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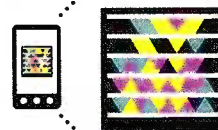
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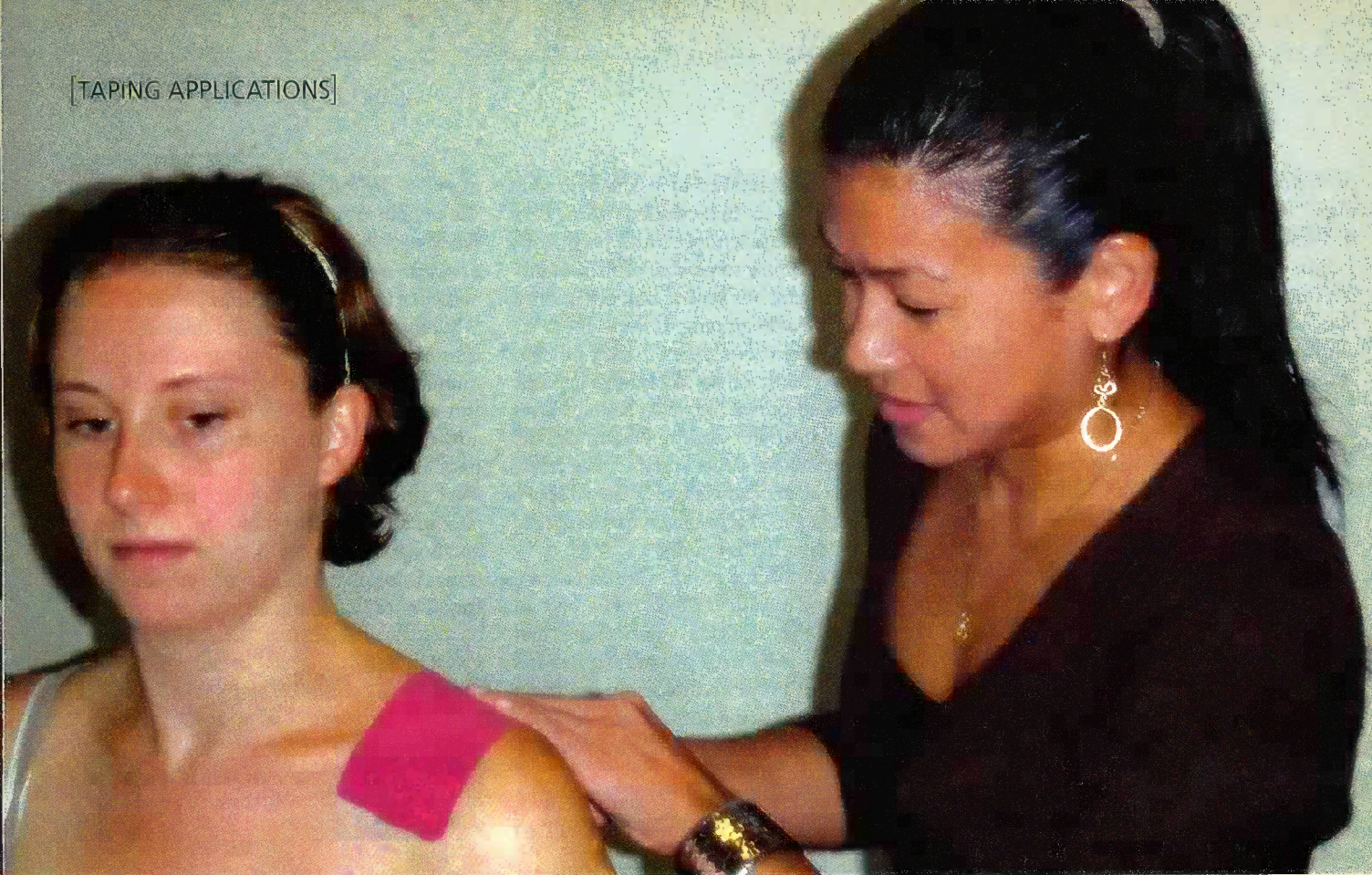
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Not Just a Trend

Athletes and their therapists and trainers are finding positive results after using taping options

By Karen Wu, PT, MS, CSCS, CPI, CKTP

“Is it a tattoo or is it tape?”

This was the popular question at the Summer 2008 Olympics in Beijing, China. For rehabilitation professionals, an already established treatment technique suddenly became all the rage. Kerri Walsh, who won Olympic Gold in Women's Beach Volleyball for the second time in a row, showed off an intricate treatment design on her right shoulder, bringing a lot of commentary on the professional athlete, sports injuries and treatment protocols.

