

## What can traditional healing do for modern medicine

James David Adams Jr

Associate Professor, Traditional Healer, Department of Pharmacology and Pharmaceutical Sciences, School of Pharmacy, University of Southern California, Los Angeles, CA, USA 90089-9121

### ABSTRACT

Modern society suffers from a disease burden that is caused by out of balance patients. Obesity causes patients to be out of balance and develop diseases such as heart disease, diabetes, and arthritis. Obesity also promotes cancer. Traditional medicine can help people learn how to live in balance. When a person is in balance, the body heals itself. This article teaches the advantages of traditional healing in the modern world.

**Keywords** balance, preventive medicine, obesity, plant medicines, American Indian healing

### INTRODUCTION

Traditional medicine can teach patients to live in balance and let their bodies heal themselves. This is a basic principle of health that is under emphasized by modern medicine. As the world population becomes burdened with increasing numbers of patients with heart disease, type 2 diabetes, arthritis, and cancer, the world can benefit more from traditional medicine. This article addresses nine basic questions that can help healthcare professionals understand how American Indian traditional medicine can help modern medicine.

#### 1. What are the most important principles of traditional healing?

Love God. Everything we have comes from God, the air we breathe, the food we eat, the planet we live on, our bodies and more. He gives us each blessings and challenges to help us become better people.

Love your family. The family is the basis of health. We live to help our families survive and prosper. Our families care for us and can support our healthy lifestyles.

Respect all people. God loves us all equally. We should treat everyone with equal respect.

Work for your community. Do what you can to improve your community. You cannot survive without your community. You are a vital member of your community. Your community needs you.

Work for your environment. You need your environment. You are a caretaker for your environment. God gave this environment to you to use in balance.

Take only what you need. You need less than what you want. Leave something for the next person.

Keep yourself thin and strong. When you are thin and strong your body is in balance and can heal itself. There is considerable variation between people concerning how thin is thin enough the answer is simple. When blood pressure,

cholesterol, and sugar are normal, without the use of drugs, the body is in balance.

The above guidelines are the basis for living in balance as understood by American Indians. Traditional medicine teaches people to live in balance in order to be healthy. Living in balance prevents disease and can help the body heal itself.

#### 2. What are the most important differences between traditional healing and modern medicine?

Modern medicine relies too much on drugs to take care of problems for patients. Modern medicine has forgotten that drugs do not cure anything. The body heals itself. The body has much more powerful mechanisms to heal itself than can be provided by drugs. Even the most powerful antibiotics and anticancer drugs cannot help a patient who does not have an adequate immune system (Adams and Parker, 2011).

The incidences of heart disease, type 2 diabetes, arthritis, and cancer increase in the US every year, as can be seen on the Centers for Disease Control (CDC) website. This is a clear sign that modern medicine is failing the US population. The cost of medicine is now 18% of the US gross national economy. Can this disease burden and cost be sustained?

The reason that heart disease, type 2 diabetes, arthritis, and cancer increase every year is because obesity increases every year, as can be seen at the Centers for Disease Control website. Obesity causes visceral fat accumulation. Visceral fat and the inflammatory cells in visceral fat secrete inflammatory proteins called inflammatory adipokines (Adams and Parker, 2011). Obesity also increases the production of toxic lipids such as ceramide and the endocannabinoids (Adams and Parker, 2011). The inflammatory adipokines and toxic lipids cause heart disease, type 2 diabetes, arthritis, and promote cancer (Adams and Parker, 2011).

Modern medicine enables obesity by giving patients drugs to help with their problems, while not addressing obesity. These drugs do not cure heart disease, type 2 diabetes or arthritis. Drug treatment of cancer is improving. Modern medicine has many drugs that can help the body heal itself from cancer. Patients with heart disease, type 2 diabetes, and arthritis must take drugs for the rest of their lives, contend with their diseases, and contend with the toxicities of the drugs they take. It is too easy for healthcare professionals to simply give a prescription drug to a patient. It is much more difficult to teach patients to

\*Correspondence: James David Adams Jr

E-mail: jadams@usc.edu

Received January 23, 2014; Accepted May 7, 2014; Published May 31, 2014

doi: <http://dx.doi.org/10.5667/tang.2014.0006>

© 2014 by Association of Humanitas Medicine

This is an open access article under the CC BY-NC license.

