

BODY POSITIONS, PROCEDURES AND PRINCIPLES IN TRX TRAINING – THEORETICAL CONSIDERATIONS

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Abstract: Problem statement: We intend to make a short review about some theoretical considerations in TRX training. **The aim of the research:** The aim of this paper is to realize a brief theoretical description on the body's position, procedures and principles in TRX training.

So, the goal of TRX training is also to develop the muscle strength and neuromuscular control, so that the purpose be represented by a better control and a more effective protection throughout the body during daily requests. The objective of introducing TRX exercises in the training is to provide a progressive muscle strain in the whole body to determine changes in neuromuscular system of trainees, to lead to the removal of shortcomings/limits caused by injury.

Conclusion: All the papers we are reviewing have the following conclusions – TRX training

Key words: TRX training, body positions, proceedings and principles, theoretical consideration

Introduction

TRX is based on Suspension Training principle which is relatively simple: exercises are performed with two straps and own body weight. During TRX training, one can safely perform hundreds of exercises to increase strength, flexibility, balance and mobility without the risk of injury. Research has shown that TRX exercises improve patient strength and proprioception, using progressive overload.

TRX training – ‘Total Resistance Exercise’ – is a relatively new practice in Romanian gyms. It came to light in S.E.A.L. US Special Forces being entered by US Commander Randy HETRICK, in Navy SEAL and was tested by trainers worldwide, receiving many positive reviews (<http://www.dumitra.net/blog/?p=4914>).

Randy Hetrik and his colleagues have developed a new set of exercises based on using own body weight, exercises especially designed for this new training tool. Thus, Hetrik and his colleagues started a new original approach of functional training that is known to us today as: Suspension Training. So TRX is based on Suspension Training principle: exercises are conducted with two straps and own body weight. It is this last aspect that is the ‘ingredient that attracts’ and amazes. In its simplest form, Suspension Training is about all unique movements based on their own body mass (<http://fitnessresearch.edu.au/journal-view/effects-of-trx-versus-traditional-resistance-58>).

During TRX training you can safely perform hundreds of exercises to increase strength, flexibility, balance and mobility without the risk of injury.

This kind of training is suitable for everyone, because it can control the level of resistance and difficulty. It is perfect both for rehabilitation and for an intensive fitness program. Unlike standard

trainings that request a single muscle group, which can lead to the risk of injury or muscle imbalances, Trx Suspension Training allows a wider range of movements and muscle groups simultaneously. (Fitness Anywhere, LLC., 2011, Dupont, D., 2007).

TRX training has a wide range of exercises for the upper and lower body, all of them asking the individual to maintain balance while performing various exercises.

Ingenious and highly effective, TRX is a tool by which are performed suspension exercises, being suitable for people having problems with their joints or back. Also, TRX training is good for the body because it involves all muscles and improves breathing.

TRX training concept is based on three different fundamental principles: vector resistance, stability and pendulum. Vector resistance principle gives opportunity to adjust resistance by angle to the ground, lever and gravity.

The stability principle comes into play due to base of support and balance, and the pendulum principle due to the starting position in relation to the anchor point (Amr, H., 2013).

Research has shown that TRX exercises improve patient strength and proprioception by using progressive overload (Dannelly, et al. 2011).

TRX training benefits

TRX training is easily monitored, safe and effective for everyone, regardless of the physical condition. With TRX Suspension Trainer, muscle activation levels and common tasks can be handled by varying the body angle and stability level for each exercise. By using the whole body, muscles forces will be distributed over the body, and will thus increase the awareness of how the body moves and the individual proprioception (Fitness Anywhere, LLC., 2011)

Briefly, TRX training benefits are as follows:

- Develops muscle strength;
- Reduces the risk of injury;
- Trains all body muscles;
- Increases flexibility, balance, mobility and proprioception;

<http://siluetasanatate.dcnews.ro/beneficiile-antrenamentului-cu-trx/>

- It is a good cardio workout;
- It is a training that develops strength under resistance

<http://www.personaltrainerstudio.ro/antrenamente-trx.php>

Body positions, procedures and principles in TRX training

TRX training specialists mutually agree that during this type of training there are used 6 main positions of the body, 6 main procedures of handling strap and 3 training principles for progress induction.

Main 6 body positions:

The reference point for the six positions of the body is the anchor point, so we have 3 standing positions and 3 lying positions.

