

Israel's Biblical Legacy in Medicine

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Many ailments, maladies, and diseases are known to everyone. Many Biblical figures also suffered from them and they tried to treat them in many ways, at the same time trying to understand and explain their etiology. Rules related to worship and rituals in the times of the Old Testament are a secondary source of information about the approach to health issues and diseases and how they were understood in those days. Furthermore, it is worth adding that the Biblical pericopes also present diseases as the aspect of human life that to a large extent once influenced the course of the history of Israel, especially when they affected kings and important public officials (for example, Saul; see: 1 Samuel 16 : 14–23; Nebuchadnezzar, see: Daniel 4 : 33). Thus studying the dominant health issues at the time not only provides insight into the background of the Bible in the context of the medicine of the ancient Hebrews, but it also allows us to evaluate their contribution to the development of this area of human life in the field of contemporary European culture, which is the legacy of Judeo-Christian as well as Greco-Roman antiquity.

1. The Bible about Physicians and Their Work

In the Bible, the most important physician who treats man is God Himself: “[God] pardons all your sins, and heals all your ills” (Psalms 103 : 3).¹ The precondition for remaining under God’s “medical” care is obedience to His guidelines: “He said: If you listen closely to the voice of the Lord, your God, and do what is right in his eyes: if you heed his commandments and keep all his statutes, I will not afflict you with any of the diseases with which I afflicted

1 All Biblical quotes come from the United States Conference of Catholic Bishops, <http://www.usccb.org/bible/books-of-the-bible/index.cfm>.

the Egyptians; for I, the Lord, am your healer” (Exodus 15 : 26). The name of the angel that showed the way to the healing of Tobiah is Raphael, which in Hebrew means “It is God who heals”: “So Raphael was sent to heal them both: to remove the white scales from Tobit’s eyes, so that he might again see with his own eyes God’s light; and to give Sarah, the daughter of Raguel, as a wife to Tobiah, the son of Tobit, and to rid her of the wicked demon Asmodeus” (Tobit 3 : 17)

The Bible also teaches that a physician is God’s tool for healing, but a physician can harm a sinner: “In the thirty-ninth year of his reign, Asa contracted disease in his feet; it became worse, but even with this disease he did not seek the Lord, only physicians” (2 Chronicles 16 : 12).

Thus in Biblical thought on the topic of health and illness, faith and medical practice always meet. Likewise, in the lengthy text Sirach 38 : 1–15 the Biblical author shows a connection between a physician’s aid and God’s help and between the profession of the physician and prayer: “Make friends with the doctor, for he is essential to you; God has also established him in his profession. From God the doctor has wisdom, and from the king he receives sustenance. Knowledge makes the doctor distinguished, and gives access to those in authority. God makes the earth yield healing herbs which the prudent should not neglect; Was not the water sweetened by a twig, so that all might learn his power? He endows people with knowledge, to glory in his mighty works, Through which the doctor eases pain, and the druggist prepares his medicines. Thus God’s work continues without cease in its efficacy on the surface of the earth. My son, when you are ill, do not delay, but pray to God, for it is he who heals. Flee wickedness and purify your hands; cleanse your heart of every sin. Offer your sweet-smelling oblation and memorial, a generous offering according to your means. Then give the doctor his place lest he leave; you need him too, for there are times when recovery is in his hands. He too prays to God that his diagnosis may be correct and his treatment bring about a cure. Whoever is a sinner before his Maker will be defiant toward the doctor.”

The above quotes allow us to infer that in Biblical times professional physicians were certainly educated in their field, although much of what they did undoubtedly was medicine bordering on magic. The Old Testament does not name any physicians specifically, although there are relatively many passages related to their work (see, for example: Genesis 50 : 2; Jeremiah 8 : 22). The only Biblical physician known by name is St. Luke, who probably was St.

Paul's physician: "Luke the beloved physician sends greetings, as does Demas" (Colossians 4 : 14).²

2. The Impact of the Israelites' Rejection of Magic on the Development of Medicine

Today, medicine is a science that by making use of the accomplishments of generations related to the treatment and prevention of diseases tries to responsibly explore their causes and progress and help those who suffer from them. However, the history of medicine shows that over the centuries the work of physicians balanced between human knowledge and magic, especially in very difficult cases. The legacy of Israel, and the prohibition against magic in the decrees of Mosaic Law in particular, had a major impact on purifying medicine from magical influences: "Let there not be found among you anyone who causes their son or daughter to pass through the fire, or practices divination, or is a soothsayer, augur, or sorcerer, or who casts spells, consults ghosts and spirits, or seeks oracles from the dead. Anyone who does such things is an abomination to the Lord, and because of such abominations the Lord, your God, is dispossessing them before you. You must be altogether sincere with the Lord, your God" (Deuteronomy 18 : 10–13).

In the field of medicine, among the Israelite medics this resulted in a observation of the development of diseases and their causes, gaining experience, and gave an impulse in the search for increasingly better forms of treatment as well as developing a series of guidelines to be followed to prevent illness. However, it is not easy to uproot magic, because it continues to attract and fascinate people, even today. Sometimes it appears as a last resort, especially when medicine remains behind closed doors and is powerless, incapable of offering a solution.

