

## History of Ancient Medicine in Iran

# Gondishapur School of Medicine: The Most Important Medical Center in Antiquity

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### Abstract

Iran has a rich civilization and a long history during which medical science flourished at specific periods. For instance, medicine blossomed in Sassanids era (226 – 652 AD).

One of the most remarkable cultural and scientific centers of Sassanids era was the city of Gondishapur located in the south-west Iran in Shah-Abad near Susa in Khuzestan Province. The city was rebuilt in the third century AD, whereupon it soon became the most important scientific focal point of the ancient world.

Gondishapur Medical School was a renowned cosmopolitan institution and had a crucial impact upon the further development of Islamic medicine. Actually, at this school, the Greek, Persian, and Indian medical heritage was conserved, developed, and it was then transferred to the Islamic world and subsequently to the West. Gondishapur Hospital was also an excellent model for establishment of hospitals especially in the Islamic countries.

Presented here is a brief account of the foundation of Gondishapur School of Medicine and its role in promoting medical science in antiquity.

### Introduction

Historical documents demonstrate that Iran has a long-standing history of almost 3000 years,<sup>1</sup> in which medicine was highly respected. The history of medicine in Iran is also as old as its civilization and is traced back to pre-Islamic times.

As evidence reveals, prior to the foundation of the two famous medical schools of ancient Greece

during the sixth century BC, at *Cnidos* in Asia Minor and on the nearby Aegean island of Cos, the practice of medicine was common in Mesopotamia, India, and Iran.<sup>2</sup> The oldest written sources of our knowledge on Iranian medicine are Avesta and other religious Zoroastrian texts including Denkart and Bundahishn. They indicate the significance of ancient medical beliefs among Zoroastrians that were mainly focused on personal hygiene, public health, and prevention of contagious diseases.<sup>3,4</sup> The ancient Persians who lived in a vast territory with great variations in its climate and vegetation soon became familiar with various medicinal plants. Several medicinal herbs such as basil, chicory, sweet violet, and peppermint are mentioned in Avesta and the names of thirty sacred medicinal plants are cited in Bundahishn.<sup>4-6</sup>

Historically, the first Iranian government was founded by the Medes in 7<sup>th</sup> or 8<sup>th</sup> century BC. They paved the path for subsequent empires including the Achaemenids (559–330 BC), Arsacids (250 BC – 226 AD), and the Sassanids (226 – 652 AD).<sup>7,8</sup>

During the Achaemenids era, Iran's map was very different from today. It was an empire stretching from Indus valley in the east to the Aegean Sea in the west.<sup>9</sup> It is known that at that time medicine became more developed in Iran because of the close ties with the Greeks.<sup>10</sup> The Achaemenids founded various schools in their vast kingdom including a medical school, which was built in Sais in ancient Egypt by the order of Daruis (r.521 – 485 BC).<sup>11</sup> There were some Greek and Egyptian physicians at the Achaemenids court including one of the most famous Greek physician Ctesias.<sup>12</sup> Later on, during the Arsacids era, several Greek books were translated into Persian language.<sup>10</sup>

At the late Sassanids period, a considerable scientific movement was started in Iran.<sup>13,14</sup>

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### The city of Gondishapur

The city of Gondishapur was located in Khuzestan Province, in the south-west Iran and its history reached back to prehistoric times. The name of this city is mentioned in the great Persian national epic—Shah Nameh (Book of Kings)—by the poet Ferdowsi, (935 – 1020 AD).<sup>15</sup>

It was at that time one of the four major cities of Khuzestan Province,<sup>16</sup> which was reconstructed by Shapur I, at the end of the third century AD. As Dr. Nasr described “it was rebuilt shortly after he defeated the Byzantine Emperor Valerian and conquered Antioch”.<sup>17</sup> He called it Veh-AZ-Andev-Shapur meaning in Pahlavi language “Shapur better than Antioch”. Then, it was gradually changed to Gondishapur and in Arabic Jundishapur. It was known as Beth Lapat in Syriac.<sup>18</sup>

Shapur II (r.309 – 379 AD) made the city of Gondishapur his capital and it rapidly became famous as a center of science and culture as well as the focus of Iran’s silk production.<sup>19–22</sup>

### Gondishapur School of Medicine

The exact date of the foundation of Gondishapur School is unknown, but most investigators believe that it was established during the Shapur II reign (309 – 379 AD). The school was actually an important focal point of medicine in ancient times and so known as the “city of Hippocrates” (Ciuitus Hippocatica).<sup>23</sup> At this medical institution of antiquity, the Hippocratic (460 – 377 BC) and the Galen’s traditions (130 – 199 AD), together with the rich Persian and Indian medical heritage were combined, developed, and subsequently transferred to the Islamic world.<sup>20</sup>

It was a cosmopolitan school attracting physicians and scholars from several countries including Egypt, Syria, India, Greece, as well as Persia.<sup>24</sup> These physicians not only valued the works of their predecessors, but sought to add their own original views.

