



UNIVERSITY OF PELOPONNESE  
SCHOOL OF HUMAN MOVEMENT AND QUALITY OF LIFE  
DEPARTMENT OF SPORT MANAGEMENT

PHYSIOTHERAPY IN THE ANCIENT OLYMPICS

By Andy Anastasios Pappas

MASTER's Dissertation submitted to the professorial body for the partial fulfillment of obligations for the awarding of a post-graduate title in the Postgraduate Programme, "Olympic Studies, Olympic Education, Organization and Management of Olympic Events" of the University of the Peloponnese.

Sparta 2022

Approved by the Professor body:

1st Supervisor: Antonios K. Travlos, Prof. UNIVERSITY OF PELOPONNESE, Greece

---

2nd Supervisor: Paul Christensen, Prof. DARTMOUTH COLLEGE, U.S.A

---

3rd Supervisor: Evangelos Albanidis, Prof. DEMOCRITUS UNIVERSITY OF THRACE,  
Greece

***Copyright © Andy Anastasios Pappas, 2022***

**All rights reserved.**

The copying, storage and forwarding of the present work either complete or in part, for commercial profit, is forbidden. The copying, storage and forwarding for non profit-making, educational or research purposes is allowed under the condition that the source of this information must be mentioned and the present stipulations are adhered to. Requests concerning the use of this work for profit-making purposes must be addressed to the author.

The views and conclusions expressed in the present work are those of the writer and should not be interpreted as representing the official views of the Department of Sports Organization and Management of the University of the Peloponnese.

## ABSTRACT

Andy A. Pappas: Physiotherapy in the Ancient Olympics (Under the supervision of  
Professor Antonios K. Travlos)

The aim of this study was to demonstrate by conducting a literature review that physiotherapy was practiced in the Ancient Olympics, albeit under a different professional name and that these ancient professionals assisted the athletes prior to their competition and also played a part in the on-field support of the injured athletes, both at the ancient training grounds known as the *gymnasia* and at Olympia itself, at the Ancient Olympic Games (AOG). During the review of the literature designated by the demarcation lines set out as being the beginning of the AOG in 776BC and ends in 394AD as the last games held in Olympia (IOC, 2022), we find ancient predecessors to the physiotherapists today, known as the *aliptes*, *triveas*, and *iatroliptes*. These therapists initially may have started out as slave labour, but they quickly were acknowledged as being an integral part of the successful Olympic victor's team. The study also highlights certain artifacts from vases, inscriptions and other ancient references to these professions and to the use of the *strigil*. A tool seen in ancient times as a piece of equipment carried in the athletes "kit bag", or hanging in the rooms of the *gymnasia* or in the hands of the *aliptes*, *triveas*, and *iatroliptes*. It was not just a mundane action to remove the *gloios* (mixture of sweat, oil and dust), and the *strigil* was not just a piece of bent bronze, but on the contrary, this special tool was probably a direct predecessor to the Muscle Massage Scraper (MMS) tool used today by modern day physiotherapists and the scraping effect that the athlete received from the action of removing the *gloios*, brought with it a form of muscle relaxation, *lactic* acid removal and scar tissue realignment, now seen in modern physiotherapy as a part of the physiological benefits associated with the technique known as Instrument Assisted Soft Tissue Massage (IASTM). A comparison of these tools and techniques used by the modern day physiotherapist will be shown to be very similar, if not the same tools (*origin*) and techniques also used by their ancient predecessors, albeit under different names. The use of photographic artifacts from the past, compared to modern day physiotherapy photographs support the argument that physiotherapy did exist in the ancient Olympics albeit under

different names such as the *aliptes*, *triveas*, and *iatroliptes* and not only the techniques of massage used back at the AOG were techniques used by physiotherapists today, but the MMS tool is the modern day *strigil* used in the Ancient Olympics.

**Keywords:** physiotherapy, Ancient Olympics, *aliptes*, *triveas*, *iatroliptes*, *strigil*, MMS tool, IASTM technique.

## **ACKNOWLEDGEMENTS**

After attending the Sydney 2000 Summer Olympics as a medical volunteer, my interest for the Olympics grew, later in 2008 I ended up establishing a physiotherapy clinic in Sparta, next to the giant bronze statue of King Leonidas of Ancient Sparta.

This move to Greece for an Australian born Greek immigrant child was a return to his roots after spending over 40 years in Sydney, where I was a university trained physiotherapy professional running many clinics, and in the later part of my career together with my business partner we created one of the first allied health franchises known as “*the Back Dr*”, in Australia.

It was here in Sparta while surfing the internet that I stumbled on the IOA’s Master’s Programme for Olympic Studies and although the trials and tribulations of starting and running a clinic in what was a totally foreign country for me, not knowing the systems and bureaucratic red tape that came with opening such a venture, I was always deferring my decision to apply for acceptance to this course.

In the year of 2019-2020 during the Covid lockdown periods I applied for the IOA’s master’s program and it was with much joy that I was accepted by the IOA and the University of Peloponnese to attempt to complete the master’s programme. It was here that I was able to establish an internet community of classmates that have over the last two years become friends that have helped me re-connect with my academic goals and even though we physically have not met each other I feel that this course will connect us for the rest of our lives. Truly, thank you to all my colleagues!

My deepest thanks to the Greek Olympic Solidarity Committee of the International Olympic Committee for the scholarship that helped fund my master’s course, thank you and I look forward to sharing my Olympic knowledge gained from this course with the people of Greece and around the world.

An online course is not easy at anytime, but especially during the pandemic of Covid-19 it made the delivery of the course content by the university professors even more trying, with tech problems, power failures and of course internet blackouts. To all the professors and

staff from the IOA I would like to say thank you and especially to some professors from around the globe that delivered their live presentations in the early hours of the morning, to you a very Big Thank You!

A great result for a sports person depends on the support team behind them. So to for me, as a student in the field of the Olympics I was privileged to have some of the top professors from around the globe as my supervisory committee (team). To Prof. Paul Christensen, who was the first lecturer for our course and what a great first impression! Thank you for your knowledge and support throughout my thesis project. To Prof. Evangelos Albanidis thank you for the many emails sent to me with information that helped bring the project to fruition.

To my head supervising Prof. Antonios K. Travlos he motivated me throughout the master's course and was a catalyst in me taking on this topic for my thesis, without his guidance and mentoring this "*student athlete*" may never have started this mini marathon. Thank you my friend!

Thank you to my parents Georgios and Angeliki, who made the six week sea voyage to the land down under (Australia) back in the 1950's with no language , no education, so that I can gain an education and be the son that I hope have made them proud. Thank you for all your support throughout my life, love you both so much!

To my three children George, Sophia and Manolis, I hope that any time away from you over the years is forgiven and that I did it so that you all can have a better life wherever you may be or go in this world. Thanks guys!

To my wife Georgia, my shinning light when I needed it most, thanks for staying the distance, and I look forward to growing old together, whilst we watch the beautiful Greek sunsets!

## TABLE OF CONTENTS

ABSTRACT .....	ii
ACKNOWLEDGEMENTS .....	iv
TABLE OF CONTENTS .....	vii
LIST OF TABLES .....	viii
LIST OF FIGURES .....	ix
CHAPTER I: INTRODUCTION .....	1
1.1 Physiotherapy at the Ancient Olympics, did it exist?.....	1
1.2 Purpose of the Study .....	6
1.3 Definition of Physiotherapy.....	7
1.4 Role of the Physiotherapist.....	9
1.5 History of Modern Physiotherapy.....	14
1.6 An Example of Modern Day Physiotherapy-in Australia.....	18
1.7 Ancient Olympics Definition and Demarcation .....	20
CHAPTER II: LITERATURE REVIEW .....	39
2.1 Ancient Professions- <i>Triveas</i> , <i>Aliptes</i> , and <i>Iatroliptes</i> .....	39
2.2 Tools and Techniques Used by <i>Alipite</i> , <i>Triveas</i> , and <i>Iatroliptes</i> .....	44
CHAPTER III: DISCUSSION – CONCLUSIONS .....	55
3.1 Discussion .....	55
3.2 Conclusions.....	57
3.3 Future research.....	58
REFERENCES .....	60

## **LIST OF TABLES**

<b>Table</b>	<b>Title</b>	<b>Page</b>
1	Ancient Olympic Events in chronological order.	30

## LIST OF FIGURES

Figure	Title	Page
1	Bronze scraper (strigil), the handle cast as a girl-athlete, who holds a strigil in her hand.	2
2	Stainless Steel Muscle Massage Scraping Tool.	2
3	Statue of Apoxyomenos.	4
4	NHS booklet review, Moving Forward campaign	10
5	Modern Physiotherapy Kit Bag	12
6	IASTM being performed on a patients forearm, using an MMS tool.	13
7	Massage to the shoulder, shown in a relief at the museum in Cyrene, Libya, thought to be 2000 years old	15
8	Peter Henry Ling, also known as Per Henrik Ling, by Kcanfield.	16
9	Mr. Frederick Teepo Hall.	18
10	Close-up, of officials overseeing athletic competitions.	22
11	A 19th century CE illustration of what the 5th century BCE, statue of Zeus at Olympia, one of the Seven Wonders of the World, may have looked like.	24
12	Ancient Stadium, Olympia, Greece.	27
13	Olympic Stadium, OAKA, 2014, Athens.	27
14	<i>Boxer at Rest</i> (left) and Photo.B.detail (right), Greek, Hellenistic period, late 4th–2nd century B.C., bronze with copper inlays	32
15	Stone bases of the Zanes of Olympia. These statues of Zeus were funded from fines from offending athletes in the Games. (4th century BCE)	34
16	Bronze Statuette of Athletic Spartan Girl, 520-500BC, found in Greece	35
17	Scene showing different activities taking place in a gymnasium, with athletes, trainers and healers in attendance.	41
18	Euphronius (about 510 B.C.): Care and Treatment of Athletes.	42

19	Patient using Cybex Exercise Equipment under supervision of the physiotherapist	47
20	Application of instrument-assisted soft tissue mobilization using stainless steel applicator.	48
21	Bronze strigil (scraper) 5th–4th century BC.	48
22	Youths washing and scraping themselves with strigils.	53
23	Scenes from the undressing room, on either side pillars with very broad capitals suggesting a building; javelins lean against the wall.	54
24	Muscle Massage Scraper tools.	55

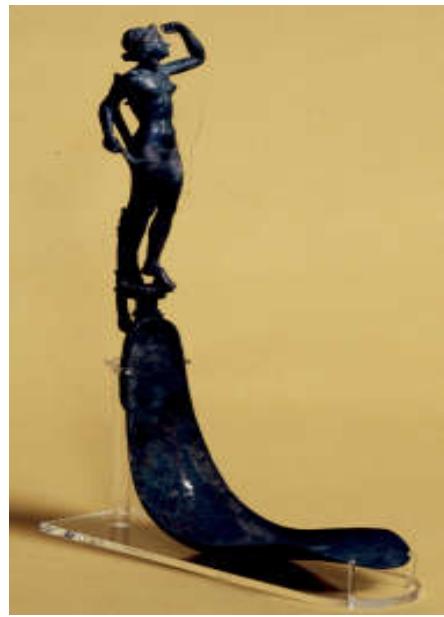
## CHAPTER I: INTRODUCTION

### 1.1 Physiotherapy at the Ancient Olympics, did it exist?

Whether physiotherapy existed in the Ancient Olympics, albeit under a different professional name, is the research question that this study will aim to answer. A conceptual framework process will be conducted using a literature review of past papers, writings and photographic artifacts, which refer to three of the Ancient professions known as *alipites*, *triveas*, and *iatrolipites*. This study will demonstrate that these ancient professional occupations are the predecessors to the modern day professionals known as physiotherapists or physical therapists, as they are called today.

Throughout the bibliography research there are many references made regarding these ancient physiotherapy type professions, and the duties carried out by them in the ancient sporting world such as the Olympics. But there is little, if any reference to the fact that some of the ancient tools used by these ancient professionals are also used today by modern day physiotherapists. The ancient tool that will be discussed is known as the *strigil* (Figure1), a device that was used by the *trivea*, *alipite*, and *iatrolipites* and as will be discussed in the literature, was also carried by the athlete as part of their personal equipment items.

This ancient tool was found in artifacts discovered by archeologist's which showed that this item was sometimes even buried with an athlete who had passed away and later discovered only when their ancient grave site was unearthed. One such archeologist was Stefano Vassalo who in 2007 unearthed an ancient *strigil* near the Pelermo-Catania highway on the ancient battlefield of Himera, Sicily, Italy. Where “*among the skeletons, some with spearheads stuck between their bones, Vassalo found a strigil—a bronze scraper used after workouts in the gymnasium. Strigils are common grave-goods in Magna Graecia, as a visit to almost any archaeological museum will tell. The standard explanation is that they represent the deceased as an athlete—either because he wanted to be remembered that way or because whoever buried him did*” (Reid, 2021, p.1).



**Figure 1.** Bronze scraper (*strigil*), the handle cast as a girl-athlete, who holds a *strigil* in her hand. The girl stands on tiptoe and shields her eyes from the sun. She is naked apart from laced-up shoes. Her wavy hair is twisted around a band decorated with three flowers and then bound in a bun. (Courtesy, British Muséum Collection)

It is only very recently that the modern day physiotherapist has started to use a tool that is very similar to the ancient *strigil*, known as the Micro Massage Scraper (MMS) (Figure 2). This modern physiotherapy tool will be discussed later in this study, including its historical beginnings and current uses.



**Figure 2.** Stainless steel muscle massage scraping tool. (Source: Amazon.com)

The ancient tool known as the *strigil* was used to remove the olive oil applied to the athlete's body before training or competition. In the process of removing the oil, the sweat of the athlete together with the sand that had accumulated onto the skin of the athlete after competition or training in events such as the wrestling (*pali*), creating a cocktail mixture or substance. (Reid, 2021)

This substance (the mixture of olive oil, sweat and sand), was known by the ancient term of *gloios*, the *gloios* had to be removed and collected probably, by one of the ancient occupations that had applied the oil in the first place, such as the *alipite, or the triveas*. The *strigil* was used to remove the substance and collected in clay vesicles, which could then be sold to the general public as a powerful healing ointment.

The funds from the sale of the *gloios* were used to support the ancient gymnasiums and helped with the running costs for the owner/manager of the gymnasium, known as the *gymnasiarch*. Heather Reid in her 2021 article on *The Philosophy of the Strigil: Gymnasia Culture in Magna Grecia*, explains how the *gloios* was collected and its inherent value, when she states that the, “*ancient Hellenes anointed themselves with olive oil before exercising. The workout itself produced sweat and collected dust (sometimes the dust was deliberately applied to help get a grip when wrestling). Afterward, the strigil was used to scrape off the mixture. Lysippus’s famed statue, the Apoxyomenos [Figure 3] illustrates the procedure.....The substance, called gloios, was collected for medicinal use and commanded a high price*” (Reid, 2021, p.8).

The action of scraping the *gloios* off the athlete's body by the *alipite, triveas or iatroliptai* may have not been mentioned in detail by the ancient scribes, or its underlying physiological benefits that were created for the athlete's musculature recovery. This absence in the literature may possibly be due to the fact that it was considered such a routine mundane function, or in fact a menial task performed by these ancient professionals or by their health assistants.

