Chapter 29
Acupuncture and Obesity

Seung Min K. Lee and Sanghoon Lee

Abstract This chapter outlines the overall traditional East Asian medicine (TEAM) point of view in approaching obesity along with easy explanations on the most popular types of acupuncture available for treatment. According to the principles of TEAM, obesity is a pathophysiological state of the body with many diverse functions going awry. It is induced by many different reasons and develops into many different forms according to each patient’s bodily constitutions, characteristics, and lifestyle and therefore must be approached differently for each patient. Unlike conventional medicine where treatment is provided for all types of obese patients alike, TEAM is based on holistic views and consequently approaches the problem from a more fundamental level, with greater emphasis on individuality. Thus, here we have also placed utmost importance on guiding the reader step by step into the field of syndrome differentiation, which will then allow the practitioner to tailor acupuncture treatment for each patient so that it can assist conventional medicine in areas unreached. Then we have aimed to provide easy explanation on three most popular types of acupuncture treatment available: manual acupuncture along with a table summarizing the key acupuncture points used for each type of syndrome, electroacupuncture along with succinct explanations on the whole mechanism of actions, and finally auricular acupuncture which may be conveniently used for the young, old, acupuncture-naive, and acupuncture-experienced all alike.

Keywords Traditional East Asian medicine (TEAM) • Traditional Korean medicine (TKM) • Traditional Chinese medicine (TCM) • Obesity • Manual acupuncture • Electroacupuncture • Auricular acupuncture

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Key Points

- According to the principles of traditional East Asian medicine (TEAM), obesity is a pathophysiological state of the body with many diverse functions going awry.
- Obesity is induced by many different reasons and develops into many different forms according to each patient’s bodily constitutions, characteristics, and lifestyle and therefore must be approached differently for each patient.
- Unlike conventional medicine where treatment is provided for all types of obese patients alike, TEAM is based on holistic views and consequently approaches the problem from a more fundamental level, with greater emphasis on individuality.
- The three most popular types of acupuncture treatment available are manual acupuncture, electroacupuncture, and auricular acupuncture.
- Acupuncture therapy is an essential component of successful obesity management to restore balance of the organs and energy, achieve and maintain a reasonable body weight, redistribute fat masses for a better figure, and suppress appetite and reduce food intake.
- The mechanism of action for each type of acupuncture is different. Electroacupuncture regulates its effects through the release of different neurotransmitters, while auriculoacupuncture aids in weight control by activating the center in the brain to suppress the desire of food, by influencing the appetite signal of the digestive tract, and by its influence on obesity-related hormone peptides.
- Despite increasing evidence on acupuncture’s efficacy in treating weight-related disorders, it is recommended for patients and doctors to use acupuncture in conjunction with behavioral modification, herbal medication, and other dietary, exercise, and conventional treatment programs for best results.

Introduction

Acupuncture is a method of treatment mostly used in traditional East Asian medicine (TEAM) [1, 2], but it is gaining worldwide popularity. According to a national survey conducted in 2002, acupuncture rated the third most frequently used complementary and alternative medicine (CAM) therapy in the USA, along with yoga and meditation, with the highest use among women, Asians, persons of higher educational attainment and income, and those living in the western or northeastern USA [3–5]. Given the increasing popularity and availability of CAM therapy nationwide, these number of patients have risen compared to the last decade. However, when looking into the use of acupuncture by overweight and obese people alone, data analysis reveals that less than 5% of the obese have experienced acupuncture and that more astonishingly, there was lower use of acupuncture with people of the higher body mass index (BMI) categories [6].

This is understandable in a sense that until now, the use of acupuncture to reduce body weight and improve obesity wasn’t without its criticism and controversy. The whole mechanism behind its effectiveness was not fully understood, and overall, it lacked conclusive evidence due to systematic reviews that contradicted previous results. Yet in 2009, a systematic review and meta-analysis with more rigorous and detailed search criteria was conducted concluding that acupuncture may actually aid in improving outcomes for body weight, as well as for obesity compared to conventional medication alone [7]. Including a total of 29 randomized controlled trials (RCT) for its systematic review, searched among a total of 19 electronic databases that included English, Korean, Chinese, and Japanese studies without language barriers, and comprised of 3,013 individual cases, this was one of the largest reviews that were done up-to-date, and consequently, it led to similar studies that delved even deeper.

