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Swiss develop rapid infrared cocaine test

Researchers at Zurich's Federal Institute of Technology (ETHZ) have helped create an infrared device that can detect tiny traces of cocaine in human saliva. The compact detector may be adopted by law enforcement agencies to test suspect drivers.

"Current rapid tests conducted by the police in the streets do not give the concentration of drugs consumed, just negative or preliminary positive results, which are sometimes wrong and not recognised by the courts," ETHZ physics professor Markus Sigrist said. "It takes time to take a suspect to hospital to give them a blood test. So obtaining a quantitative concentration in saliva samples would be a major step forwards."

The Zurich professor believes it is possible to detect cocaine levels as low as twenty nanogrammes per millilitre of liquid using the technique. If someone smokes cocaine, up to 500 micrograms per millilitre are still present in the saliva for a short time.

"Based on what we've obtained so far we need one year to refine the nanogramme per millilitre results, and another three years to create a suitable platform so an industrial partner can then market the product," said Sigrist.

The same method, using a different sensor, could also be used for heroin tests.

Under Swiss law, forensic medical tests are the only ones accepted as legal proof to sanction illegal drug use behind the wheel. If this kind of sensor were to be accepted by the courts, it would necessitate a change in the law.

Swiss police currently use two kinds of preliminary drug tests: saliva or urine, which can give positive or negative results for four substances: cocaine, heroin, marijuana and amphetamines. The second stage is to take the suspect to hospital to carry out a quantitative blood test, the only one recognised by the justice system.

Six out of ten drivers suspected of being under the influence of psychotropic drugs when involved in traffic accidents gave positive blood tests. Half of all positive tests were for alcohol and the other half for the use of various illegal drugs - often more than one - generally mixed with alcohol: 73 per cent cannabis, 38 per cent cocaine, ten per cent morphine, four per cent amphetamines, five per cent ecstasy and eight per cent methadone. In Switzerland it is assumed that five per cent of serious road accidents are caused by people using illegal drugs or medicines. The risk of accidents is up to 14 times higher when alcohol is mixed with other drugs, even in small amounts.

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27.9 per cent of soldiers are caries-free.

Researchers also said smokers had more tooth decay than their non-smoking colleagues. However, neither when nor how you brush your teeth seems to play a particular role.

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Tooth decay drops

A medical study on army recruits has shown tooth decay is on the decline.

Thanks to fluoridated toothpaste and table salt, dentists are finding fewer cavities in their patients' mouths.

Since 1996 there has been a drop of 37 per cent in caries.