Christianity remains faithful to the guidelines contained in the above quote from the Book of Deuteronomy 18 : 10–14. This is confirmed by the teaching of the Catechism of the Catholic Church, which deals with this matter in the following words: "All practices of magic or sorcery, by which one attempts to tame occult powers, so as to place them at one's service and have a supernatural

² Cf. *Słownik tła Biblii*, red. nauk. wyd. oryg. J. I. Packer, M. C. Tenney, red. nauk. wyd. pol. W. Chrostowski, przekł. Z. Kościuk, Oficyna Wydawnicza Vocatio, Warszawa 2007, p. 388; R. Gover, *The New Manners and Customs of Bible Times*, Moody Press, Chicago 2005, p. 160.

power over others - even if this were for the sake of restoring their health - are gravely contrary to the virtue of religion. These practices are even more to be condemned when accompanied by the intention of harming someone, or when they have recourse to the intervention of demons. Wearing charms is also reprehensible. Spiritism often implies divination or magical practices; the Church for her part warns the faithful against it. Recourse to so-called traditional cures does not justify either the invocation of evil powers or the exploitation of another's credulity" (2117).³

The above postulates requiring the rejection of magic and fortunetelling in medicine indirectly send us to topics related to the need to be educated by trustworthy teachers who were the true masters of medicine. In the ancient world, the Egyptians were among those who were considered to be knowledgeable in this field. Thus it can be stipulated as highly probable that the Israelites gained medical knowledge from Egyptian physicians, who above all knew human anatomy quite well, which to a certain degree was related to their practice of the art of embalming corpses. The high qualifications of Egyptian medics in the field of mummification are attested to by the perfect state in which many ancient mummies have been preserved to the present day. They are also considered to be ancient specialists in the field of brain surgery. There are testimonies according to which they drilled holes in skulls to lower their patients' intracranial pressure caused, among others, by head injuries, which prolonged their lives. Evidence of this is the five-thousand-year-old minium found in Tel Lachish. They were also familiar with dentistry. Thus it should come as no surprise that the positive opinion of Egyptian medics as reputable specialists in their profession can also be found on the pages of Sacred Scripture, where we read: "Then Joseph ordered the physicians in his service to embalm his father. When the physicians embalmed Israel, they spent forty days at it, for that is the full period of embalming" (Genesis 50 : 2-3).⁴

3 *Catechism of the Catholic Church*, <http://www.vatican.va/archive/ENG0015/_INDEX.HTM>.

4 Cf. R. Gover, *The New Manners and Customs of Bible Times*, op. cit., p. 154-155.

3. The Mosaic Law as Israel's Contribution to the Development of Medicine

The Ten Commandments are a collection of religious and ethical principles of the Hebrews whose significance to the history of medicine cannot be questioned. This does not pertain only to the Fifth Commandment: "Thou shalt not kill" (see: Exodus 20 : 13), which in the field of medicine usually refers to topics related to abortion and euthanasia as well as a series of other Biblical guidelines and laws.

Another example of the contribution of Israel's religion to the development is the Sixth Commandment (see: Exodus 20 : 14), which teaches that in moral categories adultery should be considered in the aspect of sin. It should be added that this laconically expressed principle also is of priceless significance to medicine, because the effects of this sin are also reflected in the physical health of human groups and societies. In medicine, the Biblical summons to fidelity is a preventative measure that protects people from an epidemic of venereal diseases. Throughout the history of humanity, one partner's lack of fidelity or sexual "liberation" or "freedom" gave rise to syphilis, of which a pandemic broke out in the seventeenth century and has yet to be extinguished, or AIDS and other diseases of the twentieth and twenty-first centuries which also result from a lack of orderliness in the area of human sexuality. In the context of what has been said above, we should recall regulations directly related to sexuality (Deuteronomy 23 : 18; Leviticus 12 : 2–4), which in light of our reflections evidently appear as efforts serving to lessen the risk of infection after birth or are directed at preventing the spread of venereal diseases. The prohibition against sexual activity immediately after giving birth gave women time to regenerate after pregnancy and giving childbirth.⁵

Israel's legacy, which can be discerned in the history of the development of the medical sciences, also includes the regulations related to the ritual cleanliness of the body. This is mentioned in both the Old (see, for example: Isaiah 1 : 16) and New Testaments. In the latter, we can read, for example: "For the Pharisees and, in fact, all Jews, do not eat without carefully washing their hands, keeping the tradition of the elders. And on coming from the marketplace they do not eat without purifying themselves. And there are many other things that they have traditionally observed, the purification of cups and jugs and kettles [and beds]" (Mark 7 : 3–5). This can lead us to the

5 Cf. Z. Gajda, *Do historii medycyny wprowadzenie*, Wydawnictwo WAM, Kraków 2011, p. 54.

bold conclusion that hygiene strictly tied to medicine has its roots in a sacred religious rite. It should be added that all the ritual baths in the religion of Israel were a sign of internal purification and thus a symbolic gesture with religious significance, which in the everyday lives of people who lived in those times allowed in a more or less conscious way to avoid diseases, including the so-called “diseases of unclean hands.”

