

# Chapter 20

## Methods of Ascertainment of Personal Damage in Turkey

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**Abstract** This chapter illustrates the historical, judicial, and juridical framework of personal injury assessment and compensation in Turkey, describing the expert's qualification and competences and detailing the ascertainment methodology and criteria of evaluation utilized for identifying, describing, and estimating any personal injury, its temporary and permanent consequences, and the causal value/link between the event and the injury and between the injury and the impairment/disability.

### 20.1 Historical, Judicial, and Juridical Overview

To consider the individual as a whole within the context his environment, to evaluate every element that threatens his health in the context of that particular environment so as to prevent hazards, and to provide health services with the aim of eliminating risks are all requirements of the welfare state, which can ensure a healthy life for its citizens. All processes related to working life are regulated by a set of rules to make sure that employees continue operating in a state of complete physical, mental, and social well-being. With those processes called Occupational Health and Safety (OHS) legislation, the State, exercising its role as regulator and

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supervisor, is responsible for the protection of its citizens, both employer and employee [1].

Traffic accidents/occupational accidents/occupational diseases, which represent the majority of injuries, constitute an important part of the processes that result in permanent damage. Incidences of injury constitute a particularly important field of interest for Forensics because of criminal and compensation lawsuits that aim to prevent unjust treatment of individuals. Courts in need of expertise, insurance companies, or individuals requiring incident reports ask for the opinion of committees, which include forensic experts.

The right to a healthy life is the most fundamental human right. According to ILO (International Labor Organization) sources, 1.2 million men and women die each year as a result of occupational accidents and diseases. According to the same sources, each year 250 million people are injured in occupational accidents and 160 million suffer from occupational diseases. A healthier and safer working environment is also a prerequisite for enhanced productivity. Especially in developing countries, occupational health and safety are among the determinants of social development [1].

Studies on occupational health in Turkey can be separated into three groups.

- Before the “Tanzimat” (Reform) Era: It is reported that guild organizations helped those people in case of being “malulin” (disabled) from a “teavün sandığı” (charity fund).
- During the “Tanzimat” (Reform) and “Meşrutiyet” (Constitutional) Era: In 1865, the first legislation for the protection of workers was promulgated. This legislation called “Dilaver Paşa Nizamnamesi” (Dilaver Pasha Regulations) aimed to improve the conditions of coal miners. “Maadin Nizamnamesi” (Mines Regulations), which was promulgated in 1869, has formed the foundation of the workplace health organization and occupational safety [1].
- Republican Period: The most important law in Turkey concerning workers’ health was “Umumi Hıfzısıhha Kanunu” (Public Hygiene Law) dated 1930, which also aimed to prevent child labor. By this law, “Regulations on the Protection of Workers’ Health and Occupational Safety” were planned, and this has been a great progress in the area of workers’ health. In 1945, the Ministry of Labor and in 1946 workers’ insurances were established. Firstly, the “Regulations on the Types and Extents of the Disabled on Active Duty” in 1953 and then the Law No: 224 caused ideas about occupational health and safety to rise and as a result, with the Social Insurance Law (SIL) No: 506, the occupational safety entered the state’s agenda. The reforms on occupational safety in the Republic of Turkey were attained with the Constitution of 1960. The revision of the Labor Law in 1967 included, for the first time, regulations on workers’ health and occupational safety. These regulations are still in effect in accordance with Law No: 1475. With the new Labor Law No: 4857 issued in 2003, the issues previously mentioned in Law No: 1475 as advisory became mandatory. In 2012, Occupational Health and Safety Act No. 6331 was issued, and this was followed by the addition of the Regulations on the Determination of

Disability in 2013. Thus, Turkey has attained the best legal regulations of the Republican Period.

Rate of mortality due to occupational accidents in Turkey was reported to rise from 13.91 in a hundred thousand in the year 2000 to 15.49 in 2005 [2]. According to the statistics of Ministry of Labor and Social Security, 79,027 cases of occupational accident and 574 cases of occupational disease occurred in 2006, 1601 of which resulted in death. In 2006, the number of working days lost as a result of occupational accidents and diseases was 1,895,235. The losses due to occupational accidents and diseases unreported in the Occupational Health and Safety statistics should also be considered [3].

Both economic losses and mental anguish caused by occupational accidents and diseases pose major obstacles for development efforts in developing countries. The economic cost is 4.03 % of the Gross National Income. Those incidences cause people to lose their lives due to avoidable problems. On the other hand, taking into consideration the economic losses the state and the corporations suffer every year and the damage cost methodology of the accidents, a planning approach needs to be adopted [3].