In modern day physiotherapy this action is known as a form of micro-massage and the scraping action as a form of drainage of the bi-product associated with muscular activities, known as *lactic acid* (see quote below, Roth, 2006,).



**Figure 3.** Statue of Apoxyomenos, A figure of a young man scraping himself with a strigil, a curved metal instrument used to remove the excess oil that wrestlers and other athletes used to cover themselves in after their training.(Courtesy University of Cambridge, Museum of Classical Archeology Databases)

The task of removing the *gloios* could have been easily accomplished by using a simple cloth, and thus the soft material would have been able to absorb this substance. But this would mean that the *gloios* could not be stored and sold, and would have been wasted.

So it seems that whether or not it was completely spelled out in the ancient literature, or if it was seen as trivial, the action of removing the *gloios* with the *strigil* and collected for sale, was both economically efficient, and also had a certain physiological benefits for the athlete. In particular the action associated with the removal of the substance helped prevent the athlete from enduring post exercise stiffness, associated with lactic acid retention in the muscle fibers after exercising. In his article Roth, 2006 mentions how our bodies process the products we take in and also expel as a result of different types of muscular exercises when he states that, “*the body prefers to generate most of its energy*

*using aerobic methods, meaning with oxygen. Some circumstances, however—such as evading the historical saber tooth tiger or lifting heavy weights—require energy production faster than our bodies can adequately deliver oxygen. In those cases, the working muscles generate energy anaerobically. This energy comes from glucose through a process called glycolysis, in which glucose is broken down or metabolized into a substance called pyruvate through a series of steps... into a substance called lactate, which allows glucose breakdown—and thus energy production—to continue. The working muscle cells can continue this type of anaerobic energy production at high rates for one to three minutes, during which time lactate can accumulate to high levels. A side effect of high lactate levels is an increase in the acidity of the muscle cells, along with disruptions of other metabolites”* (Roth, 2006, p. 104)

When reviewing the history of physiotherapy in the literature there is mainly an emphasis on the modern origins of the profession, and within it only a small mention of its ancient roots. Mouratidis et al. (1998), in their paper titled, *The Importance of Physiotherapy in Ancient Greek Athletics*, introduce to us the ancient profession of physical therapy and its benefits, when they mention that, “*Hippocrates, the father of medicine, and the later Greek physicians used massage for a number of reasons, such as physical therapy, for the treatment of sprains and dislocations and also to treat constipation*” (Mouratidis et al., 1998, p.137).

The main treatment regime mentioned in the ancient literature “*massage*”, is only one of many treatment modalities that can be used and are carried out by physiotherapists today. The popularity and importance of this treatment can be seen by the increase in medical referrals to occupations associated with anointing and rubbing such as the *aliptes, triveas, and iatrolipetes*, where they attended to the ancient Greek athletes as mentioned by Mouratidis et al. (1998), who stated that, “*massage was recommended by ancient Greek doctors and athletic trainers before and after muscular exercise, because they believed that it could have a beneficial effect not only on the body but also on the central nervous system, thus reducing anxiety and tension*” (Mouratidis et al., 1998, p.137).

But there seems to be a wide gap between the modern history of the physiotherapy profession and its ancient predecessors known as the *aliptes, triveas, and iatrolipetes*, a gap

that may have been left because massage is only one small part of what a physiotherapist can do today, and may also be seen as a step down for the modern physiotherapist professional abilities, when looking at their position within the ladder of hierarchy of modern day medicine and paramedical professions today.

This is evident in some western countries where the physiotherapist is seen as a primary (*first contact*) practitioner and not the assistants to the medical practitioners of today, as they are considered in other countries. In the countries where physiotherapists are primary practitioner's, the treatment known as massage is mainly conducted by masseurs, either in separate clinical locations or as an assistant to the physiotherapist practitioner in their clinic and as part of the overall treatment plan for their patient.

This medical hierarchy today was also present in ancient times where the medical physician was placed well above the *aliptes*, *triveas*, and only the *iatroliptai* had a rank that brought them a little closer to the medical physician of the time. As stated by Horstmannshoff (2012, p. 7), “*according to ancient physician Galen, neither the trainer, nor the physiotherapist, but the iatros, the doctor, was the real expert. Generally speaking, however, the medical knowledge of all these professionals did not differ a great deal.*”

It is important to note that there were some limitations encountered in this research study, such as the fact that there were also many references made about these ancient physiotherapy type professions' and the tools and techniques used by them in other periods of ancient history, both pre and post the Ancient Olympics. But for brevity purposes, we needed to keep within the question of this research study which was in the period of the historical Ancient Olympics. A demarcation line had to be drawn and the period of investigation was set, using as a guide, the International Olympic Academy's website as a source, which states that, the Games took place every four years from 776BC to at least 393AD (IOC, 2021).

## **1.2 Purpose of the study**

The aim of this study is determine through a literature review, whether the modern day physiotherapist as we know today existed back in the Ancient Olympics, albeit under a different name such as the *triveas*, *aliptes*, and *iatroliptes*.

A second question, is to determine if tools and techniques used today by modern physiotherapists were originally used or developed by the *triveas*, *aliptes*, and *iatrolipites* and in particular the use of an ancient tool known as the *strigil* is the predecessor of what is currently known to physiotherapists as the MMS tool, and the technique of scraping the skin of lubricants in ancient times is the action now called IASTM, a technique used in modern day physiotherapy clinics.

### **1.3 Definition of Physiotherapy**

The word physiotherapy is a modern term used to describe a type of therapy that helps to assist people who either have an illness or injury or want to avoid illness or injury through the utilization of certain treatment plans or programmes, that are suggested to them by this health profession. Physiotherapy is also known as physical therapy (PT), which gives us a simple understanding that it has two distinct aspects to it, one that is “*physical*” and the other being “*therapy*”. In some countries physiotherapy is also known by its abbreviated form as “*physio*”, which also can have a double meaning, in that it describes the function or type of therapy performed on a patient (i.e., having *physio* treatment), but is also considered to be a term that refers to the person performing this type of therapy (i.e., the *physio*).

The two terms used to describe this modern therapeutic technique (i.e., physiotherapy or physical therapy – PT), are interchangeable, in other words they are synonym of each other. There is also no scientific or paramedical difference between the two names and as such both come under a world governing body known as the World Confederation of Physical Therapy (WCPT, now known as *World Physiotherapy*), which represents many thousands of these practitioners from different countries, races, religions and languages. The organization was “*founded in 1951, and World Physiotherapy is the sole international voice for physiotherapy, representing more than 625,000 physiotherapists worldwide through its 121 member organizations. World Physiotherapy is the operating name of World Confederation for Physical Therapy (WCPT)*” (World Physiotherapy, 2022).

When we take a close look at the science of physiotherapy, we see that it is a health science that is primarily studied at a university entry level for a minimum of four years and involves study in the subject areas such as biology, physiology, kinesiology, anatomy etc. Further study in this field can be continued at the universities where post graduate studies known as Master's or Doctorate (PhD) degrees can be achieved after certain years of study and research into this area. For example one of the first states in Australia to offer physiotherapy as an undergraduate degree was the University of Queensland, and within their official website of their sister university the Central Queensland Institution, they state that the course is known as, “*The Bachelor of Physiotherapy (Honours) at CQ University....a four-year course designed to develop your skills and enable you to practice as a Physiotherapist... a healthcare profession concerned with human function and movement....using a range of methods in their work including exercise, manual techniques, education and advice....and develop the skills to become confident in assessing, treating and managing a range of conditions for people of all ages. In addition.... focus on ways to prevent injuries and promote health and well being- skills that are highly valued within the industry*” (Central Queensland University, 2022).

In order to truly define physiotherapy, it is very important to gauge what the general public believes this profession actually provides in the way of medical/paramedical services. In one study that aimed to find out what the public's perception was of this profession, and what services it provides, which was conducted by Professor of Physiotherapy, Lorraine Sheppard who created a survey questionnaire and gave it to a sample of the general public where they asked a number of questions in which a summary of “*the results of the telephone questionnaire indicate that there was a reasonably high public awareness of musculoskeletal conditions treated by physiotherapists including muscles, sports injuries, joints and accident rehabilitation. In contrast, there appears to be a very low public awareness of the treatment provided by physiotherapists for women's and children's conditions, in particular ante-natal care. The public were generally aware of massage, heat, exercise and manipulation treatments. A majority (59 per cent) of the total survey sample had used a physiotherapist. The doctor's referral is clearly the most*

*prevalent form of selection of a physiotherapist and personal recommendation is a significant factor”* (Sheppard, 1994, p.270).

In some countries private colleges also have physiotherapy type courses, usually for a short period of 2 years, but these students are not eligible for full membership within the WCPT and are also not recognized or eligible for registration as an allied health professional physiotherapist in most, if not all countries. Usually, they are considered assistants to the physiotherapist and in some hospitals and rehabilitation institutions are known as *physiotherapy aides*.

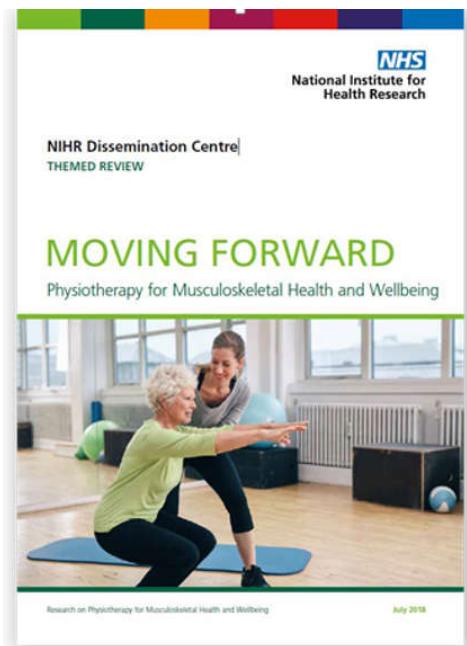
#### **1.4 Role of the Physiotherapist**

The physiotherapist uses their evidence-based treatment knowledge in order to help patients alleviate their pain or to prevent it from happening in the future, by helping them to understand and be aware of possible problems that are associated within the environment in which they work and live on a day to day basis. They can treat patients as young as new born individuals in areas such as hospital intensive care units, where some patients require assistance with fluid secretion removal for their immature lungs and this is performed using various suction apparatus. As well as these infants, the physiotherapist can also provide services to the other side of the chronological spectrum, in which they can also treat elderly patients on how to continue to be independent in daily activities of living, known as (ADL), which can include rolling in bed, sitting posture, standing posture and especially walking, which is particularly useful after lower limb fracture, repairs or joint replacements.

From an international perspective the WCPT verifies the role of the physiotherapist on their website, by mentioning that, “*physiotherapists provide services that develop, maintain and restore people’s maximum movement and functional ability. They can help people at any stage of life, when movement and function are threatened by ageing, injury, diseases, disorders, conditions or environmental factors. Physiotherapist’s help people maximize their quality of life, looking at physical, psychological, emotional and social wellbeing. They work in the health spheres of promotion, prevention, treatment/intervention, and rehabilitation*” (World Physiotherapy, 2022).

These paramedical professionals are able to assess and diagnose their patient's problem and plan a treatment programme that will assist the patient to either alleviate their pain or stiffness associated with their injury or illness that has occurred or create a treatment programme that emphasizes movement and prevention, as its main weapons of support. The physiotherapist is able to offer a number of different physical based techniques such as stretching tight muscles or ligaments, strengthening weak or atrophied muscles, soft tissue massage or help to correct imbalances in the patient's posture when standing, sitting, walking or running.

In some countries they have developed specific physiotherapy programmes (*Moving Forward Campaign*) for different sections of the general public, as can be seen by the United Kingdom's approach to the elderly and how they too can benefit from a physiotherapy treatment exercise plan (Figure 4, below).



**Figure 4.** NHS booklet review, *Moving Forward Campaign*. (Courtesy National Health System of the United Kingdom)

In Australia for example, the physiotherapy association has created sub-classifications of physiotherapy, which has led to the development of separate interest groups, which specialize in such areas as sports physiotherapy, geriatric physiotherapy, pediatric physiotherapy, occupational physiotherapy, and many more.

The area of occupational physiotherapy for example, is where the physiotherapist uses their knowledge of anatomy and human movement to assess the best ergonomic way to tackle a task at work and even in heavy industrial areas. The advice offered by the physiotherapist to the commercial industrial world can help to generate state of the art devices, which can assist in making the working life of humans a safer and better place. This in turn can help prevent injuries such as repetitive strain type ailments, which for example can occur from incorrect working postures at a desk and thus reduce absenteeism in the workforce, leading to an improvement to the economic bottom line in many businesses.

An example of this type of physiotherapy intervention in the commercial world we can be seen by the world renowned and awarded design of the *Gregory Chair®*, which was “*...developed by leading physiotherapist and company founder, Peter Gregory, to address the largest cause of occupational back pain in Australian office workers – the office chair. His knowledge of the anatomical reasons for chronic back pain and his precise observations of correct seating posture, lead to the development of the original award-winning Dual Density Posture Support seat technology*” (GFC,2011-20). This physiotherapist designed invention helped solve a nagging complaint associated with long term desk sitting by workers (i.e., back pain). The chair has a two part foam seat with different supportive densities, which allow the pelvis of the person sitting at their desk to maintain a better sitting posture and help avoid back pain. The chair is distributed and sold throughout the world and has led to the prevention of many back pain associated injuries and illnesses that occur due to long term sitting postural imbalances.

No matter what sub-classification group a physiotherapist is part of, if any, the core attributes of the professional are the same, they use their university evidence-based training to assist people with their physical problems and to help them avoid them in the future by providing preventative advice, be it in a clinic setting or on the sporting field.

There are many and varied types of treatment modalities that can be used by the physiotherapist some of these are as follows, massage, mobilization/manipulation of joints, muscle/ligament stretching techniques, use of electro-medical apparatus and exercises for rehabilitation or prevention. When using some of the modalities mentioned above the physiotherapist may also use various consumable and non-consumables products, in order to aid the delivery of the type of treatment selected for therapy that will be used on the patient. Some of these consumables, but by no means exhaustible lists are oils, creams, lubricant gels, *plaster of Paris*, stretch and non-stretch adhesive tapes, and some physiotherapists who are trained in the use of acupuncture, also use disposable acupuncture needles. The non-consumable items consist of tools that are used to assist the physiotherapist to perform certain treatment tasks, or aid the patient by creating a better position for their bodies in a way that help the therapist with the treatment of their patient's condition or assist in the prevention of injury in the future.

A short list of tools and equipment aides used by modern day physiotherapists such as, foam wedges of different densities, mobilization hand held activator devices, splints/slings for joint stabilization or support, Pilate's equipment and other gym type equipment. In recent times, a new tool has been used by physiotherapy practitioners, one that is being used both internally within the boundaries of the clinic, hospitals and other institutions, but is also considered a must have in the portable "*physio-kit*" (Figure 6), which is carried by the practitioner when the physiotherapist is outside and in the field, such as at an athletic sporting ground.



