# THE INTERACTION BETWEEN DEVELOPMENT OF STRENGTH AND OTHER DRIVING SKILLS IN HANDBALL

*Florin-Valentin Leuciuc*<sup>1</sup>

<sup>1</sup>Stefan cel Mare University of Suceava, Romania

### Key words: strength, driving skills, handball.

**Abstract:** The handball game is in constant change and evolution, with a permanent and dynamic acceleration, so that work to improve physical training must be done systematically and consistently throughout the sport activity. Specific physical training aims to ensure the qualities necessary for players to cope with the distinct game requirements that requesting speed, strength, coordinative capacity and stamina. The necessity to identify new components was felt especially in sports performance that lately has reached very high rates, pushing the limits of human body possibilities.

#### Introduction

In the handball game, the role of physical training is to provide developing of the driving skills characteristic to the game. This activity takes place as close to game conditions and is performed in interdependence with the acquisition of technical and tactical skills. Specific physical training aims to ensure the qualities necessary for players to cope with the distinct game requirements that requesting speed, strength, coordinative capacity and stamina.

Handball game is in constant change and evolution, with a permanent and dynamic acceleration, so that work to improve physical training must be done systematically and consistently throughout the sport activity.

## Material and method

To identifying the connections between driving skills specific to the handball game was the main goal of the research.

### Results

The physical training content refers to driving skills to be developed, to try to achieve consistency between the game requirements and the individual skills.

The training process of the handball players requires optimal relationship between: physical preparation, technical and tactical

preparation, psychological preparation. Interdependence of the sports training factors is very striking, although the physical training appears to be dominant. Without further development of specific and predominant driving skills, players can not yield rose to a high level, to develop individual and collective performance.

Handball game features in the contemporary period, at the motrical component, lies in it's ability to perform repeated explosive efforts several times in a game. Thus the driving skills necessary to achieve these actions are (listed in order of rank): strength, speed and endurance.

Because the place and the role of strength in the handball game was introduced in the previous subsection, we propose a brief analysis of the other two driving skills.

Although the short and explosive action is miss just 10-12% of the contents of a handball game, it is critical to effectively perform their in the game and getting sport performance.

The sports training orientation must be done in this direction, as is the main way of development and progress of handball in the contemporary period.

In the special literature are presented following types of training for speed development for handball players:

 "pure" speed training - to improve speed ratios of the distances encountered by handball players in the game – up to 30-60-100 m;

- training for specific speed, develop by executing different specific actions and technical exercises alternated with speed exercices;

- intermittent speed workouts that are designed to complement the effects obtained by using two other types of training.

### Discussions

"Pure" speed training (sprint)

This type of training involves working in two different directions: upper body, lower body.

To train lower body are used:

- exercises consisting in linear distances running;

- exercises that require changes of directions, quick stops and starts.

For upper body are used:

- exercises to increase the speed execution of movement of armforearm driveline required for recienving-passing and throwing the ball; - exercises for the shoulder muscles for fast execution of movements that involving the upper limbs.

Training for specific speed development

This type of training follows the same line as previous, but the objective is to transfer the earnings to specific technical actions (running, sprinting, jumping, stopping, throwing, recieving-passing, overtaking, countering the opponent's actions). This activity is essentially oriented to the competitional requirements of the handball game.

Intermittent speed training

Intermittent work must become a priority in the preparation of the handball players as the most reliable type of effort required by the contemporary competitive handball. In preparation we can use one of the following ways of working:

Lower boby:

-classic intermittent - runnings in maximal aerobic speed;

- intermittent maximal aerobic speed race with jumps - which can be on the horizontal or on the vertical;

- intermittent sprint with jumps.

Upper body

intermittent receiving and passing of the ball with sprints;

- intermittent receiving and passing of the ball with defending tehnique;

intermittent specific throwings for playing post.

The current trend it's to focus on short explosive efforts, but does mean that work for development of the resistance to be neglected.

Should take into account the repeatability of the short actions during a game and the body's possibility to support these actions with increased efficiency at all times. Although the muscle preparation and use of explosive and short training efforts is undeniable to achieve high indexes of this and it's based on a very good preparation under aerobic regim of work, so the overall resistance work at the beginning of the preparation and then shift to the specific part.

Specialists in the fields of sports consider that the development of resistance should be made through the following types of training:

- training to develop general resistance - designed to improve aerobic capacity of the handball players;

- training to develop specific resistance, by executing various specific technical actions alternated with efforts under the specific resistance;

- intermittent training to develop specific resistance.

Training for general resistance

This category of trainings generates a global influence on the body and his segments, the primary effect is turned on cardio-respiratory sistem and enhance It's activity. In carrying out this training are used the following exercices:

- runnings with uniform efforts made with moderate to medium intensity;

- runnings with variable effort, which requires repeated and differentiated efforts depending on the speed of execution, distance and time;

- alternative runings, which are expected to establish the working principle of the time period in which actions are performed with high speed or if it increases gradually so as to increase the intensity of effort in a short time, and oxygen debt to fill immediately;

- runings that requiring uniform, uneven or combination growth of distance or speed of execution.