In Turkey, occupational accidents occur mostly in Small and Medium-Sized Enterprises (SME) that constitute 98 % of all enterprises. 50 % of the occupational accidents in SMEs are observed in establishments with 9 or less employees [1, 2]. The highest number of accidents occur in the “metal goods manufacturing” industry, with 14 % of total accidents, secondly in the construction industry, with 8.7 %, and thirdly in the coal mining industry, with 8 %. The three industries which have the highest number of fatal occupational accidents are the construction industry, with 290 fatalities, the transportation industry, with 163 fatalities, and the coal mining industry, with 82 fatalities [4]. Another study have also reported that 31 % of the fatal occupational accidents occurred in construction sites [5].

Other negative outcomes of accidents besides death need redefining. The WHO (World Health Organization) has made definitions of negative conditions that the survivors suffer such as impairment, disability, and handicap. This classification is widely used in many countries around the world. Definitions of the terms are as follows.

**Impairment:** Any loss or abnormality of psychological or anatomical structure or function. This includes defects on the organ level.

**Disability:** Any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being caused by an impairment resulting from deterioration of health. This refers to disorders at an individual level. Disabilities may be temporary (malnutrition, infectious diseases), permanent (blindness, mental retardation), and progressive (degenerative diseases, heart disease).

**Handicap:** A disadvantage for a given individual, resulting from an impairment or a disability that limits or prevents the fulfillment of a role that is normal for that individual depending on age, sex, and social and cultural factors [6, 7].

The Welfare state is responsible for solving the problems that arise from the risks with legal regulations and assuring its people a healthy and happy life in all aspects. One of the state's major tasks is to protect the rights of accident victims. A just identification of the deterioration in the individual's health (handicap or disability) is a requirement of the welfare state.

Although the disability evaluation process of every country is specific to its own medicolegal structure, there are some common aspects. Many institutions such as the "American Medical Association (AMA)" have issued guidelines to evaluate the severity of disability [8]. Article 2 of the English Social Security Act defines "disability" and, unlike the private insurance legislations, emphasizes that the dysfunction should be permanent, untreatable, or fatal. The degree of disability is determined by a team that includes a physician and an occupational disease specialist. In the United States the Social Security Act defines being disabled. According to the definition a physical or mental dysfunction that prevents the person to work should exist and this dysfunction should be medically diagnosed and should last for at least 12 months or should result in death. Similarly in Turkey, the Social Security Institution, which is affiliated with the Ministry of Labor, has Health Affairs Terms of References and Disability Board of Health Regulation guides.

In our country, economic life was the first arena where the definitions of disability and victimization were used. The Republic of Turkey took a step forward by adopting Work-related Accidents, Occupational Health and Maternity Insurance Law (Law No: 4772) for the first time on 07.07.1945, which went into effect a year later on 01.07.1946. This law was repealed by the adoption of Law No: 506 on 01.03.1965, which also incorporated other insurance types. This aimed to regulate the consequences experienced by the insured as a result of work-related accidents or occupational diseases while working at a facility defined in Law No: 506. The aim was to compensate for the damages suffered by the insured as a result of work-related accidents or occupational diseases [9].

Law No: 506 Article 11 Subsection A defines occupational accidents as:

"Occupational accident is an incident that occurs in one of the following circumstances and conditions that causes a physical or mental dysfunction immediately or afterwards.

- While the insured is at work
- In connection with work carried out by the employer
- During time spent not doing the main job because of being sent by the employer on duty to an other location
- For the insured nursing woman during time reserved for breastfeeding
- While the insured employees are collectively being transported to and from the work place by a vehicle provided by the employer." [8–10].

Employers are obliged to inform the authorized local constabulary immediately after the incidence and to notify the Ministry of Labor within 2 days. The employer covers the necessary health expenses until the Social Security Institution (SSI) puts the person that had the accident under treatment. Documented expenses and

transport costs are paid to the employer by the Institution. However, those expenses will not be paid if the employer does not make notification within the statutory period. The employer is liable for all damages of the Institution resulting from incomplete or incorrect information on the occupational accident notification form. Although the insured is also obliged to report the occupational accident to the employer and the Institution within 2 days, there is no sanction if he/she does not [9].

Contributions made by the Institution to the insured person who has had an occupational accident can be summarized under four headings, as discussed in the following paragraphs.

### ***20.1.1 Health Benefits***

After the occupational accident, all treatment costs of the insured and, if needed, all prosthetic devices are covered by the Institution. Health benefits continue as long as the health condition of the insured requires. The main objective is to restore the insured's ability to work and to increase his/her self-sufficiency.