So what is elastic therapeutic taping? One type of taping was developed by Dr. Kenzo Kase, a Japanese-born chiropractor who saw that tape used in rehabilitation was either rigid or multi-directional in elasticity. He developed it in the early 1970s using the concept of kinesiology.

The tape has similar properties to skin and is the only tape with unidirectional, or longitudinal elasticity (approximately 140 percent elasticity). There is no medicine in this tape. It is

heat activated and hypo-allergenic. It consists of 100-percent cotton and has the same weight and thickness of skin so the skin does not perceive the tape. It has a 10-20 percent stretch right off the paper backing and because of its ability to move with the body, it is very comfortable. It is meant to last 3 to 5 days.

Elastic therapeutic tape allows for controlled movement to re-educate the muscles. Its application on the skin allows for greater proprioceptive input. Based on its application and the position of the tissue, it has a multitude of functions.

There are four major effects of elastic therapeutic tape. The first is to correct muscle function. This can be either to facilitate a muscle contraction or inhibit a muscle contraction based on application direction. Facilitation of a weakened muscle allows for increased range of motion and can reduce muscle fatigue. Inhibition of an overly contracted muscle reduces cramping and/or spasm and relieves pain.

The second effect of taping is increasing circulation. Application of the tape affects the skin and the underlying circulatory system. Applying the tape with both tension and direction pulls up on the skin, thereby creating space and allowing for increased blood and lymph circulation to remove congestion in an injured area.

The third effect of kinesiology tape is for pain. Tape applied to the skin affects the superficial nociceptors, mechanoreceptors and thermoreceptors. This activates the endogenous analgesic system, which moderates pain via the spinal ascending and descending inhibitory system. This allows for increased range of motion, reduction in pain and inflammation in the injured area and the underlying irritated nerves.

The final feature of the tape is to correct joint dislocations. Using the tape on shortened or overstretched muscles or fascia around a joint can assist in repositioning of a joint. The tape will assist in normalizing muscle tone, thereby improving range of motion and stability in the joint as well as relieving pain.

Best Uses

So how do therapists best use elastic therapeutic tape? There are a few factors to consider: the size and shape of the tape, direction, tension and body positioning. There are also color choices.

[TAPING APPLICATIONS]

The tape comes in 4 widths: 1", 1.5", 2" and 3." Most rehab professionals use 2", as it can easily be cut in half for use as 1", and can be cut into the different shapes. 3" is primarily used for athletes and on very large muscle groups. The shape of the tape can be an X, Y, I, fan or button hole (anchor) tape. The Y and I are the most commonly used. The fan is used for lymphatic drainage and the button hole for the hand or foot for better grip and adhesion.

Common applications that take into account direction, tension, and body positioning are as follows:

- Overstretched or acutely damaged muscle: Insertion to origin, No tension, stretch muscles before application; allows for reduction in muscle spasm or cramp.
- Chronic or acutely weak muscle: Origin to insertion, Light tension (approx. 15 percent), functional joint position during application; allows for muscle assistance in contraction.

Elastic therapeutic tape now comes in four colors: beige, blue, pink and black. Busy working professionals choose beige whereas most athletes select the bright colors. In his 2003 book *Every Second Counts*, Tour de France champion Lance Armstrong noted his team used "a special hot-pink athletic tape that seemed to have magical powers. Sometimes we'd be so wrapped up in hot-pink tape that we'd look like dolls, a bunch of broken dolls. But the tape worked, so we kept it, because it could fix things."¹

It can be used all over the body. Most common applications are in the shoulders, knees, hips and ankles, especially in the athletic population.

Weight bearing joints respond very well to taping. Tendonitis, muscle strains, ligament sprains, joint dysfunctions and joint subluxations are all commonly treated with conservative physical therapy modalities and benefit greatly with the addition of elastic therapeutic tape. It really is successful in treating pediatrics to geriatrics and a variety of orthopedic, neuromuscular, neurological and other medical conditions.

Proper Applications

There are six applications of the tape: lymphatic/edema correction, ligament/tendon correction, mechanical correction, functional correction, fascial correction, and space correction.

Lymphatic or edema correction will use tape cut into a "fan" shape. The base of the fan will be placed over the area that movement of lymph fluid is desired. Minimal stretch is placed on the tails (approx. 5 percent), and the direction of the tails will be over the desired region of drainage.

Ligament or tendon correction will use either a neutral or shortened position to mimic the tension on the skin as the tissue being taped. This means full stretch over ligaments (50 to 75 percent) and about half of the stretch capability (25 to 50 percent) over the tendon. Direction will be either from insertion to origin or origin to insertion. This tape will enhance the activity of the tissues, thereby stabilizing the joint.