Standing positions:

1. Face toward the anchor point (TRX Low Row)



2. Back lying toward the anchor point (TRX Chest Press)



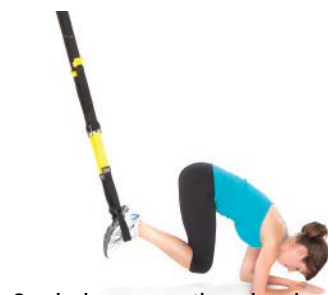
3. Side lying toward anchor point (TRX permanent Hip drop)



Taken from *Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 16.*

Lying positions:

4. Side lying toward the anchor point (TRX Side Plank)



6. Lying on the back with knees bent (TRX Hamstring Curl)



5. Sit-up face to the ground (TRX Crunch)

Taken from *Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 16.*

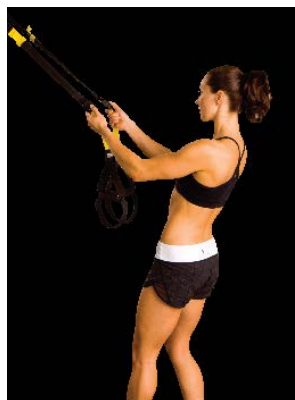
Main 6 procedures of handling TRX

1. Adjusting the strap length

The ability to shorten and lengthen quickly the strap enable fast transitions between exercises.

Strap shortening

Strap lengthening



2. Way of gripping the strap with one hand
 In some exercises, will be required some rotary motions or one side workout, therefore it is necessary that the trainees learn to handle the

strap with one hand. Basically, they must learn to pass both strap handles in one hand. The steps are the following:

I. A hand upper and the other lower.

II. Handle B is passed through the triangle strap of handle A. Shift hands.



III. Repeat steps in point II, pulling handle A through strap B. Shift hands.

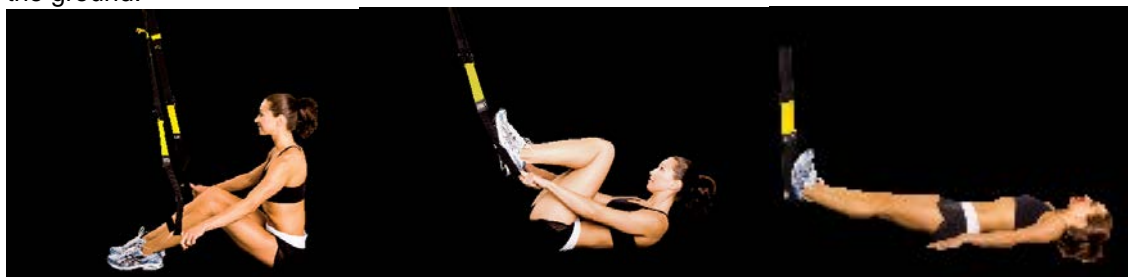
IV. Pull handle A toward you to block the strap.



Taken from *Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 17.*

3. Heels in the straps

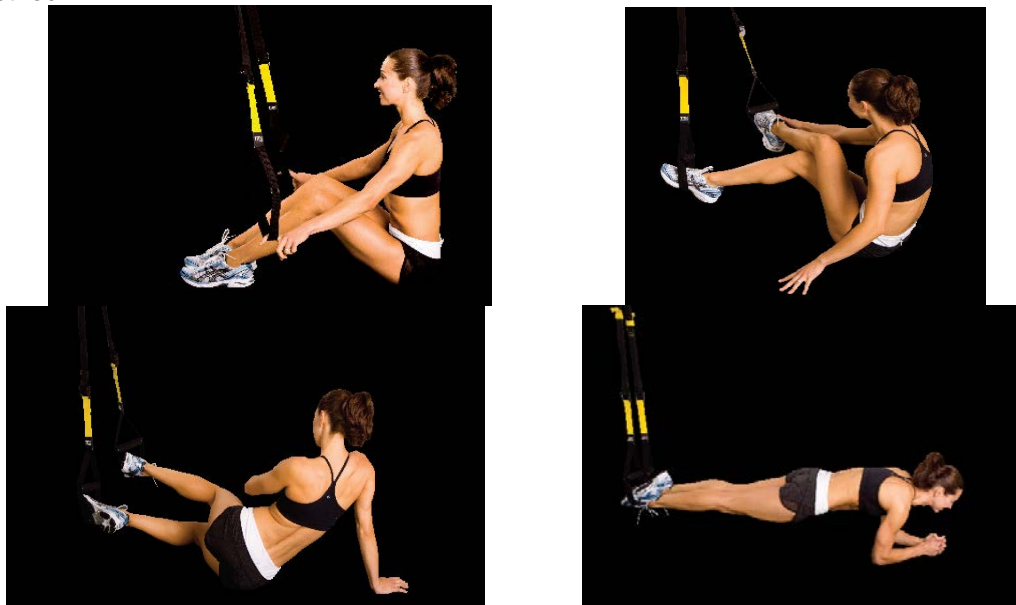
This procedure is used for most exercises on the ground.



