

AGEING AND PHYSICAL ACTIVITY

Consequence of the ageing on the activity physical à the army

Since the professionalization of the Belgian army, his/her/its ageing did become more pronounced only. The suppression of the military draft modified the pyramid of ages and if the officers and non-commissioned officers constituted the aging staff, it is now necessary there to add the soldiers of career.

As the shows the tracing, the middle age of the Belgian soldier passes the 40 years currently whereas it was only of 32 years 8 years ago.

This ageing has an influence on the sporty practice and the practice physical à the army.

In this exposition, I intend in a first time to define the ageing and to express his/her/its consequences on the different physical bill of particulars. I will also speak of the beneficial effect of the sporty practice on the ageing.

Then, in a second time, I will approach the consequences of the ageing on the results of the aptitude tests physics à the army and I will benefit from this to propose some solutions to manage these consequences.

I will finish by general findings.

1. Definition

One has the habit to value the ageing according to the chronological age that tackles since our birth. It is little representative in term of performance, it is only a static notion that constitutes a bad reference mark in view of an individual interpretation.

On the other hand, the biologic age as definite by Linn in 1975 is a more reliable value that rests on measures and tests on basis of the biologic quality of cloths.

In any case, the ageing is a notion difficult à to define. We know that the processes of regeneration slow down with age, the unrests and small lesions don't disappear more completely. The deterioration predominates and the functions undergo some modifications unfavorable à the physical benchmarkses.

Besides, the aging being must defeat some psychological gates:

- a reduction of the domestic structure*
- a less active life that requires some reorganizations*
- recognized social standing*

All these modifications can be considered as being the phenomena that stretch à to limit the being's mobility.

The ageing sees to appear to different modifications within the various organs. The reduction of the capacities of benchmarks will be influenced mainly by the chiefs à the level of the devices locomotive cardio - pulmonary and cardiovascular system assets and liabilities.

In conclusion, one could define the ageing as being the sum of all psychological and social biologic modifications that drives since age adult à a progressive reduction of the capacities of adaptation and performance of an individual.

2. Consequences of the ageing on the physical bill of particulars

Now see what the main bill of particulars are physical that are affected by the old age:

- *Staying and resistance*
- *Strength*
- *Speed*
- *Suppleness*
- *Coordination*

Staying :le ageing will have an influence negative on the staying. Indeed, one can observe with the passing of the years a reduction of the FC max (FC max = 220 age) possibly combined à a reduction of the systolic ejection volume. The combination of these two factors entails a reduction of the systolic output (QC = VES–FC).

Studies proved that a strong interrelationship exists between the systolic output and the power aerobic Max (VO2 Max). While comparing the evolution of this (VO2 max with the passing of the years, we notice that this one reaches a maximum then in the middle of the 3rd decade cad à the about the 25èèmè year regresses in a continuous way so that à 40 years, the individual can lose until 25% .de his/her/its VO2 max.

Strength is also a physical quality that will decrease with age.

First of all speak of the muscular mass that doesn't quit to decrease from 25 years. This reduction can reach 30% at the age of 70 years. One also notices a free testosterone production reduction that has an effect anabolic steroid.

These modifications entail a parallel reduction of strength going while becoming more pronounced as one advances in age.

He/it is à to note while with a suitable practice, strength contrary to the other physical bill of particulars can maintain itself à a level close to the maximum (25 years) during longer (\pm 40 years).

Of all physical bill of particulars, it is the speed that undergoes the reduction the more precocious and most labelled. The speed is going to depend on two factors: - strength and the coordination and will follow a parallel regression therefore.

The suppleness when à she/it is affected by the sedentary lifestyle and by age. She/it is bound à a state of relaxation of the muscular system and is determined by the amplitude of movement around one or several joints.

This amplitude is going to depend on the:

- anatomical structure*
- of the soft bodies*
- of external factors as - the temperature*
 - age*
 - sex*

The face opposite famous the stiffness increased à the thread of years à the level of the backbone as well as a reduction of the springiness the tendons, the ligaments and the articular capsules.

The faculty of adaptation due to new situations is going to decrease also with age. What will have like consequence a risk increased of injury.

