

# ACCEPTED LEVEL OF RISK OF DOPING USE IN THE VIEW OF YOUNG ATHLETES

■ Accepted  
for publication  
09.03.2010

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**ABSTRACT:** The paper is a continuation of studies aimed at verifying the hypothesis from decision theory stating that the risk in action is the greatest when the probability of loss is high, and the higher the value attached to that which is lost as a consequence of this action. Students of the Sport Championship School (n = 89) from fencing, track and field, martial arts and football classes took part in the studies. The age of the study participants was in the range 16-18 years. The experimental technique "Perception of risk of doping" (author: H. Mroczkowska) was used to help to determine the individual ranking of possible losses of valued goods as a consequence of doping use (loss of health; loss of medal; loss of physical attractiveness; loss of emotional balance; loss of material reward; loss of respect from others). It turns out that the hierarchy of the values that may be lost as a consequence of doping variously influences the assessment of the real and subjective risk and concerns various areas of evaluation. The assessment of the objective risk depends more on the rank of what may be lost (health) than on what may be gained (medals). Moreover, direct external sanctions are not perceived as more probable than remote personal consequences (psychophysical health). In the real situation of decision making about doping, the internalized hierarchy of values has no greater significance; in the real danger of a doping disclosure, everything that can be lost turns out to be equally valuable.

**KEY WORDS:** doping use, risk, youth, loss of health

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## INTRODUCTION

According to decision theory, the choice between alternatives is influenced by the assessment of the profitability of risk, probability of failure and loss of respected values. The risk seems to be the greatest when the probability of loss is high and the more valued the good is that is being lost as a consequence of making the decision [1].

The above paper is a continuation of research based on previous observations [5,6]. In the first stage of the studies the second element of the statement was verified, i.e. the value of goods which according to a sportsperson he/she may lose as a consequence of doping use and the internal correlation between these values were analysed.

Data from the first stage of the studies led to the conclusion that the attitude towards two diametrically different sets – material goods and goods constituting personal integration – is relevant to making risky decisions about doping use. Greater protection of personal goods (health, emotional balance) than material goods argues for perceiving one's own sport career in a long-term perspective. It is decidedly easier for young sportspersons to come to terms with the

loss of values the consequences of whose loss are immediate than with the loss of values whose consequences are postponed, even to such an extent that the negative symptoms are elusive or imperceptible [6]. It turns out at the same time that the rewarding value of the medal, despite being in fact material goods, is a manifestation of self-assessment of a sportsperson. The obtained data suggested that in the perception of a young sportsperson, the fact of winning the medal with the support of doping is an illusion; it leaves a sense of insecurity as to whether one's own skills enabled it to be won. Nonetheless, it turns out that its loss as a consequence of a doping scandal violates the most internal structure of identity, the sense of personal dignity, pride and personal self-esteem. Concealed in the above observations is the paradox of the temptation of doping – exposing a huge need for high self-assessment as a sportsperson even for the price of the completely illusory nature of such self-assessment.

In the situation of a temptation of doping use the decision making process consists in the choice of one of the two alternatives and is preceded by the analysis of profitability of the risk included in this

decision. In the name of the expected benefits people are different in readiness to accept the loss of respected values, i.e. the perception of risk. Personally accepted risk in the perception of a decision maker has to be worthwhile; this means that the expected effect and benefits connected with it are perceived as greater than the predicted loss. These assumptions show unambiguously that the perception of risk does not exist in a psychological void but coexists and is closely connected with other psychological constructs such as freedom of choice or responsibility [4,10].

The choice of one of the two alternatives constitutes information about an individual level of acceptable risk which means the acceptance of all the consequences resulting from this choice. According to researchers, the preferred strategy in the situation of a choice of risky decisions is minimization of the extent of loss [1,2]. This means that the person pays more attention to the possibility of a potential loss than a potential gain. In this study, in the theoretical as well as the operational sense, the above viewpoint was assumed by concentrating on the extent of loss made by a sportsperson, and not the potential benefits, i.e. what can be lost and what is the objective risk that we will lose it and what is the personally accepted probability of loss of certain goods.

