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Guidebook to Eastern Medicine

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Introduction:

This guidebook attempts to meld together the functional philosophies of Eastern medicine with the supporting Western-based scientific evidence to provide future clinicians, as well as those invested in their own health, with the knowledge to incorporate these natural, non-invasive Eastern practices into Western medical care.

The most profound differences between Eastern and Western style medicine rests in the approach to the body and to the nature and duration of treatments. Western medicine views the body as a collection of separate but interdependent systems (Nervous, Digestive, Muscular, Immune, etc) and treats conditions and diseases after they arise by delivering fast-acting treatments targeting one or multiple symptoms to provide relief or curation to the patient. Conversely, Eastern medicine views the body as a singular, flowing system in which one part can not be affected without in turn affecting all other parts, and treatments are provided long before the need arises, stressing the importance of lifelong healthy habits as the cornerstone of a person's health.

The difference between this reactive, systematic approach in the West and the preventative, holistic approach in the East provides an invested clinician with ample resources to consider when approaching a patient. Both the West and the East offer effective solutions to problems that occur within the human body. The West, through intensive research into the biology and chemistry underlying each of the bodily systems, has been able to create treatments designed to target specific problems, Whether through medication or surgery, Western medicine can provide fast relief, with the one goal of the treatment being to eventually cure the condition with as little impact on the rest of the patient's life as possible. In the East, tradition and natural remedies that have been effectively used for centuries underlies the majority of treatments. While there are certainly aspects of Eastern medicine which are administered after the condition has manifested, most practices are meant to be performed throughout the course of an individual's life, in sickness and in health. While some pillars of

Eastern medicine are treatments, most are foundational, lifelong habits that emphasize the importance of properly understanding and caring for the body.

As our society grows more global, the interaction between these two philosophies of medicine continues to grow as well. While this interaction can clash when it occurs between a clinician on one side and a patient on the other, more and more both clinicians and patients alike are beginning to expand their beliefs on what constitutes good medical care. With lifestyle clinics inspired by Eastern medicine popping up around the country and more medical schools opening with courses or entire programs on Eastern medicine, the knowledge gap between the West and the East is shrinking and the clinical importance of Eastern philosophies and practices is being slowly discovered.

This guidebook will attempt to explain the reasoning and application behind Eastern medicine as it relates to a Western clinician, supporting such treatments with the peer-reviewed, scientific data that is the cornerstone on which Western treatments rest.

Diagnostics:

While much of the diagnostic practices performed by Eastern medicinal healers require extensive training to properly assess the body externally, the philosophy underlying these diagnostic procedures can provide a Western physician with a more holistic eye when in comes to understanding how intimately connected each part of the body is to another.

Without going into the various terms and categories of forces at work in the body as described in Traditional Chinese Medicine (TCM), the essential diagnostic practices that easily can be initiated into standard Western practices are that of inspection, auscultation, palpitation, and inquiry (Bing, Chapter 2) . These practices are not unique to Eastern medicine, some version of raw, physical assessment being practiced by every notable medical system. However, the holistic approach that saturates all of Eastern medicine is likewise emphasized in this method of diagnosis as well, and that alone is enough to be of value to a Western physician.

Eight Principles:

Before going into the methods of evaluation for diagnosis, some information about the eight principles of Eastern medicine that determine the terms in which diagnoses and treatments are made.

1. Yin: Yin and yang are the two more general classifications describing the relationship between the other pairs of principles: interior and exterior, heat and cold, and deficiency and excess. Yin is considered Earthly, and symptoms can include: dark complexion, listlessness, weak pulse, large amounts of urine, and a lack of thirst. (Wu 125)
2. Yang: Like Yin, Yang also generally describes the patterns of interaction between the other principles. Yang is considered Heavenly, and symptoms can include: fever, restlessness, course breathing, phlegm, and heavy thirst. (Wu 126)
3. Interior: Interior is ascribed to conditions that manifest deep inside the body, such as in the bodily fluids or qi, the blood, and bone marrow. Symptoms include: fever, irritability, coma, thirst, diarrhea, and constipation. Usually depicts a middle to late stage disease. (Wu 114)
4. Exterior: Exterior describes diseases manifested on the surface of the body, including the hair, skin, nails and meridian points. Notable features for an exterior condition diagnosis include chills, fever, a weak pulse and headaches. Usually depicts an early stage disease. (Wu 114)
5. Heat: Heat describes a lack of an aversion to cold. With an exterior pattern, symptoms may include a rapid pulse, irritability fever, chills, dehydration, thick phlegm, and soreness of the throat. With an interior pattern, symptoms may include preference for cold drinks, clear urine, and slow pulse. (Wu 117)

6. Cold: cold describes a constant aversion to cold. When paired with an exterior pattern, symptoms may include aches, a tense pulse, fever, chills, pale face, and headaches. When paired with an interior pattern, symptoms may include nausea, stomach pain, vomiting, and diarrhea. (Wu 117)
7. Deficiency: deficiency describes a scarcity in qi, blood or bodily fluids. It can be paired with Interior/exterior and cold/heat to produce a variety of symptoms, usually manifesting as constipation, a lack of an appetite, fatigue, cold limbs, dizziness and a weak or slow pulse. (Wu 120)
8. Excess: Excess describes any disease that does not fit into a deficiency pattern. Symptoms can include delirium, constipation, course breathing, abdominal pain, and painful urination. (Wu 120)

Inspection:

The use of sight is vital for gaining diagnostic information for any provider and is often the first cue for both patients and providers when assessing health. Inspection refers to intense visual analysis, with Eastern doctors spending extra time and attention on analyzing the face, body and tongue. (Wu)

<u>The Face:</u>

The face is the gateway to the soul, and as such the face of a patient as they walk into a clinic is the first cue to their health that the provider may assess. In Eastern medicine, extra attention is given to examining the eyes of a patient, as they are the clearest way to view a person's spirit or shen, and how bright the eyes are can give a good impression of the overall vitality of a person. (Wu)

A healthy face includes bright eyes, good color in the face, regular breathing and logical, cohesive speaking. And unhealthy face is often paired with vacant eyes, abnormal color in the skin, slow/weak or fast/shallow breathing, and illogical speech or volume. (Wu)

