

FITNESS - REMODELLING

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FOREWORD

Mr. Chairman, (ladies and) gentlemen,

To begin with I'd like to thank you for the opportunity you offer me to hold this lecture. Let me introduce myself:

I am Senior Captain Rony Nys and have been the sports officer at the Royal School for NCOs at Zedelgem Belgium since 1978.

In this function I am responsible for the physical training of the cadets NCO.

In this lecture I'd like not only to present the concept of FITNESS - REMODELLING but also to convince you of its NECESSITY.

Before entering into my subject let me sketch you the STRUCTURE OF THIS LECTURE.

Structure:

In my INTRODUCTION I'll say a few words about how the project got off the ground. I'll THEN explain in detail how FITNESS-REMODELLING can optimize the training process. FINALLY we'll try and come to an assessment of this method.

I. INTRODUCTION

During the last 20 years the physical quality of cadets NCO and conscripts deteriorated to such a degree that more intensive training was called for. The result of this training, however, was, that the number of injuries increased proportionately, which, in its turn, led to a higher number of drop-outs.

For the less able this went hand in hand with an increase of weight. To counter this effect those cadets were subjected to even more intensive training, with the inevitable result: a vicious circle.

II. CONSEQUENCES INACTIVITY

The study which appeared in the Scandinavian Journal of Medical Sports of 1992 entitled 'The effects of training, immobilisation and remobilisation on musculo skeletal tissue' by Kannus P. et al, gives a clear picture of the negative impact of immobilisation of 5 weeks. Especially the time needed for remobilisation (expressed in MONTHS) is disconcerting.

This immobilisation was negative for the mental system, the cardio-vascular system, the muscular condition, the nerves, ligaments, bones, cartilage and discs, and proprioceptors.

The main conclusion to be drawn from this study was, therefore, that the period of immobilisation or inactivity be kept as short as possible in order to:

1. shorten the negative spiral;
2. start remobilisation as soon as possible.

In what way FITNESS-REMODELLING can contribute towards this end is what I will demonstrate in the next few minutes.

II. CONTRIBUTION OF FITNESS-REMODELLING

What does FR do? What are its pedagogical objectives? How should we define it? What is the place of FR in motion management? Who is FR for?

Those are the questions we will need to answer.

The method used is, of course, the practice, together with the area in which it is done.

The training of personnel and the coordination within the different authorities is the next important step.

Finally we'll come to a general assessment in which the problems that may crop up and our expectations for the future will not be forgotten.

A. PEDAGOGICAL OBJECTIVES

Objectives have to be defined for any kind of project. As far as attitude is concerned, this means that, at the end of the FR session, the individual must be able to carry out the physical effort set out at the beginning.

The condition is that this is done under the supervision of the FR cell.

The final assessment checks if the individual has reached the standard required for this phase of training.

B. DEFINITION

FR is a complementary non-medical form of training which aims at enabling an individual to carry out basic functions again after a period of non-activity. GENERAL REMODELLING refers to a situation in which there is no real injury, in other cases the term SPECIFIC REMODELLING will be used.

In general fitness-remodelling a BETTER and MORE INDIVIDUAL training is offered, with a progressive training-programme which is specific for the individual.

The aim of specific fitness-remodelling is to shorten the period of medical exemption as much as possible, to fill in the period of 'normal' inactivity as a result of the injury usefully, to reduce or even annihilate the negative consequences of such inactivity on both the mental and physical condition and to guarantee the progression in training.

C. THE PLACE OF FR IN MOTION MANAGEMENT

The technical supervision and coordination lies with the sports officer, who is responsible for the coordination with the different authorities responsible for physical training.

The General Fitness-Remodelling covers the whole area of training, starting from the green light given by the doctor, over the medical, physio-therapeutical treatment, the possible specific FR programme, to the actual purely physical training given by the physical training instructor (PTI).

The specific FR is situated between the physio-therapy and the PTI. Here the medical-functional training has a crucial role to play.

D. TARGET GROUPS

As has been pointed out before, the possible candidates for such training are numerous.

This form of training is meant for individuals, both for those IN POOR SHAPE and those that are OVERTRAINED whether they have been INJURED or NOT.

In the first place there are the 'newcomers', those that are training towards a specific goal.

But when they have reached that goal, this is not the end. Their physical condition has to be maintained. Moreover, if a problem crops up resulting in a longer or shorter period of non-activity, they are still 'candidates' for FR.

Finally, also those that go in for any kind of top sport can benefit from this form of training, either in order to excel in a particular sport, or to maintain their carefully built up condition or to remain at the top through alternative training.

E. METHOD

How is this done in practice?

To start with we make a round-up of the situation, which is translated into a FITNESS ASSESSMENT.

