Anti-doping Poland
Annual Report 2009

2009

Komisja do Zwalczania
Dopingu w Sporcie

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Introduction

I am extremely happy that for the first time in the history of the Polish Commission Against Doping in Sport and the Anti-Doping Laboratory a report has been prepared in two language versions. This is particularly significant in view of the fact that the Commission and the Laboratory are starting to play a very important role in the sport community, both in Poland and in the world. I am also happy that I can use this report in my capacity as President of the Polish Commission Against Doping in Sport as a vehicle to share information about the most important events in 2009.

The past year was a year of changes for both the Commission and the Laboratory. We have introduced new regulations, which significantly changed the organizational structure of the Commission. We focused on the re-organization of the institution – new jobs have been created and new employees have been hired. Thanks to the new and logical division of responsibilities the work of the Commission is more effective and more efficient. We started comprehensive work to develop an educational programme aimed at the maximum elimination of unconscious doping in sport. As we have also been asked to prepare proposals for the new parliamentary act on sport, representatives of the Commission have been actively involved in legislative work. Some provisions of the new act provide for sanctions imposed on people who administer prohibited substances to athletes. We are of the opinion that the act alone will not be sufficient to effectively fight doping in sport. It is also necessary to standardize the internally binding anti-doping regulations of Polish sport associations – we focused on this project towards the end of 2009. In addition to legislation and education we also made efforts to improve the planning quality of doping control. In mid 2009 we developed an IT system used to collect information about the places and times of training in selected sports clubs. 2009 was also the year in which we prepared for the implementation of ADAMS, a powerful IT tool used to coordinate doping control planning and collect whereabouts information about athletes. The past year was also very special for the Polish anti-doping laboratory – it made a record number of analyses and was also accredited to conduct doping control analyses, e.g. to test for the presence of EPO in a sample collected from an athlete, to test using the IRMS method and to test blood, including analyses to detect the presence of growth hormones.

2009 was a very intensive year. 2010 will require even more of us – we will have to become even more creative and hard working so that our work translates into what is most important, i.e. fair and conscious sport competition. We are fully aware that this is an enormous challenge for us but it is a challenge achievable more easily today than ever in the past

Jerzy Smorawiński

History

The use of pharmacological substances and other doping substances in sport was banned first in the Physical Culture Act of 3 June 1984. On 16 November 1989 the Foreign Affairs Minister of the Republic of Poland signed the Anti-Doping Convention of the Council of Europe, which was ratified by the President of the Republic of Poland on 3 July 1990. The Convention is a comprehensive international agreement aimed at combating the use of prohibited substances and methods by athletes. The signing and ratification of the Convention means that the Polish authorities have assumed the responsibility for fighting doping in Poland.

In an attempt to create an anti-doping system in Poland, an Anti-Doping Commission was established in 1998, which from 1991 to 1993 operated as the Council for Fighting Doping in Sport. In 1993 the name was changed to the Commission against Doping in Sport.

In December 1995 the Socio-Political Committee of the Council of Ministers adopted the National Programme against Doping in Sport. The Programme is based on the Anti-Doping Convention of the Council of Europe, the Olympic Charter of the International Olympic Committee and Polish legislation and focuses on education, doping controls, and the control of sanctions imposed by Polish sport associations.

The Qualified Sport Act, which repealed the provisions of the physical culture act related to fighting doping in sport, became effective in 2005. Consequently, the organizational structure of the Commission against Doping in Sport was changed. The establishment of the UNESCO International Convention against Doping in Sport, which was ratified in 2007, was the milestone in the world anti-doping programme. Under the Convention, the Prohibited List International Standard and the International Standard for Therapeutic Use Exemptions, which are the integral part of the World Anti-Doping Code, have become binding law.

Literature :

R. Grucza, A. Pokrywka, „Doping zabija sport" [Doping Kills Sport], Chapter: „Historia dopingu" [History of doping], Warszawa 2007.

Seat of Commission Against Doping in Sport

Organizational structure

The Polish Commission Against Doping in Sport is an organization responsible for the development and implementation of the anti-doping programme in Poland. The Commission is a state institution, supervised and financed by the Ministry of Sport and Tourism.
The bodies of the Commission Against Doping in Sport include Commission Plenum, Commission Presidium, Commission Offices, Doping Planning and Sample Analysis Review Team and TUE Committee.

Commission Plenum
Commission Plenum sets the directions of the Polish anti-doping policy within the framework of the qualified sport act. It is a body composed of eminent members appointed by the minister responsible for sport. The work of the Commission Plenum is headed by the Commission President, who is elected by an absolute majority of votes in the presence of at least 50 percent of all members. The Commission Plenum meets at least 4 times a year. Commission members include persons who represent different professions in the fields of sport, biology, law and medicine.

Commission Presidium
The Commission Presidium meets in-between sessions of the Commission Plenum. Its responsibilities are identical to those of the Commission Plenum, except for drafting legal regulations and the Commission's financial plan.

Commission Office
The Commission is composed of the Secretariat, Test Management Unit and Chief Accountant. The Office is an executive and administrative body and its responsibilities are defined in the regulations and the qualified sport act. The work of the Office is headed by the Commission Office Director.

Meeting of Commission Plenum

Secretariat
The Secretariat administers the work of the Commission and its other organizational units.

Test Management Unit
It is the main organizational unit responsible for doping tests, collection of whereabouts information, coordination of doping test teams, collection and archiving of test results and analysis of test results. The work of the Unit is headed by the Testing Manager.

Chief Accountant
Responsible for the Commission's finances and preparation of draft financial plans.

Doping Test Planning and Sample Result Review Unit
The main responsibilities of the Unit include: approval of short term doping test plans, analysis of completed doping test documentation and test result review. This Unit meets at least once every two weeks and is composed of 3 persons.

Therapeutic Use Exemption Committee
The Therapeutic Use Exemption Committee is a team of people responsible for reviewing applications for therapeutic use exemptions and declarations of use. The Committee is composed of highly qualified specialists in pharmacology and medicine.

Commission Board

President

Prof. dr hab. Jerzy Smorawiński

Consultant in sports medicine, vice-chancellor of the University School of Physical Education (AWF) in Poznań, sports activist, senator, president of the Polish Commission Against Doping in Sport between 1993-2005, re-elected in 2009. He has been advisor to the Minister of Sport and Tourism since 2008. He also represented Poland in the Council of Europe's Monitoring Group at the Anti-Doping Convention.

Professor Smorawiński graduated from the Faculty of Medicine, University School of Medical Sciences in 1965. From 1971-1975 he completed basic and advanced training in internal diseases and advanced training in sports medicine. He also completed internships in Glasgow and Cologne. In 1992 he was appointed associate professor of the AWF in Poznań and in 2001 he was awarded a professorial title in medical sciences. From 1996-2002 Professor Smorawiński was vice-chancellor of the University School of Physical Education in Poznań and at the same time he was chairman of the Poznań College of Rectors.

Professor Smorawiński was the physician of the Polish Olympic and national field hockey teams, board member, deputy president and president of the Polish Field Hockey Association. He was also board member of the Polish Olympic Committee, chairman of the Board of Physical Culture with the President of the Republic of Poland. He is a member of the Scientific Board of the Institute of Sport, member of editorial boards of the Biology of Sport and Medicina Sportiva. He also served as president of the Polish Society for Sports Medicine and has been Poland's consultant on sports medicine.

Deputy President

Dr Ryszard Wysoczański

Since 1964 he has been an academic teacher (University School of Physical Education and College of Tourism and Recreation), president of the AZS-AWF Warsaw sports club, director of the department of education and science, department of personnel and training, and department of organization of physical culture at the ministry of physical culture, tourism and sport, general director and deputy president of the Polish Olympic Travel Bureau Sp. z o.o., general directors and secretary of the Polish Field and Track Association. From 1988 - 1991 he was president of the Polish Commission Against Doping in Sport. From 1994-1996 Dr Wysoczański was a member of the Interministerial Group for the Coordination and Control of Intoxicating and Psychotropic Substances. He also served many institutions associated with the sports movement. He has authored many publications on doping in sport, e.g. the ministerial anti-doping programme adopted by the Council of Ministers in 1993. From 1991-1996 he took part in sessions of the Sports Council at the Council of Europe in Strasbourg.

Member

Prof. Wojciech Cichy

Head of the Department of Paediatrics and Paediatric Gastroenterology and Metabolic Diseases at the Poznań University of Medical Sciences. Since 1992 he has also been representative of the vice-chancellor of the Poznań University of Medical Science for cooperation with the Martin Luther University in Halle (Germany).

Prof. Cichy studied medicine at the Faculty of Medicine, University School of Medical Sciences in Poznań From 1959-1965 (diploma cum laude). Since 1970 he has worked at the University School of Medical Sciences in Poznań, where he was first an assistant and today is a professor. He is an expert in paediatrics, sports medicine and gastroenterology. He is the author of over 300 publications in paediatrics, gastroenterology, child nutrition, enterohormones and sports medicine. He is also the author of Poland's first monograph of medical control of physical education and sport for children and adolescents and co-author of many textbooks on paediatrics and nutrition of children and adolescents and sports medicine for students, physicians and nurses.

