

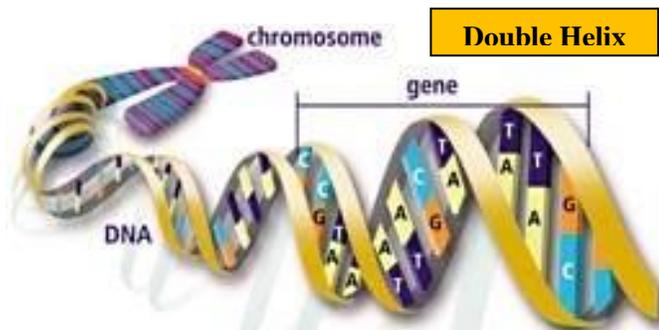
# DNA Evidence

## What is DNA?

DNA stands for **deoxyribonucleic acid** and contains **genetic information**. It is found on **chromosomes** located in the nucleus of our cells.

## What makes up DNA?

The sides of the DNA molecule are made up of **sugar (deoxyribose)** and **phosphate molecules**. The rungs that form the middle of the molecule are made up of pairs of **nucleotides** or **nitrogen bases**. **Adenine (A)** pairs with **thymine (T)**, while **guanine (G)** always pairs with **cytosine (C)**. The order of the bases determines the **genetic code**.



## Where is DNA found in the body?

DNA is contained in: the blood, skin cells, tissue, organs, muscle, brain cells, bone, teeth, hair, saliva, mucus, perspiration, fingernails, urine, feces, etc.

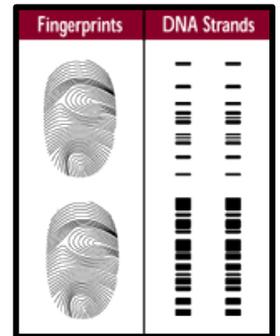
## Which statements are true?

1. The DNA in a man's blood is the same as the DNA in his skin cells and saliva.
2. Each person's DNA is different from every other individual's.
3. DNA can be found in all the cells in our bodies except the blood cells.
4. DNA can have forensic value even if it is decades old.
5. DNA evidence was first used to get a conviction in a trial in 1987.

## How is DNA used as evidence?

Since each person's DNA is different from other people (except identical twins), DNA collected from a crime scene can either link a suspect to the evidence or eliminate a suspect, similar to the use of fingerprints.

It also can identify a victim through DNA from relatives, even when no body can be found. When evidence from one crime scene is compared with evidence from another, they can be linked to the same perpetrator locally, statewide, and across the Nation. Further, DNA does more than just identify the source of the sample; it can place a known individual at a crime scene, in a home, or in a room where the suspect claimed not to have been. It can refute a claim of self-defense and put a weapon in the suspect's hand. It can change a story from an alibi to one of consent.



## What factors affect DNA evidence?

Several factors can affect the DNA left at a crime scene, including environmental factors (e.g., heat, sunlight, moisture, bacteria, and mold). Therefore, not all DNA evidence will result in a usable DNA profile. Further, DNA testing cannot identify when the suspect was at the crime scene or for how long.

## What is CODIS?

CODIS stands for **C**OMBINED **D**NA **I**NDEX **S**YSTEM, which is an electronic database of DNA profiles that can identify suspects. DNA profiles from individuals convicted of certain crimes, such as rape, murder, and child abuse, are entered into CODIS and help officers identify possible suspects when no prior suspect existed.

## Did you know?

Each human cell contains three billion DNA base pairs. Our unique DNA amounts to 0.1% or 3 million base pairs.



DNA Image: <http://science.howstuffworks.com/genetic-science/dna-evidence.htm>

DNA Information & DNA Strand Image : <http://www.dna.gov/audiences/investigators/know/>

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