



**RÄTTSMEDICINALVERKET**  
NATIONAL BOARD OF FORENSIC MEDICINE

An expert authority within  
the judicial system

# The National Board of Forensic Medicine

The National Board of Forensic Medicine is an expert authority within the Swedish judicial system. Our employees include specialists such as forensic doctors, forensic psychiatrists, chemists and biomedical analysts. We work on criminal investigations on behalf of the police, prosecutors, the courts and the prison and probation service.

AT THE NATIONAL BOARD OF FORENSIC MEDICINE we carry out forensic psychiatric examinations in order to determine whether a suspect has acted under the influence of a severe mental disorder. This has a bearing on whether the sentence is imprisonment or forensic psychiatric care. In cases of unnatural death or when a crime is suspected, we conduct forensic postmortem examinations to establish the cause of death. Using DNA technology, we carry out paternity and kinship tests, and our forensic toxicology laboratory performs analyses in cases of suspected drink-driving and drug offences.

The National Board of Forensic Medicine also documents and assesses injuries in violent offences, conducts risk assessments when prisoners sentenced to life imprisonment apply for a fixed-term sentence, and is responsible for medical age assessments in criminal cases and within the framework of asylum processes.

Our agency is divided into four fields: forensic genetics, forensic toxicology, forensic medicine and forensic psychiatry. We have nine sites around the country.



Sara Rodre, Psychologist,  
and Patrik Backgård,  
Head of Division for  
Forensic Psychiatry.



## RESEARCH AND DEVELOPMENT

The National Board of Forensic Medicine is a unique operation. Therefore, we conduct extensive research and development work to ensure that we are always able to deliver legally secure statements based on evidence and proven experience.

Approximately 50 employees are involved in various research projects within our fields of operation.

Our research has led to countless advances, including, for example, reliable methods for blood analyses of new psychoactive substances (NPS) and methods for dental analysis that can determine the identity of a deceased individual.

# Forensic genetics

AT THE DIVISION FOR FORENSIC GENETICS in Linköping, DNA information is used to help identify deceased individuals and conduct paternity and kinship tests. Paternity tests are conducted on behalf of social welfare committees or courts for the purpose of establishing liability for payment of maintenance. Kinship testing is a common commission when reuniting families, which we carry out on behalf of the Swedish Migration Agency.

At the laboratory we normally examine 21 markers on the DNA molecule, but if required the examination can include close to 200.

Each year the unit investigates approximately 3,000 kinship cases. In such cases, we can almost always achieve reliability of more than 99.999 per cent. The result is used as evidence in court.

Research and continuous method development increase the reliability of kinship testing and the identification process for deceased individuals.



“*Today we can examine multiple aspects of the DNA molecule. This means that we can solve more cases with greater reliability.*”

ANDREAS TILLMAR | Associate Professor in Forensic Genetics and Technical Molecular Biologist at the Division for Forensic Genetics in Linköping.



Mikaela Cruz Delgado, Biomedical Analyst, and Barbara Dell'Amico, Medical Biologist, at the Division for Forensic Genetics in Linköping.



#### DVI – DISASTER SUPPORT

In connection with major disasters with a high death toll, one of the National Board of Forensic Medicine's Disaster Victim Identification (DVI) teams is activated. These teams are tasked with working with technical experts from the police to identify the dead. The National Board of Forensic Medicine's DVI teams specialise in forensic genetics, forensic

medicine and forensic odontology (teeth and oral cavity).

Unidentified bodies are examined with the aid of DNA sampling and dental status. Age, distinguishing features and belongings are all taken into account. The details are matched against information gathered by the police about persons who have been reported missing in connection with

the event. Dental and health care providers also make dental records, x-ray images and medical notes available.

The DVI teams were activated following the Estonia disaster, the nightclub fire in Gothenburg, and the tsunami in Thailand, among other events.

# Forensic toxicology

LINKÖPING is home to Sweden's only forensic toxicology laboratory. In the event of a suspected crime analyses are performed that detect and establish the concentration of alcohol, drugs, medication and doping preparations. When the police take samples from a driver, it is the Division for Forensic Toxicology that performs the analysis, as it is in cases of suspected drug offences and doping crimes. When investigating a cause of death, samples are submitted by our Divisions for Forensic Medicine around the country.

The laboratory analyses blood, tissue, urine and hair. Hundreds of substances can be detected and evaluated at molecular level. All analysis work is performed using quality-assured methods and the findings are reviewed in two independent stages. Our experts also help the police and the courts to interpret the results of analyses, for

example, in cases of people having had or having claimed to have had a drink after a traffic offence.