The decrees of Mosaic Law related to the selection of food are also related to the above matter (Deuteronomy 14 : 3n). The categorization of food as clean or unclean is not only related to the sphere of the sacred, but in everyday life to a significant degree protected everyone who remained faithful to this law from poisoning and animal-borne diseases.⁶

Likewise, the roots of preventative medicine can be traced to Biblical guidelines intended to protect against leprosy and other infectious diseases (Deuteronomy 24 : 8; Leviticus 13 : 1–2; Numbers 5 : 1–4). In Biblical thinking, lepers were to tear up their cloaks, ruffle their hair (their unique appearance was supposed to give a warning), cover their beards (to protect others from airborne infection), and yell: “Unclean, unclean!” when they saw approaching people. Above all, they were supposed to live in isolation, outside of the community. This seemingly cruel way of acting towards people with infectious diseases is an example of rational efforts taken to protect the community.⁷ It is worth adding here that regulations that, using today’s nomenclature, we would call sanitary-epidemiological also protected the community: “Outside the camp you shall have a place set aside where you shall go. You shall keep a trowel in your equipment and, when you go outside to relieve yourself, you shall dig a hole with it and then cover up your excrement. Since the Lord, your God, journeys along in the midst of your camp to deliver you and to give your enemies over to you, your camp must be holy, so that he does not see anything indecent in your midst and turn away from you” (Deuteronomy 23 : 13–15). It should be added that in the army in field conditions similar rules are obliging up to the present day.⁸

Likewise, the Biblical commandment to celebrate the Sabbath day (Exodus 20 : 8–10) is also very important in the context of care for human physical

6 For more on this topic, see: A. Wajda, *Zwierzęta czyste i nieczyste*, [in:] *Wokół Biblii*, pod red. T. Jelonka, Wydawnictwo Naukowe Papieskiej Akademii Teologicznej, Kraków 2008, p. 127–149 (Biblia w Kulturze Świata).

7 Cf. *Słownik tła Biblii*, op. cit., p. 384–385.

8 Cf. Z. Gajda, *Do historii medycyny wprowadzenie*, op. cit., p. 65–66.

and psychological health. A day free from work is presently guaranteed in all civilized societies and is intended for the regeneration of one's vital and spiritual strength. Christianity adds to the experiencing of this day the aspect of reflection on one's own life, which should above all be conducive towards the celebration of Sunday in a religious way and with one's family. The increasingly evident desacralization of Sunday, however, results in growing workaholism and depression, in extreme cases even leading to suicide. Contemporary psychiatry and psychology are attempting to address this problem, using psychoanalysis sessions, coaching, or pharmacotherapy, because in many cases it is too late to apply preventative measures related to the rules of celebrating the holy day established by ancient principles.⁹

Biblical references allow us to conclude that midwifery was also at an advanced level in ancient Israel. The first Biblical reference to midwives appears in the story of Jacob (Genesis 35 : 17). In addition to assisting in the process of childbirth, the midwife also gave advice and supported the mother with her good word. She also knew how to deal with multiple births, as the account of Tamar's giving birth to Perez and Zerah (Genesis 38 : 27–30) shows. What is more, thanks to the Biblical narrative we know the names of two representatives of this profession: Shiphrah and Puah, who were greatly experienced and had high ethical standards, because despite the pharaoh's orders they did not kill male Jewish infants in Egypt. Because of this, they also enjoyed God's blessing: "Therefore God dealt well with the midwives; and the people multiplied and grew very numerous. And because the midwives feared God, God built up families for them" (Exodus 1 : 20–21).¹⁰

We can also find the fundamentals of balneotherapy among everyday and religious life described on the pages of Sacred Scripture. In this time, many types of baths were applied. Usually, they were intended for purification and were rituals; thus they were treated as an external expression of internal purification. Typical therapeutic baths (warm, bold, steam, and also mineral baths) were also known. The latter, as seen in medical categories, can include the bath of Naaman, king of Aram, who was cleansed after immersing himself seven times in the waters of the Jordan upon the instructions of the prophet Elisha (2 Kings 5 : 1–15a). Today, it is widely known that the waters of the

9 Cf. Brat Efraim, *Jezus Żyd praktykujący*, trans. J. Fenrychowej, Wydawnictwo M, Kraków 1994.

10 Cf. *Słownik tła Biblii*, op. cit., p. 365–366.

Dead Sea and also the Jordan River contain bitumen and sulfuric compounds, which are used in mineral baths intended to treat fungal infections of the skin.

In Biblical times, the beneficial impact of music on mentally ill persons was known. The best-known Biblical figure who was subjected to such treatment, known today as music therapy, was the king Saul. Sacred Scripture also tells us that playing the harp had a palliative effect on David's melancholy and attacks of rage (1 Samuel 16 : 14–23).

