# NUMSS

## **Doctor of Osteopathy (DO)**

# THESIS TOPIC: BENEFITS OF OSTEOPATHIC MANUAL THERAPY ON RECREATIONAL GOLFERS IN SINGAPORE

**Cindy Tan** 

Submission date: 25 Dec 2021

### Contents

Origins of Osteopathy	2
Osteopathic Principles	2
The Main Osteopathic Techniques	3
History Taking	4
Observation	5
Osteopathic examination	7
Physical restrictions (passive) versus Functional control (active)	
Golf	
Most Common Golf Injuries	9
Background of Recreational Golfers in Singapore	11
Stress among Recreational Golfers	11
Additional Understanding How The Body Moves As A Whole	13
Osteopathy and Golf Injuries (Treatment)	15
As a golfer I should consider osteopathy	15
Conclusion	15
References	16

#### **Origins of Osteopathy**

Andrew Taylor also, the father of osteopathy and osteopathic medicine, coined the word "osteopathy" in 1874. The word comes from the Greek words for bone (osteon) and pain (suffering) (pathos). Dr. Still studied anatomy to learn the secrets of nature's design because he was interested in developing nature's own ability to heal (Rosen, 2018). Dr. Still's first realization after his studies was the relationship between structure and function. Hence, Dr. Still believed that by correcting the problems that occurs in body's structure, the body's capability to function and to heal itself could be improved by use of osteopathic manipulative techniques ("Manual Osteopath", 2018).

Osteopathy focuses on the musculoskeletal system, as the name implies (osteo means bone and path means disease). Osteopathy is a Diagnosis and Therapy term that originated in the United States with Doctor Andrew Taylor Still. He was the one who coined the word "osteopathy." His key idea was that the nerve and blood vessel systems are responsible for all body functions of supply and cleansing, and that recovery is only possible if the body's self-healing abilities are strengthened. His theory is that the body is a working machine, and any malfunction will have negative consequences on other body cycles. For example, the musculoskeletal, lymphatic, or muscular systems.

The aim is to find some blockades and to release them to help the body heal itself. There are three major branches of osteopathy:

- Soft tissues, muscles, joints = Parietal Osteopathy
- Inner Organs and their soft tissues = Visceral Osteopathy
- "Rhythms" of the Organism = Cranio-sacral Osteopathy

#### **Osteopathic Principles**

The osteopathic philosophy embraces the idea of the unity of structure and function through four main principles ("Manual Osteopath", 2018).

- The body is a unit, and the person represents a combination of body, mind, and spirit.
- The body is capable of self-regulation, self-healing, and health maintenance.
- Structure and function are reciprocally interrelated.

• Rational treatment is based on an understanding of these principles: body unity, self-regulation, and the interrelationship between structure and function.

All parts of a body are essential; if any part of the body is not functioning well, it is detrimental to the rest of the body. All of this is to say that when the body's ability to adapt is disrupted, self-maintenance collapses. (Pourgol, 2014) Nobody knows exactly how the body works and how its systems interact with one another. In fact, when the balance between healthy and ill cells is changed in favor of the latter, our body ages and becomes ill. Stopping aging requires reversing this unfavorable equilibrium. Theoretically, if we create proper circumstances for that process, our cells are able to completely repair themselves within a seven-year period." (Tombak, PhD, 2005) As a result, by choosing osteopathy as a means of treating diseases and restoring balance to our bodies, we will extend our lives with quality. Osteopaths deal with all of the human body's organs and processes, making it one of the most effective treatments.

#### The Main Osteopathic Techniques

- General Osteopathic Treatment = Strain, Counter Strain, positional release
- Muscle Energy Technique MET = Post Isometric Relaxation
- Fascia Release Techniques
- HVCA Techniques = High Velocity, low amplitude
- Visceral Techniques E.g., gliding of inner organs
- Cranio-sacral therapy = Manual Osteopathy in the head region (developed by a pupil of Still; W.G. Sutherland)

