

# ***“Treatment for the Disorders of Dancers”***

## ***Analysis of the Effects of Kinesio Taping on the Movement of Dancers***

**Atsushi Futakawa**

Director of Tera Natural Physical Condition Clinic

**Summary:** Content: The characteristic movements of dances, such as social dance, Latin, zouk, salsa, capoeira and ballet, are associated with fatigue and disorders of the muscles. I attempted to maximize the improvement of performance using Kinesio Taping. I analyzed the movements of a social dancer using video of a dance contest, and clarified the issues and points of improvement for dancers. In addition, I corrected the movement habits with effective treatment and Kinesio Taping and helped dancers to exhibit muscle power, so the consciousness and body movements of dancers became unified, and the dancer's performance improved.

**Emphasis of Presentation:** Examination of the human body as a whole before Kinesio Taping. How do I change the body of a patient as requested by the patient? What is necessary when using Kinesio Taping in patients with a high level of body consciousness?

**Clinical report:** I analyzed the movement and body structure of a social dancer using a video to clarify the points to be improved. Even in professional dancers, the body and consciousness were changed by treatment and Kinesio taping, and the quality of dance improved.

Summary of patient: A 31-year old man, unmarried. Occupation: Dance instructor

Main complaint: As he becomes fatigued, his muscles cannot follow the body movement in the image. He wants to make the same movement as imagined. He always wants to improve the quality of his dance movements.

Career: A soccer player until high school age, a history of social dance for 12 years, no major diseases.

Main symptoms: He has tension in the muscle groups in the hip and hypogastric region of the trunk, particularly the piriform muscle and the gluteus medius, and he loses the curvature of the hip, an important point of social dance, shows blurring of the body axis, and his ankles become stiff. Hence, the performance of dance declines.

Muscle test: Movement test of gluteus maximus, gluteus medius, piriform muscle, rectus femoris muscle and talocrural articulation.

Diagnosis: He is slightly bow-legged due to playing soccer, and his muscle outside the thigh swells largely and is likely to show tension. Since he always maintains an erect posture of the spine in social dance, the muscles in the hip are always forced to tense.

Treatment and progress: The inflamed muscles are cooled by cryotherapy, the fascia of the tensed muscles is relaxed, lymph flow is improved, and the slip of muscles is relieved. Adjustment effectively increased the range of movement of joints and Kinesio taping was used to maintain range of motion.

Discussion: With the progress of treatment, the patient came to realize what muscles are weakened by the fatigue, and the quality of his dance movements was improved.

---

In this study, social dance has been the focus-of the clinical research. The movements of social dancers were analyzed, the muscle strength was enhanced by effective treatment and Kinesio Taping, the body movement was corrected, and the dance performance was improved. The study took place over a 1 year period. This is a record of the progress of the dancers.

### **Approaches**

- ◆ Understanding of social dance: In order to understand the movements of social dance, the motions were analyzed carefully frame by frame.
- ◆ Confirmation of inquiry and main complaint: In depth questioning of the patients was used to establish their main complaints
- ◆ Examination of body structure: The physical characteristics of dancers were measured by orthopedic tests and muscle tests.
- ◆ Establishment and implementation of the processes of treatment: Based on the test results, the processes of treatment were determined.
- ◆ Prescription of Kinesio Taping: Kinesio Taping was used to resolve the main complaints of the patients and to improve body consciousness
- ◆ Analysis of movement and confirmation of the points to be improved: The progress of the dancer and improvement in the problem areas was exhibited.

### **Photos showing the point of analysis of social dance/waltz**

Let's look at the photographs of the frames analyzed on the video. The section shows the main sequence of the muscle movements: first, stepping-off, then the basic rotation, kicking up of the foot of female dancers, and extension of the lower limbs before the finale. The last two photographs compare before and after one year of treatment.

### **Summary of the patient Physical status**

Summary of patient: Male Age: 31 years old Unmarried Height: 176 cm Body weight: 64 kg

Visual acuity: Right: 0.04; left: 0.05 Blood type: A Blood pressure: 125 to 70

Background: He played football until his high school days and started dancing in his college days.

No particularly major diseases

History of dancing: 12 years

Occupation: Dance instructor

Work: 9 hours a day

Frequency of exercise: 8 hours every day

Sleep: 7 hours a night

Alcohol: Yes

Smoking: Yes

### **Main complaints.**

- As he becomes fatigued, his muscles cannot follow the body movement in the image.
- He wants to make the same movement as imagined.
- He always wants to improve the quality of his dance movements.
- He holds down the left shoulder when fatigued due to dance.
- Fatigue accumulates in his back, in the lumbar region.
- He wants to improve his conscious use of muscles.

### **Body structure test**

Orthopedic test and muscle test: I administered a mobilization test of the greater psoas muscle, gluteus maximus, gluteus medius, piriform muscle, rectus femoris muscle and talocrural articulation and the deltoid test.

