

## **Coclusions**

The analysis of data collected, some conclusions can be drawn particular importance on physical education and sports, the concept that young people come into faculties:

Poor participation of high school students in physical education lessons (53.1% boys and 75.5% girls even), compulsory school education plan, shows lack of concern for the health of the pupils, skills based movement, and Why not make them an education sports, as befits a civilized youth in a civilized European country.

This aspect is responsible both subjects, but especially parents and teachers specialty should focus on explaining the theoretical efficiency physical education and sport on health and individual's personality;

The tendency of students to practice different sports in teams representing the school, school sports clubs, etc., and further demonstrates their desire to compete in competitions in sport, even if their percentage is not too high (20.1% boys and 7.1% girls). Both issues will be repercussions "for" and "against" in the practice of physical exercise during higher education.

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## **THE STUDY OF ANATOMICAL AND CLINICAL KNEE AFFECTIONS IN THE SPORTS PATHOLOGY**

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### **Abstract**

*The large number of contusions at the knee articulation level resulted because of the sports traumas is a continual process in specialized studies. The sports traumas at the knee articulation level are accompanied by long periods of recoveries and can also leave behind morphological and functional sequelae, with consequences either on the sports activities or on the personal and social life of every individual. However, this type of effects can only happen if they had not been diagnosed at the right time and treated properly.*

**Key-words:** *knee, ligament, sports*

## **1. Introduction**

The type of lesions at the knee level, such as their localization is extremely varied. As localization we can count the following: ligaments, meniscus, patella and femoral conditions. From the point of view of the lesion types we can keep a record of the following: sprains, fractures, ruptures, etc.

The most frequent cause of the rear cruciate ligament rupture is the direct impact at the tibia's previous face level, with the flexed knee. Such a common situation is visible to the athletes who are falling on the knee's previous face situated in hyperflexion, with the top of the leg in plantar flexion. Therefore, the ligament is overstrained, and a powerful enough force can shatter it.

The lateral collateral ligament lesions appear exclusively through a direct concerning on a knee load (a blow to the supportive body part). It is assembling throughout 3 mechanisms: excessive varus, the external rotation of the tibia and/or hyperextension.

The rupture of the patellar tendon appears exclusively to the patients that are under 40 years old, sedentary, males or to the athletes among an overstrain. In the ruptures of the patellar ligament, the entire extension of the knee is lost. Instantly after the rupture, till the occurrence of the hematoma, it is easily possible to massage the faulty tendon. The mechanism through which is produced a rupture to the patellar tendon, is the attempt of avoiding a fall with the knee in semi-flexibility.

In general, the healthy tendons do not break so easily in normal conditions of pressure. In the gear mechanism of the knee extension, the most unstable component is the patella. The rupture of patellar tendon, subordinated to an indirect trauma is a result of a degenerative cronical affection. The spontaneous rupture of the tendon reveals a degenerative pathology.

## **1. Procedures used for the actualization of the study**

The current study is based on the investigation of the knee affections in the sports pathology. We obtained and processed the datas procured from the athletes's files. For this research, the diagnosis has been established with the assistance of the clinical examination and of the methods of imagery investigations. Out of these procedures we list the following: any means which utilize the X rays and other types of discharges: the intelligible radiography and the computerized tomography (CT) and other ways which do not utilize the X rays: the nuclear magnetic resonance (NMR) and the ultrasound.

## **2. The participants of the study**

In the research had been included 400 patients with trauma of the knee articulation, all of them being either practitioners of the team sports ( volleyball, basketball, handball, football ) or individual sports ( athletics, gymnastics ). Each of the patients had been registered at a sports club. For every patient, had been recalled the following datas: gender, the sport, diagnosis and the location of the wound.

## **3. Results**

Out of those 400 patients included in the study, 305 were males and 95 females, which is a male/female ratio of 3,2:1. This proportion is explainable in order to the number of the male players which is as always higher than the one of the female players, that is because the majority of the athletes included in the study were football players, this being a reserved sport for most of the male players.

