

4. An increase in blood pressure is detected by receptors in the vessels that sense the resistance of blood flow against the vessel walls. The receptors relay a message to the brain which in turn sends a message to the heart and blood vessels (effectors.) The heart rate decreases and blood vessels increase in diameter which cause the blood pressure to fall back within the normal range (set point). Conversely, if blood pressure decreases, the receptors relay a message to the brain which in turn causes the heart rate to increase and the blood vessels to decrease in diameter. Some set points become "reset" under certain conditions. For instance, during exercise, the blood pressure normally increases. This increase is not abnormal; it is the body's response to the increased demand of oxygen by muscle tissues. When the muscles require more oxygen, the body responds by increasing the blood flow to muscle tissues, thereby increasing blood pressure. This resetting of the normal homeostatic set point is required to meet the increased demand of oxygen by muscles.
5. In hot environments, when plants begin to lose water, some will close their stomata (pores) to keep prevent water loss.
6. The human body maintains a blood pH within the very narrow range of 7.35 to 7.45. A pH below this range is called acidosis and a pH above this range is alkalosis. Either condition can be life-threatening. One can live only a few hours with a blood pH below 7.0 or above 7.7. And a pH below 6.8 or above 8.0 is quickly fatal. Yet the body's metabolism constantly produces a variety of acidic waste products that challenge its ability to maintain pH in a safe range. Individual blood cells, your kidneys, and even your lungs remove wastes to maintain pH at appropriate levels.
7. The hypothalamus detects fluctuations in temperature. The receptors on it are known as thermoreceptors. Skin also possesses thermoreceptors which can detect the temperature of the external environment. This information is relayed to the hypothalamus which can in turn transmit nerve pulses for corrections to occur. If you are HOT, sweating (the water released absorbs heat from your body) and vasodilation (blood vessels near the skin get bigger; skin may get red.) This increases heat released to the outside of your body. If you are COLD, vasoconstriction (blood vessels near the skin get smaller; decreases heat loss) and shivering (muscle movement creates heat) occurs. In extreme cold, blood flow to extremities decreases in order to protect internal organs.
8. Lactation (milk production in women) increases as the baby suckles more. So, more suckling means more milk is productions.
9. Mad Cow Disease is caused by a prion (an improperly folded version of a protein) which catalyzes the improper folding of other proteins in the brain, generating new prions. These new prions can catalyze the change in other proteins. This leads to the formation of long chains of these prion proteins, holes in the brain, disease and eventually death.
10. Oxytocin is a hormone that intensifies the contractions that take place during childbirth. The stretching of the uterus triggers the secretion of oxytocin, which stimulates uterine contractions. These contractions further stretch the uterus, which cause the secretion of more oxytocin and speeds up labor.