4. Surgical Procedures

The surgical procedure most commonly mentioned in the Bible is circumcision. This procedure consists of the removal of the foreskin of a Jewish boy on the eighth day of his life. The beginnings of this practice are related to the commandment that Abraham received from God: "This is the covenant between me and you and your descendants after you that you must keep: every male among you shall be circumcised. Circumcise the flesh of your foreskin. That will be the sign of the covenant between me and you" (Genesis 17 : 10–11). Circumcision was very important. This is confirmed by the Biblical pericope that says that God got so angry at Moses when the latter did not perform this ritual on his son that He wanted to kill him. The circumcision was performed by Zipporah, his wife, in his absence; this is also the only Biblical mention of this ritual being performed by a woman (Exodus 4 : 24–26). Jesus was also circumcised; this took place on the eighth day after His birth, as proscribed by the Mosaic Law (Luke 2 : 21).

Currently, circumcision (*circumcisio*) is a common procedure in the Middle East, African countries, and among some ethnic groups in South America. It is performed for hygienic or religious reasons. The hygienic reasons for circumcising boys are related to geographic and social conditions. The hot, dry climate and subsequent limited access to water precluded the use of hygienic procedures such as cleaning the body, especially the pubic region, everyday; thus circumcision was performed among boys and men in order to prevent the accumulation of smegma (*smegma praeputii*), or flaky foreskin cells, sebum, and bacteria under the foreskin, which can lead to infection.¹¹

11 Cf. *Biblia a medycyna*, red. B. Pawlaczyk, Księgarnia Świętego Wojciecha, Poznań 2006, p. 149–150.

In the Bible, circumcision was accompanied by a certain ceremony, while the ritual itself was performed using a flint knife. It was between twelve and fifteen centimeters and is described as Canaanite: “On the journey, at a place where they spent the night, the Lord came upon Moses and sought to put him to death. But Zipporah took a piece of flint and cut off her son’s foreskin and, touching his feet, she said, ‘Surely you are a spouse of blood to me.’ So God let Moses alone. At that time she said, ‘A spouse of blood,’ in regard to the circumcision” (Exodus 4 : 24–26). Such knives were already used in Joshua’s times: “On this occasion the Lord said to Joshua: Make flint knives and circumcise Israel for the second time. So Joshua made flint knives and circumcised the Israelites at Gibeath-haaraloth” (Joshua 5 : 2–3). Later, however, knives made of bronze or steel were used.

Circumcision was performed on the eighth day after birth, because “[w]hen his son Isaac was eight days old, Abraham circumcised him, as God had commanded” (Genesis 21 : 4). This ritual could be performed even on the Sabbath day: “Moses gave you circumcision—not that it came from Moses but rather from the patriarchs—and you circumcise a man on the Sabbath. If a man can receive circumcision on a Sabbath so that the law of Moses may not be broken, are you angry with me because I made a whole person well on a Sabbath?” (John 7 : 22–23). It is worth adding that Muslim boys are circumcised only when they are thirteen years old, which is related to the following Biblical narrative: “[A]nd his son Ishmael was thirteen years old when the flesh of his foreskin was circumcised” (Genesis 17 : 25). No anesthesia was used during circumcision. Frequently, this procedure led to infection: “All who went out of the gate of the city listened to Hamor and his son Shechem, and all the males, all those who went out of the gate of the city, were circumcised. On the third day, while they were still in pain...” (Genesis 34 : 24–25).¹²

It should be added that Christians are still required to become circumcised, albeit not at the physical level of a “mark on one’s body,” but at the moral level, which is much more difficult to execute. This dimension was added to circumcision by St. Paul. This means “circumcision of the heart,” which he writes about in the Epistle to the Romans: “One is not a Jew outwardly. True circumcision is not outward, in the flesh. Rather, one is a Jew inwardly, and circumcision is of the heart, in the spirit, not the letter; his praise is not from human beings but from God” (Romans 2 : 28–29).

12 Cf. *Biblia a medycyna*, op. cit., p. 150–151.

Presently, circumcision is still performed. It is required of Orthodox Jews and Muslims, because religious laws demand this. It is also performed for medical reasons, such as to treat phimosis in boys. Sometimes, this procedure is performed for cosmetic reasons upon the request of an adult patient. In some cases, it is even fashionable: in Canada, for example, seventy-five percent of male infants are circumcised, which some think is related to far-reaching preventative measures.¹³

Other surgical procedures performed in antiquity include trepanning, as archaeological digs have confirmed. Physicians shaved their patients' heads, cut their skin and cut their bones with a trephine (surgical instrument with a cylindrical blade for boring) and removed bone tissue that put pressure on the brain. Sometimes, these incisions were very extensive, as archaeological finds from Palestine and Egypt show; skulls showing traces of this procedures often have not been sealed and even contain traces of openings used for draining. All this demonstrates that these procedures were successful and that patients still lived for some time; otherwise, tissue that sealed the opening in the skull would not have appeared.¹⁴

Other surgical procedures performed at this time include the removal of arrowheads, the amputation of limbs, and castration. It is worth adding that eunuchoidism is the effect of castration. A eunuch is a man without testicles. This term comes from Greek and means "bedroom guard" (*eune* – bedroom and *echein* – to hold, to keep). In ancient Egypt and Assyria, castration was a punishment for men caught committing adultery. The guards of court harems in China, Egypt, Persia, Byzantium, and Turkey were also eunuchs. It is worth noting that the practice of castrating underage boys became common in Europe especially from the sixteenth to the eighteenth centuries; in music, vocal parts were written for castrated boys (for example by Handel). In the Bible, references to eunuchs are especially common in the Book of Esther. Likewise, the author of the Book of Sirach refers to castrated men: "Like a eunuch lusting to violate a young woman is the one who does right under compulsion" (Sirach 20 : 4).

