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Dietary Recommendations in the Medieval Medical School of Salerno

A Lesson from the Past

Maurizio Bifulco, MD, Magda Marasco, DLitt, Simona Pisanti, PhD

In this commentary, we have evaluated the historical relevance of the dietary prescriptions of the medieval Medical School of Salerno, the most ancient institution in Europe for the medicine's teaching and their correlation to the present Mediterranean dietary pattern. To this end we have analyzed two major treatises of the school: *Regimen Sanitatis Salerni*, which is one of the most ancient writs of the preventive medicine, and *De flore dietarum*.

"Si tibi deficiant medici, medici tibi fiant haec tria, mens laeta, requies, moderata diaeta" (if you lack physicians, let these three things be your medicine: good humor, quiet—avoiding or reducing stress—and mild diet). This precious aphorism is one of the most ancient writs of the preventive medicine. It preludes the *Regimen Sanitatis Salerni*, the main text of the Medical School of Salerno (around 900 AD), certainly the most ancient institution in Europe for medical knowledge, progenitor of the modern medical school.^{1,2} The school achieved its splendor between the tenth and thirteenth centuries, during the final decades of Longobard power; it combined the Greek and Latin culture with the Arab and Jewish tradition to form a whole harmonious scientific knowledge comprehensive of the different learning. In this connection a legend says, with good reason, that the school was founded by a Latin, a Greek, an Arab, and a Jew, supporting its international inspiration and being beyond compare in the Western Mediterranean for its practical concerns.

Its medical works became known among medical practitioners and common people too, and the *Regimen Sanitatis Salerni*, one of the most popular in the history of both medicine and literature, was translated into every language, one of which was the English version by the Elizabethan poet Sir John Harington in 1607.

The poem was born as a short poem in 362 Leonine verses, written between the ninth and the tenth century by one or more anonymous authors, who gathered the result of the experience of the school's doctors in advice to be in good health. It follows that the *Regimen*

is not a medical treatise but an actual healthy lifestyle program, easy to keep in mind and to put into practice, inspired by universal and imperishable principles that entitled the school to go over the scientific, religious, and superstitious limits of the Medieval age, watching to the future.

What would seem still notable today is the purpose of the poem to avoid having recourse to the medicines and to maintain the balance of the four humors with the help of some simple advice to follow, in accordance to the Hippocratic theory and the Galenic practice of health.³ Similarly to the hippocratic idea, the cook is the forerunner of the doctor. Disease and cure are questions of digestion, metabolism, and food sooner than antidotes and remedies. The right diet is fundamental to guarantee a state of good health.⁴

Leafing through the pages of the short didactic poem *De Regimine Sanitatis*, written in verses in an educated Neapolitan dialect mixed with middle Latin and Tuscan, we can find numerous natural remedies for people of that time, to purify body and mind, in order to preserve the link with Mother Nature. According to the rules set by the school, prudence and moderation were the keys to being healthy. Close attention was also given to the connection between nutrition, to the use of medicinal herbs, and to the advice on diet that could adjust the tempers of man.⁵ A melancholic-tempered man, for example, could not use vinegar and could not eat crane often (Figure 1). Hot-tempered men were to skip spicy foods like onion, but the lethargic were to add more. Onion was also regarded as an ingredient crucial for averting baldness. Leek was for female fertility; black pepper for cough and gripe; garlic, rue, horseradish, or walnuts were prescribed against poisons. The mix of beer and medicinal herbs was called *gruyt* and had preservative properties. After the advent of hops, *gruyt* usage was lifted.

The value of the diet to be in good health is deduced also from a previous treatise, *De flore dietarum*, initially held as a work of Constantine the African, more probably written by an unknown doctor from Salerno.⁶ The manuscript is full of practical common sense advices and recommendations such as: with regard to wine, "vinum biban homines, animalia cetera fontes" (wine is for men, water for animals), and, about a mild

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Figure 1. *Liber De Regimine Sanitatis*. Naples, National Library—Ms. XIII C. 37. A recipe of crane washed down with a good wine not to eat very often because of the black colour of its flesh that induces melancholy.

use of it, “genuine wine can provide many benefits: it comforts the brain, cheers the stomach, eliminates harmful gases from the body, relaxes the tummy, sharpens intelligence, improves sight and hearing, builds up the body, and strengthens the limbs.”

In the light of current scientific knowledge, we could smile at these statements that obviously are simply illustrative of the Medieval school of medicine thought. But what is both relevant and actual is the value that the school gives to a varied diet (the so-called “flower” of the diets in *De flore dietarum*), rich in all kind of fruits and vegetables, at every meal to help good digestion and nutrients’ absorption, legumes, olives and olive oil, seafood, cereals, and red wine, all products peculiar to the Mediterranean area.

Indeed, the connection between diet prescriptions and the native products of Salerno’s area is evident. Looking past the limitations of Medieval knowledge, all the above-mentioned foods are also at the basis of the present traditional model of Mediterranean diet, inspired by traditional dietary patterns of Southern Italy, where Salerno is located. Medieval Salernitan people, following the preventive *vade mecum* of the school, anticipated the actual dietary guidelines taking health benefits from the Mediterranean dietary pattern, which is now widely recognized as protective against cardiovascular diseases, cancer, certain psychiatric disorders, improving well-being, and extending life expectancy.⁷

The beneficial effects of moderate wine consumption on cardiovascular diseases, as well as moderate consumption of nuts have been supported by research.^{7–9} Also garlic, onions, herbs, and spices, used as condiments, beside increasing the nutritional value of foods, may have cardiovascular benefits and improve cognitive function.⁸

The Salernitan dietary model influenced the Medieval medical men, coming from different countries, and continues to influence physicians and common people today, in a continuous distillation of the quintessence of its art to restore to health still present in some contemporary popular sayings, thus earning

modern credibility and crossing over the limits of time and space.

In our age, when obesity and its co-morbidities are becoming a pandemic medical problem and a correct diet and lifestyle are increasingly needed, a glance to the precepts of the Medical School of Salerno, which it might well be hoped to see revived one day, could be very healthy.

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References

1. Harington J. The school of Salernum. *Regimen sanitatis*. English version. Roma: Edizione Saturnia, 1957.
2. Pasca M. The Salerno School of Medicine. *Am J Nephrol* 1994;14:478–82.
3. Musi A, Oldoni M, Placanica A. *Storia della Università di Salerno*. Salerno: Arti Grafiche Boccia Edizioni, 2001.
4. Baran D. Salernitan spirit today. Presented at the 40th International Congress on the History of Medicine, Aug 29, 2006. Romania: Gr T. Topa University of Medicine and Pharmacy.
5. Cavallo P, Proto MC, Patruno C, Del Sorbo A, Bifulco M. The first cosmetic treatise of history. A female point of view. *Int J Cosmet Sci* 2008;30:79–86.
6. Cantalupo P. Un trattatello medioevale salernitano sull’alimentazione: il *de flore dietarum*. *Quaderno di Annali Cilentani* n. 2/1992.
7. Ortega R. Importance of functional foods in the Mediterranean diet. *Public Health Nutr* 2006;9:1136–40.
8. Carollo C, Presti RL, Caimi G. Wine, diet, and arterial hypertension. *Angiology* 2007;58:92–6.
9. Opie LH, Lecour S. The red wine hypothesis: from concepts to protective signalling molecules. *Eur Heart J* 2007;28:1683–93.