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### Physical Health in Dynastic Egypt, The Ideal VS Reality

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#### ARTICLE INFO Abstract

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Observers of ancient Egyptian sources are often impressed by the images of healthy and strong bodies which are presented throughout the ancient Egyptian art. Indeed the majority of people, of all genders, are represented in their youthful days, being fit showing no signs of obesity, exhaustion or illness. It seems that, with the exception of permanent disabilities, the ancient artists were inclined towards depicting people in their ideal physical form, young, slim and healthy. Yet how far was this image reflected in reality? It is a well-known fact that the average life expectancy of Egyptians was around 35 years old Hence there is a good chance that people suffered many health problems that led to their short lives. In addition to that, how realistic is it to assume that most people in an ancient agricultural society looked like modern athletes?

Although there are numerous papers dealing with diverse topics like ancient Egyptian medicine, diet and diseases no research was devoted to evaluating the overall health and well-being of ancient Egyptians. This article aims to be an analytical- descriptive study of the realistic situation concerning ancient Egyptians' health by contrasting artistic images and ancient textual sources with modern resources like mummy analysis , diet evaluation and environmental factors to decide how overall healthy the ancient Egyptian life was. Permanent disabilities such as dwarfism and blindness have been excluded from this research since they are widely covered by research elsewhere.

#### 1. Introduction

Physical health is an essential element in determining the well-being of individuals (Robert, 1999). Being healthy means being free of illnesses and being able to perform daily life activities with ease and without pain. The main economic activity in ancient Egyptian society was agricultural which required lots of physical efforts and exposure to environmental stress and infections. Moreover, other professions like quarrying and many types of crafts must have been physically demanding, exposing their workers to injuries, hazards and pollutants. Yet the majority of ancient Egyptian scenes and figures show their owners in perfect condition of health, that being correct for people of lower hard worker classes equally as the case in administrates, priests or kings. Researchers have therefore to dig further in scientific evidence available to us today to assess how overall healthy our ancient ancestors were.

## 1. Evidence from lifestyle and environment

Egypt's economy during the dynastic period was based on agriculture (Eyre, 1997). The ancient peasants of the Nile Valley used basin irrigation which meant letting flood water submerge fields and waiting until water stands (Hughes, 1992). Because annual floods were inconsistent, and to ensure regular irrigation, canals were dug and dykes were built, both of which needed restoration every year to keep the system running. The agricultural cycle had 3 parts corresponding to the seasons of the year: inundation, growth and harvest. Thus the ancient farmer had constant contact with the river.

Daily life in ancient Egypt also resulted in frequent contact with river water through household activities such as fetching drinking water, washing clothes and bathing. Even leisure involved water contact in the sports of hunting, sailing, swimming and rowing. Also as a marsh-country, Egypt must have been swarmed by mosquitos in antiquity since it housed an optimal habitat for the insect's larvae and pupae (Fearnside, 1911). This might have promoted the wide spread of Malaria.

There were huge civil engineering projects throughout dynastic history: building great Mastabas, massive pyramids, gigantic water amenities and curving colossal statues and obelisks (Mark, 2016). The logistics of these great constructions must have caused many injuries to the workers involved. Hence it is reasonable to assume that trauma and skeletal disease were common, a fact that is supported by medical papyri.

Farouk (2022) concluded that air quality in ancient Egypt was modest for many reasons. Quarrying was stressful to the respiratory system and exposure to dust from quarrying can pose health dangers not only to the workers but also to the population living nearby (Nemer et. al, 2020). Moreover, silica dust, a harmful material for lungs, must have been produced often in ancient Egypt in the process of making jewelry, vessels, amulets, inlays, sarcophagi, and scarabs. Cooking was also done in closed spaces using fuels such as wood or animal dung. The former produces grade one carcinogenic emissions according to modern research.

On the positive side, hygiene and grooming were an important part of social identity of ancient Egyptians (Rigs, 2010). The Ebers papyrus describes the earliest prototype of soap which was used for cleaning and treating the human body. The text includes the way of preparing soap which was by mixing animal and vegetable oils with alkaline salts. The soap-like material was then used for treating skin diseases, as well as for washing. Mouth hygiene was not however practiced with the same tools of today and there was nothing similar to a toothbrush. Nevertheless masticatories were probably employed to refresh the mouth and priests used to chew natron pellets as a purification ritual (Forshaw, 2009).

All archaeological sources (equipment, texts, scenes, sports venues) indicate that ancient Egyptians of all social classes practiced numerous types of sports such as wrestling, field hockey, swimming, hunting, water-jousting, rowing, javelin-throwing, competitive races, handball, archery, acrobatics and high-jumping (Decker, 1992). Such activities must have contributed to the physical fitness of the society. According to the World Health Organization, sports help in preventing non communicable diseases (NCDs) such as heart disease, stroke, diabetes and breast and colon cancer and other chronic illnesses such as hypertension and obesity.