Insureds are obliged to comply with the measures and recommendations of the physician during and after treatment. If the treatment prolongs, a disability develops or the degree of disability increases because of the insured's noncompliance; the Institution may reduce the temporary incapacity allowance or the permanent disability income according to degree of fault but the reduction cannot exceed 50 % of the total amount. Furthermore, if the insured refuses the recommended treatment despite the Institution's written notification, the health benefits and temporary incapacity allowance or the permanent disability income will not be paid until the date the insured applies to the Institution for the treatment.

### ***20.1.2 Temporary Incapacity Allowance***

After the occupational accident, the Institution pays the insured a temporary incapacity allowance until the date they restart working, which is half the amount of their daily incomes during inpatient treatment and two-thirds of the incomes during outpatient treatment.

### ***20.1.3 Permanent Disability Income***

By the end of a temporary incapacity period following an occupational accident, the loss in the wage earning capacity of the insured is assessed by the examination of the reports on the resulting disorders of the insured, which are filed by the Institute or the health board of the health facility referred, according to the Social Insurances

Health Operations Regulation by the Disability and Occupational Accidents Evaluation Department of SSI General Directorate of Health Affairs Treatment Services and Disability Department [6, 7, 9].

If the loss is 10 % or more, the insured is paid permanent disability income. If the insured needs constant care of another party, the income is increased by 50 % [10, 11].

This is essentially a lifelong income for the insured. But in cases where the wage earning capacity from the given profession is confirmed to have decreased by less than 25 %, and when this condition is not expected to change within 3 years, the income can be paid as capital if the insured demands.

After beginning to receive permanent disability income, the insured may request at any time for an amendment to the income on the grounds that the degree of incapacity to work has raised or that constant care of another party is needed. The Institution may also request an affirmation checkup at any time. In this case, the insured is reexamined in the Institution's healthcare facilities, and if the reports of the medical board reveal any change in the condition of the insured, the income increases, decreases, or stops, starting from the beginning of the month following the report [9–11].

Among the insureds that have lost 60 % or more of their wage earning capacity from a profession due to occupational accidents, those who meet the requirements may additionally receive a disability pension in case they request to be retired due to disability. The Institution pays the insureds monthly the total amount of the higher income and 50 % of the lower income [9–11].

The notion of disability is not sufficiently included or is evaluated differently in Turkish social security systems. This leads to a number of drawbacks and injustices in working life. While SSI evaluates the degree of disability using various parameters (age, line of business, degree of dysfunction severity, etc.), some health institutions consider determining the degree of dysfunction severity (degree of disability) alone to be sufficient. Because of that, the degrees of disability are calculated differently for the same kind of injuries or disabilities of individuals working in the same line of work, having the same age and gender. These differences lead to inequalities in the compensation amounts the individuals receive and cause some individuals to lose their rights [12].

All parties expect an accident and risk-free working life. Another expectation is to suffer less after an accident. The great care shown to the victim immediately after the accident decreases with time. Solving the problems of the victim and to compensate for the rights lost is one of the basic human rights. The cases sent to the Council of Forensic Medicine (CFM), which is the competent authority for final decisions concerning occupational accidents, constitute 1 % of the annual number of occupational accidents. The Council of Forensic Medicine's 3rd Board of Specialty is recognized as the final authority of appeal for cases concerning occupational accidents. Occupational accidents are discussed primarily in the SSI General Directorate of Health Affairs. In the event of dispute, the case goes to Social Security Supreme Board of Health and finally to CFM 3rd Board of Specialty and General Assembly of Forensic Medicine [13].

The number of disability degree arrangement scales is quite high in Turkey.

- The Social Insurances Health Operations Regulation No: 85/9529 dated July the 3rd 1985 and regulations on determination of disability made in the year 2011 are used for occupational accidents.
- “The Regulation on the Method of Determining the Disability Degree of the Employee Who Will Benefit From Disability Discount and Its Application,” which is updated in 1998–2006–2008, is used for issues such as tax reduction and determination of degree of disability.
- “Regulations on the Types and Extends of the Disabled on Active Duty,” which was issued for public servants in 1953, is still in effect. Most recently “the Regulation on the Determination Process of Disability,” which is a part of the OHS Act, was enacted in 2013. Apart from these, a payment is made from a security account opened for traffic accidents to individuals who have become disabled based on the degree of disability. The scale explained above in number 2 is also used for these payments.