(<http://creativecommons.org/licenses/by-nc/3.0/>)

change their lifestyles in order to treat disease. Drug toxicity and drug interactions are an increasing medical burden in the US. Currently, there are 14,000 people who die every year from prescription opioids (Adams and Parker, 2011). There are 100,000 people who get ulcers from nonsteroidal antiinflammatory drugs (NSAIDs) of which 10,000 people die every year (Adams and Parker, 2011).

Of course, modern medicine does not cause obesity. US society has made the decision, since the 1980s, that obesity is acceptable. This can be easily seen at the Centers for Disease Control website. The incidence of obesity and over-weight people has increased yearly in the US since the 1970s and is now stable at about 70% of the adult US population. Traditional medicine teaches that obesity puts the body out of balance and allows disease to occur. Modern medicine needs to learn this fact.

Traditional healing teaches each person to be responsible for their own health. Our families can help support our health and help us make the correct decisions about our health. Traditional medicine teaches patients to get themselves back into balance to cure themselves of disease and prevent further disease occurrence.

### **3. How can traditional healing help people today?**

Modern medicine relies on the carpenter approach. If the hammer does not work, get a bigger hammer. The carpenter approach is frequently the wrong approach because the toxicity of the more powerful drug may be greater than the risk from the disease. For instance, methotrexate is used to treat rheumatoid arthritis. Many patients have died from methotrexate toxicity. Rheumatoid arthritis does not kill patients. Medical students are taught “first do no harm.” This is contrary to the carpenter approach where harm may be part of the treatment.

Modern medicine relies on randomized, placebo controlled, double blind clinical trials to prove the efficacy and safety of drugs (Adams, 2012a). Yet, many approved drugs are no better than placebos, especially some antidepressants (Adams, 2012a). Many approved drugs are removed from the market because of toxicity problems that become apparent after large scale marketing. The major flaw in these clinical trials is that the initial assumption is wrong. The initial assumption is that drugs heal the body. Drugs do not heal the body. The body heals itself. This is why placebos are frequently as good as drugs in clinical trials. Many clinical trials seek more powerful drugs to replace older, less potent drugs. Toxicities of these more potent drugs may become apparent only during mass marketing, after approval. This is why toxicity is such an issue when new drugs are released.

Traditional healing teaches people that balance heals the body. Balance means balancing times of rest with activity, balancing body fat with muscle, balancing the sympathetic and parasympathetic nervous systems (Adams, 2013; Adams and Lien, 2013). A balanced diet includes fruit, vegetables and protein. Fat intake should be minimized in order to minimize the deposition of fat in the body, especially visceral fat. Daily exercise is important to maintain and strengthen muscles. Muscles are lost during dieting and aging. So daily exercise is important, to help keep the muscles that can be kept. Exercise also stimulates stem cell growth in the body (Adams and Parker, 2011). Stem cells help replenish the body. Most people have active sympathetic nervous systems due to stress experienced daily. They must balance the sympathetic nervous system with the parasympathetic nervous system. Stimulating the parasympathetic nervous system is best done by exercise. During endurance exercise the parasympathetic nervous system

helps regulate heart rate and body temperature. Exercise balances the autonomic nervous system. Exercise must be used carefully. This involves using the proper exercise for each patient to balance the body. Not all types of exercise are useful for each patient.

### **4. What do you want people to learn from traditional healing?**

People can learn that when the body is in balance, the body can heal itself. Our society has come to the conclusion that obesity is acceptable. This conclusion is wrong. Obesity is dangerous and causes heart disease, type 2 diabetes, arthritis, and promotes cancer (Adams and Parker, 2011). It is better to view a thin, strong body as acceptable. A thin body is not burdened by visceral fat. This minimizes inflammatory adipokine and toxic lipid production in the body.

Preventive medicine must become the first medicine that all people experience in modern medicine and traditional medicine. The goal of preventive medicine is to keep people healthy and prevent diseases. Preventive medicine should teach people to live in balance and avoid toxic lifestyles. There are many toxic lifestyles such as lifestyles that lead to obesity, cigarette smoking, and excessive alcohol drinking (Adams and Parker, 2011). Cigarette smoking damages the lungs, arteries and heart. Cigarette smoking is a major cause of pulmonary disease, cancer, and heart disease. Alcohol is an obesogen that stimulates the production of visceral fat. Alcohol is a major cause of heart disease, type 2 diabetes, and arthritis.

