

# Ibn Zuhr

## The turbaned doctor of Seville

– Written by David W. Tschanz, USA

Perhaps the best way to introduce him is start with a story:

In 1120 a Muslim doctor was en route to see his patient, the Almoravid ruler of Seville. On the side of the road he saw an emaciated man holding a water jug. The man's belly was swollen and he was in obvious distress.

"Are you sick?" the doctor asked the man. The patient nodded.

"What have you been eating?"

"Only a few crusts of bread and the water from this jug."

"Bread won't hurt you," said the doctor. "It could be the water. Where are you getting it?"

"From the well in town."

Ibn Zuhr pondered a moment. "The well is clean. It must be the jug. Break it and find a new one."

"This is my only jug" whined the man, "I can't."

"And that thing bulging out there," sternly replied the doctor pointing to the man's midsection, "Is your only stomach. It is easier to find a new jug than a new stomach."

The man continued to protest, but one of Ibn Zuhr's servants picked up a stone and smashed the jug. A dead frog flowed out with the foul water.

"My friend," the doctor said to the patient, "look what you have been drinking. That frog would have taken you with him. Here, take this coin and go buy a new jug."

When the doctor passed by a few days later he saw the man sitting along the side of the road. His stomach had shrunken, he had gained weight and his colour was back.

**He has earned undisputed claim to the title 'The Father of Experimental Surgery'**



**Image:** Chirurgical Operation, Turkish manuscript, 15th Century (Public Domain).

Seeing the doctor, the man heaped praise on him.

#### BACKGROUND

Ibn Zuhr, the physician who observed, deduced and cured the man was born in Seville in 1091 CE, and named Abu Marwan Abd al-Malik. At the time of his birth no one questioned that he would become a doctor. It was, after all, a family tradition.

The Banu Zuhr (from where he got the nickname Ibn Zuhr, later Latinised to Avenzoar by European scholars) had already produced two generations of physicians, and would produce five more. Ibn Zuhr outshone them all, becoming one of the greatest physicians – some historians say the greatest – of the Islamic world. He also earned undisputed claim to the title ‘The Father of Experimental Surgery’.

After graduating from the University of Cordoba, and a brief stay in Baghdad and

Cairo, he began his medical practice and training under his father, Abu'l-Ala Zuhr (d. 1131). In addition to being a leading physician of the era, Abu'l-Ala was a vizier to the Almoravids, then in control of Seville. Ibn Zuhr became their physician as well.

During his life, Muslim medical practice was the most advanced in the world and driven to constantly improve by the Prophet's oft-quoted *hadith* that for every illness and condition God had created a cure, and the role of the physician was to find it.

By contrast, medical knowledge in Christian Europe was mired in a stygian abyss. Compared to their Muslim counterparts, European physicians were witch doctors, bereft of knowledge and hampered by a cultural mindset that disdained their work as a challenge to Divine Will.

The intellectual life of the West was in shambles. The barbarian hordes that

toppled the world's largest empire had destroyed its libraries, using the scrolls to fuel the fires that cooked their meat, turning Europe's intellectual heritage into ashes.

In post-Roman Europe, the Christian Church redefined medicine and science in a profound and inhibiting way. Illness, the Church insisted, was due to supernatural forces, as a punishment for sin, or as diabolical possession, hence the only cure for sickness and disease was by religious means. Every malady was assigned a patron saint to whom prayers for a cure were directed by the patient, his family, friends and the community.

The Church opposed anything that saved the body but risked the soul. Bathing was condemned as a prideful, immoral act. Basic hygienic principles were lost. The pope banned surgery, because it was a danger to the surgeons' chance for salvation. Hellenistic style doctors were replaced by

clerics convinced the role of the physician was not to heal, but to study the writings of other physicians and pen commentaries on their work.

EARLY CAREER

Ibn Zuhr was the first Muslim scientist to devote himself solely to medicine and made several major discoveries and breakthroughs carefully chronicled in his books, only three of which survive. The lost works include a treatise on cosmetics, a treatise on leprosy and a memorial addressed to his son on what to do in the treatment of diseases and the use of laxatives.