Another systematic review that was conducted in 2010 concluded that herbal medicine and/or acupuncture not only demonstrated greater reductions in body weight, BMI, waist circumference, and blood total cholesterol in comparison to mere lifestyle modification or no treatment at all but also showed fewer relapses of weight gain after termination of treatment compared to placebo or pharmacological drugs [8].
The use of acupuncture in the field of obesity is gaining more and more popularity as emerging evidences support its efficacy not only in reducing weight but also in treating medical conditions such as musculoskeletal pain [9, 10], osteoarthritis [11, 12], hypertension [13–15], diabetes [16], depression, and even anxiety [17, 18]. All of which are well-known complications of unhealthy weight gain.

In order to fully understand and successfully utilize acupuncture for obesity in practice, it is of utmost importance to first understand the yin and yang, five organ theories of traditional East Asian medicine (TEAM), and then the pathophysiology of obesity in the TEAM point of view. With that concept steadfastly held in mind, we can go on to discuss the different types of acupuncture treatment available for different types of obesity patterns, intermittently providing examples of modern research to help clarify its mechanism of action.

How Does TEAM View Obesity?

So what are the main causes and problems that lead to obesity? In TEAM where almost all of the different types of diseases can be found in at least one of its ancient encyclopedias, obesity is a relatively untouched subject, and there is only a few mentioning in the *Inner Classic of the Yellow Emperor*, where it divides overweight patients into two types, depending on their bodily proportions of fat and muscles. It mentions that both types are a result of overeating heavy, rich, and sweet foods and that continuous consumption will lead to idiopathic thirst, urination, and eventually sudden loss of consciousness—currently postulated to be symptoms of diabetes and stroke. However, there is not much explanation on treatment.

Therefore, current day primary obesity has to be approached by applying basic TEAM principles of maintaining harmony and balance of the five vital organs and taking into account the consequent problems that may arise when such system goes awry.

In TEAM, the five vital organs that maintain our everyday health are the Liver, Heart, Spleen, Lung, and Kidney. These five work in close cooperation to maintain homeostasis by either supporting or hindering each other’s functions. In obesity, the Spleen plays a critical role, and to understand this mechanism, we have to first peer into the digestive system.

Once the food enters the body, the Spleen functions like the “energy/qi transformer;” or the “dynamo” in a machine—to transform and collect worthy energy and essential materials from it. However, it needs help from another organ to do so and right below it, the Stomach, is the “burner” which helps to heat up and combust the food for the Spleen. Thus, the food that has been combusted from the Stomach is separated into either essential substances that are then collected by the Spleen and transported to the organs and extremities or wastes—which are sent to the Small or Large Intestines for excretion. Next to the Spleen and Stomach, the Liver acts as a “booster” to help spread the clean energy absorbed by the Spleen up and outward, while the Kidney resides below the whole combustion site to fuel all organs fundamentally.

Yet, this is a very idealistic case, assuming that all organs are operating in optimal condition. When a person starts to gain weight in a pathological manner, the root of most causes arises with the deficiency of qi/energy in the Spleen. Deficiency of Spleen qi may be induced either congenitally or by

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1 A classic Chinese text which was published between 100 and 200 BC, considered to be one of the first treatises on acupuncture. It is also called *Huangdi Neijing* in Chinese.
2 The five organs are not to be mistaken or confused as the actual viscera in human anatomy, but more as a convenient means of tool to explain the very complex and interrelated system working in cooperation to regulate our bodily functions.
3 Since the five organs mentioned in this chapter refer to the five vital organs in TEAM physiology and not the anatomical organ itself, capital letters are used to differentiate between the two.
actual unsparing, harmful use of the Spleen such as frequent binges and fasting. When our body’s “energy transformer” is weakened, it not only becomes difficult to garner enough energy sources for our body but it also becomes difficult to spread it around. Hence, the body gets congested with slow-flowing traffic, and just like today’s traffic congestion, all the essential substances get crammed failing to reach the place of its destination on time. The body will feel heavy and react like there is not enough energy, which is why most overweight people tend to feel more and more lethargic, with lower level of tolerance for hunger, and crave for snacks or junk food that provides fast energy. Truthfully, it is not that the person actually lacks the essential nutrients; it is that they lack the sufficient and efficient flow of open traffic to get the materials to their places.