Osteopathy shares many of the same goals as traditional medicine, but it focuses mostly on the relationship between the organs and the musculoskeletal system as well as on treating the entire person rather than just the illness. Pain is the main reason clients seek musculoskeletal treatment. Pain is a symptom, not a disease by itself. It is crucial to figure out what's causing the pain first. Cancer, brain or spinal cord disease, and a variety of other conditions may be to blame for this symptom. When it is determined that the pain is coming from the musculoskeletal system, treatment that includes manipulation is appropriate. "An unconscious mind can record the accident in two-thousands of a second. When such an event occurs, there are visible wounds that we can feel and treat, but there is also the fear, whose itinerary from the brain to the organ remains a secret to us. Trauma and psychological aggression create a "memory imprints itself deep down inside the body. Its first target will be our "weak link", our most sensitive spot or vulnerable organ. It can be the back, the liver, the intestine." (Barral, 2007)

Osteopathic joint mobilizations are a collection of techniques that help restore joint movement and mobility. Joint mobilization aids in restoring movement to injured joints, reduces stiffness, reduces joint swelling, reduced localized joint adhesions. Joint mobilization may also relieve pressure on ligaments, tendons, nerves, blood vessels and alleviate disc pain. Joint mobilization has been shown to have the following clinical effects:

- Temporary relief of musculoskeletal pain.
- Shortened time to recover from acute back sprains (Rand).
- Temporary increase in passive range of motion (ROM).
- Physiological effects upon the central nervous system.
- No alteration of the position of the sacroiliac joint.

Common side effects of spinal manipulative therapy (SMT) are characterized as mild to moderate and may include local discomfort, headache, tiredness, or radiating discomfort.

#### **History Taking**

The osteopathic evaluation of the client begins with a history consultation. The role of the practitioner is to determine the exact nature of complaint by duration, pain location, severity, and related symptoms. The practitioner will ask the relevant and required questions during the consultation to obtain a full history. To understand the client better, their lifestyle choices, hobbies, habits, and posture matters as well. Most of the time, something they are doing in their daily life is causing the tension and a good practitioner has to find ways to understand and relate back to their assessment. One of the guiding principles of osteopathy is that we consider the body as a unit. What this means is that we do not look at any one part of the body in isolation. For example, a client may present with low back pain; this may be the result of tight hip flexors

or an immobile mid spine. When examining a golfer, we always look at the whole kinetic chain involved in the golf swing.

An example of history taking form can be seen in the following:

PRACTITIONER Date
Name: Birth//
Email:()
Occupation/Work
Reason for Visit (major complain)
Pain location
When did your symptoms appear?
Is this condition getting worse, constant or come and go?
Pain referral: numbness, tingling, discomfort
Rate the severity of your pain 1 (least pain) to 10 (severe pain)
Type of pain:       □       Sharp       □       Dull       □       Achy       □       Shooting       □       Burning       □       Cramps         □       Stiffness       □       Swelling       □       Slight       □       Acute       □       Chronic       □       Muscle       □       Nerve
How often do you have this pain?
Activities or movements that are painful to perform Sitting Standing Walking Bending Lying Down Exercise Every day chart
Relieve factors?
Does it interfere with your <ul> <li>Work</li> <li>Sleep</li> <li>Daily Routine</li> <li> </li></ul> recreation         exercise
Work Activity:   Sitting  Standing  Light Labour  Heavy Labour  Mixed  repeating movement if yes which kind
How long being working there
What treatment have you received for your condition?
Surgery Physio Therapy Osteopathy Medications
Chiropractic      Massage Therapy / How many
Exercise:   None  3/week  Moderate  Daily  Heavy
Which kind exercise? $\Box$ gym $\Box$ jogging $\Box$ yoga $\Box$ Other
Drinks water/day: □ High Stress Level Reason
<b>X-ray</b> o yes o no o Arthritis o Osteoporosiso Asthma o Constipation/Diarrhea o Headaches/Migraines o Insomnia
Past History $\square$ Cancer $\ \square$ Heart disease $\square$ diabetes $\square$ High Blood pressure

#### Observation

Another aspect of the osteopathic assessment is visual examination of the client. This starts from the moment that the practitioner sees the client. What type of gait he has when he enters the room? What

posture they are in while standing or sitting on the chair? Do they walk with a limp, if so, how pronounced is it? Do they tend to lean to one side? Once the practitioner is in the room, he/she is still observing their movements. Do they look tired, nervous, frustrated or something else? It should be noted clients can adapt their gait according to the situation, so observing is preferably done from the sitting room to examination. Walking gait assessment is a good tool to check the movement. Therefore, by going through various visual examination, this can be a good start to gain the client's trust:

- Overall posture- any obvious abnormality
- Symmetry
- Flat feet
- Any noticeable rotational issues
- Any lateral bending

On a deeper aspect before and during the visual examination, we could look at the characteristic and profile of the client. From the clients' first point of contact when they make an appointment, you will be able to feel what kind of temperament the client is. Is the client passive-aggressive, easily frustrated, impatient, and or an over-thinker? Do they speak very fast or someone who is always rushing against time? As we slowly gain the clients' trust, we will need to check whether they have any past traumas. The brain is one of the most important organs in the body, and the most complex organ in the universe, as it controls the body and stores information within it. It receives impulses from nerves which are located throughout the body. The brain "is involved in everything you do. How you think, how you feel, how you act, and how well you get along with other people has to do with the moment-by-moment functioning of your brain" (D.Amen, 2005). Our brain and organs have a connection through the nervous system and hormones. When intense stressful situations occur, our "brain passes the excess stress on to the organs, whose fibrous matter immediately records the emotion." (Barral, 2007) The brain is the conductor of emotions. It memorizes everything. Our organs speak with our brain all the time. The brain records the emotions and sends them into the organs. In reverse, the organs' cells record the emotions and send the messages back to the brain which ends in emotional imbalance. At the moment of the stress the brain may not differentiate what is physical and what is psychological, that gives us explanation that the organ can be the source of behavioral or emotional problem. Moreover, our sympathetic nervous system has a reaction faster than the brain and,

consequently, "we have an instant reaction of an organ (stomach spasm, gallbladder contraction, etc.)." (Barral, 2007)

#### **Osteopathic examination**

Following a visual examination of the client, it is very important to feel the body itself and where exactly the pain is located. This is what we call "palpation". Osteopathic examination and palpation are an important part of the physical examination. There are many physical tests, or "orthopedic tests", that are used by clinicians in physical therapy, orthopedic, chiropractors, and manual osteopath practitioners during a physical examination. The sense of touch is just as important in this examination as the sense of sight is. Palpation may be used to identify sore areas and to qualify pain felt by clients. In summary, palpation assists the practitioner in locating any tightness, tenderness, spasm, or pain referral by the client. The assessment assists in the differential diagnosis of orthopedic conditions and injuries. There are many such clinical orthopedic tests that target the various regions of the body and many tissue types including connective tissue, muscles, nerves, and bone. We are slowly piecing the bits and pieces of information together like a jigsaw puzzle. The following is an example of orthopedic test that can be used for golfers:



Golfer's Elbow test- this orthopedic test is used for testing for presence of a medial epicondylalgia.



#### Physical restrictions (passive) versus Functional control (active)

To do so, the golfer will be asked to sit on the care couch while the practitioner rotate their torso with his/her hands. If this movement is satisfactory, the client will be asked to stand and turn their trunk to both sides while keeping their pelvis still. A golfer with strong physical movement is often unable to actively rotate through their full range of motion under their own muscle control. This is referred to as a lack of functional control. If required, exercises will be prescribed to retrain the golfer's ability to actively move through their full range. If a golfer has poor physical movement this must be addressed before functional movement can be rectified. Good functional activation of the trunk muscles facilitates better control during deceleration of the swing. Excessive forces are transferred into joints and ligaments if these muscles fail to regulate and absorb deceleration of movement, rendering them more susceptible to injury. During the stance process, some golfers find it difficult to resist hunching their backs. During both the back and forward swings, this slumped movement prevents complete spine rotation. The golfer will learn to keep the spine in a balanced forward/backward position with the right signals, increasing range of motion and strength while lowering the risk of injury.

#### Golf

Golf is a popular recreational activity that combines physical activity with social interaction. However, as with any sports or activities, injury is possible. Many golf-related injuries occur in the upper limb, but there has been little research into the possible mechanisms of these injuries. Golf is a recreational activity that can be played by all ages, genders, and skill levels. The golf swing is a dynamic movement with the potential to cause injury to the golfer. Various injuries occur in different parts of the swing and frequently involve soft tissue injuries. Understanding the mechanics of the golf swing will aid in gaining a better understanding of appropriate knowledge of the etiology of the injury, and, as a result, better treatment. This

is especially true of upper limb golf-related injuries as the arms move through a wide range of motion (ROM) during the swing, connecting the fast-moving club to the power-generating torso. The golf swing is a complex body that involves a wide range of motion in the upper limb, which serves as a link between the golf club and the body. Many muscle injuries occur when the club collides with the ball. The health professional can better understand why these accidents occur by understanding how the body moves and the muscle movement performed during the golf swing.