As mentioned above, regularities concerning the extent of loss were described in the first stage of the studies. The aim of this study was to analyse the probability of loss in the view of young sportspersons. It is expected that the study will provide answers as to whether the real risk of loss translates into the personally accepted risk, which rules of overestimating or underestimating belong in the context of sport doping, whether direct external sanctions are assessed as more probable than remote in assessment of health consequences, and whether estimation of the real and subjective risk depends on the importance of what may be lost.

## MATERIALS AND METHODS

The study included 89 students from the Sport Championship School from fencing, track and field, martial arts and football classes. The age of study participants was in the range 16-18 years (mean 17.2 years). The training period in each discipline was in the range 2-11 years (mean 5.8 years). Due to the weak relationship between declared moral attitude and actual moral behaviour (explaining approximately 10% of the variation), the principle of anonymous performance of the studies was adopted.

An experimental version of the technique for risk assessment named "Perception of risk of doping" by H. Mroczkowska, developed at the Department of Psychology of the Institute of Sport, was applied

in the studies. The scale enables the recognition of the selected values in the pilot polls which the player may lose as a consequence of doping use for non-medical purposes:

- loss of health;
- loss of medal, scoring place;
- loss of physical attractiveness;
- loss of mental balance;
- loss of material reward;
- loss of respect of persons important for the sportsperson.

Data obtained using the scale comprise 3 areas of recognition:

1. Individual ranking of respected values determining the extent of potential loss as a consequence of doping; the task of the respondent is to rate the above listed values according to the grade of *difficulty – easiness* of coming to terms with the loss of each of them. Scoring from 1 to 6 points was adopted, where a higher numeric value means greater significance ascribed to the given value.
2. Real probability of losing the value as a consequence of doping use – the task of the respondent is to assess on a scale from 0 to 100% the real risk of losing each of the six values, independently from each other, as a consequence of doping use.
3. Subjective probability of losing the value as a result of doping use – the task of the respondent is to assess on a scale from 0 to 100% how high a risk of losing each of the values he/she would take and accept.

Statistical analysis of results was carried out using the *Pearson product-moment correlation coefficient* and t-test for dependent samples (*F* quotient) [8].

## RESULTS

Internal correlations between the values that may be lost as a consequence of doping use were presented in the earlier publication. Here, to make the results presented in this paper clearer, we present the ranking of the same values obtained in earlier analyses [6]: loss of health (mean 5.08); loss of respect of others (mean 4.37); loss of emotional balance (mean 3.80); loss of medals (mean 2.92); loss of physical attractiveness (mean 2.73); loss of material rewards (mean 2.08).

Table 1 presents the distribution of the objective risk of losing the above-mentioned goods in the view of sportspersons and doping use values in this range.

In fact, the assessments of the real risk reflect the knowledge of respondents about the effect and negative results of using banned

**TABLE I. OBJECTIVE RISK OF LOSING ASSESSED GOODS**

	Health	Medals	Physical attractiveness	Respect of others	Material reward	Mental balance
Mean value (%)	72.6	58.0	48.2*	58.9	53.0	52.0
SD	21.0	29.6	22.4	27.7	25.9	26.9

Note:  $p < 0.05$



drugs. The above data show that in the awareness of the respondents doping use does not translate absolutely into negative consequences, i.e. loss of personal goods. With respect to none of the controlled values was 100% risk assessment of their loss obtained. In the view of young sportspersons the greatest risk of use of banned drugs concerns respectively health (~73%) and respect of others (~59%), i.e. those values that are most valued by them and with whose loss they would have the greatest difficulties to come to terms with [6]. In turn, the smallest risk of doping use concerns physical attractiveness (~48%). Only in reference to these two values did differences in objective probability of their loss turn out to be statistically significant ( $p < 0.05$ ).

Apart from the significantly higher risk of loss of health, the probability of losing other personal goods varies around 50-60%. Therefore it cannot be confirmed that direct external sanctions that are something certain (loss of medal, material rewards and respect of others) are perceived as more probable than remote personal consequences (health and mental balance). Indirectly these data also suggest that estimating the objective risk depends more on the importance of what may be lost (health) than what may be gained (medals).

