

# Moses Maimonides' Treatise on Asthma

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**ABSTRACT** This paper contains an analysis and appreciation of one of Moses Maimonides' authentic medical works, his *Treatise on Asthma*. After a brief biographical section, passages from the work are cited and analysed to illustrate the approach of this medieval physician who organised the knowledge of Greeks and others who preceded him. Maimonides presents a logical and systematic approach to the prevention, diagnosis, and treatment of disease, an approach which is clearly evident in his *Treatise on Asthma*.

Moses Maimonides' *Treatise on Asthma*, as all his medical works, was originally written in Arabic with the title *Makalah Pi Alrabo*. An original Arabic version with Arabic lettering is manuscript 601<sup>9</sup> in the Madrid library (formerly Escorial 888). Additional Arabic manuscripts but in Hebrew letters are manuscript 1211 of the National Library in Paris and Bodleian (Neubauer) manuscript 1202 in Oxford.<sup>1–3</sup> The Parisian catalogue only lists this work with the notation "a few pages are not in proper order," but in reality the Parisian manuscript 1211 also contains three other Maimonidean medical treatises—the *Treatise on Poisons*, the *Treatise on the Regimen of Health*, and the *Medical Responsa*.

Maimonides' *Treatise on Asthma* was twice translated into Hebrew and once into Latin. However, not all extant manuscripts in the various libraries throughout the world have been adequately studied.

The first Hebrew translation in the year 1320, apparently prepared from the Latin version (see below), is that of Samuel Benveniste, a Spanish physician from Saragossa. He was physician in the house of Don Manuel, brother of King Don Fredo the fourth of Aragonia. Benveniste's translation is extant in the following manuscripts: Parma-Rossi 1208, Bologna 20<sup>5</sup>, Paris 1173, Paris 1175, Paris 1176, Vienna 151 (folio 163, Gold folio 86). There are differences among these manuscripts. In only one of the six manuscripts is the name of the

translator (Benveniste) mentioned in chapter 12.<sup>1</sup> The Vienna manuscript is briefer than the others and the Paris manuscripts are incomplete. The Bologna manuscript has the additional title *Sefer Hamisadim* (literally: book of nourishments), probably because the unknown patient for whom the book was written asked for and was given nutritional advice in regard to which foods he should select and which he should avoid and which regimen he should follow to be cured of his asthma. Steinschneider<sup>1</sup> points out that the *Treatise on Asthma* contains parallel phrases and verbatim wording of various sections of Maimonides' *Regimen of Health*. He also notes that a fragment of Benveniste's translation was extant in the private library of Joshua H Schorr.

The second Hebrew translation of Maimonides' *Treatise on Asthma* is that of Joshua Shatibi from Xativa about the end of the fourteenth century. He translated directly from the original Arabic into Hebrew. Shatibi was called "the scholar in every field of knowledge, especially medicine." A copyist's note in Munich manuscript 280 states that Shatibi translated this treatise for an unknown Jewish apostate of high standing in the court of King Juan the first of Castille who reigned from 1379 to 1390. The translator did not translate the title nor much of the Arabic text except for the names of therapies. Only two manuscripts of Shatibi's Hebrew version of Maimonides' *Treatise on Asthma* are extant today: Munich manuscript 280 folio 35 (copy also in Munich manuscript 43 from the middle of the sixteenth century), and Steinschneider manuscript 30 folio 66 to 92b. The latter is now in the national library

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in Berlin as manuscript 232 and also contains several other Maimonidean medical treatises including his *Commentary on the Aphorisms of Hippocrates*, his *Regimen of Health*, his *Treatise on Sexual Intercourse*, his *Treatise on Hemorrhoids*, his *Medical Responsa*, and his *Medical Aphorisms of Moses*.

Maimonides' *Treatise on Asthma* was translated into Latin by Armengaud de Blaise, a French scholar, in May 1302. The Latin version exists in Cambridge (Smith Catalogue p92) as manuscript St Peter, Cambridge 209<sup>8</sup> under the title *Tractatus Contra Passionem Asthmatis* or *De Regimine Egrorum et Sanorum et Specialiter de Asinate* (should be *asthmate*). An additional Latin manuscript is described by Friedenwald<sup>4</sup> who states that this work is "not found elsewhere in Latin translation . . . This anonymous translation differs from that of Armengaud and is otherwise unknown." It would thus appear that this manuscript, which is now part of the Friedenwald collection of the Hebrew University in Jerusalem, differs from the Cambridge Latin manuscript described above.