The color of the face is especially important in Eastern medicine when determining the underlying health problem; a pale face indicates a cold condition, with a corresponding brightness to the skin indicating a qi deficiency and a dullness indicating blood deficiency. Redness in the skin indicates a problem with heath; redness all over the face indicating an excess of heat while redness present in just the cheeks indicates a deficit. Yellow tint to the skin indicates dampness; when the face is bright with a yellow tint it is displaying a damp heat, while a dull face with yellow tint displays a damp cold. Black on the face is most strongly associated with kidney dysfunction. (Wu)

With regular observation and long-term training, a physician can be trained to assess color and the location of color to better understand the underlying nature of a disease before running labs and tests. An accepted example is the connection between the tip of the nose and the spleen; redness on the nose (when not due to weather conditions) indicates their may be a problem in the spleen, alcohol intake notably making this area more red as well as alcohol affects the spleen and liver.

The Body:

The overall physique of the body can also display numerous signs of underlying conditions and excess or deficiency of the various principles. Yang is associated with activity and energy while Yin is associated with quiet and sedentary; a person who is obese or underweight therefore have an excess or deficit of yin or yang. (Wu)

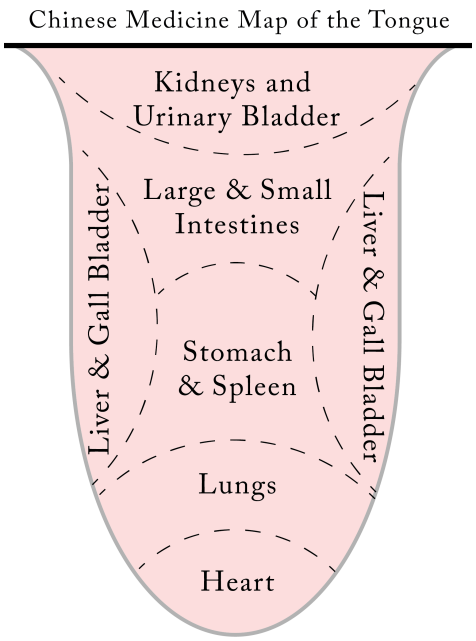
Hair, while not being a traditional feature for analysis in Western medicine, does give a Eastern physician additional signs for diagnosis. Shiny, lustrous hair is a sign of good kidney function and healthy blood, with faded, dry hair being a sign of the opposite.

The lips are another important site for analysis; bright, full colored lips indicate heat, while pale lips indicate qi or blood deficiency, and blue lips indicate cold or poor blood flow. Dry, chapped lips are a sign of depleted bodily fluid levels, while twitching lips are indicative of live malfunction. (Wu)

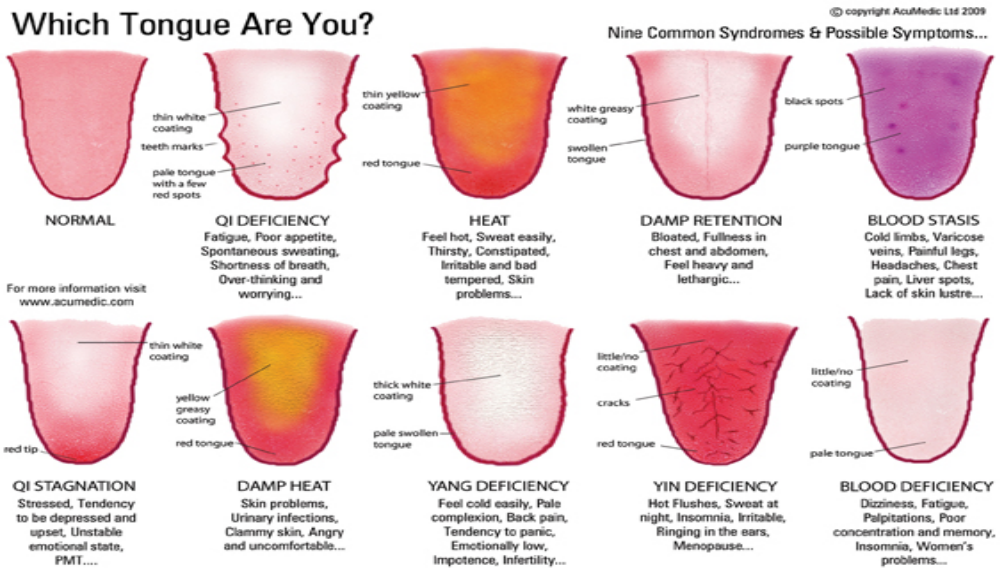
The Tongue:

The tongue is perhaps the more commonly known method of diagnostics in Eastern medicine that is not similarly practiced in the West. In Eastern medicine, proper assessment of the tongue is a vital source of information, and there are hundreds of books simply detailing the signs and related conditions of the tongue.

The tongue is assess for material, coating and color, the locations of these signs additionally are associated with specific body regions.



The material of the tongue is considered the underlying structure of the tongue itself, including the shape and location of taste buds and assortment of colors that can present themselves from patient to patient. The relative moisture and dryness is also assessed and varies between patients.



The coating or “moss” of the tongue changes readily, from day to day and season to season, reflecting lifestyle, diet, and toxin levels in a patient’s body.

A healthy coating has uniform density, although the middle of the tongue usually is thicker. The moss should be thin, moist and slightly white, but still allowing a view of the material of tongue underneath. (Wu 48)

A thick coating is a indicator of excess in the body and a paste-like consistency is a sign of dampness. Greasy, thick, oily moss on the tongue is also a sign of mucus or dampness in the body. White color indicates coldness, while yellow indicates heat. (Wu 53)

Eastern practitioners also evaluate the tongue for shape, swelling, cracks, and attachment of the moss to the material, a loose moss indicating malfunction in the stomach or spleen.

Auscultation:

Auscultation is the assessment of signs and smells when evaluating a patient.