Member

Dr Wojciech Gawroński

Physician, specialist in sports medicine, orthopaedic surgeon and traumatologist, specialist in medical rehabilitation, a great athlete – five times represented Poland at the World Championships in whitewater slalom, winner of 4 medals, Sports Champion, certified kayaking coach, academic teacher, co-founder and deputy editor-in-chief of Medicina Sportiva, editor-in-chief of Medicina Sportiva Practica, head of the medial mission at the Paralympics Games in Beijing 2008.

Member

Prof. dr hab. Anna Jegier

Presently president of the Polish Society of Sports Medicine, head of the Department of Sports Medicine at the Medical University of Łódź. Professor Jegier is a physician, academic teacher, specialist in internal diseases and sports medicine. She is a regional consultant on sports medicine in Łódź and head of an advanced training programme in sports medicine. From 2005-2009 she was a member of the Polish Commission Against Doping in Sport. Since 2001 she has been member of the senate of the Medical University in Łódź. From 2002-2003 she was deputy dean and from 2003-2008 dean of the Faculty of Health Sciences at the Medical University in Łódź. Since 2008 she has been deputy rector for teaching and education at the Medical University in Łódź.

Since 2005 Professor Jegier has been president of the Polish Society of Sports Medicine (PTMS). From 1993-2005 she was PTMS board member, secretary, and deputy president for science (since 2002). From 1999-2004 she was chair of the Łódź Chapter of PTMS.

Member

Dr Paweł Kaliszewski

A graduate of the Faculty of Pharmacy, Medical Academy of Warsaw (major: clinical chemistry). In 2002 Dr Kaliszewski defended his master's thesis "Search for suppression mechanism of mutation in the RSP5 gene encoding ubiquitin ligase by the PIS1 gene encoding phosphatidylinositol synthase in yeast Saccharomyces cerevisiae". In 2008 he defended his doctoral dissertation "Involvement of Rsp5 ubiquitin ligase in regulation of lipid biosynthesis in yeast Saccharomyces cerevisiae" at the Department of Genetics, Institute of Biochemistry and Biophysics, Polish Academy of Sciences.
Since 2007 dr Kaliszewski has worked at the Department of Anti-Doping Research, Institute of Sport, first as assistant and since 2008 as assistant professor.
He is the co-author of the method used to detect recombined growth hormone and erythropoietin and methods used to determine chorionic gonadotrophin and luteinizing hormone at the Department of Anti-Doping Research, which were accredited by the Polish Accreditation Centre as compliant with ISO 17025.

Member

Krzysztof Kola, lawyer

Graduated from the Faculty of Law and Administration, Adam Mickiewicz University in Poznań in 1976. In 1979 Krzysztof Kola completed a judge apprenticeship and was added to the register of legal advisers in 1980. Since 1992 he has had his own law office. Krzyszof Kola specializes in civil, family and guardianship law and in commercial and business law. For many years he has been very active in the government of legal advisers. In 1998 he was appointed member of the District Board of the Chamber of Legal Advisors in Poznań, of which he became dean for apprenticeships in 2002. Since 2006 he has been member of the Polish Commission Against Doping in Sport. In 2007 Krzysztof Kola was appointed arbiter of the Arbitration Tribunal for Sport with the Polish Olympic Committee.

Member

Dr Michał Sobolewski

Presently employed at the Ministry of Health as director of public health. He is also advisor to the minister of health. Graduated from the Medical Academy of Pomerania in 1968 and is an expert on labour medicine and social medicine. From 1972-1984 he held different positions in the health care system, was head of an outpatient's clinic, head of the health department at the county office, and director of a health care centre.

Member

Krzysztof Urbaniak, lawyer

A graduate of the Faculty of Law and Administration, Adam Mickiewicz University in Poznań, and the Faculty of Journalism and Political Sciences, Warsaw University. Secretary of the Polish Commission Against Doping in Sport from 2006-2010. A legal adviser (District Chamber of Legal Advisers in Poznań). Specialist in constitutional, administrative and sport law. Legal advisor on local government reform to the Minister of Internal Affairs and Administration (1998-1999) and legal advisor to the Minister of Sport (2005-2007). He is the author of over twenty publications on constitutional, administrative and sport law. Expert of the Polish Parliament and the Chancellery of the Prime Minister. Received a doctorate from the Institute of Political Sciences, Warsaw University (comparative constitutional law).

Member

Prof. Andrzej Wach

An academic teacher at the Institute of Civil Law, Faculty of Law and Administration, Warsaw University. Teaches classes on civil procedure, sport law and public orders. Professor Wach is presently head of the Post of Diploma Studies in Arbitration Proceedings at the Faculty of Law, Warsaw University. He is also director of the Legal Department of the Polish Football Association.

Prof. Wach studied law at the Faculty of Law and Administration, Warsaw University, from 1973-1977 (diploma cum laude). He passed examinations to become a judge and legal counsel. Since 1978 he has worked at the Faculty of Law and Administration, Warsaw University, where he was an assistant and ultimately a professor. In a prestigious competition of the "Państwo i Prawo" monthly for the best doctoral and post-doctoral dissertations he was awarded two prizes for each of his two dissertations. He published over 100 publications on civil procedure, family law, sport law and public orders. He is the arbiter of the Court of Arbitration for Sport, at the International Olympic Committee, in Lausanne. He is also actively involved in the Union of European Football Associations (UEFA). He also the arbiter of the Arbitration Court, Polish Chamber of Commerce, and the Football Arbitration Court of the Polish Football Association.

Member

Dr Andrzej Ziemba

Since 2006 Dr Ziemba has been head of the Department of Applied Physiology, Institute of Experimental Medicine at the Polish Academy of Science. Since 1973 he has worked at the Department of Applied Physiology, Institute of Experimental Medicine at the Polish Academy of Science where he was first an assistant and later an associate professor.

In 1973 Dr Ziemba completed his studies at the Faculty of Biology, Warsaw University (major: physiology). In 2006 he was awarded the title of associate professor of medical sciences. He has published 55 articles in scholarly periodicals, most of them international, read over 50 papers at national and international conferences, authored five chapters in books and textbooks, and authored 10 popular articles on science.

Since 1997 Dr Ziemba has been member of the Scientific Board of the Institute of Experimental and Clinical Medicine at the Polish Academy of Science in Warsaw. He is a member of the Organizing Committee of the 20th Convention of the Polish Physiological Association in Warsaw. He has also been a member of scientific committees of Medicina Sportiva international symposia in 2000, 2002, 2004 and 2008.

Member

Paweł Zygmunt

Polish speed skater, Olympic athlete, many times a speed skating champion. He took part in the Olympic Games in Lillehammer (1994), Nagano (1998), Salt Lake City (2002) and Turin (2006). 40 times speed skating champion at distances of 1,000 m, 1,500 m, 3,000 m, 5,000 m, and 10, 000 m and in allround speed skating championships and a holder of Poland's records at 3000 m, 5000 m, 10 000 m and allround speed skating. Paweł Zygmunt won a silver medal at the European Championships in Erfurt in 2002 and a bronze medal at the World Championships in 2002 and European Championships in 2003. In 2006 he retired from sport. He is presently member of the Technical Committee of the International Skating Union and actively involved in the work of the Polish Olympic Committee.

Employees

We all have different backgrounds, are of different age, represent different professions and have diverse passions. This diversity helped build an experienced and dynamic team, which is always open to new ideas. We are determined to make our work as beneficial for others as possible. We think that such an institution as the Commission Against Doping in Sport can function effectively only if and when it develops as an institution and if and when its staff has a clearly defined career development plan. Development makes our work more effective and enhances our image. We are always open to new ideas and are ready to listen to the opinions of others. We make every endeavour to help athletes keep clean and to participate fairly in competitions where those who lose are sure that the winner's victory was preceded by fair and hard training. Most importantly, we are not alone in this endeavour – we are often assisted by people involved in sport and by mere observers. Do not hesitate to contact us in case you have any questions.

Director, Commission Office

Michał Rynkowski

Graduate of the Faculty of Law and Administration, Warsaw University, responsible for the administration of the Commission Office, coordination of Commission work, international cooperation and cooperation with other organizations, development and implementation of anti-doping programmes and development of draft regulatory documents.

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Head, Result Management Unit

Piotr Wójcik

Graduate of the University School of Physical Education in Łódź, coach, former water polo team member, responsible for the implementation of doping control plans, analysis of doping results, preparation of doping test trips, cooperation with the Doping Control Planning and Sample Analysis Evaluation Team, management of systems used to collect gathered information. He also monitors the issuance of decisions about anti-doping rule violations by Polish sports associations.

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Specialist, Education and Information

Dr Dariusz Błachnio

Graduate and academic teacher of the University School of Physical Education in Warsaw. Has worked for the Commission for many years. Author of many articles and books on doping in sport, responsible for the preparation and implementation of educational programmes and organization of training.

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Senior Assistant

Joanna Borkowska

Graduate of the Faculty of Pedagogy, Warsaw University. Organizes Commission meetings and keeps its records. In her capacity as secretary of the Commission Office her duties include office administration, website maintenance, employee affairs, management of TUE applications, and cooperation with the Therapeutic Use Exemptions Committee.