Fortunately, the practice is going to permit to improve the coordination and the precision of the movements until an age + advanced.

After have review the consequences of the ageing on the main physical bill of particulars, pose himself the problem to know if it is possible to influence these results by the practice of sport.

The scientific literature answers comfortably by the affirmative. :

- 1. " The physical practice permits to maintain the younger man biologically that doesn't express it his/her/its age.*
- 2. The decline of the capacities is delayed and is remained lower at the driven topics.*
- 3. The aged man and in good health reacts à the stimuli.de the practice in the same way as a young (Weineck " the biology of sport ").*

In synthesis, I will say that the reduction of the physical benchmarkses with age are ineluctable.

But the practice of sport influences favorably the functional state of the organism and permits to move back this reduction of performance.

Now see the consequences of the ageing on the Belgian Military Physical Test results.

3. Consequences of the ageing on the results of the physical tests of the Belgian army

To begin, I am going to present you the tests of the physical tests of the Belgian army.

These tests include 4 tests:

- *a test of jogging 2400 m*
- *a forcible test for the members superior bending of arm à the stationary rod*
- *a forcible test for the suit - up abdominal muscles*
- *a test of swimming 100 free meters*

The military staff is distributed in five categories of age. For every category a coefficient corresponds permitting à the eldests to compensate the handicap of age.

Aged fairness adjustment is provided by the following factors:

Cat	Ages	F
1	17 to 35	1.0
2	36 to 40	1.2
3	41 to 45	1.4
4	46 to 50	1.6
5	50	1.8

The picture that follows gives us the results gotten by the different category Soldiers without taking into account the coefficients to which they have rights.

We cannot only notice that the decrease of the benchmarks is bound à well ages it but especially as the most meaningful decrease is located between the presses 2 and 3, c - have - d that the break of the performance is located between 40 and 45 years.

Categorie	Result (%)	
1	69,9 %	} # 9,4 % } # 12,9 % ⇐ 40 – 45 years } # 4 %
2	60,5 %	
3	47,6 %	
4	43,69 %	

Now compare the results gotten by the soldiers belonging à the units of fight in relation to those gotten by the executive staff and logistics. These results show that the performance decreases less quickly among the soldiers belonging à the most active " organisms.

Cat / Unit	Comb Bn	Admin & Logistic
1	74 %	61,5 %
2	64 %	53,7 %
3	55 %	40,1 %
4	51,9%	34,6 %

If one now studies the rate of involvement of the

military à these tests, one notes that absenteeism for medical reason increases with age. What is normal since the modifications linked à age it à the locomotive device level passive and active drag an increase of the risks accidents?

<i>Catégorie</i>	<i>Exempt %</i>
<i>1</i>	<i>6,8 %</i>
<i>2</i>	<i>18,1 %</i>
<i>3</i>	<i>19,5 %</i>
<i>4</i>	<i>38,8 %</i>

In summary:

What means that the monitor of sport must adapt its courses according to age and the practice of his/her/its pupils. How can him to take itself/themselves of it to decrease the risks of accidents maximally:

First of all, the monitor must require a medical follow-up under shape of medical exam of faculty à the sporty practice. Then, the monitor should form the homogeneous groups taking into account the potential physical of each. (For example not of effort max. for the more of 50 years). He/it will have to besides to individualize the practice while using the sports for example to test (polar.....) on the land and finally, the monitor will owe conscientiser them practicing of the increasing importance to do a good warming-up and a return à the serious calmness

In conclusion,

One can affirm that the ageing is ineluctable and go from equal with a reduction of the performance. However the ageing is not a restrictive factor of the practice of the sport à the army but debit to be taken like stimulant and to motivate the military fair à of sport through which it will preserve a physical shape allowing him to really lead à his/her/its missions.

The role of the sporty monitor is primordial and the application of the few advices should allow him to maintain the soldier's physical condition in spite of the ageing of the army.

I will finish by a quote of the Sir Marc Arthur that à says I mention: " One doesn't become old to have lived certain number of year, one becomes old because one deserted his/her/its ideal ".