



Youth Coaches' Course
during the
2004 Women's 19 European Handball Championship in Czechia

CONDITIONS TRAINING OF YOUNG HANDBALL PLAYERS

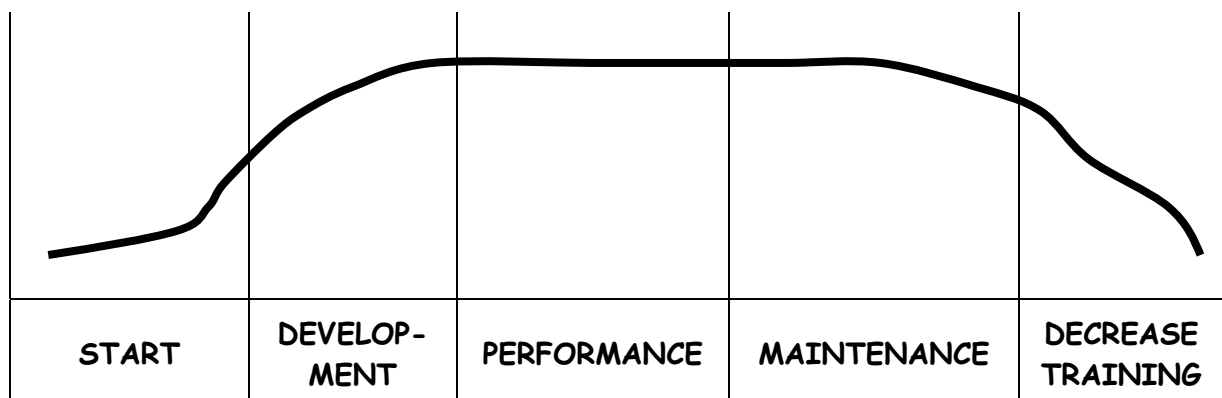
First of all we will make a general analysis of the career of a sportsman, to know to what stage corresponds the age we are analyzing. Then we will see the importance of the biological age in the determination of the work, as well as the differences in the development among young boys.

Then we will sum up the beginning of the work of each physical quality and the characteristics and general recommendations of the work in the respective age.

General phases of a sportsman's career

The next graphic gives an approach to the characteristics of the general process of the sportsman's career, where we can distinguish the different phases throughout the player's life.

Graphic of the player career phases
(Ruiz y Sánchez 1997)



It is very important to respect the work that should be carried out in each phase and mainly the yield demands

May be the most important points to take care of are:

- ⇒ the initial increase (just the moment to reach the maximum performance)
- ⇒ the final part, that means not to stop the process of training all of a sudden



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Biological age and chronological age

We all know that the periods of quick growth are less favourable for the learning, fundamentally because of the descent of the coordination that is produced by the lengthening of the corporal segments.

That doesn't mean that we should not train the physical condition, in contrary, it is a phase of good capacity of training of the physical qualities.

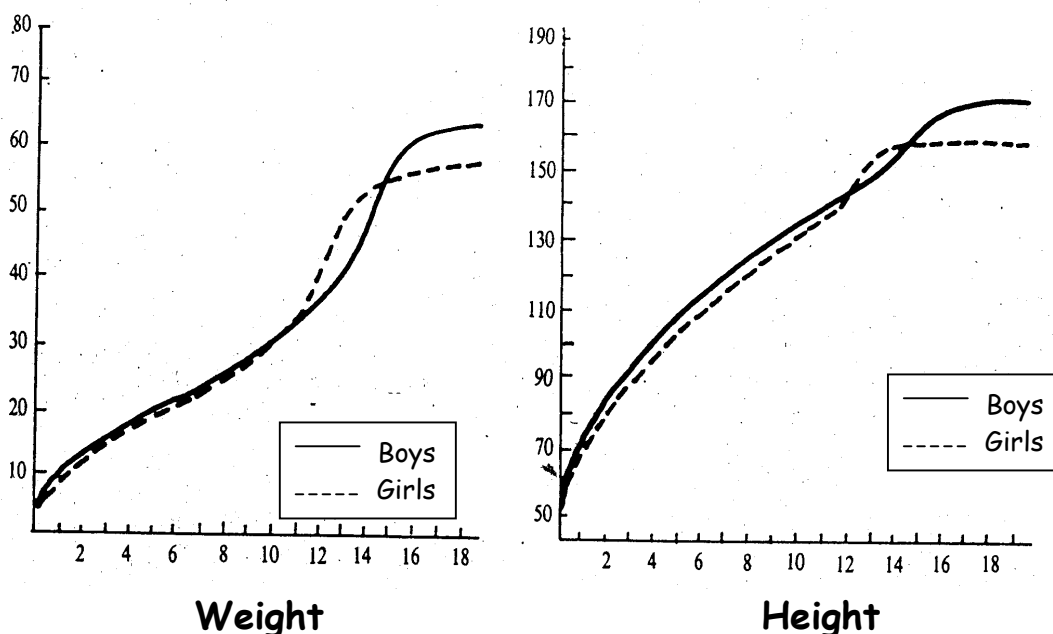
But in their fair measure, like we will see later on. It is very important that the decrease of harmony in the corporal segments makes the player more sensitive to wrong loads. Specially in terms of load put on the spine and on the cartilage of growth. Due to their momentary modifications it decreases their capacity to support big loads.

