

## **Treating the Female Athlete Triad, Part Two: Eating Disorders, Part Two: Amenorrhea and Osteoporosis**

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Female athletes are susceptible to developing a combination of three interrelated conditions: amenorrhea, osteoporosis and eating disorders, also known as the Female Athlete Triad.<sup>1</sup> Any female athlete is at risk of developing one or all of the triad conditions.

Essentially, the prevalence of Female Athlete Triad is unknown. Currently, there are no Westernized validated screening tools that can detect at-risk female athletes. Identifying female athletes potentially at risk is subjective at best within the Western medical community, and relies on the clinician's experience and understanding of the Triad to ask questions and be aware of certain pre-existing factors. Oriental medicine can provide a portal to understanding and recognizing these conditions via a different perspective. Acupuncturists can be implemented as screening tools to prevent athletes from developing any of these three conditions, purely based on the process by which they develop TCM diagnoses.

Certain sports tend to predispose female athletes to these conditions, such as gymnastics; ballet; diving; running; swimming; figure skating; dancing; and wrestling. These sports tend to create a propensity toward these conditions due to the emphasis on an ideal body image, including appearance and leanness.

Disorders involving the Female Athlete Triad:

- **Amenorrhea** is the complete cessation of the menstrual cycle. Low levels of estrogen stop the cycle, which is usually due to very low body-fat percentage; excessive physical/emotional stress; high energy demands; low caloric intake; and poor nutrition.
- **Osteoporosis** is the weakening of the bones, making them fragile and prone to fracture. Due to athletic demands, amenorrhea exacerbates this condition with a drop in estrogen levels that allows the bone

density to build through the absorption of calcium. Teenage and early adult athletes are especially at high risk due to poor eating habits and the amount of soda they consume instead of water. The phosphorus in these carbonated beverages leaches calcium from the bones; this decreases bone density and mass, making the bones fragile and susceptible to stress fractures. Another aspect to consider is the calcium absorption within the body and bone mass. Bone density development is in its prime stages in the teens and early adulthood. In our 30s, bone stops absorbing calcium and starts to lose bone density.<sup>2</sup>

- **Eating Disorders:** Many female athletes deal with the issue of general weight loss and/or maintenance of a thin physique. They will excessively restrict their consumption of food through the number of calories eaten per day (anorexia), and through excessive exercising to overcompensate for food consumption and/or binge and purge tactics (bulimia).<sup>3</sup>

Acupuncturists have a unique position in the sports medicine arena, because we address questions pre-disposing these athletes to these conditions such as menstrual cycle irregularities; emotional stress; self-image; ideal weight; visual appearance; and any extreme dieting habits. Typical signs and symptoms that present include menstrual cycle stop/start/color/length; clotting; fatigue; dry hair; low body temperature; emaciated appearance; recurrent stress fractures; and/or multiple stress fractures.

### **Amenorrhea (*Jing Bi*)**

Menstruation usually starts around age 14. If it doesn't start by age 18, or a female athlete has not had menses for three months or longer, this is called amenorrhea.

In traditional Chinese medicine, *jing* represents menses, and *bi* represents blockage. This blockage of the menstruation is classified into blood deficiency or stagnation due to many underlying conditions. Deficiency can be caused by a multitude of problems, such as worrying, overthinking, and physical and emotional stress, which impairs the transformation and transportation of the spleen and stomach and severely consumes the yin of the blood. The consequence is blood deficiency, resulting in amenorrhea or blocked menses.

The excess condition could be attributed to excess cold being retained in the uterus by cold food and drinks. Another factor could be depression after a competition, creating stagnation of *qi* and causing the blood to become stagnate, obstructing the meridians. Fire is another condition that obstructs the *chong* and *ren*. Liver *qi* stagnation, over time, can counterflow upward, affecting the heart *qi*. In turn, the heart *qi* cannot flow downward, thus affecting the *chong* and *ren*, which are not flowing freely, resulting in amenorrhea or

blocked menses.

Underlying conditions vary, and can include *qi* deficiency; *qi* stagnation; yin deficiency; cold; and phlegm/damp. In female athletes, the underlying conditions focus around yin deficiency, *qi* deficiency and deficient fire.