Current societal norms can be changed from accepting obesity to encouraging balanced health. This involves encouraging people to stay thin and strong. Public information from magazines, the internet, television and other sources should help people learn how to live a balanced lifestyle and be healthy.

### **5. How do you think each person should live a healthy life?**

Most of us are born healthy and can stay healthy if we live in balance. When the body is in balance, blood glucose is normal, blood pressure is normal, blood cholesterol is normal and arthritis is minimal. Balance occurs when no drugs are needed to maintain the body. Even people who have heart disease can reverse their disease by getting rid of excess weight and exercising daily (Ornish, 1996). Even people with type 2 diabetes can reverse their disease by getting rid of excess weight and exercising daily, as can be seen at the American Diabetes Association website. Even people with arthritis can reverse their disease by getting rid of excess weight and exercising daily (Bruce et al., 2005). It is possible that staying thin and strong will help decrease the risk of developing cancer. It is clear that the incidence of cancer was much less prior to the 1970s, when people tended to be thin and strong, as can be seen at the CDC website.

Daily exercise should be normal for all people. This involves mild, endurance exercise to keep the heart strong and maintain muscles (Adams and Parker, 2011). Endurance exercise burns calories, burns fat and keeps the body strong. Exercise can be walking, swimming, running, bicycling and other possibilities. The duration of exercise should be about one hour and should increase to about two hours as people age. Duration should increase with aging to help maintain muscles and decrease visceral fat deposition. As people age muscles tend to be lost and visceral fat deposition tends to increase. Aging tends to cause a loss of lusitropy in the heart, the ability of the heart to relax. Mild endurance exercise helps maintain the heart.

## 6. What are the most important changes each person can make to live a healthy life?

Each person can make the decision to live a healthy lifestyle that puts the body in balance. This may involve prayer, interacting more productively with the family, working to improve the community, working to improve the environment, and staying thin and strong. Each person should learn that a thin and strong body is a healthy body.

Nutritional education should teach people to eat less fat, more fruit and vegetables. Many people in the US and Europe eat more meat than the body needs. They have been taught that meat is essential to provide the protein each person needs. They have not been taught that excessive protein intake damages the kidneys (Adams and Parker, 2011). Some meat, especially beef, is too high in fat. Fruit and vegetables provide phytonutrients that are essential for health and fiber that helps control blood glucose and cholesterol.

Fat addiction has become a major unrecognized problem in the US and Europe. Beef, hamburger, cheese, fast foods, some frozen foods, some processed foods and other foods are high in fat. Endorphins and enkephalins are released in the brain following consumption of a high fat meal (Chang et al., 2007; Matsumura et al., 2012). This makes high fat consumption addictive. In addition, high fat consumption results in endocannabinoid synthesis which stimulates appetite (Banni et al., 2010). Fat addiction is not recognized by modern medicine. Fat addiction is a major basis of obesity.

Each person needs to learn that diet has a major impact on health. A healthy diet is necessary for health. An unhealthy diet may lead to obesity and disease. Fat addiction should be treated as an addiction just like heroin, cocaine, alcohol or nicotine addiction.

## 7. How do you think traditional healing can be made a part of modern medicine?

Preventive medicine is the basis of traditional medicine. Traditional healers should be hired to teach healthcare students how to live in balance. Each healthcare professional should be given classes and continuing education in preventive medicine. Preventive medicine should have a major role in hospitals and healthcare schools. In addition, healthcare professionals, including traditional healers, should educate the general public about preventive medicine and how to live in balance.

When people live in balance, they may need medical help from time to time, such as from pain caused by falls and trauma. However, the medicine needed in a balanced patient may be milder than modern medicine typically uses. Milder medicines, such as plant derived medicines, do not overwhelm the body. These medicines push the body back into balance and health.

Living in balance should become the basis of medicine in general. People who live in balance are healthy. Preventing disease should be the foundation of all medicine.

## 8. What are the most important plant medicines you use? How do you use them? What are they used for?

*Homo sapiens* has existed for about 200,000 years. During this entire time, we have used plants as medicines. There has been a natural selection for people who respond to plant medicines. We should continue to use plant medicines today.

