Swimming: NeuroMuscular Taping as a means of correcting technical actions

Luca Chisotti
Physiotherapist, Area Zenit, Torino
Italy
31/05/2011

This is the case of a young Italian swimmer of national prominence who underwent tests in water to identify possible technical-kinesiological problems in her execution of the various movements and strokes. The athlete was assessed at a hydrokinesitherapy center where it was possible, through a glass wall, to film and observe her execution of the different strokes. During the first meeting, watching the athlete swimming freestyle, the technician noted, on the right side of the body, an incorrect sequence in the entry of the hand into the water and thrust phases.

At the moment her right hand entered the water, the sinking of her ipsilateral hip was seen to be delayed, meaning that she executed the movement in two stages; this prevented her from exploiting the benefits, in terms of dynamicity and flexibility, offered by the rhythmic alternating action and impeded her hydrodynamics in the propulsive movement.

The technician’s analytical evaluation revealed several negative factors (Table 1), while the physiotherapist’s examination highlighted other aspects (Table 2).

It was thus decided to use the NeuroMuscular Taping technique to implement several corrections. First of all, postural taping (decompressive) was used, with the tape applied on the subject’s right side in a five-strip “fan” arrangement (figure 1).

Figure 1
Decompressive NeuroMuscular Taping of the myofascial chain, postural technique.

However, no changes of note were observed in the subsequent swimming test. For the second application, compressive muscle taping of the arm was used. The tape was applied with the elbow joint in mid position with respect to the useful angle and tension (25%) was applied on the two long strips of the “Y”-shaped arrangement of tapes over the bellies of the left brachial triceps muscle (figure 2).

The next swimming test showed an immediate reduction of the problems that had previously been identified; the athlete’s technique was improved and she herself had the impression that her strength and stability had increased.
Case Study

Figure 2
Compressive NeuroMuscular Taping of the left brachial triceps muscle.

Training protocol

In view of this result, and in agreement with technician, the athlete began a program specifically designed to strengthen the extensor-chain muscles of the left arm together with a series of six NeuroMuscular Taping applications, as described. The program covered a month’s training, towards the end of which the athlete was re-assessed in the same conditions as before. The following changes were noted:

– a balanced swimming action with more dynamic sinking of the right hip;
– more correct use of the hip, trunk, upper limb sequence;
– a longer arm stroke and higher frequency of arm strokes per unit of time.

Conclusions

This experience may serve as a stimulus for using NeuroMuscular Taping in sport not only as a valid support in the treatment of overloading disorders or post-traumatic and post-surgical recovery, but also as a useful aid in the study of ever more specific and personalized training programs, increasing the corrective potential inherent in technical-kinesiological analysis of the preparation and execution of the sporting action.

Table 1  Technical act of freestyle swimming: analytical assessment

| • Inefficient entry into the water due to a slipping back of the elbow
| • Poor dynamic traction which does not exploit the weight of the body and the action of the back muscle, making the hand move slowly through the water
| • Reduced dynamic thrust and the shoulder (which is overloaded on account of having supported, by itself the entry and traction), rises when the hand is still deep in the water

Table 2  Objective examination

| • Different mobility of the lumbar spine during left tilt versus contralateral rotation resulting in alteration of stroke rate and length
| • Weakness of the left triceps muscle resulting in reduced stabilization of the torso