### **Lower limb**

First, the lower limb was examined and the following testing done:

- Gluteus medius test
- The test on the degree of induration of piriform muscle and the range of motion test of the hip joint
- Greater psoas muscle and adductor muscle test

### **Muscle test-2**

- Range of motion test of the rectus femoris muscle
- Test on the muscles and deltoid of the left shoulder

**Physical characteristics:** Overall, he had a muscular torso and largely flared thigh. From the

results of the orthopedic tests and muscle tests, the following observations were made:

- Extroversion of the left shoulder
- Induration of the gluteus maximus muscle group and piriform muscle
- Decreased strength of the greater psoas muscle
- Induration of the lateral vastus muscle of the thigh
- Decreased range of motion of the rectus femoris muscle

#### **Upper limb**

The upper limb was examined in detail on each side.

- Tension was placed on the supraspinatus muscle, the left shoulder lowered, and the muscle strength was weak
- Induration and strong tension of the piriform muscle, gluteus maximus and gluteus medius, made it difficult to load the upper limb on the lumbar.
- Extroversion of the left shoulder and thin muscle of the left greater pectoral muscle

#### **Induration of lower extremity and legs**

- Strong tension of the thigh, rectus femoris muscle and tensor fascia lata muscle.
- Induration and lateral displacement of the anterior tibial muscle. If he has a heavy schedule of dance lessons, the anterior tibial muscle tenses, and the muscle tension extends laterally.
- Induration of the ankle, tension of the thigh and anterior tibial muscle and decreased range of motion of talocrural articulation

#### **Order of induration of the ankle**

- Tension of the thigh and anterior tibial muscle
- The muscles are pulled upward
- The lymph flow to the talocrural articulation accumulates
- Extroversion and decreased range of motion of the ankle. Dorsal flexion and plantar flexion becomes difficult if the fatigue increases due to dance lessons.

**Contortion of body axis and induration of muscles:** The information obtained in the above tests was plotted to a chart.

The induration sites of muscles and the intrinsic habits of the patient were marked with a red color, and the muscles particularly getting tired due to social dance were marked with a blue color. In addition, displacement and contortion of the trunk were marked with a green line.

**Main symptoms:** The main symptoms to be treated include:

- The muscle group in the hip, trunk and lumbar region, particularly the piriform muscle and gluteus medius, tense, and the curvature of the lumbar region, an important point of social dance, disappears.
- In addition, the ankle becomes stiff, and thus the performance of dance decreases.
- The muscle strength of the left shoulder is weak, and it becomes difficult to hold the partner's hands.
- He was a soccer player before, has largely flared muscle group on the lateral side of the thigh and is slightly bandy-legged.
- The movement of the left leg is weaker than that of the right leg.

#### **Therapeutic processes:**

##### **Prescription of cryotherapy**

- Cool the muscle group, particularly rectus femoris muscle and lateral vastus muscle, which have become inflamed due to dance, by cryotherapy.
- Cool the lumbar, gluteus medius, gluteus maximus and piriform muscle supporting the tension of upper extremity with Cryo CDV as needed.

##### **Fascial therapy**

- Suspend the fascia of the tensed muscle group particularly in the lower limb, improve the lymph flow, and restore the glide of the muscles.
- Fascial adjustment on the area showing limited motion: Gluteus medius, gluteus maximus and piriform muscles.
- Adjustment to enlarge the range of motion of talocrural articulation.

### **Cryotherapy**

- Lower limb and thigh. Conduct cryo CDV on the thigh in a pinpoint application by twisting an L-size tape around the tensor fascia lata muscle for 10 minutes.
- Rectus femoris muscle. Approached the rectus femoris muscle that is easily fatgued next to lateral vastus muscle.
- Medial side of patella. Fatigue accumulated in the medial side of the patella due to dance lesson. Cryo of L size was applied for 10 minutes.

### **Fascial therapy and fascial adjustment-1**

#### **Upper limb**

- Fascial therapy suspending the fascias of supraspinatus muscle and upper trapezius muscle. Suspend and relax the fascia while swinging the supraspinatus muscle from side to side. An orange arrow shows the direction of force, and a blue arrow shows the direction of the pull of arm.
- Slacking to the latissimus dorsi. Relax the tensed upper limb and the latissimus dorsi. As shown with an orange arrow, relax the fascia of latissimus dorsi to the lateral side. Its purpose is to make a space on the back.
- Fascial therapy and fascial adjustment of the tensed supraspinatus muscle. An adjustment to bring out the muscle strength after relaxing the fascia.

### **Contractile slacking of the sacrospinalis muscle**

The treatment for relaxing the tensed latissimus dorsi and sacrospinalis muscle was done with manipulation and a slacker. An orange arrow shows the direction of force.

### **Fascial therapy and fascial adjustment-2**

#### **Lower limb**

- Slacking of the indurated piriform muscle. A green arrow shows the direction of approach on the muscle. Hold and contract the thigh.
- Slacking of the fascia of rectus femoris muscle. Hold the tensed fascia of the thigh down and slide it in the direction of the ankle joint. A space is made in the ankle joint, and the range of motion increases.
- Adjustment of piriform muscle. Press in the direction of the gluteus medius.