In a study conducted in 2002, 1st and 3rd scales, which were used for the evaluation of 164 cases that came to CFM due to work-related accidents, were compared. When the cases were evaluated using both of the disability parameters, the number of employees with complete disability was 17 according to the 1st scale, whereas according to the 3rd scale the number dropped to 15. If the disability calculation of these employees were made using the 3rd scale instead of the 1st scale, there would have been a great loss of rights. When those scales are compared in terms of distribution range and the average, it is observed that the 3rd scale damnifies people. Calculations made using the 2nd scale show similar problems. Of the 164 patients included in this study, 95.1 % were male and 4.9 % were female employees [11]. In a study conducted by Güven, 97 % of the 36 cases with disabilities resulting from occupational accidents were male and 3 % were female. Aşıcıoğlu’s and Forst’s studies revealed that the 86 % of the cases who had occupational accidents were male and 14 % were female [14–16]. This is because women are less active in economic life in Turkey and all over the world. Additionally, they benefit less from the social security system. In other words, men occupy a larger part within the insured working population [17–21].

When the cases are examined according to the distribution of age groups at the time of the accident, it is observed that occupational accidents are more frequent in the 30–39 age group than in other age groups [21]. The fact that the accident rate drops in the 50 years and over age group can be explained both by the decrease in the working rate and the decrease in the accident rate due to higher level of experience [11]. In Umut’s study, 27.4 % of the occupational accidents happened in the 30–39 age group; where as in Ertürk’s study the ratio was 25.27 % for the same age group [22, 23]. Similarly, in a study conducted by Ways, most of the cases that had an accident were in the middle age group [24]. On the other hand, Skov’s study reports that occupational accidents occur at a young age [25]. In Hunting’s study, 45.6 % of the accidents are reported to occur in the 25–34 age group [18]. Suruda found the mean age in occupational accidents to be 29.2 years

[26]. According to SSI statistics in Turkey, the median age in time of accident is 29 years for women and 32 years for men [5]. In Ince's study, the median age for occupational accidents was found to be 31 years for men, 27.5 years for women [11]. The fact that the young populations' high percentage is not reflected in the statistics suggests that these individuals are mostly involved in the unrecorded economy.

The length of trial period is the most important problem in occupational accidents. The cases examined in 2002 have shown trial periods of 24 years at the longest and 2 years at the shortest. This reveals another aspect of damnification. The expression "Justice delayed is justice denied" is unfortunately true, especially for legal cases. One of the reasons for prolonged trial periods is the delay in the correspondence due to missing documents in files sent by the courts to CFM 3rd Board of Specialty. Another reason is the strong tendency to send cases that could be resolved locally to CFM. In the year 2002, 73.2 % ( $n = 120$ ) of cases were sent from Labour courts and 26.8 % ( $n = 44$ ) from Civil Courts. Conflicts concerning occupational accidents and diseases are usually resolved in civil courts due to the insufficient number of labor courts. Being specialized courts, labor courts pay special attention to not having any missing documents in the files whereas the same kind of attention is not paid in civil courts. Compared to civil courts, the cases are resolved more rapidly in labor courts by specialized judges and prosecutors. A prolonged trial process leads to losses in compensations and claims of individuals. Therefore, it is necessary to increase the number and the geographic extent of labor courts, which are currently limited to provinces and large districts [11].

In Turkey, the calculation of disability and degree of disability is the responsibility of the Ministries of Labor, Health and Justice. Giving the responsibility to a single authority and deciding on a single scale for the calculation is of great importance for the solution of the problem. In some state hospitals, the degree of disability is calculated according to undefined criteria, which leads to confusion in courts. That is why the present disability scales should be updated and their shortcomings should be corrected. This update should be the product of a joint study of various institutions and various areas of expertise. It would be appropriate to evaluate all groups of employees according to a single scale. In this regard, a joint disability calculation program should be developed, not on a national level, but internationally. The studies pioneered by Ranavaya beginning in December 2010 in Hatay, Turkey, and continuing with a workshop in the 22nd Congress of the IALM are important. In Turkey, those studies on disability should continue and the use of the directory, which the American Medical Association (AMA) occasionally updates and provides training about, should be encouraged [8]. AMA should be contacted for the training on evaluation of disability in accordance with the directory. The use of the scale prepared by the trained experts in view of the directory should bring a solution to the confusions mentioned above.

Treatment reports should not suffice when calculating the degree of disability; preemployment medical reports should also be investigated in order to assess the suitability for the job. The physician should take into account the physical and



mental condition of the employee candidate when ruling him/her healthy, thus ensuring a suitable employee for the job.

Syndicates also have duties concerning occupational accidents and diseases. Syndicates should show in collective agreements that they recognize the importance of OHS institutions in the field of education and collective agreements. Syndicate representatives should be present at OHS committees and should participate in the planning together with the employer. Employing occupational physicians and occupational safety specialists in establishments with more than 50 workers is obligatory. These physicians and specialists should plan together in order to ensure the proper functioning of OHS committees. An occupational physician should keep in mind that his/her duty in the workplace is to exercise preventive medicine. Increasing the number and the quality of labor courts would reduce the length of trial periods, thus preventing right loss of individuals.

