Integrating Complimentary And Alternative Medicine Can Reduce Overall Health Care Spend in the US

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Dedicated to my husband, Robin, who always supports my endeavors. To my family & friends for helping me achieve such an honored accomplishment and to the many individuals that are continuously striving for an integrated health delivery system. Thank you!
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Introduction

With medical costs continuing to rise in the United States, could integrating complementary and alternative medicine be our answer to reducing health care costs and helping us to live healthier lives? In 2009 the United States spent $2.5 Trillion dollars on health care costs. Currently, ineffective treatment not only wastes precious dollars for our health care system, but also has the potential to leave patients with painful and disabling conditions that affect an individuals’ quality of life. Certain conditions are associated with higher treatment costs and productivity losses. Musculoskeletal conditions are of particular concern, as they frequently occur in today’s society. Unfortunately, diagnosis entails using very costly testing such as X-rays, CT Scans and MRI scans. Treatment often requires long-term drug-therapy regimens. In fact, low back pain is the second most common reason for patients to seek medical care (the first being treatment for the common cold), the fifth most common cause for hospitalizations, and back surgery is the third most common type of surgery in United States.\(^1\) Furthermore, up to 7 percent of patients with acute low-back pain end up suffering from chronic back pain, which is defined as pain that is consistent for more than a six-month period.\(^2\) The annual cost to the US health care system of back pain treatment is over $148 Billion annually. **Should we as consumers seek out a chiropractor for our back pain, this could save our system nearly $1 Billion annually.** This is simply one example of the high costs associated with the way we deliver medicine in the United States today and in particular in Western medicine. An integrated delivery system (where the insurance company pays for conservative treatments) would significantly reduce not only the high medical costs in the US, however would increase outcomes and patient satisfaction.
This document explores how the United States, as well as other countries, utilizes alternative medicine in their health delivery system. It also explores the types of alternative treatment modalities available in today’s society and the potential cost reductions, as well as health impacts that could be obtained should the United States health insurance companies more openly embrace alternative medicine practices and integrate them into the Western medicine philosophy that currently dominates the health care system. Research for this dissertation was compiled from numerous published studies and provides a solid foundation on which to offer a hypothesis for further thought.

This document also references a controlled (Rockley Research Study – RRS) research study which compares, contrasts and answers how the average United States citizen currently uses alternative medicine and how often they’ve used this form of treatment. It also provides an answer as to what ailment was being treated, the length of time in treatment and if the alternative medicine modality did in fact cure the ailment. Additionally, this paper will answer if integrating complementary and alternative medicine can be a way to reduce health care costs in the United States.

**What is Alternative Medicine: Categories of Care**

Now let’s look at the definition of alternative medicine. There are many definitions of alternative medicine that can be found through Google searches, dictionaries, various research studies, etc. Some definitions range from simply offering massage, acupuncture and chiropractic care to a more comprehensive definition that is defined by the United States National Institute of Health which categorizes alternative medicine into the following 5 distinct categories. The
purpose of the category explanations is to supply a common definition that will be used throughout this document. This definition can also serve as a standard definition throughout the United States as we discuss alternative medicine and integrative medicine modalities.\textsuperscript{11}

1. Biologically based practices which they defined as vitamin and mineral supplements, as well as natural animal based products and plants.

2. Manipulative and body-based approaches such as chiropractic care and massage therapy.

3. Mind and body medicine which they define as meditation and relaxation techniques.

4. Energy medicine which is bio-electromagnetic such as Reiki.

5. Alternative medical systems defined as acupuncture, homeopathic medicine, Traditional Chinese medicine and Ayurveda.

In addition to the above references I would like to provide a definition of naturopathy. “Naturopathy is a therapeutic system based on natural remedies that trusts natural elements like air, water and sunlight, combined with therapeutic massage, conditioning as well as conditioning and toning of the human body. Naturopathy believes that the human body has the capacity to heal on its own, provided it is in a healthy environment. With a holistic approach to well-being, Naturopathy believes that the three physical entities – the natural body, the supernatural soul and the mind – must be integrated through natural energies. A recent survey shows that 76\% of global drugs are consumed by USA and European countries. We believe that freedom from disease and drugs can only be achieved by living a natural life style. With Naturopathies
systems of medications, using all natural ingredients to restore the holistic disease fighting nature of the human body, Naturopathic Medicine has created increased chances for its own survival.”

**Methodology and Review**

In writing this document I was very interested to learn which countries use alternative medicine and to what extent. I have also conducted my own controlled study in the United States and will share that information with you later in this section. I believe if we have evidence that alternative medicine is an effective form of treatment, for many of our health related conditions, that our health insurance should cover the costs. Health care costs will then be lower than Western based medicine interventions and by publishing this type of data, the utilization will be higher. Additionally, I believe that we cannot simply increase utilization of alternative medicine and forgo the use of Western medicine practices. Rather, there should be an integrative approach that provides a symbiosis of each and thereby offers a lower cost alternative to our health care system, along with better patient outcomes.

Although, there are numerous studies represented in this document, as part of my own personal research for this dissertation and to corroborate the other represented studies, I have conducted a study that focused on the following items:

1. In order to assure every participant was answering each question with the same knowledge base, I used the following definition of alternative medicine. Alternative medicine is defined as the
use or engagement in one or more of the following: physical therapy, massage therapy, chiropractic, acupuncture, homeopathy, naturopathy and herbology.

2. I then wanted to determine if there is a particular age that was using alternative medicine in the United States. I also sought to determine the gender of the individuals answering the dissertation survey.

3. The next section was to determine how often a participant had utilized alternative medicine within the past 12 months. Knowing through my previous research studies the majority of conditions using alternative medicine were back pain, endocrine dysfunction, neck pain, headache or head colds, I offered these items as choices for the participants.

a. Back Pain

b. Arthritis

c. Neck Pain

d. Headache or Head Cold

e. Other

4. Due to the fact that many individuals will see their primary care physician as a first line of defense or seek out the advice of a surgeon, I wanted to see if this is how they accessed the medical system. And if so, did that physician recommend alternative medicine for their treatment. I also wanted to determine if they (the individual) sought out a surgeon, was surgery
recommended as a first line of defense or did the surgeon recommend less invasive alternatives prior to surgery.

5. If the participant had used alternative medicine to treat or assist a condition, what was the type of alternative medicine that was used for their treatment?

6. Based on the type of alternative medicine used, I wanted to know if it actually treated the condition, or if the condition was not completely treated, did the intervention help in curtailing the condition or issue.

7. Finally, I wanted to determine for the participants that used alternative medicine, did they have health insurance coverage and if they did have insurance in place, did their health insurance cover the alternative medicine procedure that was performed.

**Rockley Research Study**

Since I’ve worked in health care field as well as in the alternative medicine sector for some time, I’ve been conducting formal as well as informal research for many years. I wanted to conduct a controlled research project that would help us understand what segment of the US population is currently using alternative medicine and to what extent. I also wanted to know if in fact the majority of our medical universities are now requiring medical doctors to take courses in alternative medicine, are they referring patients to alternative medicine practitioners. In order to answer these questions, I developed a survey (see below) that I distributed to individuals on Face
Book and on Linked-In. I randomly sent requests to my members on Linked-In and I posted a general message to my Face Book friends. The survey is as follows:

**Alternative Medicine Dissertation Survey**

Thank you for your participation in this survey. This survey will aid in determining the forms, quantity and outcomes of alternative medicine being administered in the US today. The survey results will be compiled and examined for placement in Sheila Rockley’s dissertation on the uses of alternative medicine in today’s society. Thank you very much for your input and willingness to participate!

Age: _ Gender:___

In this survey alternative medicine or naturopathic medicine is defined as the use or engagement in one or more of the following: physical therapy, massage therapy, chiropractic, acupuncture, homeopathy, naturopathy or herbology.

1. In the past 12 months how many times have you used alternative medicine?

   a. None
2. Overall, what was the primary reason for your use of alternative medicine?

a. Back Pain

b. Endocrine Dysfunction

c. Neck Pain

d. Headache or Head Cold

e. Other:

f. All the above

3. Was surgery recommended?

a. Yes
i. If yes was the surgery performed? Yes or No

ii. How many surgeries did you have due to the same condition: _____________

iii. Did the surgery solve the issue? Yes or No

b. No

4. Did you seek out alternative medicine for the condition?

a. Yes

i. If yes, what type of alternative medicine?

ii. Did your medical doctor recommend alternative medicine? Yes or No

iii. How many appointments/treatment did you attend: _____________

iv. Did alternative medicine resolve the issue:__________________

b. No

5. Were you covered by health insurance during treatment?
I provided participants a little over 4 weeks to fill-out the survey and obtained the results that follow. Of the 323 surveys which were emailed to the participants there were 43 respondents’; thereby providing a 13% response rate. Of the respondents’, 67% were male and 33% of the respondents’ were female. 30% of respondents were between the ages of 20 and 39, another 30% were between the ages of 40 and 49, 39% of the participants were between the ages of 50 and 59, while the remaining 1% of respondents were over the age of 60.
Of the total participating surveyors, 58% sought out alternative medicine treatment within the prior 12 months of the date the survey was mailed. The age group 40 to 49 most often sought out alternative medicine as a way to treat their condition. The age groups 50 to 59 and 20 to 29 were equal in the use of seeking alternative medicine as a form of treatment and the age group over 60 sought alternative medicine treatments the least.

Of those participants that used alternative medicine, the majority of participants sought out a chiropractor for their care (36%), secondary to massage therapists (28%), while physical therapy came in as the third form of treatment (20% each), and the remaining participants used either homeopathy, acupuncture or another form of unidentified alternative medicine treatment (16%). There was also quite a disparity concerning the number of treatments it took to cure or aid in healing a particular condition. Participants ages 40 to 49 had the most treatments (58 treatments), followed by ages 50 to 59 (55 treatments), 20 to 29 year olds saw a practitioner approximately 23 times and the least number of treatments were in the over 60 age group (3 treatments).
The study found chiropractic care was most often sought out by individuals ages 20 to 29, which equated to 20% of the population. Individuals age 40 to 49 were the primary group to seek out alternative medicine for their treatments (44%). Individuals age 40 to 49 were also the primary group to seek out massage therapy as their preferred form of treatment (36%). 84% of all participants were not referred to an alternative medicine practitioner by their medical doctor.

Back pain participants were the primary group that pursued alternative medicine for the treatment of their condition. Throughout other forms of research, we find that back pain is in fact the number one cause for seeking out alternative medicine treatments. It is also the number one health care spend for health plans and hospitals within the United States.

47% of the respondents expressed having back related pain. Back pain occurs so frequently and if not treated properly can have a very high cost of care. Of those individuals that sought treatment for their back pain, 75% tried to cure their condition with a form of alternative medicine. The primary form of treatment was chiropractic care, which was the preferred
treatment modality for 47% of the individuals; secondary to massage therapy at 33%. Of the participants with back pain, none of the individuals sought out surgery. **75%** of the individuals that took the approach of an alternative medicine treatment reported that this form of treatment resolved their back pain. **45%** of the individuals with back pain indicated their insurance company covered the cost of their alternative medicine treatment. On average it took 11 treatments to resolve their issue of back pain. The remaining **55%** of the participants were not covered by their insurance carrier for their treatments and had to pay out of pocket for these services.
Preferred Treatment Modalities for Back Pain

Following back pain, the next group to seek out alternative medicine for their condition was those suffering from neck pain. There is a tremendous drop between those seeking treatments for their back pain as related to any other condition. The percentage of individuals suffering from neck pain was 13%. Unlike the individuals suffering from back pain, the neck pain group primarily used massage therapists for their preferred form of treatment. Most often neck pain will be caused by stress and performing desk related jobs. The muscles in the neck, shoulders and back will tense; thereby causing neck pain. Of those individuals with neck pain one individual had surgery performed. 25% of neck pain participants had their insurance plan cover their treatments; most of which was massage therapy. Unlike individuals with back pain, 40% had a recommendation to see a massage therapist by their medical doctor. On average a patient saw a practitioner for 10 treatments. 60% of this population indicated their neck pain was resolved by using alternative medicine; compared to 75% of back pain patients.
The next category for individuals seeking alternative medicine treatment is arthritis (9%). 62% of individuals within the arthritis group sought primarily a combined treatment of chiropractic care and homeopathy. There was an average of 6 treatments performed in order to control the condition. The remaining participants in the arthritis group sought out only homeopathy or diet changes as their preferred treatment. For arthritis, the condition has no known cure and therefore the individual often continues the treatment regimen that has worked for them in the past. For those individuals with insurance, the insurance company did **not** cover any of their treatments.
Following arthritis, another 9% of the participants sought alternative medicine to treat conditions outside of back or neck pain, headaches or arthritis. Of the 9% that sought out an alternative treatment 50% had knee problems and had an average of 15 visits until the condition was resolved. 25% of individuals in this group had their condition paid for by their insurance company and 50% were referred to an alternative medicine practitioner from their primary care physician.
Rockley Research Study Conclusion

For everyone seeking out alternative medicine in the control group, there were 209 alternative treatments performed for all of the participants and conditions combined; which equates to an average of 5 treatment sessions per individual. **84% of the participants indicated their condition was treated or at least controlled by their individual selected choice of treatment.** Of the total population only 7 medical doctors recommended that their patient seek out alternative medicine to either compliment or treat their condition. See reference chart below.
You can see the disparity in the chart above concerning the coverage of alternative medicine by the US health care system. Hopefully, this study will help to change the reimbursement patterns of our US health insurers. Less than 10% of all the treatment modalities were covered by the participants’ insurance company. Additionally, there were few doctors in this study that recommended their patient seek out an alternative medicine practitioner for their condition, even though medical schools in the US are mandating courses be taken as a condition of graduation. **Nearly every participant in the survey indicated their condition was corrected or stabilized by their alternative treatment(s).**

Going back to the subject of back pain, we can extrapolate the cost savings to our medical system. If for example 100,000 patients were experiencing back pain and 75% of those patients sought out a chiropractor, we know on average 75% of those patients will have their condition resolved. On an individual basis, based on preferred treatment the costs would be as follows:
However, if you normalize this data across the 100,000 patients the cost structure would appear as follows. As you can see the most number of patients would be seen by a chiropractor, however this would still remain to be the lowest treatment category. Whereas, the highest treatment category is the surgeon and this specialty would see the fewest patients; oftentimes with sugeries being performed 2 or more times.
Five Actual Participant Case Studies Explored

Now that we’ve analyzed the various survey results of the Rockley study, I wanted to interview a few of our survey participants to obtain a further look at the reason(s) for selecting alternative medicine as their choice of treatment. We know the majority of our respondents indicated that their condition was completely treated when alternative therapies were used to treat their condition. But what underlies that? How did they first become exposed to alternative medicine? I selected five survey respondents and asked them if I could use their experience with alternative medicine as a case study; knowing their name(s) would not be used, they agreed to the interview. The interview questions I asked were as follows:

In-Person Interviews Questions Asked:

- What is your sex?
- What is your age?
- What condition did you have that you sought out alternative medicine to treat your condition?
- Why did you select alternative medicine as opposed to traditional medicine?
- What forms of treatment did you seek out?
- What is your previous experience with alternative medicine?
- Did alternative medicine treat your most recent condition?
- Did your insurance company cover the treatment?
- Would you recommend alternative medicine?
- What would you tell your medical doctor about alternative medicine?
- What would you tell your health insurance company about alternative medicine?
Case Study Number One

This is 46 year old female who was introduced to alternative medicine through her mother’s use of the practice. Her mother used alternative medicine (acupuncture and chiropractic care) regularly due to continued paralysis of her hand; which was a birth defect. The participant began seeing alternative medicine practitioner for a neck problem in her teens. This introduced her to alternative medicine and to chiropractic care. Her initial neck problem was entirely cured within a few sessions of seeing her chiropractor.