The golf swing is a highly complex movement pattern that necessitates coordination of all joints and muscles in the body, as well as timing and balance. Small differences in movement are compounded by the length of the golf club, resulting in major shifts in golf-head trajectory. As a result, even minor flaws in movement patterns can cause significant performance issues. If one part of the body is not moving optimally, it can impair performance and put you at risk of injury. Consider a bicycle wheel; often when a spoke becomes loose, it places additional stress on other spokes in the wheel, which can cause them to break. If the mechanic removes the spoke but does not ensure that all the spokes are equally tensioned, the spokes can snap again in no time.

#### **Most Common Golf Injuries**

What are the most common injuries suffered by golfers? How do you recognize them, what are the available treatments, and what are some ways you can minimize their impact:

#### Hand or Wrist Injuries:

- Trigger finger is a condition in which one or more fingers lock up. When the flexor tendon sheath, through which the finger tendons pass, is inhibited, the disorder occurs.
- DeQuervain's Tendinitis is caused by inflammation in the tendons that regulate the thumb and induces discomfort in the wrist at the base of the thumb.
- Some golfers may experience such as Carpal Tunnel Syndrome, tendonitis, or fracture of a carpal bone in the hand. Carpal tunnel syndrome can be excruciatingly painful and even incapacitating at its worst. Osteopathy works to release tension in the muscles, ligaments, and joints around the

affected areas and further up the limb to aid blood flow, drainage, and freedom of movement, taking the stress off the affected area.

- Wrist impaction syndrome occurs when the bones of the wrist collide due to excessive or repeated movements.
- ECU Tendon Subluxation occurs as the wrist tendon's sheath slides in and out of its groove.
- The hamate bone is a small bone on the pinky side of the wrist that can be fractured. The hook, a slight prominence on the hamate, protrudes into the hand. During the swing, most golfers grip their clubs so that the butt-end of the club is right up against the hook of the hamate.

#### **Elbow or Shoulder Injuries:**

- Tennis elbow is characterized by inflammation, soreness, or discomfort on the outside of the upper arm around the elbow. Inflammation, soreness, or discomfort on the inside of the upper arm around the elbow is known as golfer's elbow. A painful condition, where the muscles of the forearm pull at their attachment on the inside of the elbow, creating inflammation. Funnily it is also quite common for golfers to experience Tennis Elbow, where the pain is on the outside of the elbow. Any restriction in the movement of the joints of the wrist, elbow, shoulder, or spine, will alter the effectiveness of the forearm muscles and can leave client predisposed to developing this condition. Treatment would involve addressing all these areas, to aid repair and prevent recurrence.
- The shoulder is an extremely complex joint, and either shoulder can be affected in swinging the club, leading to tendonitis, tears, and joint inflammation or instability. As in elbow injuries described above, if adjacent areas are not functioning as they should, i.e., stiffness in the spine, neck or elbow, a higher demand will be placed on the shoulder, leaving it prone to injury. Any treatment should look at all these areas, not only where client's pain is.

#### **Back, Hip or Knee Injuries:**

• The golf swing (not to mention the hunched-over putting posture many of us adopt) places a lot of strain on the golfer's back, so it is no wonder that back pain is the most common issue. Back pain in golfers can be caused by a variety of factors, including mechanical or disc-related issues, arthritis, or a stress fracture, to name a few. The flexed (forward) position combined with strong rotational

forces that occur during the golf swing can be a bad combination for the lower back. If there is any underlying tightness it not only limits the movement available, but leaves client more susceptible to damage, such as joint sprain or disc injuries. Osteopathic treatment can help to ensure the pelvis, hips and spine are free, mobile, and working together to provide an easy, painless movement.

