

Detailed description of examinations conducted for charge

As of 1 March 2010 examinations, tests and analyses not related to pending cases can be commissioned from the Estonian Forensic Science Institute.

DNA test or identification of filiation is the most frequent extrajudicial test commissioned from the Estonian Forensic Science Institute. The test can be commissioned if the parties agree that a DNA test is required for identifying the filiation of a child and they do not wish to address the court to that end. The prerequisite for the test is that all the parties come to give a sample at the same time. Paternity is not identified using samples or personal effects that have been taken in secret. In order to make an extrajudicial test, the consent of all the parties is required. In the event of minors the consent of both legal parents is required.

It takes only about twenty minutes to take a sample (i.e. to make a few rounds in the mouth using a cotton swab) and draw up the paperwork.

In addition to saliva, biological paternity can be determined on the basis of the following: foetal material during pregnancy, aborted foetal material, tissue samples taken during autopsy, and skeleton residues.

Foetal material can be analysed in two ways: chorion biopsy (taking a chorion sample using the needle of a syringe through the inguinal ligament) up to the third month of pregnancy and amniotic fluid analysis (taking amniotic fluid under the ultrasound using the needle of a syringe through the inguinal ligament) as of the fourth month of pregnancy. Both tests are risky and Gunnar Tasa, the Acting Head of the DNA Department, advises postponing the identification of biological paternity until the child is born, where possible. But if the future mother would like to be absolutely certain about to whom to bring the happy news before the birth of the child, she should certainly consult a DNA expert beforehand. A sample is taken by a doctor – in Estonia, samples can be given only in Tallinn and Tartu – and thereafter the foetal material taken by the doctor must be brought to the Estonian Forensic Science Institute. According to Tasa, the results of the survey will reach the mother at any rate only after the time of having a legal abortion (after the 12th week of pregnancy in Estonia) and therefore the results of the DNA analysis cannot be used for making a decision on whether to have an abortion or not.

Furthermore, a filiation analysis can be carried out if the DNA of the relevant person is no longer available (e.g. the person is dead). In such an event the other children of the deceased person or, as the last resort, their other personal effects or biological residues (bones, teeth) can be of help. In events where a person is no longer alive, an expert should be consulted before commissioning an examination, in order to identify whether a DNA test would give a sufficiently reliable answer in the first place. It may happen that multiple tests and examinations will need to be carried out in order to identify the blood relationship via the deceased.

Although identification of paternity is the most widespread analysis, a different biological blood relationship can be identified as well.

The result of a DNA test is either affirmative or preclusive. In the event of a preclusive result there are no overlaps in the investigated DNA sequences and the result is absolute, i.e. 100% reliable.

An affirmative result is always given as a probability ratio accompanied by an expert opinion. The probability percentage is close to one hundred, usually over 99%, but never 100%.

Upon identification of biological paternity, the test gives a sufficiently reliable response, while in the event of more distant relatives the identification of filiation is more complicated.

The test also costs less: the analysis fee per person is now 57 EUR. That is, if the mother, father and one child wish to take the test, it costs 171 EUR. If the number of compared persons is higher, 57

EUR will be added per person to be analysed.

A DNA sample can be given in Tallinn, Tartu, Kohtla-Järve and Pärnu. For further information contact the DNA Department of the EFSI by phone (+372 663 6726) or email dnainfo@ekei.ee [1].

Chemical examination – examinations conducted by the Chemistry Department are divided into toxicology examinations and pure substance examinations. The most frequent examination is toxicology examination, i.e. testing a biological fluid (blood, urine) for ethylene glycol, methanol, ethanol, narcotic drugs and psychotropic substances and medicinal products. The most frequently such examinations are commissioned by hospitals, but authorities have also started exercising control over their employees.

In the event of individuals there have been events where it has been necessary to prove that a person has not consumed any narcotic drug or psychotropic substance (e.g. parents want to be certain of their suspicions that their child consumes drugs).

Today there are quick tests that you can use for carrying out the initial check at work or home and then come to the expert institution to double-check a positive test. Hospitals and institutions have usually taken the samples themselves and they only bring a sample to have it tested. Individuals can give a sample in the Toxicology laboratory of the Chemistry Department in Tallinn at Tervise 30 and in Tartu at Ravila 19 from 8:30 a.m. to 4:30 p.m. on working days (pre-registration by phone is required, +372 663 6701). In such an event a fee for taking a sample is added to the examination fee pursuant to the price list. The price list has been set out in § 27¹⁰ of the Forensic Examination Act.

Examinations of pure substances are carried out for identification of the types and composition of alcohol, narcotic drugs and psychotropic substances and medicinal products. Pure substances are examined in the Tallinn laboratory. Before commissioning an examination please consult the Chemistry Department directly by phone (+372 663 6701). The price of an alcohol examination is 75 EUR and the price of a narcotic substance examination is 84 EUR.

Biological examinations – biological examinations include chemical examinations and DNA tests. Chemical examinations include, for instance, fibre examinations, which means that the animal to which a certain hair belongs is identified. When planning this examination you should certainly discuss the necessity of the examination with an expert of the Chemistry Department beforehand, because the examination costs quite a lot, 438 EUR per object.