More recently however, the participant began seeing a chiropractor for her continued back pain. The back pain started with slight pain and continued to worsen in her lower back. This was a pre-disposed condition due to a car accident in 1999. The car accident was so terrible that Jaws of Life had to cut her out of the vehicle. In the car accident she had a severely bruised rotator cuff along with a concussion, whiplash and back pain. She was out of work for a year and a half due to the severity of the accident.

Directly following the accident she was hospitalized for approximately 24-hours and released the following day. The emergency room doctor provided an arm sling, neck brace and pain pills. He had the participant follow-up with her family practice doctor.

Her family practice doctor saw her the following day. Unlike the majority of medical doctors, her family doctor (a female) had a secondary focus in alternative medicine. Prior to the car accident the doctor would often talk to the participant about specific vitamins and herbs that she could take in lieu of pharmaceutical drugs. Upon examining the participant, her medical doctor recommended that she see a massage therapist and chiropractor for her treatment regimen. Her
family doctor also recommended she sparingly take the pain medications prescribed by the emergency room doctor; as she did not recommend her taking pain medications.

In the past 24 months the participant has seen a chiropractor (on average) once a month. During her sessions the chiropractor performs chiropractic manipulations on her neck and upper back, which then releases the tension in the hips and lower back. In addition, she’s had issues with irritable bowel syndrome which lessens when she sees the chiropractor. Her chiropractor also performed manipulations that help adjust the colon and pancreas; which is known as organ realignment. She truly recommends this treatment option.

In between her chiropractic appointments she is also seen by a massage therapist once per month. Her massage therapist performs a moderately deep tissue massage to help loosen the back and neck. Between the two modalities, she feels better in between visits and is able to function accordingly at her job. She still has some pain, however feels without alternative medicine she would be unable to walk, sit or literally function.

Her job entails continued walking and driving. She also spends a few hours per week at her desk and on the telephone. In addition to the chiropractor and massage therapist, she exercises with aerobic activity and lift weights approximately 3 to 4 times per week.

Due to the severity of her back pain, the condition has not been completely treated and she remains in continuous treatment (as described above). In addition to the treatment and exercise, she regularly eats healthy foods consisting of mostly organic fruits, vegetables and hormone free meats. She consumes little to no dairy products.
The insurance company of the driver (she was not at fault and was rear-ended in the accident) paid for all associated medical bills. Her job function during the accident was performing bookkeeping duties that consisted of walking and sitting; both of which she was only able to do on a limited basis following the accident.

The participant states she would recommend alternative medicine to others because she feels taking conventional drug therapy is but a foreign agent that you are putting into your body which is harmful and has numerous side effects. In addition, conventional drug therapy (the majority of the time) merely masks the true issue or problem; it does not cure the problem.

She would also recommend that medical doctors in the United States become more educated on the positive effects alternative medicine can have on their patients. She would tell medical doctor’s in the US that they should have an open mind to integrating traditional medicine with alternative medicine. She feels that integrating the two would help to identify the cause of a person’s issue and it can help make a person better naturally, versus covering a health condition. She feels alternative medicine helps to heal the entire body.

The participant would also communicate to the health insurance companies that don’t currently offer alternative medicine to offer this as an option to their members. She feels not all ailments need a medical doctor to help correct them. Back pain in particular has had very successful outcomes when a patient sees a chiropractor rather than a medical doctor. Also, vitamins and herbs make an enormous impact on the health and healing of the human body. They should be offered as a covered medical benefit. Plus, they treat the cause of an ailment and are less expensive than conventional drug therapy treatments for both the consumer and the health plan.
Case Study Number Two

A 42 year old male was introduced to alternative medicine in childhood due to his family’s use of massage therapy and natural medicine. Recently, he was experiencing severe upper back pain and neck pain. The neck pain was also radiating down his arm into his hand. Initially, he sought out massage therapy to help alleviate the pain. He also used an infra-red sauna to help aid in pain relief. For a period of a few weeks these therapies seemed to reduce the pain, however after a period of time the pain in his neck and arm became more sever.

The participant then made an appointment with his family practice doctor. After he was examined by his family practice doctor, he was then referred to a spine surgeon. The spine surgeon requested he schedule an MRI. The MRI revealed a pinched nerve in his right arm along with a bulging disc between C5 and C6. His spine surgeon provided him with pain pills and recommended surgery for the bulging disc in his back. The surgery would place pins in his back to keep the disc in place. He also stated the bulging disc was causing the pinched nerve. Should he have surgery the pinched nerve would also be treated.

The participant felt that surgery as a first treatment option was not the right approach and for something this severe a second opinion was needed. He then performed quite a bit of research for treating both a bulging disc and a pinched nerve. He found that one of the preferred treatment modalities was acupuncture treatments combined with massage therapy. The participant then sought out an acupuncturist that unfortunately worsened the condition. He felt the acupuncturist did not practice appropriately, nor did he know what he was doing.
After further research and the fact that his brother had, had a similar condition in the past, he
sought treatment from a chiropractor. He saw the chiropractor a total of 5 times. The treatment
sessions consisted of the chiropractor icing down the upper back and arm. He then performed
electrical stimulation to loosen the muscles. After the participants’ muscles were relaxed he
performed spinal manipulations causing the disc to move back into place. The participant
experienced pain relief, to some extent, after the first session and the pain was relieved altogether
after the 5th session. During his chiropractic treatments he continued to have massage
(specifically for the bulging disc) for a period of 6 weeks.

The participant indicated he would like to explain to his medical doctors (and others) that
alternative medicine can be a viable alternative to many surgeries, as well as an alternative to
pharmaceuticals. He stated not all conditions can be treated by alternative practices; however
Western medicine is quite beneficial and useful in the areas of broken limbs and severe
lacerations. He indicated today’s medical doctors should reduce their prescribing of
conventional drug therapy and become more educated on dietary changes as well as herbal
remedies. However, he notes that herbal remedies should be treated as conventional drug
therapy in terms of how they are federally approved and administered through the medical
community. Every doctor should be trained in herbal remedies just as they are pharmaceuticals.
Herbal remedies should not be treated differently and should be universally integrated into the
system. It does not matter if medications are man-made or natural as each still has side effects
and can have positive and negative attributes. With integration, there is less likelihood of
negative or fatal drug interactions.
The participant stated musculoskeletal conditions, in particular, should be treated with alternative medicine. He does caution that one should perform research not only on the specific modality of treatment, but also on the specific practitioner. This can be done by researching online for testimonials, or better yet, a referral from someone that has used the practitioner with success. Taking the path of alternative medicine for this participant actually corrected the condition within only 6 weeks and should the participant have followed through with surgery, his condition will more than likely still be present. In addition, should he have followed through with the surgical recommendation, his treatment costs would have been substantially higher and his recuperation time would have been tremendously longer.

The health insurance company did cover the chiropractic treatments, however there was only a discount applied to the massage therapy treatments. He also paid a copay to see the chiropractor each time. The participant’s insurance company was United Health Care, which offers chiropractic and acupuncture as a covered treatment modality.

**Case Study Number Three**

This is a 52 year old female that was in an automobile accident over 20 years ago. She was introduced to alternative medicine only a few years prior through a modality called dry needling. Nearly 20 years ago the participant broke her back and fractured her hip in a car accident. Screws and rods were placed to stabilize her lower-back. A few weeks following surgery, she began a course of therapy and extensive treatment with pain injections and pharmaceuticals. Nothing seemed to help her with the severe pain she was experiencing.
For the past several years her treatments consisted of seeing her pain management doctor who would give her epidural injections along with very strong pharmaceutical pain pills. At this point the back was pretty well healed, however due to the accident the pain was still quite severe. Additionally, the screws and rods that were placed in her back were beginning to move and one began protruding out of her back. She then underwent surgery once again to remove the rods from her back.

Her pain management doctor continued to prescribed pain medications along with epidural injections for the pain at a rate of 6 to 8 epidural injections per year. She was also receiving pin point injections that should have been relieving the pressure points around her shoulder blades. The pressure point injections were made directly into the nodules in her shoulder and were also painful when administered. The participant was on pharmaceutical grade pain medications for over 20 years and had been having epidural injections since 1998. She indicated that sometimes the epidurals would work, sometimes they would not work and other times her condition would actually worsen after the injection. She indicated the epidurals almost became like an experiment and she felt like a Ginny Pig.

After a time, she became hopeless as the epidurals were no longer working and going under anesthesia nearly every month was wearing on her physically and mentally. In addition the epidurals were being mixed with other substances that had harsh effects on her body. This was also beginning to bother her as she truly did not know what to expect years down the road from this treatment regimen.

After a time, she complained more about the effects or lack of effects from the epidural. By this time she had 3 epidural injections in a matter of 2 months and since the pain was not subsiding
her pain management doctor was recommending a third injection. She was becoming very frustrated in her MD’s failure to offer additional treatment options. One day she went into her doctor’s office and was seen by his physician’s assistant (PA). She began telling him about her lack of pain control and unresponsiveness of her pain management doctor. The physician’s assistant asked her if she had ever tried dry needling. She indicated that she had not and he began to tell her about this alternative therapy.

Dry needling takes acupuncture needles and places them into specific parts of the body where the pain resides. The needles are usually placed into the short muscles in the body. Once the needles are in place, a few of the needles are attached to an electrical stimulation machine that releases small amounts of electricity into the body. This then creates controlled injuries and blood flow then increases to those specific areas where the needles are placed to promote circulation and healing. This technique is also referred to as trigger point dry needling.

The PA then told her that there was an office that performs dry needling directly across from his office and if she was interested, he could take her over and introduce her. She said that she would like that and they went to the office where she was further educated on the therapy. She was then provided with additional literature that she could share with her husband so that they could determine if dry needling was a good treatment option for her to pursue.

She did in fact decide to pursue this therapy and made her appointment days later which she equates to being, “literally a god send.” In addition to the pain, she indicated that she had started receiving sever muscle spasms and was taking a very potent pharmaceutical with severe side effects called Methocarbamol. This drug had side effects of: fast/slow heartbeat, fainting, yellowing eyes or skin, persistent nausea/vomiting, stomach/abdominal pain, mental/mood
changes, clumsiness, trouble urinating and infection. After 9 months of dry needling she was able to discontinue the majority of her medications which included the Methocarbamol. Currently, she is not taking steroids and has discontinued the epidurals.

When she sees her practitioner for the dry needling procedure first they perform a half of an hour massage to loosen up the muscles. Her massage therapist documents and massages any tense muscle areas she finds and this loosens up her back. Then her practitioner places the needles which are positioned into her back. A few of the needles are then hooked-up to the electrical stimulation machine. The objective is to increase blood flow in particular areas. Given her hip was also fractured; needles were also placed in the hip. Once she returns home, she places a heating pad on her back for another 30 minutes and is ready to start her day; something that was unthinkable when she was receiving the epidural injections. The participant has dry needling performed once a week. When she first began this treatment regimen, she was being seen twice per week; however now that has decreased to once per week and is estimated to continue decreasing as she continues through the healing process.

Her epidural office fee’s averaged between $4,000 and $5,000 per month compared to the dry needling which United Health Care pays at a rate of $80.00 per office visit. United Health Care is covering 100% of her services, minus her $20.00 per office visit co-pay.

Whenever she sees someone that has back pain or any kind of musculoskeletal pain she immediately tells them about her experience with dry needling. She stated that she would recommend alternative medicine for so many reasons but the main reason because this is the best that she has felt in 20 years. She also believes it was a life saver for her. Just 4 years ago she was walking with a cane, now she walks on her own, is able to enjoy life and do the things she
likes to do; like taking walks with her dog Apollo! She also believes medical doctors should keep their treatment options open and not be so closed minded to alternative medicine.

Case Study Number Four

This is a 41 year old female that was introduced to alternative medicine in her childhood through her family in friends. Alternative medicine in this case primarily consisted of herbs and natural medicine to cure such things as colds, influenza, etc. This participant travels extensively for her work and travel usually involves air travel. She’s been traveling for work for approximately 5 years and will often times fly in and back to her home on the same day. Given the way the seats were developed on the airplane, she began having lower back problems. She initially tried rectifying the problem with natural back pain cream; however that proved to have little to no long term effect even though it was being applied continuously. When she is not traveling on an airplane she is either sitting at her desk or traveling by car. The participant does exercise approximately 5 times per week and takes vitamins and supplements to keep her healthy. She indicates that she has never been severely ill and rarely ever gets sick. Her diet is quite healthy and mostly organic. She does have a gluten allergy as well as being lactose intolerant.

Recently she traveled to Europe on a vacation to France for two weeks and the plane ride back to the United States was extremely uncomfortable. After returning to the United States, she scheduled an appointment with the massage therapist and began having deep tissue massages every two weeks until the pain began to lessen. She also took up the Kettle Bell workout which helped to strengthen her lower back. Additionally, she began using an infrared sauna which
seemed to help loosen the muscles in her lower back. Oftentimes when she went to see the massage therapist there would be 5 to 10 trigger points located in her shoulders. The massage therapist had a very difficult time working out all of the trigger points and usually managed to rectify about 50% of the issues. The back pain began to subside to a point where it was no longer causing pain. Within a few weeks of resolving the back pain (and not traveling during that time) she began having severe headaches. She had been prone to migraines for the majority of her life, however determined through food elimination techniques that this was due to food allergies. The headaches she recently began experiencing were radiating and appeared on the right side of her head. The participant is also right handed. Through questioning by her massage therapist, it was determined that within the last several weeks that she had been working extensively on the computer and was not moving from her desk for most of the day. After several session of loosening the right shoulder, neck and head, she began feeling better and the pain began to subside. She was also told to walk around throughout the day and not remain at her desk for more than a few hours at a time. Her massage therapist recommended stretching and walking. Another exercise she was asked to perform was to take both shoulders and tightly move them up to the head, then slowly release. Oftentimes this would yield a cracking sound in the shoulders and she would attain immediate release of the muscle tension.

Her insurance company offered massage therapists at a pre-negotiated discount rate which equated to her paying approximately $45.00 per massage (this included a tip for the massage therapist). The participant feels that had she seen her primary care physician she would have referred her to a pain management doctor which would have cost the health care system 10 fold to what was being paid for her massage therapy sessions. The issues for which she sought out
the massage therapist have been rectified, however as a routine, she still has massages once every couple of weeks to avoid having to go through another painful episode of treatment.

The participant feels strongly that all individuals, the medical community and United States health insurance companies should be integrating and offering alternative medicine as a treatment option. She also feels medical schools should be doing a much better job in offering courses in alternative therapies and natural remedies. As an example the participant recently went in for a physical examination with her doctor. The participant began discussing alternative medicine and questioned if she practiced or prescribed alternative therapy for her patients. The doctor (this is the first time the participant saw this doctor) indicated the she felt most alternative medicine practitioners did not include her in their treatment plan and thereby left her (as the physician) out of the decision making process for the patient. She felt oftentimes these alternative medicine practitioners would overprescribe their services which could actually lead to harming the patient. The participant felt that had this physician been educated in the various modalities of alternative care, she would be able to integrate this type of treatment into her patient care. The participant felt an integrated treatment team is the best approach in the US; we just have a long way to go to realize this type of a system. She indicated much of this is a lack of education by the general population, our medical community and our insurance companies. It all begins with education!

Case Study Number Five

This is a 42 year old male that has frequently used alternative medicine in his past; mostly for massage therapy. Recently, he had an accident and severed 4 tendons and 3 muscles in his hand.
He immediately went to the emergency room and was examined. They were able to stop the bleeding; however the attending emergency room physician did not recommend that he use the attending hand surgeon for his treatment. Since the participant had a few friends who were surgeons, he reached out to them for a hand surgeon referral.

A few days following the injury he was seen by one of the best hand surgeons in the country. This surgeon indicated he would need to wait a few more days to assure an infection was not occurring. After waiting the recommended time frame, he then went in for surgery. Surgery proved to be very successful; however the physician told the participant that he may not regain the full feeling within his fingertips. Unfortunately, this participant is a violin maker and pianist; both of which require the use and feeling of his fingers.