For that reason is very important to know not only the chronological age but the biological one, to know exactly the moment of growth of the player.

It is necessary to keep in mind that the boys and the girls have different phases of growth and that this has a special incidence in the work to develop in each stage. In the following graphics we can see the general differences between boys and girls in this period.

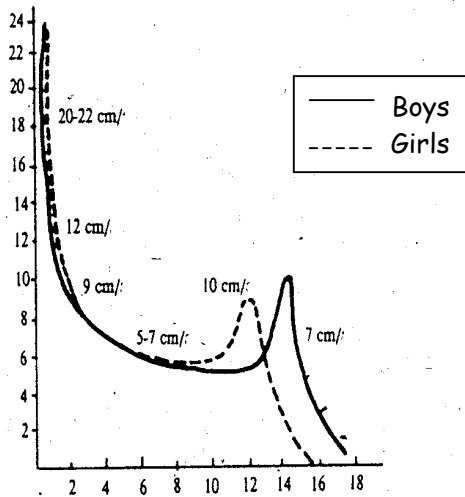
Differences in the growth of boys and girls

Graphic of the absolute grow up (Tanner 1966)

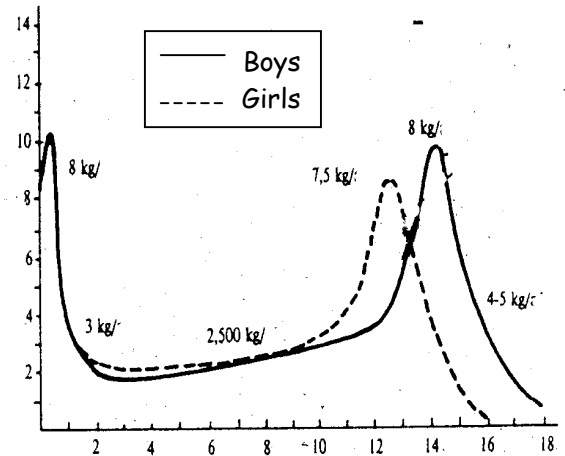


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**Graphic of the increase of growing up year by year
(Tanner 1966)**



Weight



Height

To point out, finally, that the end of the period of growth in height is substituted by a growth in width that harmonizes the player's proportions and supports the co-ordination capacities.

This reason, together with an increase of the psychological capacities, allows the handling of bigger work loads.

The different authors denominate this phase the second golden age of learning.

At the end of this period we can observe the first performance. In spite of that, we should be wise with that type of results and always take primary care of the player's protection in respect of the optimum performance in the future.



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The Beginning of the work of each one of the physical qualities

Following Professor Martin (1980) we will analyze general characteristic wings of the stages that belong to these ages.

Training contents in the different phases of development (Martin 1980)

<ul style="list-style-type: none"> ⇒ Develop of durable interests ⇒ Election of the specific sport ⇒ Exhaustive forming of the technique and of the coordination ⇒ Increase of the demands with regard to the physical condition 	<ul style="list-style-type: none"> ⇒ To support the tendencies of autonomy ⇒ Develop exhaustive and generic of the basic motive conditions ⇒ Constant increase of the loads ⇒ Stabilization of the technique 	<ul style="list-style-type: none"> ⇒ Training of the technique and the physical condition almost without limits ⇒ To solve pedagogically the grown conflicts of the different interests 						
DIFFERENTIATION OF THE DEMANDS IN THE TRAINING ACCORDING TO THE DIFFERENT BIOLOGICAL AGES								
AGE AND PHASES								
10	11	12	13	14	15	16	17	18
End of the school age			First phase of puberty			Second phase of puberty Beginning of the performance age		

Related to the physical qualities it is necessary to keep in mind that not all of them produce the same effect in the work with the young and therefore the moment in which you can begin to carry out the work of some and others also vary significantly.

