

# THEORETICAL AND PRACTICAL ASPECTS OF THE RETROACTIVE CALCULATION OF ALCOHOL LEVEL

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## Abstract

*The new regulations regarding the retroactive calculation of the alcohol level stipulate, expressly and restrictively, the circumstances that allow the judicial organisms to order medico-legal investigations aiming mainly to establish the alcohol level at a certain moment, based on the results of the lab tests on blood samples taken from vehicle or tram drivers, from authorized auto instructors or from the examiners of the competent authority during the practical test necessary to obtain the driving license, under investigation for the crime indicated by art. 87 from Government Decision 195/2002, namely “driving a vehicle or a tram by a person who has an alcohol level exceeding 0.80g/l of pure alcohol in the blood...” At the same time, the methodological norms regarding the drawing of blood samples necessary to determine the alcohol level do not allow medico-legal expertise to be carried out based on the statements of the persons under investigation or of the witnesses who, generally, provide false information regarding the concentration or quantity of the intake in order to influence a smaller alcohol level, under the limit that triggers criminal liability.*

**Keywords: calculation, alcohol level, retroactive, methodological norms.**

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In the light of the contribution of the intake of alcoholic drinks to certain antisocial acts, among which traffic violations, as well as in the light of the consequences on the medical, juridical and social plan, it is extremely vital to determine the level of alcohol contamination at the moment the crime was committed. That is why in most cases the determination of value of the alcohol level in the medico-legal expertise becomes absolutely imperative. The toxic effect of alcohol is almost exclusively produced through ingestion, only seldom cases of accidental intoxication at the respiratory level or through the skin being reported (most authors argue that these are unlikely ways to reach representative values of alcohol, stating that in such workplaces the alcohol-infested atmosphere would make respiration impossible should it be at the concentration needed to determine, through prolonged exposure, certain behaviors and also that the alcohol level resulting from the cutaneous penetration is quantitatively insignificant). Inside the organism, as a result of certain foods containing glucides which, through fermentation can produce ethanol, there are normally traces of ethylic alcohol, also as a by-product of metabolism, in insignificant quantities not exceeding 2-3mg/1000 ml of blood, untraceable using the current methods to detect alcohol level. The determination of the alcohol in the organism is usually made using the blood and the concentration referred to as alcohol level represents the amount of ethylic alcohol, expressed in grams, per 1000ml of blood; nevertheless, there are situations when the alcohol level is determined using urine, saliva, LCR.

Once ingested, alcohol is quickly absorbed in the body, in relation with its great solubility in water, the absorption starting as early as in the oral cavity, being made actually in the gastric mucous membrane and in the first intestinal segment. The absorption speed is mainly determined by the concentration of the alcoholic drink, by the quantity ingested and by the contents of the stomach during consumption. The absorption and elimination of alcohol from the organism is a dynamic process, reflected in the value of the alcohol level in time, a dynamic which can be graphically represented by an absorption-elimination curve, ascending in the beginning as it corresponds to the absorption followed by a descending line corresponding to the rhythmic disappearance of alcohol from the blood, the most famous being called Widmark and being applied to this purpose by most states in the world, some of them already using the method of automatic computer aided processing of data [1]. From the graphic representation mentioned above one can draw the following conclusions:

- the intoxication phases (diffusion or ascension) is faster for strong drinks than for drinks with a smaller concentration of alcohol, the total amount of alcohol ingested being the same;
- the contents of the stomach determine the reach of maximum alcohol level after 20-30 minutes on an empty stomach and after 1-2 hours if the stomach is full with food;
- the coefficient of rhythmic elimination of alcohol from the blood, estimated at an average of 0.15g% per hour, with all individual deviations, preserves a value with a practical character (except the terminal segment of the curve).

In a percentage of 90% alcohol is metabolized at the liver level while the rest is eliminated through the kidneys, by respiration and through the skin. For the complete disappearance of the ethylic alcohol from the blood, at an alcohol level of 0.80g/l approximately 5 to 6 hours are necessary, on condition that the alcohol consumption is stopped. The studies made in order to discover new therapeutic means to increase the metabolism – elimination rate of the alcohol by the administration of certain products, especially in the case of drivers led to inconclusive results. The alcohol intake causes speech difficulties, loss of balance, sight impairment, poor movement coordination, all of these affecting the ability to drive a vehicle or a tram on the public roads. [2]

The consequences of the alcohol consumption by the drivers have determined, in the course of time, the creation of certain legislative measures aiming at preventing and sanctioning the traffic violations caused by such consumption. The dispositions of the Government Decision 195/2002 regarding circulation on the public roads, modified and republished, approved by the Law no. 49/2006 sanctions alcoholism in the case of drivers, treating an alcohol level of under 0.80 g/l as a misdemeanor and a level above this limit as a felony, the threshold being in direct proportion to the frequency of traffic accidents at certain values of alcohol level.