### Differentiation of Amenorrhea

<b>Blood Deficiency</b>	<b>Blood Stagnation</b>
<ul style="list-style-type: none"> <li>- decreased appetite</li> <li>- loose stool</li> <li>- pale lips and nails</li> <li>- blurred vision</li> <li>- vertigo</li> <li>- lassitude</li> <li>- spiritless</li> <li>- tongue = pale</li> <li>- pulse = thready, choppy</li> </ul>	<ul style="list-style-type: none"> <li>- abdominal distention</li> <li>- sharp pain</li> <li>- irritability</li> <li>- feverishness</li> <li>- chest stuffiness</li> <li>Severe cases               <ul style="list-style-type: none"> <li>- abdominal masses</li> <li>- dry stool/constipation</li> <li>- dry skin, nails</li> <li>- dry mouth</li> <li>- tongue = dark red or purple spots</li> <li>- pulse = deep, wiry, choppy</li> </ul> </li> </ul>
<b>Acupuncture Points</b>	<b>Acupuncture Points</b>
Regulate spleen/stomach and tonify kidney <i>qi</i>	Relieve liver <i>qi</i> stagnation, resolve blood stagnation, promote new blood, soothe <i>qi</i> circulation
R6 ( <i>qi hai</i> ) - tonify kidney <i>qi</i> (essence supports blood) ST36 ( <i>zu san li</i> ) - tonify spleen/stomach UB20 ( <i>pi shu</i> ) - tonify spleen/stomach UB23 ( <i>shen shu</i> ) - tonify kidney <i>qi</i> (essence supports blood)	R3 ( <i>zhong ji</i> ) - regulate <i>chong</i> and <i>ren</i> to benefit lower <i>jiao</i> LV2 ( <i>xing jian</i> ) - regulate liver/spleen <i>qi</i> , remove blood stagnation SP6 ( <i>san yin jiao</i> ) - circulate blood downward to restore menses SP10 ( <i>xue hai</i> ) - regulate spleen/liver <i>qi</i> , remove blood stagnation LI4 ( <i>he gu</i> ) - circulate blood downward to restore menses
<b>Yin Deficiency</b>	<b>Deficient Fire</b>

<ul style="list-style-type: none"> <li>- dry mouth, throat</li> <li>- dry skin</li> <li>- tidal fever</li> <li>- 5 palm heat</li> <li>- night sweats</li> <li>- constipation</li> <li>- scanty urine</li> <li>- dizziness</li> <li>- tinnitus</li> <li>- weak, sore lower back</li> <li>- palpitations</li> <li>- tongue = dry, red, no coating</li> <li>- pulse = weak, forceless, thready</li> </ul>	<ul style="list-style-type: none"> <li>- easily angered</li> <li>- constipated</li> <li>- insomnia</li> <li>- restlessness</li> <li>- red face</li> <li>- tongue = red, scanty coating</li> <li>- pulse = rapid, forceful, fine</li> </ul>
<ul style="list-style-type: none"> <li>Nourish yin, clear heat</li> <li>Tonify associated organ <i>qi</i> deficiency</li> <li>Nourish liver</li> <li>Regulate menses</li> </ul>	<ul style="list-style-type: none"> <li>Drain fire</li> <li>Calm liver</li> <li>Clear heart fire</li> </ul>
<ul style="list-style-type: none"> <li>LV3 (<i>tai chong</i>) - tonify yin deficiency</li> <li>LV14 (<i>qi men</i>) - tonify yin deficiency</li> <li>K3 (<i>tai xi</i>) - tonify yin deficiency</li> <li>HT7 (<i>shen men</i>) - calm heart, tonify yin deficiency</li> </ul>	<ul style="list-style-type: none"> <li>LV2 (<i>xing jian</i>) - cool liver fire, calm liver</li> <li>LV3 (<i>tai chong</i>) - calm liver <i>qi</i></li> <li>GB12 (<i>wan gu</i>) - clear liver fire in head</li> <li>GB20 (<i>feng chi</i>) - clear liver fire in head</li> <li>P8 (<i>lao gong</i>) - clear heart fire</li> <li>UB14 (<i>jue yin shu</i>) - clear heart fire</li> </ul>

## Osteoporosis

Although this condition and its pathological concept are not addressed in the TCM literature, I believe it can still be explained according to TCM. For osteoporosis to take place, there must be an internal, pre-existing deficiency that includes *qi*, blood and body fluids (yin deficiency). Long-term deficiency progresses and weakens the internal *zang/fu* organs. As the internal *zang/fu* organs become deficient, consumption of body fluids due to yin deficiency progresses, specifically affecting the kidney yin. Over time, kidney yin gradually affects the essence. The essence/*jing* supports the kidney yin as it slowly becomes exhausted. The kidney represents the bone marrow, and the bone marrow can no longer be nourished, resulting in osteoporosis.

## Key Points I Would Use to Treat Osteoporosis

### Acupuncture Points

- K 2 (*ran gu*) - tonify kidney yin deficiency
- K 15 (*zhong zhu*) - tonify kidney yin deficiency
- UB 23 (*shen shu*) - tonify kidney yin deficiency
- UB 52 (*zhi shi*) - tonify kidney yin deficiency
- UB 11 (*da zhu*) - tonify sea of marrow
- GB 39 (*xuan zhong*) - tonify sea of marrow
- UB 43 (*gao huang shu*) - tonifies and regulates *qi* and blood within pericardium level
- K 4 (*da zhong*) - influential point lower *jiao*
- R 7 (*yin jiao*) - promotes movement of essence
- R 4 (*guan yuan*) - tonifies source *qi*

In conclusion, I would like to reiterate that acupuncturists who are part of sports medicine teams are in unique positions to identify and help prevent these Triad conditions. Acupuncturists are also in the position not only to educate female athletes in the prevention of the Female Athlete Triad, but also to educate the sports medicine profession of the advantages acupuncturists have and the contributions we can make. As health care providers, we are all working toward the same goal: encouraging healthy, safe participation and preventing short- or long-term health imbalances in female athletes.

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