After many weeks (4 he believes) of being in a cast like structure, his physician recommended that he begin therapy for his hand and was referred to a physical therapist and massage therapist. The physical therapist began performing stretching and movement techniques to begin stimulating both the hand and fingers. The participant indicted this was extremely painful; however this process was appearing to aid in his recovery. He was seeing the physical therapist once per week and performing exercises at his home three times per day. He was also seeing a massage therapist who began massing the hand and fingers to promote blood flow. Eventually they began using electrical stimulation on the top of his hand which began stimulating the fingers. The participant began having some feeling in the lower extremity of his fingers; however three of his fingertips did not regain feeling.

After several months of both physical therapy and massage therapy he was able to completely remove the cast from his hand. Today he has the majority of feeling back in his fingers and has
been able to both play the piano and work on his violins. He attributes much of his recovery to the physical therapist and the massage therapist. During recovery he also began playing the piano again and by doing so his fingers would stretch and contract which he and his hand surgeon believe attributed to his speedy recovery and the growth of his nerve endings back into the tips of his fingers. His surgeon had indicated since the nerve endings did appear to be growing, he could expect to more feeling in his finger as the months progressed.

Other than the deductible and office co-pay visits, the hand surgery and the physical therapy were covered by his insurance company. The massage therapy was paid for out of pocket as it was not a covered service. The participant however did have a health savings account, which is how he paid for the massage therapy treatments. So in a roundabout way, the massage therapy was also covered through his insurance or health savings account.

The participant believes that the United States should have an integrated health system and medical doctors should work alongside alternative medicine practitioners to offer care that meets the need of each patient, not each particular discipline.

It strikes me as to how much of a difference alternative medicine has made in the lives of the people which were interviewed. The interviews were conducted to get an idea of how alternative medicine has made an impact in someone’s life and even if it did not cure the condition, each of the above individuals were satisfied with the results and would recommend its’ use to others.

Four of the five individuals had United Health Care as their health insurance. All five had their claims reimbursed by an insurance company or a portion of their claims reimbursed by the
insurance company. One participant had a health savings account which even reimbursed his massage therapy sessions.

United Health Care is one of the few health insurance companies that offers and reimburses for many of the alternative medicine treatments; and one that I would personally recommend. One of the above participants had surgery recommended as a first option for treatment. What we know today is that if someone does have surgery performed, rather than seeking out alternative medicine as their treatment option, that back surgery has a high failure rate; nearly 50% and many patients then need to have a second or even a third surgery. Imagine the pain, immobility and cost by having back surgery as your first treatment option. Whereas, in the case study listed above the participant said “no” and decided to seek out an alternative medicine provider for his care. Even though the first practitioner didn’t work out so well, his second attempt proved fruitful and he was literally cured of his severe pain within 6 treatment session; equating to about 6 weeks of treatment. Why are we not offering alternative medicine in the United States health care system when these results are proving to be the norm?

**Health Insurance Company ICX – How it can be done correctly.**

To explain how one health insurance company actually is using alternative medicine successfully, I’ll tell you the story of Insurance Company X (also known as ICX - alternate name being used to limit liability in case they read this document). ICX contracts with a variety of chiropractors and has been doing so for quite a few years. The philosophy of ICX is that if a chiropractor treats their patient following evidence based measurement guidelines, the member will have better outcomes, the member will be happy and stay with ICX as a health plan and
their overall medical spend will be decreased. ICX has put in place not only evidence based measurements to assure their chiropractors are properly caring for members, however they have also built a large support system around their chiropractors. For example if a chiropractor has a question relating to the treatment of a particular “hard to treat” patient, they have an ICX mentor who is also a chiropractor they can call to help determine proper treatment options.

The chiropractic network at ICX not only provides chiropractors, however they also offer care management through their national network which means they can offer their members high quality and low out of pocket costs. The foundation behind the chiropractic network is to deliver effective treatment by assuring the doctors are following best and recent treatment practices. On average when a patient uses an ICX chiropractor their treatment costs will be about 30% less than if they use a non-contracted chiropractor. In addition to their case management philosophy, ICX also grades their chiropractors so that they can see how their treatment patterns vary or are similar to that of their peers. Let’s say ICX has three different types of chiropractors A (best), B (good) and C (not following evidence based practices). Those chiropractors that consistency practice based on evidence based guidelines, have good patient outcomes and positive patient feedback, are rated as A’s. This means that they will more than likely receive more referrals from ICX than would a B or even less a C graded chiropractor.

It is not only necessary to incorporate alternative medicine into our health delivery system, however it is also necessary to incorporate those individuals that practice medicine based on evidence based best practice guidelines. A study conducted by the Department of Health and Human Services indicated that 50% of current chiropractic visits are unnecessary. Meaning chiropractors are seeing patients more than needed in order to treat their condition.
Overutilization occurs not only in traditional Western medicine, but also in alternative medicine. This is an issue that needs to be addressed and having a system such as ICX’s can help to curtail and limit this unnecessary medical spend. Another unsuccessful approach that has been deployed in the US is offering alternative medicine benefits, and then curtailing its use. This approach will reduce the overall unit cost; however it does not prove successful in the effective treatment of the patient. A patient centered approach is needed as not all patients will require the same number of (chiropractic) treatments for the same condition. This is why the ICX model of a mentor and peer to peer influence can prove successful for our US health care delivery system.
Evidence for the Use of Alternative Medicine

Up until recently, it has been common practice to disregard the use of alternative medicine in the United States by taking the viewpoint that there is no scientific evidence of its efficacy. Notwithstanding that alternative medicine has been used effectively for thousands of years. Today, with the overhaul of the United States health care system and the fact that the medical universities in the United States are now requiring physicians to study alternative medicine courses to be taken as a condition of graduation, we are beginning to see a positive change in the perception of alternative medicine.

According to JAMA, “Alternative Medicine Meets Science – There is no alternative medicine. There is only scientifically proven, evidence based medicine supported by solid data or unproven medicine, for which scientific evidence is lacking. Whether a therapeutic practice is Eastern or Western is unconventional or mainstream, or involves mind body techniques or molecular genetics is largely irrelevant except for historical purposes and cultural interest. We recognize that there are vastly different types of practitioners and proponent of the various forms of alternative medicine and conventional medicine, and that there are vast differences in the skills, capabilities, and beliefs of individuals within them and the nature of their practices. Moreover, the economic and political forces in these fields are large and increasingly complex and have the capability for being highly contentious. Nonetheless, as believers in science and evidence, we must focus on fundamental issues, namely the patient, the target disease or condition, the proposed or practiced treatment and the need for convincing data on safety and therapeutic efficacy.”19
Alternative medicine has been practiced for thousands of years and through all that time it has established guidelines, practices and outcomes studies that justify its use and efficacy. JAMA believes today’s physicians should be trained in alternative medicine and that our approach should be steering to an integrative health delivery model where Eastern and Western medicine work in tandem to cure the patients. Up until recently, in my own experience, I’ve not seen health plans incorporate alternative medicine into the health insurance offering. Now we are seeing a select few health plans offer chiropractic, massage and acupuncture as covered health care services. This in turn, is decreasing the amount of money being spent on unnecessary surgeries, high cost procedures, ER utilization, and the list continues.

The following is an example of how the Swiss incorporated alternative medicine into a mandatory benefit structure. “Patients around the globe are increasingly embracing alternative medicine as a contributor to health. A recent study by the US National Institute of Health shows that 4 out of 10 Americans used some form of alternative medicine in 2007. Another study out of Switzerland reported that almost 11% of the population had used one of five alternative medicine streams (anthroposophic medicine, homeopathy, neural therapy, phytotherapy, and Traditional Chinese Medicine) in 2002. The alternative medicine doctors in the study treated, for the most part, younger females, with higher levels of education. These patients also tended to have a favorable attitude toward complementary medicine and tended to exhibit chronic and more severe forms of disease. The majority of alternative medicine users appear to have chosen alternative medicine mainly because they wish to undergo a certain procedure; additional reasons included the desire for more comprehensive treatment and an expectation of fewer side effects. In a referendum in Switzerland in 2009, two-thirds of the voters were in favor of a wider coverage of alternative medicine by their public health insurance. In January 2011, based on the
positive outcome of this national referendum, Swiss authorities decided that alternative medicine will be covered by their mandatory health insurance for a period of 6 years (2012–2017).”

Although, not all health insurance companies are offering alternative therapies as a fully covered benefit (or all countries for that matter) we are seeing more insurance companies offering alternative therapies as a discount program. In essence, the benefit is not listed under their insurance plan rather there is usually an accompanied benefit that allows the member to seek out, let’s say massage therapy, from a contracted provider that has agreed to provide a discount for the member. So rather than paying $80.00 for a massage, with a particular health insurance discount card, the member may be only paying $35.00 for the massage. I expect that as we continue moving towards an integrated delivery system, one that offers alternative medicine as a covered benefit and not as an ancillary discount program, that we will see utilization increase, and overall costs of treatments decrease. We know that over half of the United States population seeks out alternative therapies as a way to treat their condition or to stay healthy and are paying out of pocket for these services.

If the United States is utilizing alternative medicine, then why are the health insurance companies not paying for these services as covered benefits?

According to the Bill & Melinda Gates Foundation, “Despite the power and promise of modern medicine, large segments of the world’s population cannot or do not reap its benefits. More than 80 percent of the people in developing countries cannot afford the most basic medical procedures, drugs and vaccines. Among wealthier populations, in both developed and developing countries, complementary and alternative practices are popular. Complementary and alternative
practices are adjuncts or alternatives to Western medical approaches. These alternative practices are different than what is known as scientific or Western medicine approaches that emerged primarily in industrialized countries during the past two centuries.” 4 The research continued with, “Studies show evidence that:

- Acupuncture for musculoskeletal conditions costs roughly 60 percent less than the cost of referral to a Western practitioner.
- Homeopathic drugs are cheaper than conventional drugs.
- Expenditures for Ayurveda are 50 percent lower per person than conventional medicine.
- Chiropractic medicine costs 24 percent less than Western pain therapy and has better results.” 4

Again, each research study will have its own interpretation of associated costs with savings analysis. However, what we need to keep in mind is that research is being and has been performed showing the efficacy and legitimacy of incorporating alternative medicine into our Western culture. The study continues with, “Training traditional healers is less expensive that training doctors or nurses and could be useful if they were recruited into a more broad based system for delivering public health programs.” Some other success stories show where approaches discovered or used in the developing world have been adopted in the West with or without modification and vice versa:

- Artemisinin, developed from the Chinese plant Artemisia, has been used for centuries to treat fever and is effective against malaria.
Acupuncture has been shown to be highly effective in managing post-operative nausea as well as reducing the pain of chronic osteoarthritis.

Chiropractic medicine has become increasingly accepted by the medical community and has proven better for low back pain than bed rest, physical therapy or instruction on back care.

Homeopathy is widely used with reported effectiveness for treating influenza, allergies and postoperative obstruction of the bowels.

Mind and body interventions have been shown to increase the survival time for breast cancer patients reducing depression and improving coping skills.

Other priority areas for complementary and alternative medicine research included studies of interventions to reduce chronic pain, relieve depression and slowing the progression of degenerative disorders like arthritis and dementia. An important role exists for alternative medicine in the United States.\(^4\)

If alternative medicine were more widely accepted within the health insurance plan structure, I’d venture to say that there would be decreased emergency room visits and unnecessary surgeries. Rather than seeing a surgeon, the health delivery system should have the member seek out conservative treatments as a first option, not a surgeon as their first entrance into the health care system. Additionally, if we had our primary care doctors in the United States better trained in alternative modalities and practices, they would be better informed when and how to refer a member to an alternative therapy practitioner. On another note, JAMA indicated that claims against chiropractors, massage therapists, and acupuncturists were less frequent than claims
against medical doctors. 19 I agree with JAMA, we need to teach our new doctors about alternative practices and the benefits to the patient as well as the overall benefits that these modalities provide to our health care system and to the economics of the health delivery system.

Natural News released a study recently that urged consumers to consider the historical and scientific evidence for using alternative medicine and homeopathic medicine. 21 They stated, “A lot of people today are confused about what homeopathy is (and isn’t). This situation is not helped by the skeptics of homeopathy who go to incredible extents to exaggerate and misconstrue what homeopathic medicine is. It is more than a tad ironic that these “skeptics” hold themselves out as “defenders of medical science,” and yet, they commonly exhibit an embarrassingly poor scientific attitude when evaluating homeopathy and when determining what scientific evidence does and does not say about it.”

Most recently Dr. OZ, a television show that covers a myriad of conditions, was attacked for his use of herbal and alternative medicine for the treatment of various conditions. The interesting thing about this attack is that it was the pharmaceutical companies that were confronting and posting the allegations that Dr. Oz’s research was not conclusive and that his findings were falsified. We see this time and time again because our system has not embraced alternative medicine as a legitimate form of health care. We also see this dilemma when pharmaceuticals compete against natural herb manufacturers (unable to be patented). Natural News also stands behind the statement that using alternative medicine should not preclude the use of Western medicine. They are essentially advocating for integrative medicine where both Eastern and Western medicine are combined to treat the entire person.
Alternative Medicine’s Use Around the Globe

In the 19th century homeopathic medicine became very popular because it was seen to treat infectious diseases. Europe and Asia both use homeopathic medicine as the primary form of drug treatment; as opposed to pharmaceuticals. In India there are over 100 million people that actively use homeopathy.

In 2002 when the World Health Organization conducted surveys to determine use of alternative medicine throughout the world, the United States ranked last in usage; only accessing alternative medicine 29% to 42% of the time. In Africa nearly 80% of the population utilizes alternative medicine as their primary form of health care. Also ranked high in utilization is China which has incorporated alternative medicine into their traditional medicine environment. China administers an integrated medicine environment in nearly 90% of their hospital systems. In France 75% of the population has utilized alternative medicine once within their lifetime. In Germany 77% of all pain clinics administer acupuncture as a first line of defense.

Additional research shows that individuals who have access to alternative medicine or conservative therapy provider networks are satisfied with the results:

- Slightly more than one-third of Americans report using at least one aspect of alternative medicine therapy, and 84% of those surveyed said that they would use them again.
- More than one-fourth of hospitals offer one or more alternative medicine therapies, most often in response to patient demand.
• In a study of 31,044 adults aged 18 and older, 58% of US adults are using alternative medicine for preventing and managing musculoskeletal conditions and other conditions involving recurring pain.\(^5\)

According to an article published in 2010 by Natural News, “Because homeopathic medicine is selected for its unique ability to cause the specific pattern or syndrome of symptoms that it is known to cause in overdose, a living organism has a hypersensitivity to even extremely small doses of the correct chosen alternative medicine. Just as a “C” note of a piano is hypersensitive to other “C” notes, living organisms are hypersensitive to extremely small doses of medicines that are made from substances that cause the similar symptoms that the sick person is experiencing. This ancient principle, like cures like, was heralded by the Oracle at Delphi, the Bible, and various Eastern cultures, and the fact that modern day immunology and allergy treatments derive from the primary principle of homeopathy, the laws of similar, provides additional substantiation to this system of medicine. Conventional allergy treatment and vaccination are two of the very few conventional medical treatments that do something to augment immune response, and yet, both of these treatments are derived from the homeopathic principles.”\(^24\)

There have been numerous double blind studies conducted for the efficacy and outcomes of using alternative medicine and homeopathy. A few of the studies that have shown significance are outlined as follows:
1. The World Health Organization deemed that childhood diarrhea is a serious health problem in the United States which causes dehydration and death in children. The study took 3 randomized double blind trials which were published in Pediatrics. The results displayed that homeopathic drugs significantly reduced diarrhea when compared to the placebo group. 21

2. In treating the flu, there were 4 randomized double blind studies conducted that displayed the effective treatment of the flu when using homeopathic medicine when compared to a placebo. 21

The United States health care system is ranked number 37 in the world. This is in part due to the fact that we as consumers are embracing alternative medicine; however our health insurance companies are not paying for the services even though there is more and more evidence that substantiates its effectiveness in both treatment outcomes and costs. For example, in our health delivery system today, if you are experiencing low back pain (in general) the following occurs:

1. Visit your local emergency room. Average cost: $1,500

2. Obtain an MRI. Average cost: $2,500

3. See your primary care physician. Average cost: $100

4. PCP refers you to a surgeon. Average cost: $300

5. Surgeon recommends surgery. Average cost for disc replacement: $31,000

6. Surgeon refers to physical therapy. Average cost for 10 visits: $1,000
The estimated total cost of care to the health insurance company would be approximately $36,400 per patient for the single surgery. However, 50% of these surgeries fail and a second or third surgery is then warranted. A more economical treatment option for lower back pain should be:

1. Visit your primary care physician. Average cost: $100

2. PCP refers you to an in-network chiropractor (6 sessions at $80). Average cost: $480

Given most research indicates low back pain will be rectified within 6 chiropractic sessions the total cost to the health insurance company is merely $580 per patient. Should the conservative treatment option not rectify the back pain, then seeing a surgeon as a next step would be warranted.