DNA tests are most frequently sperm tests, but usually they are taken following a forensic examination and then the survey reaches the DNA Department along with a consignment note by a forensic pathologist. Thus, the person who wants the examination must first address a forensic pathologist for examination and taking a sample. Forensic medical examination departments are located in Tallinn, Tartu, Kohtla-Järve and Pärnu and are open on working days. The prices of gynaecological or andrological examinations are different. The price is also influenced by the age of the person – the examination of a minor costs more.

By way of exception, DNA tests are taken in the event of animal attacks (e.g. if a dog has attacked a person). In the event of a usual bite there is no point in taking a DNA test, because the blood coming from the wound has washed off the animal DNA. But in the event of a major accident whereby the animal has torn off a piece of a human it is possible to analyse the meat found in the animal's digestive track in order to find out if there is the DNA of the injured person in it. In the event of such examinations the DNA Department should be certainly be consulted by phone (+372 663 6726) or email (dnainfo@ekei.ee [1]) in order to identify the possibility and price of the examination.

Electron microscopy examinations – electron microscopy and microanalysis offer broad opportunities for examination of very different objects. Forensic science uses electron microscopy examinations for comparing various materials and identifying firearm traces. The EFSI has a low-vacuum scanning electron microscope with a large chamber, which allows for examining, among other things, large objects without harming them. The materials most frequently examined using an electron microscope and elementary analysis are metal alloys, paints and glass. On the basis of

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microscopic features it is possible to identify forged documents – in that regard cooperation with the experts of the Document Department is pursued. First of all, the EFSI offers the possibility of cooperation to other research institutions in order to carry out electron microscopy examinations.

Electron microscopy examinations are also helpful for coin collectors for identification of forged coins. This means that if a person buys a certified coin, but is not certain if they received the right goods, they can address an expert of the EFSI who will examine the right weight and metal content of the coin.

If you would like to have an examination carried out, you should discuss the details of the survey with an expert beforehand (phone +372 663 6701, email kohtuekspertiis@ekei.ee [2]).

Carrying out metal examinations is expensive – one examination costs 289 EUR.

Handwriting examination and document examination - Applying document or handwriting examination should be kept in mind that the Estonian Forensic Science Institute is not a procedural authority and do not resolve any civil disputes.

If there is a suspicion that all document or handwritten text or signature are forged, it is advisable to file an application to the police or the court who requests if necessary forensic examinations.

Prepaid external handwriting and document investigations are carried out in accordance with Forensic Science Act and cannot be made anonymously.

Handwriting investigations carried out on the basis of the forensic handwriting methods. Sometimes the word graphology has been used but nowadays they are distinguishable: handwriting experts are not graphologists.

Under the Act, the price of handwriting investigation per one person is 282 EUR and document investigation per one document is 77 EUR.

Contact by email kohtuekspertiis@ekei.ee [3] or by phone +372 6636600.

Person's forensic medical examination – such an examination is usually requested if a person has been injured, but they do not want to address a law enforcement body. There are various reasons for conducting an examination: family violence, quarrel (e.g. between neighbours), accidents in the street, school, nursery school, etc. Often people want to address the police later, but since the injuries suffered in the given situation have either not been registered or they find that these have been registered improperly, it is subsequently difficult to identify whether, how and when the injuries have been caused. The deed can later be submitted to the police for initiation of an official procedure.

The prerequisite for a forensic medical examination of a person in the EFSI is the absence of serious injuries. If injuries that need attending to have been caused to a person, the person should first go to a hospital.

Forensic medical examinations are carried out in Tallinn, Tartu, Kohtla-Järve and Pärnu on working days.

The prices of forensic medical examinations have been established in the Forensic Examination Act and they range from 61-271 EUR depending on the type and level of difficulty of the examination. In the case of gynaecological and andrological examinations the price of a DNA test will be added as well.

Medical toxicology examination – a medical toxicology examination is used in order to identify narcotic and psychotropic substances in a body and their area of influence. For instance, if a person suspects that they have been poisoned, the doctor will, after a positive result of the toxicology survey, give the person a thorough-going medical opinion on the impact and consequences of consumption of the substance. By analysing various source data, it is possible to identify when the

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poisoning could have taken place.

The service has been rendered to employer for identification of a possible state of intoxication and examinations are also commissioned by hospitals. For instance, the EFSI has special methods for obtaining from the body the traces of the infamous GHB, which have not been identified using screening (analysis of the general class of narcotic drugs and psychotropic substances) in hospitals.

If a person addresses an examination institution directly with a suspicion of poisoning, they must also pay the price of a toxicology examination (examination of a biological fluid) and the price of taking a urine and/or blood sample in addition to the price of a medical toxicology examination.

Medical toxicology examinations, costs 95 EUR, are carried out only in Tartu, but samples can also be given in Tallinn. To commission an examination contact the Southern Estonian Forensic Medical Examination Department by phone (+372 663 6775) or email (louna@ekei.ee [4]).

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Links:

[1] <mailto:dnainfo@ekei.ee>

[2] <mailto:kohtuekspertiis@ekei.ee>

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[4] <mailto:louna@ekei.ee>