**Figure 5.** Modern Physiotherapy Kit Bag. (Source: [PhysioRoom.com](http://PhysioRoom.com))

The tool in question is a hand held Muscle Massage Scraping (MMS) tool, mentioned in the introduction (Figure 2), which is used in combination with a consumable item such as oil, and allows the therapist to administer an easy fluent stroking action on the surface of the muscles of the body part being massaged. The benefits to the patient are twofold, in that the action created by using this tool can help to eliminate the muscle exercising bi-product known as *lactic acid*, which helps to avoid post exercise stiffness and strain of the body part treated, as well as the micro massage effect that the tool provides on the skin and underlying tissues. This action is now known as Instrument Assisted Soft Tissue Massage (IASTM) (Figure 6) and “*some experimental studies and case reports have supported that IASTM can significantly improve soft tissue function and range of motion following sports injury, while also reducing pain it is thought that IASTM can help shorten the rehabilitation period and time to return to sports among athletes and ordinary people who have suffered sports injuries*” (Kim et al., 2017, p.12).



**Figure 6.** IASTM being performed on a patients forearm, using an MMS tool. (Source: Physiotherapy & Rehabilitation Centre, 2022)

In modern day physiotherapy they also tend to use a number of technologically superior equipment, known as electro-medical apparatus, and as a subject it can take up a large section of the university training that is conducted by the physiotherapy departments in the universities around the world, usually over a number of semesters. In this area of

study the physiotherapist is trained on how to use the physics within the machines that can help to promote healing in the injured patient and hence provide a quicker recovery from their illness. Some of the apparatus that can be used by the physical therapist such as Ultrasound, Interferential Current, Shortwave and Microwave Machines, plus many other types of medical apparatus.

Thus, when looking at what a physiotherapist is able to offer a patient as treatment today, there are many different types of treatment modalities available to them, and their training and knowledge of the injury or illness, is what will direct them to use the correct physical therapy tool or technique, in order to help alleviate the patient's pain or stiffness, or to prevent it from happening in the first place.

There is also a current trend around the world by many physiotherapists and it seems to be in vogue now, for physiotherapists to consider their role as primary (*first option*) practitioners, not only of one of providing diagnosis and treatment, but one that prefers to be a specialist who can advice, counsel and help make their patient aware of possible hazards associated with their activities of daily living (ADL), in both their home and work environments, thus offering what is now termed *Wellness Care*.

## **1.5 History of Modern Physiotherapy**

The term physiotherapy as we discussed previously is a relatively modern term used to describe this allied medical health profession. There are many references from the past that indicate that certain aspects of this science were performed thousands of years ago in ancient civilizations such as China, India and Greece. In Greece, ancient physicians like Hippocrates and later Galen are believed to have been the first practitioners of physiotherapy, advocating massage, manual therapy techniques and hydrotherapy to treat people in 460 B.C. (Melnick, 2015b, p. 29).

In an artifact located in a museum in Cyrene, Libya (Figure 7), we see massage techniques used on a patient which is over 2000 years old. The practitioner appears to be a specialist *triveas* and has also taken up an ergonomically efficient position for massaging the patient's shoulder, as he is sitting with his hands at a comfortable level for an activity that could have duration of half an hour or more.

But it wasn't until the late 19<sup>th</sup> Century that the term physiotherapy or physical therapy (PT) as it is referred today, became popular as a way of articulating this science, and it was “*in the early 1800's Peter Henry Ling, (also known as Per Henrik Ling, Figure 9) was perhaps the first to notice what numerous others pioneers of physiotherapy have observed in the past centuries: massage and physical exercises are critical for healing many chronic and acute forms of pain. Per Henrk Ling is known as the father of physical therapy*” (Melnick, 2015a, p. 13).



**Figure 7.** *Massage to the shoulder, shown in a relief at the museum in Cyrene, Libya, thought to be 2000 years old. (Courtesy, the Curator of the Department of Antiquities, Libya)*

It was well over half a century later that the country in which the so called “*Father of Physiotherapy*”, (see Figure 8), of Sweden, gave this profession some aspects of formal recognition within the health system when “*Sweden was the first to institute physical education with its Royal Central Institute for Gymnastics. Then, in 1887, Sweden's National Board of Health and Welfare recognized “physiotherapy,” another term for physical therapy, as a viable health practice*” (Strive Rehab.com, 2021). In fact, it took a further twenty years or so for physiotherapy to start to appear in other countries around the

world and in particular Europe, where England and Denmark followed suit, establishing physiotherapy as a valid treatment for ill and injured patients (Strive Rehab.com, 2018).

This then led to an early 20<sup>th</sup> Century renaissance of the physiotherapy profession throughout the larger western British colonial nations such as Australia, New Zealand, and Canada and also in its neighbor the United States of America. In the early part of this century we “*fast-forward to America in 1918; a group of 18 women called Reconstruction Aides administered massage and exercise therapy to the injured troops of World War I. With their success, Mary McMillan and some of her fellow aides founded the American Women’s Physical Therapeutic Association in 1921*” (Strive Rehab.com, 2021).



**Figure 8.** Peter Henry Ling, also known as Per Henrik Ling, “father of physiotherapy”.(Courtesy, Kcanfield, Timetoast.com, 2007-2022)

Throughout this research there were two main aspects of therapy that were conducted by these newly established health professionals known as physiotherapists, and that was massage and exercises. It is therefore easy to understand that nearly all the current physiotherapy associations around the world have their origins either from massage or gymnastics associations.

There were also two major worldwide events in history that contributed heavily to the advancement of the profession of physiotherapy and its recruitment drive, which was needed to cover expectant shortages in staff within hospitals and rehabilitation institutions. The first, was in 1916 with the Polio pandemic and the second, was in 1918 with the advent of world war one (WWI). In particular during the period of the WWI and towards its end, it was evident that the role of physiotherapists had increased from one of not just providing massage and exercise, to one where they provided rehabilitation assistance to the medical staff at hospitals. Where they were responsible to help assist the injured soldiers, who had amputations and other war torn injuries and illnesses, to once again re-establish their activities of daily living (ADL), post war. In Marilyn Moffat's article within the Journal of Physical Therapy entitled *The History of Physical Therapy in the United States* she confirms that "*physical therapy practice in the United States evolved around two major historical events: the poliomyelitis epidemics of the 1800s through the 1950s and the effects of the ravages of several wars. Marguerite Sanderson and Mary McMillan were the first two individuals involved in the training of "reconstruction aides", responsible for caring for those individuals wounded in World War I*" (Moffat, 2003, p. 15).

After world war two (WWII) in the early 1950's, the British Council started to add the techniques of manipulative procedures of the spine and extremity joints and began to be practiced, especially in the British Commonwealth countries, in the early 1950s (Jordanian Physiotherapy Society, 2017). Throughout the remainder of the 20<sup>th</sup> century physiotherapy continued to develop and establish formal university studies in the field of physiotherapy, to the point where physiotherapy is now considered one of the main paramedical professions studied around the world and the courses offered globally are monitored by the World Physiotherapy (WCPT), who accredits the programmes offered from universities around the world. This accreditation is "...based on independent review conducted according to the guidelines for physiotherapist professional entry level education and continued accreditation/conditional accreditation is dependent on submission of satisfactory annual reports, and review and re-accreditation at the end of a period of accreditation" (World Physiotherapy, 2022).

## 1.6 An Example of Modern Day Physiotherapy-in Australia

One of the leaders in the field of physiotherapy today, and with its foundation at the beginning of the 20<sup>th</sup> century, was Australia, an ex-British colony and now an independent republic. When examining the history of the nation and its significance within the field of physiotherapy, Mc Meeken (2020) says that Australia was the first country in the world to teach and examine all aspects of physiotherapy: exercise, massage and manipulation, and electrotherapy, in programmes aligned with universities. It was also a founding member of the WCPT, and has had a number of its Australian physiotherapists as past presidents of the WCPT.

A nation that also has its origins in the science of massage, a physiotherapy technique, which was established in 1905 by Frederick Teepo Hall (Photo 9), a migrant from India with a British father and Indian mother he had a great understanding of the medical sciences as was a true catalyst to the birth of the profession, “*as a masseur he would establish his reputation and be the most significant contributor to Australia’s professionalization of physiotherapy and the development of the Australasian Massage Association – the forerunner of the Australian Physiotherapy Association*” (McMeeken,2020, p. 1).



**Figure 9.** Mr. Frederick Teepo Hall. (Courtesy Joan McMeeken , History.physio.com)

As was the case worldwide, Australia was also affected by both the two world wars and due to the fact that its soldiers were part of the armed forces of Britain, the physiotherapists gained a reputation for the provision of physical therapy to their returned soldiers, who were in great need of rehabilitation and assistance in order to return to the community as a whole, albeit with some form of disability. In between these great wars and after some solid subject content consolidation within the courses offered at universities in Australia, the Australian Massage Association (AMA) decided at their second national congress which was held in 1939, to rename themselves the Australian Physiotherapy Association (APA) (Bentley & Dunstan, 2006).

Some fifteen years later the association published its first journal of physiotherapy in 1954, known as the Australian Journal of Physiotherapy, which was later renamed the Journal of Physiotherapy. Several years later the APA had the honour of being officially recognized for its achievements within the paramedical field of physiotherapy by her majesty Queen Elizabeth II of Britain, who bestowed on them her royal patronage in 1962, this came with various aspects of support, but more importantly the financial assistance required for this growing association (Bentley & Dunstan, 2006).

During this period of war and accolades of gratitude, the APA still believed that it needed more formal government based authority and recognition within the field of physiotherapy. One of the state branches of the APA, known as New South Wales (NSW), which has one of the biggest membership numbers within the country of Australia now, continually lobbied the state government in order to recognize their association. It wasn't until 1946 that the government of NSW created and authorized the *Physiotherapy Act*, which was "*an Act to make provision for the registration of physiotherapists; to regulate the qualifications for and the effect of such registration; to provide for the constitution of a Physiotherapists Registration Board and to define the powers and functions of that Board; and for purposes connected therewith*" (NSW Gov. Legislation, 2022).

From a tertiary educational historical perspective, it is important to note that another state of Australia known as Queensland became the first national university to offer a degree in the field of physiotherapy. The global standing within the profession of physiotherapy is highlighted by the fact that by the year 2006 there were a total of eighteen

physiotherapy entry-level programmes within Australian university institutions (APA Website, 2022). It is also noteworthy to mention that Australian physiotherapists were elevated up the medical hierarchy ladder of health professionals, when in 1976 the association was challenged as to whether the Australian trained physiotherapists were ready to become a primary (*first contact*) practitioner (i.e., able to assess, diagnose and treat patients without a medical doctor's referral).

In Glen Ruscoe's (2018) article on *The Primary Contact Physiotherapist* he writes that “*accepting this challenge, the Australian Physiotherapy Association (APA) repealed its first ethical principle, which stated that 'It is unethical for a member to act in a professional capacity except on referral by a registered medical or dental practitioner', and on 14 August 1976 physiotherapists in Australia became the world's first (first-contact) physiotherapy practitioners. The move was perhaps the most significant change to the profession's structure in its one-hundred-year history*” (Ruscoe, 2018, p. 1).

Currently, the APA has well over 30,000 members and back in 2018, “*... had created 800 courses through career pathway framework, 10 international OUs delivering and sharing knowledge with the international community. Over 20 million Australians are reached through consumer marketing campaigns. The APA has a respected and active voice in health policy*” (APA Website, 2022). APA continues to be at the forefront of physiotherapy development both in academia and as a professional allied health professional body around the world.

## **1.7 Ancient Olympics Definition and Demarcation**

In this study a demarcation time line for the Ancient Olympic Games (AOG) had to be set in order to create a boundary within which the research period would take place. The boundaries were set from the first Olympic Games that were held in 776 BC to the last Games which were in the year 394 AD, and the IOA website helps to clarify the AOG and its foundations, where they state that “*in Olympia, the Idaean Hercules had his brothers, the Idaean Daktyloi, compete in footrace after he had marked the place and length of the track. He thus set the foundations for the Olympic Games, and he was also the first to crown the winner with the 'kotinos' – a wild olive shoot. The founder of the Games is*

*thought to be Aethlios, the first king of Elis, whose name is associated with the word ‘athlete’. There are many others, who are claimed to be the founders of the Games, according to various myths – among them Peisos, Oinomaos, Pelops, Pelias, Neleus, Oxylos and others”* (IOA, 2019).

There is some discussion as to whether these dates are exact, with some scholars believing that the AOG had started a lot earlier, where even some scholars believed that the Games origins may go back as far as within the period of Greek Mythology. We know that “*the Sanctuary of Olympia existed long before the Geometric era (9th-8th B.C.) – even before the 12th century B.C. The first shrine was the ‘Gaeon’ an altar dedicated to Mother Earth. The god Cronos was worshipped here, to be superceded by Zeus, when the latter defeated him in wrestling, as Greek myth has it*” (IOA, 2019).

As a result of this wrestling match, where Zeus defeated the God Cronus, his demi-God son Heracles (or Hercules) and son of the mortal mother *Alcmene*, who was said to have created a running event for his brothers where they competed in a foot race at Olympia thus setting the foundations for the Olympic Games, and he was also the first to crown the winner with the *kotinos*– a wild olive shoot (IOA, 2019). The controversy as to who were the original founders of the Games in Ancient Greek History as opposed to Greek Mythology theory continues even today!

The collaboration of a number of different leaders from different Greek states also decided and agreed upon that there needs to be a period of a cease-fire of conflicts and executions throughout the Ancient Greek world during these Games, both before, during and after the event, which usually ended up being an exercise that was over a month long overall. This period of relative peace and safety was known as a period of *ekecheiria*, which was a truce that was accepted by all of these warring Greek states and in the most part was respected and therefore allowed spectators, athletes and their support staff free, safe passage to the event of the Ancient Olympics which was held in Olympia, in the ancient Greek state of Ellis. “*The first historical data about this grand religious and athletic feast in Olympia date from the early 8th century B.C.; in the year 884, according to ancient sources, King Iftos of Elis, the legislator Lykourgos of Sparta and the tyrant Cleosthenes of Pissa signed an agreement according to which the sanctuary would be*

*inviolable and all wars would stop during the festival. This agreement was called ‘Ekecheiria’ (Truce) and designated the whole of Elis and the sanctuary of Olympia as sacred and inviolable”* (IOA, 2019).

The Games were organized and administered by the state of Elis and they selected a small group of men known as the ‘*hellanodikai*’ (Figure 10), to act as the officials of these Games. They “...became well known for enforcing laws of fairness. They also had the honour of presenting the crowns and palm branches to the champions. Selected from the ruling families of Elis, the judges served for only one program of games and were trained for several months in advance by the Elean magistrates. During the games they wore purple robes and sat in a special box at the southern end of the grounds. Several groups of lesser officials were under their jurisdiction” (Britannica, 2016, p. 1).