<u>Sounds:</u>

Generally, heat is associated with loud speaking voices while cold is likewise associated with a quiet, soft voice. A patient who is fighting a pathogen may have a quiet voice that grows

steadily louder over the course of the appointment, while a patient who has a natural excess of heat or cold may be consistently loud or quiet respectively. (Wu 58)

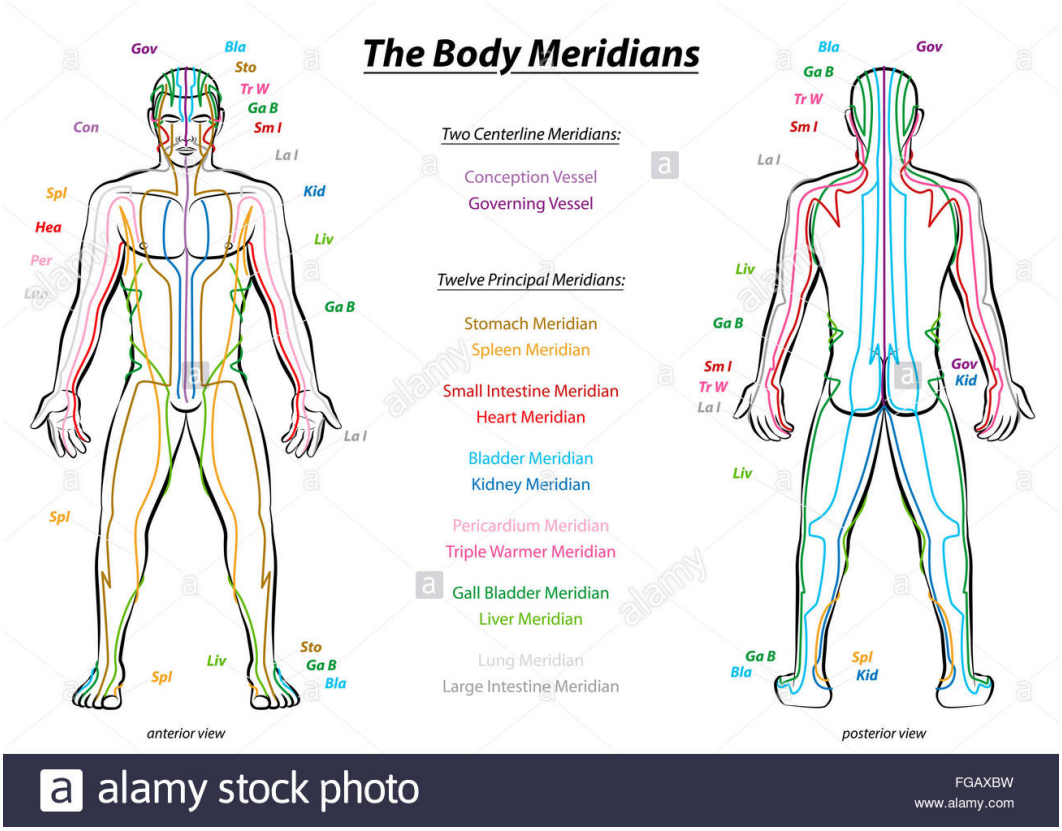
Breathing is also evaluated through sound. Weak, shallow breathing indicates deficiency in the lungs or kidney, while loud, heavy breathing indicates there is an excess that is constricting the airway of the patient. (Wu 59)

Smells:

Breath, urine, stool, vomit, sweat and discharge are evaluated for smell. Generally, strong smells are associated with heat while a lack of smell is an indicator of a cold condition. (Wu 63-64)

Palpitation:

Palpitation refers to feeling the body. Eastern practitioners evaluate the wrist, abdomen and meridian points to assess the body. While many of the techniques and conclusions drawn from palpitation take admittedly more training than this guide will provide, here is a chart of the areas assessed:



Inquiry:

Like Western practitioners, Eastern practitioners also interview their patients on their lifestyle, signs and symptoms to better understand the nature of their disease.

Herbalism:

The use of herbs in Eastern medicine dates back to 2852 B.C, and it has since been a dominating practice for combating every kind of malady. Following in the vein of the Taoist philosophy, which believes that illness is rooted in an imbalance between the positive yang and the negative yin. Yang corresponds with the sun, day, heat, life, and light, and if in excess, it result in dryness, hypertension, fever, obesity, pain, cough, elevated heart rate, inflammation and constipation. Yin corresponds to the moon, night, cold, darkness, water, and death, and if in excess, it can result in hypotension, hypothermia, thinness, weakness, and diarrhea. Over 2,600 different herbs are used in combination to attempt to either tonify (too much yang) or sedate (too much yin)

the body so that balance is restored. Most traditionally used herbs fall under a category of either yin or yang, and likewise, yang herbs are used to treat yin maladies and vice versa. Since 1954, the use of herbs in Eastern medicine has carefully analyzed by Western scientific standards, and many studies have backed the use of Eastern herbs in treatment of a variety of diseases and conditions.

Below is a summary of the clinical foundations of Eastern Herbalism, explaining each piece in appropriate context for a Western practitioner. The fundamentals of the preparation and administration of herbal decoctions will be outlined, followed by an analysis of the scientific and clinical evidence for the effectiveness of treatments with 7 of the more relevant and popular herbs in the West: Astragalus, Ginkgo Biloba, Red yEast rice, Cinnamon, Ginger, Ginseng, and Gotu kola.

The goal is to provide a basic understanding of how herbal treatments are used and what benefits they may have to offer.

Preparation:

Preparation of a decoction of Eastern herbs begins with a proper container; ceramic, mud and clay containers are preferable, and metal is generally advised against unless it is stainless steel. It is important that the container be cleaned thoroughly before and after every use.

1. Wash the herbs in a strainer to remove impurities, including dirt, rocks and sulfur dioxide, then soak in clean water.
2. Add water until it is 2-3 centimeters above the herbs and gently bring to a boil before turning down to a simmer for 30-45 minutes.
3. Strain the decoction when finished.

A standard dose of herbs can be used again for a second decoction, although it is advised to use less water on the second. Cooking times vary with different herbs; overcooking and burning can also make the dose less effective and should be discarded rather than used for a second decoction. Preparation can vary depending on the specific herb or combination of herbs, and the specific order in which herbs are added an important factor in determining the decoction’s effectiveness as well.