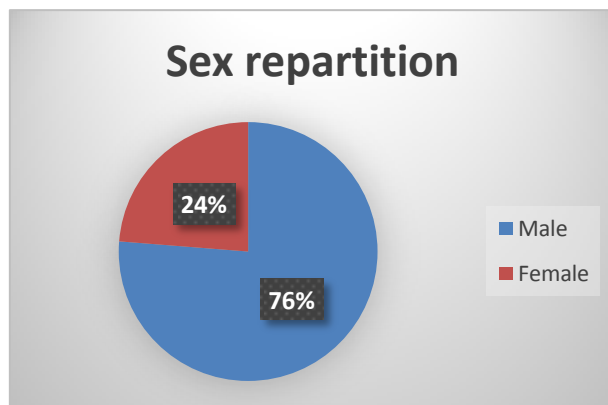


Fig. no. 1 – The gender disposal of the athletes included in the study

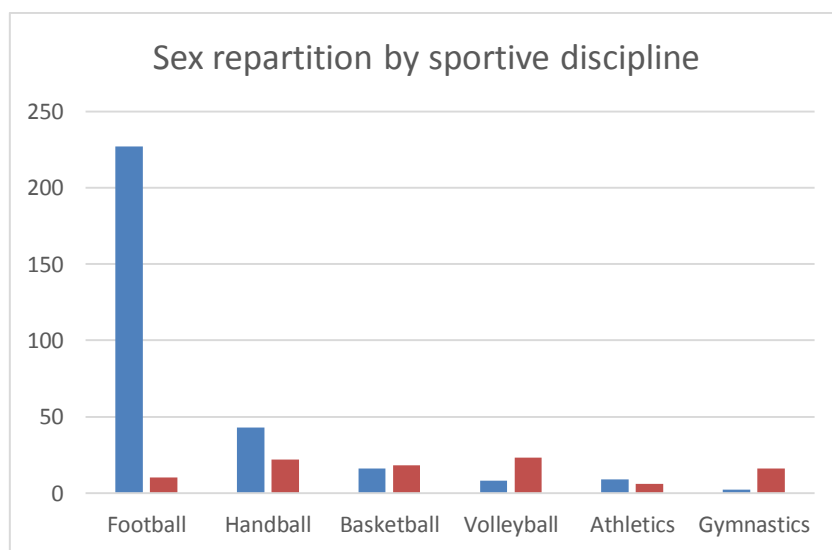


Fig. no. 2 – The gender and sports disposal of the athletes included in the study

Concerning the gender disposal of every sport, the datas show the following:

	Gender male	Gender female
Football	227	10
Handball	43	22
Basketball	16	18
Volleyball	8	23
Gymnastics	2	16
Athletism	9	6

Carrying on with the study we will be representing next the type of lesions based on the gender and sports.

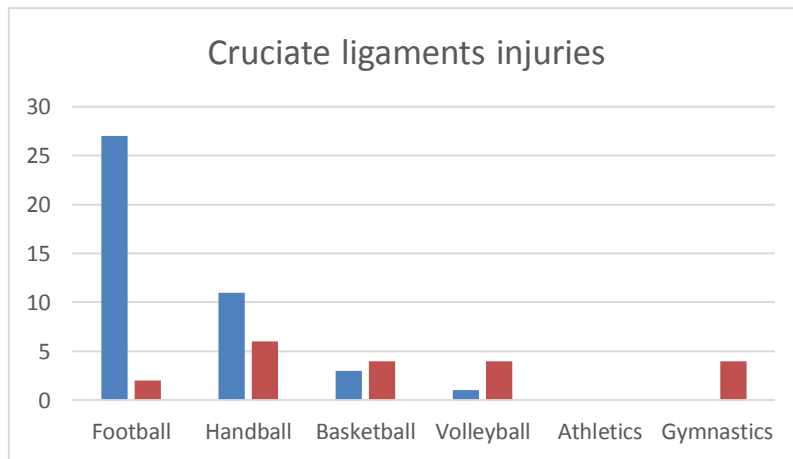


Fig. no. 3 – The cruciate ligaments contusions

Out of fig. no. 3 can be noticed that the highest incidence of lesions at the level of the cruciate ligaments appears to the team sports, while to the individual sports this incidence is pretty low .