## 2. Evidence from diet

The ancient Egyptian diet was rich and diverse as it consisted of bread, beer, fruits, (dates, grapes and figs), vegetables (onions, leeks, lettuces, celery, cucumbers, radishes, papyrus

stalks), legumes (peas, beans, lentils, chickpeas) eggs, milk, red meat (cows, pigs, sheep), poultry (ducks, pigeon, geese, partridge, quail, doves, swans and ostriches), several types of fish and honey. Yet this variety was not available most of the time to all social classes. Meat was considered a luxury and beef was more expensive than pork or mutton. The majority of the population consumed a mostly vegetarian diet while the upper class, including kings, officials, and priests may have eaten more meat protein, mainly from cattle (Triambelas, 2014).

David et al. (2010) examined hieroglyphic inscriptions on Egyptian temple walls which give details of the food offered daily to the gods, assuming that it was eventually consumed by priests, thus reflecting their dietary habits and exposing their daily fat intake. The diet consisted mainly of beef, wildfowl, bread, fruit, vegetables, cake, wine, and beer. Each of these components had fat ranging from 35% to 63% of their energy content. Even the bread had considerable fat content since it was enriched with fat, milk, and eggs. They made a conservative estimate that the dietary energy for each priest contained more than 50% fat, a good portion of which coming from saturated fat. The modern recommended daily intake of energy contains 25–30% fat in total, of such only 7% of saturated fat. Thus it seems that the ancient priests almost doubled the recommended healthy amount. Other factors like high intake of salt (which was used as a preservative), low to no intake of fish (prohibited to Egyptian priests) and the consumption of alcohol must have contributed more to poor cardiovascular health.

It's not easy to determine the diet and portions available to worker classes of the society. But indications can be driven from the daily rations assigned to workers. Breasted (1906) calculated that the detachment of workers sent by Seti I to Silsilah quarries received a daily ration of 1.8 bread, 2 bundles of vegetables and a roast of flesh. The eloquent peasant, who did not carry out any physical work, received a daily portion of 10 loaves of bread. Nunn (1996) made an interesting estimation of the daily calories intake of workers of Dier Al Madina based on Cairo ostrakon 51518. Since the amount of calories ranged from 2.2 times to 8 times the recommended daily needs of manual work (3500 kc), it is more probable that the rations covered the families as well. In any case these textual sources suggest that workers of the state were well fed and well provided for in ancient Egypt, contrary to the evidence from mummies to be discussed.

Designation	Daily Calorific Values (Kilocalories per day)
Chief of workers	48,195
Scribe	48,195
Workman	35,343
guardian	28,917
female servant	19,278
boy	12,852
potter	9,639
doctor (swnw)	8,033

Calculation of daily calories based on grain rations allocated to workers of Dier Al Madina. From *Ancient Egyptian Medicine* by J.F Nunn, 1996, p. 19. Norman: University of Oklahoma Press

Finally, teeth wear and abscess formation in gum were attributed to the type of bread Egyptians consumed. After examining 12 preserved bread samples dating from the Predynastic Period to the Middle Kingdom, Leak (1972) noticed that they contained mineral fragments, sand and abrasive particles. However research indicates that the amount of tooth wear became less common in the course of Egyptian history, thanks to improvements in diet and food processing methods (Forshaw, 2009).

### 3. Evidence from art

Art indicates that the typical ancient Egyptian body was clean, shaved, and scented. Egyptian men almost never had beards but sometimes grew thin trimmed mustaches. Actually, ancient Egyptians took extreme measures for hygiene by circumcising males for the sake of cleanliness. A well-known scene in the tomb of Ankhmahor, an official of the Sixth Dynasty, shows circumcision being operated on two adult males (fig.1). On the other hand, Hodges (2001) assumed that circumcision was limited to priests, functionaries and some workers.