White sage, *Salvia apiana* Jeps (Lamiaceae), is used for prayer as discussed below and other uses (Garcia and Adams, 2012). *S. apiana* is our everything. We must have it every day or something will be missing from our lives. *S. apiana* helps keep people rational and productive. People are taught to put one leaf in their water bottle every day and drink from this bottle all day long. Four to seven flowers of *S. apiana* can be

eaten by people who refuse to recover from a problem. Such as a person who was in a car accident and feels dread every time they must drive. *S. apiana* can be made into a tea and drunk by people who have just been through a serious problem, such as a cancer diagnosis or an AIDS diagnosis. One leaf, fresh or dried, is put into about 300 ml of water. The tea is heated to a simmer and stopped. The tea is drunk without sugar four nights in a row, only. The tea is not continued more than four nights. *S. apiana* contains monoterpenoids and diterpenoids that are slightly water soluble and anxiolytic. It also contains a diterpenoid that is anxiolytic.

California sagebrush, *Artemisia californica* Less (Asteraceae), has a powerful smell that induces pleasant memories (Garcia and Adams, 2012). The smell comes from the 15 monoterpenoids in the plant. (Adams, 2012b; Fontaine et al., 2013) *A. californica* is used to make a liniment that is a powerful pain reliever (Adams, 2012b; Fontaine et al., 2013). The monoterpenoids in the plant interact with transient receptor potential cation channels to relieve pain. The plant also contains sesquiterpenes that may be involved in pain relief. The liniment is more powerful than opioid drugs and is much safer. A small amount of the liniment is applied where it is needed. Within 20 min, the pain subsides, even pain from broken bones, arthritis, sprains and strains. Clinically available pain liniments, such as menthol liniments, are inadequate for pain control. Opioid drugs are dangerous and cause 14,000 deaths annually in the US from toxicity. *A. californica* liniment should be used clinically as a safe alternative to opioids.

Mugwort, *Artemisia douglasiana* Besser (Asteraceae), has many uses: premenstrual syndrome, dysmenorrhea, menopause, addiction, dreaming, attention deficit hyperactivity disorder and poison oak rash. The plant contains sesquiterpenes that act through a serotonergic mechanism to bring down body temperature in menopause (Adams et al., 2012a; Garcia and Adams, 2012). The plant has mild diuretic activity that helps in premenstrual syndrome. The sesquiterpenes are analgesic which is beneficial in dysmenorrhea. A mild tea made from the leaves of the plant is used in the previous conditions. Addiction is diminished through a serotonergic mechanism by the plant. Patients chew on the stem of *A. douglasiana* to relieve addiction. The monoterpenoids from the plant help people sleep and dream. Dreaming is stimulated by putting the leaves and stems of the plant under the patient's pillow at night. Dreaming is necessary to balance and health. People who cannot dream suffer from depression and other conditions. Attention deficit hyperactivity disorder is treated by making a cloth toy, such as a star, and stuffing it with the dried leaves of the plant. The child plays with and sleeps with the toy. The monoterpenoids from the plant help calm the child and relieve anxiety. Poison oak rash is treated by rubbing the leaves of *A. douglasiana* on the rash or the exposed area of skin. The leaves should be soaked in urine.

Sacred datura, *Datura wrightii* Regel (Solanaceae), is used for pain relief and in sacred ceremony (Garcia and Adams, 2012). A decoction is used for pain relief. Seven leaves and seven flowers are put into 2 - 3 l of sea water or water. This is placed in the sun for 4 - 6 h to make a sun tea. The patient soaks the feet or hands in the decoction. A few milliliter of the decoction can also be placed on the scalp. Scopolamine from the plant crosses the skin and interacts with cholinergic receptors to relieve pain. Sacred ceremony with *D. wrightii* occurs only four times in the lives of most people. The first time is for the rite of passage, when a boy must become a man, or a girl must become a woman. This involves preparing the child with religious and other instruction for one year prior to the ceremony. The ceremony involves the entire village over