Decoctions can also be dried to form a powder, allowing it to be ingested with hot water and tea or even packaged in the form of tablets, pills, and capsules (Dharmananda). There are other methods for preparing powders that do not involve an initial decoction, and even methods of preparation that result in tinctures or involve adding some kind of alcohol (usually wine). When alcohol is added, the type and amount is specific to the types of herbs involved and is meant to enhance the effectiveness of the treatment (Dharmananda).

Administration:

While the most common administration of herbal remedies is through ingestion with hot water in the form of tea, treatments can be administered in a variety of ways. Dried decoctions and powdered formulas can be taken orally in the form of capsules or tablets, and certain herbs like EXAMPLES are currently being used by Western pharmaceutical companies. Salves and oils are also commonly used mediums to deliver the herbal treatments topically.

Most Commonly Used Herbs:

While there are many herbal remedies that are used commonly around the globe--both as alternative medicine and, after extraction of their essential molecular components, as important components of many pharmaceutical drugs-- the herbs outline below are those that have been in the Western spotlight due to their importance in Eastern medicine and broad range of health enhancing effects. All are safe to use in prescribed amounts and sold over the counter, but may cause adverse side effects if taken in excess or if underlying health conditions or current prescriptions are a factor. Cognitive, heart, liver, and immune system function enhancement and reduction of many broad risk factors such as blood pressure, blood glucose, and insulin sensitivity, are some of the broad acting effects of the following herbs: astragalus, ginseng, ginkgo biloba, gotu kola, red yEast rice, cinnamon, and ginger.

Astragalus (Huang Qi)**:** A powerful herb used commonly as an immune system builder or general stimulant; is used in Eastern medicine to raise a person's life energy or "Qi" by forcing deeper reserves of energy outward and to the surface. Although it is effective at boosting athletic performance and immunity, it should not be taken lightly due to it's known to induce

hypertension, agitation, insomnia, headache, tinnitus, dizziness and palpitations (Goldman). These side-effects also may result in exacerbation of longer lasting pains such as head and back pain as energy is forced to the surface of the body. Western studies in humans have found Astragalus effective in increasing the body's production of white blood cells (Block) and in enhancing heart function (Yang), and studies in mice have additionally shown that astragalus may help regulate blood sugar levels (Wu) and attack pathogens as well (Gao).

Ginseng**:** As another stimulating herb, Ginseng is most commonly used as an immune booster, energy enhancer, and quick treatment for fatigue. However, if not administered properly in the correct dosage, it can exacerbate other symptoms such as hypertension, insomnia, and rashes. Ginseng is hard to digest and can result in constipation, loss of appetite and digestive pain (Goldman). Although few research studies have been conducted on the clinical use of Ginseng, they provide insufficient evidence for use in Western medicine.

Ginkgo Biloba: Most commonly used in the treatment of cardiovascular disease and as a cognitive enhancer, Ginkgo Biloba is effective at dilating blood vessels, reducing blood viscosity, diminishing or enhancing the effect of certain neurotransmitters, and reducing free radicals in the blood and cerebrospinal fluid. Traditionally it was used in soothing bladder infections and increasing sexual energy, however current studies have been more focused on the herb's cognitive effects. Ginkgo Biloba is already used commonly in Europe for the treatment of dementia, and recent studies have found treatment with Ginkgo Biloba clinically effective in the treatment of Alzheimer's (Kanowski) and safe for patients (Le Bars). Other studies have found Ginkgo Biloba effective in treating anxiety and glaucoma as well, but these studies alone lack good, clinical reference (Woelk).

Gotu Kola: Commonly called the "herb of longevity", Eastern practitioners prescribe Gotu Kola to boost brain functioning, heal skin issues, and promote liver and kidney function. Studies in mice have found administration of the herb to result in enhanced problem solving and memory, reduced anxiety, and enhanced cognitive function in Alzheimer's, however many of

these findings are lacking comparable studies in humans (Grey, Soumyanath, Chanana) . Other studies in rats confirmed an effect of Gotu Kola on reduced joint inflammation for rats with arthritis, and a detox effect on rats taking an aggressive drug used in the treatment of Tuberculosis (Sharma, Ghosh). However, these studies still require more robust review and demonstration of a similar effect in humans. Gotu Kola does appear to be safe for consumption and bears less adverse side effects that many herbal treatments. However, ingested Gotu Kola has been known to cause upset stomach, nausea, and headache, and topical administration may also cause skin irritation, so it is recommended to take Gotu Kola in small intervals .

Red YEast Rice: A type of fermented rice made using specific types of mold, Red YEast Rice has gained the quick acceptance of the Western scientific community due to its inclusion of some of the same chemicals used in pharmaceutical cholesterol lowering medications. Commonly used as a natural and affordable alternative for lowering cholesterol levels and promoting heart health, however Red YEast Rice has many other potential benefits, including reduced cancer cell growth and improved blood sugar/insulin levels (Hong). Multiple studies in humans have confirmed Red YEast Rice's effect in lowering cholesterol level without many adverse side effects (Xue, Huang). Other studies have found Red YEast Rice to be effective in the treatment and prevention of Metabolic syndrome by treating risk factors by reducing blood sugar and insulin levels and lowering blood pressure (Patel, Affuso). However, it should be noted that ingestion of Red YEast Rice may result in gastrointestinal problems such as stomach pain and bloating, and more severe reactions may result in muscle weakness, liver toxicity, and allergic reactions.

Cinnamon: An inexpensive spice that is comparable to other superfood spices like garlic and oregano, cinnamon has a variety of health benefits, including more general regulatory properties through it's inclusion of antioxidants and anti-inflammatory chemicals, and treatment and prevention of neurodegenerative disease and heart problems (Shan,Pasupuleti, Gunawardena). Along with reducing sensitivity to insulin and lowering blood sugar levels (Bolin,

Adisakwattan, Kirkham), studies have shown that cinnamon may reduce cholesterol levels and fight fungal and bacterial infections (Allen, Singh). Studies in mice have also found cinnamon to be effective in reducing the effect and onset of Alzheimer's Disease (Peterson), and in Parkinson's models, cinnamon was show to help protect neurons, regulate neurotransmitter function, and improve motor function (Khasnavis). While all types of cinnamon provide health benefits, the Cassia variety is known to cause problems in large doses, so the Ceylon ("true Cinnamon") variety is prefered, although it is more expensive.