**Figure 10.** Close-up, of officials overseeing athletic competitions. They rest switches on their shoulders to use for beating cheaters. (Digital image courtesy of the Getty’s Open Content Program)

Although there may have been other sporting events around the ancient Greek world other than those held in Olympia, prior to the 776 BC Games, these games were considered the pinnacle of athletic performance as was highlighted by the way the victors from the

different Greek states were treated and showered with gifts. The first recordings of these victors at these Games in Olympia appear around what is considered as the start of the Games, where *Koroibos*, a cook from the nearby city of Ellis, won the *stadion* race, a foot race 600 feet long (Penn Museum, 2020). The Games then started to appear on a regular four year basis, termed the “*Olympiad*” and this term was used in order to help set a timeline for the general population in where they were able to chronologically date certain personal events around these Olympiads, e.g., they knew that their first born son was born during the 3<sup>rd</sup> Olympiad (768 BC). These Games were also held at a certain period of the year, the “*summer lament*” around the beginning of August and middle of September as these months is known today, fine tuning the date of their offspring even further.

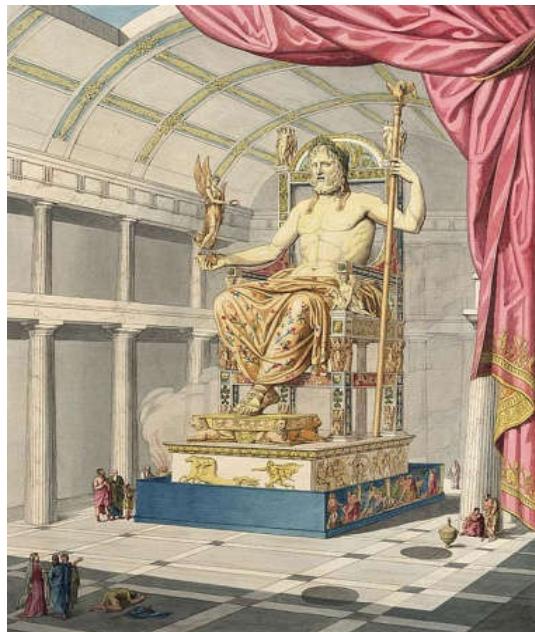
The winner of an Olympic Games event in ancient times was not given any gold medal, instead an inexpensive, “...*olive wreath, also known as kotinos was the prize for the winner at the ancient Olympic Games. It was a branch of the wild olive tree Kallistefanos Elea (also referred to as Elaia Kallistephanos) that grew at Olympia, intertwined to form a circle or a horse-shoe. The branches of the sacred wild-olive tree near the temple of Zeus were cut by a pais amphithales, a boy whose parents were both alive, with a pair of golden scissors. Then he took them to the temple of Hera and placed them on a gold-ivory table. From there, the Hellanodikai would take them, make the wreaths and crown the winners of the Games*

” (Ministry of Culture and Sport, 2012).

The popularity of these Games grew over time and also started to become more political in many member states throughout the ancient Greek world, which would send athletes to the games. It was an opportunity for these states to increase their recognition as a great powerful state, if their athletes were crowned Olympic victors. This created rivalry, brought about competition between the states, and some skilled athletes benefited from this rivalry with support in the form of funded sponsorships and the rewards of wealth and fame that came from being crowned an Olympic victor. They were also honoured by their state with grand precessions and statues of the winners within the town centres, plus cash prizes as stated in Plutarch, Life of Solon 23 and mentioned in the Penn Museum’s official website where it says that, “*although Olympic victors did receive an olive wreath as a prize at Olympia, it is known that victors’ commonly received other more lucrative rewards when*

*returning to their home city. For instance according to Plutarch, Life of Solon 23, an Olympic victor who was a citizen of Athens could expect to receive in the year 600 B.C a cash reward of 500 drachmai, a literal fortune* (Penn Museum, 2020). It clearly became evident in these ancient times that although the monetary value of the olive wreath was minimal, the power, prestige and relative wealth that were bestowed onto these athletic victors by the state, were far greater than the symbol of victory, the olive wreath crown.

The location of the Games, in Olympia was not as architecturally grandeur as Ancient Athens, but the natural beauty of the landscape with its green grasslands and rolling hills, helped create an area of tranquility, which was highlighted by the sacred temple of Zeus (Figure 11). “*The monumental statue of Zeus at Olympia in Greece was one of the Seven Wonders of the Ancient World. Created in the 430s BCE under the supervision of the master Greek sculptor Phidias, the huge ivory and gold statue was bigger even than that of Athena in the Parthenon*” (Cartwright, 2018, p. 1).



**Figure 11.** A 19th century CE illustration of what the 5th century BCE statue of Zeus at Olympia, one of the Seven Wonders of the World, may have looked like. (Courtesy World History.org)

Within the temple grounds prior to, and at the end of the Games official priests enacted hundreds of animal sacrifices such as cows, in order to honour the God Zeus. This was also a great opportunity for the Greeks who followed a mainly vegetarian diet to intake some animal protein since “*Greeks didn’t get to eat very much meat because it was so expensive, so the way Greek religion worked was that you sacrificed the animal and you burned some of it on the altar but you kept most of it for yourself and barbequed it*” (IOC, 2021).

Apart from a great opportunity to eat meat at this *Mega BBQ Event* (AOG), there were also many opportunities for the large crowds at Olympia to be witnesses to other social and cultural events that occurred at this special time of the year. Olympia during the AOG was where the sacred grounds also became a cultural and social festival. “*The place became a bustling bazaar with friends, family and associates eating, drinking, gossiping and doing business together. With such a concentrated gathering of Greeks, coming from all over what is now Europe, Olympia naturally became the place to be every four years*” (IOC, 2021).

With a trapped audience of some 40,000 spectators at the AOG it was a perfect place for many renowned philosophers, poets and other academics to stand on their soap box and preach their new ideas. For example, Herodotus, the very famous Greek historian, went to Olympia and read some of his new history work, standing on the back porch of one of the temples (IOC, 2021).

It is therefore very clear that the AOG had a religious festive nature, closely associated with the ancient God of Zeus, and were are far cry from the mega sporting spectacular event of today’s Olympic Games, where it has an audience of millions of viewers around the world, who can tune in on their *Smartphone*’s, while sitting on top of a mountain many thousands of miles away from the actual event site itself and even more so, if distracted can watch the replay of the 100 meter sprint race again and again. To some, it may seem like the present modern Olympics is a greater event now than it was back then, but if we look at two very important aspects of running a mega sporting event, such as the administration/organization of the Games, and the number of spectator’s attending the actual event at the arena/stadium, we can then compare apples to apples!

If we look at the population in the period of the Ancient Olympics and compare this to today's world population, having 40,000 spectators, officials, athletes and support staff in one venue in the Ancient Greek world watching a few events over a short period of less than a week was extraordinary. Ben Akrigg (2021), in his review of the book *Population and Economy in Classical Athens*, suggests that the ancient census material came up with the number of people (free and slaves) living in ancient Athens, but in order “...to establish the population size of Classical Athens in a descending scale of classes, from citizen families to metics and slaves (38–88, 89–138). The chapter on citizens is framed around Hansen and divides the Classical period into the fourth and fifth centuries. One of the key passages for the fourth century is Demetrius of Phalerum's census (317–307 BC) that gives 21,000 citizens, 10,000 metics, and 400,000 slaves” (Erickson, 2021, p. 304).

If we use Demetrius's census then, we come up with a population in ancient Athens of approximately 431,000 people and if we compare this total with the current 2022 Athenian population where we have a little over 3 million people (Population Stat, 2017-2022). We see approximately a tenfold population explosion in the capital of Greece now, compared to the ancient times.

In regards to the spectator participation numbers at the venue in Olympia (Figure 12), we are told by Crowther (2001), that it is estimated that by the middle of the fourth century BC the Late Classical Stadium (Olympia III) could accommodate about 40,000 spectators. Whereas back in the 2004 Olympics held in Athens, there were some 69,618 spectators (OAKA, 2014) viewing the Games within the stands of the Olympic Stadium (Figure 13).



**Figure 12.** Ancient Stadium, Olympia, Greece. (Source: [Ancientgreece.org](http://Ancientgreece.org))



**Figure 13.** Olympic Stadium, OAKA, 2014, Athens.(Courtesy Olympic Athletic Centre of Athens, “Spiros Louis”)

Reviewing the information regarding populations then and now, and using the capital city of Athens as a reference guide, we see that at the AOG held in Olympia had about ten percent of the Athenian population in 400 BC that could possibly attend the event. Whereas in the modern Athens Olympics held in 2004, there was less than one percent of the Athenian population then, actually within the stadium, watching the event.

This shows us how much of a mega event the AOG really was from a spectator attendance point of view within the ancient Greek world.

As well as this we need to mention the tremendous administrative effort that was coordinated by the Elian officials and its government during the AOG in order to organize the events, athletes, spectators and select the official judges known as the *Hellenidikoi*. The Elian officials though the organization of the AOG were also very successful in bringing the warring Greek states and cities around the ancient Greek world to the event. Many of these states thought it was special enough to make the long and sometimes dangerous trip to Olympia, in order to participate in the Games as an athlete, trainer or spectator.

In contrast to their ancient predecessors the modern Athens 2004 Olympics needed the government of Greece, in coordination with the International Olympic Committee, to create the Athens Organizing Committee for the Games of the XXVIII Olympiad known as “ATHOC” in order to have a safe and successful Olympics Games. The ATHOC committee also had thousands of staff and volunteers, several years to plan, organize and eventually were able to implement at the time of the event, a safe, successful Olympics. If we compare the size of this committee and the resources available to them (ATHOC), the AOG proves once again how much of a “*Herculean*” effort was required by the Elian officials. Here safety was also important for everyone who were attending the Games (athletes, trainers, spectators, poets and other artists) and in particular since many Greek states were nearly always at war then needed to be safe passage to the event, hence the *ekecheiria*.

The Elian government officials, who were a group of a dozen or so prominent men were able to successfully plan and organize these AOG, but were also able to consolidate a safe passage to and from the Games in Olympia for all who attended by implementing the *ekecheiria*- cease fire. This cease fire and stay of executions of people during the period of the games was an agreement made by ruling kings and lawmaker’s within ancient Greece. “*The creation of the Ekecheiria, the Olympic truce, lies within the traditional story of the founding of the ancient Olympic Games. Two warring kings of the area around Olympia, Iphitos and Cleomenes, joined with the Spartan lawgiver Lycurgus in an*

*agreement to hold the Games and to enact and publicize an Olympic truce”* (Young, 2007, p. 1).

Being able to create a ceasefire within the boundaries of the ancient Greek world was truly a major accomplishment, and if we consider the current situation at the last Olympics held in Beijing 2022, both their winter Olympics and Paralympics were taking place whilst the Ukraine was being bombarded and invaded by Russian troops under the command of President Putin. These days we don’t have ancient king’s ruling the world, but we do have the so called “*powerful nations*” in this world, who in this case were unable to stop the war and thus no *ekecheiria* (truce) was in place during the 2022 Beijing Winter Olympics.

This is one of the reasons that emphasize how big an achievement it was to stage such a mega event (AOG) for the Elian’s, when throughout this ancient Greek world conflict was considered a part of everyday life. The AOG must truly be considered one of the major mega sporting, cultural and socially political spectacular events of all time! When discussing the grandeur of the AOG, the IOC asked renowned Ancient Classical history professor Paul Christensen, to paint a picture of what it would be like to be at the site of the ancient Games in Olympia where he says: “*Anyone who wanted to get a big audience from all over the Greek world showed up in Olympia. Painters, artists, orators all went there to put their wares on display... We know there was total chaos for a week because anyone who wanted to raise their profile, this was the place and time to do it*” (IOC, 2021).

Initially, the events only took a day to complete over the first several Olympiads, but after the 13<sup>th</sup> Olympiad the governing body then added other events to the programme and as such the AOG increased to close to a week .Later the multi event known as the pentathlon was created which consisted of “*... five sub-events: discus (diskos), javelin (akon), broad jump (halma), running (a stadion race), and wrestling. Running and wrestling existed as independent events, but the other sub-events were held only as part of the pentathlon*” (Kyle, 2014, p. 27).

The following list (Table 1) provided by Kyle, in his book and chapter called *Greek Athletic Competitions: The Ancient Olympics and More*, gives the traditional reconstruction of the development of the program of events (based on Pausanias 5.8.5–9.2).

There is still today, a great deal of controversy surrounding the event known as the pentathlon with many scholars unable to agree on how the event was run? What was the order of the events? How the winner of the individual events was determined? And how the overall pentathlon winner was crowned? Also, how did the spectators know who was in the lead, since there were no electronic scoreboards?

**Table 1.** Ancient Olympic Events in chronological order.

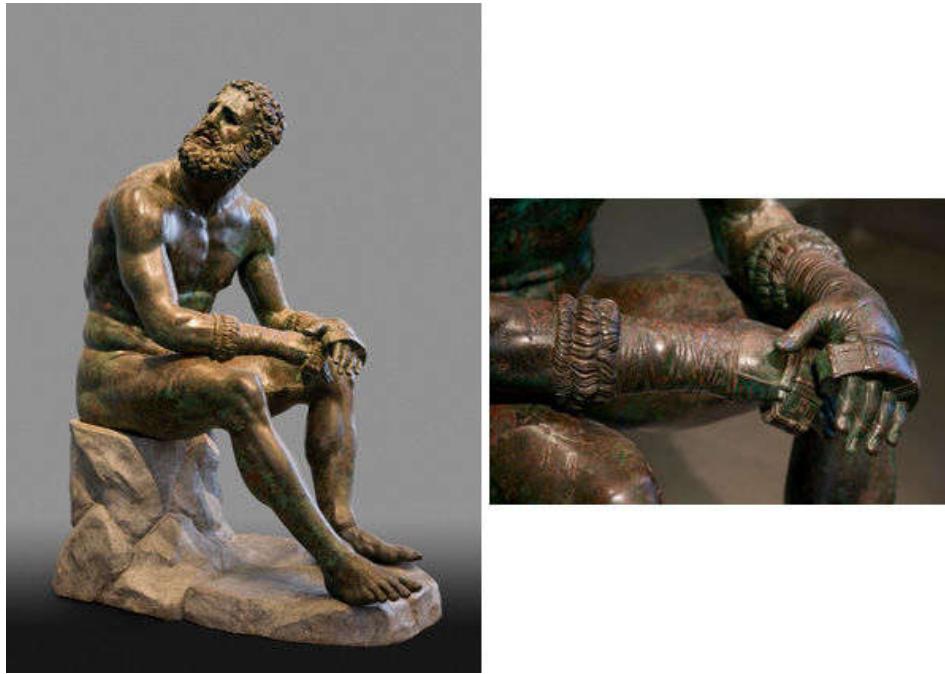
No:	Event(s)	Year Added to Olympic Programme (BC)
1	c.200 m sprint (stadion)	776
2	c.400 m run (diaulos)	724
3	Distance race (dolichos)	720
4	Pentathlon, wrestling (pale)	688
5	Four-horse chariot race (tethrippon)	680
6	All-in wrestling (pankration), horseback race (keles)	648
7	Boys' stadion, boys' wrestling	632
8	Boys' pentathlon (discontinued immediately thereafter)	628
9	Boys' boxing	616
10	c.400 m run in armor (hoplites, hoplitodromos)	520
11	Mule-cart race (apene)	500
12	Horseback race for mares (kalpe or anabates)	496
13	Apene and kalpe discontinued	444
14	Two-horse chariot race (synoris)	408
15	Contests for heralds and trumpeters	396
16	Four-colt chariot race	384
17	Two-colt chariot race	268
18	Horseback race for colts	256
19	Boys' all-in wrestling (pankration)	200

Source: Kyle 2014, p.26

Many scholars from around the world have their own ideas on how the pentathlon was organised, one idea comes from historian Kyle who states that “*debate continues about the origin, status, operation, and scoring of the pentathlon and about the techniques of the sub-events, but this composite event was probably created as a way to test excellence in three events (the discus, javelin, and jump). Running and wrestling were perhaps added to help determine an overall victor*” (Kyle, 2014, p. 27).