In view of the application of the sanctions for those who drive vehicles or trams on roads open for public circulation it is necessary to determine the state of ethylic intoxication by rigorous scientific methods to avoid all errors. That is why the methodology of establishing the degree of ethylic intoxication is rigorously regulated, from the drawing of biologic samples to the clinical examination and the final conclusion regarding the alcohol level at the time of the incident.

From the analyses of the statistical data published by the judicial bodies there results an alarming increase each year of the number of criminal cases based on crimes against the regime of circulation on public roads, for which sentences of non-commencement of criminal trials were given. A particular interest is represented by cases in which individuals who drove vehicles under the influence of alcohol were under investigation and the alcohol level was determined through expertise or medico-legal assessments regarding the retroactive calculation of the alcohol level. A careful examination of this category of cases reveals a series of deficiencies identified and traced most of the times during the early stage of criminal investigation, due to the failure to observe the rules of forensic tactics, the norms of criminal procedure or the regulations regarding the activity of drawing up medico-legal documents which define the juridical background in the matter.

On one hand there are norms which comprise interdictions or obligations for drivers of vehicles or trams, such as the obligation to cooperate for the collection of biological samples; on the other hand there are rules regarding the procedure of making use of this kind of evidence.

According to the dispositions of art. 87 from the Government Decision 195/2002 regarding circulation on public roads, the drivers of vehicles or trams, the auto instructor in the process of practical instruction of an individual in order to obtain the driving license as well as the examiner of the competent authority during the practical test necessary to obtain the driving license or any of its categories and sub-categories, involved in a traffic accident, are forbidden to ingest alcohol, drugs or medicine with similar effects after the occurrence of the accident and until the testing of the alcohol level in the expired air or the collection of biological samples.

Also, in the event of an accident, it is mandatory to collect biological samples from both the vehicle drivers involved in the accident and the victims in view of determining the alcohol level or the consumption of substances, drugs or medicine with similar effects, even in the absence of the policeman, who will be informed as soon as possible.

The vehicle or tram drivers tested with a certified technique and having a concentration over 0.40 mg/l pure alcohol in the air expired are bound to cooperate in view of collection of biological samples or to be tested using an approved metrological procedure.

If the person tested by the road officer with a certified technical means is found to have an alcohol level up to 0.40 mg/l of pure alcohol in the air expired, he/she may require to have biological samples collected by the institutions of forensic medicine or by authorized medical institutions in agreement with the methodological norms elaborated by the Ministry of Health, in the presence of a representative of the road police, in view of determining the alcohol level in the blood.

The collection of biological samples and the clinical test in view of determining the ethylic intoxication and the influence of products, drugs or medicine with similar effects on the behavior of vehicle or tram drivers constitutes a medical emergency and cannot be denied by any sanitary unit with such attributions. In order to determine the alcohol level, two blood samples are drawn from the vein, separated by one hour, each sample containing 10 ml of blood. In the event it is impossible to draw 10 ml of blood, the reason shall be indicated as "observation" in the clinical examination bulletin [4]. The first sample is preferably drawn within 30 minutes from the occurrence of the incident that caused the request for collection (the moment the driver was stopped in traffic or the moment of the accident).

In order to determine the products, drugs or medicine with similar effects a single blood sample is drawn and also 50 to 100 ml of urine.

In special medical situations when the second collection is impossible, 10ml of urine are collected, under surveillance, in a clean and sealed recipient; in case of refusal, the reason is also indicated as observation in the bulletin of clinical examination. In case of refusal to have the second sample collected, usually the retroactive calculation of the alcohol level is not carried out, the situation being registered in the collection report [5]. The same document should also indicate the doctor's and the policeman's obligation to inform the investigated person about the consequences of the refusal to give the second blood sample. It should be mentioned that the surveillance of the person under investigation between the two sample collections is ensured by the police [6].