Ginger: A commonly used spice, ginger was tradition used to help digestion, reduce nausea, and relieve pain due to its anti inflammatory and antioxidant properties. Most commonly prescribed to treat nasea, studies in humans have demonstrated ginger has a safe and clinically effective treatment for sea-sickness (Schmid), cancer patients (Chaiyakunapruk), and, most notably, for morning sickness in pregnant women (Nutr). Likewise, other studies in humans have demonstrated ginger to be effective in relieving menstrual pain (Ozgoli) and in treating chronic indigestion (Wu). The anti-inflammatory components of Ginger are also responsible for Ginger's effect at lowering chronic muscle pain (Black), as well as pain and inflammation from osteoarthritis (Altman). Other studies in animals have shown Ginger to be effective in slowing age-related cognitive decline (Oboh) and in inhibiting the growth of several bacterial and fungal strains (Ponmurugan).

Acupuncture:

Acupuncture is a practice used in Eastern medicine, where thin needles are placed in specific points on a person to provide pain relief as well as serve as a treatment for some illness in addition to boosting one's overall well-being. A person's life force, known as Qi, is believed to flow through an intricate pathway that is unique to Eastern Medicine, known as the meridian, in the body, which can be altered by targeting specific points along its route. Qi is driven by the opposing forces of Yin and Yang, and the goal of acupuncture as well as all Eastern medicine is to balance these forces to create harmony within the body. There are 350 acupuncture points

where along needles are placed in varying combination, and then left for varying lengths of time. Acute problems are usually resolved within 8-12 treatments, while more chronic conditions will require once or twice a week sessions for several months (Nordqvist). After a session, the patient may feel immediate relief in pain and muscle tension for a day or two; some experts have attempted to explain these effects by speculating that acupuncture points are places where skin, muscle, and connective tissue can be stimulated, thereby triggering a release of pain-relieving hormones and increasing the blood flow, which increases the effect of the hormones (Nordqvist). Official studies on acupuncture are rare due to the lack of an adequate control or sham treatment. The National Center for Complementary and Integrative Health (NCCIH) has found supporting evidence for the effectiveness of acupuncture in relief for chronic pain, often lower back, neck, and joint pain--which will be analyzed below.

This review will attempt to provide and understanding of the principles of acupuncture as well as its current position in Western medicine. The first section will explain the practical portions of acupuncture--what the equipment, namely needles, are composed of, the necessary training and certification required to practice acupuncture in the United States, and finally, where these acupuncture points are located and their corresponding association areas. The final section will provide analysis to the scientific evidence and clinical effectiveness of acupuncture as a treatment for chronic pain in the lower back, neck, osteoarthritis, and headaches as well as other applications, which will not be discussed in this chapter.

Equipment:

Acupuncture needles vary both globally and between types of treatments, although most are made from stainless steel and are thread-like, often between only 0.12 mm and 0.35 mm in diameter. The vast majority of needles used in the West are pre-sterilized and single-use/disposable and can be between 8 mm to 7 cm in length. Most needles are left in for between 5 and 30 minutes, but some may only remain a few seconds or up to several days

depending on the size, location, and condition. There are a few types of specialty needles which may be used as well: three-edge, plum blossom, intradermal, and press.

Three-edge:

Three-edge needles have a wider base proximal to the tip of the needle and may be flat, curved, or surrounding a hollow opening. The goal of these needles is to draw small amounts of blood at specific acupuncture points.

Plum Blossom:

Also called the seven-star needle, the plum blossom needle is in fact an arrangement of 7 filiform needles in the shape of a flower. The handle of the needles is often flexible, allowing the practitioner to swiftly and gently tap on the skin. These needles may be used at specific points, but these may often be used only the meridian pathway as well.

Intradermal:

Intradermal needles are very thin and very short needles that are meant to be left in place for several days, often in the ear area. They are inserted very shallowly and then covered with tape and removed days or weeks later depending on the condition. Likewise, they are often used for more chronic conditions, namely pain but it also is implemented for treatment of addiction.

Press:

Press needles are very small needles, usually with a spiral base to prevent much penetration of the skin, that are meant to be left in place for 1 to 3 days to produce prolonged stimulation. Needles are pressed into the skin, often around the ear, and covered with a sterile surgical adhesive patch, which needs to be carefully attended to for penetration by dirt if the needle is piercing the skin.

Training:

Students wishing to practice acupuncture in the United States must achieve a Master's in a program accredited by the Accreditation Commission for Acupuncture and Oriental

Medicine (ACAOM), following at lEast two years of study at a baccalaureate level, although some schools require a formal bachelor's degree. Acupuncture programs normally take three years and consist of classes on Eastern medical theory, diagnosis and treatment techniques, herbal studies, integrated acupuncture and herbal clinical training, and biomedical clinical sciences along with additional courses on patient interaction and basic business management.