Muntner<sup>5</sup> writes that Dr L Bertolot in the Vatican discovered a fifteenth-century Latin manuscript containing translations of six of Maimonides' medical writings including his *Treatise on Asthma*. The others are his *Regimen of Health*, *Medical Responsa*, *Poisons and Their Antidotes*, *Treatise on Sexual Intercourse*. This Latin manuscript is probably identical to the Friedenwald manuscript which also contains the other five Maimonidean medical works in the same sequence. Both the Vatican and Friedenwald manuscripts begin and end with identical phrases: *Inquit Moyses filius Maymonis filii Abdelle cordubensis yspanus—Narravit nobis dominus rex . . . Finis. Explicit Tractatus Alrabo idest asmatitis*.

Maimonides' *Treatise on Asthma* remained dormant for several hundred years until the early part of the twentieth century when Dr Herman Kroner, Rabbi in a small town in Germany, began editing this work and translating it into German. Unfortunately, he died in 1930 before the task was completed.<sup>6</sup> Ten years later, Suessman Muntner published the first critical Hebrew edition of the *Treatise on Asthma*,<sup>3</sup> based mainly on the Paris Hebrew manuscript 1173 which represents Benveniste's Hebrew translation. Muntner's definitive edition is complete with introduction, bibliography, remarks, commentary, and Hebrew, Arabic, Greek, and Latin indices. Also included are an analysis of Maimonides' *Treatise on Asthma*, a lengthy discussion on Maimonides the physician,

an essay on "Asthma in Ancient Hebrew Literature," and a brief chapter devoted to "Modern Views on the Pathology and Treatment of Asthma." For the non-Hebrew reader, there is also an English summary of this Maimonidean book. Muntner's Hebrew edition was commented on by Levy<sup>7</sup> and reviewed by Nemoy.<sup>8</sup>

During the preparation of an English edition of Maimonides' *Treatise on Asthma* (see below), Muntner discovered numerous various typographical and textual errors in his Hebrew edition. He, therefore, published a revised and corrected Hebrew edition in 1963.<sup>9</sup> This second Hebrew edition is limited solely to the Hebrew text and the reader is referred to the first edition for the profuse commentaries mentioned above. Since only 300 copies of the second edition were published, Muntner published a third edition of only the Hebrew text but containing additional corrections.<sup>10</sup> This edition is bound together with critical editions of two other Maimonidean medical works, the *Treatise on Hemorrhoids* and the *Treatise on Sexual Intercourse*.

### Treatise on Asthma

Muntner's English translation of the *Treatise on Asthma* was published in 1963<sup>11</sup> and contains a preface by the paediatrician Bela Schick who says: "I was impressed by the depth of Maimonides' knowledge of the disease (ie, asthma), by the clarity of the discussion of its cause and of the influence of the environment, as well as the general health of the individual upon the disease." In an introduction to the English version, the allergist M Murray Peshkin points out that "in spite of spectacular modern advances made in the theoretical and practical aspects of the allergies, the studies of the asthmatic state, written in the 12th century by Maimonides, still merit our attention."

Shortly after the appearance of the English edition of Maimonides' *Treatise on Asthma*, Muntner, in collaboration with Isidore Simon, founder and editor of the Parisian-based *Revue D'Histoire de la Médecine Hébraïque*, published a French version but without notes, commentary, or index.<sup>12</sup>

From the time of the Greeks to the era of Maimonides to the present time, the *name* asthma has changed its significance several times. The *disease* itself has changed even more, as physicians looked for different sets of symptoms that changed with their theoretical concepts of causality. It is, therefore, possible that Maimonides' *Treatise on Asthma* may not refer to what is today known as

asthma. All one can say is that asthma was a difficulty of breathing or a pain in the chest.