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Senior Assistant

Iwona Kocerka

Has worked for the Commission for many years. Her duties include ISO 9001:2008 quality system management, collection of gathered information, preparation of doping control trips, filing and mailing letters.

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Chief Accountant

Aleksander Frontczak

Graduate of the Faculty of Economic Sciences, Warsaw University. He keeps the Commission's account books, makes decisions on fund disbursement, and performs preliminary checks to see whether business and financial transactions have complied with the financial plan.

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Accountant

Bogumiła Jaglińska

Has worked for the Commission for 18 years, first as chief accountant, today as accountant.

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Mission and Priorities

An athlete is always most important for us. Our efforts and hard work are targeted at the achievement of fair competition in sport. We want all athletes to believe that success is possible only after hard work (95%) aided by talent (5%). Short cuts always lead to failure. Each athlete should answer the question whether a medal won unfairly and at all costs, cheating one's body, relatives and people, who admire sport achievements, is the right way? We know it is not. We know more – we know that a person using doping must pay a high price, the price of health, money, fame and good name. We think this price is too high.

What does the Commission do?

- Conducts doping tests
- Develops proposals for legal solutions and programmes against doping in sport
- Runs educational programmes
- Provides information about prohibited substances and prohibited methods
- Cooperates with international organizations involved in combating doping in sport

Result management

The planning and management of doping tests were based on the assumption of the programme adopted for the whole of 2009. The programme was prepared on the basis of the experience gained by the Polish Commission Against Doping in Sport in previous years and the analysis of the results of tests conducted in 2008.

The strategy comprised the use of the following elements:

- Planning support systems;
- In competition and out of competition tests;
- Classification of sports/athletes with respect to risks connected with the use of doping substances;
- Management of a doping control team;
- Seasonality of competitions.

Approximately 2,650 doping tests were planned for 2009. In the reporting period 2,644 samples were taken (1,383 in competition and 1,261 out of competition). In order to collect the samples, 407 control campaigns were conducted all over Poland.

Tests conducted in dysciplines in 2009

No	Sport	Number of tests	Number of samples
1.	Acrobatic gymnastics	5	25
2.	Mountaineering	1	5
3.	Badminton	2	12
4.	Biathlon	3	20
5.	Pool	1	6
6.	Boxing	16	107
7.	Gymnastics	3	22
8.	Ice hockey	18	122
9.	Field hockey	4	24
10.	Judo	13	77
11.	Jujutsu	1	8
12.	Canoeing	17	124
13.	Karate	3	24
14.	Kendo	1	7
15.	Kick-boxing	4	23
16.	Cycling	16	112
17.	Basketball	28	156
18.	Body building	11	92
19.	Track and field	37	287
20.	Archery	1	8
21.	Figure skating	2	14
22.	Speed skating	3	29
23.	Skiing	7	45
24.	Modern pentathlon	5	32
25.	Football	21	134
26.	Handball	24	143
27.	Swimming	9	67
28.	Weight lifting	26	180
29.	Rugby	16	94
30.	Volleyball	25	131
31.	Snowboard	1	8
32.	Motor sport	1	4
33.	Paralympic sport	5	14

Tests conducted in disciplines in 2009

No	Sport	Number of tests	Number of samples
34.	Shooting	3	18
35.	Sumo	2	16
36.	Fencing	12	69
37.	ITF Taekwondo	3	21
38.	WTF Taekwondo	4	26
39.	Tennis	3	20
40.	Table tennis	2	11
41.	Triathlon	3	22
42.	Floorball	1	2
43.	Rowing	13	85
44.	Wrestling	27	173
45.	Sailing	4	24
46.	WADA		1

Doping tests

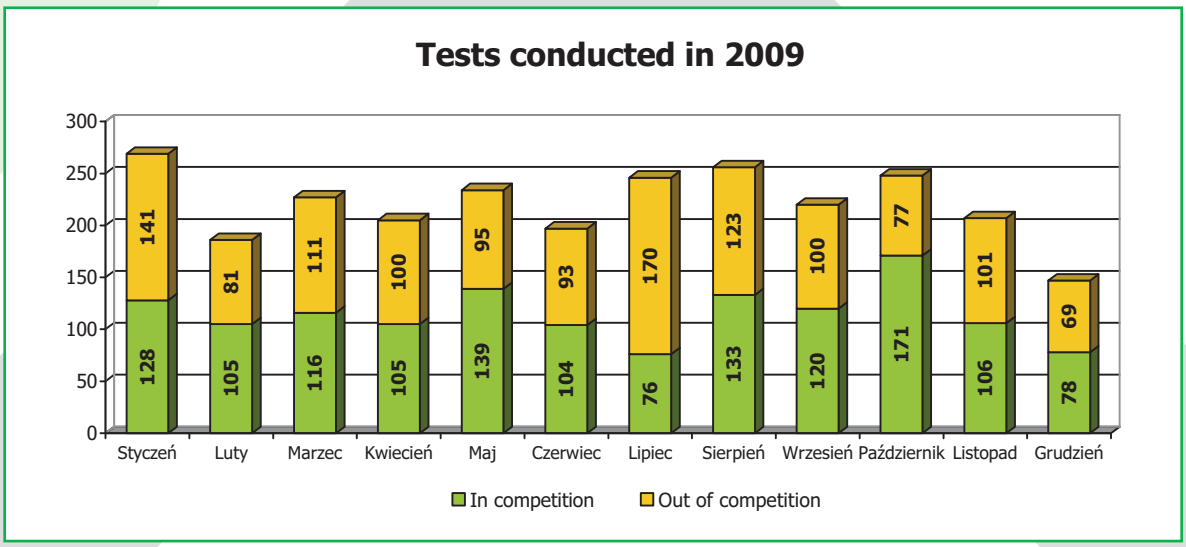
Out of competition

In the reporting period 1,261 doping tests were conducted out of competition (camps, training), which was 47.7% of all samples taken.

We could plan the tests thanks to the use of the antybaza IT system, which helps to monitor training in all of the sport clubs of team sports, wrestling and weight lifting, and also thanks to the collaboration with sport associations.

In competition

In 2009 1,383 doping tests were made in competition, which is 52.3% of all tests. At the planning phase we took into account doping tests with respect to sport level, sport popularity and risk group of a given sport. About 4.6% more in competition tests compared to out of competition tests were conducted.



External control

Apart from internal control tests, the laboratory also conducted 33 external doping tests, during which 350 samples were collected. These tests were commissioned by sport associations, international federations and organizers of competitions and international meetings held in Poland.

Tests conducted on behalf of international federations

No.	Event	Sport	Place	Number of samples
1.	Pedros Cup	Track and field	Bydgoszcz	5
2.	EYOF	Winter sports	Szczyrk	30
3.	Junior World Championships	Speed skating	Zakopane	26
4.	World Cup	Judo	Warszawa	15
5.	World Cup	Foil - women	Gdańsk	6
6.	Boxing Gala	Boxing	Lublin	2
7.	Indoor World Championships	Archery	Rzeszów	37
8.	World Cup	Mountaineering	Tarnów	2
9.	World Cup	Fencing	Warszawa	3
10.	World Tour	Beach volleyball	Mysłowice	10
11.	Na rynek marsz" – meeting	Track and field	Kraków	7
12.	Boxing Gala	Boxing	Wołomin	2
13.	J. Kusociński memorial	Track and field	Warszawa	6
14.	Enea Cup	Track and field	Bydgoszcz	6

Tests conducted on behalf of international federations

No.	Event	Sport	Place	Number of samples
15.	All-Around Europe Cup	Track and field	Szczecin	10
16.	Europe Cup	Fencing (wheelchairs)	Warszawa	4
17.	World championships	Motor sport	Augustów	5
18.	Body Building and Powerlifting	Wrestling	Spała	6
19.	Boxing Gala	Boxing	Międzyzdroje	2
20.	European Youth Championships	Boxing	Szczecin	22
21.	Sports meeting	Rowing	Poznań	9
22.	Military World Championships	Sailing	Węgorzewo	4
23.	Europe Cup	Triathlon	Kędzierzyn Koźle	8
24.	European Championships	Basketball – men	Polska	64
25.	Grand Prix	Figure skating	Toruń	8
26.	Pedros Cup	Track and field	Szczecin	5
27.	European Championships	Volleyball – women	Polska	36
28.	World Cup	Fencing	Warszawa	2
29.	World Cup	Fencing	Warszawa	6
30.	World Cup	Fencing	Sosnowiec	4
31.	Boxing Gala	Boxing	Łódź	2
32.	Boxing Gala	Boxing	Ełk	2
33.	World Cup	Fencing	Leszno	4

Isotope ratio mass spectrometry (IRMS)

The laboratory was asked to conduct IRMS analyses to check the T/E ratio and DHEA. We conducted 49 analyses of which two confirmed an exogenous character and were treated as positive results. The table below presents all the analyses made and their results.