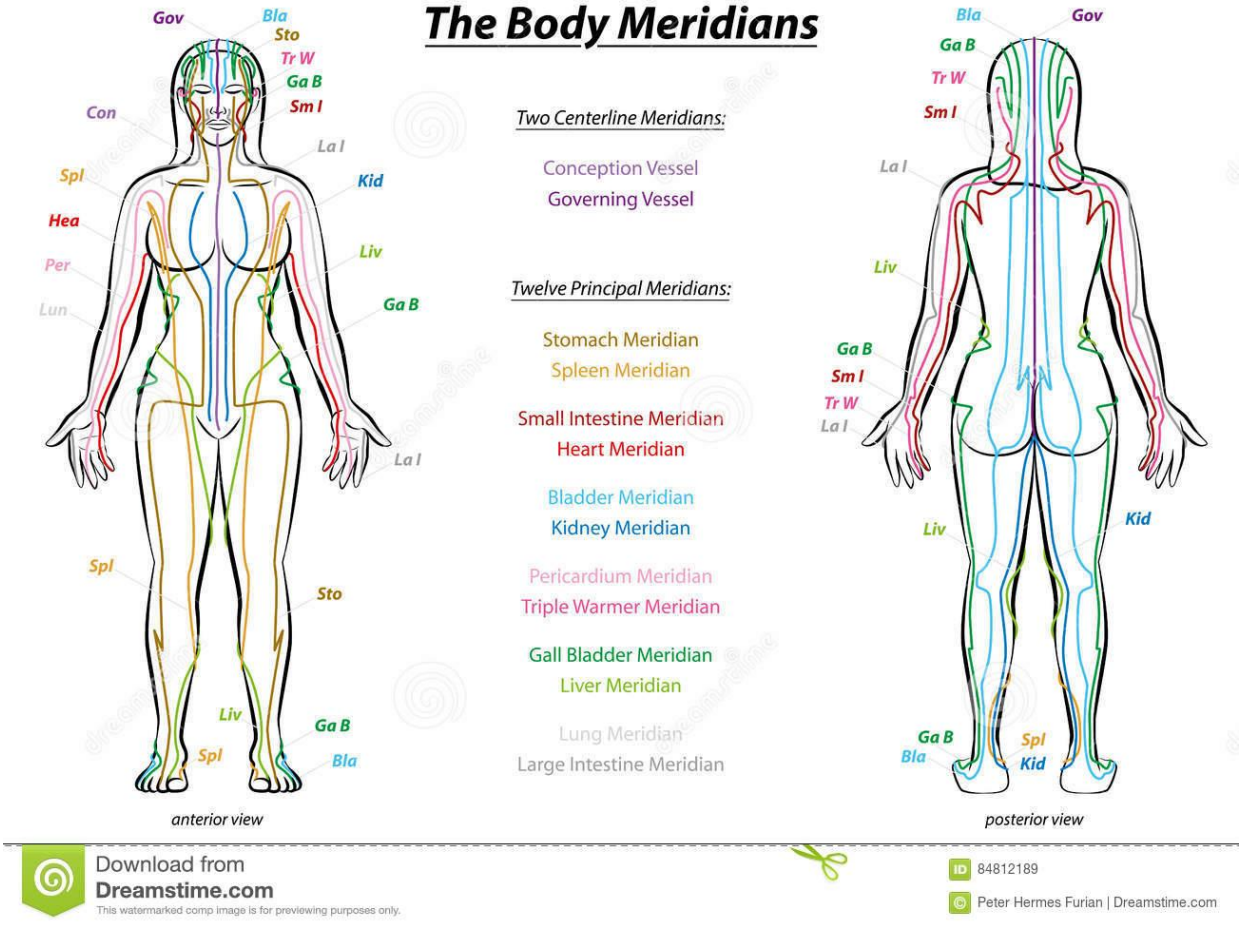
Following completion of an ACAOM program, a practitioner must additionally gain licensure through the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM) to practice in most states. Certification requires the applicant to complete a clean needle technique course offered by the Council of Colleges of Acupuncture and Oriental Medicine (CCOAM), and pass certification exams in the foundations of Eastern medicine, acupuncture, and biomedicine. Following certification, practitioners are most often called “Licensed Acupuncturist”s, but in some states they are called “Acupuncture Physicians" or "Doctors of Oriental Medicine", which do not indicate the practitioner is a licensed physician as well.

In the United States, a recent survey showed that 14 million US citizens have tried or used acupuncture, and an estimated 8.19 million people are consistent patients. There has been a remarkable growth in the use of acupuncture from 4-6% over a 5 year timespan, marking it as one of the fastest growing holistic medical industries (Acupuncture & Massage College). As of 2015, there were over 34,000 licensed acupuncturists in the US, and there were 72 accredited acupuncture institutions providing masters or professional doctoral programs (Fan). Acupuncture is quickly growing in the US and increasing both in respects to both practice and training.

Placement:

Acupuncture needles are placed at specific points along major groups of blood vessels, nerves and muscles, called meridians. The Meridian system is not formally recognized by Western medicine, but it is the most important system in Eastern medicine, and is targeted by

all forms of Eastern treatments. There are 12 major meridians in the body, named for the corresponding organs that are most strongly connected to: Lung, Spleen, Heart, Kidney, Pericardium, Liver, Large Intestine, Stomach, Small Intestine, Bladder, Triple Burner, and Gallbladder (Bouhdili).



Needles are placed along specific points are the Meridians in a three step process:

1. Identify the ‘sick’ Meridian: along with association to specific organs in the body, the 12 meridians are also associated with specific regions of the pain, associations that both can be used to target the area of pain.

2. Balancing the ‘sick’ Meridian: each meridian is balanced by 5 corresponding meridians. Once the sick meridian(s) are found, the associated balancing meridians are targeted to provide relief.
3. Choosing acupuncture points: onces the balancing meridians have been determined, an acupuncturist will target specific points through ‘body mapping’. Body mapping is a system in which one part of the body is mapped out onto another, and can thus provide a mechanism where the painful area can be affected indirectly. Certain areas such as the feet and ear are believed to correspond to a broad range of body areas, and thus entire acupuncture treatments may focus on one of these regions (Bouhdili).

Placement of acupuncture needles can additional vary in how deep the needle is placed, the type/shape of needle that is used, and how long the needle is kept in place. However, the foundational processes of determining where to place the needles to provide pain relief to the area of interest always begins with these three steps.

Supporting Evidence:

Lower Back Pain:

Several studies show that acupuncture may be helpful in alleviating chronic back pain; these effects were noted to be most significant immediately following treatment, and were enhanced if implemented in addition to other non-invasive forms of self-care (Berman, Cherkin, Furlan). However, there is no evidence for long-term relief, and a few studies have even found no significant difference between actual and simulated acupuncture for back pain relief (Chou, Cummings).

Neck Pain:

One study found actual acupuncture to result in more significant neck pain relief than simulated acupuncture, but the study sample was too small to validate these results (Witt). Another larger study which compared the effectiveness acupuncture in addition to other neck-

pain care found that participants who had the acupuncture treatment saw more improvement in pain than those who only relieved on self-care interventions (Vickers).