The first of the surviving texts, *Kitab al-Iqtisad fi Islah al-Anfus wa al-Ajsad (Book of the Middle Course concerning the Reformation of Souls and the Bodies)* was completed in 1121 and dedicated to the Almoravid prince Ibrahim ibn Yusuf ibn Tashifin. The book, written for laymen, gives a summary of diseases, therapeutics and hygiene. The introduction is a long treatise on the relation between psychology and health. The main text consists of seven sections (divided into 15 *iqtisad*) that relate to diseases of:

1. The tongue and mouth.
2. The eyes.
3. Ears, nose, scalp and face.
4. Neck, brain, arms, armpits and fingers.
5. Buttocks.
6. Scabies, furuncles and tumours.
7. Acute conditions including fevers, chills, myopathies and oedemas.

It appears his intention was to discuss the ailments of internal organs, including the brain, heart, lungs and kidney in a future book that was never written. This book is interesting but as one commentator has said, it is a first work and its real value is in comparison to Ibn Zuhr's later works

Around 1131, possibly at the death of his father, he fell out of favour of with the Almoravid ruler, Ali bin Yusuf bin Tashufin, and fled to Africa. He was, however, apprehended and jailed in Marrakesh for the next 16 years. While in prison he met a woman who with whom he had children, though we do not know her name and whether she was his sole wife or one of several wives. During this imprisonment he became the father of two sons (the first

of which may have died in infancy) and a daughter.

RETURN TO FAVOUR

In 1147, the Almohads (Al-Muwahadun), under 'Abd al-Mu'min, conquered Seville and Ibn Zuhr returned as the new ruler's personal physician and devoted himself to medical practice and teaching until his death in 1161.

Shortly after his release from prison al-Mu'min requested he prepare a general medical handbook for laymen and the court. Ibn Zuhr, who mentions he didn't have access to his book, produced the *Kitab al-Aghthiya (Book of Foods)* which describes different types of food and drugs and their effects on health as well as the importance of hygiene.

It is also the most readable of all of Ibn Zuhr's writings. He was clearly influenced by the simplicity of his incarceration, and the spontaneity of Berber life with its elements of miracle-working and folk remedies. It also shows the value of composing a book based on personal experience and knowledge as opposed to merely summarising and conveying the work of others.

In the book, Ibn Zuhr makes several recommendations regarding diet. For example, he argues that food intake should be determined according to the season. "Since digestion in winter is stronger, the amount of food should be greater; and since it is colder and more humid, the foods should be hotter and drier".

A significant portion of the book is taken up with a discussion of the nutritional value



**Image:** This 15th-century Italian illustration depicts the presentation of a work by Ibn Zuhr of Seville, translated into Latin by John of Capua.

of various foods and their preparation. Ibn Zuhr favours ordinary, fermented wheat bread cooked over the *tannur*, an earthen oven in the shape of a dome. He praises the value of mutton and lamb, which he considers the most humid and delicious. Beef is dismissed as an inferior meat. He also discusses wild animals, finding gazelle easy to eat, lions and leopards too tough whereas snakes and locusts are acceptable in dire emergencies. The most delicious game food he says is porcupine, “in moderation”.

There is an entire section on ‘Simple Medications with Special (meaning occult) Properties of Objects’. These include somewhat arcane and exotic preparations such as grains of emerald, bezoars and burned river crabs. Also recommended are practices such as the daily viewing of olive trees and the drinking of water poured over molten iron or gold, or of water in which copper has been washed. Perhaps a bit sheepishly, Ibn Zuhr defends their inclusion on the grounds Galen used them as well.

The book also offers guidelines on general hygiene and best healthy practices regarding sleep, exercise, dwellings, grooming, bathing, pregnancy and childcare.

A number of Latin texts, written in Montpellier, France, under the title *Regimina sanitatis*, followed the format and content of the book. The text made a deep impression on Maimonides who frequently quoted it.