IRMS analyses and their results

No.	Sport	T/E and DHDA value	Result
1.	Track and field	T/E 5,24	negative
2.	Badminton	T/E 6,46	negative
3.	Taekwondo	T/E 5,58	negative
4.	Rugby	T/E 5,01	negative
5.	Powerlifting	T/E 26,77	positive
6.	Basketball	T/E 7,03	negative
7.	Body building	T/E 19,63 | DHEA 171	positive
8.	Acrobatic gymnastics	T/E 5,45	negative
9.	Cycling	T/E 4,66	negative
10.	Boxing	T/E 5,96	negative
11.	Track and field	T/E 5,61	negative
12.	Track and field	T/E 7,90	negative
13.	Track and field	T/E 5,15	negative
14.	Cycling	T/E 6,56	negative
15.	Cycling	T/E 5,30	negative
16.	Track and field	T/E 7,12	negative
17.	Weight lifting	T/E 5,33	negative
18.	Body building	T/E 5,38	negative
19.	Body building	T/E 5,19	negative
20.	Table tennis	T/E 7,57	negative
21.	Rowing	T/E 5,24	negative
22.	Basketball	T/E 4,91	negative
23.	Triathlon	T/E 5,41	negative
24.	Track and field	T/E 4,73	negative
25.	Boxing	T/E 5,05	negative
26.	Taekwondo	T/E 5,58	negative
27.	Fencing	T/E 6,32	negative
28.	Acrobatic gymnastics	T/E 5,45	negative
29.	Triathlon	DHEA 127,48	negative
30.	Triathlon	T/E 7,68	negative
31.	Wrestling	T/E 5,53	negative
32.	Handball	T/E 4,79	negative
33.	Ice hockey	T/E 5,33	negative
34.	Sailing	T/E 4,58	negative

IRMS analyses and their results

No	Sport	T/E and DHDA value	Result
35.	Wrestling	DHEA 138,51	negative
36.	Boxing	DHEA 228,63	negative
37.	Ski jumping	T/E 4,80	negative
38.	Rugby	DHEA 224,51	negative
39.	Sumo	DHEA 136,48	negative
40.	Canoeing	T/E 6,99	negative
41.	Ju-Jutsu	T/E 8,09	negative
42.	Modern pentathlon	T/E 7,01	negative
43.	Weight lifting	T/E 6,06	negative
44.	Taekwondo	DHEA 137,16	negative
45.	Powerlifting	DHEA 161,18	negative
46.	Ice hockey	DHEA 168,72	negative
47.	Canoeing	T/E 4,88	negative
48.	Canoeing	T/E 5,80	negative
49.	Wrestling	T/E 5,76	negative

EPO (Erythropoietin)

In the final months of 2009 the laboratory conducted analyses to detect the use of erythropoietin (EPO). This was a pilot programme, comprising 15 tests, mainly on athletes practicing winter sports. We plan to continue the development of the programme in 2010.

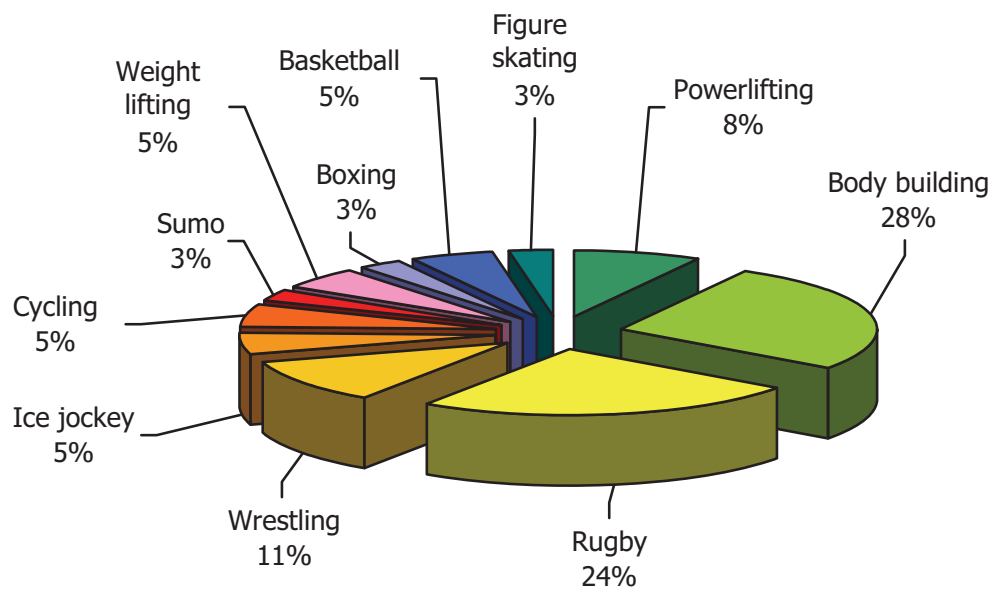
Positive results

In 2009 the laboratory found 37 cases of anti-doping violations, which have been classed as positive results. Two of them were tampering attempts, one was a refusal to be tested and in the other cases prohibited substances were found in the athlete's body. The athletes represented eleven sports. A detailed specification is given in the table below.

In four cases the athletes appealed against the test results and requested an analysis of their "B" sample. All analyses confirmed the result of the "A" sample.

As regards the substance detected – most often analyses revealed anabolic substances (16) and cannabinoids (14). Other substances included stimulants (5), diuretics (3), antagonists and hormone modulators (3) and glucocorticosteroids (1).

Percentage of sports in positive results



Positive results

No	Sport	Circumstances	Detected substance	Sankcja
1.	Ice hockey	in competition	THC	reprimand
2.	Basketball	in competition	THC	3 months disqualification
3.	Ice hockey	in competition	THC	reprimand
4.	Rugby	out of competition	Testosterone | Nandrolone	2 years disqualification
5.	Powerlifting	in competition	Ephedrine	2 years disqualification
6.	Boxing	in competition	Nandrolone	2 years disqualification
7.	Rugby	in competition	Nandrolone	1 year disqualification
8.	Rugby	in competition	THC | Nandrolone	2 years disqualification
9.	Powerlifting	in competition	Canrenone | Indiapamide	2 years disqualification
10.	Body building	in competition	Refusal to be tested	2 years disqualification
11.	Body building	in competition	Stanozolol | Boldenon THC | Tamoxifen	2 years disqualification
12.	Body building	in competition	Stanozolol | Drostenone	4 years disqualification

Positive results

No	Sport	Circumstances	Detected substance	Sanction
13.	Body building	in competition	Metenolone	2 years disqualification
14.	Powerlifting	in competition	Testosterone	2 years disqualification
15.	Weight lifting	in competition	Amphetamine	6 months disqualification
16.	Body building	out of competition	Stanozolol	2 years disqualification
17.	Body building	in competition	THC	1 year disqualification
18.	Body building	in competition	Testosterone	2 years disqualification
19.	Cycling	in competition	Methylprednisolone	warning
20.	Cycling	in competition	Ephedrine	6 months disqualification
21.	Rugby	in competition	Tampering attempt	6 years disqualification
22.	Rugby	in competition	Tampering attempt	no sanction
23.	Rugby	in competition	Amphetamine | THC | Metandienone	2 years disqualification
24.	Rugby	in competition	THC	1 year disqualification
25.	Rugby	in competition	THC	6 months disqualification
26.	Sumo	in competition	Furosemide	3 months disqualification
27.	Rugby	in competition	THC	6 months disqualification
28.	Wrestling	in competition	Furosemide	2 years disqualification
29.	Basketball	in competition	THC	3 months disqualification
30	Body building	in competition	Anastrazol | Clenbuterol	2 years disqualification
31.	Body building	in competition	Letrazole | Clenbuterol	2 years disqualification
32.	Wrestling	in competition	Amphetamine	2 years disqualification
33.	Wrestling	in competition	THC	2 years disqualification
34.	Wrestling	in competition	Boldenone | Nandrolone | THC	2 years disqualification
35.	Body building	in competition	Clenbuterol | Testosterone	2 years disqualification
36.	Weight lifting	out of competition	Metandienone	2 years disqualification
37.	Figure skating	in competition	THC	6 months disqualification