In Turkey, about 600 traffic accidents happen every day, 25 every hour, and unfortunately 5–20 people die and 200 people are injured every day. The number rises especially before and after Ramadan and Feast of Sacrifice holidays. Careful driving safety training must be received; active crash safety and passive safety measures must be taken in the car. The legal procedure to follow in case of an injury resulting from a traffic accident that occurs despite those measures is very clear and under state guaranty, but victimizations still happen due to ignorance of the law and its misapplication.

Degree of disability is calculated by measuring the permanent damage to the patient. This measurement is done according to certain procedures. After the accident, as the injured (victim/patient) will not be capable of doing any work he/she is considered 100 % disabled during medical recovery until the treatment process ends and he/she returns to his/her daily life. An examination is made at the end of all medical procedures. It is checked if the damage is permanent or not. If there is no permanent damage, a temporary degree of disability may be calculated. Patients are called to reexamination. The time of this reexamination is determined by physicians committee. If the examination reveals a permanent disability, it must be noted that its degree will not change for life. If the examination that determines the degree and the scale that is used for the calculations are standardized and internationally accepted, then the problem will be solved to a great extent.

## **20.2 Identification and Description of the Medicolegal Expert's Qualifications in the Ascertainment of Personal Injuries and Damage**

During the rehabilitation period following the initial and emergency treatments, the patient is considered 100 % disabled. This period is called medical recovery period. The duration is different for each injury. For example, while the recovery period of a fibula fracture is 3 weeks, it is 18 months for a comminuted fracture of the femur.

During this period, the patient does not work and his/her salary is paid. He/she will undergo the necessary treatment. When the court asks about the disability of the person during the judicial process following the accident, the medical recovery period is particularly specified in the results section. In Turkey, disability (permanent disability) is not calculated according to a single standardized scale that is accepted by all experts. The disability can be calculated according to various legislations mentioned above. However, the Law Courts and the Supreme Court in Turkey accept the results of the Council of Forensic Medicine relying on its reports. The disability calculation method used by the institution is described below.

### ***20.2.1 Points to be Considered when Calculating the Ratio of Disability***

According to the mandatory provisions of Law No. 506, in occupational accidents the degree of disability is primarily determined by the General Directorate of Social Security Institution. In case of appeal, the Social Security Supreme Board of Health is responsible for evaluating the appeal. If there is an objection to this result, the Councils of Medical Faculties or the Council of Forensic Medicine are asked for their opinions (in accordance with the decisions no: 1989/6431 E and no: 1989/6178 K dated 09/18/1989 of the 10th Civil Chamber of the Supreme Court).

When determining the degree of disability resulting from occupational accidents, the application of the aforementioned Health Operations Regulations is obligatory. The Supreme Court states in a number of its decisions that lawsuits concerning occupational accidents are filed in accordance with the relevant articles of the Social Security Act No. 506 and that for this reason when evaluating the degree of disability it is a legal obligation to comply with the regulations issued according to article no. 135 of the mentioned act. The degree of disability is evaluated according to the regulations in effect on the date of the occupational accident. The same regulations are applied for the evaluation of disability degree resulting from incidents other than occupational accidents (such as traffic accidents and gunshot wounding). Also for those cases, it is compulsory to apply the regulations in effect on the date of the incident.

### ***20.2.2 Calculating the Degree of Disability***

The standard disability formula used for the calculation of disability degree, the criteria that make up this formula and their brief descriptions are given below.

### **20.2.2.1 Profession, Group Number**

The lines of business, the profession groups within those lines and the numbers given to the related profession groups are cited in scale B in the Health Operations Regulation. However, in order to be used in the calculations, this profession group number must be reported to the Council of Forensic Medicine by the court. If the person declares his/her profession and the profession is present in scale B, its group number can be used for the evaluation of disability degree. Profession group numbers are between 1 and 52.

### **20.2.2.2 Defect List Number**

Scale A in the Health Operations Regulation must be referred. In scale A the defects are arranged in lists. For example List I shows defects of the head, List X shows the defects of the spine etc.

### **20.2.2.3 Defect Serial Number**

Each defect present in scale A of the Health Operations Regulation has a serial number.

### **20.2.2.4 Defect Severity Level**

Each defect present in scale A of the Health Operations Regulation has a defect severity level.

### **20.2.2.5 Permanent Inability to Work Symbol**

There is a symbol used for each disability degree evaluation. To determine the symbol, the profession group number and the defect serial number are crossed in scale C of the Health operations Regulation.