According to the research study entitled, Alternative Medicines Use in Select Countries, “The earliest use of alternative medicine dates back to 2800BC in China. Practiced all over the world and by more than a hundred disciplines, alternative medicine has grown significantly in its use in an unprecedented manner. Using alternative medicine and following alternative medical practices not only removes any possible additional effects of the illness but also increases the resilience of the body. It is generally claimed that natural remedies are not only less rigid on the human physiology, but they also help in retaining body pliancy. Systems of natural, traditional medicines use a combination of ingredients to restore the bodily constituency. In fact, natural remedies are considered to be more as a food, given their natural constituency. Since alternative medicine is based on completely natural methods and there is no usage of any chemicals, there is no danger of interferences with the organic system. A holistic approach as opposed to looking at
a set of symptoms and treatment that delves on the root – cause of an illness is some of the distinct features of alternative medicine. It is also pronounced that widespread use of modern medicine has deteriorated the immune system in the human physiology and has resulted in modern medicines becoming less effective. It is also often said that alternative medicine is the only way to cure some incurable diseases.”

According to Alternative Medicine in Select Countries, “The world has witnessed the development of many traditional as well as modern systems of medicine in the 20th century. Pathbreaking discoveries like penicillin, technological advancements in modern surgery, major research advancement in stem cell research and genetic structure, and the development of traditional medical systems like the traditional Chinese system of medicine, acupuncture, osteopathy, homeopathy, Ayurveda, yoga and others have all been a part of developments in the invincible territory of global medicine. The major competitive advantages that India faces are cost effectiveness and traditional medical systems like Ayurveda and naturopathy. The last few years have seen countries with their own individual expertise attracting tourists from the entire world.”

France, according to Natural News, was ranked number 1 in the use of alternative medicine. In France over 40% of the population uses alternative therapies to help treat a variety of ailments and conditions, plus over 30% of physicians in France prescribe alternative medicine. What a difference from what we are practicing in the US.

According to a recent study released by Medical Tourism research, “In India alternative medicine has its ancestry in south India and some places in North Eastern India. Internationally famed for its natural remedies and therapies, schools of medicine have embraced Siddha,
naturopathy and Ayurveda in treating their patients. These traditional medical practices are estimated to attract utilization from Europe and Middle Eastern countries.”

According to Medical Tourism Research in India, “the KayaKalp medical center has offered detoxification, immunizing and rejuvenating through yoga, pranayama, naturopathy and meditation. Its therapies are claimed to be drugless and extremely natural. Naturopathy takes the help of Ayurveda preparations for healing processes and improved blood circulation. India is a pioneer in alternative therapy.”

China is another pioneer in the practice of alternative medicine. According to Alternative Medicine in Select Countries, “The 3000 year old method of traditional medicine in China has gained popularity as the world’s most popular medicine, being used by more than a quarter of the world in treating even chronic diseases like cancer, Aids, allergies and heart disease. Traditional Chinese Medicine (TCM) uses medicinal herbs, therapeutic exercises and acupuncture to cure ailments. TCM diagnoses illnesses based on the five elements theory and the yin yang theory. The five elements theory base their evaluation on the five elements – wood, fire, earth, medal and water to establish a connection between human physiology and pathology and the natural environment. The movement of these five elements constantly rules the functioning of the human body and thus established the interdependency of both. The yin and yang theory calls for comprehending the bright and darks sides of the universe, in other words, the opposite properties of the universe. The relative nature of yin and yang represents the interrelationships between substance and function. As Traditional Chinese Medical practitioners say “Only the ample substance can the human body function in a healthy way and only when the functional processes are in good condition, can the essential substances be appropriately refreshed.”
Japan follows close suite in its success with alternative medicine to treat a variety of conditions. According to Alternative Medicine, “Japanese medicine is known as Kanpo or Kamp, a herbal medicine that forms part of well researched modern clinical methods and also traditional methods of medicine. A Japanese variant of the traditional Chinese medicine, Kamp adheres to the body’s natural instincts and natural mechanism of healing. For this purpose medical treatment involves diagnosis of the tongue, abdomen and pulse. At each stage of the treatment, different procedures, that are necessary to bring the body back to normalcy, are prepared by the doctor. These herbal medicines are regulated by the Japanese Government. Kanpo medicine is used to cure many acute and chronic ailments like cardiovascular, respiratory, digestive, reproductive and dermatological conditions and immune system corrections and even disorders like bedwetting, high cholesterol and hepatitis. Though Kanpo therapies take longer than usual to work, this medical system uses some very natural diagnosis and treatment methods and concepts like water, blood and air to identify bodily symptoms. Also, it is claimed that these herbal medicines produce no side effects because of their compositions.

Another study published by Complimentary Therapies in Medicine noted that, “The use of complementary and alternative medicine appears to be a worldwide phenomenon, although no one knows its true prevalence; which is assumed to be high.”

The World Health Organization (WHO) estimated that 80% of the world’s populations depend on “indigenous therapies.” There are over 1500 alternative medicine studies appearing in indexed journals annually. “In Asia alternative medicine use is the most widespread, since it is here that the two oldest systems of medicine, namely Chinese and Ayuverdic, originated and continue to have a strong hold. A relatively well-designed, nationwide, random sampled and
population weighted telephone survey of 1000 respondents found a prevalence of 76% alternative medicine use in Japan.\textsuperscript{25}

In Singapore, alternative medicine was mostly used for maintaining health and wellbeing, this equated to 72% of the respondent’s. Whereas 28% of the respondent’s in this survey reported their use of alternative medicine was for the treatment of an illness. The survey results also noted that elderly respondent’s used alternative medicine as a form of treating an illness as opposed to the younger population who used alternative medicine as a way to stay healthy.

The patterns of use in alternative medicine in Singapore were also noteworthy as it stated that, “among alternative medicine users, the vast majority (which was 95%) were also CWM users, indicating the complementary” rather than the “alternative” utility of complementary and alternative medicine. Only 5% of respondents said they used alternative medicine exclusively for all their health needs. Forty eight percent said they used CWM predominantly, while 29% used both equally and 23 used alternative medicine predominantly. The majority (74%) did not discuss their use of alternative medicine with their CWM doctors. Most alternative medicine users (66%) self-medicated rather than consulted an alternative medicine practitioner. Among those who had consulted an alternative medicine practitioner in the past 12 months (96%) this group also practiced alternative medicine self-medication. Significantly more Malays (89%) and Indians (83%) than Chinese (60%) self-medicated with alternative medicine. The top 5 conditions cited for preferred alternative medicine use over CWM were all minor conditions, ankle sprains, back or joint aches, diarrhea, stomach ache and chronic pain. Some 24% of respondents however indicated that they would prefer to use alternative medicine over CWM for a serious condition like cancer.”\textsuperscript{25}
Another research project released by the World Health Organization provided a study of alternative medicine throughout the world in 2002, “the following alternative medicine utilization:

1. Africa – Alternative medicine was used by 80% of the population for primary health care.

2. Australia – 49% of adults used alternative medicine.

3. China – Alternative medicine accounts for 30% to 50% of total health care and is fully integrated into the health care system. 95% of hospitals have alternative medicine units.

4. India – Alternative medicine is widely used and 2,860 hospitals provide alternative medicine services.

5. Indonesia – Alternative medicine is used by 40% of the entire population and is used by 70% of Indonesia’s rural population.

6. Japan – In Japan, 72% of all physicians practice alternative medicine.

7. Thailand – Alternative medicine is integrated in 1,120 health care centers.

8. Vietnam – Alternative medicine is fully integrated into the health care system and 30% of the entire population is treated with alternative medicine.

9. Western Countries – Alternative medicine is not strongly integrated into the health care system. In the United States 29% to 42% of population use some form of alternative medicine.
In developing nations, alternative medicine is nearly the sole source of health care for all but the privileged few. By contrast, in affluent countries, individuals select alternative medicine approaches according to their specific beliefs. For example as many of 60% of those individuals living in France, Germany and the United Kingdom consume homeopathic or herbal products on a regular basis. Only 1% to 2% percent of Americans use homeopathy, but 10% of adults use herbal medicines, 8% visit chiropractors, and 1% to 2% utilizes acupuncture every year. Use of alternative medicine among patients with chronic, painful, debilitating or fatal conditions such as HIV/AIDS and cancer is far higher, ranging from 50% to 90%.

If the United States is using alternative therapies for their health care, why is health insurance not covering these modalities as benefits?

Germany is another country worth discussing its use of alternative medicine. “Germany’s alternative medical practices have their origins in homeopathy, a medical system that was developed by Samuel Hahnemann, a German physician. Homeopathy considers symptoms as disturbances of vital forces that have connection with the human body. Homeopathic advocates believe that this medical system has the ability to cure acute diseases like the flu, cold, pains, depression and fatigue, constipation, irritability and other chronic diseases. It is claimed to cure allergies and allergic disorders like eczema and asthma. Moreover, this medical system is child friendly, in the sense, that the medication given by homeopaths is sweet to the tooth and therefore acceptable for a child. Homeopaths use a hands free treatment for patient care. They concentrate more on the patients’ state of mind and attitude towards life. The preparation of different potions in homeopathy is done mostly with the help of herbs, minerals and animal extracts.
Also, it is often reasoned that since the dosage that homeopaths prescribe is in such minute constitutions and because they come in dilutions of substances like water and alcohol that there are little to no side effects.

Germany also stands famous for its herbal remedies. Regulated by Commission E on the purity and pharmaceutical activity, these herbal medicines in Germany have come a long way in preventing and curing many diseases like cancer, AIDS and other serious ailments. Most physicians in Germany are required to be educated in alternative therapies so that their system serves complimentary to modern medical treatments. As Mark Blumenthal, Chairman of the American Botanical Council pointed out, most of the clinical research that’s conducted on the leading herbal medicines in the United States comes from Germany.” 27

A recent study published by the British Medical Journal (BMJ) indicates the following, “The exact reasons for the popularity of complementary and alternative medicine are complex; they change with time and space, they may vary from therapy to therapy, and they are different from one individual to another—for example, a patient with AIDS will have other motives than someone who is “worried well.” Reporting on complementary and alternative medicine in the British Daily Press is considerably more enthusiastic than that for conventional medicine. Also complementary and alternative medicine is largely practiced privately. There is an intriguing, positive correlation between signs of affluence and the sales figures of commercial complementary and alternative medicine products.

In essence, therefore, no single determinant of the present popularity of complementary and alternative medicine exists, but there is a broad range of interacting positive and negative motivations. Some of these motivations amount to a biting criticism of our modern health care
system. Regardless of whether this criticism is valid or not, it is often deeply felt by those who turn towards complementary and alternative medicine, and mainstream medicine would be well advised to consider it seriously.

Motivations for trying complementary and alternative medicine

Positive motivations

- Perceived effectiveness
- Perceived safety
- Philosophical congruence: “Zeitgeist”; spiritual dimension; emphasis on holism; embracing all things natural; active role of patient; explanations intuitively acceptable
- Control over treatment
- “High touch, low tech”
- Good patient/therapist relationship: enough time available; on equal terms; emotional factors; empathy
- Non-invasive nature
- Accessibility
- Pleasant therapeutic experience
**Negative motivations**

- Dissatisfaction with (some aspects of) conventional health care: ineffective for certain conditions; serious adverse effects; poor doctor-patient relationship; insufficient time with doctor; waiting lists; “high tech, low touch”

- Rejection of science and technology

- Rejection of “the establishment”

- Desperation

Many providers of complementary and alternative medicine are convinced that their therapy defies the “straightjacket” of reductionist research. They argue that it is individualized, holistic, intuitive, etc., and call for a “paradigm shift” in research. Usually these arguments are based on a series of misunderstandings, and often the problems can be resolved by clearly defining the research question and subsequently finding the research tool that optimally matches it. If the aim is to test the effectiveness of complementary and alternative medicine, randomized controlled trials usually provide the least biased method for finding a reliable answer. We should listen less to the opinions of those who either overtly promote or stubbornly reject complementary and alternative medicine without acceptable evidence. The many patients who use complementary and alternative medicine deserve better. Patients and health care providers need to know which
forms are safe and effective. Its future should (and hopefully will) be determined by unbiased scientific evaluation.”

Another research study finds that alternative medicine is quite cost effective and of good value for the patient. A study released in 2005 by the BioMed Central (BMC) found the following in their research, “Complementary and alternative medicine has a reputation for good value among health conscious consumers. In the United States consumers spend over $34 billion per year on alternative medicine therapies, dollars spent outside the conventional health care financing system. Such evidence on out-of-pocket expenditures is a testament to the widely held belief that alternative medicine therapies have benefits that outweigh their costs. Regardless of public opinion, there is often little more than anecdotal evidence on the health and economic implications of alternative medicine therapies.

The scarcity of outcomes research in alternative medicine has likely depressed access to alternative medicine therapies by impeding their integration into financial mechanisms commonly found in conventional health care. Most US consumers, who have health insurance coverage, either through public or private institutions, bear the entire cost of alternative medicine therapies out-of-pocket. Alternative medicine therapies seem effective and a good candidate for cost savings because they avoid high technology, offer inexpensive remedies, and harness the power of vis medicatrix naturae (the body's natural ability to heal itself). As such, a thorough and external review of economic and health outcomes of alternative medicine is necessary for evidence-based consideration of alternative medicine therapies as a covered expense. That being said, it is also known that affirmative evidence on economic and health outcomes is a necessary, but not sufficient step toward alternative medicine coverage, and not the decision itself. Other
factors such as historical demand, political expediency, consumer demand, and practitioner enthusiasm may also be considered in the decision to incorporate alternative medicine into a health insurance policy.

The need for economic evaluations is also growing in conventional health care. An increasing number of health plans and hospitals have moved from a simple budgetary focus in formulary decisions to requiring detailed evidence on the economic value of considered therapies relative to alternatives. Beyond their use in decisions concerning health insurance coverage, economic outcomes of both alternative medicine and conventional therapies also influence health policy, justify licensure of practitioners, inform industry investment decisions, provide general evidence to consumers about potential economic benefits, and can guide future research efforts through identifying decision-critical parameters for additional research.

In their systematic review of alternative medicine economic evaluations, White and Ernst identified 34 economic evaluations of alternative medicine conducted between 1987 and 1999; only eleven of which were full economic evaluations (i.e., compared both economic and health outcomes between two or more alternatives). Quality was evaluated by noting whether cost data were collected prospectively and whether comparison groups were comparable – i.e., assigned randomly. Unfortunately, their search strategy included the term "alternative medicine" but not "complementary medicine." Therefore, all single therapy studies in their review are of alternative medicine therapies that are usually used as substitutes (alternatives) to conventional care (e.g., acupuncture, homeopathy, and spinal manipulation). No studies of complementary therapies (those used in conjunction with conventional care) were included, despite the use of the term
"complementary" in their conclusion that spinal manipulative therapy can have benefits for back pain.