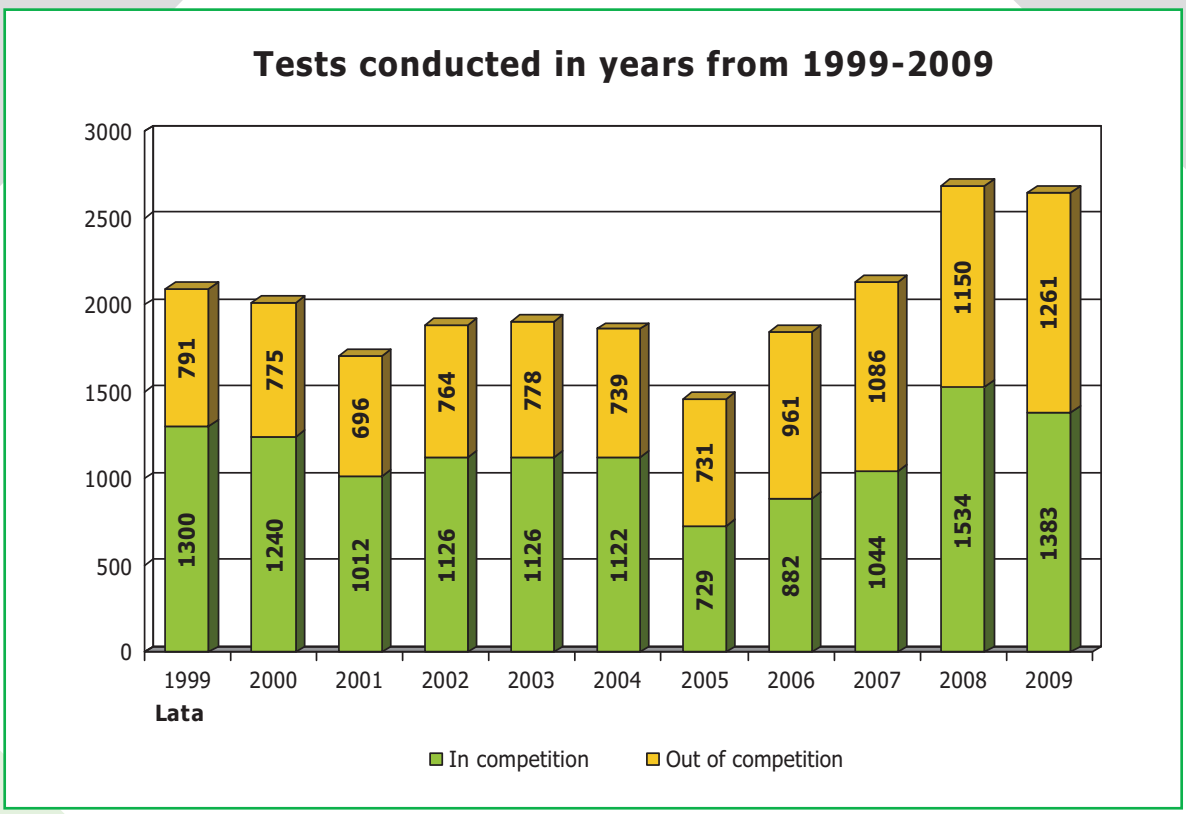
In 2009 the laboratory also analysed three positive results of samples that were collected at the end of 2008.

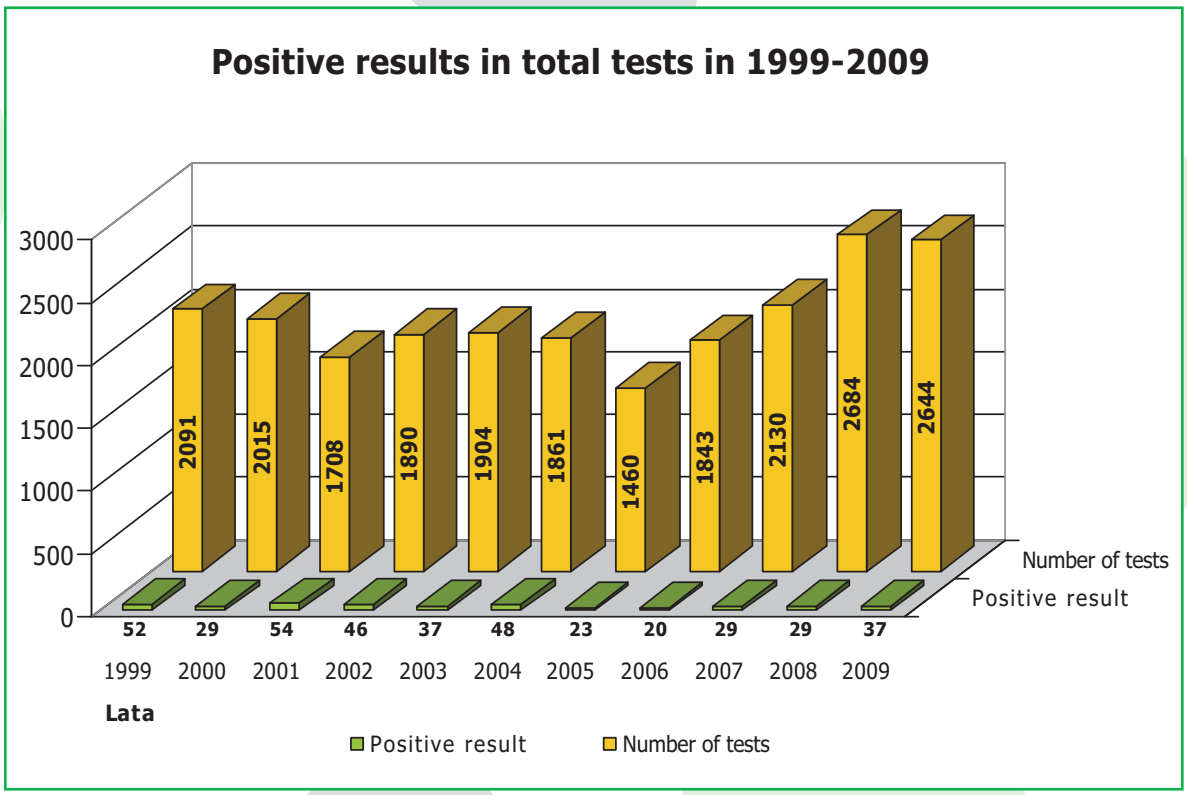
Samples collected in 2008 and analysed in 2009

No	Sport	Circumstances	Detected substance	Sanction
1.	Wrestling	out of competition	17a-methyl-5a-androstane-3a*	1 year disqualification
2.	Wrestling	out of competition	17a-methyl-5a-androstane-3a*	1 year disqualification
3.	Pool	in competition	THC	1 year disqualification
4.	Body building	out of competition	Testosteron	2 years disqualification

*substance detected in food supplement

Comparison of analysis made in the last decade




Positive results in total tests in 1999-2009
3000
2500
2000
1500
1000
500
0
2091
2015
1708
1890
1904
1861
1460
1843
2130
2684
2644
Number of tests
Positive result
52
29
54
46
37
48
23
20
29
29
37
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Lata
Positive result
Number of tests

EDUCATION

There is a unit at the Polish Commission Against Doping in Sport dealing in broadly understood education, information and prevention of doping in sport. We are absolutely convinced that this activity is necessary since it helps raise the awareness of all participants in the sport movement and systematically eliminates doping from sport. Our activity is targeted at all people involved in sport, irrespective of their age and function. The Commission disseminates knowledge about doping in sport and collaborates with the Ministry of Sport and Tourism, Youth Sports Federation, Polish sport associations and other organizations, which support the programme or are interested in it. The programme is targeted mainly at active athletes, their coaches, medical personnel and other people.

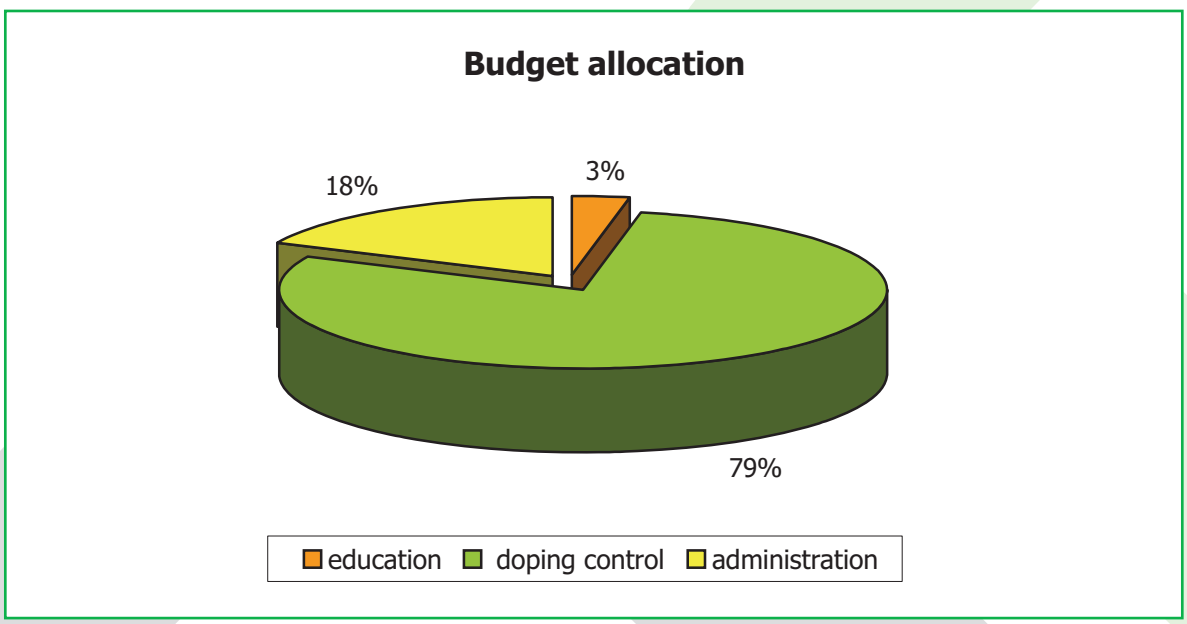
In 2009 in collaboration with the Youth Sports Federation the Commission started a nationwide educational campaign. The launch of the campaign coincided with the Polish Youth Olympic Days. At a special Mobile Information Desk at sports arenas educational materials – brochures, guidebooks, films and other gadgets were distributed. There were quizzes on doping in sport and its prevention and consultations by anti-doping experts. We also organize training for coaches in regions. It usually has the form of lectures combined with workshops at which the most relevant issues of doping in sport are discussed and questions asked by trainers and coaches answered. The electronic distribution of educational and information materials is another form of cooperation. The Commission provides these materials to the Federation, which forwards them to regional training managers, who subsequently provide them to regional coaches. Finally, the information and materials should reach young athletes. It is a simple system, which only requires the involvement and commitment of all its participants. The Commission also facilitates the establishment of similar cooperation with Polish sports associations in the implementation of the anti-doping educational programme. When defining conditions of cooperation it is possible to use well-tested forms or jointly develop an educational programme targeted to the needs of a specific sports association. The programme will be primarily addressed to students of sport championship schools and their teachers/coaches. We hope that we will be able to visit about 90 such schools with a 60-minute lecture. On this occasion the students will be provided