Mechanical correction is the use of elastic therapeutic tape to position a

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Palomar Pomerado Health

San Diego, CA

► After graduating from USC in 2007, Monique Warnke received an astounding seven job offers. It didn't take her long to choose Palomar Pomerado Health to start her journey as a physical therapist. Here's why: PPH cares as much for their employees as they do for their patients.

Warnke works at Palomar Medical Center in the Level II Trauma Center that receives more than 1,000 patients a year who have sustained serious physical injuries from an external force. Here, Warnke treats patients with orthopedic injuries from trauma or with neurologic injuries due to a TIA, stroke or brain injury.

As a therapist at PPH, she has the ability to see patients throughout the hospital—from people in the critical care unit to those with cardiopulmonary disorders or diabetes complications—plus patients and injuries that she wouldn't be able to see at any other facility in San Diego County. The most rewarding part of her job is helping people regain their independence so they can get well and go home to their families.

Warnke chose PPH back in 2007 because she saw potential for movement within the organization. She also saw ways to continue using all of her skills in different settings, helping various patient populations.

Since then, she has even had a part in designing PPH's Hospital of the Future, set to open in 2012. Warnke worked alongside her supervisor and rehab director to develop an innovative plan for the new orthopedic unit. "At such a large organization, you wouldn't expect

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your voice to be heard, but at PPH, your concerns are addressed and put into action," said Warnke. The new facility will have a therapeutic terrace to allow patients to perform their therapy outdoors. According to Warnke, the state-of-the-art design of the building will improve the comfort and safety of patients as well as the efficiency of staff.

As an organization, PPH promotes lifelong learning and provides the opportunities to accomplish that, including allowances for continuing education, discounts for seminar courses and the Performance Enhancement Program, which allows employees to reach out to the community while earning a bonus. These are just some of the ways that PPH promotes personal and professional growth. "It is a wonderful gift that they give to us," said Warnke.

The mission of Palomar Pomerado Health is to heal, comfort and promote health in the communities they serve in the 319-bed Palomar Medical Center and the 107-bed Pomerado Hospital. The Hospital of the Future is set to open in 2012. As a non-profit community hospital district, PPH continues its long-standing dedication to treating all patients who need care, regardless of their ability to pay.

Benefits include comprehensive health care benefits, income protection plans, short- and long-term disability, paid time off, flexible spending accounts, pension and deferred compensation plans, voluntary benefits, pet insurance, supplemental life for employees, spouse and children, personal accident expense plans, college savings plans, tuition assistance and continuing education pay, and wellness programs. ■

To see how Palomar Pomerado Health can make a difference in your life and career, visit PPHCareers.org.

[TAPING APPLICATIONS]

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muscle and/or joint in a proper functional position without losing active range of motion or inhibiting circulation. Tension of the tape will be approximately 50 to 75 percent, using proprioception from the tape to pull the misalignment into a corrected position.

Functional correction will have tape applied from origin to insertion during active movement or after movement is accomplished. This acts to enhance mechanoreceptor sensitivity and stimulates the muscles more easily to contract.

Fascial correction is applied to create and gather fascia in order to hold it in a desired position. Tape is applied using a "jiggle, wiggle, oscillate" technique in order to gather or move fascia. A downward pressure can also be used to directionally move fascia. Alternatively, fascia can be manually maneuvered and the application of tape on stretch will hold the fascia in its desired position.

Space correction has three applications: manually gather tissue and use tape to hold, "jiggling" technique, and using tape to pull and hold connective tissue. Most common is the manual gather and hold technique, especially for scar mobilization. After application, there should be wrinkles in the tape as the skin is lifted and space is created over the area of inflammation and pain. Common taping problems to avoid include:

- Overstretching the tape;
- Not stretching the muscle or fascia during application;
- No tension should be applied at the beginning or end of the tape;
- Removing tape from top down or direction of hair growth and remove the skin from the tape;
- Removing oils/lotions from skin before application;
- Touching the adhesive before application.

Elastic therapeutic taping was introduced to the rehabilitation community in 1997. Today, it is found in many rehab clinics as well as in almost all sports, and is an official medical supplier for the U.S. Ski and Snowboard Association (USSA). Runners, cyclists, swimmers, volleyball and soccer players all have been seen in the media sporting this taping treatment with great results. ■

Karena Wu is a graduate of Columbia University's Program in Physical Therapy. She is owner of ActiveCare Physical Therapy in New York, NY, a facility that specializes in manual therapy, Pilates-based rehabilitation, Kinesio Taping and Functional Training.



For more information on taping, please visit us at
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