- If, during the swing, client's weight is positioned slightly incorrectly this can transfer into the limb she/he is weight bearing on. This can lead to a strain in the hip capsule or the gluteal (buttock) muscles. If the rotation makes it all the way to the knee, she/he is at risk of damaging the meniscus, ligaments, or cartilage. Osteopaths are qualified to perform orthopedic testing to determine which structures may be involved. After a full examination is carried out it can then be decided whether treatment is appropriate or whether client need to be referred for further assessment.
- Golfers' knee pain can be caused by a variety of underlying conditions, including a torn meniscus, osteoarthritis (arthritis of the knee), or kneecap pain (chondromalacia).

#### **Background of Recreational Golfers in Singapore**

The game is played by about 36,000 here, or less than 1 per cent of the population. (The Straits Times Singapore, Jan 8, 2017) The 2018 Golf Facility Survey found there are presently 83% of golf members being male and 55% aged 55 years or older. Not surprising as land is scarce in Singapore and club membership are not affordable. Singapore's active golfer age mix is comparable to that of other western countries, presenting a significantly older majority population than that of the wider population. For the Singaporean golfer, there is a large social value to the golf experience, with the physical environment, level of socialization and general activity undertaken being of greater importance than the status that may come from being a golf club member. Approximately 70% were introduced to the game via a friend or work colleague. Only 9% started independently. The core golfer spends approximately \$1,700 per year on golf equipment. (Singapore Golf Industry Report 2018)

#### **Stress among Recreational Golfers**

We also need to consider with the above average salary, stress can be prevalent in the recreational golfers. There are instances where it becomes more than a social event or fitness activity, it could be an escape from their daily lifestyle, especially for golfers who persist to play golf despite having pain. As manual osteopathic practitioners, we will need to consider if their clients' stress amount is high, and whether they are mainly desk bound as their lifestyle will create a ripple effect on their chronic pain and continue to

disrupt on both end of the spectrums. Our bodies constantly communicate with us. When it is out of control, it communicates through its muscles, and through its signals, it alerts us of potential future illnesses. Since all negative feelings pass through the brain first, and then the knowledge travels everywhere it can, how we respond in our lives is extremely significant.

The body then retains two types of trauma memory: direct-physical, which triggers an involuntary response, and indirect-emotional. For example, if a person is frustrated and angry at work, the body will cause stomach discomfort, and the "brain will receive a mixture of psychological and physical information." 2007 (Barral) Separating the emotional and physical causes of the symptoms will be challenging, and "a vicious cycle will be created." 2007 (Barral) In this case, osteopaths may use Visceral Manipulation to relieve discomfort around the stomach, reducing the amount of harmful information that reaches the brain and thereby breaking the vicious cycle. Via manual touch, manual osteopaths can detect any stress restrictions or damaged physical elements inside the body. Osteopaths who have received extensive training are able to pinpoint the region of the body that has the most emotional tension. As a defensive mechanism against external attack, our skin, the largest organ in the body, contains a wealth of knowledge. According to D. Hamilton, PhD, "childhood trauma is linked with a high number of stress-related illnesses in adulthood. It can cause a flood of stress hormones that kill cells in an area of the brain that stores memories (the hippocampus), actually dissolving them". (Hamilton, 2010)

The human body functions as a feedback machine. Any traumatic event is registered by our brain and preserved in our bodies, both psychologically and physically. It directly affects our organs because they are in motion all of the time inside the body (for example, the lungs, liver, spleen, pancreas, and intestines move with the diaphragm; the pelvic moves with the diaphragm as well but more relies on leg activity), but when we have an injury, stress, illness, or even pregnancy with birth, our organs lose movement. 2007 (Barral) The movement of our organs and our negative feelings trigger visceral reactions in our bodies, which then affect our wellbeing.

In these cases, an osteopath can increase an organ's mobility by applying gentle and precise pressure and movement to the viscera. An osteopath examines the whole body for organs that aren't moving properly and explains why. Osteopaths increase organ mobility by breaking the negative emotional cycle that affects

the organ's healthy behaviors as a result of stress, trauma, disease, or emotional imbalance. Trauma and psychological violence leave an indelible mark on the body, creating a "memory." Our "weak link," our most vulnerable spot or organ, will be its first target. It may be your back, your liver, or your intestine." 2007 (Barral) Osteopaths are trained to recognize the connection between emotions and internal diseases. We feel nervous and aggressive, and we suffer from depression, if the liver, which is the main organ reflecting our inner being, has problems. "The brain and the liver enjoy exchanging energy. When one of them is low on energy, the other takes it." 2007 (Barral) A swollen liver will make you feel down in the dumps. A individual with this type of liver will experience constant inner struggle and conflict as a result of their victim actions. This is something only a manual osteopath can help with. The liver benefits greatly from visceral manipulations, and the benefits are felt almost instantly. The stomach is associated with social life and self-awareness, the spleen with anxiety and a sense of risk, and the intestines with tension. The function of the intestines must be restored by an osteopath because it helps us to release accumulated negativity from the body.