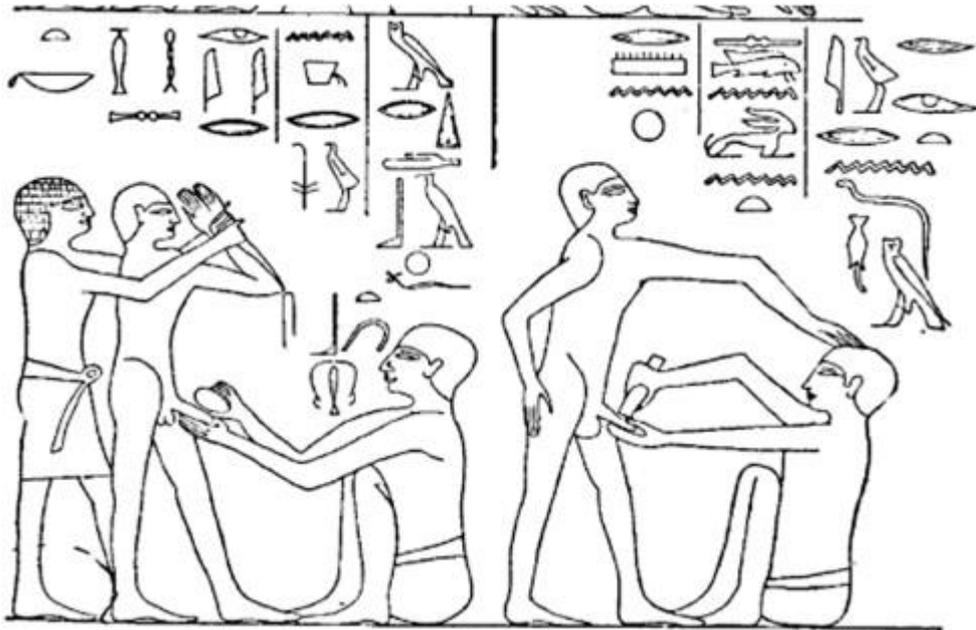


Fig. 1. Circumcisions depicted in the tomb of Ankhmahor Reprinted from *Coptic art and archaeology : the art of the Christian Egyptians from the late antique to the Middle Ages* (figure 27), by A. Badawy, 1978, Cambridge.

Be it in scenes or statues, men were usually represented with firm muscles while women were represented with slim graceful proportions. Although being overweight, indicated by the folds of fat on torsos of men, was considered a sign of prosperity and comfortable life, kings were not represented in the state of obesity. Many tomb owners on the other hand are represented with protruding breasts and folds of fat, a body shape that might, aside from obesity, suggest gynecomastia, an increase in the amount of breast gland tissue in boys or men resulting from an imbalance of the hormones oestrogen and testosterone. An official called Ankhmahor (fig. 2) from the Sixth Dynasty seems to have had the condition as shown in a relief in his tomb in Saqqara (Nunn, 1996)



Fig.2 Ankhmahor as represented in his tomb in Saqqara. Reprinted from *Ancient Egyptian Medicine* (figure 4.11), by J.F. Nunn, 1996, London.

A remarkable example which shows extra weight in art is the statue of Hemiunu (G 4000), a member of the royal family of the Fourth Dynasty who is believed to have been the architect of the Great Pyramid of Giza (Der Manuelian, 2008). The sculpture shows him as a middle aged obese man with double chin and notable accumulation of fat in the pectoral region (fig.3). Not far from the tomb of Hemiunu is a mastaba which belongs to another fat official, namely Idu (G 7102), a scribe of the Sixth Dynasty (Simpson, 1976). Idu's statue was attached to his false door and it represents him as a heavy man (fig. 4). Interestingly the scene of Idu and his wife on the false door shows him as an average built male, which might mean that reliefs were more committed to idealism than sculpture (fig.5).

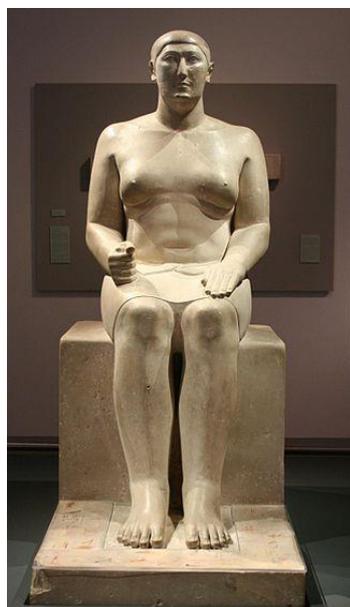


Fig. 3 Statue of Hemiunu retrieved from <https://en.wikipedia.org/wiki/Hemiunu#/media/File:Statue-of-Hemiun.jpg>

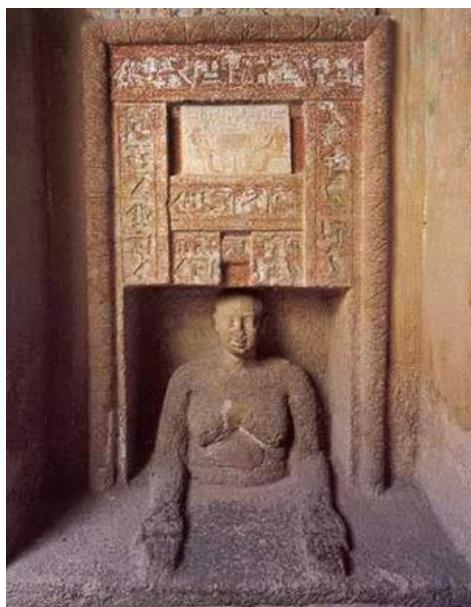


Fig. 4. Statue of Idu retrieved from <http://www.touregypt.net/featurestories/ident.htm>



fig 5. Idu and his wife on the panel of the false door. retrieved from <http://www.touregypt.net/featurestories/idut.htm>