The themes of the book are as timeless as its recommendations. It is not a stretch to say that if it were put in a modern format and the language modernised, the *Kitab al-Aghthiya* would be a useful manual for persons looking for a sensible diet and practical guidelines for a healthy lifestyle – just as it was 10 centuries ago.

His last book, *Kitab al-Taisir fi al-Mudawat wa al-Tadbir* (*Book of Simplification concerning Therapeutics and Diet*), was written at the request of his student and intellectual opponent Ibn Rushd (Averroes) in approximately 1155 CE. Ibn Zuhr was then in his 60s. His goal was to combine the old tradition of compendium writing with some theoretical and scientific medicine.

The main body of *Taysir* is divided into two books and formulary of medicinal preparations as an appendix. The first two books are arranged “from head to heel” according to a long-established tradition dating back to ancient Egypt. Book I covers

conditions effecting anatomic sites from the top of the head to the upper abdomen. Book II covers the rest of the body.

Each ailment is described and then followed by recipes, consisting mostly of herbal medications used as laxatives for the evacuation of superfluous humours, ointments and dietary restrictions. A number of medications derived from minerals or animals are included. Following Galen’s teachings, Ibn Zuhr recommends bloodletting in instances ranging from ringworm to more serious conditions such as penetrating head wounds, empyema and some fevers.

Ibn Zuhr includes detailed case reports, such as the one paraphrased at the beginning of this article, to illustrate his points, describing the ailment, deducing the cause and applying a cure.

In a breakthrough he proved that scabies was caused by the itch mite (*Scabies sarcoptes*). This simple discovery completely disproved the erroneous but long-standing and much-revered theory of four humours supported by Hippocrates, Galen and Avicenna. When he showed that curing the disease was by removal of the

“***He established introduced a training course so surgeons were fully qualified before being allowed to perform operations independently***”

parasite from the patient's body and did not involve purging, bleeding or any other traditional treatments associated with the four humours, he sent a shudder through the medical world that unshackled it from blind subservience to ancient, but incorrect ideas. As a result, he is sometimes called the 'Father of Parasitology'.

He wrote about ways to avoid developing kidney stones through diet and lifestyle to avoid painful and difficult repair in future years. He gave the first accurate descriptions of neurological disorders, including meningitis, intracranial thrombophlebitis and mediastinal tumours, and made contributions to modern neuropharmacology. He also gave clinical descriptions of intestinal phthisis, inflammation of the middle ear and pericarditis.

His description 'On Verrucae that Occur in the Stomach', which deals with an emaciated Berber who evacuates a tumour the size of an apple in his stools, represents the first detailed report of a cancer of the colon.

In *Taysir*, he was the first to explain how to provide direct feeding using a tube of silver or tin through the gullet and rectum in the cases where normal feeding was not possible i.e. parenteral feeding. He also recommended the use of a fine sound tipped with a small diamond for breaking up urethral stones.

He also showed extreme skill in understanding the psychology of patients. Ibn Abi Usaybia wrote about one incident:

*The Almohad Caliph 'Abd al-Mu'min needed to have a laxative drug, and he detested to drink the purgative drugs. [Ibn Zuhr] acted by subtle means, he went to a grapevine of his garden, and irrigated it with water containing the purgative drugs, macerated or boiled. When the grapevine took the strength of the laxative drugs, and the grapes appeared with these strengths, he ordered the Almohad Caliph to be on a diet, and then brought him a grape and indicated him of eating it. The Caliph had a good opinion of [Ibn Zuhr]. When he ate it in his presence, he said to him: "Oh, Commander of the faithful, it is sufficient for you to*

*have eaten 10 grapes and you will go 10 times to evacuate the bowels". The Almohad Caliph asked him the reason of this; he informed him of it. Then it happened as he said. 'Abd al-M'umin became calm and was healed, and so [Ibn Zuhr's] reputation and rank increased.*

#### SURGERY

While Az-Zahrawi, a fellow Andalusian, is considered the 'Father of Surgery' because of the impressive body of knowledge, instruments and techniques he had devised and developed a century earlier, Ibn Zuhr did one better: in *Taysir* he introduces and confirms the use of the experimental method into surgery.