Osteopathic manual therapy is an arts and science. How you are able to put it across to the client so that they do not become defensive and at the same time willing to share all these information is not built overnight. It comes from the practitioner heart that they want the best for their client and moving on to work on other equally important areas even though the golfer might have just come in with an elbow pain. How the practitioner is able to relate back to the findings, information gathered and getting the client in tune with their body would the best possible thing a practitioner could help the client. It is always almost never about the symptom that they came in with.

#### Aims of osteopathic treatment for golfers:

- Prevent injury
- Recover from existing injury
- Optimize performance

### Additional Understanding How The Body Moves As A Whole The neck (cervical spine)

During the golf swing, the golfer needs good neck rotation and stability to achieve good eye-to-ball contact. Excessive curves in the neck result from a chin that protrudes too far. This can restrict mobility and put you at risk for neck pain. Individual joint restrictions will obstruct the overall mobility of the neck.

#### The wrist

The lead wrist, which involves good ulnar and radial deviation, or side-to-side movement towards the wrist and thumb, is a common site of injury in golfers. To keep these movements from being repetitive, the muscles in this region must be strong and regulated.

#### The upper and mid back (thoracic spine)

The golf swing relies heavily on trunk rotation. The majority of the trunk's overall movement is regulated by the thoracic spine (the area of the spine where the ribs are attached). Restrictions here can cause undue pressure on the lower back and neck, which can shorten the overall swing's duration and reduce its effectiveness. Other joints can become more mobile to compensate for the lack of movement. The swing's fluidity can be affected by this imbalance between hypomobile and hypermobile joints. As a result, shot accuracy and consistency can suffer as a result.

#### The lower back (lumbar spine)

This is one of the most common places for golfers to get hurt. The lower back is extended at the end of the golf swing. To avoid lower back hypertension, which can result in disk and facet joint injuries, good control and strength of the abdominal muscles are needed.

#### The hips

A good follow through of the swing requires good hip rotation, especially good internal rotation of the lead hip. In reality, good internal rotation of the lead hip is critical for golfers who keep the lead foot planted during the follow through. Restriction in this region will put additional strains and pressures on the lower back and lead, knee, putting them at risk of injury.

#### **Osteopathy and Golf Injuries (Treatment)**

The manual osteopath practitioner will now make clinical decisions and formulate a treatment plan after compiling all of the subjective and objective data. This can include techniques like mobilization, muscle energy technique (MET), soft tissue therapy (STT), visceral techniques, cranial sacral techniques, and others. Osteopathic manual therapy should address all body systems and tissues to determine the source of pain and dysfunction. This is a discreet, easy, and gentle care choice for people of all ages and stages. Osteopathy can help a client's swing by relieving pain and improving their swing.

#### As a golfer I should consider osteopathy

- Wish to optimize biomechanical movement and functional control to improve my game

- Wish to prevent injury
- Am currently injury free but am prone to repeated injuries
- Wish to recover from injury

#### Conclusion

The osteopath will take a thorough medical background from the client, including vital details about their lifestyle and diet. The osteopath may want to know when the symptoms first appeared and whether there are any variables that influence them. Osteopaths use their hands to treat patients, using a range of methods to improve joint strength, reduce muscle spasm, and reduce inflammation. This improves function, speeds up and improves recovery, and reduces pain. Osteopathic therapy considers the whole body, whether it is functioning properly or whether certain cogs are churning too much for those who are not churning at all. A variety of stretching, mobilizing, and manipulative methods are used to treat the condition, including articulation, joint mobilization, and gentle joint manipulation, muscle energy techniques, soft tissue massage, traction, and the use of ultrasound when necessary. The aim of treatment is to get to the root of the client's problem so they can get out on the course and play their best! Taking proactive actions to keep their body in the tip top condition will allow better enjoyment of the game, develop meaningful relationships, a body free from pain and efficiency in everything you do.