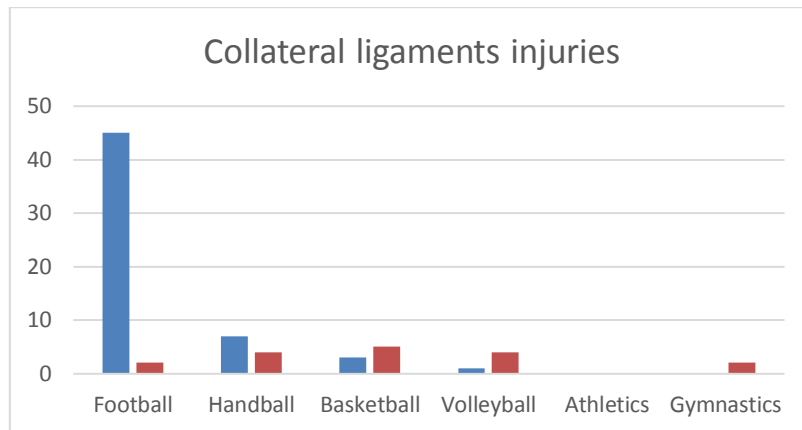


Fig. no. 4 – The collateral ligaments contusions

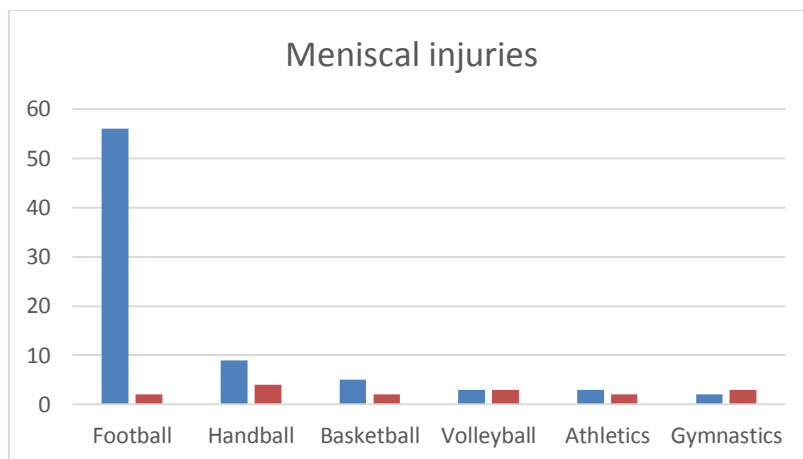


Fig. no. 5 – The meniscus contusions

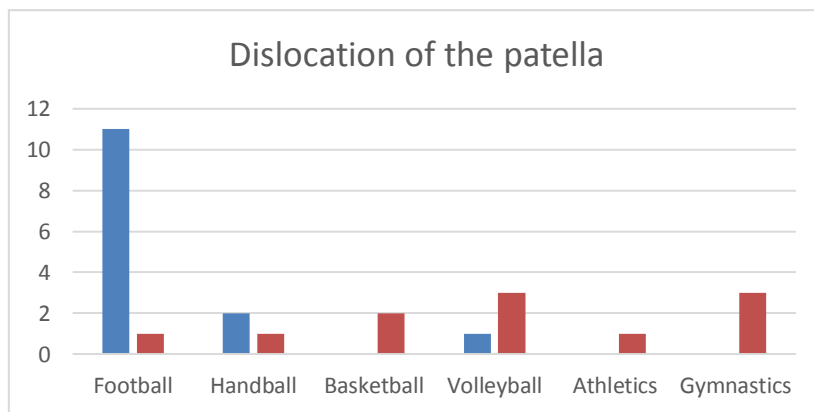


Fig. no. 6 – The sprains of the patella

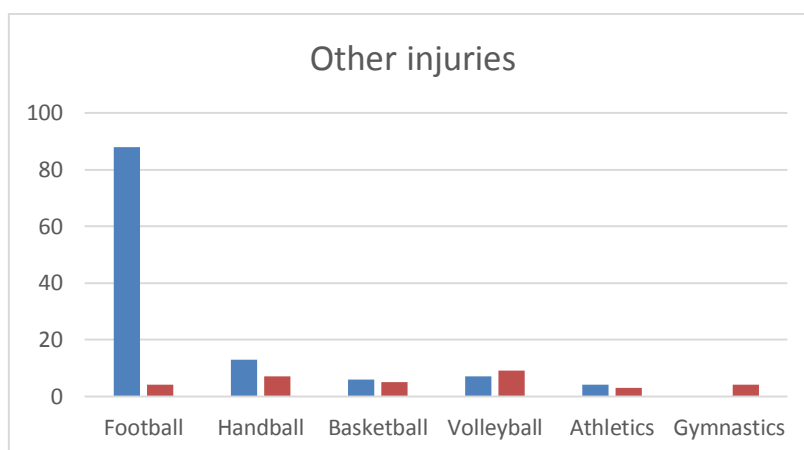


Fig. no. 7 – Other types of contusions (combined ruptures of the femoral condyles and patella, imprecise contusions, patellar ligament contusions, cartilage contusions)

#### 4. Deductions

**Football** – For both of the genders, can be noticed that the higher percentage of lesions at the knee articulation level due to the football practice are the unspecific ones. For males, the secondary rank is occupied by the meniscus lesions, followed by the lesions of the collateral ligaments, with 25% respectively 20%. For females, on the second place as frequency it is a tie between the lesions of the cruciate ligament and the meniscus injuries, each one with a percentage of 20%. Additionally it can be observed that the percentage of the lesions of the cruciate ligament is lower for the male patients, only 12%, so far for the female patients, the lesions of the collateral ligaments are in existence in the 10% of the cases. The lesions of the patellar ligaments are rarely encountered for both of the genders.

**Handball** – It can be remarked that the majority of the lesions in handball are at the level of the cruciate ligaments, not only for males, but also for females, with 30% respectively 27% of the cases. Ranked in the second and third place for males are the meniscus lesions respectively those unspecified, meanwhile for the females the rankings are the other way around. The rarest encountered lesions to the handball players are those of the patellar ligament and of the cartilage.

**Basketball** – Contingent upon the basketball players, the most frequent cases for the male patients are the imprecise lesions and the collateral ligaments equally, each one about 31%, followed by the lesions of the cruciate ligaments, taking place in about 19% of the cases. For the females, the most cases of unspecified lesions and the lesions of collateral ligaments are also at a tie, each one with a percentage of 28%, followed by the lesions of the

cruciate ligaments, around 22%. The lowest percentage for both of the genders were the lesions of the patellar ligaments and the fractures of the patella and the femoral condyle.