When it comes to the actual order of events Kyle says that “*scholars disagree on the sequence of events and the means used to select victors in the pentathlon. The first three wins by one athlete could produce a winner and end the competition, and the discus, javelin, and jump were non-independent events, so these three events probably took place first. Xenophon (Hellenika 7.4.29) suggests that wrestling was the final event, so the run was probably held fourth. To select the winner, scholars have suggested points systems, comparative victories or relative placements, and systems with eliminations, byes, lots, and rematches*” (Kyle, 2014, p. 28).

After the pentathlon was added to the AOG, the sport of boxing known in ancient times as “*pigmachia*” was added. Here the athletic event was spectacularly brutal, bloody, and dangerous. In (Figure 14), we see the boxer resting and a close up of his protection over his hands. “*Boxers wrapped their hands and wrists with long ox hide leather straps known as “himantes” to protect their hands – not to spare their opponents’ faces*”. (Kyle, 2014, p. 29).



**Figure 14.** Boxer at Rest (left) and close up detail (right), Greek, Hellenistic period, late 4th–2nd century B.C., bronze with copper inlays. (Source: Museo Nazionale Romano - Palazzo Massimo alle Terme, inv. 1055.)

Around 680 BC, the event of chariot racing was included to the Ancient Olympic Games schedule, with a number of different types of chariot races added, see table of events by Kyle (Table 1.) After the chariot races then came the “*pankration*”, which was introduced in 648BC as a “...brutal free-for-all combining wrestling and boxing, with few rules (Poliakoff 1987: 54–63). Only gouging and biting were prohibited; punching, kicking, choking, and blows to the genitals were not. Like boxing, matches went on until someone raised his finger and gave up, was incapacitated, or died” (Kyle, 2014, p.29).

There were certain rules and guidelines at all the Olympic events that had to be adhered to by the athletes and some specific rules for the coaches, spectators and other supporter staff of the athletes as well. First of all the Games at Olympia were restricted to athletes who were free-born Greek males and all participants had to compete in the nude and this rule later changed to encompass also the coaches and support staff.

Although most people looking into the ancient history of the Games might think that no women were in attendance at the all-nude athletic event, this was not the case and

can be seen in Pausanias's description of the official parties that attended the Games. "*The stadium is a bank of earth on which is a seat for the sponsors of the competition. Opposite the Hellanodikai is an altar of white marble. Seated on this a woman watches the Olympic Games, the priestess of Demeter Chamyne; this office is bestowed on a woman from time to time by the Eleans. They do not prevent virgins from watching the games*" (Pausanias 6.20.9).

One of the main reasons for the nudity rule extension that was enforced onto the coaches and support personnel of athletes was due to the fact that a female intruder to this all male mega sporting event managed to make her way onto the arena. Pausanias once again paints us a picture of this historic one off event in the AOG when he says that "*the Eleans have a law requiring them to throw off these cliffs any women discovered at the Olympic festival...They say that no woman has ever been caught except Kallipateira .... She had been widowed, and, disguised as a male trainer, she took her son to Olympia to compete. When her son, Peisirodos won, Kallipateira jumped over the fence that held back the trainers, and uncovered herself. She was thus discovered to be a woman, but the Eleans released her unpunished out of respect for her father, [Diagoras of Rhodes], her [three] brothers, [her nephew], and her son, all of whom had been victors at Olympia. They passed a law, however, that in the future trainers would have to attend the competition in the nude.* Pausanias (5.6.7-8; A 149) (as stated in Miller, 2004, p.151).

Apart from excluding women from the AOG, the administrative group known as the *Hellenidiki* made sure that the Games were also held in an environment where fairness and equality was a main character of these Games and that cheating was highly frowned upon, with certain penalties awarded to athletes who cheated. For many athletes, "*bribery was their form of cheating....The organizers disqualified those who were caught bribing. Further, the guilty had to chip in for statues of Zeus with their names engraved thereupon....In fact, over 1000 years, a total of 14 such statues, the Zanes, lined the athletes' path into the Olympic stadium*" (Stefani, 2016, p. 3) (see Figure 15).



**Figure 15.** Stone bases of the Zanes of Olympia. These statues of Zeus were funded from fines from offending athletes in the Games. (4th century BCE). (Courtesy, World History Encyclopedia)

For some people it may seem that this male dominant period of time in Ancient Greece had sports events and activities solely for men, and that the women within their communities were excluded from participating in sporting activities. This was not truly the case, as activities such as sport was a large part of the Ancient Greek culture and their civilization, in order to promote individually strong women, one state in particular Sparta actually put it into law. So “*our attention must first focus on Sparta, where physical training was an important part of the education of both women and men. Xenophon describes part of the constitution established by the legendary Spartan lawgiver: "Lykourgos, thinking that the first and foremost function of the freeborn woman was to bear children, ordered that the female should do no less bodybuilding than the male. He thus established contests for the women in footraces and strength just like those for the men, believing that stronger children come from parents who are both strong"* (Constitution of the Lakedaimonians 1.4; A 152)(as stated in Miller, 2004, p.154).

There were even special female Games at the sacred grounds of Olympia which were held in honour of the God Hera, the wife of Zeus, where animal sacrifices were held in her temple grounds at Olympia, and the only event of these Hera games was the running

event known as the *stadia*, see statuette of female runner.(Figure 16). These games were held alternatively from the all males AOG and Pausanias says that, “*every fourth year at Olympia the Sixteen Women weave a peplos [robe] for Hera, and they also sponsor the Heraia competition. This contest is a footrace for virgins of different ages. They run in three categories: the youngest first, the slightly older ones next, and then the oldest virgins last. They run in the following manner: their hair hangs loose, a chiton [tunic] reaches to a little above the knee, and the right shoulder is bared as faras the breast. They also use the Olympic stadium, but the track is shortened by one-sixth*” (Pausanias (5.16.2 - 7; A 158))(as stated in Miller, 2004, p.155).



**Figure 16.** Bronze Statuette of Athletic Spartan Girl, 520-500BC, found in Greece.  
(Courtesy, National Archaeological Museum, Athens)

When researching the literature there is however a controversial Olympic victor at the Ancient male exclusive Olympics, in the event of chariot racing, who was not a free-born Greek male, but a female from a royalty background (see Travlos et al., 2019). One of the ladies who are described in history as the first Olympic victor of this type is mentioned by Kyle (2003), where he states that “*Kyniska of Sparta was the first women to win an Olympic victory, but, because women were banned during the festival, she was not allowed to be present at the games in which she was declared the winner in the four-horse chariot in 396 and again in 392BC*”. (Kyle, 2003, p.183).

The evidence found in the ancient sources tells us that some female intruders did manage to attend the AOG, some were there by special invitation and considered an honoured official like the priestess of *Demeter Chamyne*, while other females tried many different forms of disguises in order to at least have some access to these nude male Games, such as *Kallipateira*, previously mentioned. While still other females such as the Spartan princess *Kyniska* won an Olympic event at the all male games abiding to the competition laws that governed this sport, which allowed wealthy individuals to send a team of horses usually driven by a slave and even though she never attended the sacred site of Olympia herself, she was awarded the prize of the olive wreath and went down in history as the first women to be crowned a victor at the all male AOG.

A closer look at the list of these Olympic victors known in Greek as the *Olympionikon Anagraphe* (Register of Olympic Victors), as recorded by Hippias in Hippias' *Olympionikai* in the words of Plutarch tells us that at “*the heart of Hippias’ Anagraphe was a catalog of Olympic victors that began with the iteration of the Olympics organized by Iphitos of Elis and Lycurgus of Sparta in 776. Hippias identified the 776 Olympics as “first” because he believed that it was at this point that an unbroken series of iterations of the Games began*” (Christensen, 2007, p.25). Hippias not only collated the list of Olympic victors, but here he helped to chronologically identify the “first” Olympiad.

In the ancient lists of Olympic victors there appears to be many different winners from different Greek states all around the ancient Greek world, with some notable athletes appearing a number of times on the list. This seems to suggest that some of the athletes may have developed certain aspects of specialization in their particular event, and thus were considered amongst the most famous of Olympic Games victors.

One such athlete with legendary fame was known as *Milo of Croton*, who came from an ancient Greek town called Croton, which is still known by this name today and is situated in modern day southern Italy. In Kyle's book, *A companion to sport and spectacle in Greek and Roman Antiquity*, Christensen (2014) writes that “*the most famous Greek wrestler, Milo of Croton, won an amazing seven times at Olympia in the sixth century. At Olympia around 520 no wrestler would face him, so he won akoniti, meaning “dustless” or unopposed*” (Kyle, 2014, p. 29).

This specialization within the events of the Ancient Olympics shows us that these athletes had to maintain good health, training and took the Olympics very seriously. Because this was a way for certain athletes to create wealth and fame for themselves by attempting to create repeated victories within their chosen event, to the point where their fame and reputation was on some occasions the reason for their victory, this is evident when we read in the ancient literature, that some athletes were able to win the Olympic event without a context, what we call nowadays a walkover (WO) or as mentioned above by Cristensen an “*akoniti*” victory.

We know today that with specialization in sport there also comes the increased amount of support staff needed to maintain these top athletes at the peak of their sport. An example of such specialization can be seen in the ancient Greek world city of Croton, where it was considered a melting pot of top sportsman and also consisting of some of the best sporting physicians known. *“Among the first physicians and physiologists at the pre-Hippocratic medicine with contradictions and oscillating doctrines was Alcmaeon from Croton in the 6th century BC. For many, he shared as the father of scientific medicine....was born in the city of Croton (Krotov) in Magna Graecia (southern Italy) which was a reference point for the activity of physicians and philosophers over the years. Furthermore, Herodotus tells us about the excellent practice quality of the physicians, ‘compared to all the others known in that period’* (Santacroce et al., 2019, p. 500).

This medical expertise in Croton could be part of the reason why so many top athletes came from this part of the Ancient Greek world. It is within the sports associated with the AOG that we see a number of medical/paramedical support staff together with their trainers/coaches for these athletes in training centres known as the *gymnasia* (Figure 3) and the *paleastras*. Within the boundaries of these arenas there would be ancient professionals such as *physicians*, *gymnastis*, *iatrolipites*, *alipites*, and *triveas*, all part of the support teams for the specialized top athletes, but also available for all other athletes as well. The number of these professionals following these top athletes of the time to events such as the Olympics, mimic’s the current top athletes in the world, where for example in the Olympic sport of tennis, we see the top athletes having a large entourage of support

personnel such as trainers, coaches, medical doctors, physiotherapists, sports psychologists, in order to help support their sporting campaigns.

Sadly, as with many great events around the world, they sometimes come to an end and the AOG is no exemption to this fact. Around the time of the Roman regime in Ancient Greece, the sporting activities started to decline and the Roman military used the gymnasium more for training their fighters, rather than looking for the next Olympic victor. The Ancient Olympic Games was not exempt from this trend and also suffered during this time, even though the Romans opened up the competition to non-Greeks as well, the ancient Olympic Games officially came to an end around 394 AD, when Roman emperor Theodosius I, outlawed pagan celebrations and this was later ratified by Theodosius II in 423AD (IOC, 2022).

## CHAPTER II: LITERATURE REVIEW

### 2.1 Ancient Professions-*Triveas, Aliptes, and Iatroliptes*

The methodology used in this study was one of a literature review of past writings and photographic artifacts found in the period designated by the Ancient Olympics and references are made to the ancient paramedical professions of *triveas*, *aliptes*, and *iatroliptai* as well as the tools and techniques used by them in the clinical or sporting settings of the times. Within the literature there are also other professionals mentioned within the ancient Greek sporting world but these tendered to be more teacher/carers who were known by the names, *gymnastis* (*gym instructors*), the *paidotriveas* (*boy rubber or teacher/trainer*) and the *hygenoi iatroi*, (*hygiene doctors*) and therefore will not be considered in this study of *Physiotherapy in the Ancient Olympics*.

In the article, *The Importance of Physiotherapy in Ancient Greek Athletics*, written by Mouratidis et al. (1998), they introduce the ancient occupation of *aleiptes*, as well as one of their techniques used by them and state that “*the terms aleiptcs (anointer) and aleipterion (the place for anointing in wrestling schools and public gymnasia) indicate that one of the main duties of the aleipies was to give massage to athletes by using olive oil. Once again, under this new name (aleiptes or oiler or anointer), the Greeks made it clear that oil and massage should be part of athletic training*” (Mouratidis et al., 1998, p.141).

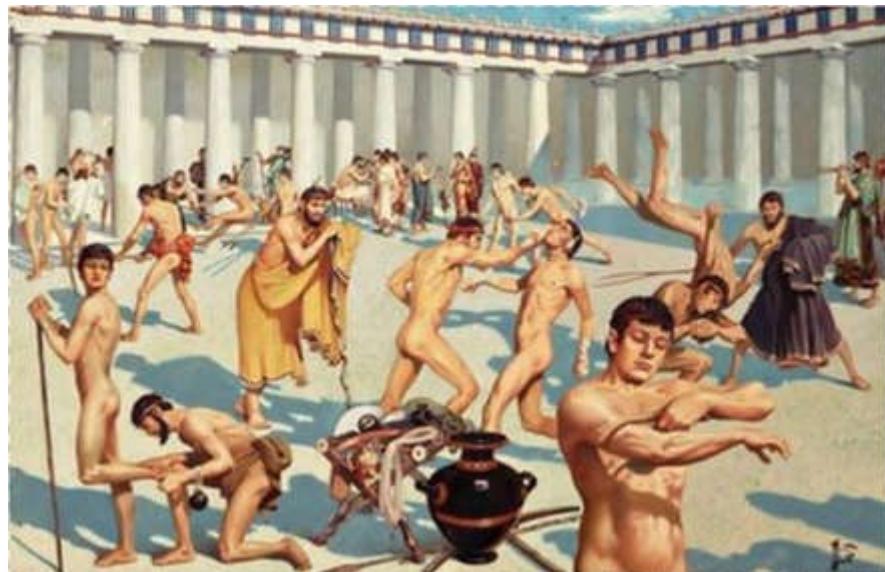
Although the literature mentions a number of different types of occupations associated with *gymnasia*, and the AOG as mentioned above. For the purpose of this study three occupations will be highlighted in the ancient literature, that are closely related to modern day physiotherapists, who deal with the prevention, therapy and rehabilitation of athletes. These ancient occupations known as *triveas*, *aliptes*, and *iatroliptai*, the latter being on top of the ancient hierarchical paramedical list of occupations will be researched. In Sarah Bond’s 2015 article called “*As Trainers for the Healthy*”, she states that “*at the top of this hierarchy of occupational touch were iatraliptae. This was the specialty....that may have instructed on the benefits of massage and the application of oils as medicinal treatments*” (Bond, 2015, p.388).