In the introduction to his book, Maimonides praises his benefactor for having asked him to write it. Maimonides points out that asthma should be treated according to the various causes that bring it about. He further states that one can only manage the disease properly with a thorough knowledge of the patient's constitution and his individual organs, his age and habits, the season and the climate. Maimonides asserts that in this book he intends to include general principles which might be useful to all people to preserve their health and to prevent disease. He then lists the 13 chapters and their headings:

"Chapter one advises on the best course of personal conduct in general. Chapter two deals with dietary measures which should be adopted or avoided when one is afflicted with the disease under consideration. Chapter three deals with foods to be taken or eschewed, with special emphasis on the foods of familiar origin. Chapter four deals with the preparation of the dishes commendable in this disease. Chapter five deals with the quantity of food the patient may safely consume. Chapter six deals with the number of meals to be taken in a given period of time. Chapter seven deals with beverages. Chapter eight deals with respiration and emotional processes. Chapter nine deals with bowel movement, eventually of holding back of evacuation. Chapter ten deals with habits of sleep and waking up, of bathing, massages, and coitus. Chapter eleven deals with simple remedies and their use in this disease. Chapter twelve deals with the composition of drugs which might be called for in treating this disease in line with the present treatise. Chapter thirteen includes short summaries which might be useful to any man desirous of preserving his health and administering to the sick, in the form of concise admonitions.

At the beginning of each chapter I also give a preview of its contents. May G-d assist me in this labour."

In chapter one, Maimonides gives general advice regarding illnesses which are characterised by acute attacks such as arthritis, migraine, asthma, kidney stones, and their like. He cites Galen who recommends dietary means to treat and even to prevent these maladies. Maimonides states that hygienic principles can be grouped into seven categories of which the first six are obligatory and the seventh is commendable: clean air, correct eating and drinking, regulation of one's emotions, exercise and rest, sleep and wakefulness, excretion or retention of wastes, and bathing and

massaging. To these he adds the regulation of coitus as an important factor in a general health regimen. These are discussed in detail in the subsequent chapters.

Chapter two deals with nutritional and dietary measures to be adhered to or avoided by the patient suffering from asthma. Maimonides recommends that food be consumed in moderate amounts and should be easily digestible. He states that a fattening diet is objectionable and may endanger life, especially in an asthmatic patient. Gas-generating foods and scalding-hot foods should also be avoided.

In chapter three, Maimonides lists a variety of poorly digestible foods such as grossly-sifted wheat flour, flour pudding, macaroni, and spaghetti, especially when these are fried in oil or treated with cane sugar or dipped in honey and fried, since all flour dishes which fatten the body are detrimental because they generate thick juices which block the body vessels and passageways. Rather, flour should be finely ground and unadulterated. One should avoid gas-producing foods such as black beans, peas, rice, lentils, nuts, onion, and garlic. Maimonides also describes the virtues and detriments of a variety of other foods such as different types of meat and fowl, cheese, eggs, fish, vegetables, and fruits. Chicken soup is recommended for patients suffering from asthma as are fresh-water fish. Also efficacious for asthmatics are fennel, parsley, mint, pennyroyal, origanum, watercress, and radish, whereas lettuce, pumpkin, cauliflower and turnip are harmful. Figs, quinces, and raisins in moderate amounts are beneficial while watermelon, peaches, apricots, cucumbers, and fresh dates should be avoided.

Chapter four presents numerous recipes for the preparation of dishes helpful to the asthmatic patient. One example is a soup made from rue, beet, and chicken, cooked with or without beans.

Chapter five deals with the quantity of food one should consume. This quantity varies from person to person and from season to season. A person should cease eating before experiencing a sense of repletion or fullness. Overeating is one of the prime causes of many diseases and maladies such as heartburn, diarrhoea, and fainting. One should also not consume a large variety of foods during a single meal. Not only are the quality and quantity of food consumed important but also the sequence of its consumption. Galen is cited as recommending that light dishes be consumed before heavy ones. Other authors are of the opposite view. Maimonides suggests that a single uniform dish, not too light or heavy, is preferred. He

then points out the virtues of moderate exercise before eating and advises against such exercise immediately after meal. He, therefore, regards sexual intercourse, bloodletting, or the taking of a hot bath immediately after eating as an offence against one's health because they involve strenuous physical and emotional exercise. Finally, Maimonides enumerates a variety of ailments which occur in people who digest their food insufficiently or inadequately: heartburn, loose stools, impotence, insomnia, lethargy, depression, urinary retention, fever or inflammation of the kidneys, spleen, liver, or joints.

