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RESEARCH ON INJURY SUSCEPTIBILITY

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Location

Unless other (individual) club arrangements, this research project is conducted at the '*Thim International Academy of Physiotherapy*', Nieuwegein (The Netherlands)

Documentary / trailer

Full Circle Productions
Avalon Video Productions

WARNING

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'Real art of movements don't fear new ideas'

V. Svetloff

Title of the study (provisional)

Recovery Ballet for soccer players and other athletes: *an experimental study*

Brief title of the study

Recovery Ballet – *From Injury to Victory*

Background

Recovery Ballet is based on the '*symphony of movements*' which means that normally each muscle, muscle group and thus any movement activity have their own harmonious coordination and timing [1]. The philosophy behind the Recovery Ballet Methodology is that an athlete with a temporary or permanent disrupted movement pattern - regardless of cause - will have in a short time a changed transmission at neuronal and synaptic level [2]. In soft tissue lesions and overload, movement patterns will change so effectively at a neurological level that a new (pathological) reflex pattern is generated.

By offering completely different movement patterns than the athlete is familiar with, specific impulses and transmissions at neuronal and synaptic level are affected. [3]. In particular, altering the currently disrupted movement patterns that the athlete has mastered, it is assumed that improved stimuli transfer and faulty circuits at different levels will in a short time improve or normalize (re-routing process or experience-dependent plasticity [3]). In general terms, the starting point for Recovery Ballet is Body Mapping. Here the principle of the movement of a certain body part is (neurophysiological) connected to another part of the body so that these parts move together at the same time [4].

Depending on the nature and severity of the injury an individual RB-program will be composed which consists of different types of dance techniques. The movement patterns to perform are derived from several ballet and dance forms. A brief description:

A. *Classical Ballet*. This 'old' technique is based on clearly defined and described movement patterns. Strictly theoretical, there is the classical ballet technique only one way to perform impeccably. Practice has also shown that the established techniques may be waived without canceling the indication 'classic'. Features of classical ballet techniques are:

1. Unscrewing (endehors)
2. Using the length of the muscles and stretching the body in a certain way (fully upright posture / attitude).
3. Both hard and soft movement's qualities
4. The element of feeling 'elevated' movements being performed on the toes (relevé).
5. Stretching of the foot (point)

B. *Modern dance*. This is a dance form which is based on the dynamism and processing of opposites as 'contraction' and 'release' (Graham). Here the spiral turn is around the axial skeleton, flexion of hands and feet as well as parallel leg positions and falling actions, including back fall and maintaining the balance. All movements start from one single point (solar plexus / center core) which is also and controller of the entered power. The principles upon which the modern dance is based, have been described as: substance (the movement), dynamics, metakinesis (the psychological or mental content of the movement) and form (the result of the movement).

C. *Jazz dance*. This form of dance is composed eclectically but important identifying characteristics are a low center of gravity and a high level of energy. The frequent use of isolation of body parts (arms, legs, head, hands, etc.), movements on the syncopated (music) elements and low to the ground (legs bent / plie) and the use of dynamics are decisive here.

Hypothesis 1.

During a recovery period of a (severe) re-injury, the researchers expect that the recovery process can be optimized by specific movements and movement patterns from the ballet world to combine with existing therapeutic interventions and performance activities. Employing proven techniques from the world of (classic) ballet and dance promotes flexibility and vigour, improving aerobic capacity, posture and muscle tone. Dance and ballet patterns are generally so designed, and performed that it may be expected that the afferent neurology can have a positive impact on the rehabilitation of soft tissue (re-) injuries.

Hypothesis 2.

- RB promotes balance, flexibility, strength and coordination and should be integrated into the training spectrum of athletes as an added value.
 - As RB is particularly important in developing sports performance, it should be integrated in training and education of junior athletes.
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Research questions

- Might RB be interpreted as a benefit in rehabilitation in soft tissue (re)injuries?
- Might RB provide scientific information that can lead to a new appropriate therapy?
- Might RB promote the recovery of the *symphony of movements* by offering non- familiar neurological transmission stimuli?
- Might RB promote *balance, flexibility, strength* and *coordination* in sports injury prevention?
- Might RB be particularly important in developing performance, sports injury susceptibility and injuries of football players and other athletes?

To be examined

1. The Impact of Recovery Ballet on the recovery (process) of soft tissue (re-) injuries.
 2. The interrelationship between existing therapeutic interventions and RB.
 3. The benefits of Recovery Ballet.
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Population

80 subjects in the test group will be selected from football players and other (top) athletes (M/F).

Inclusion criteria

- Athletes
- M/F
- Age between 16 and 29
- In good general health
- Active in (elite) sports
- Recovering from a soft tissue (re-)injury
- Expected prolonged recovery time from a soft tissue (re) injury
- Sub-acute phase of injury
- No more risk of further injury, increasing pain or swelling,
- Minimal reaction after active movement(s)

Objectivity

Objectivity will be regularly measured by the plantar activity (COF or Centre of Force) by using the RS-scan Footplate. The RS-method has been described in the literature and as such validated and widely accepted as well as filling in report questionnaires by the dance teacher afterwards every dance session. Monitoring of clinical progress is carried out by a sports scientist and / or full graduated physiotherapist. Subjective data will be collected from the participants in this project by filling in multiple evaluation forms by themselves.

Procedure

Internally & Confidentiality

Procedure / Measurements

Internally & Confidentiality

Period study

Start January 2015 - End of November 2017

Literature

- [1] Boschma, J.C. (1987): 'Block Point Methode' (pp.17-19). De Tijdstroom, Lochem-Gent.
- [2] Ericsson, K.A. (2006). 'The influence of Experience and Deliberate Practice on the Development of superior Expert Performance'. In K.A. Ericsson, N. Charness, P.J. Feltovich, R.R. Hoffman, The Cambridge Handbook of Expertise and Expert Performance (pp.683-704). New York, Cambridge University Press.
- [3] Sitskoorn, M. (2007) 'Het maakbare brein' (pp 170-172); Amsterdam, Uitgeverij Bert Bakker
- [4] Kolff, J. (1995); Departement of Dance, Ohio State University: 'De conferentie Dans en Technologie 1995', Bulletin voor Dansonderzoek 4.1/2 (1995) pp. 30.