## **20.3 Ascertainment Methodology**

This section has two stages. One of them is the calculation of the loss of capability for physical work made by forensic medicine specialists and the other is the actuarial calculations that ensure the calculation and the compensation of the financial losses. The disability calculations are made only by forensic medicine

specialists, whereas the actuarial calculations are made by a wide range of professional groups such as forensic medicine specialists or lawyers. Those two calculations are shown below through examples.

Wage earning capacity = roughly as a main heading for calculating disability  
(Which items will be included in this calculation?)

- The percentage of function loss of the damaged area
- The profession of the employee
- The age of the employee can be used to correct the degree

The present-day disability calculating method required by the Courts of Law in Turkey is explained below.

### **20.3.1 Standard Disability Formula**

Profession Group No-Defect List-Defect No-Defect Severity Level-Permanent Inability to Work Symbol-Degree for 38–39 years Gr. 1 II 3 25 A 29, From Scale C: Profession group number  $\times$  Defect serial number = Permanent inability to work symbol; From Scale D: Defect Severity Level  $\times$  Permanent inability to work symbol = Degree of disability for 38–39 years of age; From scale E: Degree of disability for 38–39 years of age  $\times$  the individual's age on day of incident = disability degree for the age on day of accident.

The disability degree of the individual for his/her age on day of accident is calculated by crossing the degree of disability cited for 38–39 years of age in scale E of the Health Operations Regulation with the age of the individual.

The first age group in the Health Operations Regulation is “21 years of age and younger than 22”; the age groups that follow are “22, 23–24, 25 ..... 62, 63–64, and older,” respectively. As can be seen from the groupings, there is no variance of disability degree for the ages between 0 and 21 (including 21 years) as well as for ages over 64.

#### **20.3.1.1 First Example**

The profession group number of an individual who is 35 years old on day of incident is reported by the court to be 41 (HGV driver). Causal link is established between the incident and the defect. If the examination reveals 10/10 vision in the right eye and 0 in the left eye, what is the degree of disability?

Step 1. To put in place the profession group number: reported by the court as 41.

Step 2. To find the defect list number: it is found in scale A, the number of the eye defects list is H.

Step 3. To find the defect serial number: it is found in scale A, the defect serial number of 0 left eye vision is 1.

Step 4. To find the permanent inability to work symbol: it is found in scale C as described below.

From scale C

Profession group number  $\times$  Defect serial number = Permanent inability to work symbol.

$$41 \times 1 = D$$

Step 5. To determine the degree of disability for 38–39 years of age: it is found in scale D as described below.

From scale D

Defect severity level  $\times$  Permanent inability to work symbol = Degree of disability for age 38–39.

$$35 \times D = 46 \%$$

Step 6. To determine the degree of disability for the age on date of incident: it is found in scale E as described below.

From scale E

Degree of disability for 38–39 years of age 46 %  $\times$  The individual's age on date of incident 35 = Degree of disability for the age on date of incident. 37.2 %.

If the defect does not yet turn into a sequel, although considerable time has passed after the incident and determination of disability degree is requested, the disability is given with a note of “for the current situation.” When determining the disability of upper extremities, the disability of the non-preferred side is reduced by 1/5 (the disability of the left hand if the person is right-handed, the disability of the right hand if the person is left-handed is reduced). For this case, no difference exists between right and left eye.

A recovery period is stated for every case with a degree of disability lower than 10 % and for cases with higher degrees if the court requests. This is because SSI does not pay permanent disability income to persons with disabilities lower than 10 %. The degree of disability is the permanent disability degree. During the recovery period, the patient is considered 100 % disabled.

The name of the court that has sent the file, the date and number of the request letter, the identity card information of the patient, and the question asked by the court are written at the beginning of the report. In the first section, all medical reports of the patient should be recorded in order, with the names of the hospitals, dates, and serial numbers of the reports. In the second section, the patient's medical information should be summarized, the sequela should be clearly stated, and then the result should be written.

### 20.3.1.2 Second Example

The reports by State Hospital A, dated 07.06.1997 and numbered 1200, State Hospital A, dated 11.05.1997 and numbered 2123, State Hospital B, dated 12.05.1998 and numbered 658, State Hospital B, dated 02.03.1999 and numbered 100, and the medical examination report of the Council of Forensic Medicine dated 09.04.1999 are reviewed. A 1/3 upper end femur amputation is detected.