Chapter six deals with the timing and number of meals one should eat. Maimonides suggests that healthy people should eat a single meal daily and that the elderly and debilitated and those convalescing from illness should consume small quantities at frequent intervals. One should only eat when the stomach is empty. The time to eat again is when the food has left the stomach, when there is no aftertaste from eructation, and when one feels real appetite and salivates in the mouth—even then one should wait another half hour. Maimonides then recounts his personal eating habits. He used to eat only once in 24 hours, except on the Sabbath. In the winter he drank a little wine, depending on the degree of cold, before going to bed. For Moslems, to whom wine is prohibited, Maimonides suggests a fine honey drink.

Chapter seven deals with beverages. Excessive imbibition of wine is said to be injurious in that it makes the drinker feel heavy, affects his brain and hearing, gives rise to severe diseases and aggravates others such as asthma. However, a small quantity of wine during or after meals is useful in the diet of the healthy and an excellent cure for many disorders in that it aids digestion, increases natural body warmth, and removes superfluities in the form of sweat and urine. Maimonides again offers a substitute for wine for Moslems to whom wine is forbidden—honeyed drink (ie, mead), seasoned with spices. He also lists spices which stimulate urination: lentils, borax, mint, anise, ginger, mastic, muscat nuts, and nard. Recommendations regarding the drinking of water include the following: it should be sweet, clear, and pure, boiled a little and drunk from a clean vessel after it cools down. The best time to drink water is about two hours after eating.

Chapter eight is concerned with rules of conduct regarding fresh air and psychic or emotional moods. Not only should air be fresh and clean but its temperature is important. On hot days, the air

should be conditioned by spraying and sprinkling the floor with aromatic water, by flowers, heat-abating leaves, and draught. Conversely, on cold, rainy days, the air should be fumigated with perfumes which warm the body. Maimonides asserts that if a person is emotionally upset or mentally agitated, his physical well-being suffers and eventually he becomes physically ill. This statement is perhaps an early description of psychosomatic medicine indicating that a deranged psyche can profoundly affect the somatic or physical well-being of an individual. Conversely, continues Maimonides, gaiety and joy gladden the heart, and stimulate the blood and mental activity. Excessive indulgence in the pursuit of pleasure, however, is injurious to one's health. The avoidance of illnesses induced by such excesses is by conducting oneself according to ethical and moral principles.

In chapter nine, Maimonides discusses constipation, urinary retention, and other forms of retention of body superfluities. A variety of oral cathartic preparations and antidiarrhoeal concoctions are described. One should try to regulate one's bowels by maintaining a regular and normal diet. Very potent cathartics should be avoided. Numerous types of enemas to cleanse the bowels are cited and various emetics to cleanse the stomach are listed. The conditions under which all these remedies are to be used are clearly enunciated. For example, vomiting is best effected when the patient is in a raised position, so that nothing remains in the stomach. Maimonides then describes a series of experiments that he conducted on himself to regulate his bowels. Finally, he states that urine stimulation, bloodletting, and purgation do not preserve health and should not be done on healthy people but reserved for cases of illness.

Chapter 10 deals with the effects of sleeping, walking, bathing, massage, and coitus on asthma. Sleeping immediately after meals is said to be harmful, as is washing with cold water. Sleeping after bathing is efficacious. The bath water should be warm and contain some salt. Massaging the body upon awakening in the morning and before going to bed at night is highly recommended. Several types of massage are described as are certain forms of exercise for the young and for the elderly. The final portion of this chapter is devoted to a discussion of coitus, an excess of which is injurious even to healthy people. A man who indulges excessively in coitus suffers from memory lapses and decline in mental capacity, faulty digestion, and defective vision. Coitus soon



after a bath or soon after physical exercise or bloodletting or at daybreak or when a person is hungry or fully satiated or seriously ill should be avoided.