4. Tips in the straps

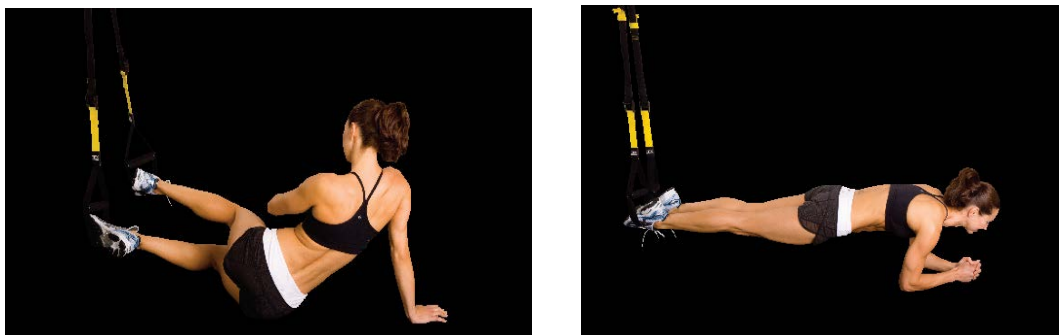
This procedure is used for many exercises performed on the ground – Lying face toward the anchor point or side lying toward the anchor point.

Method 1



Taken from Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 18.

Method 2



Taken from Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 18.

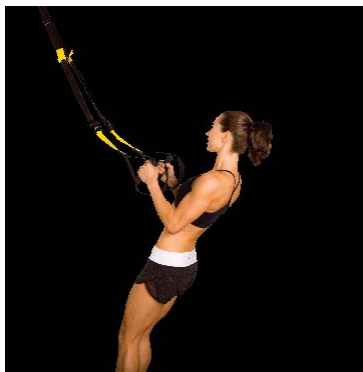
5. Tension on the handles

Tension on the handles prevents imbalance and also provides an equal load of limbs.

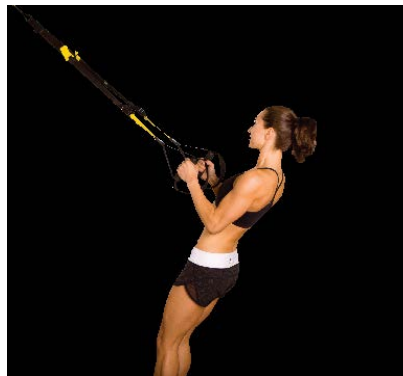
Strap is not slack

Incorrect

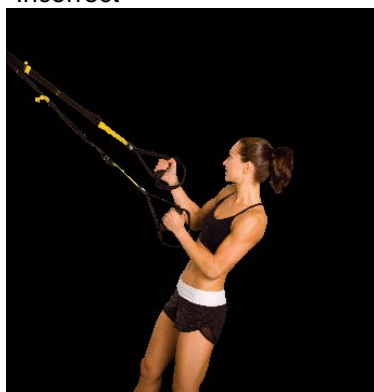
Correct



Strap must be in balance
 Incorrect



Correct



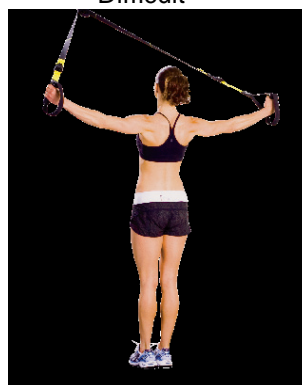
Taken from *Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 18.*

6. Balancing the position of the feet
 This technique allows the transfer of movement from the upper body to the lower body and
 Easy

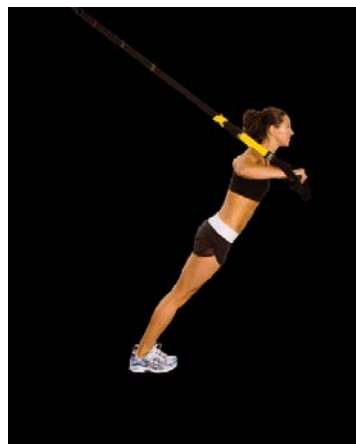
maintains even the tension over the entire range of motion.