This study will focus on these three ancient professionals in order to demonstrate that the similarities between them, and the modern day physiotherapist are more than that, they are the predecessors of the field of physiotherapy. In her book *The Ancient Olympic Games*, entitled *Doctors and Trainer*, Swadling (1999), refers to the fact that doctors, paramedics and first-aiders were present at the Games. There is also a reference from her that two famous scholars Plato and Aristotle, also taught at the training facilities of these athletes known as the “*gymnasia*”, and at these venues there were also a number of occupations associated with the word “*trivai*”, meaning rubber or massager. She says that “*some were called simply aleiptai, or massagers while others became iatroleiptai, healer massagers or hygenoi iatroi, something like fitness specialists and they seem to have combined a knowledge of physiotherapy and diet*” (Swadling, 1999, p. 45).

This reference immediately introduces us to these ancient physiotherapy type occupations and their role in the sporting world and in particular to the Ancient Olympic Games, and their training grounds known as the *gymnasia*, in a way in which we can say that there is a direct correlation between them and the modern day physiotherapy professions today. When looking at a possible time when these ancient physio-type occupations started Mouratidis et al. (1998) say that “*it is believed that the term aleiptes (anointer) was invented during the first decades of the fourth century and was probably the result of a rise in professional athletics. Thus, the role of the paidotribes for amateur athletes was the same as that of the aleipies for professionals*” (Mouratidis et.al., 1998, p.141).

This reference above helps us date these occupations within the demarcation specified in this paper, which is between the first and last ancient Olympiads. But also distinguishes between the *paidotribes* for amateur athletes and the *aleiptes* as those that were associated with the professional athlete. This appears to be also another reference that suggests that the professional athletes had a team of support staff with them during training and especially at mega events such as the Olympics. It appears that the *aleiptes* were both an athlete’s rubber and a teacher of professional athletes. In fact he worked closely with *gymnasts* for training and preparing athletes for great athletic competitions (Mouratidis et al., 1998, p.141).

We can see in the painting below (Figure 17, bottom left) which depicts a typical scene within the ancient *gymnasia*, possibly a *triveas*, *alipite*, or *iatrolipites* kneeling and treating an athlete's foot in the arena with a “*physio-type kit bag*” or *aryballos* (oil flask), wrapped around his wrist.



**Figure 17.** Scene showing different activities taking place in a gymnasium, with athletes, trainers and healers in attendance.(Courtesy of H.M. Herget, National Geographic Creative)

As we can see from the photo above, this simple task of oiling and massaging the athlete's left foot/ankle may seem like a basic treatment, but this task later developed into methodical massaging and eventually into a specialty field, where “*the ἀλείπται or anointers, were responsible for anointing with oil the athletes who were about to exercise. This initially simple task developed gradually into methodical massaging and eventually into a specialty that was concerned with many aspects of hygiene and athletic routine. Thus the ἀλείπται gradually became known as ιατραλείπται (healer-anointers), or doctors of hygiene ύγιεινοι ιατροί. These interesting paramedics – we shall call them athliatroi – greatly promoted dietetics and the art of caring for orthopaedic injuries and other commonplace traumata in the gymnasia*” (Retsas, 2011, p.1).

As is depicted in (Figure 18), we could envisage the ancient *gymnasia* and *palestras* daily activities, being a hive of activity where trainers/coaches can be seen advising their athletes, others sparring with other athletes in sports such as *pygmahia* and *pali*, while throughout the days training, the musicians played music in order to accompany the activities that were taking place.



**Figure 18.** Euphronius (about 510 B.C.): *Care and Treatment of Athletes*. (Courtesy State Museums, Berlin)

These different ancient occupations of healers and trainers may have started out as slaves but soon became employees of these physical activity centres where “usually a *paidotribes* or an *aleiptes* (*anointer*) were employed for oiling and massage of the athletes in wrestling schools and *gymnasia*. It appears that the *paidotribes* was employed for the oiling and massage of youths and the *aleiptes* for the professional athletes. The latter, together with the *gymnastes* developed a science of training which by means of exercise, diet and massage produced the necessary conditions for success in the Games” (Mouratidis et al., 1998, p. 143).

In his article called *Medicine in the Ancient Olympics*, Arndt (2012) mentions the importance of treating athlete’s sporting injuries during the training period of the Olympics,

and how sometimes the masseurs had to develop techniques to treat these injuries. Within this article the author uses an image that comes from an ancient artifact dating back to 510 BC (Figure 18, above), which shows this development of treating athletes during training or competition. “*In his epos from the 4th century BC, Quintus of Smyrna describes the medical treatment of athletes. He informs about the therapy of a sprained ankle using blood-letting and ointment.*” (Arndt, 2012, p 4).

The popularity of these ancient physio-type occupations in ancient Greek athletics was such that their title became a symbol for many athletic clubs, whereas today we have names like the Golden State Warriors basketball team in the NBA, in ancient times “*we learn from inscriptions that several athletic clubs called themselves ‘the anointers’ indicating the importance of massage in Greek athletics. Such inscriptions were found at Delphi, and at Troezen, ‘a city under Athenian influence’. At Troezen two inscriptions mention the ‘anointers’, a youth club, which may have included with the epheboi, all other athletes who exercised at the gymnasium*” (Mouratidis et al., 1998, p.145).

In their paper called *The Importance of Physiotherapy in Ancient Greek Athletics*, Mouratidis et al. (1998) conclude that these ancient Greek trainers and therapists known as the *paidotribes*, *aleiptes*, and *gymnastes* were the inventors of medical massage, which was used before and after training. The Greeks called the development of this type of massage (*iatrakleiptifū*) that is medical massage or scientific massage.

It could be considered obvious to some that a technique such as massage has a direct relationship to these past occupations and is still a technique that is used by the physiotherapists today. But there were also other techniques mentioned such as exercise, manipulation and even certain breathing techniques, that were used on the ancient athletes. It could be seen by some readers of this thesis that it would very easy to show how similar these ancient physio-type occupations were to the current physical therapists of today, just from the techniques mentioned above and especially the art of massage. However, the physical therapists today not only use these techniques that were taught in the Ancient period, but also use tools originally designed in ancient times as well!

## **2.2 Tools and Techniques Used by *Alipite*, *Triveas*, and *Iatroliptes***

Another question that this research will also aim to answer is how certain tools and techniques are used by modern physiotherapists today, and were actually used and probably invented many thousands of years ago. One of the fields of study within the curriculum of the physiotherapy universities around the world today is the field of kinesiology and the technique known as kinesiotherapy. Stavrianos et al.(2018) refer to specific speeches made by *Galinos* who attempts to highlight not only the field of kinesiology in ancient times, but also refers to an ancient physio-type specialist, and his expertise in solving muscular skeletal conditions, such as those treated today in physio clinics around the world. They say “*Galinos, for example, writes in his Healthy Speeches about kinesiotherapy: “One needs to go through a therapeutic exercise (gymnasion) during which, movements should be made in a symmetrical way in terms of quantity, slower in terms of quality (at a lower degree) and with many intervals in between, while relieving rubbing is necessary during these intervals’* (*Galinos, Healthy Speeches. III.6*). He also refers to a specialist, a physical tutor called *Theontas*, whose description reminds us of the modern experts in sports and exercise physiology and experts in therapeutic exercise, specialized in training and rehabilitation, recommending a variety of horizontal bar exercises for the restoration of certain musculoskeletal problems (*Galinos, Healthy Speeches. II.71*)” (as stated in Stavrianos et al., 2018, p .51).

In the third century AD article written by *Philostratus*’ called *Gymnasticus*, there are references to a specific ancient athletic training programme called the *Tetrad*. To make physiological sense of the Tetrad, this method of training is compared to the role of periodization in ancient medicine and modern kinesiology (Stocking, 2016). Here the athlete probably under the watchful eyes of their trainers, *anointers*, *triveas*, *iatroliptes*, and other support staff, go through a vigorous four day training programme, which has as its medical theoretical bases in modern day kinesiology and physiotherapy techniques such as stretches.

The process involved within the Tetrad is written in detail by Philostratus and he states “...we consider the *Tetrad* cycle of four days, doing one thing on one day, and another on another. The one day prepares the athlete, the next increases intensity, the next

*relaxes, and the next mediates. The preparatory day involves short, intense exercise and quick movement rousing the athlete and making him sharp for the coming hardship. The [day off] intense exercise is an inexorable test of stored strength of the athlete in his bodily state; the day of ease is a time for regaining movement in a rational manner, the mediating day [teaches] how to escape one's opponent and how not to let go when an opponent is escaping (Philostratus Gym. 4718)"* (as stated in Stocking, 2016, p.90).

A closer look at the Tetrad from a modern kinesiology point of view suggests that this method of training may be contrasted with more standard linear models of exercise progression, in which exercises increase in intensity and duration from easy to difficult. Perhaps the most well-known example of linear training progression is the story of *Milo of Croton*, who is reported to have carried a calf continually and was soon able to carry it as a bull. Stocking (2016, p. 90) said that "...*Milo carried a bull, which he had been accustomed to carry as a calf. The assumption is that as the calf increased in size over time, so Milo's strength increased in a manner commensurate with the weight of the calf*". Stocking (2016) continues to try to bring together aspects of ancient and modern medicine by explaining that the *Tetrad* is not a strictly linear progression format, but rather the *Tetrad* presents what seems to be a unique sequence of days, preparatory day, intense day, rest day, medium day. In order to understand the physiological logic behind this specific sequence, I suggest we turn from ancient medicine to modern studies in kinesiology. (Stocking, 2016)

But where modern medicine has often been thought to develop out of or in dialogue with ancient medicine, kinesiology seems to have reinvented the cyclic model of athletic training (Stocking, 2016). It is within *Philostratus' Gymnasticus* where we see kinesiology components mentioned throughout the article, and where physiotherapy techniques such as stretching and pre and post testing of the athletes is part of this ancient training method called the *Tetrad*. These techniques can be seen on close examination of day two of the *Tetrad* where "*Philostratus describes this second day as "intense" or "stretching," ἐπιτεῖνον, and further describes it as a day of "in exorable testing," ἔλεγχος ἀπαραιτητος* (Gym. 47). The very description of this second day is semantically loaded. The use of the

*participle ἐπιτεῖνον implies that the body is metaphorically “stretched” to its physical limits*” (Stocking, 2016, p.96).

This close relationship of athletic training regimes such as the *Tetrad* and the medical understanding of the kinesiology effects of such a programme, on the bodies of these ancient athletes highlights why some people say that “*Exercise is Medicine®*”, too much or too little can be devastating to the health of an *athlete*. Stocking (2016) summarises it well by stating that “*...from Hippocrates to Galen and Philostratus, there is a basic assumption in both medicine and athletics about the periodicity of physiological processes. At the same time, this basic view of periodicity also relates to modern discourse in kinesiology, and it is the modern theory of the “General Adaptation Syndrome,” which can help us to make sense of why and how disease cycles and training cycles would even be considered as related phenomena*” (Stocking, p.116).

Apart from kinesiology being a major part of study within modern physiotherapy courses today, we see in the above example of the *Tetrad* how there was definitely ancient derivatives back in the paramedical sporting world back then as well. When trying to compare the tools used by modern day physiotherapists and those used by their ancient predecessors (e.g., the *alieptes and co*), the first thought that comes to the mind of a lay person, within the general public, might be: how could modern physiotherapy tools such as the *Cybex Machine* be related to ancient physio tools?

The general public may also believe that modern physiotherapy is only made up of tools such as complex electronic medical apparatus (e.g., ultrasound, interferential devices). In some clinics, very expensive muscle exercise equipment, like the *Cybex Exercise Machines* (Figure 19) are also used by the physiotherapists today, when teaching exercises to strengthen weakened muscle groups.



**Figure 19.** Patient using Cybex Exercise Equipment under supervision of the physiotherapist. (Source: Physiotherapy & Rehabilitation Centre 2022)

To their surprise thou, the general public may find it hard to believe that an ancient tool such as the *strigil* is now the modern physiotherapy tool known as the MMS, which was discussed earlier in the section on the Role of the Modern day physiotherapist. The MMS is a tool that has come into vogue over the last couple of decades and is now used by many physiotherapists both in their clinics as well as at the sporting arenas around the world, having become an essential part of the “*physio kit bag*”.

This relatively new tool known as the Muscle Massage Scraper (MMS) discussed previously in modern physiotherapy, is primarily made of stainless steel, but also made from other materials such as plastic, and the technique used when using this tool is known as Instrument Assisted Soft Tissue Mobilization (IASTM). We see a direct parallel with the ancient action of removing the *gloios*, possibly a form of IASTM and the use of the ancient tool known as the *strigil* as an ancient predecessor to the MMS tool.

In Kim et al. (2017) article called *Therapeutic effectiveness of instrument-assisted soft tissue mobilization for soft tissue injury: mechanisms and practical application*, describes the benefits of this massage technique and how it has become widely accepted as treatment modality today. They mention that IASTM (Figure 20) is “... a technique that uses instruments to re-move scar tissues from injured soft tissues and facilitate healing process through formation of new extracellular matrix proteins such as collagen. Recently,

frequent use of this instrument has increased in the fields of sports rehabilitation and athlete training. Some experimental studies and case reports have reported that IASTM can significantly improve soft tissue function and range of motion following sports injury, while also reducing pain" (Kim et al., 2017, p. 12).



**Figure 20.** Application of instrument-assisted soft tissue mobilization, to different parts of the body using stainless steel applicator. (Source, Kim et al., 2017)

The technique shown in (Figure 20) is known as IASTM, which definitely is not mentioned in the ancient literature per say, but does bear very similar actions to the ones applied to the soft tissue areas of the body of an athlete, by the *triveas*, *aliptes*, and *iatroliptes* in the Ancient Olympics, and instead of a MMS tool they use the ancient tool, known as the *strigil* (Figure 21).



**Figure 21.** Bronze strigil (scraper) 5th–4th century BC. (The Metropolitan Museum of Art, © 2000–2022)

As for the techniques used by the *aleiptes*, *tiveas*, and *iatrolites*, we turn to a specialist in ancient medicine, Emeritus Professor Hortmanshoff from Leiden University, who gives us a great understanding of the type of techniques that were used by two of the three ancient professionals researched in this study, and links modern day physical therapists with their ancient predecessors, when he says that “*the aleiptes, the ‘greaser’, the masseur, understood the physical condition of his pupils and knew how to improve their muscular development by massage. The iatroleiptes ‘physician masseur’ had even more medical knowledge. We could consider him to be the ancient equivalent of the physiotherapist*” (Horstmannschoff, 2012, p.7).

One of the reasons that this study believes that these ancient physio-type occupations were responsible for the use of the *stigils* on the athletes is because it would be very hard for the athlete to remove the mix of sand, olive oil and sweat known as “*gloios*” and collect it in a clay container successfully, using one hand. This use of olive oil played an important role in Greek athletics and in athletic training where Greek athletes, in general and for strenuous events such as wrestling, boxing and *pancratium*, in particular, rubbed themselves with olive oil, both before and after exercise, for massage and relaxation (Mouratidis et al., 1998). “*The iatralipta’s practice of using touch and oil to heal patients was increasingly associated with healing.* (Bond, 2015, p. 387). And goes on to say “*In the Greek East, massage therapists could be referred to as a τριβεύς (literally a “rubber”), whereas an ἀλείπτης referred to an anointer or an athletic trainer.*(Bond, 2015, p.388).