When the deficiency of qi in the Spleen becomes chronic, and the transportation function decreases, this leads the Spleen to fail to move and transform water fluids efficiently as well, leading humid to gather and collect and to accumulate into symptoms of dampness and to even congeal into phlegm. When phlegm is produced, a myriad of other problems arise with it, and at this stage, the patient feels fatigued, experiences lower immunity, frequently develops edema and chest oppression, and develops a lot of sputum in the Lungs. Since the patient is lethargic, it leads to less exercise, starting a vicious cycle of accumulation of more phlegm and eventually of fat. Therefore, the basic treatment principle for all the aforementioned problems is to balance and strengthen the Spleen, which will eventually help the body to stop craving food and also effectively get rid of humidity and phlegm from the body. The analogy between the flow of qi and the flow of traffic will work much better if you think of your body’s energy transportation system as a system of canals.

With Spleen qi deficiency in the background, there are multiple factors that aggravate the situation. One is excessive heat in the Stomach. Too much heat combusts foods too fast, produces hunger, and leads the person to develop a propensity to overindulge. A person can naturally have a lot of innate heat compared to others, but it can also be kindled up by eating a lot of heat-producing foods such as hot, spicy, greasy, and oily foods. Two is Kidney qi deficiency on top of Spleen qi deficiency. As mentioned earlier, qi deficiency of the Spleen itself is already bad enough for the whole digestive system, but when Kidney lacks qi as well, the person develops cold symptoms around the body, cold and weak limbs and genitalia, lumbar soreness, and impotence.

It is also important to mention the functions of the Liver. The Liver functions like the “booster,” but on the downside it is also very easily affected by emotions of anger or depression. In many obese patients, the Liver functions are depressed due to emotional distress. When the Liver is depressed, it fails to course and discharge nutrients, blood, and qi and, moreover, even suppresses the Spleen to induce “traffic congestion.” This phenomenon is especially frequently seen in modern-day obese patients with psychiatric signs and symptoms. Modern obese patients almost always show symptoms of Liver qi stagnation as well, with a tendency for comfort eating, which aggravates existing symptoms of obesity [19].

**Syndrome Differentiation**

No two obese patients are exactly the same in TEAM diagnosis. After close examination and history taking, the patient may have gained weight due to initial Spleen qi deficiency brought about by long-term consumption of junk food and sweets, and another patient may have become obese because of too much heat in the Stomach dramatically increasing the amount of food intake. They might even show symptoms caused by multiple factors, such as a prolonged stagnation of Liver qi oppressing the

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4 Phlegm is a general term for the viscous turbid pathological product that can accumulate in the body, causing a variety of diseases. It can also include retained fluid, the clear and watery pathological product due to disordered fluid metabolism.
transportation functions, congenital deficiency of Kidney energy, or even blood stasis caused by external factors but eventually also hindering qi flow. All these may act in conjunction or even as a vicious cycle, with one problem leading to the next and then causing further blockage around the body.

Therefore, it is necessary to tailor treatments according to the patient’s unique pattern of dysfunction and to figure out the crucial problem by addressing his/her own history and metabolic reasons for being overweight. Table 29.1 provides a simple explanation of the most common types of syndromes seen in the clinic, along with the mechanisms of action, associated symptoms, and other features/cautions organized through a variety of TEAM literature, clinical series [20], and individual clinical observations.