13 Cf. Z. Gajda, *Do historii medycyny wprowadzenie*, op. cit., p. 72.

14 Cf. *Słownik tła Biblii*, op. cit., p. 386.

5. Gigantism and Dwarfism in the Bible

Biblical texts are also an interesting source for historians of medicine of research on ancient references to the incidence of some disease entities, especially in the fields of genetics and endocrinology. Such an interesting example for a deepened medical study is Goliath, the gigantic warrior described in the First Book of Samuel (see: 1 Samuel 17 : 4n).

Thanks to the development of the natural sciences, including medicine, we know today that a person's growth is dependent on genetics; if parents are tall, their children will also be tall. It is also dependent on the secretion of growth hormones. Environmental factors also impact an individual's growth, as research on our ancestors' bone structures has demonstrated that people today are taller than they were one hundred years ago.¹⁵

Similarly, the Bible contains references to people whose height differed from that of most. One of them is Goliath, about whom we can read: "A champion named Goliath of Gath came out from the Philistine camp; he was six cubits and a span tall. He had a bronze helmet on his head and wore a bronze breastplate of scale armor weighing five thousand shekels, bronze greaves, and had a bronze scimitar slung from his shoulders. The shaft of his javelin was like a weaver's beam, and its iron head weighed six hundred shekels. His shield-bearer went ahead of him" (1 Samuel 17 : 4–7).

The protagonist of the above pericope was without a doubt a giant, because after converting cubits and spans to units of measurement used today we find that he was more than three meters tall (six cubits and one span are $6 \times 52.5 \text{ cm} + 1 \times 26,2 \text{ cm} = 341,2 \text{ cm}$, or 3.412 m). We can also calculate how many kilograms Goliath's armor weighed: Five thousand shekels is $5,000 \times 11.4 \text{ g} = 57,000 \text{ g}$, or 57 kg. Meanwhile, the iron head of the shaft of his javelin weighed more than six kilograms (600 shekels is $600 \times 11.4 \text{ g} = 6840 \text{ g}$, or 6,84 kg).¹⁶

Goliath was much taller than other Philistines as well as Israelites. This was most likely caused by the excessive secretion of growth hormones by the frontal lobe of the pituitary gland. The pituitary gland is an endocrine gland that weighs about 0.4–1.1 grams and is located in the center

15 Cf. W. Góralski [et al.], *Encyklopedia szkolna. Biologia*, Wydawnictwo Zielona Sowa, Kraków 2004, p. 266–267, 747.

16 Units of measurement have been converted with the help of: A. Chouraqui, *Czasy biblijne*, translated from the French by L. Kossobudzki, Świat Książki, Warszawa 2012, p. 143–145 (*Życie Codzienne*).

of the middle cranial fossa and is surrounded by a small bony cavity (sella turcica). It is located near the optic chiasm, the part of the brain where optic nerves partially cross. Meanwhile, the above-mentioned growth hormone is secreted by the frontal lobe of the pituitary gland and is produced through pulsatile secretion mostly at night; thus the common folk wisdom that children grow when the sleep is very accurate. However, when a tumor known as an adenoma grows in the pituitary gland, growth hormones are produced in excess, which causes in children what is known as gigantism, or excessive growth with a disruption bodily proportions; the upper and lower limbs are disproportionately longer in relation to the torso. Among adults, however, adenomas are the cause of acromegaly, which causes enlarged lower jaws, hands, feet, and tongues as well as thickened facial features and thickened skin. An expanding tumor causes migraines and puts pressure on the optic chiasm, which causes problems related to eyesight.¹⁷

The symptoms of disease described here in a sense explain why Goliath did not notice and dodge the stone thrown at him by David and why a strike in the forehead took him down: “The Philistine then moved to meet David at close quarters, while David ran quickly toward the battle line to meet the Philistine. David put his hand into the bag and took out a stone, hurled it with the sling, and struck the Philistine on the forehead. The stone embedded itself in his brow, and he fell on his face to the ground. Thus David triumphed over the Philistine with sling and stone; he struck the Philistine dead, and did it without a sword in his hand” (1 Samuel 17 : 48–51); “As a youth he struck down the giant and wiped out the people’s disgrace; His hand let fly the slingstone that shattered the pride of Goliath. For he had called upon the Most High God, who gave strength to his right arm to defeat the skilled warrior and establish the might of his people” (Sirach 47 : 4–5).

