

Blood and teeth samples accurately predict a criminal's age

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The researchers use blood samples to predict someone's age with great accuracy. Credit: © Shutterstock

Forensic biomedical scientists from KU Leuven, Belgium, have developed a test to predict individuals' age on the basis of blood or teeth samples. This test may be particularly useful for the police, as it can help track down criminals or identify human remains.

When [forensic examiners](#) find traces of [blood](#) at a crime scene, they can try to identify the perpetrator on the basis of DNA. From now on, the [blood samples](#) can also be used to predict the criminal's age. This is also the case for deceased individuals: when traditional methods do not lead to identification, the forensic examiners can use blood or teeth samples for age estimation.

Human tissues and organs change as we grow older. This aging process is regulated by our DNA. The KU Leuven researchers are the first to have successfully used this aging process, embedded in our DNA, to predict individuals' age with great accuracy.

Professor Bram Bekaert from the KU Leuven Forensic Biomedical Sciences Unit explains: "The

behaviour of our organs and tissues depends on which of our genes are activated. As we grow older, some genes are switched on, while others are switched off. This process is partly regulated by methylation, whereby methyl groups are added to our DNA. In specific locations, genes with high methylation levels are deactivated."

Bekaert and his colleagues were able to predict individuals' age on the basis of a set of four age-associated DNA methylation markers. The methylation levels of these markers can be used for highly accurate age predictions. The researchers were able to determine individuals' age with a margin of error of 3.75 years for blood samples and 4.86 years for teeth.

The new technique is potentially useful in the context of police investigations because it can help determine the age of criminals or unidentified bodies, which in turn can lead to identification.

The full text of the study "Improved age determination of blood and teeth samples using a selected set of DNA methylation markers" was published in *Epigenetics*.

More information: www.tandfonline.com/doi/full/10.1080/1080413#.Vdbuz7LtlHw

Provided by KU Leuven

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