Only a handful of scenes show people with illnesses in ancient Egypt (Other than permanent disabilities). Two tombs in Saqqara (D 64 and tomb of Mehu )show deformities consistent with Bilharzia (Ghailiungui, 1962). Men carrying bundles of papyrus and riding boats show umbilical and genitalia swellings. Ghailiungui suggested bilharzia , filariasis, hydrocele or hernia as possible explanations. Due to the fact that sick people of both tombs were fishermen, boatsmen, papyrus carriers, potters and peasants all of whom had daily contact with water he opted for the first possibility.

Tuberculosis was depicted in several ancient Egyptian scenes dating to the period extending from the Old Kingdom to the New Kingdom. Such scenes were compiled by Cave (1939). Among these is a false door from a mastaba of the Old Kingdom which bears two reliefs of the owner, Ankhmywas. The deceased is represented with an obvious convex torso which may have resulted from tuberculous disease of the upper thoracic spine (Pot's disease) (fig. 6).



fig. 6 Ankhmywas on his false door. Reprinted from 'The evidence for the incidence of tuberculosis in ancient Egypt', by J.E. Cave, 1939, *British Journal of Tuberculosis* 33, fig 1A

In a well-known scene in the tomb of Ipuu, the sculptor of Ramses II, a physician was depicted treating a man with a dislocated shoulder, using a method similar to the Kocher maneuver introduced in 1870, good 3200 years later (Fig. 7). It seems that a worker sustained

an injury during tomb construction, an incident which was documented by the painter of the scene (Colton, 2013).



fig. 7 A physician treating a dislocated shoulder in the tomb of Ipuy. Reprinted from ‘Orthopaedic challenges in Ancient Egypt’, by C. Colton, 2013 , *Bone & Joint* 360, 2(2), fig. 3.

A study by Kamal (2019) has traced 122 scenes of bald individuals from the Old Kingdom till the Late Period, only 9 of which represent persons from the elite. Most scenes, 94 in number, depict aged persons. One example appeared in the tomb of Meresankh (G7530, 4th Dynasty, Giza) and it shows two elderly herders with balding gray hair (fig. 8)



fig. 8 . Two elderly herders in the tomb of Meresankh III. Reprinted from *The Mastaba of Queen Meresyankh III, Giza Mastabas I*, ( plate IV) by D. Dunham and W.K. Simpson,, 1974, , Boston.



fig. 9 a stela of a priest in Copenhagen museum with a shortened leg. Retrieved from <https://www.tuftsmedicalcenter.org/neurology-illustrated/spinal-cord/ancient-illness#:~:text=This%20stela%20from%20ancient%20Egypt,or%20individuality%20amongst%20the%20figures.>

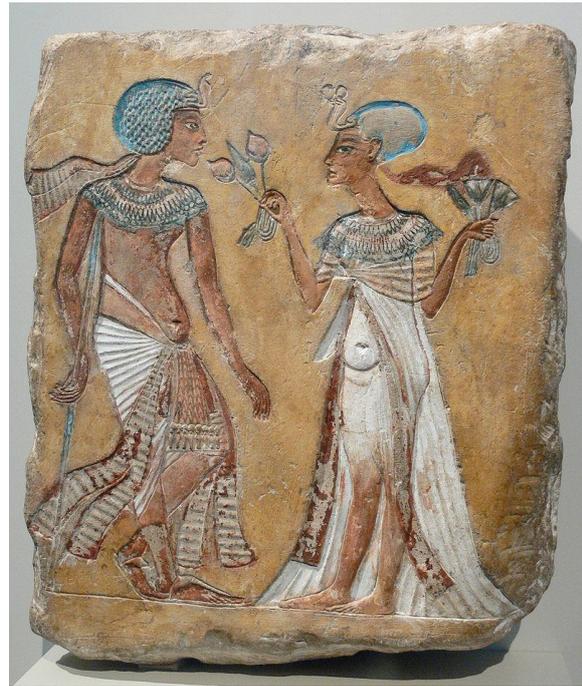


fig. 10 A royal couple from Amaran period on a limestone block in Egyptian Museum Berlin. Retrieved from [https://commons.wikimedia.org/wiki/File:Spaziergang\\_im\\_Garten\\_Amarna\\_Berlin.jpg](https://commons.wikimedia.org/wiki/File:Spaziergang_im_Garten_Amarna_Berlin.jpg)

An Egyptian stela dating to the 18th dynasty (fig.9) depicts a priest with a definite deformity in the right leg since the limb is too short and skinny when compared with the healthy left leg. The priest is using a stick to aid his walking. An almost identical representation from the same period on a piece of limestone now in the Berlin museum which depicts a royal couple (the male being either king Tutankhamon or Smenkhkare), although the right leg here is not thinner than the left (fig.10). Both cases and other similar representations in Egyptian art accumulated by Mahran and Kamal (2016) seem to document cases of polio, a viral infection of the spinal cord that targets motor nerves.