Use of Acupuncture for Obesity

Acupuncture therapy is an essential component of successful obesity management:

1. To restore balance of the organs and energy
2. To achieve and maintain a reasonable body weight
3. To redistribute fat masses for a better figure
4. To suppress appetite and reduce food intake

Starting from the most simple and common type of manual acupuncture, there are numerous different types of acupuncture that you may use to help treat obesity: electroacupuncture, auricular acupuncture, laser acupuncture, small scalpel-like needling, pharmacopuncture, magnetized needling, scalp acupuncture, thread-embedding acupuncture, and Saam acupuncture [21] just to name a few. However, most of them have little or mostly low-quality research literature available to enable the assessment and comparison between the needling methods. The following pages will only delve into the three most frequently used and researched acupuncture treatments: manual acupuncture, electroacupuncture, and auricular acupuncture.

Manual Acupuncture

Manual acupuncture is the simple insertion of thin metallic needles at specific points on the body that can be manipulated manually by twirling, thrusting, rotating back and forth, and scraping. The acupuncture points are usually chosen along the meridians connected to the dysfunctional organ of interest or specifically for the acupuncture point’s known effects in combination with other points for a synergistic effect. It is believed that such insertion of needles in specific points will help, correct, and rebalance the flow of qi flowing along the energy pathways—meridians. However, there are about 361 acupuncture points along with many more extra meridian points and new acupuncture points positioned throughout the body, and it is in the skill of the acupuncturist to choose the most appropriate one for inducing the desired effect.

Table 29.3 shows the ten most frequently used acupuncture points in the treatment of obesity that was analyzed in a literature research of 47 RCTs from Sui [8].

Saam acupuncture was developed by a Korean monk in the late seventeenth century and it uses “a combination of five transporting points of the involved meridians” to calculate the four most efficient acupuncture points to resolve symptoms. Due to its high convenience and efficiency, it is widely used in Korea but unfortunately not well known abroad yet. The acupuncture points that may be used according to Saam acupuncture to treat obesity will be briefly introduced in Table 29.2.
<table>
<thead>
<tr>
<th>Type of syndrome</th>
<th>Mechanism of action</th>
<th>Characteristics/clinical symptoms</th>
<th>Other features/cautions</th>
</tr>
</thead>
</table>
| Stomach heat + Spleen deficiency | – Due to overindulgence of heat-producing foods  
– Due to heat in the intestines causing constipation and stagnation  
– Stomach heat produces hunger and a tendency to overeat but Spleen vacuity fails to disperse and transform the essence of food | Corpulence, fullness of head, vertigo, body heaviness, lassitude, hyperphagia, thirst, preference for drinking water, constipation, red tongue proper, slightly yellow greasy tongue coating, and slippery and rapid pulse | Prolonged time in treatment may exacerbate symptoms into accumulation of heat in the intestines as well, leading to even more heat in the Stomach |
| Deficiency of Spleen qi | – Due to dietary irregularities  
– Due to frequent binges and fasting | Corpulence, edema, tiredness, body heaviness, asthenia, hypoxemia, poor appetite, abdominal fullness, loose stool, pale tongue, proper, thin greasy tongue, and threadlike, slippery pulse | Frequently produces dampness retention |
| Deficiency of Spleen, Kidney yang | – Due to congenital deficiency of Spleen, Kidney yang  
– Excessive use of Spleen, Kidney yang | Corpulence, tiredness, asthenia, lumbar soreness and leg weakness, impotence, sensation of coldness in the genitalia, pale tongue, and deep, threadlike, and weak pulse | |
| Stagnation of Liver qi | – Due to emotional distress | Corpulence, melancholy, irritability, hypochondriac, rib-side distension or abdominal distension and fullness, bitter taste, irregular menstruation, insomnia, dreaminess, white or thin greasy tongue coating, and thread and taut pulse | Usually very emotional, worrisome females or easily irritated males suffer from stagnation of Liver qi |

(continued)
Table 29.1 (continued)

