



## Editorial

# Maimonides, The Respiratory System and Personalized Medicine

## Maimónides, el aparato respiratorio y la medicina personalizada



Maimonides (*Moshe Ben Maimon*, also known by his acronym Rambam) was a Cordovan doctor of unquestionable importance in his time, and with a special inclination toward the conceptualization of diseases, their etiological and modulating factors, as well as a personalized patient management. From his extensive philosophical, theological and medical work, it is worth highlighting a text dedicated entirely to bronchial asthma.<sup>1</sup> Born in the middle of the 12th century, Maimonides followed the paternal family tradition of studying the laws and Jewish sacred texts. However, those were difficult times in Cordova due to the fanaticism of the Berber fundamentalist movement of the Almohads. So, at the early age of 10, Maimonides had to emigrate, taking refuge in various places until temporarily establishing his residence in Almeria, where he lived with his Muslim professor Averroes (Ibn Rushd, who also fled from Cordova because of Almohad fanaticism).<sup>2-4</sup> Again, this religious intolerance led Maimonides to a successive pilgrimage through present-day Israel, Morocco (where he continued his studies in Medicine) and finally Egypt, where he was able to practice his medical profession in peace, probably becoming the most popular doctor of his time.<sup>2-4</sup> He died at the age of 66 in Cairo, having been the court doctor, organizer of the local health system to face major epidemics (plague and cholera), and leader of the Sephardic community. It is interesting to remember that despite his banishment he always emphasized his Sephardic-Hispanic (actually a redundancy) origin.<sup>2-4</sup> He is buried next to Lake Tiberias, in Israel.<sup>2</sup>

The scientific and philosophical production of Maimonides was very broad,<sup>1,5,6</sup> highlighting his rationalist vision and his saving of ideas and concepts extracted from the classical world, with a great influence on further Hebrew, Muslim and Christian theologians, philosophers and doctors (such as Thomas Aquinas and Spinoza).<sup>2-4</sup> It can be said that his thinking as well as his philosophical and medical work are strongly influenced by Hippocrates, Galen and Aristotle, but also by his contemporary colleagues, such as the already named Averroes, Avenzoar (Ibn Zuhr, Sevillian and the first surgeon to perform a tracheostomy), and Avicenna (Ibn Sina).<sup>2,4</sup>

In his Book of Asthma, Maimonides describes the disease and makes a series of pharmacological and lifestyle recommendations to improve the patient's condition.<sup>1</sup> Asthma is described as a chronic disease with exacerbation periods and seasonal predominance of symptoms, indicating that its causes and mechanisms are diverse as should be the management for each patient. Even more, he mentioned that medical books speak about diseases, but

not about patients who suffer them, who are very heterogeneous ('the patient must be taken into account individually, and specific provisions should be given'). Does this 'music' sound similar to current debates about phenotypes and endotypes, as well as for more specific therapies for each case? In fact, some authors consider Maimonides a visionary of concepts that are now called *personalized medicine* and *environmental health*.<sup>7</sup> In the same regard, he emphasized that both respiratory and systemic symptoms of the asthma patient should be taken into account by doctors. In fact, Maimonides refers to extrapulmonary symptoms such as 'fear, sadness and anguish' that often accompany chronic pulmonary diseases. Note that until only recently have health care professionals paid attention to these extrapulmonary symptoms and their relationship with the quality of life of the asthmatic patient. Regarding the pathophysiology of asthma, Maimonides reminded us that 'if the humor is thick it can fill bronchial ramifications, its elimination being dependent on both its own characteristics and the diameter of the airways'<sup>1</sup> (unfortunately, he only had therapies that were able to improve the former factor, and we would have to wait until the twentieth century for the latter to be modified). He also highlights the importance of environmental factors, such as temperature, humidity and pollution, as well as the influence of diet, physical exercise and rest on the progression or stabilization of chronic diseases, such as asthma.<sup>1</sup> Therefore, Maimonides recommends that his patients take regular but moderate exercise and a balanced diet, emphasizing the importance of eating fish and avoiding dishes with poor hydration, drinking abundant but not excessive fluids. As for the evolution, he highlights the difficulty or impossibility of curing asthma, and proposes more realistic objectives such as reducing the symptoms, especially during 'attacks', and extending the period between them.<sup>1</sup> For all these purposes, Maimonides recommended different preparations (either in the form of syrups or vapors) based on traditional medicine.<sup>8</sup> Among them, cough suppressors and fluidizers of the 'thick mucus' characteristic of the disease ('the cleaning of the lung will be done with those drugs that dissolve and refine the superfluous matter, so that it becomes moist and helps in its evacuation', 'preventing it from hardening since it will be more difficult to eliminate it').<sup>1</sup> Some of these preparations are recommended for asthma attacks and others for the stable phases. Chest physiotherapy is also part of Maimonides recommendations for patients with asthma, especially in stable periods or if there are signs that a new exacerbation may occur.<sup>1</sup> In spite of all this, he recognized that 'what is sought is not

always achieved', since not everything depends on the action of the doctor and the treatment, but on the 'own nature of the patient' since on many occasions 'we do not know the real cause of what is happening to him'.<sup>1</sup>

Finally, another interesting concept envisaged by Maimonides is the premonitory vision of medical teams, where the difficult cases are explained and discussed, taking concerted resolutions: 'so that the best of each doctor can be taken, with excellent results for the patient'.<sup>1,8</sup> Almost a precedent of clinical sessions and multidisciplinary units, which allow us to combine complementary visions and improve patient management.

As the classical Hippocratic Oath mentions, it is our duty to honor those who are or were our masters in the art-science of medicine.<sup>9</sup>

### Acknowledgements

To Jonathan McFarland for his editing aid.

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