In chapter 11, Maimonides discusses simple medicinal therapy for asthma. He advises one to use an experienced and expert physician who develops a rational treatment plan and implements it. He counsels against the use of "empiricists who do not think scientifically" but who succeed or fail purely by chance in treating patients. He cites the following parable: a patient who puts his life in the hands of an experienced physician who is lacking in scientific training is like a mariner who places his trust in good luck, relying on the sea winds which sometimes blow in the direction desired by the mariner but which sometimes spell his doom. Maimonides is obviously cautioning against consultation with and treatment by medical quacks. In support of his position, he cites Galen and Hippocrates who assert that medicines should be compounded scientifically and logically, according to the individual qualities of the patient. Specifically for asthma, Maimonides recommends enemas "to drain the thick juices", and aromatic herbs "to fortify the brain and dry out any humidity therein." These should be employed once or twice a year. During an acute attack, chicken soup is advised if the patient is afebrile, and sweetened barley porridge if the patient has fever. Should these be insufficient to allay the attack, an enema should be used. For the most severe cases, an emetic may be necessary. The patient should sleep as little as possible and in a sitting position. Excessive bathing and strenuous physical exercise should be avoided but light exercise may be beneficial.

Chapter 12 describes compound remedies for asthma in ascending order of potency. The mildest remedy is made from liquiritia, althaea, fleabane, and fennel boiled and strained into freshly made rosewater syrup. Maimonides endorses a remedy of Rhazes to clear the lungs of moisture, ease respiration, and eliminate the cough: soak wheat bran overnight in hot water, filter, and add sugar and almond oil; place on the fire until it resembles a julep and drink when lukewarm. A mild remedy of Galen for asthma consists of equal parts of seeded raisins and fenugreek cooked in clear water, sifted, strained, and left standing for a prolonged period. More potent remedies of Galen are also described.

Maimonides cautions against the use of opiates except for severe cases of asthma. He details at some length the case of one of his patients who

suffered from asthma, a young, thin unmarried woman with a moderately warm constitution, for whom he prepared a remedy containing numerous ingredients. His purpose was "to cleanse her lungs, fortify her brain, and stop her catarrh." He states that no mention of this remedy is found in any of the medical texts written by ancient or modern physicians but that he had great success therewith. Maimonides again asserts that chicken soup assists in the expectoration and expulsion of pulmonary phlegm. He points out that Ibn Zohr preferred powders to oily pastes for "fortifying the brain" in asthmatic patients. Various formulae for ointments, fumigations, enemas, and purgatives are then described and their varying degrees of potency are cited. Most of these formulae were taught to Maimonides by "Western (that is, Moroccan) Masters" and only a few are recorded in medical books. He concludes this chapter by stating that he only listed those remedies for asthma whose ingredients are easily available and whose preparation is simple.

The last and most important chapter of Maimonides' *Treatise on Asthma* is concerned with concise admonitions and aphorisms which he considered "useful to any man desirous of preserving his health (that is, the patient) and administering to the sick (that is, the physician)". The chapter begins as follows: "the first thing to consider . . . is the provision of fresh air, clean water, and a healthy diet". Fresh air is then described in some detail:

" . . . city air is stagnant, turbid, and thick, the natural result of its big buildings, narrow streets, the refuse of its inhabitants . . . one should at least choose for a residence a wide-open site . . . living quarters are best located on an upper floor . . . and ample sunshine . . . toilets should be located as far as possible from living areas. The air should be kept dry at all times by sweet scents, fumigation and drying agents. The concern for clean air is the foremost rule in preserving the health of one's body and soul . . ."

These air pollution control measures advocated by Maimonides nearly 800 years ago seem appropriate indeed to the twentieth century reader of this essay.

Healing of illness is said to be dependent not only upon the therapeutic measures prescribed by the physician but also the nature and constitution of the patient. In mild cases of illness, the physician should not interfere but allow nature to heal. If the physician errs and prescribes a therapy

which is contrary to the course of nature, he may impede the cure or even aggravate the illness. Even if the physician prescribes correctly and even if the patient follows the prescription precisely, it is possible that cure will not be effected because nature may not co-operate. The same may happen to the farmer: he does everything that is expected of him yet the seed bring forth no fruit if nature doesn't co-operate. Maimonides then quotes the famous aphorism of Rhazes who said:

"when the disease is stronger than the natural resistance of the patient, medicine is of no use. When the patient's resistance is stronger than the disease, the physician is of no use. When the disease and the patient's resistance are equally balanced, the physician is needed to help tilt the balance in the patient's favour."