The above distribution of risk shows that in the assessment of young sportspersons the probability of doping exposure, manifested by loss of medals and rewards, is not high and creates a real temptation which in every case generates a random situation, dependent on chance.

In the next analysis it was assessed whether the correlation between the values of goods that may be lost and objective risk of their loss as a consequence of doping use will confirm the above assumptions. The relevant correlation coefficients are presented in Table 2.

**TABLE 2.** PEARSON CORRELATION COEFFICIENTS BETWEEN THE VALUE OF GOODS AND REAL RISK OF THEIR LOSS

Correlated variables		Coefficient r
Values	Objective risk	
Respect	Respect	0.26*
Mental balance	Health	0.27*
Mental balance	Physical attractiveness	0.21*
Mental balance	Mental balance	0.35*

Note:  $p < 0.05$

**TABLE 3.** SUBJECTIVE RISK OF LOSS OF ASSESSED GOODS

	Health	Medals	Physical attractiveness	Respect of others	Material rewards	Mental balance
Mean value (%)	35.9	38.0	33.6	38.5	34.6	33.7
SD	34.5	24.2	24.9	29.1	23.1	29.1

It turns out that there are no significant relations between material values of external nature (medals, scoring place and material rewards) and the real risk of their loss. Such relations are observed in reference to other, more internal personal goods and in this area there are a few regularities, indicated by the coefficients presented in Table 2.

First, the attitude towards mental health has the greatest influence on the assessment of the objective risk of losing potential values. This means that the more the young sportspersons value their own emotional balance, the more they perceive the danger of losing the good, as well as the loss of health and physical attractiveness. Second, the more the young people appreciate the respect of others, the higher they assess the probability of its loss as a result of doping exposure.

Since the knowledge does not have to translate to a decision, it was assessed in the next analysis which level of risk of loss of respected values the young sportspersons are ready to accept personally. Table 3 presents the distribution of subjective risk of respondents informing what is the personally accepted probability of loss of assessed values.

As described characteristically by the above distribution, in reference to all assessed goods, personally accepted risk has very comparable values. The lack of significant differences in the level of subjective risk shows that in the face of danger of losing any goods, everything that can be lost turns out to be equally important. Therefore the above data do not confirm the prediction that there is an association between the rank of the value which can be lost and the level of acceptable risk of its loss. If it was so, the accepted risk would be directly proportional to the rank of the value; the more valuable the good, the smaller the accepted risk.

As mentioned at the beginning, in the researched group the significantly most valued good is health, whereas the accepted risk of its loss turns out to be comparable and not at all the lowest in relation to the level of risk of loss of other values.

Secondly, the personally accepted level of risk was found to be lower than the objective risk, i.e. the actual knowledge of the negative consequences. This observation concerns all assessed goods. The analysis of variance revealed that a significantly lower level of personally accepted risk in relation to the objective risk concerns two kinds of goods, i.e. health ( $p < 0.001$ ) and medals ( $p < 0.05$ ). The data suggest that the young sportspersons are braver and more risky in the way of thinking about the doping phenomenon than in the real situation of making decisions about the use of banned drugs.

**TABLE 4.** SUBJECTIVE RISK OF LOSS OF ASSESSED GOODS AND DOPING USE

Correlated variables		Coefficient r
Values	Objective risk	
Health	Physical attractiveness	-0.23*
Physical attractiveness	Respect	-0.27*

Note: \*  $p < 0.05$

**TABLE 5.** PEARSON CORRELATION COEFFICIENTS BETWEEN AGE AND SPORT EXPERIENCE, AND THE PERCEPTION OF THE REAL RISK OF DOPING

Correlated variables		Coefficient r
Values	Objective risk	
Age	Respect	0.39*
Experience	Respect	0.40*
Experience	Mental balance	0.39*

Note: \*  $p < 0.05$

Analogically, as above, it was assessed whether there are correlations between the personally accepted risk and the values of goods. The revealed correlations are presented in Table 4.

The data confirm the lack of association between the rank of a given value and the subjective probability of its loss which was suggested above by the presented analysis. On the other hand, inverse relations are observed. Firstly, it turns out that the more health is valued, the lower the risk of loss of physical attractiveness is accepted. Secondly, the more personal appearance is valued, the lower the risk of loss of respect of others is accepted.