It is worth noting, however, that the author of this pericope was not interested primarily in describing gigantism as a medical disorder but rather in imparting that in God’s name and with God’s name on one’s lips one can conquer all obstacles, even those that are as gigantic as Goliath

Another disorder related to growth hormones is dwarfism. In the New Testament, we can encounter dwarfism in the narrative about Zacchaeus, “who was a chief tax collector and also a wealthy man, was seeking to see who

17 Cf. P. Hoser, *Fizjologia organizmów z elementami anatomii*, Wydawnictwa Szkolne i Pedagogiczne, Warszawa 1994, p. 308–310; B. Pawlaczyk, *Biblia a medycyna*, op. cit., p. 89.

Jesus was; So he ran ahead and climbed a sycamore tree in order to see Jesus, who was about to pass that way” (Luke 19 : 3–4). Likewise, modern history is replete with persons of short stature with great accomplishments, such as Napoleon Bonaparte, who according to the army report written during his conscription in the military was 166 centimeters tall.¹⁸

6. Other Disorders and Diseases Mentioned in the Bible

An interesting genetic disorder mentioned on the pages of the Bible is polydactyly, which means “having many fingers.” This is a developmental disorder that results in a larger than normal number of fingers or toes or sometimes both fingers and toes simultaneously. Someone with polydactyly can have twenty-two or even twenty-four fingers. In the Bible, polydactyly is mentioned in the Second Book of Samuel when the war with the Philistines is described: “There was another battle, at Gath, and there was a giant, who had six fingers on each hand and six toes on each foot—twenty-four in all. He too was descended from the Rephaim. And when he insulted Israel, Jonathan, son of David’s brother Shimei, struck him down” (2 Samuel 21 : 20–21).

Today we know that dementia is a decline in mental function and a disruption of balance, which is the result of brain atrophy that occurs in old age. Although the Biblical authors did not know the medical causes for this state, they describe it, at the same time giving guidelines on how to deal with such a person: “My son, be steadfast in honoring your father; do not grieve him as long as he lives. Even if his mind fails, be considerate of him; do not revile him because you are in your prime. Kindness to a father will not be forgotten; it will serve as a sin offering—it will take lasting root. In time of trouble it will be recalled to your advantage, like warmth upon frost it will melt away your sins” (Sirach 3 : 12–15).

The Bible presents several correct diagnoses. For example, when it discusses the elderly king David, it at the same time notes that he suffered from a disorder related to blood circulation: “When King David was old and advanced in years, though they covered him with blankets he could not get warm. His servants therefore said to him, ‘Let a young virgin be sought to attend my lord the king, and to nurse him. If she sleeps with you, my lord the king will

¹⁸ Cf. A. Zahorski, *Napoleon*, Państwowy Instytut Wydawniczy, Warszawa 1985, p. 16.

be warm.' So they sought for a beautiful girl throughout the territory of Israel, and found Abishag the Shunamite. So they brought her to the king. The girl was very beautiful indeed, and she nursed the king and took care of him. But the king did not have relations with her" (1 Kings 1 : 1–4).

Today, people dream about living for a long time. Without a doubt, we live longer today thanks to enormous progress in medicine, including modern medicine and medical procedures. However, certain genetic disorders that in a physical sense allow people to live indefinitely have not been cured. In the Bible, we read: "Then the Lord said: My spirit shall not remain in human beings forever, because they are only flesh. Their days shall comprise one hundred and twenty years" (Genesis 6 : 3). Furthermore, the longest-living people on earth have yet to transcend this boundary.

Fevers are often a sign that a disease is unfolding in a person's body. We can read about the curing of fevers in the New Testament. The best-known example is the healing of Simon Peter's mother-in-law: "Simon's mother-in-law lay sick with a fever. They immediately told him about her. He approached, grasped her hand, and helped her up. Then the fever left her and she waited on them" (Mark 1 : 30–31; Matthew 8 : 14–17; Luke 4 : 38–41). Less known healings from illnesses accompanied by fever concerned the royal official of Capernaum (John 4 : 46n) or the father of the landlord Publius of Malta (Acts 28 : 8).¹⁹

We can also read about tooth sensitivity in the Bible. Examples include: "Parents eat sour grapes, but the children's teeth are set on edge" (Ezekiel 18 : 2) as well as: "As vinegar to the teeth, and smoke to the eyes, are sluggards to those who send them" (Proverbs 10 : 26). The Bible describes the symptoms, but contemporary dentistry explains them. They are related to the fact that microscopic channels appear in the dentin, while the tissue below it contains many nerves and blood vessels; thus consuming very hot, cold, or even sour foods can lead to toothache.

It is also worth mentioning aphasia, which is described as a temporary loss of speech caused by damage to the brain and sometimes ascribed to great anger. One Biblical narrative dealing with aphasia is: "On the fifth day of the tenth month, in the twelfth year of our exile, the survivor came to me from Jerusalem and said, 'The city is taken!' The hand of the Lord had come upon me the evening before the survivor arrived and opened my mouth when

19 Cf. *Stownik tła Biblii*, op. cit., p. 383–304.

he reached me in the morning” (Ezekiel 33 : 21–22). Likewise, in the New Testament there is a quote describing the symptoms of this illness. It refers to Zechariah, the father of John the Baptist, who had a vision while serving in the Jerusalem temple: “But when he came out, he was unable to speak to them, and they realized that he had seen a vision in the sanctuary. He was gesturing to them but remained mute” (Luke 1 : 22).²⁰

The Bible also describes eye diseases such as leukoma; in some descriptions we can find symptoms common to epilepsy; also common are references to leprosy, ulcers, and boils. We also find in it references to infertility and gynecological disorders. All these are a valuable source for research on the history of medicine.