The collected sealed samples, together with the original copy of the collection of biological samples report and the bulletin of clinical examination shall be made available, when the collection and examination procedure has ended, to the policeman, who shall transport and hand them over as soon as possible to the territorial medico-legal institutions. The determination of the alcohol level is

carried out only in the medico-legal toxicology laboratories within the forensic medicine institutions. In special situations, at the request of the policeman or of the person under investigation, counter-evidence can be simultaneously collected. The lab analysis on the basis of the blood remaining from the first determinations is also valid as counter-evidence as long as it was kept in optimum conditions, expressly mentioned in the analysis request. If the evidence are processed at the level of a county forensic medicine service, the analysis of the counter-evidence will be in the charge of the competent territorial institute of legal medicine and if the analysis of the evidence is conducted at this institute, the analysis of the counter-evidence shall be made at the National Institute of Legal medicine Mina Minovici from Bucharest [7]. In the event the person under investigation challenges the result of the toxicological analysis, most of the times a medico-legal expertise regarding the retroactive calculation of the alcohol level is carried out. According to the regulations in force, the expertise of recalculation of the alcohol level is to be conducted only in the institutes of legal medicine by a commission which comprises a primary forensic doctor and a pharmacist or primary toxicologist who works within the medico-legal toxicology laboratory within that particular institution, both of them being considered as experts. It is expressly indicated in the procedural norms for the performance of expertise, assessments and other medico-legal works that the expertise of recalculation of the alcohol level is possible only when two blood samples were drawn after an interval of one hour as well as, exceptionally, in the case of individuals in a serious clinical state: coma, traumatic and/or hemorrhagic shock, emergency medical interventions attested by medical records and for which a second blood sample could not have been drawn. At the same time, from the contents of the norms mentioned above, there results that the retroactive calculation of the alcohol level cannot be conducted only on the basis of the statements attached to the file and that it offers only estimative theoretical values. Therefore, this method of determining the alcohol level is conditioned by the cumulative fulfillment of the aforementioned conditions; in the absence of these conditions or of one of them, the result of the retroactive calculation is outside the legal background and consequently cannot be used as evidence in a criminal case investigated by the judicial organisms.

Although the situations when the judicial organisms may dispose the medico-legal expertise regarding the retroactive calculation of the alcohol level are expressly and restrictively stipulated, lately one can notice an alarming increase of the number of criminal cases based on the crime stipulated by art. 87 from the Government Decision no. 195/2002 approved in the Law no. 49/2006 when the criminal investigation was stopped, followed by acquittal, although the methodological norms regarding the collection of biological samples and the procedural ones regarding the performance of expertise, assessments or other medico-legal works have been rigorously observed.

A careful analysis of the management of the evidence in this category of cases outlines a series of major deficiencies that triggered illegal or ungrounded sentences. A first observation refers to the manner the defense of the people under investigation was appreciated, especially those regarding the alcohol level determined by the scientific method of toxicological analysis. The persons under investigation either challenge the results of the toxicological analyses by statements like: "I find the alcohol level to be a little high" or place the time of alcohol consumption farther than the moment of collection of the first blood sample, or falsely declare in front of the judicial organisms smaller quantities than the ones really ingested, with smaller concentrations, different degrees of fullness of the stomach, different types of foods or alter the statements several times until they get an alcohol level under the legal limit, etc. Therefore the subjective and retractable statements of the persons under investigation determine variable values of the alcohol level, being used as evidence with a high random coefficient.

When disposing a medico-legal expertise regarding the retroactive calculation of the alcohol level the dispositions of art. 2 and of the code of criminal procedure regarding evidence and means of evidence must be corroborated for maximum efficiency with the dispositions of art. 67 code of criminal procedure stating that the administration of evidence cannot be rejected as long as the evidence is useful and conclusive. The admission or the rejection of the evidence must be grounded. Therefore it can be said that the simple assessment of an alcohol level determined in agreement with the legal dispositions in force is not equivalent with a request of administration of the evidence with medico-legal expertise and also that the prosecutor who admits the solicitation is bound to prove, in his resolution, the conclusive and usefulness aspects imposed by the legislator and then, through a

separate resolution, to dispose the performance of the medic-legal expertise, a document which should show the objectives (questions to which the expert must answer or issues he/she needs to settle).