#### 4. Evidence from texts

There are thirteen main medical papyri that survived from ancient Egypt: Kahun Papyrus, Ramesseum Papyri, Edwin Smith Papyrus, Ebers Papyrus, Hearst Papyrus, London Papyrus, Berlin Papyrus, Carlsberg Papyrus, Chester Beatty Papyrus, Carlsberg VIII papyrus, Crocodilopolis papyrus, Leiden papyrus and the Brooklyn Papyrus (Nunn, 1996). These papyri dealt with diverse health topics covering almost every branch of modern medicine, such as gynaecological diseases, fertility, pregnancy, contraception, eyes, paediatrics, muscles, tendons, broken bones, surgeries, dermatology, digestive diseases, traumatic diseases, dentistry, urinary system, ulcers, orthopaedic conditions, blood and hair

conditions (Leake, 1952). All of these papyri have descriptions of the cases and prescriptions. Drugs were composed of animal fats, liquids (like beer and milk) and numerous types of plants such as acacia, barely, casia, castor bean, coriander, cucumber, cumin, dates, fennel, fig, garlic, gourd, juniper, leek, lettuce, lotus, peas poppy seeds, saffron, sunflower, sytrax, terbinit, wheat, willow buds, white thistle and wormwood. In addition, there were 50 other types of unidentified plants. The papyrus also presented number of cosmetic recipes to fight dandruff and head lice and to control body odour. The method of taking drugs was by oral administration or local application. In spite of the fact that many of these papyri quote magical formulas and spells, modern medical research has shown the effectiveness of the steps of examination, diagnosis and treatment when they prescribed recipes. Actually the British Pharmacy Constitution issued in 1973 affirmed the compatibility of the ancient Egyptian pharmaceutical compositions by 37 percent with the known formulas.

In those medical Papyri, there are many references of worms and vermin as obtrusive and

destroyers of the body. The most prominent disease is the one called aAa  since it's mentioned 50 times through four papyri (Ebres, Berlin, Hearst, London) (Jonckheere, 1994). The word is written with a determinative of a penis. Some researchers have connected it with schistosomiasis (Balharazia), an infection which is caused by a parasitic worm that lives in freshwater in subtropical and tropical regions and which used to be common in Egypt until two decades ago. The disease is described in ancient papyri by causing discharge from penis which might refer to blood in urine, one of the symptoms of Bilharzia. However, the word aAa can equally refer to the multiple other possible diagnoses such kidney stones, genitourinary neoplasms or gonorrhoea which cause the same symptom. It is nevertheless worthy of attention that precaution advised to avoid contracting a-a-a was to stay away from polluted water. As for fishermen, farmers and others who dealt with river waters on a daily basis they were instructed to wear penile sheaths made of linen (Di Bella et. al, 2018).

Leprosy is a chronic infectious disease which mainly targets the skin, the peripheral nerves, mucosa of the upper respiratory tract and the eyes. Many scholars believe that the earliest possible account of the disease appears in an Ebers Papyrus (Veiga, 2009). It was called the

Chons swelling (anwt nt Sat Xnsw)  and the Berlin papyrus recommends a recipe to remove it (Ebbell, 1935).

The Edwin Smith papyrus, contained the earliest reference to trauma injuries, listing 48 systematically arranged cases. This includes injuries to the head, throat and neck, clavicle, arm, sternum, ribs, shoulder and spine. According to the severity of the condition the text classifies the case to 'An ailment that can be treated'; 'An ailment that can be contended'; or 'An ailment that can not be treated'. The same papyrus gives detailed information about the treatment of some oral issues as well.

Judging from medical texts, the ancient Egyptians were taking great care of their hair and wanted to avoid it turning to gray or losing it altogether (Kandil and Salama, 2018). The ancient Egyptian term for baldness was is  (Kamal, 2019). In the Ebers Papyrus, which is concerned with various skin diseases and cosmetic conditions, there is an entire section about baldness and its treatments.