<table>
<thead>
<tr>
<th>Type of syndrome</th>
<th>Mechanism of action</th>
<th>Characteristics/clinical symptoms</th>
<th>Other features/cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood stasis</td>
<td>– Due to stagnation of qi flow</td>
<td>Stabbing pain in the chest, irregular menstruation, dark or purple tongue, and wiry or choppy pulse</td>
<td>Distension of the lower belly is observed along with coldness in the lower part of the body. These patients don’t look very obese but have a high percentage of fat concentrated in the lower abdominal area. Frequently observed in female patients</td>
</tr>
<tr>
<td></td>
<td>– Can be also induced by stagnation of Liver qi</td>
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</tbody>
</table>

Phlegm – Due to possible problems in the functions of the Lung, Spleen, or Kidney

Tiredness, dark circles under eye, profuse phlegm, chest oppression, formation of sputum, slimy tongue, and slippery bowstring pulse

The most frequently seen symptom in patients with obesity is phlegm. It may be a cause itself or a problem that arises as a complication. Dramatic improvement in symptoms can be seen when such patients start physical workouts

Table 29.2 Selection of manual acupuncture points for different types of syndromes

<table>
<thead>
<tr>
<th>Type of syndrome</th>
<th>Acupuncture points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stomach hyperactivity + Spleen hypoactivity</td>
<td>SP4 (Gongsun), LI4 (Hegu), LI11 (Quchi), ST25 (Tianshu), ST34 (Liangqiu), ST36 (Zusanli), ST37 (Shangjuxu), ST40 (Fenglong), ST44 (Neiting), BL21(Weishu), BL27(Xiaochangshu)</td>
</tr>
<tr>
<td>Stomach-reducing Saam acupuncture set: GB41(Zulinqi), ST43(Xiangu), LI1(Shangyang), ST45(Lidui), ST36(Zusanli), ST40(Fenglong), CV6(Qihai), CV12(Zhongwan)</td>
<td></td>
</tr>
<tr>
<td>Deficiency of Spleen qi</td>
<td>SP4 (Gongsun), SP6 (Sanyinjiao), SP9 (Yinlingquan), ST25 (Tianshu), ST34 (Liangqiu), ST36 (Zusanli), ST40 (Fenglong), CV6 (Qihai), CV12 (Zhongwan)</td>
</tr>
<tr>
<td>Spleen-reinforcing Saam acupuncture set: HT8(Shaofu), SP2(Dadau), LR1(Dadun), SP1(Yinbai)</td>
<td></td>
</tr>
<tr>
<td>Deficiency of Spleen, Kidney yang</td>
<td>CV3 (Zhongji), CV6 (Qihai), CV12 (Zhongwan), KI3(Taixi)</td>
</tr>
<tr>
<td>Kidney-reinforcing Saam acupuncture set: LU8(Jinggu), KI7(Fuliu), SP3(Taibai), KI3(Taixi)</td>
<td></td>
</tr>
<tr>
<td>Stagnation of Liver qi</td>
<td>SP10 (Xuehai), BL17(Geshu), BL18(Ganshu), BL19(Danshu), GB31(Fengshi)</td>
</tr>
<tr>
<td>Triple Energizer-reinforcing Saam acupuncture set: GB41(Zulinqi), TE3(Zhongzhu), KI20(Futonggu), TE2(Yemen)</td>
<td></td>
</tr>
<tr>
<td>Blood stasis</td>
<td>SP6 (Sanyinjiao), SP10 (Xuehai), BL17 (Geshu)</td>
</tr>
<tr>
<td>Triple Energizer-reinforcing Saam acupuncture set: GB41(Zulinqi), TE3(Zhongzhu), KI20(Futonggu), TE2(Yemen)</td>
<td></td>
</tr>
<tr>
<td>Phlegm</td>
<td>ST28(Shuidao), ST38(Taokou), ST40(Fenglong), TE4(Yingchi), CV6(Qihai), CV9(Shuifen), CV12(Zhongwan)</td>
</tr>
<tr>
<td>Spleen-reinforcing Saam acupuncture group: HT8(Shaofu), SP2(Dadau), LR1(Dadun), SP1(Yinbai)</td>
<td></td>
</tr>
<tr>
<td>BL denotes the Bladder meridian, CV conception vessel meridian, GB Gall Bladder meridian, KI Kidney meridian, LI Large Intestine meridian, SP Spleen meridian, ST Stomach meridian, TE Triple Energizer meridian</td>
<td></td>
</tr>
<tr>
<td>*Acupuncture point SP4 refers to the 4th point of the Spleen meridian and the names in <em>italics</em> are its Chinese name</td>
<td></td>
</tr>
<tr>
<td>Stomach-reducing Saam acupuncture set is a group of four acupuncture points typed in bold that helps to harmonize the dysfunction of the Stomach</td>
<td></td>
</tr>
<tr>
<td>* means that the acupuncture point needs to be reinforced. Likewise, ⊗ means that the acupuncture point needs to be reduced/sedated</td>
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</table>
Table 29.3  Point name and location of ten most frequently used acupuncture points in the treatment of obesity