Outreach, Kraków 2009

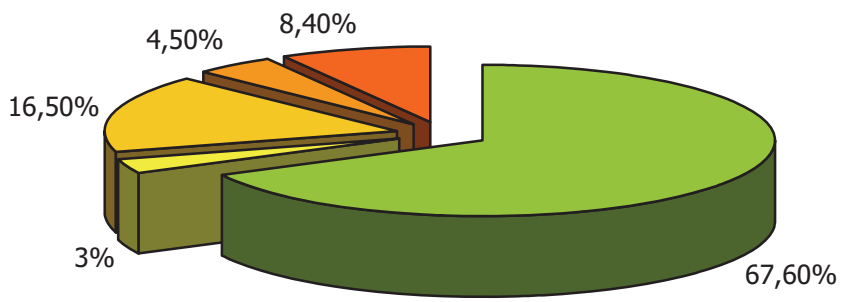
not only with theoretical knowledge but also with educational materials (brochures, leaflets, films, gadgets, posters, etc.). After the visit coaches and teachers will be obliged to organize similar training sessions in the future using the materials available on our website. The effects of most of our educational campaigns in 2009 were so promising that members of the Commission decided to broaden the educational programme in 2010. We use the Internet and our portal **www.antydoping.pl**, where all the educational materials, including presentations on doping control, are available in the "Educational Package" section. The package has been prepared with athletes, coaches, teachers and sports instructors in mind and is a great repository on doping in sport for everybody interested in the problem.

Finances

The overall budget of the Polish Commission against Doping in Sport in 2009 amounted to PLN 3,935,000.00. All the money was provided by the Ministry of Sport and Tourism. The money was spent as follows: PLN 3,115,206 (79%) – doping control, PLN 706,440 (18%) – administration, PLN 113,354 (3%) – education.

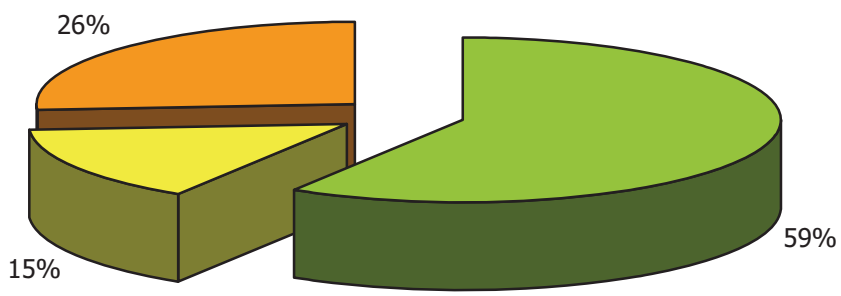


Doping control costs



standard tests
other tests
fees of doping control officials
sample containers
transport and accommodation of doping control officials

Other tests



IRMS tests
EPO tests
animal testing

TUE Committee

In 2009 the Committee for Therapeutic Exemptions examined 50 TUE applications and 130 notifications of prohibited substance use.

Therapeutic exemptions in 2009 – 50 applications:

- Consent to use prohibited substance – 39 cases,
- No consent (denial) to use prohibited substance – 7 cases,
- Incomplete documentation (returned to applicants) – 4 cases.

Notification of prohibited substance use – 130 applications:

- Inhaled glucocorticosteroids – 51 cases,
- Local glucocorticosteroid injections – 75 cases
- Incomplete documentation (returned to applicants) – 4 cases.

International cooperation

The Commission Against Doping in Sport is actively involved in international cooperation, which entails relations with different international organizations.

ANADO – Association of Anti-Doping Organizations

ANADO is mainly interested in supporting national anti-doping organizations and helping them to reach their objectives, promote the implementation of the ISO quality system to doping tests and the monitoring of member organizations through quality assessment programmes (questionnaires). An ANADO conference is always a good opportunity for the exchange of experiences and on how to solve the practical aspects of anti-doping activity.

CAHAMA – Ad hoc European Committee for the World Anti-Doping Agency

The Committee monitors the decisions made by the Foundation Board and Executive Committee. Furthermore, CAHAMA conferences are a good forum for the exchange of views with WADA representatives on topical anti-doping issues.

T-DO Monitoring Group, Anti-Doping Convention of the Council of Europe

The Commission's representatives take part in the meetings of the monitoring group, which has been set up to monitor the observance of the anti-doping convention by its signatories.

WADA – the World Anti-Doping Agency
Cooperation with WADA involves, e.g. incorporation of the World Anti-Doping Code into Polish legislation as well as the implementation of educational programmes and test result management.

International Sport Federations
Cooperation includes exchange of athlete whereabouts information and laboratory test results. In exceptional cases the Commission Against Doping in Sport asks federations to take action in the Polish sport association which it supervises.

Challenges and plans for the future

2010 will be a year of hard work for the Polish Commission against Doping in Sport. Commission representatives will take part in legislative work and contribute their expertise in the area of doping control to the new act on sport. One of the main changes in the approach to doping control in sport includes the introduction of imprisonment as a sanction for the administration or attempted administration of a prohibited substance to the athlete. Furthermore, as its own initiative the Polish Commission Against Doping in Sport will approach Polish sports associations to incorporate provisions of the World Anti-Doping Code and regulations helping to effectively enforce the duty of providing information about training time and place in sports clubs. An anti-doping educational programme s another challenge – it will comprise all sports championship schools and athletes taking part n the Polish Youth Olympic Days. In 2010 we will also be preparing for the national educational campaign which will address the negative health consequences of using doping, promoting proper diet and informing about the hazards connected with the use of dietary and nutritional supplements.

Main plans for 2010
- ADAMS implementation – basic module,
- Attempt of establishing cooperation with external parties to co-finance the educational programmes of the Commission Against Doping in Sport,
- Recruitment of new members to the TUE Committee,
- Development of a new drug database,
- Training, educational campaigns,
- Educational programme,
- RTP (Registered Testing Pool) preparation,
- Recruitment of doping control teams in Cracow and Gdańsk (continued),
- Increasing the number of erythropoietin (EPO) tests,
- Introduction of blood tests.

History

Paweł Kaliszewski, Dorota Kwiatkowska, Andrzej Pokrywka
Anti-Doping Laboratory, Institute of Sport

The use of pharmacological substances and other doping substances in sport was banned in Poland after the enactment of the Act on Physical Culture of 3 June 1984. Three years later, in September 1987, the Doping Control Laboratory was opened at the Institute of Sport in Warsaw. After 77 years from the world's first documented doping tests conducted by Alfons Bukowski, a pharmacist from Warsaw, a typical anti-doping laboratory was established in Poland. Its first head was Dr Marek Daniewski. In 1995 the Doping Control Laboratory was renamed as the Anti-Doping Laboratory. From 1996-2001 it was headed by Dr Krzysztof Chrostowski and since 2002 by Dr Dorota Kwiatkowska. Presently, the Anti-Doping Laboratory employs 13 persons. From 1987-2009 the laboratory tested approximately 40,000 samples, of which over 1,000 included prohibited substances.

The work of the Anti-Doping Laboratory is focused on:

- Wanalyses of biological samples taken from people and animals during doping control tests
- expert opinions and opinions on doping control and analyses of different samples (commissioned by the police, prosecutor's office, court, etc.) to find substances which are prohibited in sport,
- improvement of the quality management system and maintenance of high quality of analyses, in accordance with ISO 17025 and the regulations of the World Anti-Doping Agency (WADA),
- participation in international research and implementation programmes targeted at fighting doping in sport,
- conducting own research aimed at the detection of substances prohibited in sport and analysis of the health and social effects of their use,
- prevention and educational campaigns on the hazardous effects of doping.

Literature :

D. Błachnio, P. Kaliszewski, J. Krzywański, D. Kwiatkowska, R. Piechota, A. Pokrywka, M. Rynkowski, Antydoping w Polsce, Warszawa 2009.

Employees

Head:

Dr Dorota Kwiatkowska – adjunct professor

In 1995 she completed her studies at the Faculty of Chemistry, Warsaw University of Technology. She earned her doctoral degree in biological sciences in 2004 from the Military Institute of Hygiene and Epidemiology in Warsaw. In 2007 she was licensed to work as a laboratory scientist. Since 1995 she has worked for the Anti-Doping Laboratory of the Institute of Sport in Warsaw.
Since 2002 she has been head of the Laboratory.Dr Kwiatkowski is a fellow member of the World Association of Anti-Doping Scientists (WAADS) (since 2004) and a professional member of the Association of Official Racing Chemists (AORC) (since 2001).