7. Medicines in Antiquity

In Biblical times, medicines were made from minerals, substances of animal origin, herbs, grapes, figs, and olives. Sometimes they were ointments: “Is there no balm in Gilead, no healer there? Why does new flesh not grow over the wound of the daughter of my people?” (Jeremiah 8 : 22). However, the greatest issue in antiquity was the effective easing of pain. At that time, wine mixed with myrrh was considered to be an analgesic: “They gave him wine drugged with myrrh, but he did not take it” (Mark 15 : 23). Wine was also used to treat upset stomachs and indigestion: “Keep yourself pure. Stop drinking only water, but have a little wine for the sake of your stomach and your frequent illnesses” (1 Timothy 5:23). Meanwhile, salt, olives, and wine were used to clean and disinfect wounds: “But a Samaritan traveler who came upon him was moved with compassion at the sight. He approached the victim, poured oil and wine over his wounds and bandaged them. Then he lifted him up on his own animal, took him to an inn and cared for him” (Luke 10 : 33–34). Meanwhile, fig paste was applied to treat ulcers: “Then Isaiah said, ‘Bring a poultice of figs and apply it to the boil for his recovery.’” (2 Kings 20 : 7).

A medicine that was especially sought after in antiquity was a solidified mass of aloe resin or powdered aloe. It was used as an ingredient in incense, a laxative, an ointment to treat sores, and, starting in the times of ancient Egypt, it was used for skin care and to embalm corpses. Aloe succotrina was

²⁰ Cf. *Słownik tła Biblii*, op. cit., p. 381.

considered to be the best source of resin. It produced a high-quality aromatic substance of a yellowish hue that was soft and shiny and had a bittersweet taste. The worse the quality of aloe resin, the darker and heavier it is. Aloe succotrina (*Aloë succotrina* Lam.) comes from the island of Socotra, which is off the east coast of Africa. From there, it was brought like myrrh without attention to its high price.²¹

In antiquity, aloe resin was extracted from cut or crushed aloe leaves placed in goatskins in depressions in the ground. The juice that flowed from it solidified for about three months. Sometimes, this process was faster thanks to heating by copper plates.²² In this way, substances extracted from aloe leaves were used as fragrances for clothing (Psalms 45 : 8–9) and bed sheets (Proverbs 7 : 16–17) and in the Jewish funerary rites. We can read about the latter use in the Gospel of John: “Nicodemus, the one who had first come to him at night, also came bringing a mixture of myrrh and aloes weighing about one hundred pounds. They took the body of Jesus and bound it with burial cloths along with the spices, according to the Jewish burial custom” (John 19 : 39–40).²³

In the above quote, we read that approximately one hundred pounds (one pound is 325 grams) of a mixture of myrrh and aloe, which was equivalent to about thirty-three kilograms, was used to embalm Jesus’ body. The amount of the ointment used for embalming depended on the wealth and social position of the deceased. Josephus Flavius noted that when Herod the Great died, five hundred slaves carried ointment. Meanwhile, sixty-eight pounds (approximately 22.5 kilograms) of these substances was used during the funeral of Gamaliel the Elder, a figure that appears in the Acts of the Apostles and who taught Saul of Tarsus.²⁴

Another interesting therapeutic plant mentioned in the Bible is the *Mandragora officinarum* L. – mandrake (*Solanaceae*). It was used as an aphrodisiac, because it was believed to increase one’s sex drive: “One day, during the wheat harvest, Reuben went out and came upon some mandrakes in the

21 Cf. W. Kawollek, H. Falk, *Podróż po biblijnych ogrodach. Informacje o roślinach oraz wskazówki dotyczące ich uprawy*, tł. K. Kwiecień, Elipsa, Poznań 2005, p. 63–66.

22 Cf. Z. Włodarczyk, *Rośliny biblijne. Leksykon*, Polska Akademia Nauk, Kraków 2011, p. 44.

23 Cf. A. Wajda, *Ewangeliczne opisy pogrzebu Jezusa z Nazaretu a żydowska tradycja grzebania zmarłych*, [in:] *Misterium Miłości. Księga Pamiątkowa dedykowana Księdzu Prałatowi Franciszkowi Chowaricowi*, red. D. Czaicki, współpraca red. i konsultacja M. Susek, Wydawnictwo Platan, Kraków 2013, p. 303–312.