<table>
<thead>
<tr>
<th>Acupuncture Point</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ST25 (Tianshu)</strong></td>
<td>On the upper abdomen, 2 B-cun lateral to the center of the umbilicus</td>
</tr>
<tr>
<td><strong>CV12 (Zhongwan)</strong></td>
<td>On the upper abdomen, 4 B-cun superior to the center of the umbilicus, on the anterior median line</td>
</tr>
<tr>
<td><strong>CV9 (Shuifen)</strong></td>
<td>On the upper abdomen, 1 B-cun superior to the center of the umbilicus, on the anterior median line</td>
</tr>
<tr>
<td><strong>BL20 (Pishu), BL24 (Qihai)</strong></td>
<td>In the upper back and lumbar region, at the same level as the inferior border of the spinous process of the 11th thoracic vertebra (T11), and the third lumbar vertebra (L3), 1.5 B-cun lateral to the posterior median line</td>
</tr>
<tr>
<td><strong>ST36 (Zusanli)</strong></td>
<td>On the anterior aspect of the leg, on the line connecting ST35 with ST41, 3 B-cun inferior to ST35</td>
</tr>
<tr>
<td><strong>ST40 (Fenglong)</strong></td>
<td>On the anterolateral aspect of the leg, lateral border of the tibialis anterior muscle, 8 B-cun superior to the prominence of the lateral malleolus</td>
</tr>
</tbody>
</table>

(continued)
Electroacupuncture

Electroacupuncture is the stimulation of acupuncture points by passing electric currents between acupuncture needles for a set amount of time. Although its wide applicability and reliable curative effects has made it one of the most frequently used tools in TEAM for treating obesity as well as one of the most studied, the underlying mechanisms and the optimal modality for clinical practice are still under debate. However, most of the clinical researches up-to-date are helping to clarify how acupuncture exerts its effects through both systemic and also localized pathways, and thus, the method for use can be fairly summarized into the following.

First, electroacupuncture works through a variety of mechanisms. A review of literature conducted recently concludes that electroacupuncture brings about a significantly greater amount of weight loss than sham through its regulatory effects on neurotransmitters [23]. This is because during treatment, electric currents can be passed through in low (2 ~ 4 Hz) or high frequencies (100 ~ 120 Hz), and interestingly, different frequencies have shown to selectively induce the release of different neuropeptides [24].
Met-enkephalins and beta-endorphins are released in low frequencies (2 Hz) whereas dynorphins are known to be released in frequencies that are higher, such as 100 Hz [25]. The release of serotonin has also been observed, and all these work in conjunction to suppress appetite, cravings for food, depression, and even pain [26–28].

Because of such idiosyncratic characteristics of electroacupuncture, when managing pain—another popular area of application—it is recommended to alternate between the two frequencies for optimal results.

Then what about for obesity? A recent animal study showed that low-frequency electroacupuncture was more effective in reducing food intake compared to the use of high frequency and that treatment in 2 Hz resulted in downregulation of the orexigenic peptides in Neuropeptide Y [29]. In another study, low-frequency electroacupuncture showed positive effects on insulin resistance as well [30, 31]. In relation to the regulation of leptin, both frequencies had a beneficial effect on its resistance [32] whereas in lipid metabolism, high-frequency electroacupuncture (100 Hz) produced a reduction of plasma level of total cholesterol and triglyceride and increased serum leptin level more effectively than that of low frequency [33]. Thus, in obesity patients also, best results may be produced by alternating between the two frequencies.

