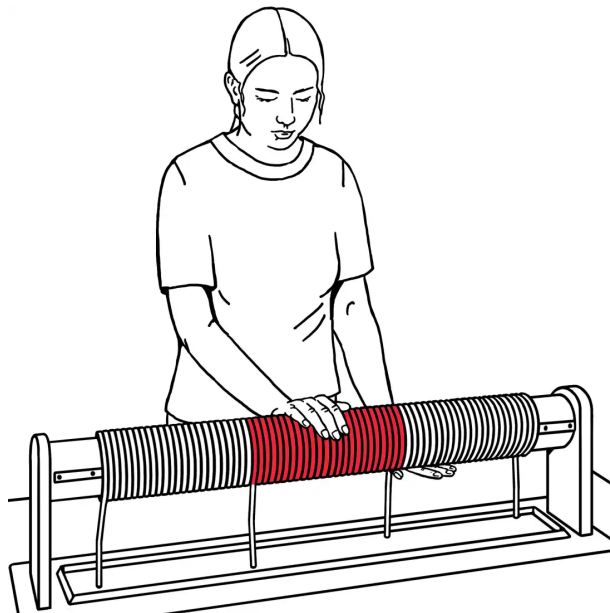


Hot and cold

What temperature do you feel in the middle of the copper spiral?



Put your hand on the middle area of the copper spiral.
What do you feel?

Put your hand on each side of the copper spiral.

Go back to the middle and use your finger to touch one bar of the spiral at a time.

When you used your whole hand, the middle area felt very hot. When you touch the windings one by one, you can feel that they are actually alternatingly cold and warm bars. The cold and warm windings each have the same temperature as the cold and warm sides of the copper spiral.

For temperature perception, you have so-called thermoreceptors, i.e. temperature-sensitive nerve cells, in your skin. There are thermoreceptors for cold and hot temperatures. In the middle area of the coil, your hand's temperature perception can be confused by the simultaneous perception of cold and warm in the same place. The sensation of cold at the same time and place as the sensation of warmth, is interpreted by the brain as painfully hot, so that the middle area of the coil feels much hotter than the same warm temperature on the warm side of the coil.