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Team:

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She completed her studies in 1995 at the Faculty of Chemistry, Warsaw University of Technology. In 2007 she was licensed to work as a laboratory scientist. Since 1998 she has worked for the Anti-Doping Laboratory of the Institute of Sport in Warsaw. Since 2003 she has been quality manger and since 2009 the deputy head of the Laboratory.

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Damian Gorczyca – acting technical manager, assistant

He completed his studies in 2007 at the Faculty of Chemistry, Nicolas Copernicus University in Toruń. Since 2007 he has worked for the Anti-Doping Laboratory of the Institute of Sport in Warsaw. In 2009 he was appointed acting technical manager.

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Dr Andrzej Pokrywka – adjunct

He completed his studies in 1994 at the Faculty of Pharmacy, Medical University of Warsaw. In 2006 he was awarded a doctoral degree of pharmaceutical sciences by the Faculty of Pharmacy, Medical University of Warsaw. In 2007 he was licensed to work as laboratory scientist.Since 1994 he has worked for the Anti-Doping Laboratory of the Institute of Sport in Warsaw. From 1996-2008 he was deputy head of the Laboratory and in 2009 he was appointed director of the Institute of Sport.

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Dr Paweł Kaliszewski – adjunct

He completed his studies in 2002 at the Faculty of Pharmacy, Medical University of Warsaw. In 2008 he was awarded a doctoral degree in biological sciences by the Institute of Biochemistry and Biophysics of the Polish Academy of Sciences.Since 2008 he has worked for the Anti-Doping Laboratory of the Institute of Sport in Warsaw.

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Włodzimierz Tszyrsznic – assistant
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Małgorzata Pasik – medical chemistry technician
In 1995 she completed her studies at the Edmund Biernacki Vocational Medical School in Warsaw where she was awarded the title of medical chemistry technician.Since 2007 she has worked for the Anti-Doping Laboratory of the Institute of Sport in Warsaw.

Danuta Stańczyk – senior medical chemistry technician
In 1980 she completed her studies at the Edmund Biernacki Vocational Medical School in Warsaw where she was awarded the title of medical chemistry technician.Since 1984 she has worked for the Anti-Doping Laboratory of the Institute of Sport in Warsaw.

Zuzanna Szczepańska – specialist
In 1981 she completed her studies at the Vocational Medical School in Łuków. In 2003 she graduated from the Maria Grzegorzewska Academy of Special Pedagogy in Warsaw with the title of therapist. Since 2005 she has worked for the Anti-Doping Laboratory of the Institute of Sport in Warsaw.

Barbara Wójcikowska-Wójcik – senior medical chemistry technician
She graduated from a Post-Secondary Vocational School in 1982 with the title of medical chemistry technician.Since 1995 she has worked for the Anti-Doping Laboratory of the Institute of Sport in Warsaw.

Accreditations

The Anti-Doping Laboratory (ADL) was first accredited by the International Standard Organization (ISO) in March 1997. The first certificate awarded to the Laboratory by the Polish Centre for Testing and Certification confirmed that the Anti-Doping Laboratory met the requirements of the PN-EN 45001 standard and the ISO/IEC Guide 25. In February 2001 PN-EN ISO/IEC 17025:2000 "General requirements for the competence of testing and calibration laboratories" standard was introduced, which replaced the PN-EN 45001 standard and ISO/IEC Guide 25. In 2002 the Laboratory adapted its quality system to the new standard.

In 2001, following a positive accreditation process, the Anti-Doping Laboratory was accredited by the Association of Official Racing Chemists (AORC) and could conduct doping tests on animals. However, from the very beginning of its operation, the Laboratory sought the accreditation of the International Olympic Committee (IOC), which in 2004 was replaced with the accreditation of the World Anti-Doping Agency (WADA). The first applications to start the accreditation process were sent to the IOC by the directors of the Institute of Sport in 1989-1991. Unfortunately, no response was given. It was the subsequent efforts of the Institute Director and representatives of the Polish government on the international anti-doping forum, which helped start the accreditation process.

The following events that took place at the time are considered as most important from the accreditation process point of view:

- organization of the International Anti-Doping Seminar by the Institute of Sport (Gniew 1999) with the participation of directors of accredited laboratories in Kreischy n. Dresden (Prof. R.K. Müller), Lausanne (Dr L. Rivier) and Ghent (Prof. F.T. Delbeke),
- visit of the IOC's Medical Commission represented by Dr P. Schamasch at the Anti-Doping Laboratory; the visit was organized by Irena SzewiĐska, IOC member),
- WADA nomination for Prof. R. Grucza, then director of the Institute of Sport, as independent observer of doping control during the Olympic Games in Salt Lake City (2002),
- election of Prof. R. Grucza as Chair of the Council of Europe's Monitoring Group of the Anti-Doping Convention (2002).

Finally, after several years of hard work and having passed three pre-accreditation tests and the final test (2002-2004), in November 2004 WADA granted its accreditation to the Anti-Doping Laboratory of the Institute of Sport, thus allowing it to conduct doping tests. This historic success must be credited to a small team made up of Ryszard Grucza, Dorota Kwiatkowska, Andrzej Pokrywka, Ewa Turek-Lepa, Dorota Michalak, Ewa Partyka, Danuta StaĐczyk, Barbara Wójcikowska-Wójcik and, in the first phase of the accreditation process, Krzysztof Chrostowski.

Accreditation is granted for one year. In order to have it extended it is necessary to fulfil the recommendations of the World Anti-Doping Code, International Standard for Laboratories and WADA's Technical Documents and Guides and, first of all, the successful completion of four re-accreditation tests, which are sent every quarter to WADA accredited laboratories (presently, there are only 35 WADA accredited laboratories in the world).

The requirements of the ISO/IEC 17025 standard relate to laboratory management and technical

requirements. If the laboratory management requirements are met, the requirements of the quality management system stipulated in ISO 9001 are automatically met, although this is not sufficient to confirm the laboratory's competence to make specific analyses or calibrations. Therefore, the second group of ISO/IEC 17025 requirements is connected with the technical competences of the laboratory – equipment, measurement consistency, testing and calibration methods and their validation, personnel, premises and environmental conditions, sampling, sample and equipment handling, result quality assurance and result presentation. This accreditation confirms the laboratory's competence to perform specific analyses and tests in accordance with world criteria. It is confirmation that the results obtained by the laboratory are reliable, impartial and credible and should be recognized not only at national but also at international level.

The laboratory seeking WADA accreditation must have a valid accreditation, which confirms that it meets the requirements of ISO/IEC 17025. Since the requirements of ISO/IEC 17025 are applicable to any test laboratory, irrespective of its type, size and structure and methods used, WADA has introduced detailed requirements for anti-doping laboratories. They have been incorporated into the International Standard for Laboratories in order to ensure credibility of evidence data obtained during doping analyses and in order to standardize results and reports prepared by all accredited laboratories. Furthermore, the International Standard for Laboratories with relevant Technical Documents define criteria, which must be met by the anti-doping laboratories in order to be WADA accredited. It should be mentioned that WADA, in consultation with the International Laboratory Accreditation Cooperation (ILAC) trains experts to prepare them to audit anti-doping laboratories. Presently, there are 52 auditors in the world, among them Prof. Ewa Bulska, Head of the Centre for Theoretical Foundations of Analytical Chemistry, Faculty of Chemistry, Warsaw University, who represents the Polish Accreditation Centre.

Literature :

D. Błachnio, P. Kaliszewski, J. Krzywański, D. Kwiatkowska, R. Piechota, A. Pokrywka, M. Rynkowski, Antydoping w Polsce, Warszawa 2009.

Employees

Scope of analysis

The primary task of the Department of Anti-doping Research is carrying out analyses of samples taken from athletes during the doping control. Nevertheless, the WADA's accreditation is a requirement in order to carry out such actions. Furthermore, it is mainly the Commission Against Doping in Sport that places an order for testing the samples. In addition, the process of analyzing the samples takes place also on the order of various sports federations. All the samples delivered to the laboratory are exposed to ten different screening procedures. Such practice allows to detect hundreds of substances and their metabolites. Under the supervision of the World Anti-Doping Agency, the List of Prohibited Substances and Methods ('The Prohibited List'), which is updated on annual basis, specifies and mentions all the substances prohibited in sport. The current list is available on www.wada-ama.org.

In the years 1987-2009, the Department of Anti-doping Research analyzed 40 000 samples. One thousand of them included prohibited substances.

The Department conducts analyses of urine and blood samples taken from animals which are involved in any sport competition. The Department of Anti-doping Research is accredited by the Association of Official Racing Chemists (AORC) in the scope of anti-doping tests for animals. The laboratory runs analyses on all the samples taken from horses on the order of the Polish Equestrian Federation. The list of prohibited substances ("Equine Prohibited List") differs significantly from the one announced by WADA. The list includes the following classes of prohibited substances:

- anti-inflammatory substances (steroidal and non steroidal)
- antipsychotic, antiepileptic and hypotensive substances
- antidepressant substances
- anxiolytic and antipsychotic substances
- narcotic drugs
- stimulants
- beta-blockers
- diuretics
- anabolic steroids
- peptide hormones
- all the substances used in humans and other species, which additionally might be found in horses
- allergic and anti-allergic substances
- oxygen carriers and other substances with a similar chemical structure or biological effect.