In the next analysis it was assessed whether the perception of dangers of doping has a connection with age and sport experience. In terms of age the studied group was homogeneous, but it was strongly heterogeneous in terms of experience in sport. The table 5 presents the relevant correlation coefficients.

Despite the homogeneity of the group, a positive relation between the age of the young sportspersons and the real probability of loss of respect of others as a result of doping exposure is observed. In relation to the sport experience, two significant correlations were found. Greater experience in sport translates to greater knowledge and perception of greater objective danger of loss of respect of others as well as emotional balance as a consequence of using banned drugs.

However, neither age nor sport experience is related to personally accepted level of risk. This is confirmed by an earlier suggestion about the lack of trans-situational conformity between what is known about the dangers of doping and the response to temptation of its use.

## DISCUSSION

Generally, the knowledge and beliefs regarding the negative results of doping do not actually translate to the decision process, and there is no trans-situational conformity between the objective and

personally accepted risk; the lack of such conformity argues for a protective or cautious attitude towards decisions about doping use. The young people in their way of thinking about doping are braver and more risk-taking than in situations of making decisions about its use; in the face of the danger of losing valued goods, everything that may be lost turns out to be equally important and the level of risk which they accept is low. However, the observation in the smaller group was confirmed that what is valued most is in the view of young sportspersons also more likely to be lost; the objective risk of losing health and people's respect is assessed as the highest [5]. Moreover, the data allow one to draw a few conclusions.

Firstly, in the view of respondents the risk of a doping exposure is not high (~50%), so the insufficiencies or gaps in anti-doping control create a real temptation. However, if we compare the above information to the studies from the 1990s, carried out on an analogical group, that estimated only 11% risk of detection, perhaps the obtained data, despite being far from perfect, are an optimistic sign of tightening of the anti-doping controls in recent years [7].

Secondly, it transpires that the hierarchy of values that may be lost as a consequence of doping influences the assessment of the real and subjective risk differently and concerns different areas of evaluation. The data suggest that estimating the objective risk depends more on the rank of what may be lost (health) than of what may be gained (medals). Moreover, direct external sanctions are not perceived as more probable than remote, personal consequences (psychophysical health). In turn, in the real situation of making decisions about doping, the internalized hierarchy of values has no greater significance; in the face of real danger of a doping disclosure everything that may be lost turns out to be equally valuable.

In the area of subjectively accepted risk, a specific process of self-censorship of young people facing doping temptation is noted. The observed logical sequence, perhaps not completely realized by them, shows the mutual conditioning of health, physical attractiveness and respect of others. The more young sportspeople value their own health – and they value it very highly, as has been shown – and the more they value their appearance, the lower the risk they will accept in order not to lose their image, and thereby the respect of others.

## CONCLUSIONS

In summary, the observations and suggestions described above may be essential when constructing educational programmes by itemizing those elements of perception of doping risk or thinking strategies of young sportspersons on the verge of maturity which would be a strong warning before making risky decisions of doping use.

Not a very optimistic implication of these studies, admittedly less drastically, but confirming reports from the literature, reveals two elements. Firstly, in the perception of young sportspersons the anti-doping control is not tight enough and hence the fear of its effectiveness is not sufficiently high. Secondly, the data suggest that the necessity of the doping ban is not sufficiently strong or

clear. These two elements of restrictive character, even though they seem to be not very effective, are most often used in propaganda campaigns when fighting doping [9,11].

In turn, an optimistic conclusion of the above studies results from three observations. Firstly, in the way of thinking about doping the young sportspersons seem to be more open and risk-prone than in the real situation of its use. Secondly, independently of the hierarchy of the values in the face of the danger of losing any of

them, everything that may be lost was found to be equally important for young people. Thirdly, a logical connection between health, appearance and respect of others is observed. The relations suggest that in the way of thinking of young people, health conditions physical attractiveness, whereas this is an unquestioned value receiving social respect, not only in the opinion of their peers – the knowledge of the logic of thinking of young people makes its translation into practice easier, and not only in sport.

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