Blood transfusion changes my DNA? [1]

Dear Alice,

Will a blood transfusion affect my future children's DNA?

Answer

Dear Reader,

Blood may be thicker than water, but it cannot alter your children's DNA. A person's DNA is inherited from her/his parents via their gametes (sex cells). In other words, the sperm and egg of one's biological parents determine the DNA of a child, rather than blood. Having new blood introduced to your system will not affect your future children's DNA because it will not alter your sex cells.

Did the transfusion already occur? If so, how long ago did you have it? If you have not already done so, you may want to consider getting tested for Hepatitis B and C and other infections transmitted by contact with blood because screening of donors for some types of pathogens was not routine before 1992.

Interestingly, if you have received a blood transfusion, you will carry the DNA of the donor in your bloodstream for a time, depending on how much blood you received. Most of the new blood is composed of red blood cells, which do not contain genetic information. However, a few of the transfused cells will also be white blood cells, (the ones that fight off infection) and these cells do have a nucleus that carries DNA. Eventually, as a person recovers from whatever caused them to need a transfusion, they will begin to produce their own red and white blood cells again and the DNA from the donor will eventually disappear as the cells from the transfusion die off.

If a person receives a transfusion just before or during pregnancy, some of the new blood will be shared with the fetus via the uterus. However, even if the donor blood is present in the bloodstream of a fetus or baby for a time, the children's DNA would not be altered and, as with the adult, the blood cells containing the donor DNA would eventually disappear.

Alice!

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