As athletics were considered a part of ancient Greek culture, the services of these practitioners were becoming increasingly necessary, especially within the gymnasiums, and the status of each of these ancient professions were also becoming apparent where we see that “*within the complex, three types of skilled attendants catered to Greek athletes: a παιδοτρίβης (literally a ‘boy-rubber,’) who was an athletic coach or trainer; an ἀλείπτης and the γυμναστής who both rubbed down athletes and trained them for competition (although both were respected employees within the gymnasium, the former appears to have been of lower status than the latter”* (Bond, 2015, p.394).

All three types of trainers were closely allied with their athletes and used massage and oil on them from early in the Hellenistic world, but it was the esteem of athletics that

allowed for a higher status for massage therapists, athletic trainers, and anointers in Greek as opposed to Roman culture (Bond, 2015). There is evidence that suggests that although these ancient professions had a level of esteem within the ancient world, they were originally servants (slaves), who used their massage therapies as their work duties within the gymnasiums in order to improve their social standing within the community and in particular with all the athletes. Bond (2015) paints a picture of what life was like for these members of the gymnasium staff and suggests that “*the esteem of athletic masseur-trainers and the institution of athletics itself in the Greek world likely draws in part from the fact that few slaves were employed by gymnasia or even permitted to exercise in athletic sites, and the servile were largely (though not completely) absent from sports competition*” (Bond, 2015, p.395).

Further to this increase in status for these masseur-trainers, we find references within the Roman regime during the specified demarcation period selected for this study (i.e., 767 BC – 391 AD), of a letter regarding an ancient ‘*aleipte*’. “*In the letter of Mark Antony about his ‘friend and ἀλείπτης’ Marcus Antonius Artemidorus, we can best track the transference of athletic training from the Greek to the Roman world. Around 41 BCE, Marcus Antonius wrote a letter to the Assembly of Greeks in Asia (interestingly preserved on the verso of a medical papyrus) asking for privileges for the guild of his ἀλείπτης and freedman Artemidorus*

” (as stated in Bond, 2015, p.395).

The letter from Mark Anthony shows how much the Greek East and their *aleipte* were gaining popularity within the Roman East, it was as if he (Anthony) was what we nowadays call an “*influencer*”, that is someone with a large following of supporters, willing to accept his recommendations and start using these ancient anointers and masseurs for their personal use as well. “*With the value of hindsight, we can look back and see that Antony was onto a trend in Rome: the Greek personal trainer. Athletes were given great regard in the Greek world, and, in turn, their trainers—who had both a medical and technical skill—shared in their victories*” (Bond, 2015, p.396).

Other popular figures within this similar period of time with the Roman Empire also started to praise the skills of these ancient professions, such as “*Pliny who sent three letters to the emperor Trajan asking for citizenship for his iatralipta Harpocras, for curing*

*him of a serious affliction. Here we find a clear example of an iatralipta who functions in a medical capacity and who is esteemed for this sort of work*" (Bond, 2015, p. 397). Pliny also realized that the work of these ancient professions were starting to change from slave labour, to one of a more profitable occupation for these men, considering that many were also gaining their "freedom" and thus becoming citizens of their respective nations. "*After the formation of the Hippocratic School, the nascent field of medicine quickly became highly profitable, particularly in the area of iatraliptics*" (Bond, 2015, p. 397).

Although some Romans found that these ancient professions had both great skills and healing capabilities, not everyone within their communities were convinced of their medical prowess. "*Even as their popularity and legitimacy increased, the professionals that practiced massage and the use of oil for healing still occupied a lower status within the Latin West than in the Greek East*" (Bond, 2015, p. 398). It could also be argued that the Greeks tended to be more involved in athletics as a way of life and considered sport as a great exercise for their whole community, which would also benefit their Greek military, whereas the Romans considered combat drills as the best form of improving their muscular endurance.

This sporting way of life in the Greek East was one of the reasons for the proliferation of the gymnasiums around the nation and these facilities also became the training grounds for the Olympic events, not only in Olympia, but also in other Greek sporting hubs such as Delphi, Ishmia, and Nemea, known as the Pan-Hellenic Crown Games. These training facilities catered for the various strenuous activities such as wrestling and boxing and needed to be successful, profitable and well managed gymnasiums. The Greek cities and states therefore needed a special type of citizen to run these venues. These Hellenistic gymnasiums were "*... run by the city and managed by a dedicated official, the "gymnasiarch". A 2nd-century BCE stela from Beroia describes in greater detail his function. He was responsible for the general administration and accounting of the gymnasium and also had the power to impose fines or even physical punishment such as flogging for those members who broke the house rules*" (Cartwright, 2016, p. 1). One of the main functions of the "gymnasiarch" was to provide the olive oil

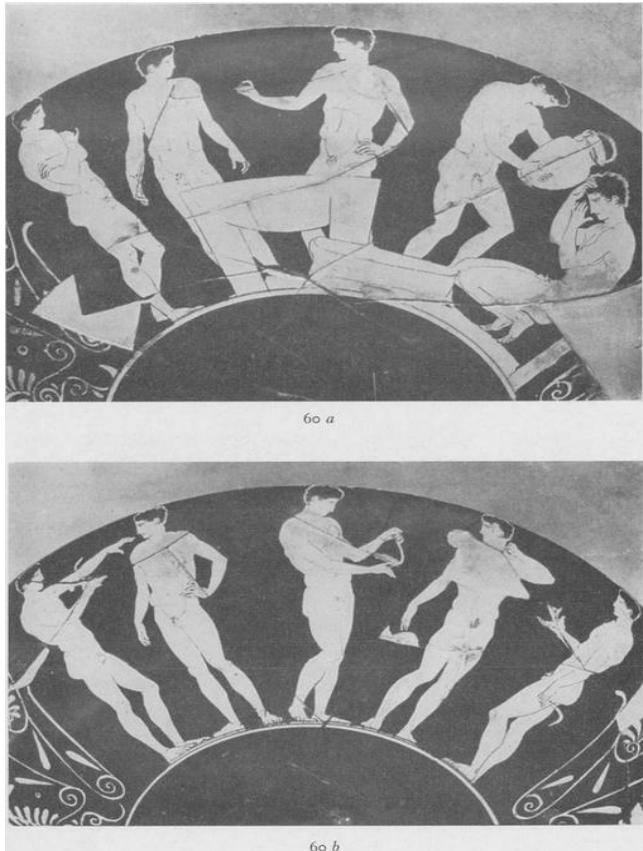
requirements for all the athletes who attended the gymnasiums, which is why these men had to be wealthy citizens as this was a consumable item, which was in high demand.

There are however references that suggest that many of the athletes brought their own supplies and equipment with them and probably within their own “*gym bag*”. This is supported by Mouratidis et al. (1998), where they say that “*in the golden age of athletic training, every athlete brought his own oil flask and strigil with him to the wrestling school or gymnasium. In fact oil flasks and strigils, were both important and absolutely essential equipment of the Greek athletes*” (Mouratidis et al., 1998, p.141).

The ancient sources together with the ancient history scholars who have researched the tool used in ancient times called the *strigil*, may not have referred to the fact that this tool could be the predecessor to the device we now call the MMS tool. But it is the *strigil*, which gives us a very powerful positive artifact that can be tracked right up to the current times and the technique used to operate the *strigil*, shows us that there is a direct correlation with the technique known as IASTM and the tool that is used to perform this action is known as the MMS, which is used today in modern day physiotherapy.

In their article called *the Effect of instrument assisted soft tissue mobilization on soft tissue injury*, Kim et al.(2017) clearly relate the modern MMS tool and the technique known as IASTM, by stating that Hammer (2008) mentioned that in ancient Greece and Rome, a small metallic instrument known as a *strigil*, was used in bathhouses for therapeutic purposes. There are other scholars such as Guhl and Koner(1989), mentioned in Kakish (2015) article called *A Strigil from Roman Jordan: Evidence for Personal Care*, who give a detailed account of the use of the *strigil*, the benefits of the action of removing the substance called *gloios* and the type of people using these ancient tools and techniques. They state that the “*strigils were used by diverse groups of people in the ancient world. These scrapers were used by both men and women in a variety of contexts. The strigil (flesh scraper) or cleaning blade was an essential tool of Greek, Etruscan and Roman athletes. This instrument was part of the athlete's portable kit, together with an aryballos (oil-flask) and a sponge. Before exercising or competing, athletes applied oil to their bodies to keep the dirt out of the pores of the skin and perhaps also to avoid sunburn. A strigil was used to scrape off accumulated oil, perspiration, and sand or pumice, thus exfoliating the skin after*

*exercising and before bathing. The athlete would then finish cleaning himself with water and a sponge*" (as stated by Kakish, 2015, p.64). The ancient vase in (figure 22, below) shows a number of these images depicting the above actions as stated by Kakish (2015).

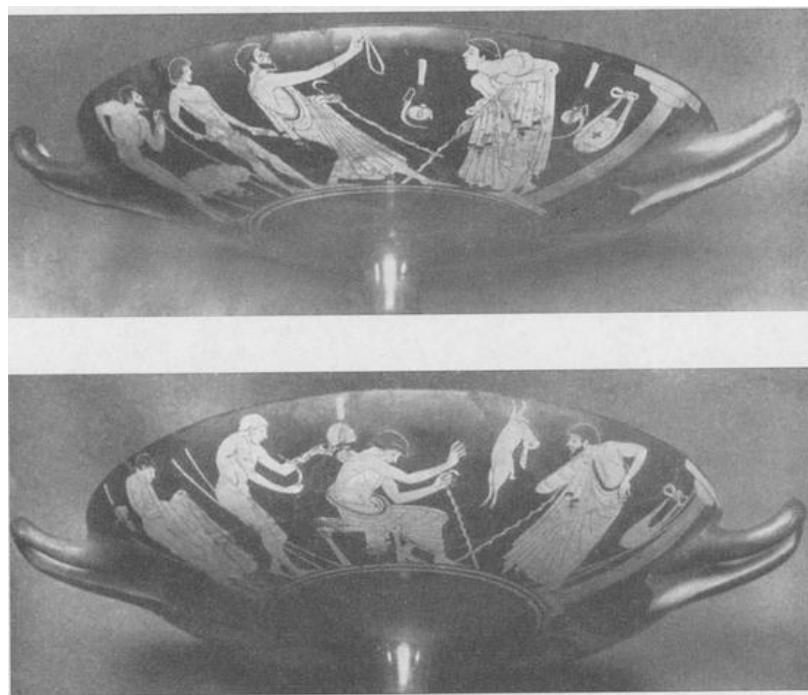


**Figure 22.** Youths washing and scraping themselves with strigils. (Attic r.-f. kylix in British Museum, E. 83. About 430 B. C. Copenhagen, Thorvaldsen Museum. Photograph from Professor Johansen).

We also see further evidence that the *gloios* was not only a way for the *gymnasia* to make money from its sale, but it also had therapeutic benefits for everyone, whether they were athletes or not. Kakish (2015) mentions Fagan (2006) where he states the ancient author and administrator *Pliny*, who tells us how and why this substance has healing powers. "*Strigils were also used in the production of substances used for health benefits. Pliny recommends the bath indirectly when he notes that the by-products of the bathing routine, in particular the scrapings of oil and sweat, generated by strigiling (strigmenta),*

*are useful for treating joint or sinew pain and in ointments for suppuration”* (as stated in Kakish, 2015, p.64).

In other artifacts found from excavations around the world we find more evidence that suggests that there were many trainers and healers within the complexes of the ancient *gymnasia* and *paleastras*. Some may have been responsible for the collection of the *gloios* with the use of the *strigil*, while others were there to practice their respective ancient trades. On an ancient vase (Figure 23), we see exactly these images, depicting athletes, trainers and healers, as well as their sporting equipment hanging within the changing rooms of the gymnasiums.



**Figure 23.** *Scenes from the undressing room, on either side pillars with very broad capitals suggesting a building; javelins lean against the wall. Hanging on the wall are strigils, oil flasks, a diskos in its sling, a hare. Groups of epheboi and trainers, some standing, some sitting.* (Attic r.-f. kylix. About 480 B. C. Copenhagen, Thorvaldsen Museum. Photograph from Professor Johansen)

## CHAPTER III: DISCUSSION – CONCLUSIONS

### 3.1 Discussion

This study has shown that the current physiotherapists and the techniques used today, are similar, if not the same as the ancient occupations (*triveas, aliptes, and iatrolipites*) and their techniques such as massage were used back in the time of the Ancient Olympics. As well as these techniques, the research conducted found, that one of the tools used in ancient times by these ancient physio-type professionals, known as the *strigil*, is a tool that is used today, albeit by another name MMS (Figure 24), and is used by the modern day physiotherapists around the world.



**Figure 24.** A range of different sized Muscle Massage Scraper tools. (Source: Physiotherapy & Rehabilitation Centre, 2022)

We also pointed out that there was a scientific physiological benefit of the ancient scraping of the *gloios* with the use of the *strigil* and how these actions are closely if not exactly related to the therapeutic technique known as IASTM (Figure 26). It was discussed previously in this study that many modern day physiotherapy clinics use a number of advanced electronic devices such as Ultrasound, Interferential machines, etc. and other gym based equipment to treat their patients, but one of the portable type of devices you will find

in a *physio kit bag* today is the hand held MMS tool, which appears to be a direct descendant of the ancient *strigil*.

In the period of the Ancient Olympics the physicians at the time may have not realized or at least it isn't mentioned in detail in the ancient literature, that the physical action needed to manipulate the *strigil* by the *triveas*, *aliptes*, and *iatrolipites* or by the athletes, all over the body area being scraped, created an underlying micro-massage effect on the muscle group below, which today's physiotherapists call the IASTM technique. For these ancient professions and their athletes, the *strigil* was used and considered a very efficient way of removing the *gloios*, (mixture of oil, sand and sweat) from the athlete as mentioned in this study previously, and was a valuable economic resource, which contributed to the coffers of the ancient gymnasiums in this Ancient Olympic period.

The research conducted here also helps to create a link between the ancient physiotherapy type professions known as the *triveas*, *aliptes*, and *iatrolipites* and the modern day physiotherapist, but also bridges the gap between the modern history of physiotherapy, which started with the *father of physiotherapy*, the Swedish professional Peter Henry Ling in 1918 and its ancient historical therapeutic massage techniques mentioned in this study. This link may appear to be quiet a large singular link, but helps in some way to fill the large gap which exists in the current profession between the days of Hippocrates, the AOG and the creation of the organization now known as World Physiotherapy (aka WCPT), who state that "*World Physiotherapy is committed to furthering the physiotherapy profession and global physiotherapy profession by supporting our member organisations with information, expertise and services*" (World Physiotherapy, 2022). The association of physiotherapists worldwide, might also be interested to find out that its history lies not only in the technique of massage, but also in the association between the ancient *strigil* and the modern day MMS physiotherapy tool used today.