24 Cf. Z. Włodarczyk, *Rośliny biblijne. Leksykon*, op. cit., p. 45.

field which he brought home to his mother Leah. Rachel said to Leah, 'Please give me some of your son's mandrakes' " (Genesis 30 : 14). During the time of Pliny the Younger (approximately 61–113), mandrake roots were used as an anesthetic. Thus this plant can be treated as the European equivalent of the most important therapeutic plant in Chinese medicine: ginseng. It was considered to be a magical sorcerer's plant; a narcotic, remedy, aphrodisiac and talisman that brought luck ("homunculus"). In medieval herbariums, it is described as having a fatal scream; thus its roots were pulled out with the use of a dog (a person stood nearby and blew into a horn). Thus the mandrake had other names: dog's apple, magic root, *antropomorphon* (human-like), and *kirkaia* ("Kirke's plant"). Mandrake has been found in Egyptian tombs (dried roots, reliefs, and paintings). Without a doubt, its presence was dictated by its symbolic meaning, as the ancients saw in it a symbol of eroticism and gift of love between a man and woman. These views are reflected in a quote from Song of Songs: "The mandrakes give forth fragrance, and over our doors are all choice fruits; Fruits both fresh and dried, my lover, have I kept in store for you" (Song of Songs 7 : 14).²⁵

The mandrake is mentioned alongside the poppy in Assyrian tablets written in cuneiform. We have learned from the Ebers Papyrus (the oldest collection of recipes that has been found so far dates to 1,500 BC) that the Egyptians valued it as a therapeutic plant. The Greeks made similar use of this plant, because Theophrastus writes that medicine made of mandrake leaves assists in healing ulcers, while ground root steeped in vinegar can be used to treat rheumatism. Wine-based mandrake mixtures were applied against epilepsy and ailments of the eyes. This plant acts as a sedative; it stuns, treats cramps, and alleviates pain. Thus in antiquity it was used as an anesthetic during surgical procedures. Because it contains a large amount of alkaloids (mandragora complex), it is a poisonous plant that acts much more strongly than the belladonna or henbane.²⁶

Of all medicines of animal origin, the Bible mentions only the use of fish gall bladder in treating eye ailments: "When the young man left home, accompanied by the angel, the dog followed Tobiah out and went along with

25 Cf. B. Szczepanowicz, *Rośliny biblijne. Ziemia święta*, Wydawnictwo Petrus, Kraków 2014, p. 130–132.

26 Cf. *Leksykon roślin leczniczych*, pod red. A. Rumińskiej i A. Ożarowskiego, Państwowe Wydawnictwo Rolnicze i Leśne, Warszawa 1990, p. 290–291; Z. Włodarczyk, *Rośliny biblijne. Leksykon*, op. cit., p. 138–139.

them. Both journeyed along, and when the first night came, they camped beside the Tigris River. When the young man went down to wash his feet in the Tigris River, a large fish leaped out of the water and tried to swallow his foot. He shouted in alarm. But the angel said to the young man, 'Grab the fish and hold on to it!' He seized the fish and hauled it up on dry land. The angel then told him: 'Slit the fish open and take out its gall, heart, and liver, and keep them with you; but throw away the other entrails. Its gall, heart, and liver are useful for medicine.' After Tobiah had slit the fish open, he put aside the gall, heart, and liver. Then he roasted and ate part of the fish; the rest he salted and kept for the journey" (Tobit 6 : 2-5); "As for the gall, if you apply it to the eyes of one who has white scales, blowing right into them, sight will be restored;" (Tobit 6 : 9).

Conclusion

A belief characteristic of the people of the Bible was that both illness and health are dependent on God, who sends debility upon a person, but can also cure him or her. They also had some medical knowledge that assisted in the recovery of one's health. They knew human anatomy quite well and developed many terms for body parts and the physiological processes that took place in them. Furthermore, they had many legal regulations, which in their essence were religious, but at the same time they positively impacted their health and mood. They prohibited against eating unclean foods, blood, and meat of unknown origin, and also required that symptoms of disease be observed and that the ablution laws be respected. Meanwhile, isolation was prescribed in the case of infectious diseases. In Biblical times, many surgical procedures, including trepanning, were successfully performed. Additionally, the Hebrews were acquainted with illnesses whose etiology was discovered relatively recently, including acromegaly, which was first described by Jakob Erdheim in 1907. Despite these numerous achievements, ultimately full healing was tied to God, the first and best physician, acknowledging the imperfection of the human practice of medicine, as expressed in these words: "[God] pardons all your sins, and heals all your ills" (Psalms 103 : 3). Similarly, today there is no lack of similar statements, especially when the powerlessness of medicine is confronted with the enormity of undeserved human suffering, as is the case in oncology units, especially for children, where the

following words ring true: “Medicine often brings comfort, sometimes mitigates, and rarely heals.”

Abstract

Israel's Biblical Legacy in Medicine

God gave the Jews a number of commandments, but their medical significance has started to become appreciated only in recent years. They were given the following health laws: regular rest and relaxation, suitable food, cleanliness, isolation when infected with a contagious disease, circumcision, and marriage regulations. It has been suggested that the insistence on circumcision has led to a very low incidence of cervical cancer among Jewish women, and that the decrees related to marriage have been helpful in containing the spread of a number of hereditary diseases.

Keywords: medicine; the commandments of God; heritage

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