the period of four days. The seeds are made into a tea that is drunk by the child. The healer who makes the tea, attends to the child during the entire ceremony and must be vigilant. Scopolamine from the plant stimulates the spiritual sense of the child (Adams and Garcia, 2012). The child's spirit goes to God. God instructs the child about what is expected in the future from the child. When the child makes a covenant with God, to follow God's intention, the spirit returns to the child's body. The healer must attend to the child's body, to keep the child breathing. The second sacred ceremony is when a man and a woman decide to accept the responsibility of marriage. After receiving permission from the elders, the couple is given a tea made from the seeds of the plant. This tea is milder than the rite of passage tea. The couple enters into sacred dreams where their spirits leave their bodies. God instructs them in how to make a good marriage. The healer attends to their bodies, to keep them breathing. The third sacred ceremony occurs when a married couple accepts the responsibility to have a child. This responsibility is given to them by the elders of the village. The couple is given a tea made from the seeds of the plant. Their spirits go to God, who instructs them in how to be good parents. The healer attends to their bodies, to keep them breathing. The final sacred ceremony occurs when a person accepts the responsibility to die. Death is a responsibility, since death makes room for a new child to be born. The healer and the dying person come to an agreement that now is the time to die. The healer makes a tea from the seeds. This is applied daily to the abdomen of the dying person. Usually, death occurs within four days or so. *D. wrightii* is used only four times in life. Other plants that are milder, such as ayahuasca, peyote and *Psilocybe* can be used yearly to renew covenants with God. *D. wrightii* is a fundamental necessity in the religious practices of many California Indians.

Yerba santa *Eriodictyon crassifolium* Benth (Boraginaceae) is used for respiratory conditions such as pneumonia, asthma, chronic obstructive pulmonary disease and tuberculosis (Garcia and Adams, 2012). A handful of leaves is placed into 3 l of water or sea water. This is boiled until the entire room smells of the plant. The patient vaporizes over the steam for 10 - 30 min, until the lungs begin to clear. The mixture is cooled until the leaves and several crushed garlic cloves can be put on the chest as a poultice. This procedure can be repeated daily as needed. For tuberculosis and severe pulmonary conditions, seven leaves are put into 300 ml of water with four cloves of garlic. This is boiled to make a dark tea. The tea is drunk without sweetener four nights in a row. After one week if the condition persists, the tea can be made again and used four nights in a row. *E. crassifolium* contains several flavonoids. Some are antibiotic. Others relax bronchial tissue. Prior to 1960, plant medicines made from plants in the *Eriodictyon* genus were the standard of care for tuberculosis in the US. In 1960, a law was passed requiring clinical trials to prove efficacy of medicines. No clinical trials were performed with any *Eriodictyon* plant.

Chia, *Salvia columbariae* Benth (Lamiaceae), is used for stroke and heart attack patients (Garcia and Adams, 2012). Mexican chia *Salvia hispanica* L (Lamiaceae) can be used equivalently and is more readily available. About 14 g of *S. columbariae* or *S. hispanica* seeds is put into 150 ml of water and stirred for about 15 min. This forms a gel that the patient swallows. This is done twice daily for the first month and continues once daily for the next 5 months. The patient also performs daily exercises such as walking, yoga, tai chi and other easy exercises. This helps the patient recover and alleviates some of the paralysis that can occur in stroke patients. This is a superior treatment than the current standard of care for stroke patients in the US. *S. columbariae* contains tanshinones

and beta-sitosterol lithospermic acid (Adams et al., 2005; Adams et al., 2012b). Tanshinones are known to be beneficial to stroke and heart attack patients (Adams et al., 2012b). *S. columbariae* is also high in linolenic acid that is a precursor for eicosanoids called resolvins. When resolvins are present, the body uses them to heal damaged areas of the brain, heart and other tissues.