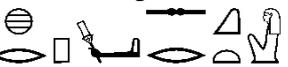
Cave (1939) reviewed the topics of the medical papyri and concluded that there is no specific textual evidence of the occurrence of tuberculosis among the ancient inhabitants of

the Nile Valley. However Ziskind and Halioua (2007) traced some respiratory conditions in medical papyrus that might refer to tuberculosis. For example a passage in Edwin Smith papyrus describes cold abscesses on the chest which is a symptom of pulmonary tuberculosis. The passage proceeds to say there is no treatment for the condition. Additionally the Ebers papyrus describes cervical swellings that may correspond to Tuberculous lymphadenitis.

Although there is no obvious mention of Malaria in medical texts, several remedies against mosquitoes were prescribed in Ebers Papyrus such as house Fumigation with incense and myrrh (Attia, 2017). It's unclear whether our ancient ancestors were aware of the diseases transmitted by mosquitoes or wanted simply to avoid their annoyance.

Tombs of officials are a great source in researching medical titles. In ancient Egypt doctors

 (swnw), purification priests of Sekhmet  (wab sxmt) ,

Kherp priests of Serqt  (xrb srqt) and magicians  (sAw) were all considered medical practitioners. There were several administrative grades of swnw such as: master, controller, overseer, inspector, chief. Occasionally these titles were followed by the geographical domain of their authority like Upper or Lower Egypt. There were titles too for specialists such as nrw phwt (proctologist), ibh (dentist) and rx kaw (veterinary surgeon) (Nunn, 1996)

Turning to another important textual source about public health in ancient Egypt, the accounts of Herodotus should be taken into consideration. The Greek traveller who visited Egypt during the Late Period expressed disapproval about Egyptian hygiene habits considering them against common sense (Book 2, chapter 35). He was for example astonished that Egyptians lived with their animals and kneaded clay with their hands but dough with their feet. He found it strange too that, against the habits of the rest of the ancient world, Egyptians mourned by letting their hair and beards grow although they were shaved otherwise. It seems that by the time of Herodotus Egyptians had indoor lavatories since he stated that : To ease themselves they go indoors, but eat outside in the streets, on the theory that what is unseemly but necessary should be done in private, and what is not unseemly should be done openly. In chapter 95 of book 2, Herodotus tells us that Egyptians invented many techniques to fight mosquitoes: they used an oil extracted from castor-oil plant which had a disagreeable smell as a repellent and they slept on raised structures so that wind drove mosquitoes away. He also adds that the ancient Egyptians invented the mosquito net, reporting that King Sneferu and queen Cleopatra VII used to sleep under nets hanging covering their beds, in fear of mosquitoes causing malaria. Finally, according to Herodotus “Egyptians practised circumcision for the sake of cleanliness, considering it better to be cleanly than comely” (Book 2, chapter 36).

Abu Bakr (2016, p. 17) extracted textual evidence of personal hygiene from the most known pieces of ancient Egyptian literature, of which she quoted an excerpt from the story of Sinuhe that lists the steps he has taken to be presentable again after spending so many years in foreign land “I was shaved and my hair was combed..... I was clad in soft linen, and anointed with fine oil”

## 5. Evidence from mummies

Palaeopathology is a medical discipline concerned with the study of diseases that existed in the past and are often still occurring in the present. Below is a summary of the paleopathological studies which examined ancient Egyptian mummies and which confirm

the evidence from text and art as well as the expectations based on lifestyle and environment on the existence of some microbial and viral diseases in antiquity .

The first microbiological study of mummies was done in 1910 when Sir M.A. Ruffer first analyzed mummified tissues from the Twentieth Dynasty and recovered *Schistosoma haematobium* ovas (bilharzia). He established back then that disease plagued ancient Egypt people just like at the dawn of the 20th century. Modern research found that the *Schistosoma* circulating anodic antigen was present in 45% of mummies studied.(Ziskind, 2009).

In 2013 an important study of ancient Egyptian mummies was published. It included whole-body CT scans of 76 mummies. The analysis of mummies proved that many of its owners died as a result of microbial diseases which cause health issues in contemporary society such as tuberculosis, malaria, pathogenic fungi and caries (Sandle, 2013).

Pulmonary tuberculosis was suspected in several Egyptian mummies. The histopathological studies done by Ruffer, as early as 1910, spotted in a mummy of the 20th dynasty, advanced lesions of anthracosis, a clue for tuberculosis. Morse et al. (1964) described pleural adhesions, a sign quite suggestive of pleuropulmonary tuberculosis, in a Late Period mummy. A mummy studied by Goyon et al. (1987) presented significant lung lesions, probably the cause of death, but they were not able to establish whether the lesions were the result of severe pneumonitis or tuberculosis. There is only one microscopic confirmation of the Tuberculosis bacillus, observed on the remains of a child of 5 years dating from the Late Period who died from a diffuse form of tuberculosis. On the other hand, dozens of mummies suggest Pott's disease (tuberculosis of the spine) given the severe destruction of vertebrae. Moses et al recorded (1964) 31 of such mummies.