**Examples of the different forms of economic evaluations of alternative medicine**

The systematic review of the alternative medicine economic evaluation literature (presented below) revealed no cost-consequence studies and no cost-benefit analyses. However, there were examples of a cost-identification studies, cost-minimization analysis, cost-effectiveness analysis, and cost-utility analysis. These examples are presented below.

*Cost-identification study*

Frenkel and Hermoni, 2002, performed a retrospective comparison of medication consumption costs from computerized medication charts three months before and three months after a homeopathic intervention for atopic and allergic disorders. The review was performed on 48 consecutive self-referred patients in one clinic over one year with a diagnosis of an atopic condition who agreed to a classical homeopathic treatment in addition to usual conventional care. Of the 31 medication users (prescription and non-prescription allergy-related medications) before the intervention, 27 reduced their use, two increased their use, and two had their medication level unchanged after the intervention. Of the 17 who had not used medication before the intervention, 4 began medication after the intervention. There was an average drop in 3-month medication costs after homeopathy of $14 (1998 US dollar) or 54% per person.
Cost-minimization analysis

Herron and Hillis, 2000, retrospectively compared government payments to physicians for 1418 Quebec health insurance enrollees who practiced the Transcendental Meditation (TM) to payments for 1418 randomly selected and matched enrollees who did not. Long term health outcomes were assumed to be equal for both groups. Before starting meditation, the groups were similar in the yearly rate of increase in payments. After starting TM, annual physician payments for the meditation group declined 1% to 2% per year, while those for the non-TM group increased annually over the six year period. The difference in the annual change in payments was statistically significant at a rate between 5% and 13% per year.

Cost-effectiveness analysis

Franzosi et al, 2001, prospectively gathered health and economic outcomes during the 3.5 year follow-up period of a large randomized open-label study (n = 5664) of omega-3 polyunsaturated fatty acids (n-3 PUFA) as secondary prevention for patients with recent myocardial infarction. The perspective was that of a third-party payer; accordingly only direct health care costs (hospital admissions, laboratory and diagnostic tests, and medications) were considered. The incremental number of life-years saved by n-3 PUFA treatment over the 3.5 years (discounted at 5%) was 0.0332 per patient. The incremental cost discounted over the same period was 817€ per patient. Therefore, the incremental cost-effectiveness ratio is 24,603€ (approximately $25,415 in 1999 US dollar) per life-year saved.
Cost-utility analysis

Korthals-de Bos et al, 2003, performed an economic evaluation alongside a randomized controlled trial to compare manual therapy, physiotherapy, and care by a general practitioner for neck pain. The study used the societal perspective and collected direct and indirect costs (including hours of help from family and friends, and hours of absenteeism from work or other activities) through the use of cost diaries kept by patients over one year. Data on each patient's overall health state were gathered at baseline and at one year using a survey instrument called the EuroQoL. The utility of these health states were then calculated by using "society's" preferences for each of those health states. Society’s preferences were estimated from a sample of the general population by the developers of the EuroQoL instrument. Using the comparison of manual therapy to general practitioner care, manual therapy had a lower one-year cost ($402, US dollar) than general practitioner care ($1241.00). The Quality Adjusted Life Year (QALY’s) were 0.82 for manual therapy and 0.77 for general practitioner care. Since the costs were lower and the QALY’s higher for manual therapy as compared to usual care, manual therapy is said to dominate general practitioner care and no cost-utility ratio is calculated.

These exemplary studies indicate that a number of alternative medicine therapies are considered cost-effective compared to usual care for a number of conditions: acupuncture for migraine, manual therapy for neck pain, spa therapy for Parkinson's, complementary guided imagery for cardiac surgery patients, complementary relaxation therapy for patients with previous myocardial infarction, complementary self-administered stress management for cancer patients undergoing chemotherapy, complementary pre- and post-operative oral nutritional supplementation for lower gastrointestinal tract surgery, potassium-rich diet (rather than potassium supplements) for
postoperative cardiac patients, and biofeedback for patients with "functional" disorders such as irritable bowel syndrome. Acupuncture and homeopathy were both found to be equivalent in terms of effects and costs to usual care for dyspepsia. The attractiveness of the other alternative medicine therapies depends on whether the increased health benefits are worth the additional cost, or whether other aspects of the therapy make them attractive, such as patient preference. Only one of the studies reported results of an alternative medicine therapy being dominated by (clearly inferior to) usual care. The use of professionally-administered stress management for cancer patients undergoing chemotherapy was shown to have higher costs, but no additional health benefits over usual care. It is important for alternative medicine to be integrated into our delivery system and for our health insurance companies to begin covering these services. Until that time, we will continue to have a fragmented, high cost system with less than favorable outcomes.

On the surface one might expect that therapies that substitute for usual care (alternative medicine) would be much more likely to be cost effective. In this sample of exemplar studies, of the nine study comparisons where alternative medicine therapies were shown to be superior to usual care (better effects and lower costs, similar effects and lower costs, or better effects and similar costs), four were studies of complementary therapies. Therefore, there is evidence that even though complementary therapies are given in addition to usual care, they can improve clinical outcomes without increasing costs.”

A study published by the American Chiropractic Associated found that, “chiropractic and medical care have comparable costs for treating chronic low-back pain, with chiropractic care producing significantly better outcomes. A group of chronic low-back patients who underwent
chiropractic treatment showed higher pain relief and satisfaction with the care and lower disability scores than a group that underwent medical care, according to an October 2005 study in the Journal of Manipulative and Physiological Therapeutics (JMPT).” Although this is a favorable study for chiropractic care, this study should have also analyzed the complete cost of treatment (MRI, CT, surgeon, etc.) when a patient seeks the medical care (MD) treatment route. We cannot look at only professional fees to determine treatment costs. Had the study covered all associated treatment costs, they would have found the costs for treating back pain through a chiropractor versus an MD are substantially lower.

Although several cost-effectiveness studies outside the United States have favorably compared chiropractic to medical care, this new study is one of the first to compare low-back treatment costs and outcomes within the structure of the American health care system. In the United States alone, back pain associated costs are estimated to reach $48 billion this year, and, at any given time, 80 percent of the U.S. population suffers from back pain - statistics that make this study especially pertinent, according to the authors.

A recent study of 2780 patients with mechanical low-back pain who referred themselves to 60 doctors of chiropractic and 111 medical doctors in 64 general practice community clinics in Oregon and one in Vancouver, Washington. Chiropractic care included spinal manipulation, physical therapies, an exercise plan, and self-care patient education. Medical care consisted of prescription drugs, an exercise plan, self-care advice, and a referral to a physical therapist (in approximately 25 percent of cases). The costs of treatment and patients' pain, disability, and satisfaction with their health care were assessed at 3 and 12 months after the initial visit to the
doctor.

The office costs alone for chiropractic treatment of low-back pain were higher than for medical care. However, when costs of advanced imaging and referral to physical therapists and other providers were added, chiropractic care costs for chronic patients were **16% lower than medical care costs.** The differences between medical and chiropractic total costs were not statistically significant for acute or chronic patients. The study did not include over-the-counter drug, hospitalization, or surgical costs. Both acute and chronic patients showed better outcomes in pain and disability reduction and **higher satisfaction** with their care after undergoing chiropractic treatment. The advantage of chiropractic care was clinically significant in the chronic patient group at 3 months' follow-up, but smaller in the acute group. Improvements in patients' physical and mental health were comparable in both the chiropractic and the medical group, with the exception of physical health scores in the acute patients in the chiropractic group, which showed an advantage over the medical group.”

**Observations Regarding Rockley Study vs Other Studies Discussed**

It is interesting how equal the comparatives between the Rockley research study conducted for and the findings of prior research studies. For example Barnes indicated in his research finding (listed above) that 58% of the population is using alternative medicine in the United States which is the same as our controlled study which revealed that in the past 12 months 58% of our survey participants had used alternative medicine to treat or control their condition. Additionally, in the above report depicting alternative medicine utilization throughout the United States, back pain is
shown to be the primary reason an individual will seek out alternative forms of treatments. Our controlled study indicated 36% of the participants had back pain issues and sought alternative treatments. Back pain was also the number one reason our research participants sought out alternative medicine treatments. The second leading cause of treatment for the Rockley study was neck pain. In the chart below, neck pain is ranked as the third reason for someone to seek out an alternative medicine provider. The percentages in both studies align similarly to the Rockley research group.

![Disease/Condition for Which CAM is Most Frequently Used](chart.png)

The above chart depicts a tremendous drop in percentage of members seeking treatment for back pain as opposed to neck pain from 16.8% (back pain) to 6.6% (neck pain). Refer to chart. We see from the Rockley data that 58% of the participants used alternative therapies for their treatment and the majority were pain free at the end of their elected treatment regimen. We also
see however that very few participants had their treatment paid for by their health insurance company; health insurance that the individual is paying for and which should be covering these types of treatments. Health insurance companies not paying for alternative therapies have been the norm in the United States; this must change and we must integrate alternative medicine and complementary medicine into our health delivery system. In 2009 the United States spent $2.5 Trillion on health care expenditures; this figure does not include the alternative therapies that were paid for out of pocket ($34 Billion) by the consumers. Of the $2.5 Trillion spent on health care in 2009, $48 Billion was for back pain treatment which does not include the billions of dollars that were also spent out of pocket.

Since the research results from the controlled study did not yield results for all of the alternative medicine modalities, I wanted to provide additional research for those that I feel bear mentioning. Earlier in the document definitions were provided for the types of alternative
medicine available in the United States today. Below are additional research findings for vitamin supplements, meditation and acupuncture.

**Vitamin, Mineral and Herbal Supplements**

Supplementing ones diet with vitamins, minerals, fish oils and herbal supplements has proven effective in either treating or helping control many types of health related conditions. The use of herbal products to treat various conditions is very prominent in many parts of the world. According to Straus, “Many people who today choose herbal products in lieu of prescription medications assume that because these products are natural, they must be safe, even when the evidence for this assentation is essentially anecdotal. Recent studies have shown that herbals are highly variable in quality and composition, with many marketed products containing little of the intended ingredients. However, homeopathy is a success in terms of its broad appeal and use. Homeopathy is used worldwide with reported success. Randomized controlled trials have suggested that it might be effective for treating influenza, allergies and postoperative ileus.”

In 2009 the U.S. Department of Health and Human Services found that taking fish oils in particular helped Rheumatoid Arthritis patients reduce the pain associated with their disease. To further elaborate, the U.S. Department of Health concluded that, “Fish oil contains high amounts of omega-3 fatty acids – substances the body needs in order to perform a number of important functions. The body can also use omega 3’s to make substances that reduce inflammation”.

Results in the United Kingdom were found to be less costly than traditional conventional drug therapy in the areas of influenza, allergies and post-operative bowel obstructions.
Studies conducted by the Alternative Medicine Review indicated taking natural substances for the treatment of Osteoarthritis have shown the same if not better results than taking non-steroidal anti-inflammatory drugs. To explain, Osteoarthritis (OA) is a joint disease which erodes articular cartilage which is oftentimes seen in the hands, knees, hips and spine. It is a very painful condition with no predisposed identities found to date. In 1999 it was estimated that there were over 100,000 people in the United States that literally could not walk because of their Osteoarthritis. Western medicine tends to treat this condition with harmful non-steroidal anti-inflammatory drugs known as NSAIDs. NSAIDS have been found to be very harmful and have serious side effects that include ulcers which are most common as well as renal failure. The NSAIDs simply prevent or delay progression of the disease, rather than treatment of the disease.

Natural treatments for Osteoarthritis are in the early stages of research, however they have been found to be very beneficial without having the horrific side effects presented with NSAID treatments’. Studies are showing that natural treatments are slowing the progression of the disease, preventing degradation and are also repairing the joint cartilage. Research from the Alternative Medicine Review suggests the following natural treatments are showing promise for Osteoarthritis:

- Niacinamide – Is showing tremendous results in increase in joint mobility if taken daily (900 to 4,000 mg depending upon severity of the disease).

- Glucosamine Sulfate – Results indicated there were decreased pain, joint tenderness and swelling when taking 500 mg three times per day.
• Chondroitin Sulfate – Results indicated joint pain and stiffness were reduced; pain was also reduced by approximately 63% when 800 mg was taken per day for a period of 12 months.

• Vitamin E – Results indicated that there was a reduction in pain. Patients took Vitamin E in a dosage of 600 mg per day for 20 days.

• Boron – This is a trace element found in plants and has been found beneficial to humans. The results indicated that when patients took 6 mg per day for eight weeks that there were beneficial changes for those individuals that had a diet low in Boron.

• Herbal Remedy – Results proved that patients taking Articulin F, Withanaia somnifera root, Boswellia serrate stem, Curcuma logna rhizome and zinc complex for their Osteoarthritis experienced relief of their pain and swelling symptoms.

As indicated in Alternative Medicine Review, Volume 4, “Some clinicians have observed that identification and avoidance of allergenic foods will relieve the symptoms of OA in some cases. In addition, one report has implicated foods from the genus Solanaceae (Nightshades: tomato, potato, eggplant, bell pepper and tobacco) as possible triggering agents to for AO. The reaction to Nightshade goods is believed to be due to solanum glycoalkaloids present in these foods. Although no controlled studies have been done on the relation between diet and OA, some patients appear to benefit from individualized dietary modifications. Avoiding allergenic foods typically produces results within several weeks or less, however it may take a number of months on a Nightshade free diet before improvement is seen.”

20
It is further explained in the alternative medicine Review, Volume 4, “Although additional research needs to be done (on OA), some of the treatments discussed appear to be as effective as, and better tolerated than, conventional drug therapy. In addition, preliminary evidence (such as the persistence of improvement after treatment is discontinued and positive radiographic and biopsy findings) suggests some of these treatments may help arrest or reverse the disease process. There is little, if any data on whether the various agents described would have an additive or synergistic effect if used in combination. However, it is not likely that each of these compounds has the same mechanism of action. Therefore, it would be worth comparing the side effects of various combinations (such as GS plus niacinamide, or GS plus niacinamide plus trace minerals) with the effects of each treatment by itself.”

As with Osteoarthritis, there have been substantial studies conducted on the use of natural treatments to treat or curtail Rheumatoid Arthritis. Rheumatoid Arthritis, also known as RA, is a chronic system disease associated with the inflammation of multiple joints. RA is considered an autoimmune disorder and can range from slight pain to very severe pain. It can also present with nodules or deformities; mostly seen in the hands. Traditional medicine treatment for RA is usually anti-inflammatory drugs or treatment with COX-2 inhibitors. Conventional treatments as those just discussed can be very harmful to the patient. Because of these, alternative and complementary medicine treatments are often used to help control the condition. These treatments can include dietary modifications, nutritional supplements, botanicals and antibiotics. In RA, alternative treatments are often used in conjunction and as a compliment to traditional treatment modalities.
According to the US Department of Health, “People with RA may continue to have symptoms despite the use of conventional treatments or they may have difficulties with side effects of beneficial treatments. Some add alternative medicine to their treatment regimens in an effort to control pain and inflammation, improve physical function, or cope with the disease or side effects of the treatment. Treatment for RA combines a variety of approaches and is aimed at relieving pain, reducing joint swelling, slowing or preventing joint damage and improving physical function and wellbeing. Alternative treatments for RA can include dietary supplements, physical therapy, modified exercise programs and devices that ease physical stress on the joints (such as splints). People with RA are also encouraged to make lifestyle changes such as balancing activity with rest, eat a healthy diet and reducing emotional stress.”