This study has attempted to close the gap between the ancient physio-type professions (*aleiptes*, *triveas*, and *iatroleiptes*) and the new current profession of physiotherapy. The relationship with the ancient past and the current professionals will help to add value to the credibility of the physiotherapy profession today. By presenting items

such as the ancient artifact the *strigil*, which mirrors, and appears to be, the original MMS tool used today by physiotherapists today.

In particular when we look at ancient and modern manipulation techniques, an article written by Pettmen (2007), called *A History of Manipulative Therapy* gives us some historical background for the modern physiotherapist and their link to the ancient predecessors. He states that “*the earliest historical reference to the practice of manipulative therapy in Europe dates back to 400 BCE. Over the centuries, manipulative interventions have fallen in and out of favor with the medical profession....With medical and osteopathic physicians initially instrumental in introducing manipulative therapy to the profession of physical therapy, physical therapists have since then provided strong contributions to the field, thereby solidifying the profession's claim to have manipulative therapy within its legally regulated scope of practice*” (Pettmen, 2007, p.165).

A number of massage books emphasize different massage styles being used around the world, such as Thai massage, Shiatsu massage, to name a few, which if researched could also have their own historical foundations to the ancient world and thus help to consolidate the relationship between the old and the new physiotherapy type professions even further. But it is this relatively new technique of IASTM that highlights certain physiological benefits to the athlete today and how the dragging and scraping created by the *strigil*, back in the ancient sporting world of Greece, was not only an efficient way of removing the *gloios*, but it indeed also have a great physiological benefit to the ancient athlete as well.

### 3.2 Conclusions

A key question that could be asked, in further research is one regarding the ancient tool known as the *strigil* and as to why we read in the literature that many archeologists discovered these tools in ancient burial sites back then, found next to the deceased, as was previously mentioned in Reid (2001). But between then and now, very few articles mention similar tools being buried and consequently excavated by archeologists. Why?

Were these tools considered unimportant, or just common, or did the technique of muscle massage scraping (MMS) or removing the *gloios* become defunct? Or was this

procedure of removing the *gloios* just a money spinner for the ancient gymnasia, and now not necessary in the modern gyms we have today? Or was the decline of the AOG and sports in general in the Roman regime period, the reason the process of removing the *gloios* ended, since now the *gymnasia* were converted to more military training grounds rather than sporting recreational areas? Or were the Roman and later Ottoman regimes and their cultures and traditions the reason the *strigil* may have lain idle for so many years and eventually the manufacture of the item also ceased (i.e., were not created by the blacksmith's of the times anymore)? And finally, how did the MMS tool become a part of the modern day physiotherapist's tools of trade today?

All these unanswered questions above, are fuel for scholars and consequent further research in the area of *Physiotherapy in the Ancient Olympics* and in the roots of the tools and techniques used by the ancient physio-type professionals known as the *aleiptes*, *triveas*, and *iatroleiptes*, thus helping to strengthen the link with physiotherapy today.

### 3.3 Future research

In the future, further research could be conducted in order to trace the development of the modern day MMS tool from its modern date of invention and trace its development all the way back to its ancient roots, where they used the *strigil* in civilizations such as Ancient Greece. Some other ancient civilizations like China for example, also used similar muscle massage scraping tools like the *strigil*, in a scraping, massage type effect. But within this ancient civilization the technique was known as *Gua sha* and they used tools made of other materials, like bone and jade stones. Cheatham et al.(2019) sum up this ancient Chinese therapy, by stating that “*Gua sha is a popular eastern medicine treatment that traditionally uses a smooth edged instrument (e.g., water buffalo horn, honed jade, soup spoon) to scrape the skin until a red blemish appears*”(p. 672).The *Gua sha* treatment is supposed to relieve blood stagnation and reduce pain and some professionals may consider the *Gua sha* approach a form of IASTM(Cheatham et al., 2019). The treatment composes repeated compressing strokes with an instrument over a lubricated skin region until the petechiae appear. Traditionally, IASTM practitioners have followed the same

philosophy with a goal of achieving the same effects with treatment (Cheatham et al., 2019).

As we can see from the research article above, other ancient civilizations have also been using IASTM techniques and scraping tools (*water buffalo horn etc*), that were very similar to the way the ancient Greeks used the *strigil* in order to assist their athletes. The difference being that the Chinese knew that the lubricated stroking action of this technique with their tool had a therapeutic benefit, whereas the Ancient Greeks didn't at least know these benefits, or as previously mentioned in the study thought that the task of removing the *gloios* was not medically significant and was only considered a part of the cleansing process of an athlete after their exercise or event commitments were completed. It is therefore interesting to note that on the other side of the ancient world (China), like-minded individuals were using these similar tools and techniques and could be a reason why further research could be conducted in an attempt to bring together these two ancient cultures. This may lead us to being able to truly marry their ancient tools and techniques and at the same time bring together modern western medicine with their eastern medicine brothers.

## REFERENCES

- Albanidis, E. (2000). The ephebia in the ancient Hellenic world and its role in the making of masculinity. *The European Sports History Review*, 2, 4-23.
- APA Website (Australian Physiotherapy Association), (2022). <https://australian.physio/>
- Arndt, K. H. (2012). Medicine in the Ancient Olympics. *Deutsche Zeitschrift für Sportmedizin*, 63(1), 4.
- Bentley, P. G., & Dunstan, D. (2006). *The path to professionalism: physiotherapy in Australia to the 1980s*. Australian Physiotherapy Association.
- Bond, S. E. (2015). "Atrainers for the healthy": Massage therapists, anointers, and healing in the Late Latin West. *Journal of Late Antiquity*, 8(2), 386-404.
- Britannica, (2016). *hellanodikai*. <https://www.britannica.com/topic/hellanodikai>
- Cartwright, M. (2016, May 09). Gymnasium. *World History Encyclopedia*. Retrieved from <https://www.worldhistory.org/Gymnasium/>
- Cartwright, M. (2018, July 24). Statue of Zeus at Olympia. *World History Encyclopedia*. Retrieved from [https://www.worldhistory.org/Statue\\_of\\_Zeus\\_at\\_Olympia/](https://www.worldhistory.org/Statue_of_Zeus_at_Olympia/)
- Central Queensland University, (2022). Physiotherapy Honour Course Description, CQUniversity Australia. <https://www.cqu.edu.au/courses/bachelor-of-physiotherapy-honours>
- Cheatham, S. W., Baker, R., & Kreiswirth, E. (2019). Instrument assisted soft-tissue mobilization: a commentary on clinical practice guidelines for rehabilitation professionals. *International Journal of Sports Physical Therapy*, 14(4), 670.
- Christesen, P. (2007). *Olympic victor lists and Ancient Greek history*. Cambridge University Press.
- Christesen, P., & Kyle, D. G. (2014). *A companion to sport and spectacle in Greek and Roman Antiquity*. John Wiley & Sons.
- Crowther, N. (2001). Visiting the Olympic Games in Ancient Greece: Travel and conditions for athletes and spectators, *The International Journal of the History of Sport*, 18(4), 37-52, DOI: [10.1080/714001666](https://doi.org/10.1080/714001666)

- Erickson, B, (2021). Review of the book: Population and Economy in Classical Athens, by Ben Akrigg. *Mouseion: Journal of the Classical Association of Canada* 18(2), 300-306. <https://www.muse.jhu.edu/article/841682>
- Hammer, W. I. (2008). The effect of mechanical load on degenerated soft tissue. *Journal of Bodywork and Movement Therapies*, 12(3), 246-256.
- Horstmannhoff, M. (2012). Disability and rehabilitation in the Graeco-Roman world. *Behinderungen und Beeinträchtigungen/disability and impairment in antiquity. BAR International Series. Studies in Early Medicine*, 2. Chapter One, p1-10. [https://www.academia.edu/12871433/Disability\\_and\\_rehabilitation\\_in\\_the\\_Graeco\\_Roman\\_World](https://www.academia.edu/12871433/Disability_and_rehabilitation_in_the_Graeco_Roman_World)
- IOA, (2019). <https://ioa.org.gr/the-legacy-of-ancient-olympic-games/>
- IOA, (2022). <https://ioa.org.gr/the-legacy-of-ancient-olympic-games/>
- IOC, (2021). A Spectator's guide to the Ancient Olympic Games, by Christensen, P. <https://olympics.com/ioc/ancient-olympic-games/spectators>
- IOC, (2021). <https://olympics.com/ioc/ancient-olympic-games/history>
- IOC, (2022). <https://olympics.com/en/featured-news/top-ten-facts-ancient-olympic-games>
- Jordanian Physiotherapy Society, (2017). <https://jpts.org.jo/history-of-physiotherapy/>
- Kakish, R. (2015). A strigil from Roman Jordan: Evidence for personal care (case study). *Mediterranean Archaeology and Archaeometry*, 15(2), 63-70.
- Kim, J., Sung, D. J., & Lee, J. (2017). Effect of instrument assisted soft tissue mobilization on soft tissue injury. Therapeutic effectiveness of instrument-assisted soft tissue mobilization for soft tissue injury: Mechanisms and practical application, *Journal of Exercise Rehabilitation*, 13(1), 12-22. <https://doi.org/10.12965/jer.1732824.412>
- Kyle, D. G. (2003). "The Only Woman in All Greece": Kyniska, Agesilaus, Alcibiades and Olympia. *Journal of Sport History*, 30(2), 183–203. <http://www.jstor.org/stable/43610326>
- Kyle, D. G. (2014). Greek athletic competitions: the ancient Olympics and more. In P. Christesen & D. G. Kyle (Eds.), *A companion to sport and spectacle in Greek and Roman antiquity* (pp. 17-35). Wiley.

- McMeeken, J. (2020). *How an Anglo-Indian Man Made Australian Physiotherapy Great*, <https://history.physio/how-an-anglo-indian-man-made-australian-physiotherapy-great/>
- Melnick, S. (2015a). Per Henrik Ling-pioneer of physiotherapy and gymnastics. *European Journal of Physical Education and Sport Science*, 1(1), 13-18.
- Melnick, S. (2015b). Physiotherapy and clinical approaches—An overview. *European Journal of Physical Education and Sport Science*, 1(1), 27-37.
- Miller, S.G., (2004) *Ancient Greek athletics*. New Haven: Yale University Press,
- Ministry of Culture and Sport, (2012)- translated from Υπουργείο Πολιτισμού και Αθλητισμού – Αφιερώματα) <http://odysseus.culture.gr/a/1/11/ga115.html>
- Moffat, M. (2003). The history of physical therapy practice in the United States. *Journal of Physical Therapy Education*, 17(3), 15-25.
- Mouratidis, J., Mylonas, A., Agelopoulou, N., Ambatsidis, G., Kitsios, A., Anastasiou, A., & Papadopoulos, P. (1998). *Graecae, 5.1.20. The Importance of Physiotherapy in Ancient Greek Athletics, Studies in physical culture and tourism*, Vol.5 (pp. 137-145). Aristotelian University of Thessaloniki
- NSW Gov. Legislation, (2022) <https://legislation.nsw.gov.au/view/whole/html/repealed/current/act-1945-009>
- Pausanias 6.20.9- University of Chicago, <https://anastrophe.uchicago.edu/cgi-bin/perseus/citequery3.pl?dbname=GreekNov21&query=Paus.%206.20.9&getid=1>
- Penn Museum, (2020). *Olympic Faqs*, <https://www.penn.museum/sites/olympics/olympicfaqs.shtml>
- Penn Museum, (2020). *Olympic Origins*. <https://www.penn.museum/sites/olympics/olympicorigins.shtml>
- Pettman, E. (2007). A history of manipulative therapy. *Journal of Manual & Manipulative Therapy*, 15(3), 165-174.
- Population Stat, (2017-2022).<https://populationstat.com/greece/athens>
- Reid, H. L.,(2021). The philosophy of the strigil: Gymnasium culture in Magna Graecia, Pre-print, <https://www.researchgate.net/publication/350467360>

- Retsas, S. (1981). Medicine and the Olympic games of antiquity. *History of Medicine*, 9(1), 4-7.
- Roth, S. M. (2006). Why does lactic acid build up in muscles?. *Scientific American*, 294(4), 104. <https://www.scientificamerican.com/article/why-does-lactic-acid-buil/>
- Ruscoe, (2018). *The primary contact physiotherapist*. <https://history.physio/the-primary-contact-physiotherapist/#:~:text=Accepting%20this%20challenge%2C%20the%20Australian,1976%20physiotherapists%20in%20Australia%20became>
- Santacroce, L., Charitos, I. A., Topi, S., & Bottalico, L. (2019). The Alcmaeon's school of croton: philosophy and science. *Open Access Macedonian Journal of Medical Sciences*, 7(3), 500-503.
- Sheppard, L. (1994). Public perception of physiotherapy: implications for marketing. *Australian Journal of Physiotherapy*, 40(4), 265-272. [https://doi.org/10.1016/S0004-9514\(14\)60463-3](https://doi.org/10.1016/S0004-9514(14)60463-3)
- Stavrianos, I., Kaimakamis, V., Tsimaras, V., Anastasiou, (2018) *Galinos, Healthy Speeches. II.71*). Perceptions and attitudes concerning individuals with disabilities in ancient Greece: physical exercise as a means of prevention and treatment of health-related problems. *Exercise and Quality of Life*, 10(2), 47-53. doi:10.31382/eqol.181206
- Stefani, R. T. (2016, July). Ancient Olympics: events, superstars, cheating, technology and women's role. In *Proceedings of the 13th Australasian Conference on Mathematics and Computers in Sport*. Melbourne Australia, 11-13.
- Stocking, C. H. (2016). The Use and Abuse of Training "Science" in Philostratus' *Gymnasticus*. *Classical Antiquity*, 35(1), 86-125. <https://doi.org/10.1525/ca.2016.35.1.86>
- Strive Rehab, (2021). *A brief history of physical therapy*, <https://striverehab.com/a-brief-historyofphysicaltherapy/#:~:text=Sweden%20was%20the%20first%20to,as%20a%20viable%20health%20practice>
- Swadling, J. (1999). *The Ancient Olympic Games* (2<sup>nd</sup> ed.). Austin, TX: University of Texas Press.

Travlos, A. K., Anastasiou, A., Velissari, M., & Georgiadis, K. (2019). Physical activities and games of the Spartan girls: The Case of Kyniska. *European Studies in Sports History* 12, 9-28.

Wikipeadia, (2022) World Physiotherapy 2022, <https://www.physio-pedia.com/Physiotherapy / Physical Therapy>

Wikipedia, (2022), Olive wreath, [https://en.wikipedia.org/wiki/Olive\\_wreath#:~:text=The%20olive%20wreath%2C%20also%20known,circle%20or%20a%20horse%2Dshe](https://en.wikipedia.org/wiki/Olive_wreath#:~:text=The%20olive%20wreath%2C%20also%20known,circle%20or%20a%20horse%2Dshe)  
oe

World Physiotherapy, (2022). Accredited Programmes.<https://world.physio/what-we-do/education/accreditation/programmes>

World Physiotherapy, (2022). What is Physiotherapy? <https://world.physio/resources/what-is-physiotherapy>

Young, D. C. (2007). *The Olympic Truce*. Encyclopedia Britannica. <https://www.britannica.com/topic/The-Olympic-Truce-1688469>