Report results: A.U., born in 1950, is reported to have acquired a defect as a result of the traffic accident that occurred on 07/06/1997. The defect is analyzed utilizing the provisions of The Social Insurances Health Operations Regulation No. 85/9529 accepting that (the appropriate one from the statements cited below should be written here), 1. Since the profession group number is not reported, it is presumed to be group 1 (one), 2. Since the profession is reported to be HGV driver, the profession group number is taken as 41 (forty-one), 3. The profession group number is 4 (four) (if the profession group number has been used in a previous disability degree calculation made by SSI), 4. If the person is under 18 years of age and the profession and rank he/she will exercise (will get, will come up to, will achieve) later on life is not reported, the profession group number is 1 (one)

Gr1 XII (9 Aa - 56) A 65 %

It is the Council's opinion that the person should be considered to have lost 69.0 % (sixty-nine percent) of his wage earning capacity for his age. If severity level of the defect detected during the Council's examination does not correspond to the regulation, for example, although the defect severity level is 30 for fibular paralysis in the regulation, if the defect is detected to be on a paresis level and it is decided that the level of severity for this defect is 10, the fibular paralysis formula is still used, but the disability calculated with the formula is reduced by 1/3, with a "DISCRETION" remark and then this degree is adjusted for the person's age.

### 20.3.1.3 Third Example

Gr1XII (38B-3 0) A  $34 \% \times 1/3 = 11.3 \%$  (Discretion). The opinion is that the person has lost 12.3 % of wage earning capacity for his age (accepting that he was 50 years old on the date of the incident).

The disability degree for multiple defects and the percentage of wage earning capacity loss in case of multiple defects or in case of an addition of a new defect to an already existing defect are calculated according to Balthazard formula. First, the percentage of wage earning capacity loss is calculated separately for each defect. Those percentages are put in a descending order. The highest percentage is subtracted from 100 %, which shows the total work capacity. The result of the subtraction is multiplied by the second disability degree on the list, and the result of this multiplication is added to the largest disability degree. Thus, the total disability degrees of the 1st and 2nd defects are calculated. If the person has more than two defects, the sum of the 1st and 2nd defects, which is calculated with the Balthazard formula, is subtracted from 100 % and the remainder is multiplied with the 3rd defect. The result of the multiplication is added to the sum of the 1st and 2nd defects.

Step 1. The percentage of wage earning capacity loss is calculated separately for each defect.

Gr1 XII (9C a ----- 45) A 49 % (distal femur amputation)

Gr1 II (3 ----- 2 5) A 29 % (loss of vision)

Gr1 XII (27A a ----- 15) A 19 % (ankylosis or arthrodesis of the ankle)

Step 2. The highest percentage is subtracted from 100 %, which shows the total work capacity.

$$100 - 49 = 51$$

Step 3. The result of the subtraction is multiplied by the second disability degree on the list, and the result of this multiplication is added to the largest disability degree.

$$0.51 \times 0.29 = 0.1479$$

$$0.49 + 0.1479 = 0.6379$$

If the person has more than two defects,

Step 4. The sum of the 1st and 2nd defects is subtracted from 100 %.

$$1.00 - 0.6379 = 0.3621$$

Step 5. The remainder is multiplied with the 3rd defect. The result of the multiplication is added to the sum of the 1st and 2nd defects.

$$0.3621 \times 0.19 = 0.068$$

$$0.6379 + 0.068 = 0.7060 \div 100 = 70.60 \%$$

The opinion is that the loss of wage earning capacity according to the Balthazard formula is 70.60 % (value for the 38–39 years of age) and is 70.0 % (seventy point zero) for the patient's age. The sum of more than one defect on an extremity cannot exceed the disability degree in case of its amputation. In this case, it is considered like an extremity amputation.

In certain circumstances, the defects detected during the person's examination can be considered equivalent to amputation. For those cases, calculations are made as amputation. The percentage of wage earning capacity loss for multiple nerve paralysis on upper extremities cannot exceed the percentage of wage earning capacity loss for amputation.

The state of losing at least 2/3 of work capability: the loss of at least 2/3 of the work capability requires disability retirement. This is explained in Article 10 of the Health Operations Regulation. The diseases are cited under the lists of head defects, eye defects, abdominal diseases, and defects. The insured who sustains damage from either one of those diseases is considered to have lost 2/3 of work capability if he/she certifies the condition with a Health Committee Report. In that case, the insured is retired due to disability.

