Training Mobility and Strength through the Turkish Get-Up

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Abstract

The purpose of this contribution is to identify, through the Turkish get-up functional movement, the benefits useful to promote the muscle tension and synergy of the kinetic chains involved, for the development of both mobility, strength and movement stability, and of coordination skills. Through a well-defined sequence, useful to carry out movements successfully, the outcome will be to lift heavy loads from supine position to upright position, and back again.

Keywords: *Turkish get-up; Technique; Overload; Strength; Stability; Coordination; Kettlebell.*

Introduction

The Turkish get-up movement plays an important role in movement science, both as a training tool for developing strength and as an exercise for movement re-education, due to the kinetic chains involved. In fact, it is a multi-joint and polyaxial movement, engaging the entire upper and lower body parts. During the Turkish get-up action, (henceforth abbreviated as TGU), the lateral kinetic chain and the contralateral kinetic chain work together for the strength and stability of the movement. Consequently, while performing it, many parts of the body will need to be brought to stability, while simultaneously keeping the overload, the so-called kettlebell, in balance. For this reason, in addition to the muscle groups directly activated, it will be necessary to activate the coordination, mobility and strength of all the deep abdominal muscles during the entire TGU execution phase.
The purpose of this work is to describe the TGU and the importance of this movement for physical training in different sports, for motor learning processes and for the development of conditional and coordination skills.

1. The Importance of technique for the use of overloads

Through a correct technique, it is possible to make the motor act effective and safe. Therefore, a precise movement, in its correctness, allows for its related physiological and neural activation, giving rise to the encoding of motor representations, subsequently decoded into motor actions. Through this conscious commitment, the athlete's movements are activated directly to achieve the result, through a voluntary connection that will produce a muscular effort to overcome skillfully and competently what previously represented in the motor cortex. A precise and correct technique allows maximizing the results during the execution of a technical athletic movement, both in terms of performance outcomes and of prevention and safety; thus, the athletic act will

preserve the characteristic of being effective and safe. For this reason, the training load or overload, during an exercise, must always be measured to ensure the correct physiological and neuromuscular response. In fact, if it were excessively incorrect, the probability of a wrong movement performance would be very high. This would lead to an ineffective training, and the exercise itself would end up creating the risk of no longer representing the solution for improving physical condition and technique: on the contrary, it would be preliminary to injuries. However, the nervous system comes to the aid of the musculoskeletal system, which plays a fundamental role in movement performance. In fact, it tends to activate protective attitudes that do not allow performing incorrect movements, especially in conscious stages. Frequently, in some sports such as weightlifting, the correct movement performance is compromised by the extreme search for performance, thus compromising the technique. This is also because there is no correct, unique and objective technique, suitable for all athletes of the same sport, but it needs to search for fundamental, but subjective, technical expedients that must be adapted to one's own physical features. For example, in weightlifting and powerlifting, technical adaptations are fundamental, as they are useful to the athlete's morpho-functional features. Therefore, even in the training methodology, it is essential to adjust volume, intensity, density and work overload to ensure a good technical quality. In fact, programming training to ensure the technical and motor success will provide training sessions in which the external load will never propose all possible repetitions with the same load, thus avoiding the consequences of adaptation, stress and negative influences of the wrong movement performance. To avoid this, by modulating training, it will be necessary to never reach psychophysical exhaustion during training, causing excessive accumulation of fatigue, loss of concentration and attention, to the detriment of an effective technique and in favor of technical failure, and thus injuries. Technical failure, or form failure, means the inability to perform one more repetitions correctly, or the last repetition of the series performed with correct and complete movements. One example are the sub maximal repetitions at 90%, which can be performed usually to a maximum of 3 or 4 repetitions, and if optimal in terms of correct technique, they will be no more than 2 or 1. On the other hand, if we want to consider an effective technical training, we must keep the load at 75%, the maximum possible repetitions of which could reach 10, and the optimal ones could be between 5 and 8 repetitions. This method to calculate the load percentage is useful to establish the correct training overload, starting from the maximum load that corresponds to 100%, thus ensuring the so-called "buffer". In fact, the buffer training, also called "RIR" (acronym of "repetitions in reserve"), indicates the range within which to place oneself in order to never reach muscle failure, and thus taking care of applying proper technique while performing the exercise. Finally, another element for an effective technique and prevention is breathing control. Breathing is essential when performing exercises that involve the use of loads or overloads, and becomes necessary to avoid injury and create greater strength and muscle tension. The most suitable breathing to be implemented during training is the diaphragmatic (or deep) breathing, so defined because it puts in the foreground the action of the diaphragm, the main inspiratory muscle, together with the intercostal muscles, consisting of a muscle-tendon lamina that separates the thoracic cavity from the abdominal cavity. During inhalation, the air reaches the lungs, and the diaphragm contracts lowering the central tendon (point of maximum convexity of the diaphragm); consequently, the vertical diameter of the thorax increases, and in this way, the pressure at abdominal level will increase. By working synergistically with the

transverse abdominal wall, the oblique muscles, the quadratus lumborum and the pelvic floor, the diaphragm will create great stability in the core and will protect the integrity of the spine by stabilizing it in a neutral position. On the contrary, thoracic (or superficial) breathing, which is characterized by short and fast breathing acts, will not allow the diaphragm to perform its natural task and will not generate the increase of pressure in the abdominal cavity, which is necessary for effective preventive and technical purposes. Therefore, the volume of inhaled air will be smaller, the back will be arched, the core will not be activated to the detriment of the spine and the technical performance of the exercise.