Other than the central regulatory effects [34], it is also postulated that electroacupuncture can act directly on the peripheral and abdominal fat cells as well. For a long time, reduction of the fat cells in the immediate area of electroacupuncture treatment has been observed and several explanations have been offered: one, that the passing of electricity into the muscles produces heat in the affected area leading to increased blood flow; two, that the electric currents stimulate the nerve endings to release catecholamines; and three, that electroacupuncture stimulates the lipolytic receptor in human fat cells, namely, beta-2-adrenoreceptor (BAR-2). All three help to explain the phenomena of how electroacupuncture may facilitate the breakdown of fat cells and how it may redistribute it when applied in coordination with appropriately targeted physical exercise [35–38]. In addition, another recent study also observed that the increase in plasma endorphin levels can contribute to the lysing of fat cells as well [39].

To apply electroacupuncture, 6–12 acupuncture points are selected and tailored to the patient’s symptoms. Most of them are situated in the abdomen or trunk area, to allow deep insertion of needles and sufficient passing of electricity. Stainless steel acupuncture needles are inserted to a minimum depth of 1 cm to a maximum of around 6 cm depending on the area of stimulation, and the needles are connected to an electric stimulator. The frequency is manipulated as wanted (ranging from 2 to 100 Hz), to a slightly painful intensity lasting for 20–40 min. There are reports of electroacupuncture being stimulated for an hour, but as far as we know, there is no proven evidence that the longer means the better.

It is important to note that, however, there are contraindications for electroacupuncture. When selecting acupuncture points, the two points should not cross the midline of the body, meaning that electricity should not pass through the body horizontally, and people with electric Heart pacemakers should avoid this treatment.

**Auricular Acupuncture**

Auricular acupuncture is the application of needles into acupoints located in the ear. Since the ear is an extremely delicate organ, abundant with nerves and blood vessels, it is usually needled with tiny (0.2 cm) stainless steel auricular needles made into a thumbtack form that may be fixed with skin tape to keep them in place. For treatment of obesity, usually 4–7 auricular acupuncture points on one side of the ear are selected in accordance with the patient’s symptoms, and the auricular acupuncture
needles are inserted using forceps, fixed with ventilation tapes, and retained for approximately 3 days. The aforementioned process is repeated on the other side of the ear after 1–3 days until deemed unnecessary.

When applied appropriately and in hygienic settings, auricular acupuncture is absent of adverse effects and does not hinder the patient from the activities of daily living. Such convenience accounts for its high popularity as a treatment modality. However, it is not only the convenience factor that makes auricular acupuncture a popular form of treatment but also its effectiveness in treating it. Through much research, it is hypothesized that auricular acupuncture aids in weight control by helping to regulate and reduce food intake through the activation of the satiety center [40], by influencing the appetite signal from the gastrointestinal tract [41], and by its influence on obesity-related hormone peptides such as ghrelin [42].

Popular points for treatment of obesity by auricular acupuncture [8] are shown below (Fig. 29.1).

**Hunger point**: located on the middle point between the center of the tragus and infratragus apex

**Shenmen point**: located at the bifurcating point between superior and inferior antihelix crus and the lateral 1/3 of the triangular fossa

**Endocrine point**: located at the base of the cavum conchae, in the intertragic notch

**Stomach point**: located around the area where the helix crus terminates

**Spleen point**: located at the lateral and superior aspect of the cavum conchae

**Large Intestine point**: located at the superior aspect of the helix crus, top 1/3

**Conclusion**

It is important to note that despite increasing evidence on acupuncture’s efficacy in treating weight-related disorders, the main aim of its treatment is focused not on reducing excessive fat but more on restoring internal balance so that the body can manage to control itself once again. Therefore, it is recommended for patients and doctors to use acupuncture in conjunction with behavioral modification, herbal medication, and other dietary, exercise, and conventional treatment programs for best results.
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