Then we go over to the actual training using our concepts of FR .

Finally we will make a permanent FEEDBACK both during and after the training in order to become a fitness-remodelling assessment.

1. FITNESS-ASSESSMENT

Let's have a look at the diagram with all the possibilities that can occur .

First we'll determine the profile from the FITNESS-ASSESSMENT. Taking into account the physical condition and/or the handicap, the doctor will set out the limits and decide whether a general or a specific FR programme is required.

If it is a GENERAL problem, we'll profile by making a sports analysis (Non-sporter, sporter, top sporter) in order to be able to determine the possibilities or limitations of the individual and to make up a training programme.

If there is a SPECIFIC problem, we'll determine his GENERAL PROFILE by the sports analysis on the basis of his medical limitations. Then we'll determine the profile of this person and develop a training programme based on a function analysis drawn up by the therapist from the functional medical training. This will enable us to perfect the training programme to ensure optimum, continuous and effective results.

When we have all this information, the Fitness-Remodelling can start!

2. FITNESS-REMODELLING

a. Training programme

Now we know where the individual ought to be situated and what his limitations are, we can draw up a GENERAL or SPECIFIC TRAINING PROGRAMME (with MFT) and determine a clear TRAINING OBJECTIVE with a choice of:

TRAINING METHOD : power - speed - stamina - flexibility - coordination

TRAINING FIELD : general circuit - specific circuit - combination

KIND OF TRAINING : power training - cardio training - coordination

WEEKLY PROGRAMME : duration: 2 periods of 5' recline

frequency: 6 x/week

period: 6 h/week

intensity: 50 rotations per minute

weight: alternately EXT and INT Trg

'SPORT INDIVIDUAL PACE': this is the transitional stage before joining the POOREST of the basic group

b. Procedure:

Nothing new, except that we keep training in spite of existing injuries the mental, cardio-vascular, muscular and coordination aspect.

Every training starts with a feedback of the previous training session.

The whole concept is based on a number of FUNDAMENTALS as mental training, cardiopulmonar and muscular stimulation and maintenance of coordination.

With the specific FR it is, of course, important to have the input of the medical-functional training at your disposal. A permanent check-up on pain, stiffness and swelling levels of every single athlete is essential.

The ultimate goal is the return to normal training as a result of the final FR test.

1) MENTAL TRAINING

The key to successful training is the mental stamina and willingness of the individual.

To start with internal, psychological factors have to be present to be able to start from scratch. Stamina and motivation are essential. The WILL of the individual is the embryo

A number of external psychological factors also play a role.

The situation at home will to a great extent determine the way in which the individual will cope with his problems. The working environment, especially the relationship between trainer and athlete, will of course have an impact too. "Mobbing" (backbiting) also influences stamina. And, indeed, the rank and position of the individual will have an important impact on the end result.

2) CARDIOVASCULAR

A permanent cardiovascular stimulation is the second stepping-stone in FR. At the centre we can train: upper body, aquatraining, recline, bike, stepper, rotex, treadmill and we use heart rate monitor. Depending on the nature and evolution of the injury one or more of these devices are used to stimulate the heart-lung function.

3) MUSCULAR

Constant training of the muscular system is the third pillar of FR. The whole range of power equipment is at our disposal: butterfly, latpull, leg extension, leg curl etc. Depending on the nature and evolution of the injury one or more of these devices are used to stimulate the muscular function.

4) COORDINATION

The permanent maintenance of coordination is important for all basics and is therefore the fourth pillar of FR. For this, the Burdenko method is an excellent help. It is applied in sessions NOT specifically selected for power training and cardio. As far as environment is concerned, we need a bit of space, some equipment and a swimming-pool.

Characteristic of this programme is the fact that the whole body is being worked on in a vertical position, in both directions on land and in the water. In water the body can be as low as 10 % of normal body weight.

The ultimate goal is of course the coordination skills needed in sports, which are mastered in MFT training, and the ensuing general proprioceptor training sessions aimed at developing endurance, power and speed.

Depending on the nature and evolution of the injury one or more of these devices are used to stimulate the cardio and muscular function and proprioception.

Giving orders without checking up is like drinking from an empty glass.

3. FEEDBACK

First there are a number of tests that check up on **mental reserves**. The Visual Analogue Scale gives a clear rendering of the pain experienced by the individual. This indication is an important help in the discussion and coordination with the medical staff as far as medical diagnosis is concerned. The BORG -scale gives a picture of how the individual experiences the intensity of the effort. This is of importance in order to be able to determine the difference between what the individual experiences and the real effort, and to assess his condition.

A second set of check-ups refers to the **physical situation**. In the cardiovascular field this is done by means of a heart rate monitor. There is a regular check-up on the muscular training content by working with the 1 RM VALUE or REPETITION METHOD. Coordination is assessed in a number of objective tests such as high jump and long jump.