Moreover, the Department of Anti-doping Research not only carries out analyses of urine and blood samples on the order of The Polish Commission Against Doping in Sport, Polish Equestrian Federation and other organizations acting under the supervision of WADA or AORC but also conducts more and more tests at the request of the public prosecutor's office, the court of law, police departments, customs service or hospitals. The tests concern mainly the use of methods and substances recognized as doping in sport or the trafficking of these substances. The results of such analyses may appear to be the proof in criminal procedure or might help to determine an appropriate (or not) course of action in treating patients.

Research

Research is an important element of the work of the anti-doping laboratory and at the same time it is one of the conditions necessary to obtain and maintain WADA accreditation. Therefore the Polish Anti-Doping Laboratory not only analyses biological samples to detect substances prohibited in sport. For more than twenty years the Laboratory and its personnel have frequently conducted experimental research and its results have been presented in Poland and abroad. They have also published many articles in scientific periodicals and journals. The main research topic of the Laboratory is "Detection of substances and methods prohibited in sport".

Research projects have focused on, e.g.:

- Steroid profile of Polish athletes,
- Drugs in Polish sport,
- Potential risk of anti-doping rule violations after the consumption of food supplements and nutritional supplements,
- Impact of bacterial flora on doping substances in urine samples

Anti-Doping Laboratory – dr Dorota Kwiatkowska

Presently, the Laboratory staff is involved in the following research:

- Detection of selective androgenic receptor modulators (SARMS-non-steroid androgenics) and specific steroid substances in urine, using mass spectrometry
- Hair sample as a biological materials alternative to urine to assess the use of doping in sport
- Testing LH changes as an additional parameter used to assess the steroid profile in athletes
- Testing changes in the number of reticulocytes in blood and selected haematological parameters in the annual training cycle of athletes
- Development of an insulin detection method using UPLC/Q-TOF
- Testing an erythropoietin lysoformium profile in a Central European population using an IEF (isoelectric focusing) based method and chemiluminescence
- Testing growth hormone level in a Central European population using methods based on ILMA (Immuno Lumino Metric Assay)
- Testing the 13C/12C ratio of a Central European population using GC-C-IRMS
- Application of UPLC/MS/MS and UPLC/Q-ToF to identify the metabolites of substances prohibited in sport

Literature :

D. Błachnio, P. Kaliszewski, J. Krzywański, D. Kwiatkowska, R. Piechota, A. Pokrywka, M. Rynkowski, Antydoping w Polsce, Warszawa 2009.

Analytical equipment

For many years the basic equipment of the anti-doping laboratory was gas chromatograph coupled with mass spectrometer (GC/MS). Later, the laboratory bought a tandem mass spectrometer (MS/MS) and high resolution mass spectrometer (HRMS). When WADA started to supervise laboratories and when new classes of compounds were added to the prohibited list, it became necessary to routinely use liquid chromatographs coupled with tandem mass spectrometers (LC/MS/MS) and with many other analytical techniques. Below is a list of the basic instruments and equipment used by the Anti-Doping Laboratory.

Liquid chromatography with time of flight detector (UPLC/Q-TOF)

- UPLC Waters Acquity / Micromass QTof Premier
  This instrument is exceptionally effective in the detection of new pharmacological substances, which could be consumed for doping purposes, and in the collection of data about unidentified substances. It is also used to test new detection methods of peptide hormone doping.

Ultra- or high performance liquid chromatographs coupled with tandem mass spectrometers (UPL/MS/MS and HPLC/MS/MS) or equipped with UV/VIS detector (HPLC/UV/VIS)

- UPLC Waters Acquity / Micromass QuattroPremier XE API
  Analytical instruments to detect diuretics, drugs and stimulants, beta-adrenolytics, anabolic steroids, ß-2- agonists, aromatase inhibitors, selective estrogen receptor modulators (SERMS) and selective androgenic receptor modulators.
- LC Waters Alliance 2695XC / MS Micromass QuattroMicro API
  Instruments used to detect: glucocorticosteroids, drugs and benzodiazepines.

- ThermoFinnigan Surveyor Pump P4000 / UV2000
  Instrument used to detect ephedrine.

Preparative liquid chromatograph

- Waters 2767 Sample Manager / HPLC Waters 1525 Binary Pump / Waters Jetstream2 / Waters 2487 Dual Wavelength Absorbance Detector
  A system used to clean biological samples, mainly used to prepare samples for analysis in GC/C/IRMS.

Gas chromatography combustion isotope ratio mass spectrometry (GC/C/IRMS)

- Thermo Trace GC Ultra / Thermo Delta V Advantage Isotope Ratio MS
  A system used to differentiate between endogenous and exogenous steroids.

Gas chromatographs coupled with mass spectrometers (GC/MS)

- Agilent Technologies 6890 / AT 5975N and NPD detector
- Agilent Technologies 6890 / AT 5975N
- Agilent Technologies 6890 / AT 5973N
- Agilent Technologies 5890 NPD
- Hewlett-Packard 5890 series II Plus / HP 5972
- Hewlett-Packard 5890 series II / HP 5970

GCQ gas chromatograph coupled to Ion trap mass spectrometer (GCQ)

- Thermo GC Focus / Polaris Q
- ThermoQuest Trace GC 2000 Series / GCQ plus
  Instruments used to detect anabolic-androgenic steroids.

Anti-Doping Laboratory – analytical room

Hematology analyser

- Bayer Advia 120

  The Hematology analyser helps to determine blood parameters in athletes. Formerly, in some sports (cycling, cross-country skiing, track and field – long distance events) an athlete was admitted (or not) to take part in the competition on the basis of the value of some blood parameters (hematocrit, haemoglobin, reticulocytes). Today hematology analyses are made regularly and the dat is recorded in the "athlete's biological passport".

Fluorometer

- Delfia 1232, Wallac Platewash 1296–026

  The instrument is used to detect the concentration of such peptide hormones as LH and hCG.

Luminometer

- BERTHOLD AutoLumatPlus LB 953

  The instrument is used to detect exogenous growth hormone in blood serum.

System to detect recombined erythropoietin and enzyme-linked immunosorbent assays ELISA

- Fuji LAS 4000 luminescence image detection system
- GE Healthcare Muliphor II flatbed electrophoresis system
- TECAN SUNRISE reader.The instruments are used to detect exogenous erythropoietin.

Literature :

D. Błachnio, P. Kaliszewski, J. Krzywański, D. Kwiatkowska, R. Piechota, A. Pokrywka, M. Rynkowski, Antydoping w Polsce, Warszawa 2009.

International cooperation

Maintenance of the highest standards by anti-doping laboratories is connected with the continuous development of their staff. Therefore, cooperation between anti-doping laboratories all over the world is necessary. The staff of the Anti-Doping Laboratory took part in traineeships in laboratories in Germany (Kreisha, Cologne), Spain (Barcelona), Belgium (Ghent), Austria (Seibersdorf), Sweden (Stockholm) and Switzerland (Lausanne). Cooperation between laboratories also involves exchange of experience acquired during anti-doping tests and during research. These experiences are mainly exchanged at anti-doping workshops which are organized in Cologne, where anti-doping laboratory staff present the results of their research and take part in practical activities at the laboratory of the Institute of Biochemistry at the German Sport University.

Educational tests organized by WADA and the World Association of Anti-Doping Scientists (WAADS) are another form of practical cooperation between accredited laboratories. They provide a lot of information necessary to develop technical documents, which standardize procedures in anti-doping laboratories and define quality requirements.

In 2006 WADA approved the application for financing a research project entitled "Comparative gene expression profiling in human buccal epithelium and leukocytes after the abuse of anabolic steroids", filed by the Polish Anti-Doping Laboratory jointly with its partners from Munich (Institute of Public Health, Technical University) and Kreischy (Institute of Doping Analysis and Sports Biochemistry). The project is aimed at looking for changes in gene expression in the cells of buccal epithelium and peripheral blood lymphocytes depending on the use of anabolic steroid medications. Modern molecular biology techniques (DNA micromatrices) are used in the research. The results of this research will perhaps help to develop new methods to detect anabolic-androgenic steroids, which considerably extend the detection window, i.e. the period in which it will be possible to prove their use.

The Polish Anti-Doping Laboratory staff are also involved in education. From 2005-2008 the Laboratory, together with its partners from Germany, Spain, Bulgaria and Greece, carried out a project entitled "Biomedical unfavourable effects of doping", co-financed from EU funds. One of the project's deliverables was an Internet portal on the hazardous impact of doping substances on the human body, where educational materials targeted at different groups of users (physicians, coaches, athletes, students). The portal can be accessed at the address http://www.doping-prevention.com.

Literature :

D. Błachnio, P. Kaliszewski, J. Krzywański, D. Kwiatkowska, R. Piechota, A. Pokrywka, M. Rynkowski, Antydoping w Polsce, Warszawa 2009.

Komisja do Zwalczania
Dopingu w Sporcie