Tobacco, *Nicotiana quadrivalvis* Pursh (Solanaceae) and other plants in the genus *Nicotiana* are useful for appetite suppression (Garcia and Adams, 2012). A small leaf, about 2.5 cm long, is placed into 300 ml of water and brought to a simmer. The tea is allowed to cool before drinking without sweetener. Other plants in the *Nicotiana* genus can have large leaves. These leaves can be cut into 2.5 by 2.5 cm squares to make the tea. The tea can be used four nights in a row to suppress appetite. After resting for two or three days without the tea, the tea can be used again four nights in a row. It is important to follow these instructions since nicotine is found in the plants, is toxic and addictive if used in excess. *N. quadrivalvis* is used by adults in the winter time to suppress appetite, so that food can be given to the children to keep them alive. The leaves of *N. quadrivalvis* are useful for poultices to stop skin infections. Several plants in the *Nicotiana* genus are used for sacred ceremony (Garcia and Adams, 2012) as described for *D. wrightii*. Vomiting is a prominent problem with plants in the *Nicotiana* genus. The year of preparation for the sacred ceremony involves acclimatizing the child to the nausea caused by the plant. The healer prepares a tea made from the leaves for ceremonial use. While the child is undergoing the sacred dream, the healer must be prepared for seizures and respiratory depression. Plants in the genus *Nicotiana* are only smoked three or four times every year, such as during community prayer. The smoke helps take the prayers to God. English people learned from Virginia Indians in the early 1600 s about tobacco, but did not learn that smoking is only for special times. Tobacco is a fundamental necessity in the religious practices of many American Indians.

Chamise, *Adenostoma fasciculatum* Hook, and Arn (Rosaceae) are very useful for eczema and Adams disease therapy (Adams et al., 2013; Garcia and Adams, 2012). A balm is made by placing 50 g of branches and leaves into 2 l of extra virgin olive oil to infuse for one month. Pour the olive oil into a mixing bowl. Melt 135 g of bees wax and mix with the olive oil in a water bath at 75 degrees C. Stir until thoroughly mixed. Pour into 35 ml containers and allow to harden. The patient rubs the balm with a fingertip to melt the balm. The balm is applied in small amounts to rashes and lesions on the skin. The balm can be used daily as needed. *A. fasciculatum* contains plant sterols such as campesterol and suberosol that are antiinflammatory. Also present is a triterpenoid, glutinol, that is analgesic. Eczema is increasing in incidence in healthcare professionals (Adams et al., 2013) because of frequent hand washing with drying soaps.

*Pseudognaphalium californicum* Anderb (Asteraceae), California everlasting, helps manage colds and flus (Garcia and Adams, 2012). One teaspoon, 5 ml, of dried flowers are put into 300 ml of water and brought to a simmer. The tea is drunk without sweetener four nights in a row (Garcia and Adams, 2012). The tea contains anthocyanins that are immune stimulants and help the body eliminate cold and flu viruses. This tea is superior to the over the counter cold and flu remedies that are currently available.

#### **9. What are the most important healing procedures you use? How do you use them? What are they used for?**

Prayer is used in many forms from simple to white sage prayers.

Simple prayers involve praying out loud or silently, alone or with others. White sage prayers involve one leaf of *S. apiana* (Garcia and Adams, 2012). The leaf must be dry and is smudged, not burned, in an abalone shell. A feather fan is used to fan the smoke over the person being blessed. The person being blessed stands so that the front can be smudged. The healer prays while smudging the person. The person turns so the back can be smudged, with prayer. Each foot is lifted to allow the soles to be smudged, with prayer. The feather fan is then placed on a shoulder of the person. The prayer that follows can be similar to "Lord, please remove anything that may be harming this person and send it into the ground where it cannot harm him or her." The fan is flicked toward to ground during the last words of the prayer.

Heat is used to treat pain from over exertion and arthritis (Adams and Garcia, 2005). The sweat lodge is the usual source of heat. The lodge is heated with hot rocks or a fire. After the smoke clears, the patient enters the lodge and lies down on the ground. The air must be clear of carbon monoxide and other dangerous gasses. The temperature of the air and ground should be about 70°C. The patient is exposed to heat for no more than 15 min. Other heat treatments include lying in warm sand, putting the feet on warm rocks and sitting in a hot bath. A hot bath should be about 38°C and should be used for no more than 15 min. After the heat therapy, the patient rehydrates by drinking water and rests. Heat therapy can be used twice daily.

Cold is used for pain from trauma, sprains, strains and similar acute pain (Adams and Garcia, 2005). Cold can be from ice or cold water. The painful area can be packed in ice or put into cold water. The treatment should last no more than 10 min. After cold therapy, the patient rests. Cold therapy can be used twice daily.

Rest involves lying down. The feet can be elevated a few centimeters in patients with leg pain. Rest is used for all kinds of pain. Rest must be balanced with times of careful stretching and careful exercise such as walking.