Osteoarthritis/Knee pain:

One large study found that acupuncture treatment modestly improved knee and joint pain compared to no treatment, but no different between actual and sham acupuncture treatment was observed (Hinman). Other agreeing study found a small difference between actual and sham treatments, but a larger difference in pain relief compared to those with no treatment (Manheimer, Vickers).

Headache:

All supporting studies tend to agree that acupuncture treatment was effective for relieving headache or frequency of migraines, however there was no sizable difference in effectiveness of actual acupuncture treatment compared with the simulated treatment. All of the studies observed that acupuncture treatment benefited both the frequency and severity of headaches or migraines (Linde, Vickers).

While there are few formally published studies on the effects of acupuncture, that is not to say there is a lack of evidence for its relevance in the clinical sphere. Studies investigating the neural reaction to acupuncture points have found very different reactions from simply activity due to sensation in the area of placement. When sticking needles into eye-related acupuncture points in the feet of volunteer, brain scans showed activity in the occipital cortex, which houses visual function (Dold). Later, they compared this activity to the activity prompted in the same region following the flashing of a bright light, and found the physical reaction to a bright light and a needle in a specific part of the foot had the same results (Dold). This effectively demonstrates that at lEast some acupuncture points have an effect as far as the brain.

Personal Experience:

After researching the previous portion of the acupuncture chapter, I made an appointment with Doctor of Oriental Medicine, Irv Marcus, where he went through practical portions of acupuncture, shared insights about his practice and acupuncture's growth in the West, and gave me an acupuncture treatment. He began the appointment by showing me the various kinds of needles he used, which varied in thickness and length, and which kinds of clients he would use them. Needle selection, as he stated, varied between practitioners according to personal preference or adherence to varying philosophies of acupuncture.

As he began placing the needles, he explained each placement on a chart of the meridians, detailing how the nervous system carries the effect throughout the body. He said that scientific evidence supports the effect of the needles requiring about 20 minutes to take effect, and that there is no benefit to leaving the needles in for longer than 40 minutes. Typically, he places about 8-10 needles in a session, but he may place more for healthier individuals and less for older clientele. Most of his patients come in weekly for 3-6 weeks, although he has some long-term clients with chronic pain who come in multiple times a week for 4-6 months. Since some insurance plans cover acupuncture services, most of his regular clients are under these plans, but he does have some long-term clients who are able to pay out of pocket for the treatments. Many of his clients come for pain relief, but he provides acupuncture services for infertilities, hypertension, insomnia, smoking cessation, weight loss, and many other conditions he says are recognized as effectively treated through acupuncture.

My session was extremely relaxing; I was able to keep my clothes on as the needles could go through the fabric, and the room was warm with ocean sounds playing in the background. Due to their flexibility, I was allowed to lie on my back despite the needles there. I felt a strength warmth and the flowing endorphins, which aided in my relaxation. On the way home I felt my muscles were at ease and this feeling continued throughout the day.

Long-term Practices:

While many treatments commonly used in Eastern medicine are meant to be practiced in sickness and in health, there are other physical and mental practices which developed alongside Eastern medicine that provide many health benefits despite lying outside the realm of clinical practice. These practices facilitate mind-body connection through awareness and control of the body, and as such enhance both mind and body function. Eastern medicine is unique from Western medicine in how it promotes these lifelong, preventative routines that attenuates chance of disease and injury and enhances life experience while healthy. Specifically, the practices of Yoga, Meditation and Tai Chi have been demonstrated to be beneficial to a patient's physical and mental state by hundreds of peer reviewed studies and have grown increasingly popular in the West in recent years. Since each of these practices have a long history and many different disciplines of study, this section will attempt to provide a basic understanding of the core values underlying Yoga, Meditation and Tai Chi, as well as the numerous benefits supported by scientific studies.

Yoga:

Yoga is a spiritual, mental and physical practice which originated in ancient India and developed into many different disciplines of practice and focus over the centuries. Most disciplines revolve around cycling through various poses or positions in which the student aligns and balances their body. The breath dictates the flow from pose to pose and the student is meant to focus on this constant inhale and exhale cycle while holding and moving through poses. This facilitates connection between the mind and body and can be practiced as both strenuous exercise and relaxing stretching. Poses vary in level of difficulty for both balance and positioning, and the length of time the pose is held can vary within a session or between disciplines.

Yoga has long been revered for how its practice enhances both the mind and body. Yoga has been demonstrated to reduce stress and anxiety, promote heart health, and reduce chronic pain along with improving flexibility and balance.

Stress and Anxiety Reduction:

Cortisol, the primary hormone associated with the sympathetic (fight or flight) response, is shown the be markedly reduced following regular yoga practice (Vedamurthachar, Katuri, Mohammad). Beyond just the biological markers, other studies have observed a significant reduction in the subject's feelings of stress, anxiety and depression, along with enhancing their overall mental health (Smith, Mohammad, Vedamurthachar). Participants often noted enhanced energy levels, contentment, and were inspired to make healthier eating decisions, resulting in a further reduction of stress (Miller, Smith, Vedamurthachar). Even participants who suffered from PTSD saw a dramatic relief in their subject feelings of anxiety, which was maintained through long term practice (Van der Kolk). In the cases of stress and anxiety, yoga is both a curative and preventative practice if done regularly.

Heart Health:

Yoga has been observed to enhance overall heart health and attenuate risks factors for heart disease. In a study of older adults, yoga practice resulted in improvement in age-related deterioration of the cardiovascular system, improving both heart rate and blood pressure (Bharshankar). A large study observed a reduction in total cholesterol and LDL cholesterol in adults who maintained regular yoga practice, and they even saw that progression of heart disease halted in half the participants (Yogendra). Inflammation, which serves to exacerbate many diseases, include heart disease, has also be observed to be reduced following regular yoga practice (Vijayaraghava). By combating several of the risk factors surrounding heart disease, yoga serves to improve heart function and reduce onset of cardiovascular disease.