A study of the mummies of Tutankhamon and 5 generations of his family suggested that malformation was hereditary. The study concluded that avascular bone necrosis along with the malarial infection was the most probable cause of death in Tutankhamun. Walking impairment and malarial disease contracted by Tutankhamun are supported by the finding of canes and an afterlife medication supply in his tomb (Hawas at. al, 2010).

Pathologist Andreas Nerlich and his team examined two mummies from Thebes which date to more than 4000 years ago and showed clear evidence for the earliest known cases of malaria ( Nerlich et. al, 2008). Using modern techniques, the researcher identified ancient DNA for the most deadly and most common malaria parasite, the plasmodium falciparum in their tissues.

Atherosclerosis is a condition that can be serious. It involves the clogging of arteries with fatty substances called plaques and It is caused by obesity, high blood pressure, high cholesterol and triglyceride levels, smoking, diabetes, and eating saturated fats. Atherosclerosis is one of the first diseases to be noticed in Egyptian mummies. Shattock (1909) recorded atheromatous deposits in the aorta of King Menephtah and Ruffer (1911) documented arterial lesions in hundreds of Egyptian mummies. A radiological survey (Harris & Wentz, 1980) showed signs of atherosclerosis in the mummies of Ramesses II, Ramesses III, Sethos I, Ramesses V, and Ramesses VI. Allam et. al (2011) carried out entire body, multislice computed tomography scans on 52 ancient Egyptian mummies dating to the Middle Kingdom until the Greco-Roman period. Out of 52 mummies, 20 dating to all periods of the study had either definite or probable atherosclerosis. Sandale's (2013) research population of 76 mummies had atherosclerosis in 29 (38%) of them. Strangely this is the same affected percentage of Allam et. al's study (38%). The Leeds mummy which belonged to a middle aged priest called Nesyamun who lived during the

New Kingdom shows well developed atheromatous plaques, agreeing with the finds of David et al. (2010), about the diet of priests (See below under diet).

Leprosy is a chronic infectious disease that targets the skin, eyes, nose, and muscles and it is caused by a bacterium called *Mycobacterium leprae*. Examination of a Late Period skeleton from Dakhleh Oasis found SNP type 2 of *Mycobacterium leprae* strain (Monot et. al, 2009).

Anthraxosis and silicosis are respiratory ailments which are caused by the inhalation of coal dust or crystalline silica dust. They have been spotted in the lungs of mummies (Farouk, 2022). Moreover, Roger Montgomerie et. al (2012) who analyzed the lungs of 15 Egyptian mummies has uncovered tiny microscopic particles that irritate the lungs, indicating the presence of air pollution thousands of years ago.

Mitchell (Attia, 2017) noticed a shortened left leg in the early Egyptian mummy from Deshasheh, interpreting it as polio. (Zaki & Abdelfatah, 2017) examined a mummy with a foot deformity dating to the New Kingdom and concluded the anomaly might be due to polio. The mummy of Siptah, a 19th Dynasty king who died at the age of 16, shows a deformity of the left leg and foot which can be a result of polio or cerebral palsy (Schipper, 2006).

Impact injuries were discovered in countless mummies. George Reisner found in Naga El Der a number of human specimens with clear fractures, two of which had been treated with splintage (Smith, 1908). The purpose of the splintage was to support bone ends of the fracture site and to prevent bone protruding through the skin. The splints uncovered in the excavation consisted of several linen-wrapped, palm bark boards placed carefully over the limb and fixed with linen bandages. Additionally, the earliest evidence of surgical care of fractures comes from ancient Egypt since a mummy of the Late Period of unknown provenance appeared to have had previous surgery to the right knee. Radiographs demonstrated an intramedullary fixation achieved with an iron nail. It is more possible however that the nail was inserted post mortem by embalmers in order to prepare it for eternity. Yet the skill by which the operation was done suggests some experience with such practice, perhaps with the living as well (Colton, 2013).

As for dental health, research of the human remains excavated in the Nile Valley has established the presence of every pathological and non-pathological dental problem found today (Leek, 1972). The reasons between past and present are however different. In the latter the disease is caused by the breakdown of teeth enamel leading to caries. But in the former the reason is the wear on the biting surface of the teeth. This tooth wear progressed with the age of the individual and led in many cases to the almost complete loss of crown structure. Moreover, many skulls show multiple abscess and cystic formation. Additionally, osteomyelitis, an inflammation of bone cortex and marrow that develops in the jaw after a chronic infection, has been responsible for many deaths in ancient Egypt (Forshaw, 2009). However, The CAT scan of the teeth of 3 Egyptian mummies preserved in the Civic Museum of History and Art in Trieste, revealed that they had lower rates of decayed/missing teeth (DMT) and decayed/missing/tooth surfaces (DMTs) than the modern population (Gerloni et al., 2009).