### **Adjustment of lower limb**

- Adjustment of the deep greater psoas muscle. Adjust the pinpoint of the deep induration in the direction to the navel.
- Adjustment of the talocrural articulation. Increase the range of motion of the talocrural articulation after relaxation of the fascias of thigh and anterior tibial muscle.

### **Approach by Kinesio Taping**

#### **Goals of Taping**

- Improve the performance of dancer overall
- Maximize the muscle strength and increase and continue the range of motion of the joint.
- Kinesio Taping in instances of decreased neurotransmission due to fatigue should be focused at sliding the fascia toward the periphery.
- Center the body weight on the lumbar region when dancing and hold the female partner with the left shoulder level
- Pay particular attention to the extension of thigh muscles.
- Maintenance of flexibility in the ankle is also important.

### **Overall view of Kinesio Taping**

The Kinesio Taping was photographed separately on the front surface of the trunk, the right lateral side of the body, the left lateral side of the body and the rear surface of the trunk. The significant taping is that on the left shoulder, that on both thighs and that on the ankle.

### **Shoulder and buttocks by site**

- Supraspinatus muscle and the capitis costae tape. Assist the varus and displaced capitis costae and the weakened left shoulder muscle and help the dancer to correctly hold the partner.
- Acromion correction tape. Inhibits the varus of the left shoulder and improves muscle strength.
- Gluteus medius tape. The site where most of the weight of the upper limbs is supported.

### **Details of Kinesio Taping on the shoulder:**

- Supraspinatus muscle tape and acromion correction tape: Produce eversion of the acromion of the left shoulder. A yellow arrow shows the direction of the tape with tension on the supraspinatus muscle, and an orange arrow shows the direction of eversion of the acromion.
- Acromion correction tape. Cover the smaller pectoral muscle and the costocoracoid region and apply tension in the direction of a yellow arrow.
- Capitis costae tape. Prevents fatigue of upper trapezius muscle and elevates the shoulder to make the dancer stronger. A yellow arrow shows the direction of tension.

### **By site: Tibial region**

- Anterior tibial muscle tape. Stabilize the lower limb and increase the range of motion.
- External malleolus stabilizing tape. Stabilize rotation around the axis and standing on tiptoe of the right ankle.
- Anterior tibial muscle tape. Apply to the ankle at the maximum extension.
- Ankle correction tape. Supports the step of lower limb and the body weight.

### **The whole lower limb**

- Intermediate vastus muscle. Prevents accumulation of lactic acid at the site of severe muscle fatigue.
- Tensor fascia lata muscle tape. Muscle showing the most serious fatigue during the dance performance.
- Knee/small lateral vastus muscle tape. A small tape maintaining the flexibility of the knee and playing the role of a shock absorber.
- Ankle correction tape. The ankle correction primarily stabilizes the lateral movement of the dancer.

When the taping is applied to the lower limb, the tape should be attached so as to hold the fascia of thigh slightly downward. This stimulates the peripheral nerves.

**Comparison of the progress of the dancer:** Compare the scenes frame-by-frame recorded on a video.

### **Upper limb**

In 2003, he pulled up the female partner using his arm muscles, but in 2004, he could comfortably support the body by dorsal flexion. The female partner also kicked up her leg without difficulty.

### **Lower limb**

In 2003, he did not put his body weight on the lumbar region because of lack of push-in of the upper limb, but in 2004, he extended the lower limb sufficiently and put his body weight on the lumbar region. The female partner also put her full weight on him without concern.

### **Discussion after treatment:**

- As the treatment progressed, it became possible for him to take notice of what muscle was weakened when he became tired.
- By dancing while being aware of the movements and roles of muscles, he improved the movements that he could not previously do.
- Specifically, he was able to be particularly aware that the lumbar region of the trunk,

gluteus medius, gluteus maximus and piriform muscle got tired and became difficult to support.

- Intensive fascial therapy is very effective for a site with accumulated muscle fatigue.
- The taping on the lower limb aimed at smooth weight shift and aligning the trunk on the lumbar region improved his dancing.
- By using Kinesio taping, the recuperative power after accumulation of fatigue was increased.
- The habit of pushing the left shoulder down due to the problem in the upper limb was nearly resolved.
- In the treatment of dancers, communication between the patients and therapists is very important as well as an understanding of the movements and actions of muscles and the sites to be treated.

**Conclusion:**

In this study, I tried to explore new areas, that is, physical consciousness and Kinesio. Strictly speaking, however, it is not Kinesio only.

I conducted a treatment based on the development of physical consciousness. It is desirable to express the thought through the body. This is quite true for ordinary people in daily life, who want to relief from pain and conflict and to move as they think.

It is my role to assist them, and Kinesio Taping is one of the methods I use.

In the clinical study on dance, I addressed the human body critically and explored the possibility that even for professional dancers, performance will definitely improve by building up a consciousness of the body and focusing on it at all times.