The US Department of Health indicated that, “people who use alternative medicine for RA are likely to try dietary and herbal supplements. Fish oil contains high amounts of omega 3 fatty acids – substances the body needs in order to perform a number of important functions. The body can also use omega 3’s to make substances that reduce inflammation. Interest in the use of fish oil for RA stems from observations that groups of people who consumed large amounts of food rich in omega 3’s had lower rates of inflammatory diseases. Types of fish high in omega 3’s include herring, mackerel, salmon and tuna. Fish oil supplements are available in capsules or oils.

Evidence from clinical trials on RA is encouraging. Fish oil supplements may be useful in relieving tender joints and morning stiffness. Studies have also found that fish oil may reduce the need for NSAID’s and other conventional RA medicines. Some people have also questioned the safety of fish oil supplements because some species of fish can contain high levels of
mercury, pesticides or polychlorinated biphenyls (PCB’s). However, fish oil supplements do not appear to contain these substances. In high doses, fish oil may interact with certain medicines, including blood thinners and drugs used for high blood pressure. Products made from fish liver oil (for example, cod liver oil) can contain dangerously high amounts of vitamins A and D.”

Food allergies are also very common in autoimmune diseases and account for a large percentage of symptoms. The most common food allergens are grains, milk, nuts, beef and eggs. In a study of Alternative Treatments for RA there were 22 patients with a diagnosis of RA. These patients went on a diet that excluded the above referenced common food allergens. Of the 22 patients, 20 experienced an improvement in their symptoms after not eating any of the food items for a period of 10 days.

Another study had 27 patients participate in a partial fasting where they only consumed herbal teas, garlic, vegetable broth, potato and parsley, beet and carrot juice. There was a significant improvement in their symptomology.

Zinc and Copper were also found to have significant treatment benefits for RA because of its inhibiting inflammatory response. It is preferred to use Zink and Copper together to achieve anti-inflammatory results. The study also recommends that a patient will achieve better results if the Zinc and Copper are taken at different times of the day.

Another preferred treatment was Selenium because of its anti-inflammatory effects. Patients found that both pain and inflammation were reduced when they took 200 mcg of selenium daily. The study ran over a three month period.
Other herbal therapies for RA include:

- Ginger Root for its’ anti-inflammatory properties.
- Bromelain for reducing joint swelling.
- Feverfew which helps to reduce migraines and also helps with strength.
- Curcuma Longa which is a spice used in China and India as a tea for its anti-inflammatory properties.

The final treatment recommendation for RA was antibiotic therapy. As stated in the Alternative Medicine Review, “In the 1960’s Wyburn-Mason isolated a free living ameba, Naegleria, from the tissues of patients with RA and other autoimmune diseases. Administration of anti-amebic drug (such as metronidazole or clotrimazole) to patients with rheumatoid diseases resulted either in a cessation of disease activity or a temporary exacerbation of symptoms, with or without fever (Hrxeheimer reaction), followed by improvement or completes resolution of symptoms. Other investigators have been unable to isolate the organism described by Wyburn-Mason and antim ameobic therapy has remained controversial. However, a number of practitioners are convinced that metronidazole and related drugs are among the most effective treatments for RA.” 23
Meditation and Relaxation for Anxiety, Stress and Pain Management

According to Keely and Head, nearly 75% to 90% of visits to a primary care physician are related to stress and anxiety. Stress can be either acute (short term) or chronic (long term). Given the current economic conditions, more and more individuals are siting the economy as the reason for their stress. And furthermore, given the ongoing length of the weakened economy we are seeing individuals moving from more simple acute episodes to individuals experience stress for much longer terms. Long term stress can affect so many areas of the body from high blood pressure, to low energy levels, depression and cardiovascular conditions.

In 2008 a study conducted by Keely and Head showed the following:

<table>
<thead>
<tr>
<th>Stress Associated Behavior</th>
<th>Percent Reporting Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overeating and Eating Unhealthy Foods</td>
<td>48%</td>
</tr>
<tr>
<td>Skipping Meals</td>
<td>39%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>52%</td>
</tr>
<tr>
<td>Drink Alcohol to Manage Stress</td>
<td>18%</td>
</tr>
<tr>
<td>Smoke to Handle Stress</td>
<td>16%</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Not Sleeping at Night</td>
<td>52%</td>
</tr>
<tr>
<td>Feelings of Anger or Irritability</td>
<td>60%</td>
</tr>
</tbody>
</table>

According to Keely, “Stress and emotions associated with stress are important risk factors for cardiovascular disease. The Mayo Clinic reported that among individuals with existing coronary artery disease, psychological stress is the strongest risk factor predictor of future cardiac events, including myocardial infarction (MI) and cardiac death. In this study, the economic cost because of re-hospitalizations comparing individuals experiencing high and low stress was $9,504 (high stress) and $2,146 (low stress) respectively.

When researchers interviewed heart attack survivors they found the intensity and timing of a stressful emotion, like anger, dramatically increased their risk. The Normative Aging Study also provided compelling evidence that emotions associated with higher stress levels are significant risk factors for coronary heart disease (CHD) and MI:

- **Anger**: Compared with men reporting the lowest levels of anger, relative risk among men reporting the highest levels of anger is 3.15 (95 confidence interval) for total CHD. A dose response relation was found between level of anger and overall CHD risk.

- **Anxiety**: Compared with men reporting no symptoms of anxiety, men reporting two or more anxiety symptoms had elevated risks of fatal CHD and sudden death.
• Worry: Compared with men reporting the lowest levels of worry, men reporting the highest levels had multivariate adjusted relative risks of 2.41 for nonfatal MI and 1.48 for total CHD. A dose response relation was found between level of worry and both nonfatal MI and total CHD.\textsuperscript{10}

Nearly any type of stress (acute or chronic) will impact the immune system, however as the above behaviors move from an acute to a chronic phase, the individuals’ overall health declines and more severe illness tends to take effect.\textsuperscript{10} Keely concludes, “Stress is an unavoidable fact of everyday life and is associated with significant morbidity and even mortality. In addition to generalized anxiety and sleep disorders, it can result in significant physiological problems, including cardiovascular, gastrointestinal and immunological. In addition to lifestyle considerations – good diet, exercise, meditation, etc. – a number of nutrients and botanicals can provide support for stress related conditions. Such support requires a five pronged approach: 1 – support for the adrenals with adaptogenic botanicals, 2 – use of nutrients to normalize cortisol levels, 3 – prescription of anxiolytic herbs to handle sleep disorders and the symptoms of acute anxiety, 4 – balance neurotransmitters with amino acid precursors and 5 – provide necessary nutrient cofactors.”\textsuperscript{10}

One intervention to help reduce stress is to practice meditation and relaxation techniques. Meditation entails emptying the mind so your thoughts are not moving from one thing to the next. It can also be performed by focusing your mind on one thing; such as the letter “O”. By practicing meditation the mind begins to relax and the body (which is usually quite tense) will relax as well therefore re-aligning your mind and body. Meditation and relaxation have been found to have helped increase survival time for breast cancer patients as well as reducing both depression and anxiety.\textsuperscript{11}
Another study conducted by the Department of Health and Human Services indicated that meditation has also been shown to help Rheumatoid Arthritis patients by reducing their pain levels as well as the psychological symptoms associated with the disease. When a patient started their meditation early on in their disease state, it was found to have more beneficial effects.

The National center for Complementary and alternative medicine recently published results of their research concerning yoga’s importance in the treatment of back pain. They indicated, “Yoga is more effective than a self-care book, but not more effective than stretching classes, in improving function and reducing symptoms of chronic low-back pain. Results from previous smaller studies have suggested that yoga may have benefits for chronic low-back pain—a common condition lacking highly effective treatment options. Findings from the NCCAM-funded trial were published in the Archives of Internal Medicine and found the following:

Researchers randomly assigned 228 adults with chronic low-back pain to participate in 12 weekly classes of either vini-yoga (emphasizing postures, breathing exercises, and guided deep relaxation) or conventional stretching exercises, or to read a self-care book. The yoga and stretching groups were given handouts and CDs (yoga) or DVDs (stretching) and were asked to practice 20 minutes on days when classes were not scheduled. The self-care group received a book that provided information on the causes of back pain and advice on exercising, making lifestyle changes, and managing pain flare-ups. The participants’ symptoms were assessed via telephone interviews upon enrollment and at 6, 12, and 26 weeks after the start of the study.

At 12 weeks, participants in the yoga group had greater improvement of symptoms and function than those in the self-care group. At 26 weeks, the yoga group sustained greater improvement in
function over the self-care group. Yoga was not superior to conventional stretching exercises at any time point.

Based on these findings, the researchers suggested that the similar effects from both treatment approaches may indicate that yoga’s benefits for low-back pain are largely due to the muscle stretching and strengthening rather than yoga’s mental components. In addition, the researchers found that yoga was relatively safe. They concluded that physical activity that involves stretching, whether through yoga or more conventional exercises, provides moderate benefits for people with moderately impairing low-back pain.”

Another very interesting study released by the American Journal of Pain Management focused on Medicaid patients in Santa Barbara California who sought alternative medicine to decrease pain symptoms such as headaches and musculoskeletal pain. Santa Clara County estimated that their cost to treat a chronic pain patient ranged from $7,000 to $30,000 per patient. The majority of chronic pain patients seek out assistance from their primary care physician and they are often dissatisfied. This study took a group of patients that were costly and difficult to manage and enrolled them into a program that was entitled: “Awareness Through Movement.” The essence of the program was to aid the patient in correct posture, ways to sit without causing pain as well as incorporating a positive outlook into their life. Each of the patients finished the program which consisted of 20 weeks of intensive pain management. At the end of the program (all of the patients finished the course) to some extent, each patient experienced a reduction in pain complaints, improved mobility, reduced pharmaceutical use and an overall better impression of the health care system. Additionally, each of the patients reduced their visits to a health care professional as compared to the prior 12 month period (71.4% of patients saw a health care
practitioner over 20 times). In the year following the study, patient appointments decreased from an average of 20 per patient down to 10 to 15 appointments per patient. The study indicated the average per member per month cost prior to the treatment was approximately $141.00 PMPM. Following the treatment, the ‘per member per month fee’ decreased to $84.00 PMPM. This affords an average savings of $57.00 per member per month. If you take this figure and overlay it onto a 100,000 member population with the same disorders, there is an annual savings of $68,000,000.

Stress management and meditation can be conducted a number of ways from practicing individually to joining a group program. Both of which are quite cost effective compared to the traditional form of treatment that entails seeing a psychiatrist, therapist, blood testing and in many cases taking psychotropic medications. This treatment regimen can cost thousands of dollars per year, per patient as compared to meditation costing a few hundred dollars per individual, per year.

**Acupuncture and Manipulative Therapies**

Since acupuncture is becoming more mainstream in the United States and has shown some phenomenal outcomes as well as cost savings opportunities, a significant portion of this research is associated with acupuncture in particular. Given this, it is thought that a background and solid understanding of acupuncture will aid the readers understanding of this form of treatment.

Acupuncture is among the oldest healing practices in the world. As part of Traditional Chinese Medicine (TCM), acupuncture aims to restore and maintain health through the stimulation of specific points on the body. In the United States, acupuncture is practiced by thousands of
physicians and other practitioners for relief or prevention of pain and for various health conditions. In 2007, an estimated 3.1 million U.S. adults and 150,000 children received acupuncture treatments.⁶

Although the Chinese invented acupuncture, Western medicine views acupuncture much differently than traditional Chinese theory. In traditional Chinese medicine, health results from a harmonious balance between the complementary extremes (e.g., yin and yang) of the life force known as qi or chi. Qi is believed to flow through pathways, known as meridians, throughout the body. Acupuncture needles access these meridians to change energy flow and rebalance life forces.⁷

Western medicine, in contrast, relies on neuroscience to explain acupuncture. Many practitioners view the acupuncture points as places to stimulate nerves, muscles and connective tissue. This stimulation appears to boost the activity of the body's natural painkillers and increase blood flow.⁸

The U.S. Food and Drug Administration (FDA) regulates acupuncture needles for use by licensed practitioners, requiring that needles be sterile, nontoxic and labeled for single use. In light of the millions of people treated each year and the number of acupuncture needles used, relatively few complications from the use of acupuncture have been reported to the FDA.

The World Health Organization maintains that acupuncture can treat more than 40 conditions. These include many conditions that fall into the following categories:
Although there are numerous indications for acupuncture use, results from clinical studies show that acupuncture is especially effective in reducing pain and increasing function in musculoskeletal conditions.

In 2011 the National Center for Complementary and Alternative Medicine released research results indicating that massage therapy also helps significantly aid in back pain relief. They explained that, “Massage therapy helped reduce pain and improve function more rapidly than usual medical care in people with chronic low-back pain, according to researchers at Group Health Research Institute and the University of Washington in Seattle, the Oregon Health and Science University in Portland, and the University of Vermont in Burlington. The purpose of the NCCAM-funded trial—published in the Annals of Internal Medicine—was to compare the short-term and long-term effects of structural massage, relaxation massage, and usual care for people with chronic low-back pain. Back pain is an important health problem that affects millions of
Americans and is the most common medical condition for which people use complementary and alternative medicine practices, such as massage therapy.

The trial enrolled just over 400 Group Health patients who had low-back pain with no identified cause for at least 3 months. The participants were randomly assigned to one of three treatment groups: structural massage, relaxation massage, or usual care (standard medical care). Study personnel who assessed outcomes were blinded to treatment assignment. It was not possible to blind participants or massage therapists. Structural massage is intended to address musculoskeletal causes of back pain through myofascial, neuromuscular, and various soft-tissue techniques. Relaxation massage (similar to Swedish massage) is intended to promote a sense of relaxation through techniques, such as long strokes, kneading, deep circular movements, or vibration. Usual care for low-back pain may include medication, other forms of physical therapy, back exercises, and education.

Participants assigned to the massage groups received 1 hour of massage once a week for 10 weeks. The participant’s symptoms, medication use, and ability to perform daily functions were measured after completion of the 10 treatments, then at 6 months, and again after 1 year.

Significantly greater improvements in disability and decreased symptomology were seen at 10 weeks in both massage groups compared to those who received usual care. For example, at 10 weeks massage recipients were better able to perform daily activities, were more active, spent fewer days in bed, and used less anti-inflammatory medication than those who received usual care. Some of these benefits persisted at 6 months—when pain and function across all three groups had improved about evenly.
The researchers point out that the mechanisms by which massage helped in this study remain unclear—benefits could come from specific local effects on the body, or from non-specific effects such as a relaxing environment, being touched, or increased body awareness. The study provides additional evidence that, as the researchers conclude, massage therapy can be a helpful adjunct in treating chronic low-back pain. While these results are promising, additional research is needed to understand better why some patients improve and others do not, and to help define optimal and cost-effective approaches to integration of massage into care of patients with chronic low-back pain.”

Due to the fact the Western medical community is continually seeking additional studies to substantiate the effectiveness of alternative and complementary medicine, the following is a sampling of additional clinical study results. These studies were chosen in part because they were performed in the United States and published by note-worthy sources such as the National Institutes of Health and the US Department of Health, to name but a few. As we read through these studies we should think about the cost reductions the US health care system could realize should our health insurance companies begin covering alternative therapies and should our medical community begin integrating alternative and complementary medicine.

- For patients suffering from **chronic low-back pain**, acupuncture has proven to help reduce pain. Researchers from the University Of Maryland School Of Medicine and the Peninsula Medical School completed a Meta-analysis of 22 studies to analyze the effectiveness of acupuncture treatment of chronic low-back pain. The studies prove that acupuncture relieved chronic lower back pain in both the short term (three weeks post treatment) and in the long term.  