Massage is used in patients who suffer from over exertion pain, such as marathon runners or long distance canoe paddlers (Adams and Garcia, 2005). The massage should be done with enough pressure to increase the drainage of fluids from the legs, arms or other body areas. The legs or arms can be elevated a few centimeters as part of the massage. Massage oils can be applied to the skin to decrease friction during the massage. Essential oils should not be added to the massage oil, or added only in very small amounts, since essential oils can be toxic to the skin. The massage should last about 5 - 10 min and can be done twice daily. After the massage, the patient rests.

## ACKNOWLEDGEMENTS

The author is grateful to several California Indians who have taught him since 1996.

## CONFLICT OF INTEREST

The author has no conflicting financial interests.

## REFERENCES

Adams JD. Design flaws in randomized, placebo controlled, double blind clinical trials. *World J Pharmacol.* 2012a;1:4-9.

Adams JD. The use of California sagebrush (*Artemisia californica*) liniment to control pain. *Pharmaceuticals.* 2012b; 5:1045-1053.

Adams JD. Preventive medicine and the traditional concept of living in balance. *World J Pharmacol.* 2013;2:73-77.

Adams JD, Garcia C. Palliative care among Chumash people. *Evidence Based Comp Alt Med.* 2005;2:143-147.

Adams JD, Garcia C. The spiritual sense, prayer and traditional American Indian healing. *TANG International Journal of Genuine Traditional Medicine.* 2012;2:1-6.

Adams JD, Garcia C, Garg G. Mugwort (*Artemisia vulgaris*, *Artemisia douglasiana*, *Artemisia argyi*) in the treatment of menopause, premenstrual syndrome, dysmenorrhea and attention deficit hyperactivity disorder. *Chin Med.* 2012a;3:116-123.

Adams JD, Lien EJ. *Traditional Chinese Medicine Scientific Basis for its Use.* (London, Great Britain: Royal Society of Chemistry), 2013.

Adams JD, Parker K. *Extracellular and Intracellular Signaling.* (London, Great Britain: Royal Society of Chemistry), 2011.

Adams JD, Ruitter Faria Filho O, Boutemy A. Treatments for atopic dermatitis. *J Pharmaceutics Drug Devl.* 2013;1:1-2.

Adams JD, Tran S, Wong V, Fontaine P, Petrosyan J.  $\beta$ -Sitosterol lithospermate from *Salvia columbariae*. *The Open Nat Prod J.* 2012b;5:13-15.

Adams JD, Wall M, Garcia C. *Salvia columbariae* contains tanshinones. *Evidence Based Comp Alt Med.* 2005;2:107-110.

Banni S, Di Marzo V. Effect of dietary fat on endocannabinoids and related mediators: consequences on energy homeostasis, inflammation and mood. *Mol Nutr Food Res.* 2010;54:82-92.

Bruce B, Fries J, Lubeck D. Aerobic exercise and its impact on musculoskeletal pain in older adults: a 14 year prospective, longitudinal study. *Arth Res Ther.* 2005;7:R1263-R1270.

Chang GQ, Karatayev O, Ahsan R, Gaysinskaya V, Marwil Z, Leibowitz SF. Dietary fat stimulates endogenous enkephalin and dynorphin in the paraventricular nucleus: role of circulating triglycerides. *Am J Physiol Endocrinol Metab.* 2007; 292:E561-E570.

Fontaine P, Wong V, Williams T, Garcia C, Adams JD. Chemical composition and antinociceptive activity of California sagebrush (*Artemisia californica*). *J Pharmacognosy Phytother.* 2013;5:1-11.

Garcia C, Adams JD. *Healing with Medicinal Plants of the West - Cultural and Scientific Basis for Their Use.* (La Crescenta, USA: Abedus Press), 2012.

Matsumura S, Eguchi A, Okafuji Y, Tatsu S, Mizushige T, Tsuzuki S, Inoue K, Fushiki T. Dietary fat ingestion activates  $\beta$ -endorphin neurons in the hypothalamus. *FEBS Lett.* 2012;586:1231-1236.

Ornish D. *Dr. Dean Ornish's Program for Reversing Heart*

Disease. (New York, USA: Ballantine Books), 1996.