In the following square summary of a study of Grosser et al. (1981) we observe the difference of the initial moments in the development of the different physical qualities



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**Table of elements of physical condition
(Grosser et al. 1981)**

PHISICAL CONDITIONS ELEMENTES		AGE						
		5-8	8-10	10-12	12-14	14-16	16-18	18-20
Maximum Strength	Boy							
	Girl							
Explosive Strength	B							
	G							
Endurance of strength	B							
	G							
Aerobic Endurance	B							
	G							
Anaerobic Endurance	B							
	G							
Reaction Speed	B							
	G							
Maximum Speed	B							
	G							
Flexibility	B							
	G							
EXPLANATION OF THE SIGNS								
		Careful beginning (1-2 times per week)						
		More intense training (2-5 times per week)						
		Training of high level						



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As a conclusion we can observe two significant facts:

- ➔ The girls, I think we have already analyzed before, they mature before the boys, therefore work directed to the high yield can begin earlier.
- ➔ In the period 16-18 we can almost work, with certain intensity, on all the physical qualities. Only we have to be patient with toughest qualities such as Strength endurance or Anaerobic endurance.

**Effects that the strength training in the youths can produce
(Gonzalez Badillo 1996)**

- ⇒ It improves the muscular force and the power
- ⇒ Little or any change in the muscular size
- ⇒ It improves the muscular resistance
- ⇒ It influences positively the body composition
- ⇒ Prevention of the lesions in the sport
- ⇒ It improves the development of the motor traits
- ⇒ It influences positively the sport yield.

Conclusions of several studies about strength production in youths (Gonzalez Badillo 1996)

- Dates: 1976-1993
- Number of studies: 18
- Age: 6-11 years
- Training type: Isometric, dynamic with loads, own weight.
- Duration: 5-12 weeks (1 of 20 weeks)



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- Frequency of session for week: 2-3
- Control group: in 16 of the 18
- Results: improvements of the force in 16 of the 18.

General characteristics of the work of strength with young

In the two following studies we find recommendations on the progression type to carry out the different possibilities of work of strength, in function of the type of muscular and tendon tension that results in the player

Types of movements according to the level of tension muscle tendon (Riva Violetta, 1985)

TYPES OF MOVEMENTS ACCORDING TENSION	EXAMPLES
Very high tension movements	<ul style="list-style-type: none">⇒ Alternating or successive Multi-jump⇒ Landings on a single leg⇒ Jump to an elevation and immediate rebound⇒ Simultaneous Multijumps (with minimum knee flexion, mainly with barriers)
High tension movements	<ul style="list-style-type: none">⇒ Landing from an elevation on two legs⇒ Landing on two legs after a jump⇒ Flexion and rebound in maximum squat⇒ Simultaneous Multi-jumps with maximum knee flexion
Middle tension movements	<ul style="list-style-type: none">⇒ Training with weights low or middle (without jumps neither maximum squat)⇒ Iso-cinetic Training
Low tension movements	<ul style="list-style-type: none">⇒ Multi-jumps going up tiers⇒ Long jump with landing in sand⇒ Uphill dashes⇒ Running



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Progression in the training of the jump capacity

(Recommendations of the High Performance Centre of Barcelona)

- ⇒ Exercises of strength mastering the own weight
- ⇒ Jumps exercises
- ⇒ Exercises of strength with weights and machines
- ⇒ Jump exercises with load and previous running
- ⇒ Jumps exercises with loads
- ⇒ Drop jumps
- ⇒ Rebound Machines

General norms for the strength training with youths

(Gonzalez Badillo 1996)

- ↳ To individualize the loads of training
- ↳ To train all the big muscles, as much flexors as extending
- ↳ To exercise the muscles in all the width of the movement
- ↳ Not to train on two days straight
- ↳ Not to train more than three days per week
- ↳ To maintain a soft but sufficient and appropriate progression of the load
- ↳ Not to use efforts of maximum character (neither very high percentage neither maximum number possible of repetitions for series).
- ↳ To avoid the tests of 1RM
- ↳ To avoid specific exercises (high load) of excentric character
- ↳ To give variety to the sessions of training
- ↳ To give preference to the exercises with free load (no machine)
- ↳ To select the exercises according to the personal requirements and those of the specific sport
- ↳ To know the technique of the application of the exercises
- ↳ Before introducing a new exercise he/she should have carried out the learning of the corresponding technique
- ↳ To supervise the realization of the exercises closely.
- ↳ To put the emphasis on the personal development, not on the competition among the players
- ↳ To pay extra attention to sharp or persistent pains

Finally, as summary we review the beginning in the work of all the elements characteristic of the training.



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**Model of planning of the long term training
(Navarro 1996)**

		AGE																				
		7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
PHASES		beginning					improvement					specialization					performance					
TRAINING	Technical	basic behaviours					automation					improvement										
	Tactical	individual tactic					team tact					improvement										
	Flexibility	general					specific					maintenance										
	Agility																					
	SPEED	Reaction																				
		Acceleration																				
		Displacement																				
	STRENGTH	Endu. of Str.																				
		Explosive																				
		Maximal																				
	ENDURA.	Aerobic																				
		Anaerobic																				
	KIND OF COMPETITIONS		Without preparation for the competition					Competition without specialization					Competition with specialization in positions					Looking for the high level competition				