2. Using the kettlebell as a training tool for strength development

The kettlebell (or gyria) is a training tool consisting of a sphere-shaped weight with a handle. Since ancient times, like in ancient Greece, athletes used tools similar to the kettlebell to prepare for the Olympics. The shape of the kettlebell was designed for a different use than today; in 1797, by order of the Tsar of Russia, the gyria was used as a counterweight to scales, and weighed a pood. However, the tool was soon used by merchants to challenge each other, through slow lifting strength tests; this changed its purpose and became a popular cultural symbol. Subsequently, the first competitions began under the patronage of Tsar Alexander III, and even after the revolution, the popularity of the giri had no end; the USSR, a world power, recognized its effectiveness and made it become a valuable training tool for soldiers. To date, kettlebells are used in many sports sectors for functional training; in fact, by using them, it is possible to train both conditional and coordination skills, such as power, speed, flexibility, balance, and muscular and cardiovascular endurance. It follows that their use makes training functional to athletic improvement, since it is also ideal for the developing mobility and stability of body movements. Therefore, by training with kettlebells, we simultaneously improve the movement of our whole body; in fact, with this tool, we can train globally and not analytically, since continuous muscle tension is required at all levels of movement. For this reason, by activating almost all the muscles of the body, the functional activity is never localized, involving both secondary muscles and major muscles by implementing the basic principles of functional training based on multi-joint and polyaxial movements, exploiting the co-activation and co-contraction through, within and between muscles.

3. Turkish get-up

This exercise was defined as perfect for training primitive motor patterns, such as rolling, kneeling, standing up and stretching out (Cook G., et al., 2011). In fact, it is performed by moving a kettlebell from supine position to upright position. This exercise is performed through a series of technical and interconnected movements, which make it an excellent exercise for preventing spinal pathologies, since while performing all the movements, athletes learn to lock the ribcage on the pelvis, and this allows them to avoid injuries. In fact, the spinal posture is controlled through all the progressive phases while the kettlebell is always held overhead, and the body learns tension and contraction strategies useful to maintain core stiffness, while at the same time the whole muscle-skeletal system generates inter and intramuscular strength, also in support of the stabilizer muscles and of general coordination. Thus, the Turkish get-up promotes stability, mobility and endurance of all the kinetic chains involved, increasing strength

through the motor skills of co-activation and co-contraction of the various muscle groups, by actively avoiding drop off or loss of strength throughout the exercise; this, in particular, is due to the activation of the stabilizer muscles. Being an exercise that must be performed slowly, through ascent and then descent phases, it involves extremely precise and technical positions (an example is a TGU performed on the right side with phases and steps performed on the opposite side), such as: lying supine on the floor and grabbing the handle of the kettlebell; rolling onto one's back with bent legs; extending one's arms; stretching out one's arm and leg opposite to the holding side of the kettlebell; rolling on the elbow opposite to the arm holding the kettlebell; propping oneself up onto the elbow; moving into a kneeling position so that the knee is in line with one's hand and foot; using the 'windshield wiper' technique to lunge up to full standing position. Therefore this exercise can always be performed at the beginning of each training, using light or even no loads, especially to the benefit of inter and intramuscular coordination. An important detail is the choice of the load or the size of the kettlebell to be used. The heavier this will be, the more strength work will be carried out and the longer the recovery time to be observed between repetitions, precisely because the neuromuscular involvement is almost equal to a 100% commitment.

Conclusions

The Turkish get-up is a complete exercise, useful for training both conditional skills and coordination skills. It is a good exercise to be used in today's training methodology. In fact, with the advent of functional training, more and more training methods use tools that promote neuromuscular development and maintenance, with exercises aimed at achieving the multi-joint and polyaxial target of the human body. This target is useful to ensure the training of kinetic chains and the specificity of movements, which characterizes each sport. Nevertheless, some exercises are the basis of movement science education and general training methodology. In fact, the use of the TGU as a way to build strength, maintenance and prevention is significant, both at a competitive and amateur level; this is precisely because it supports a physical well-being concept aimed at building motor learning processes through educational plans for growth, and indirectly targeted at enhancing first the person and then the athlete, thus also improving his/her psychosocial sphere. Therefore, with the TGU, it is possible to achieve the objectives of strength, power, mobility, muscular elasticity and prevention, thus ensuring a simultaneous nerve connection from the lower to the upper part of the body through tension and stability.

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