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• A landmark study exhibited the fact that acupuncture provides pain relief and improves function for people with osteoarthritis of the knee and serves as an effective complement to standard Western based care. The study, the largest phase III clinical trial of acupuncture for knee osteoarthritis, was funded by the National Center for Complementary and alternative medicine and the National Institute of Arthritis and Musculoskeletal and Skin Diseases, both components of the National Institutes of Health.
• In the Western United States according to the Disease Control Priority Project, it was found that treating lower back pain with chiropractic care proved to have better outcomes than bed rest and physical therapy.11
• Acupuncture is also a recommended treatment for Rheumatoid Arthritis (RA) according to a study released by the US Department of Health and Human Services, acupuncture has been used and studied for a variety of pain conditions and may be useful in the treatment of RA given that additional studies are performed to confirm current positive outcomes of treatment.23

Earlier we discussed that neck pain was one of the primary reasons someone would seek out an alternative medicine provider. Additionally, according to the 2005 Medical Expense Distribution report 6.3% (approximately $157 Billion) of overall medical spend in the United States was caused by back and neck pain. Of that percentage 2.0% (approximately $50 Billion) were surgical related expenses and 4.3% were non-surgical expenses. Taking that one step further if we look only at overall orthopedic spend we find that back and neck pain constitute over 40% of all orthopedic related expenses.
The above data reflects that approximately 1,400 patients sought out treatment from a surgeon ($35,000 per patient surgery). Had 75% of those patients sought out a chiropractor, the total treatment cost would have only been $4,200,000 (represents 10,500 patients). That alone is a $43.8 Billion savings per year. Refer to chart below:
A recent study published through the National Center for Complementary and Alternative Medicine shows that acupuncture appears to help with tension headaches. The study indicates that, “Headaches affect millions of Americans. According to the National Institute of Neurological Disorders and Stroke, about 45 million Americans suffer from chronic headaches. Tension-type headaches (or tension headaches)—characterized by pain or discomfort from tense or constricted muscles in the head, neck, or scalp—are one of the most common forms of headaches. In most patients, tension headaches occur infrequently and can be treated with over-the-counter pain medicine. However, some people experience these headaches several days per month, or even daily, and may benefit from other treatments.”

A recent review published by the Cochrane Collaboration looked at the literature on acupuncture for tension headaches and analyzed the findings from 11 randomized trials with 2,317 participants.

The results of the literature review found that of the 11 studies:

- Two showed that patients who received acupuncture in addition to standard care had fewer headaches.

- Five found slightly better effects in patients who received true acupuncture compared with sham acupuncture.

- Three of the four trials that compared acupuncture with physiotherapy, massage, or relaxation had methodological shortcomings. Their findings were difficult to interpret, but acupuncture appeared to have slightly better results than these other therapies.
Overall, the researchers concluded that acupuncture could be a valuable option for patients suffering from frequent tension headaches.

The National Center for Complementary and alternative medicine released a study in 2005 indicating that acupuncture has shown to improve functioning in osteoarthritic knees. They specified that, “Acupuncture provides pain relief and improves function for people with osteoarthritis of the knee and serves as an effective addition to standard care, according to a landmark study published in the *Annals of Internal Medicine*. The study, funded in part by NCAM Medicine and the National Institute of Arthritis and Musculoskeletal and Skin Diseases, was conducted across three sites and is the **longest and largest clinical trial of acupuncture to date**.

The researchers enrolled 570 patients with osteoarthritis of the knee, aged 50 and older, to receive one of three treatments: acupuncture, simulated acupuncture (procedures that mimic acupuncture, sometimes also referred to as "placebo" or "sham"), or participation in a control group. The control group followed the Arthritis Foundation's self-help course for managing their condition over 12 weeks. Participants in the actual and simulated acupuncture groups received 23 treatment sessions over 26 weeks. All study participants continued to receive standard medical care from their primary physicians, including anti-inflammatory medications and opioid pain relievers.

At the start of the study, each participant's pain and knee function were assessed using standard arthritis research survey instruments and measurement tools; their progress was assessed at 4, 8, 14, and 26 weeks. By week 8, participants receiving actual acupuncture showed a significant increase in function and by week 14 a significant decrease in pain, compared with the simulated
and control groups. These results sustained through week 26. Overall, participants in the acupuncture group had a **40 percent decrease in pain** and a nearly 40 percent improvement in function compared to their assessments at the start of the study. Findings from this study began to shed more light on acupuncture's possible mechanisms and potential benefits, especially in treating painful conditions such as arthritis.”36

BMJ performed a study to evaluate the cost effectiveness of alternative medicine in the treatment of **neck pain**. They had 183 patients participate in the trial and alongside ran a randomized controlled trial. They were testing for recovery, the level of pain the patient was experiencing; to what extent the pain was disabling the patient and the patients’ quality of life. The study also measured the costs associated for treatment of each patient.

The study used a variety of interventions to measure success, which were as follows:

- Manual therapy which they described as muscular mobilization and this was performed by chiropractors as well as with other disciplines.

- Physiotherapy which they defined as individualized exercise therapy. This also included massage and manual traction.

- General practitioner care where they were seen by a general medical doctor.

In the study there were 183 patients who received manual therapy for their treatment, 60 patients that received physiotherapy and 59 who received care from their general medical doctor. The most effective treatment in this case proved to be the **manual therapy** where 1 in 3 patients
made a complete recovery from their neck pain within 7 weeks. The general practitioner and physiotherapy groups showed a slight recovery within 52 weeks.

The manual therapy group which consisted of chiropractic care was also shown to have the lowest treatment cost of all of the treatment modalities associated with the study. All of the above referenced interventions did have higher treatment costs upon the onset of treatment, however declined as treatment and intensity decreased.

Cost Reductions Realized with Alternative Medicine

To achieve the delicate balance of providing individuals’ with effective care options while controlling costs, in the United States, we are beginning to see a few health plans contracting with alternative medicine networks. The alternative medicine approach seeks to relieve symptoms or treat illnesses through non-invasive and non-pharmaceutical techniques. This entails not using surgical interventions or the use of pharmaceuticals. Rather this discipline focuses on using alternative and complimentary modalities to treat the cause of an ailment, thereby eliminating the associated symptoms.

The Archives of Internal Medicine in 2004 indicated the cost of back pain alone in the United States is well over $100 billion per year and is the second leading cause of hospitalizations. Back pain is also one of the most chronic conditions that we deal with in the US. Alternative medicine treatment modalities as well as Western medicine treatment options will now be compared.
A 2011 study out of Germany indicated the following cost reductions were realized when using alternative and complementary medicine, “Two examples of alternative medicine treatments that have become (more) accepted by conventional medicine are St. John’s Wort and acupuncture for specific indications. St. John’s Wort has been used in the US for 90 years and has become part of the conventional guidelines for the treatment of depression. Hopton and McPherson expressed on the basis of a systematic review of pooled data from meta-analyses that acupuncture is more than a placebo for commonly occurring chronic pain conditions. In addition, in her thesis, van den Berg recently demonstrated positive effects of acupuncture on obstetric health problems (breech presentation). Servan-Schreiber presents a series of recent examples of the transition from alternative medicine to conventional medicine in depression treatment. Some of the methods described by Servan-Schreiber have been practiced for centuries and cannot be patented, and are available at low costs. These findings underscore the fact that methods that are considered alternative medicine today could be effective and have a large cost-saving potential.

Anthroposophic medicine, acupuncture, and homeopathy are three main streams of complimentary and alternative medicine practices. One of the core features of alternative medicine is its orientation on preventative and curative health promotion as an additional approach to a more conventional fighting disease approach. Anthroposophic medicine is an integrative diagnosis and therapy concept, developed from 1921 onwards and practiced today in over 60 countries. It combines mainstream scientific medicine with Rudolf Steiner’s anthroposophy. Anthroposophic medicine considers a human being as a whole entity—body, mind, soul, and individuality. It aims to stimulate the self-healing forces of the body, restoring the balance of bodily functions, and strengthening the immune system, rather than primarily relieve the symptoms of disease. Specific anthroposophic approaches include anthroposophic
medicinal products, massage therapy, art and music therapy, and speech and movement therapies. Homeopathy is a form of alternative medicine, first proposed by the German physician Samuel Hahnemann in 1796, that attempts to treat patients with heavily diluted substances. These substances that cause certain symptoms in healthy individuals are given as the treatment for patients exhibiting similar symptoms. The appropriate homeopathic medicinal product aims to stimulate the body’s inherent forces of self-recovery. Acupuncture is one of the main forms of treatment in Traditional Chinese Medicine (TCM). It involves the use of sharp, thin needles that are inserted in the body at very specific points. This process is believed to adjust and alter the body’s energy flow into healthier patterns and is used to treat a wide variety of illnesses and health conditions. In their review, Herman et al. reports that some studies indicate that alternative medicine therapies may be considered cost-effective compared with usual care for various conditions: acupuncture for migraine, manual therapy for neck pain, spa therapy for Parkinson’s, self-administered stress management for cancer patients undergoing chemotherapy, preoperative and postoperative oral nutritional suppletion for lower gastrointestinal tract surgery, bio-feedback for patients with ‘functional’ disorders (e.g., irritable bowel syndrome), and guided imagery, relaxation therapy, and potassium-rich diet for cardiac patients. A systematic review of randomized clinical trials on the use of natural health products shows evidence of cost-effectiveness in relation to postoperative surgery. Studer and Busato demonstrated that general practitioners who have completed certified additional training in alternative medicine after obtaining their conventional medical degree(GP-CAMs) compared with general practitioners who have not (GPs) have significantly lower costs per doctor (29%) per year, although GP-CAM’s take more time per patient.
The costs of patients with a GP-alternative medicine are 7% lower compared with conventional GPs, which amounts to 140 Euros (based on the conversion rate on 12/28/2011 which would equate to $181.18 US dollars) per patient annually. The lower total cost results from lower hospital and pharmaceutical costs. Patients with a GP-alternative medicine have slightly higher costs for paramedic care, but this difference is small. When the costs are compared by age group, in absolute terms, the differences are particularly large for patients aged 75 and above with an anthroposophic GP-alternative medicine (1,000 Euros on an annual basis or based on conversion rates of 12/28/2011 this equates to $1294 US dollars). The analyses also demonstrated large demographic differences between patients with a conventional GP versus patients with GP-CAMs. GP-CAMs have a larger fraction of female patients than conventional GPs and fewer patients from disadvantaged neighborhoods. Clearly, the cost differences reported in are partly due to differences in the demographic composition of the various groups of patients and therefore difficult to interpret. After controlling for these demographic differences by means of regression analyses, we find that for patients in the age group 25–49 with a GP-alternative medicine with acupuncture, total costs are 66 Euro (or $85.41) lower per quarter. Secondly, for patients aged 75 and above with an anthroposophic GP-CAM, total costs are about 400 Euros (or $517.65) lower per quarter. The magnitude of this difference is large, about one-third lower.”

The Internal Medicine group conducted a 4 year study of 700,000 members with and without chiropractic coverage. They indicated that, “Back pain accounts for more than $100 million annual US health care costs and is the second leading cause of physician visits and hospitalizations. A study they conducted ascertains the effect of systematic access to chiropractic care on the overall neuro-musculoskeletal specific consumption of health care
resources within large managed care systems.” 17 This 4 year study conducted between 1997 and 2001 used claims data from health plans located in California. Data was comprised of both in-patient and out-patient claims data for a primary diagnosis of back pain. The cost items included in this study included:

- Outpatient services
- Radiographs
- MRI’s
- Spine surgical procedures
- In-patient hospitalizations

Their study indicated that for patients using chiropractic care for their treatment the average cost of treatment in California was $289 per episode with an average treatment cost of $522 per patient. Compare this figure to a study conducted by Reden and Anders18 in 2007 which indicated that a patient who sees an Orthopedic Surgeon for the treatment of their back pain will a treatment cost of over $1,200 as compared to a PM&R physician with a treatment cost over $1,400 and if a member sees their primary care physician their treatment cost is a little over $600 per patient. The Reden and Anders study also indicated the average treatment cost for a member to see a chiropractor (network provider of a large health plan) for the treatment of their back pain was only $400 per patient. Comparing the treatment cost of a PM&R physician of $1,400 per
patient to that of a network chiropractor for every 100,000 back pain patients seeking treatment by a network chiropractor, there is nearly $100 million in savings.

A study published in 2009 out of the National Health Statistics Reports indicated, “Complementary and alternative medicine (CAM) comprises a diverse set of healing philosophies, therapies, and products. Over the last decade, the U.S. public has shown a steady and substantial use of complementary and alternative medicine, with 2007 estimates placing overall prevalence of use at 38.3% of adults (83 million persons) and 11.8% of children (8.5 million children under age 18 years). The most recent national estimates of out-of-pocket expenditures for alternative medicine therapies are now more than a decade old. In their 1997 telephone survey, Eisenberg et al contacted a nationally representative sample of 2,055 individuals aged 18 years or older, with a weighted response rate of 60%. At that time, the total out-of-pocket expenditure for alternative medicine use in adults was estimated at $27.0 billion per year, with $12.2 billion of the total going toward payment of alternative medicine professionals such as acupuncturists, chiropractors, and massage therapists.

In 2007, adults in the United States spent $33.9 billion out of pocket on visits to alternative medicine practitioners and purchases of alternative medicine products, classes, and materials. Nearly two-thirds of the total out-of-pocket costs that adults spent on alternative medicine were for self-care purchases of alternative medicine products, classes, and materials during the past 12 months ($22.0 billion) compared with about one-third spent on practitioner visits ($11.9 billion). A total of 44% of all out-of-pocket costs for alternative medicine was spent on the purchase of non-vitamin, non-mineral, natural products.
In 2007, 38.1 million adults made an estimated 354.2 million visits to alternative medicine practitioners, at an estimated out-of-pocket cost of $11.9 billion dollars. About three-quarters of both visits to alternative medicine practitioners and total out-of-pocket costs spent on alternative medicine practitioners during the past 12 months were associated with:

Total costs: $33.9 billion

- Self-care costs $22.0 billion (64.8%)
- Practitioner costs $11.9 billion (35.2%)
- Non-vitamin, non-mineral, natural products.

On average, adults in the United States spent $121.92 per person for visits to alternative medicine providers and paid $29.37 out of pocket per visit. Some of the highest per-person, out-of-pocket costs are associated with visits to practitioners of naturopathy and chelation therapy, while one of the lowest per-person, out-of-pocket costs is associated with visits to practitioners of chiropractic or osteopathic manipulation therapy.

For most types of alternative medicine therapies, the majority of adults spent less than $50 per visit to a practitioner. However, at least 20% of persons visiting practitioners of acupuncture, homeopathy, naturopathy, massage, and hypnosis therapy paid $75 or more per visit.

Non-vitamin, non-mineral, natural products ($14.8 billion) accounted for the majority of out-of-pocket dollars spent on alternative medicine self-care purchases. Adults who made alternative
medicine self-care purchases spent a total of $4.1 billion out of pocket on yoga, tai chi, or qigong classes (Table 4).

NVNMNP $14.8 billion (43.7%):

- Yoga, tai chi, qigong classes $4.1 billion (12.0%)
- Homeopathic medicine $2.9 billion (8.7%)
- Relaxation techniques $0.2 billion (0.6%)

Adults spent $2.9 billion out of pocket on the purchase of homeopathic medicine in 2007.

Across categories of self-care alternative medicine products, most adults who purchased the products spent less than $30 per purchase. However, about 5% of individuals who bought non-vitamin, non-mineral, natural products or who purchased self-help materials to learn relaxation techniques spent more than $120 per purchase.”

The out costs associated with seeing an alternative medicine practitioner as opposed to a general medical doctor is nearly 1/3 of the cost.

The Archives of Internal Medicine explain that there are, “several studies that have produced preliminary evidence demonstrating the cost effectiveness of chiropractic care compared with the medical management. A series of studies by Stano and colleagues and one study by Dean Schmids reports cost benefits of chiropractic care compared with conventional medical treatment for neuromuscular conditions in a review of current literature (mostly workers compensation studies). For instance, a cost comparison study, in 1996 which adjusted for demographic,
insurance and condition variables, revealed higher total (30% to 217% higher) and outpatient (27% to 94% higher) mean payments for medical treatment relative to chiropractic treatment. These later studies support the applicability of findings to managed health care setting’s by including large sample sizes and examining existing fee for service health claims data.”