Both working methods and analytical equipment are updated and refined as new advances are made in science and technology. Researchers at the Division for Forensic Toxicology have developed methods for analysing samples that contain synthetic drugs. The ability to identify new psychoactive substances in a blood sample may make criminal investigations easier.



## ANALYSES

Almost 100,000 cases are examined and approximately 700,000 analyses are performed at the Division for Forensic Toxicology each year. Suspected drug-driving or drug offences are confirmed in just over 78 per cent of drug samples submitted by the police.





Fanny Kjellqvist, Chemical Analysis Technician at the Division for Forensic Toxicology in Linköping.



**”** *A lot of things you see on TV are simply made up. For example, you can't put a strand of hair into a machine and get a list out of all the substances in a person's body. That sort of thing is only possible on TV.”*

MARTA KOMOROWSKA | Analytical Chemist at the Division for Forensic Toxicology in Linköping.

# Forensic medicine

EACH YEAR AROUND 5,500 forensic postmortem examinations are carried out on behalf of the police or prosecutors. The reason for this may be an unexpected or unnatural death, for example murder, or other suspected crimes, suicide and accidents. Postmortem examinations are also carried out to establish the identity of the deceased.

The doctor who performs the examination is an expert in forensic medicine and must answer questions such as: When did the death occur? What was the cause of death? Have there been any injuries to the body?

A postmortem involves an external and an internal examination of the body. The doctor is aided by forensic medical assistants, investigators, administrators and biomedical analysts. A postmortem examination

is an important part of the ongoing investigation into a death.

Another of the Department for Forensic Medicine's responsibilities is examining suspects and possible victims of a violent crime. Injuries and trace evidence are documented and summarised in a forensic report that is a part of the evidence in a criminal case.

On behalf of the Swedish Migration Agency, our forensic doctors issue statements for medical age assessments in asylum processes, and in criminal cases on behalf of the police.

We have six Divisions for Forensic Medicine around the country, from Umeå in the north to Lund in the south.



” *Initially no crime was suspected. However during the examination of the body we saw that something wasn't right.*”

ANGELICA JOHANSSON | Investigator  
at the Division for Forensic Medicine in  
Gothenburg.



Emmelie Bogårdh, Forensic  
Medical Assistant at the  
Division for Forensic Medicine  
in Stockholm.



#### TISSUE DONATIONS

All the Divisions for Forensic Medicine recover tissue that is used in the thousand or so tissue transplants carried out each year. One-fifth of all tissue for transplant in Sweden is handled by the National Board of Forensic Medicine. Donated skin or heart valves can save the lives of patients with burn injuries or heart conditions. Significantly impaired vision caused by illness can be corrected with donated corneas, and a new ossicle can restore hearing.

The work of the National Board of Forensic Medicine on tissue donation means that Sweden is almost self-sufficient in terms of transplant tissue.

# Forensic psychiatry

ANYONE DEEMED to have a severe mental disorder should preferably not be sentenced to prison. In order to be able to determine a suitable punishment in a criminal case, a court can request a minor forensic psychiatric examination of the suspect. Each year the Department for Forensic Psychiatry carries out approximately 1,300 minor forensic psychiatric examinations. An examination of this kind takes about one hour and the results indicate whether a complete forensic psychiatric examination is recommended.

A complete forensic psychiatric examination of a detained person normally takes four weeks. The suspect is examined by a team of forensic psychiatrists, psychologists, social workers and nursing staff. A statement from the National Board of Forensic Medicine indicates

whether the crime may have been committed under the influence of a severe mental disorder.

Approximately 500 people undergo a forensic psychiatric examination each year. Slightly less than half of these are transferred for forensic psychiatric care. The National Board of Forensic Medicine's Divisions for Forensic Psychiatry are located in Stockholm and Gothenburg.



## RISK ASSESSMENTS

Forensic psychiatry also carries out risk assessments in the case of prisoners sentenced to life imprisonment. After ten years in prison, a prisoner can apply to have the sentence commuted to a fixed-term sentence. It is the Örebro District Court that examines these cases. Our experts conduct an examination over a period of approximately six weeks and submit a statement outlining the risk of recidivism.





Tobias Blomander, Group Manager at the Division for Forensic Psychiatry in Stockholm.



” My research shows that there are various mechanisms behind general lethal violence and partner related lethal violence. This has to do with two completely different groups of offenders.”

SHILAN CAMAN | PhD student researching violence in close relationships at the Division for Forensic Psychiatry in Stockholm.

## Our sites

The National Board of Forensic Medicine is based at nine sites around the country and has four fields of operation: forensic psychiatry, forensic medicine, forensic genetics and forensic toxicology. The Head Office is located in Stockholm.



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[www.rmv.se](http://www.rmv.se)

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