In conclusion, the human body acts as a single unit. Muscles and surrounding fascia react to physical injuries, emotional distress, and habitual patterns of thinking and behavior by contacting and communicating with the nervous system. As previously stated, our emotional state can influence our physical health and vice versa, and our bodies are constantly giving us signals about internal imbalances. Osteopathy is a drug-free, non-invasive manual therapy that aids the body's natural ability to heal itself and encourages it to return to a healthy state. We will fully enjoy our lives by paying careful attention to the signals our bodies send us by using osteopathic manual therapy.

#### References

- 1. Amen, D. (2005). Making a good brain great: The Amen Clinic program for achieving and sustaining optimal mental performance. New York: Harmony Books;
- 2. Barral, J. (2007). Understanding the messages of your body: How to interpret physical and emotional signals to achieve optimal health. Berkeley, Calif.: North Atlantic Books;
- DiGiovanna, E., Schiowitz, S., & Dowling, D. (2005). An osteopathic approach to diagnosis and treatment (3rd ed.). Philadelphia, Pennsylvania: Lippincott Williams and Wilkins.;
- 4. Han FK, The rise and fall of golf in Singapore (2017). Retrieved from https://www.straitstimes.com/singapore/the-rise-and-fall-of-golf-in-singapore;
- Hooper TL, Denton J, McGalliard MK, Brismée JM, Sizer PS Jr (2010). Thoracic outlet syndrome: a controversial clinical condition. Part 1: anatomy, and clinical examination/diagnosis. J Man Manip Ther. Jun; 18(2):74-83;
- 6. Manual Osteopath. (2018). Retrieved from https://www.manualosteopath.com;
- 7. Pourgal, S. (2014, 12 15). Clinical and Ethical Management. Lecture 56-57. Toronto, Ont, Can.;
- 8. R. Hirschmann (2019). Distribution of active golfers Singapore 2018 by age group. https://www.statista.com/statistics/1034905/distribution-of-active-golfers-by-age-singapore/;
- 9. Rosen, D. (2018). History of Osteopathy. Retrieved from https://osteodoc.com/history/;
- Singapore Golf Industry Report (2018). Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjGw9L CjuLwAhUuILcAHd96DvgQFjAAegQIAxAD&url=http%3A%2F%2Fwww.sga.org.sg%2Fwp-

content % 2 Fuploads % 2 F2018 % 2 F09 % 2 FS in gap or e-Golf-Industry-Report-FINAL-content % 2 Fuploads % 2 F2018 % 2 F09 % 2 FS in gap or e-Golf-Industry-Report-FINAL-content % 2 Fuploads % 2 F2018 % 2 F09 % 2 FS in gap or e-Golf-Industry-Report-FINAL-content % 2 Fuploads % 2 F09 % 2 FS in gap or e-Golf-Industry-Report-FINAL-content % 2 Fuploads % 2 F09 % 2 FS in gap or e-Golf-Industry-Report-FINAL-content % 2 Fuploads % 2 F09 % 2 FS in gap or e-Golf-Industry-Report-FINAL-content % 2 Fuploads % 2 FO Fuploads % 2 FO Fuploads % 2 FS in gap or e-Golf-Industry-Report-FINAL-content % 2 FS in gap or e-Golf-Report-FINAL-content % 2 FS in gap or e-Golf-Report-FINAL-content % 2 FS in gap or e-Golf-Report-FINAL-content % 2 FS in gap or e-Golf-Re

v2.pdf&usg=AOvVaw02Q4WKpg5fjYDaN3xvGDDe;

- 11. Still, A. (1897). Autobiography of Andrew T. Still, with a history of the discovery and development of the science of osteopathy ... New York: A. T. Still.;
- Still AT. Autobiography of AT Still. American Academy of Osteopathy. Indianapolis, IN. 1981. p 229. (orig. 1908);
- Tombak, M., & Madejski, J. (2005). Can we live 150 years?: Your body maintenance handbook (2nd English ed.). Blaine, Wa.: Healthy Life Press;
- 14. Ward R, Spratka S. Glossary of osteopathic terminology. JAOA. Vol 80. No 8. pp 552-566.