Using animals as his subjects, Ibn Zuhr proved the safety of a tracheotomy on a goat by performing one. He also performed postmortems on sheep in the course of his clinical research on treatment of ulcerating diseases of the lungs and represented a further step in the development of the experimental school started by Al-Razi (Rhazes) of Baghdad in the 9th century who gave monkeys doses of mercury to test it as a drug for human use. Ibn Zuhr is the first physician known to have carried out human dissection and postmortem autopsy to confirm his understanding of surgical techniques. Curiously he will deny this, though there is no other way he could have had the detailed knowledge he presents without it.

Ibn Zuhr also established surgery as an independent field of medicine by introducing a training course designed specifically for future surgeons so that they were fully qualified before being allowed to perform operations independently, and for defining the roles of a general practitioner and a surgeon in the treatment of a surgical condition. He also drew the lines at which a physician should stop during his general management of a surgical condition, a major step in the evolution of general surgery as a specialty of its own.

#### LEGACY

Ibn Zuhr would see to it that two of his female relatives, his daughter and granddaughter, went into medicine. Though

they were largely limited to obstetrics, they began a tradition that became common in every Muslim society to the present – the acceptance of women as medical doctors. By contrast, the USA did not graduate its first female physician until 1849, England in 1870 and Scotland in 1894.

Ibn Zuhr's only adult son, Abu Bakr, became a successful physician, but was more famous among his contemporaries as a man of letters and a poet. He also served the Almohad caliphs Abu Yaqub Yussuf al-Mansur, and then Al-Nassir. A group of envious dignitaries wrote a letter to Al-Mansur in which they made serious allegations against Abu Bakr but al-Mansur had the accusers imprisoned. Unfortunately he, as well as Ibn Zuhr's daughter the midwife, were poisoned by an envious vizier in Marrakesh in 1199.

Abu Bakr's son, Abu Muhammad 'Abdallah ibn al-Hafid, became a successful physician in the Almohad service. He was poisoned around 1205, and was buried in Seville near his ancestors. He left two sons who lived in Seville; the youngest, Abu Al-'Ala' Muhammad, was also a physician and the 6th generation of physicians in direct descent in the Ibn Zuhr family. In the 1240s Seville was in Spanish hands and all Muslim scholarship in the city effectively ended, including the Banu Zuhr medical dynasty.

Ibn Zuhr's works were translated into Latin by scholars living along the Christian-Islamic border in Europe, particularly at Montpellier, Toledo, Salerno and Padua. Hebrew translations appeared in the mid-12th century. The *Taysir's* Latin version, *Liber Teisir*, was usually paired with the *Colliget*, the Latin translation of Ibn Rushd's largely theoretical *Kitab al-kulliyat*.

The Cairo-based Jewish physician Maimonides quoted extensively from Ibn Zuhr and considered him "unique in his age and one of the great sages".

His books remained popular in Europe as late as the advent of the 18th century and their emphasis on observation and experimentation greatly influenced the Eastern and Western medical sciences for several centuries, laying the seeds for his intellectual heir, Paracelsus. The latter's critique of scholastic methods in medicine and the uncritical copy of the teachings of



**Image:** Scene from the Story of Bayad and Riyād (Public Domain).

the old Fathers of Medicine such as Ibn Sina and Ibn Rushd owes much to Ibn Zuhr and was a major step a more dynamic approach to medicine

Ibn Zuhr was not merely a keen observer of patients and a dispenser of remedies. His narratives are candid recollections and views on a variety of subjects and of his society. His medical recipes could be compared to current forms of alternative medicine. His holistic approach to medicine and his spontaneous vignettes make him one of the most refreshing physicians of any age. Against a modern culture of often impersonal, bureaucratized and costly healthcare, Ibn Zuhr's role as a caring, genuine *hakim* (healer-teacher) to his patients continues to inspire.

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