**Volleyball** – For males, 38% of the cases presented meniscus lesions, while the other types of lesions are represented in approximately equal proportions, around 12-13%. For females, the majority of the lesions were inexact (35%), followed by the lesions of the cruciate and collateral ligaments.

**Athletism and gymnastics** – Can be perceived that, due to the low number of cases, the types of encountered lesions to the athletism and gymnastics practitioners are not varied, the majority being, for the both genders, imprecise lesions. These are followed by the meniscus lesions and by the patella sprains.

As it can be noticed, if we refer to the football and handball for all 3 types of lesions, the male patients are much more numerous than the females. As to basketball and volleyball, the lesions of the cruciate and collateral ligaments are much more numerous for the females, while for the males, the meniscus lesions continue to be prevalent. If we speak about the individual sports, the lesions of the cruciate ligaments are appearing only to the females, in gymnastics, and the meniscus lesions are in a higher number to women for gymnastics and to men for athletism.

Although in a fewer number, the cartilage lesions and the patellar ligament represent a part of the sports pathology which is no to be neglected, especially because of the severe consequences of them not being diagnosed which might appear upon the functionality of the articulation. Although the incidence of the lesions at the knee articulation level is higher for the females for 3 out of the 6 sports included in the research (basketball, volleyball, gymnastics), the global incidence is significantly higher for the men than for the women. As de Loes (1,2,3) declares, this one may be due to the high number of the male players of football and handball, in contrast with the females, both being sports with a high risk of producing lesions followed in this study. These two sports are responsible for about 75% out of the total cases included in this study.

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