The school was a flourishing center and its activity was enhanced in the fifth century AD. As Dr. Nasr has written: “it became further strengthened after 489 AD when the School of Edessa (in Arabic Alroha, now Urfa) was closed by the order of the Byzantine emperor and its physicians took refuge in the city”.<sup>18</sup> It was a well-organized institute based on scientific principles. As Soylemez believes: “it functioned according to the statement engraved upon its portal”<sup>25</sup> i.e.,

“knowledge and virtue are superior to sword and strength.”

The Sassanids Empire reached the peak of its cultural blossoming under Khosrow Anoushiravan (r.531 – 578 AD).<sup>12</sup> He had a keen interest in the school’s advancement and therefore a special mission headed by Burzuyah (Perzoes in Latin), the Iranian physician was dispatched to India to obtain books on medicine and other subjects. On his arrival, Burzuyah translated several Indian and Sanskrit texts into Pahlavi language. In addition, in 550 AD the first medical symposium was held on Anoushiravan’s order.<sup>26</sup> In the 7<sup>th</sup> century AD (at the time of the Islamic conquests), the Gondishapur School was regarded as the most important medical center of the ancient world.<sup>27</sup>

As an international center,<sup>28</sup> non-Iranian students were also enrolled at Gondishapur School of Medicine, including the first Arab physician “Harith Ibn- Kaldeh” who was from Taif in present Saudi Arabia.<sup>2</sup> The students were initially taught in Greek or Syriac but later, during the sixth century AD, Pahlavi language was also added to the educational curriculum especially for teaching pharmacology.<sup>10, 25</sup>

According to the Egyptian historian Ibn-Qefti, (568 – 648 AH),<sup>29</sup> the therapeutic approaches of the Gondishapur physicians were considered more advanced than the Greek and Indian methods,<sup>30</sup> because of the development of a new system of diagnosis and treatment that was developed there. The physicians were required to pass special examinations and obtain a license in order to practice medicine.<sup>23</sup>

The most distinguished physicians of Gondishapur were members of two Christian Iranian families: Buhktishu (in Syriac means Jesus had saved) and Masuyeh (in Latin Mesue). The Buhktishu family practiced at the school for more than two centuries.<sup>26</sup>

In 765 AD Jurjis Buhktishu, the chief of Gondishapur Hospital was summoned to Baghdad to treat the Abbasid Caliph al-Mansour. (d.158 AH /775 AD), and so, an official connection between the Gondishapur physicians and Baghdad was established for the first time.<sup>2,4</sup> Then, in subsequent years, more medical scholars from Iran migrated to Baghdad. They played an important role in the development of Islamic medicine. They wrote a variety of books on medicine and translated medical Pahlavi and Syriac texts into Arabic. For instance, Yuhanna, the son of Masuyeh was a reputed physician who worked in Baghdad during

the first half of the 9<sup>th</sup> century AD. He wrote the first Arabic treatise on ophthalmology.<sup>17,25</sup>

At Gondishapur School, medical books including Greek texts were translated into Syriac or Pahlavi mostly by the Nestorian physicians.<sup>31,32</sup> Hunayan-Ibn-Ishaq (808 – 873 AD), known as Johannitus, was born in al-Hira in Iraq who studied medicine at the Gondishapur School and then in Alexandria. He was an active translator of Galen's medical works into Arabic.<sup>33,34</sup>

Gondishapur School had a library with many books in Pahlavi, Greek, and Syriac.<sup>35,36</sup>

### Gondishapur Hospital

Gondishapur Hospital is attested by some authors as the first teaching hospital in the history of medicine and the most celebrated Iranian hospital.<sup>37</sup> It was a well-organized medical institute of ancient world operated by a director, medical staff, pharmacist, and servants. Dr. C. Elgood (1892 – 1970) wrote: “to a very large extent the credit for the whole hospital system must be given to Persia”. Afterward, the hospitals in the Islamic world were established based on the Gondishapur Hospital's model.<sup>38</sup> One instance that was established in the 8<sup>th</sup> century AD was the first medical center in Baghdad. Even the term “Marestan” that entered the Arabic literature was essentially the shorter form of a Persian word “bimarestan” (hospital). Bimarestan is composed of bimar (=sick, derived from the Pahlavi word wemar) with the suffix—*stan* donating place.<sup>20,39,40</sup>

The activity of Gondishapur Hospital reached its climax in the 6<sup>th</sup> century AD, continued at least until 225 AH (869 AD), and ultimately it was completely suppressed by immigration of Gondishapur physicians to Baghdad.<sup>4,26</sup>

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