Chronic Pain:

Chronic pain affects millions of people and can be caused by a myriad of different diseases, injuries, and genetic conditions. Several studies have found evidence of yoga benefiting those with chronic pain, specifically in the back and in joints such as the knee or wrist. One study found that yoga helped participants with carpal tunnel manage pain and even enhanced wrist function more effectively than splints (Garfinkel). Similar studies have found yoga to be beneficial in relieving osteoarthritis pain in the knee, and they also observed enhanced physical function at the joint (Kolasinski). Studies featuring participants with lower back pain also saw that regular yoga resulted in decreased pain perception, better attitude towards pain, and enhanced physical function (Whitehead). The incorporation of prolonged stretches and awareness of the body may be behind these results.

Meditation:

Meditation is the practice of self-awareness in which the student focuses their attention on the senses to attempt to eliminate unwanted thoughts and enter a state of peaceful mindfulness. While not a strenuous physical activity, the practice of meditation involves staying still for long periods of time and focusing one's attention, a simple task which proves quite difficult, even to regular students. Meditation is associated with a range of physical and mental benefits, including the easing of stress, anxiety and depression, enhancing quality of life, and even promoting kindness. However, this section will discuss the various scientific studies supporting the effect of meditation in improving quality of sleep, aiding those with addiction, and pain management.

Sleep:

Meditation is often practiced at night to promote a peaceful mindset before sleep, and this practice has been growing in the US thanks to how accessible the practice is and the ever growing industry of meditation apps (Walsh). A large study found that participants who suffered from insomnia and meditated briefly before sleep fell asleep sooner and stayed asleep longer

than those who didn't (Martires). Other studies have found that people who regularly practice meditation reported fewer sleep problems and more energy in the mornings following sleep (Martires, Walsh). This may be due to meditation's effect on calming the mind, one of the most cited reasons for sleep struggle.

Addiction:

The mental strength that is cultivated through meditative practice is important for developing self-control and self-awareness, both of which are necessary components when fighting addiction (Hayes). Multiple studies have demonstrated the effect of meditation and mindfulness training to lower the occurrence of addictive behaviors, by increasing the subjects awareness of themselves, their triggers, and the impulses behind addictive tendencies. Participants reported feeling greater self control over their emotions and behaviors, which allowed them to maintain control over their addictions along with feeling more content and productive (Gallant, Tang, Katterman, Zgierska). These studies covered both substance and diet addictions, and observed that meditation helped participants cease these behaviors and reduce addiction-related stress.

Pain Management:

Pain sensitivity, which is largely a mental state, can be altered through regular meditation practice. By comparing brain activity and subjective pain experience between a meditative and non-meditative group, one study observed a higher level of activity in the pain-controlling region of the brain in the meditative group, which was accompanied by a lower subjective score of their pain (Zeidan). Other large studies have investigated the pain sensitivity of long-term meditation practitioners and observed decreased reports of intermittent or chronic pain (Goyal). Similar effects have also been observed following short-term practice in an elderly population, adding that meditation may be beneficial to the emotional and physical pain associated with end-of-life (Goyal, Ball). While pain is often thought of in the West as a physical

state, the mental fortitude and control developed through meditation is an effective way to combat acute and chronic pain.

Tai Chi:

One of the lEast competitive martial arts, Tai Chi is a traditional Chinese practice which originated out of a focus on defense over aggression, and has grown into a practiced referred to as ‘meditation in motion’. Like many other Eastern practices, it is believed to help enhance the flow of Qi through the body, along with aiding in the balance of the Yin and Yang. It is a self-paced exercise which like yoga, takes the use through various flowing postures, meant to keep the body in constant motion while focusing on balance and breath. Tai Chi has grown popular as a healthy lifestyle alternative for individuals of all ages and backgrounds, as the practice is low impact and avoids placing strain on muscles and joints. It is associated with a myriad of general health benefits, including improved sleep, increased muscle tone, improved balance, and reduced blood pressure, and these benefits often correlate to an improved mood and mental health. This section will focus on the studies relating to the effect of Tai Chi on stroke prevention and rehabilitation, as well as fall prevention.

Stroke:

As with cardiovascular disease, risks associated with strokes increase naturally through the aging process and can be accelerated by unhealthy habits such as a high fat diet, smoking, and a lack of exercise. The practice of Tai Chi can be an effective preventative intervention to people of all backgrounds who are at risk of stroke. In a study which focused on older adults who regularly practiced Tai Chi for 12 weeks, they observed improved blood flow and heart function, along with improved fasting glucose levels, insulin and balanced, supporting Tai Chi’s effect in reducing stroke risk factors (Zheng). In another study, where participants were stroke

patients and in the recovery process, Tai Chi was observed to result in improved balance and functional mobility, and also helped participants moods and feeling of community (Zheng). Tai Chi's indirect effect of improving cardiac and general physical health is an effective, alternative preventative and rehabilitative practice.

Fall Prevention:

Falls are one of the most common injury inducing events in the older population and can result in broken bones, increased pain, and increased dependance. Since falls cannot be prevented via pharmaceutical drugs like other risk factors associated with disease, it is important to find affordable, alternative interventions. The slow, controlled motion of Tai Chi has long been associated with improved balance and posture, however it is important to gage how this effect translates into fall prevention. In one study, which followed over 600 older adults, noted that the practice of Tai Chi reduced falls in the population by over 30% (Li). Another study, which followed participants of all ages who suffered falls regular due to ankle instability, observed Tai Chi practice helping both reduce fall occurrence, and improve participants sense of instability and motor control (Cruz-Díaz). Tai Chi provides a safe, easy, and affordable alternative to both improve balance and prevent falls in at risk populations.

Conclusion:

The approach to medicine in the East is one of prevention and quality over convenience. While this guide did not go into extensive detail on these Eastern practices, the underlying ideal is clear: treat the body well in sickness and in health, and appreciate the connection between all parts of the body. In each of these disciplines, these ideals are implemented, practitioners taking in the entirety of the body and implementing treatments designed to provide balance when sick and rejuvenation when well. While implementing these practices requires further

study and certification, understanding that there are alternative, preventative measures that can promote human health, and that these benefits have been supported by Western studies, is an important awareness for any clinician.

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