Trainings for specific resistance developing

This type of training continue in line with the general resistance and the purpose is to transfer earnings to specific technical actions (jumping, stopping, throwing, receiving-passing, overtaking, countering the opponent's actions). It is used when the emphasis is on strength training to be at the level of the competition or to overcome it. Alternating of the intensities during training facilitates recovery between workouts, resulting in a peak shape obtained at the scheduled time.

Intermittent training type to develop resistance

Use of intermittent work for development of resistance requires adjusting to the competitional handball game and involves the intermittent working variants of strength and speed increase with repetition to ensure efficiency in the execution of the specific actions of the handball game.

It's recommended the following variants:

- classic inttermitent - runnings in maximal speed in aerobic regim;

- intermittent jumps - runnings;

- intermittent jumps- sprints;

- intermittent recieving-passing the ball with sprints;

- intermittent recieving-passing the ball with technical defense;

- intermittent throws for specific playing post with sprints.

Intermittent work options presented can be achieved by monitoring time or distance, number of repetition and the alternating of the exercices should be repeated many times to secure the work for resistance. This requires working time during intermittent regim to be between 4 and 8 minutes.

A graphical presentation of the relationship that is established between driving skills in handball game is presented in figure 1.



Figure 1 The interaction between strength and other driving skills in handball game

#### Conclusions

The exercices used for specific training related to technical and tactical actions and improving the indices of the specific driving skills can be grouped as follows:

- repeating games situations - attack, defense and linking of this;

- multiple repetition in various conditions of the specific technics of the game;

- exercices for specific handball driving skills;

- bilateral game.

Experts unanimously agree that one way to increase the efficiency of handball players is continuous repetition in all periods of training of the exercices related in the previous four groups.

The necessity to identify new components was felt especially in sports performance that lately has reached very high rates, pushing the limits of human body possibilities.

# References

1. ACSINTE, AL., ALEXANDRU, E., (2000), Handbal de la inițiere la marea performanță, Editura Media, Bacău

2. ARNAULD, H., (2004), La préparation physique et sa dimension prophylactique, Approche du handball, nr. 83, Paris

3. BOMPA, T., (2003), Performanța în jocurile sportive. Teoria și metodologia antrenamentului, Editura Ex-Ponto, București

4. BUCHHEIT, M., (2003), Bilans medicaux, epreuves d'effort en laboratoire et tests de terrain (L'exemple du Handball), <u>http://www.martin-buchheit.net/Dossiers/M.Buchheit-Reflexion</u> sur <u>l'evaluation physique et le suivi des sportifs en Handball.pdf</u>

5. COMETTI, G., (2004), Musculation et handbal, Centre d'expertise de la Performance, UFR STAPS, Dijon

6. CUNIN, M., (2002), Pregătirea fizică a unui jucător de handbal, Cursul de perfecționare al profesorilor și antrenorilor din România cu specializarea handbal, Cluj-Napoca

7. DEHERME, D., (2004), Exemples de situations de préparation physique, Approches du handball, nr. 82, Paris

8. ESPAR, X., (1995), La preparación física específica en los deportes colectivos. Orientaciones metodológicas, Curso de Verano del INEF de Castilla y León.

9. KUCHTA, Z., (2002), Motorical preparation in the training process of a handball player, 2002 EHF youth coaches' seminar Gdansk/Poland 15 - 18 august 2002

10. LAPAJNE, A., (2004), Intertwining fitness exercises with technical and tactical contents in order to be handball players more efficient in training, EURO 2004 Coaches' Seminar Slovenia

11. LEUCIUC, F., (2007), Pregătirea musculară adaptată pentru postul de joc la handbaliștii seniori în perioada competițională, Universitatea din Pitești

**12.** MIHĂILĂ, I., (2006), Handbal - Optimizarea pregătirii fizice specifice la echipele de juniori, Editura Universitaria, Craiova

**Titlu:** Interacțiunea dintre dezvoltarea forței și celelalte calități motrice în handbal.

Cuvinte cheie: forță, calități motrice, handbal.

**Rezumat:** Jocul de handbal este într-o continuă schimbare și evoluție, cu o dinamică permanent accelerată, motiv pentru care munca pentru îmbunătățirea pregătirii fizice trebuie realizată sistematic și consecvent de-a lungul întregii activități sportive. Pregătirea fizică specifică urmărește asigurarea calităților necesare jucătorilor pentru a putea face față în joc cerințelor distincte de manifestare a vitezei, de solicitare a forței, îndemânării și rezistenței. Necesitatea identificării de noi elemente ale mijloacelor s-a resimțit îndeosebi în domeniul sportului de performanță care a atins în ultima vreme cote deosebit de ridicate, forțând la limită posibilităților umane.

**Titre:** L'interaction entre la force et d'autres qualité motrices dans le jeu de handball.

Mots clés: force, les qualité motrices, le handball.

**Résumé:** Jeu de handball est en constante évolution avec une accélération permanente et dynamique, afin que les travaux pour améliorer la preparation physique doit être fait de façon systématique et cohérente tout au long de l'activité sportive. Specifique entrainement physique vise a garantir les qualites necessaires pour les joueurs a faire face aux exigences de jeu distincts que demander de vitesse ou la force, la capacite de coordonation et d'endurance. La nécessité d'identifier de nouveaux composants a été particulièrement ressentie dans la performance sportive qui a récemment atteint des taux très élevés, poussant les limites des possibilités du corps humain.