Finally, the conditions in which the patient is considered to be in need of constant care of another party are:

- Quadriplegia, paraplegia, diplegia, flaccid hemiplegia that prevents the person to continue with his/her daily life without help, and other disorders and diseases of the nervous system associated with sphincter dysfunction
- Mental disorders that require occasional stays in a mental hospital and that are untreatable
- 100 % loss of vision in both eyes
- Loss of both hands
- Loss of an arm below the shoulder, loss of a leg below the hip
- Loss of both legs below or above the knee

- Patients suffering from severe nutritional disorders and cachexia resulting from an untreatable disease need the care of another party in order to continue with their lives and for their personal care. It is requested whether those conditions exist

### **20.3.2 Actuarial Calculations**

In every situation, where an individual is harmed as a result of another person's fault or negligence, the faulty party causing the harm has an obligation to financially compensate the patient or his/her next of kin. The financial damage is calculated and the sum is given to the beneficiaries in forms such as death indemnity, compensation for destitute of support, etc. In the Turkish legal system the methods used for the calculation of compensation for deceased patients are:

- Amounting method,
- Full increase full discount method
- Capital in advance method
- Arithmetic average method

There are three periods for the calculation of compensation for destitute of support for the next of kin in cases where the patient is deceased;

- The period of occurred damage or income.
- The period of future or unknown damage.
- The passive term damage period.

When calculating the compensation;

- The most important data is the patient's pre-accident income (salary). This income should be proven with legal documents. If he/she did not have an occupation or the occupation is not specified, it is calculated according to the state's official minimum wage.
- Another important data is the age of the accident victim. The calculation for adults is not complicated. However, for children the age of the parents is also a factor and is included in the calculations.
- Fault degree of the person or persons causing the damage is another data. The judge takes this data into consideration when distributing the compensations according to the Law of Obligations.
- Patient's documented healthcare and treatment expenses are included in the calculation. Today every individual in Turkey is under the protection of the social security system. So any extra cost is included in the calculations.
- A judge's right of discretion on the subject of damage is not standardized; it is variable.
- A payment can be asked for the pain, anguish, and suffering caused by the accident. This is not standardized either.



### 20.3.2.1 Example

Patient L.Y. has a disability of 29.2 % resulting from an accident. The accident scene investigation has revealed that 6/8 of the fault is of the person causing the damage.

- The patient who was 39 years old on the date of calculation would have an active working period until the age of 60. The 21-year period is calculated as the damage period.
- Since the patient’s occupation and income were not presented to the court, the minimum wage is used in the calculation.
- The annual increase of income is calculated as 10 %.
- Period calculation is made beginning from the date of the incident until the date of calculation based on minimum wage,
- As the person causing the damage has 6/8 fault, this ratio will be used for the discount.

Year	Basic pay
1	2673
2	2685
3	2779
4	2900
5	3038
6	3190
7	3355
8	3533
9	3724
10	3930
11	4151
12	4388
13	4643
14	4916
15	5209
16	5523
17	5861
18	6224
19	6614
20	7033
21	7484
Total	93,853

$$93,853 \times 29.2 \% \times 6/8 = 20,553.00 \text{ TL (6800 euros)}$$

The calculation does not include treatment costs as they were not documented and the elements of non-pecuniary damages. Inclusion of all the documents concerning the treatment costs within the file is a legal requirement. On the other hand, non-pecuniary damages are left to the discretion of the judge. In Turkey, it is

obligatory that the amount determined by the judge for non-pecuniary damages cannot cause the enrichment of the victim. This is a self-control mechanism of the court.

So far, we have provided information regarding how permanent damages are evaluated by forensic medicine specialists in Turkey regardless of the cause of trauma. As can be understood from the article, Turkey has no established standard on the subject and an issue that can be resolved very easily has become extremely complicated. An increase or decrease in the degree of permanent damage over the years is medically possible but the likelihood is very low. A single scale for the degree of permanent damage has to produce consistent results for every case. What we are aiming at today and the reason for our researches is to put this single scale into use. Therefore, the scale used since 1985 should be replaced by an updated scale that is standardized and internationally accepted. In addition to this, the forensic medicine specialists that will use the new disability scale should receive certification training for the correct application of the scale.

All these operations must be carried out together with the State of Turkish Republic. The first necessity is to put the scale in effect as a legal obligation with the state's support. Secondly, the ones that can calculate disability are forensic medicine specialists, approximately 95 % of whom are civil servants, and their training expenses must be covered. For these reasons cooperating with IALM on a project that will enable the integration with Europe will put us on the right track with regard to disability.

As a result, the Social Security Institution that embodies all social security services should create a new regulation, by taking into consideration the opinions of Institutions of expertise on the subject to replace the Social Insurances Health Operations Regulation dated 1985, which is still in use for the degree of disability calculations. Care should be taken not to repeat any shortcomings present in the previous regulation, to avoid arbitrary practices, and to make sure first and follow-up examinations are done in order to determine disability. Increasing the number and the quality of specialized Labor Courts would reduce the length of trial periods, thus preventing individual loss of rights.

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