He continues that, “in contrast, a study by Carey et al found significantly higher health care costs for patients with chiropractic or orthopedic care for back pain (secondary to a greater number of visits) than for patients who received their back pain care from a primary care physician at a health maintenance organization. Patients were interviewed over the telephone for up to 24 weeks to assess use of health care services and outcomes of care. Patients who received care from doctors of chiropractic care (DC’s) paid more per episode than patients who received care from their primary care physician. However they were not specifically adjusts for the variables of comorbidities, severity, and types of diagnosis.

It is apparent further research much be performed that takes into account all variables within the cost associated with back pain care being given by a chiropractor as opposed to a general family doctor. Additionally, the costs are not only associated with the office visit fees, however the costs must also include other variables associated with the cost of treatment such as MRI’s, CT Scans, X-rays, emergency room visits, unnecessary hospitalizations, etc. which will equate to the true costs of treatment. The Reden and Anders study took the total episodic treatment cost which indicated the treatment cost associated with seeing a PM&R doctor compared to a network chiropractor was $1,000 higher per patient.

A study published in 2008 fiscal year the National Center for Complementary and Alternative Medicine confirms that naturopathic care is cost effective for low back pain treatment. They
indicate that, “Researchers who studied treatment alternatives for low-back pain in a group of 70 warehouse workers found that a naturopathic approach incorporating a range of treatment options—acupuncture, exercise and dietary advice, relaxation training, and a back-care booklet—was more cost-effective than the employer’s usual patient education program. Both the workers and the employer benefited from the naturopathic approach, which was associated with better health-related quality of life, less absenteeism, and lower costs for other treatments and pain medication. Overall, naturopathic care resulted in a net savings (reduced "societal cost") of $1,212 per participant.

In a recent NCCAM-funded study, Patricia Herman, N.D., and colleagues recruited workers ages 18 to 65 who had experienced low-back pain for at least 6 weeks in duration. The workers were randomly assigned to receive naturopathic care or patient education visits over a 3-month period. The 30-minute, onsite visits were conducted semi-weekly (naturopathic) or biweekly (patient education).

The researchers conclude that naturopathic care proved to be more cost-effective than a patient education program in treating low-back pain. They also recommend further studies of the economic impact of naturopathic medicine, particularly to address the limitations of their evaluation.”

Research published by Reden and Anders seems to be more comprehensive and factual than the examples provided above, however I thought it prudent to relay other analysis of costs that differ from the Reden and Anders research studies. So, to determine the effective cost savings for a 100,000 patients with back conditions, I took the average treatment cost of the PMR doctor
which was $1,400.00, the Orthopedic Surgeon which was $1,200.00 and the primary care physician cost of $600.00 giving us an average treatment cost of $1,066.66 per patient. Comparing the $1,066.66 cost of treatment to the $400.00 cost of treatment by a network chiropractor we see a **per patient savings of nearly $700.00 per episode**. Per episode is defined as treating the condition and having no additional effects of the same injury for a minimum of 90 days following the last day of treatment. If you then take the $700.00 per patient and multiply by 100,000 patients experiencing back pain the United States this would have an **annual savings of $70 Million dollars**. Imagine if we were to take just back pain and chiropractic care as our cost savings measures to the over 1 Million people that currently experience back pain, we could make significant dent in the United States health care deficit.

Of course there are many other studies. However, many of the studies trend relatively closely to the model discussed above. For example, according to Lindall, “Acupuncture for musculoskeletal conditions cost roughly 60% less than the cost of referral to a Western medicine (medical doctor) practitioner.” 12 In the United Kingdom, Jain found in his study that homeopathic drugs were substantially cheaper than conventional pharmaceutical drugs.13 According to the American Journal of Managed Care the cost for ayurveda medicine was approximately 50% less per person than traditional Western medicine practices of the same type.14 For the management of pain in the United States, the Journal of Neurosurgery found costs for treatment were 24% less than traditional pain management procedures and were found to have better results.15
To provide another savings example, if we have a group of 200,000 patients with back pain and 100,000 seek out alternative medicine for their condition and the second group seeks a traditional medicine practitioner, the costs are nearly triple for those that elect to see a medical doctor.

Averaging the treatment costs of a PMR physician, orthopedic surgeon and a primary care physician the average cost to treat back pain is $1,066. Then averaging the treatment costs published by Reden and Anders of $400 along with the $522 costs published by the Archives of Internal Medicine the average alternative care treatment cost of back pain is approximately $461.00 per episode, per patient. The treatment cost for 100,000 back pain patients seeing a medical doctor is over $106 million, whereas the treatment costs when seeing an alternative medicine provider is half of the costs coming in at only $46 million. See chart below.

*Treatment Costs Based on 100,000 Members*
Conclusion and Findings

Certain conditions are associated with higher treatment costs. Back pain is that primary condition and is the second most common reason for patients seeking out medical care; the first being the common cold. Back pain is also the fifth most common cause of hospitalizations and back surgery is the third most common type of surgery performed. So, much of the associated medical costs in the United States can be directly tied back to back pain.

Back pain is the number one health care spend for health insurance companies due to the high costs of testing, (MRI, CT Scan, etc.) along with surgeries and pain control procedures. In 2009 $2.5 trillion dollars was spent on health care. Of that amount $157 billion was associated with back and neck pain, however this figure does not include the out of pocket expenses which were not covered by the health insurance companies. In addition to back pain, this document also focused on the treatment and costs associated with neck pain as well as arthritis; as those were the three primary conditions revealed in the Rockley research study.

Let’s start with back pain. Back pain alone costs the United States over $150 billion dollars per year. By using chiropractic care as the first provider seen for back pain patients, this one step alone could save the United States substantially. There are over 30 million Americans suffering from low back pain. If half of those patients were to seek out alternative medicine, there could be nearly a $7 billion savings per year in our health care spend. Now that’s savings, however our health insurance companies need to begin paying for complementary and alternative medicine in order to realize such savings.
In the Rockley controlled study group the primary group that sought out alternative medicine treatments were those suffering from back pain; which equated to 47% of the entire test group. This aligned well with other study references referred to in this document. 75% of patients experiencing back pain sought out alternative medicine for their treatment and the group primarily sought out a chiropractor for the treatment of their back pain. 45% of respondents with back pain indicated their health plans covered the cost of their treatment, while the remaining 55% paid out of pocket for their care costs. Of the overall control group only 16% of patients were referred to an alternative medicine practitioner by their medical doctor. On average those individuals with back pain had 11 treatment regimens in order to resolve their condition. The Rockley control group also indicated that for the treatment of back pain their preferred treatment modality was one of (in order of relevance): chiropractic, physical therapy, acupuncture, massage, homeopathy and other.

Following back pain patients in the Rockley control group, were those suffering from neck pain. 13% of the respondents indicated they had sought treatment for their neck pain. This group did not seek out a chiropractor, even though back and neck related pain is closely related, rather they preferred a massage therapist. 75% of the individuals that were treated for neck pain were not reimbursed by their health insurance company; however 40% were referred to a massage therapist by their medical doctor. 60% of this group indicated their neck pain was resolved within 10 treatment sessions.

The next group to seek out alternative medicine treatments was those patients suffering from arthritis. We did not specifically point out if the participant suffered from Osteoarthritis or Rheumatoid Arthritis. 62% of this group sought treatment from both a chiropractor to relieve
their joint pain and stiffness along with a combination of homeopathic solutions. Diet was also a preferred treatment modality. Since neither form of arthritis is treatable, each participant of this study continues to seek out both chiropractic care and homeopathic/diet treatments to control their arthritis pain. Unfortunately, of the respondents in the Rockley control group, the participants’ health insurance did not cover the chiropractic or homeopathic treatments.

In all, less than 10% of the participants in the Rockley study had their treatment covered by their health insurance even though the majority of participants were pain free following their alternative medicine treatment regimens. This too, is a serious problem with the state of the US health delivery system. Care that is working and treating the patient is for the most part not being covered by our health insurance plans.

Throughout this document there have been numerous studies that demonstrate the benefits of using alternative medicine and integrative medicine both on a successful treatment basis as well as a financial basis. But, before we can realize the savings of such an approach, we need harmony and consensus from our medical community. It begins with the realization that in the US we are over utilizing health care with unnecessary surgeries, tests and procedures. Our doctors are afraid of being sued, so they perform many tests to stave away law suits. That’s not how we should practice medicine in the US. We are over utilizing our emergency rooms as a one stop shop for all health related issues, thereby escalating our premiums even higher each year. The insurance companies in the US are looking for ways to decrease their expenses, while simultaneously making their members and practitioners content; a dichotomy in itself.

In order to reduce our health care expenditures, we (the US health care system) need to integrate alternative medicine into our system and have our insurance companies cover and pay for
services. I noted earlier in the document that the way we are accessing the health care system for back pain can cost an insurance company over $35,000 per patient, however should the primary care physician refer directly to a chiropractor (as a first treatment approach) the cost would be under $500 to treat a patient. The savings potential is tremendous, not to mention the increased consumer satisfaction with their health plan. Health plans are fighting to keep every health plan member they have. I see this as a prime opportunity!

We have learned how China, India and Europe use alternative medicine (integrative) and their health care system ranks well above the United States in both outcomes and quality of care. We have also learned that individuals in the United States are paying out of pocket for alternative medicine procedures and products. Currently, as patients we are rewarded (i.e. the insurance company pays our claims) when we go to the emergency room, or have a surgery or take high cost prescription drugs. We are then penalized (i.e. the insurance company does not pay our claims) when we seek out massage therapy or a chiropractor for our back pain. Through the numerous research studies presented in this document (US and throughout the world) we’ve experienced the beneficial effects of alternative and conservative therapy measures and have seen how they have helped so many people eliminate their pain and discomfort. The fact that we have not completely accepted and incorporated alternative medicine into the US health care system shows where we are failing as a nation; this is one of the main reasons our health care system in the US is broken. We are not taking advantage of medical knowledge (alternative medicine) that is over 1,000 years old and can be of great importance in today’s society.

I believe I’ve proven in this document that through a dedicated network of practitioners (that are practicing based on evidence medicine and proper protocols) that outcomes are better, patients
are happier and health care costs are dramatically lower. On average we’ve seen that a chiropractor that is not following evidence based measures has treatment costs that are 40% higher than those that are adhering to the guidelines. Additionally, cardiac patients that were experiencing high levels of stress had costs that were $9,504 per highly stressed patient as compared to $2,146 for cardiac patients that had their stress levels under control. We can take the stress example and overlay it onto any disease or state of dis-ease and come up with higher costs if the patient does not have their stress levels under control. Simply controlling stress levels will lower our overall medical spend in the United States.

Here in the United States alternative medicine is not yet main-stream, so physicians are rarely referring to alternative providers nor are they recommending the use of herbs over pharmaceuticals. Alternative medicine can benefit both individuals and the US health care system. For individuals, alternative medicine networks play an important role in the choice of treatment(s) that someone seeks in the treatment of their condition. For health care insurance companies, alternative medicine networks can provide access to lower-cost alternative medicine practices that can reduce the over utilization of benefits which today lead to annual premium cost increases.

We’ve also read in this document that acupuncture has been proven to prevent, reduce or manage the pain and other symptoms of multiple medical conditions. Acupuncture can help improve health and wellness of individuals, which can lead to productivity increases for our employers and improved morale throughout the workplace. Combined, these factors contribute to an environment that can help recruit and retain top talent within the workplace, reduce our health care spend in the United States and increase jobs for US workers.
As we slowly begin the incorporation of alternative medicine into the US health care system, we must do so carefully as to attain success and not overutilization. Just like we see today in our current health care environment, overutilization of services, tests and medical procedures must be warranted and practiced under evidence based measures. We must also look at the many positive integration potentials of Eastern and Western medicine to build confidence and trust in the various practitioners’ as they begin working together. But most importantly, our health insurers in the US must begin paying for alternative medicine as a covered health care benefit.

**About the Author**

Sheila Rockley was born and raised in Hamburg, Germany. She has had an interest in alternative medicine since early childhood and has experienced the successes of an integrative health system. With nearly 20 years health care experience, in early 2000 she began consulting independently with health care organizations and has recently worked as the Vice President of Physical Health Solutions for a large health insurance company. She is passionate in her dedication to decrease health care expenditures by incorporating appropriate alternative and conservative medicine offerings into the mainstream medical community.
Definitions
As defined by Webster Dictionary

**Acupuncture**
Function: noun
: an originally Chinese practice of inserting fine needles through the skin at specific points especially to cure disease or relieve pain (as in surgery)

**Arthritis**
Function: noun
Inflected Form(s): plural ar·thri·des\-ˈthrit-ə-, dēz\-
: inflammation of joints due to infectious, metabolic, or constitutional causes; also: a specific arthritic condition (as gouty arthritis or psoriatic arthritis)

**Alternative Medicine**
Function: noun
: any of various systems of healing or treating disease (as homeopathy, chiropractic, naturopathy, Ayurveda, or faith healing) that are not included in the traditional curricula taught in medical schools of the United States and Britain

**Chiropractic**
Function: noun
: a system of therapy which holds that disease results from a lack of normal nerve function and which employs manipulation and specific adjustment of body structures (as the spinal column)

**Homeopathy**
Function: noun
Inflected Form(s): plural ho·me·op·a·thies
: a system of medical practice that treats a disease especially by the administration of minute doses of a remedy that would in healthy persons produce symptoms similar to those of the disease
Massage Therapy
Function: noun
: manipulation of tissues (as by rubbing, stroking, kneading, or tapping) with the hand or an instrument especially for therapeutic purposes

Musculoskeletal
Function: adjective
: of, relating to, or involving both musculature and skeleton <musculoskeletal defects> <the musculoskeletal organization of the arm>

Naturopathy
Function: noun
Inflected Form(s): pluralna·tu·rop·a·thies
: a system of treatment of disease that avoids drugs and surgery and emphasizes the use of natural agents (as air, water, and herbs) and physical means (as tissue manipulation and electrotherapy)

Physical Therapy
Function: noun
: therapy for the preservation, enhancement, or restoration of movement and physical function impaired or threatened by disability, injury, or disease that utilizes therapeutic exercise, physical modalities (as massage and electrotherapy), assistive devices, and patient education and training—called also physiotherapy


6 National Center for Complementary and alternative medicine.

7 Mayo Foundation for Medical Education and Research.

8 Mayo Foundation for Medical Education and Research.


10 Kathleen A. Head, ND and Gregory S. Kelly, ND. 2009 Nutrients and Botanicals for Treatment of Stress: Adrenal Fatigue, Neurotransmitter Imbalance, Anxiety and Restless Sleep. 114 - 139


17 Archives of Internal Medicine. Vol 164 No. 18. 2004

18 Reden and Anders. 2007


20 Alternative medicine Review. Vol 4, Number 5. 1999


22 BMJ. Volume 326. 04-26-2003: 1-6

23 alternative medicine Review. Vol 4, Number 6. 1999


26 Haile T. Debas, Ramanan Laxminarayan and Stephen Straus. Complimentary and Alternative Medicine. 1281 - 1291

27 Alternative Medicine in Select Countries – Potential for Medical Tourism. 2011

28 Peter Kooreman and Erik Baars. Patients whose GP knows complementary medicine tend to have lower costs and live longer. May 2011: 1-18

29 National Health Statistics Reports. Number 18. July 30, 2009

30 BMJ. Volume 321. 04-26-2000: 1133-1135


32 American Chiropractic Association. New Study shows chiropractic is cost-effective in treating chronic back pain. November 16, 2005

33 National Center for Complementary and Alternative Medicine. For low back pain, yoga more effective than self care but not stretching. 2011