After positive advice from the doctor, the physiotherapist and the FR instructor, the FR instructor makes a FR evaluation that gives the permission to the person concerned to carry out his basic functions again as soon as possible.

F. THE FITNESS-REMODELLING CELL

In the first place there has to be a physical training instructor (PTI) who is responsible for the TOTAL programme, including the first assessment of fitness, the actual FR programme and the feedback.

He has at his disposal the necessary cardio set-up, power training equipment, appliances for the Burdenko method, body fat analyser and laboratory support. As the concept is very labour-intensive he needs the necessary computer back-up and programs.

G. TRAINING

It goes without saying that such an approach must be based on proper training and in-service training. The sports officer is responsible for the grey area between medical and athletic aspects. He's also responsible for the total concept of motion management. The PTI is the supervisor of the mental and physical aspects.

H. COORDINATION

If such a well-balanced and optimal training programme is to be effective, coordination is of the utmost importance. There should be coordination on four levels:

First, there has to be a **permanent input** of a

Doctor : he is responsible for the diagnosis, treatment and medication.

Physio-therapist: he cares for rehabilitation and he starts the medical-functional training.

Cook : he checks the calorie balance and gives dietary advice.

FR instructor : is responsible for the whole FR programme.

PTI : he is the practical assessor of the whole system. He assesses performances before, during and after FR.

Second, **daily contact** between FR instructor and PTI is essential to ensure step-by-step follow-up.

Third, there is a **weekly meeting** of physio-therapist and FR instructor at which the medical-functional aspect of the problem is discussed.

And finally, there is a **monthly meeting** presided over by the sports officer to coordinate efforts. Here all cases are discussed with the military staff, the FR instructor, the PTI, cook, physio-therapist and doctor. It is, after all, of the utmost importance that all the authorities involved can communicate and work together as effectively as possible.

I. CONCLUSIONS

A first conclusion was that one can always keep training. Second, that ambiguous cases were "soon miraculously cured" through this form of alternative and complementary training.

As far as results were concerned we saw that:
deterioration of fitness was fundamentally halted
a return to normal training was accelerated thanks to the benefits of aqua-training
mental reserves, both individual and in group, were enhanced
there was minimal relapse and there were few rest symptoms
a continued effort with efficient weight control ensured positive results
fundamental improvement of physical condition could even be detected with poor performers who had suffered injuries.

J. PROBLEMS

As with all new methods one should not only look at performances and results, but also at problems that crop up.

The first hurdle to take is the training of the sports officer and the PTI's. Specialized training is essential.

Acquiring the necessary material and equipment is not a problem in itself, but one must realize that with less equipment the system cannot operate satisfactorily.

And finally, the sports officer must have the necessary know-how in management so that all efforts (medical, athletic and military) can be pointed in the same direction.

K. EXPECTATIONS

First, FR needs to be optimized, both in terms of training methods and equipment. It is therefore important to pass on knowledge and experience to each other.

In a first stage schools and trainingcenters should introduce this method, later to be followed by the units.

The budgetary impact of this project per installation is around 25.000 US/Dollar for the cardio unit, fitness equipment, computerisation and the various smaller appliances.

III. CONCLUSION

Let's now come to a conclusion of FR.

HAS THE GREY ZONE BEEN FILLED IN?

First, I'd like to stress that FR is NO REHABILITATION TRAINING. On the contraray!!

It is an essential part of commercial and company fitness (for every Tom, Dick and Harry) and of top sport (look at the methods used by football clubs like Ajax Amsterdam, top cyclist Johan Musseeuw, olympic champion Nancy Kerrigan, etc.) It's a supplementary training aimed at both advanced sportsmen and beginners.

In this way the grey area which unfortunately still exists between the medical world and the actual sports and fitness world has indeed been covered. Still, all want to get maximum results. And this is perfectly possible with maximum efforts.

If the specific FR method has done its job well, the athlete, who has gone through this phase and has re-started his normal training, will no longer have to fight 2 opponents (his poor condition and his injury), but will only have to concentrate on his injury. He will already have regained his original shape through FR.

So we can conclude: YES, THE GREY ZONE IS FILLED IN

THE TORTOISE AND THE HARE

Allow me to end this lecture with a visual analysis.

In the past we trained, got injured, went to the doctor and had to stop training for a day, a week, a month or even a year.

The results were: a drop in training level and intensity, a deterioration of mental reserves and team spirit. In short, we emerged from this period as a tortoise.

Now we have the possibility to welcome a shining future in which we can keep training those parameters. The keyword is FITNESS – REMODELLING. Using this form of training we leap towards better results like a frisky hare.