Mummies can tell a lot about the diet of its owners too. In 2013, Qubbet el-Hawa research project studied the bones of more than 200 mummies discovered in a Middle Kingdom tomb (no.3) which was reused up to the Late Period. Though the study is yet not fully published, the initial results released in several press coverages draw a grim picture about the lives of the persons examined; Life expectancy barely reaching 30 because of

malnutrition and severe gastrointestinal disorders, due to drinking the polluted waters of the Nile. The infant mortality rate was high and children died from serious infections.

Finally Egyptian mummies give us clues about cosmetic issues of their time. Kandil and Salama (2018) listed many examples of bald royal mummies. Among these were the mummies of Tuthmosis III, Ramsis II, Merenptah and Tuya the mother of queen Tiye.

### Conclusion

Ancient Egyptian art depicted a mostly healthy population, with few exceptional scenes and statues showing symptoms of Bilharzia, Tuberculosis, polio, minor injuries, obesity and baldness. However this was sadly not the case in reality. Egyptian mummies and environmental analysis indicate epidemic prevalence of microbial diseases such as Bilharzia, Malaria and Tuberculosis. The upper class commonly had atherosclerosis due to excess intake of saturated fats. There are also indications on the existence of Leprosy.

Yet the Ancient Egyptians led healthy lives to the best of their ability managing the restrictions of the environment and with the little scientific knowledge they possessed. They were the first in the world to lay the foundations of medical diagnosis and treatment, using natural ingredients for conventional remedies as textual sources indicate. The writers of medical papyri addressed almost every branch of modern medicine. Egyptian medical practitioners had good experience in dealing with impact injuries. They introduced splintage for fractures and a technique to reposition dislocated shoulders. There are even indications of surgical care for fractures.

Personal hygiene was considered essential and was kept to the highest standards, especially among the upper class. Lots of care was given to cosmetic issues like baldness and countless recipes were prescribed to treat it.

The diet of our ancestors was wonderfully diverse, although it's hard to determine the percentage of the population that had access to adequate nutrition. While textual sources indicate that even the lowest classes of workers had sufficient daily intake of calories, evidence from malnourished mummies of Qubet Al Hawa suggest the opposite.

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## الصحة الجسدية في مصر القديمة بين المثالية والواقعية

مى فاروق

كلية السياحة والفنادق - جامعة مدينة السادات

المعلومات المقالة	المخلص
<p><b>الكلمات المفتاحية</b></p> <p>الصحة؛ مصر القديمة؛ الجسد؛ الأمراض؛ النظافة.</p> <p><b>(JAAUTH)</b> المجلد ٢٣، العدد ٢، (٢٠٢٢)، ص ١٦٩-١٨٤.</p>	<p>غالباً ما ينبهر الناظر بشكل الأجسام السليمة والقوية التي يتم تقديمها من خلال الفن المصري القديم. والتي تظهر غالبية الأفراد، من الجنسين، أثناء شبابهم، حيث لا تبدو عليهم علامات السمنة أو الإرهاق أو المرض. و يبدو أن الفنانين القدامى، كانوا يميلون إلى تصوير الأشخاص في شكلهم البدني المثالي، من حيث الشباب والنحافة والصحة. لكن إلى أي مدى انعكست هذه الصورة في الواقع؟ من الحقائق المعروفة أن متوسط العمر المتوقع للمصريين كان حوالي ٣٥ عاماً، وبالتالي فقد عانى الأغلبية على الأرجح من العديد من المشكلات الصحية التي أدت إلى قصر حياتهم. بالإضافة إلى ذلك فقد كان للمجتمع الزراعي لقدماء المصريين العديد من التحديات البيئية التي ساهمت بلا شك في اعتلال صحتهم.</p> <p>على الرغم من وجود العديد من الأوراق البحثية التي تتناول موضوعات متنوعة مثل الطب المصري القديم والنظام الغذائي والأمراض، إلا أنه لم يتم تخصيص أي بحث لتقييم الصحة العامة و مدى رفاهية المصريين القدماء. تهدف هذه المقالة إلى أن تكون دراسة تحليلية وصفية للوضع الواقعي المتعلق بصحة المصريين القدماء من خلال مقارنة الصور الفنية والمصادر النصية القديمة بالدراسات الحديثة مثل تحليل الموميאות وتقييم النظام الغذائي والعوامل البيئية لتحديد مدى الصحة العامة للحياة المصرية القديمة. وقد تم استبعاد الإعاقات الدائمة مثل التقزم والعمى من هذا البحث حيث تمت تغطيتها على نطاق واسع بحثياً في دراسات عديدة.</p>