Easy



Difficult

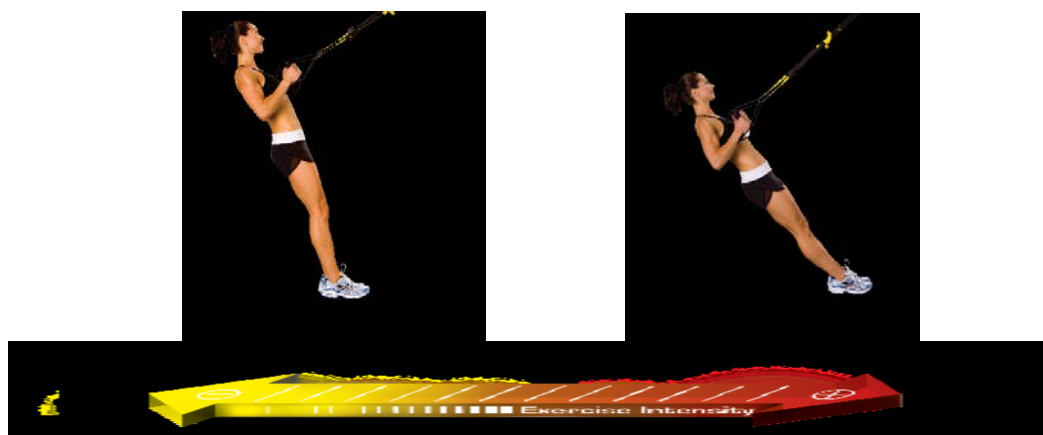


Taken from *Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 19.*

The 3 principles of training for inducing progress

Principle 1 – vector resistance principle (workout load) – Modifying body angle to adjust resistance strength.

Principle of vector resistance established the level of workout load, depending on the body weight and work angle.



Principle 2 – Stability principle – changes the base of support to adjust stability. Stability is a function of the relationship between the center of gravity (COG) and the base of support. Stability is maximized with a great base of support and a COG positioned in the middle of such base. If the base of support decreases or moves the COG outside the base of support, the stability decreases and effort intensity will be higher.

From standing position

The decrease of the base of support (for example, bringing feet together) influence the stability and

requires a greater involvement of the body. More the movements are performed with COG outside the base of support, more the instability increases, and the body tends to tilt or rotate. These rotation/tilting forces have to be countered by muscular force to stabilize the body position. When COG is positioned inside the base of support, the stability of body position is high (Fitness Anywhere, LLC., 2011). When the base of support becomes smaller, stability decreases and the efforts to stabilize the body and to control the effort intensity will be higher.

Very easy

Easy

Medium

Very difficult



Taken from *Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 20.*

From supination and pronation positions

Stability decreases if COG becomes vertical (higher) – it is located further away from the base of support.

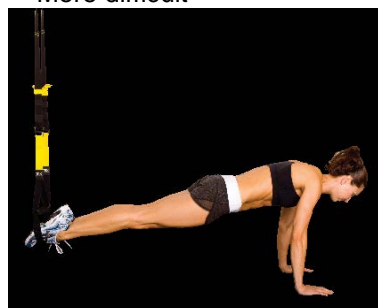
This is one of the reasons why the workout position ‘Plank’ is more challenging when exercises are

performed on hands toward their performance on forearms. Performing exercises from ‘Plank’ position with support of forearms is more stable than performing same exercises from standing on hands.

Easier



More difficult



Taken from *Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 20.*

Principle 3 – Pendulum principle – changing the start position to adjust the effort intensity.

For most exercises on ground, the way of placing the foot in relation to the anchor point establishes the exercise intensity – how hard is perceived the effort by the individuals.

Naturally, the strap hangs straight down in a neutral position, below its anchor point. The effort may be easier or more difficult, by changing the starting position in relation to the neutral position of the strap.

Shifting starting position behind the neutral point, with head and feet on the opposite side of the

anchor point, will cause the gravitational force to pull the strap and trainee’s body, in the direction of movement. This makes that effort be performed easier and with less resistance (Fitness Anywhere, LLC., 2011).

Shifting starting position ahead the neutral point, with head and feet on the same side of the anchor point, will cause the gravitational force to pull the strap and the trainees body on the opposite direction of movement. This makes that effort be performed with more difficulty and with increased resistance.



Taken from *Fitness Anywhere, LLC., 2011, TRX - Suspension Training Course - Study Guide, San Francisco, California, p 21.*

The most common mistakes to avoid during TRX training:

1. On start position – must find the end point of movement and then ‘set’ the appropriate position of legs.
2. Rope balance – to apply equal pressure to each strap. Never allow straps and handles to swing forward and backward.
3. Tension on the strap – the straps must be kept stretched/in tension. Never allow straps to be under strain, regardless of the exercise being performed.
4. On body position – trunk bending – the body must be kept straight; it is not right to be bent in

the middle. This requires the engagement of all body muscles to stabilize and maintain a correct position at all stages of movement.

5. The straps rub against the arms – the straps should not touch the arms. To correct the grip position, lift your hands slightly.

6. Stop – when adopted a workout position that leads to performing exercises with difficulty, it simply reduces the projection angle of the body on the ground or modifies the progression and continues the exercise (Fitness Anywhere, LLC., 2011)

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