With concern to the form of the document used by the prosecutors to dispose expertise or medico-legal assessments, one can notice a non-uniform practice, in the sense that in certain cases a simple notification was sent to request the retroactive calculation, no other objectives being formulated and in other cases resolutions or injunctions were drawn up. According to the dispositions of art. 203 C code of criminal procedure, during the criminal investigation the prosecutor disposes on acts or procedural measures through injunctions, when the law stipulates so, and in all other cases through motivated resolution. The resolution act needs to be motivated, indicating the date, place, name, surname and quality of the person who writes it, the cause it refers to, the object of the action or procedural measure, its legal basis and the signature of the author. From the provisions of art. 116 code of criminal procedure there results that the prosecutor or the court may dispose an expertise when for the clarification of certain facts or circumstances of the cause the knowledge of an expert is necessary to find out the truth. The expert is entitled to be informed on the evidence in the file, may ask further details from the prosecutor or the court regarding certain facts or circumstances of the cause. On the other hand, in the procedural norms regarding the conduct of expertise, assessments and other medico-legal works it is shown that “the new medico-legal expertise consists of the reinvestigation/reanalysis of the case if deficiencies, omissions and/or contradictory aspects are found in the previous expertise [8]. The conclusions of a new expertise are drawn up based on the previous assessments or medico-legal expertise, on the evidence from the file, on the specific aspects of the case, on new evidence, attached to the file as well as on objections raised by the judicial organisms. As the resolution of the prosecutor or the sentence of the court are mandatory for the expert, the possibility of not taking into consideration the acts which disposed expertise in other conditions than the ones mentioned above was envisaged, without determining the sanctions stipulated by the norms of criminal procedure. As it was shown above, in the relationships between the judicial organisms on one hand and the medico-legal expert on the other hand there are mutual obligations deriving from the regulations in the field regarding the provisions expressly and restrictively stipulated by the legislator to allow for the retroactive calculation as an exception. Consequently, a medico-legal expertise having as an object the retroactive calculation, carried out in other conditions than those imposed by the methodological norms applicable in the matter, is evidence without validity in the criminal trial. In the event the medico-legal expert appreciates that the requests of the methodological norms regarding the retroactive calculation are not met, he/she may address the judicial organ who disposed the expertise in order to solicit the clarification of certain facts or circumstances of the case, as stipulated by art. 116 code of criminal procedure. The courts of justice favored this approach constantly [9]. The retroactive calculation of the alcohol level made on the basis of the data resulted from the defendant’s statements, corroborated with the declarations of witnesses with whom the defendant ingested the drinks, statements made during the criminal investigation and the prosecution in the first instance, cannot be rejected by a calculation made on the basis of other data regarding the amounts of alcohol and food the defendant claims to have ingested in front of the court of appeal, which are not supported by other evidence. As an example, a defendant, with an alcohol level of 1.91 g%0 drove a vehicle on the public roads and, losing control of the wheel, flipped the car sideways. He was sent to court but the first instance acquitted him motivating that from the conclusions of the medico-legal expertise conducted during investigation it results that the alcohol level at the moment of the accident was of 0.80 – 0.95 g%0. Although there was no doubt regarding the collection procedure or regarding the level of alcohol concentration, the court decided to supplement the file with a new medico-legal expertise, accepting, without censorship, the defendant’s objectives which, contrary to the evidence previously administered, proved another de facto situation [10].

Therefore the court of appeal only considered the conclusions of the new expertise, ignoring the fact that it was carried out based on a situation uncorroborated by other evidence than the defendant’s statements. The court should have equally state that the new retroactive calculation of the alcohol level had to be dismissed as inconclusive as the report contained only the objectives and the conclusion, failing to observe the art. 123 letter C code of criminal procedure, according to which the report had to comprise the detailed description of the operations of the expertise. As the conclusions of the new expertise are not motivated, the medico-legal document at stake lacks proving force. Consequently the appeal was admitted, the decisions attacked were dismissed and the decision of the

first instance was maintained [11]. Other courts gave similar sentences and rejected the defendants' requests to conduct new medico-legal expertise regarding the retroactive calculation of the alcohol level motivating that "the medical acts are not contradictory, they are evidence and the court is free to make appreciations on their proving value", one of them relating to a case when the first blood sample was draw after 2 hours and 45 minutes after the road incident (collision) [12]. The experts constantly argued that as far as the retroactive calculation of the alcohol level is concerned, "it gives estimative theoretical values and therefore cannot be used as evidence from a medico-legal point of view and that based on this calculation a fix value of the alcohol level cannot be determined, unlike biological samples, the two situations being different considering that the alcohol level resulted from the biological samples is determined by direct measurements while the retroactive calculation presupposes appreciations of the specialists based on experiment and observation [13]. At the same time it was appreciated that the medico-legal expertise for the recalculation of the alcohol level has a judicially proving value in the meaning of art. 116 code of criminal procedure because it comprises scientific appreciations on the likely values of the alcohol level at the moment of the crime, appreciations made on the basis of the knowledge of experts" [14].

The succinct analysis of the regulations regarding the retroactive calculation of the alcohol level and the presentation of the aspects of a unitary jurisprudence lead us to the conclusion that every time a medico-legal expertise is disposed with the purpose of determining the alcohol level in other conditions than the ones set by the legislator, the policeman, the magistrate, the medico-legal expert are the authors and accomplices of a judicial error which may lead to the repossession of the right to drive a vehicle or tram on roads open for public circulation, with consequences that may take the form of loss of human lives, severe body damage or significant material damage etc, at a time when Romania is among the first in Europe with regard to traffic incidents.

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