This rule of *primum non nocere* was already enunciated centuries earlier by Hippocrates who said that the physician should help the patient and not harm him. If one cannot help him, at least do not harm him. Maimonides then criticises "famous physicians who commit grave errors on patients who later succumb . . .". Maimonides says he often observed a physician prescribe the use of a strong purgative for a patient who did not even need a mild one. Some physicians commit gross blunders, according to Maimonides, yet the patient survives; others commit seemingly small errors and the patient dies. Anyone with common sense should keep this in mind. The genuine physician is always beset with doubts whereas the charlatan thinks that everything is clear.

Maimonides cites Rhazes' aphorism which considers medicine to be an art, and Galen's assertion that "the medical art seems easy and simple to men of limited vision but how profound and far-reaching was this art in the eyes of a man like Hippocrates." Maimonides makes reference to his *Commentary on the Aphorisms of Hippocrates*. He also quotes Aristotle who said that most people die of the remedies given them, a clear reference to iatrogenic disease. This observation, however, should not lead one to abandon appropriate remedies. Medicine is a science essential to man at all times and in all places, not only for the ill but also for the healthy. However, one should seek out and consult with expert physicians who have complete mastery of theoretical and practical knowledge. An unlearned physician should be avoided; if an expert physician is not available one should rely only on nature, confirming Hippocrates' assertion that "nature cures disease . . . she takes no orders from man . . . nature does all that is necessary . . ." Where a diagnosis is in

doubt, it is best to rely on nature to cure the illness.

The humble Maimonides then addresses himself to the Sultan for whom he wrote his *Treatise on Asthma* saying:

"do not assume that I am the right person in whose hands you might place your body and soul for treatment. Heaven be my witness that I myself know well that I am one of those who are not perfect in this art (of medicine) and who shrink from it because it is enormously difficult to attain its vastness . . ."

The chapter continues with the observation that therapeutic measures developed by practical experience are more frequently used than those arrived at by theoretical reasoning. Maimonides again warns against the use of "experienced" quacks. The genuine physician has at his disposal not only his own experience but that of all physicians over many generations up to the time of Galen and Hippocrates as recorded in medical books. Another cardinal rule is that the physician should not treat the disease but the patient who is suffering from it.

The case of a young Moroccan patient who was wrongly treated and whose care was then taken over by one of Maimonides' teachers is cited in detail. Other cases of erroneous treatment with fatal outcome are also mentioned. Another case described in detail is the illness of the Sultan Amrael Muselmin in Marakesh, Morocco, treated by four of the greatest professors of medicine: Abu Ali Ibn Zohr, Serapion, Abu Alchassan Ibn Kamniel of Saragossa and Abu Ayub Ibn Elmulim of Seville. The strong young Sultan recovered from his illness but later died, probably of an incorrect dosage of medicine. Maimonides investigated the circumstances surrounding the Sultan's death and comments thereon at some length. Maimonides expresses admiration for the fundamental rules of medical practice in Egypt and enumerates several reasons for his admiration. Finally, he lists the circumstances where such multi-physician consultation should be avoided.

Chapter 13 and the entire treatise end with the following prayer:

"May G-d the Gracious and Truthful guide us on the right path to our salvation in eternity. Praise be to G-d forever and ever."

Maimonides' logical and systematic approach to the prevention, diagnosis, and treatment of illness, is typical of all his medical and other writings. One should note his allusions to psychosomatic medicine and his discussion of iatrogenic disease, seemingly modern concepts. His teachings

that a bad physician is worse than none, that one should treat patients and not diseases, and that *primum non nocere*, among others, should be taken to heart by all students of medicine and medical practitioners of the present era. It is hoped that this essay describing Maimonides' *Treatise on Asthma* will stimulate the reader to read this important Maimonidean medical work as well as his other nine medical books, nearly all of which are now available in English.<sup>13</sup>

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