

Chapter Seven

Galen and our World

Galen's teaching on good health that we have seen in the last six chapters brings an overwhelmingly positive message from antiquity. A well informed person was able to live a healthy life at home and at work as long as they avoided major infections. This was not a matter solely for the individual, but to be administered partly by children's nurses, and professionals in gymnasia and bathhouses who had a wider knowledge of the body's needs in certain special areas of training and massage. This area of *preventive* medicine was not necessarily in need of close medical supervision, but the doctor most certainly had an interest in it. It was part of the art of medicine, according to Galen and many of his predecessors, to advise on nutrition, exercise, sleep and mental health. These were not matters to be left to chance, leaving the individual to his or her devices until chronic illness set in and good health was all the more difficult to restore.¹

Galen's programme for maintaining good health inevitably cuts across important categories in modern health studies. He is writing in a culture different from ours and within a different scientific system. He is also the medical polymath who is the opposite of the specialist in modern practice: Galen expected to advise on everything, both in person and in a written version. Beyond those differences, however, Galen may offer a useful challenge to current thinking and practice. In the first place, the doctor is advising not a 'patient' but a person who is healthy. Secondly, that person enjoys a certain level of autonomy, living a normal life of eating, working and exercising, sleeping and thinking and feeling, unless some disease requires medical intervention. Thirdly, this healthy regime is a product of the civilisation of the Greco-Roman city, which is able to guarantee certain provision of food, good water, and sewers for the majority of the population. What kind of healthy regime is best suited to the cities of Western civilisation with their similarly advanced infrastructure? Does Galen offer suggestive analogies?

Galen, like his predecessors the Hippocratic doctors, Diocles and Diphilus thought that writing about health as well as disease was a part of the doctor's brief. This is a complex area in modern thought, with many in biomedicine believing that medicine should concentrate on curing disease through a rigorous and tested methodology. Alongside this commitment to the curing of disease, there are others who would focus also on the life and needs of the patient. Thus the World Health Organisation has an objective of health and well being for all; and others have emphasised the appropriateness to medicine of lifestyle decisions about food, exercise, and social and natural environment. This area, the debate over what 'health' is and is not, has been discussed in an ancient context in King 2005.

Galen's proposal is that health and well being *are* the concern of the doctor, that preventive *medicine* should stand beside therapeutic medicine as an important approach to health.

A word is needed on therapeutic medicine. King (2001:60) concludes her review of Greek and Roman medicine as follows:

¹ Galen contrasted his Aristotelian model based on Nature doing everything for a purpose with the atomic theory of Democritus and Epicurus, where chance movements of particles determined outcomes. Doctors whose theories were related to atomic theory and whom Galen consistently attacked were Erasistratus of Ceos and Asclepiades of Bithynia, the latter an important predecessor in preventive medicine, as we have seen.

Improved public health and treatment by antibiotics mean that the ‘fevers’ – acute infections – which were the major diseases of the past have been replaced by chronic degenerative diseases such as heart disease and arthritis. Knowledge of the diet, and the role of vitamins and minerals, has virtually eliminated the ‘deficiency diseases’ in the developed world. The part played in various bodily processes by hormones (from the Greek verb to excite or arouse) has been clarified. The Human Genome Project has succeeded in mapping the genes. Plato and Galen would approve: modern medicine is centred on drugs, even if they are now made from synthetic compounds rather than from plants provided by nature. Willow bark was used in the eighteenth century to reduce fever and pain; in the second half of the nineteenth century it was synthesised in the laboratory, and tested on animals and people. At the turn of the century the synthetic compound was named ‘Aspirin’.

Therapeutic medicine is one of the success stories of the modern world, as is attested by the statistics on average longevity and successful treatment of many serious diseases. As Helen King observes, Galen would approve of the new generations of drugs, a number of them based on plant products, even though they are based on aetiologies of disease to which he had no access, and are proved to be effective by systematic testing. But Galen, like Hippocrates, believed that every human being was an individual in need of customised treatment. That individual normally lives a life in a social and cultural context which imposes many demands of work, child-rearing and social interaction. Galen’s proposal, as we have seen, is that that life should wherever possible be lived in a ‘healthy’ way. This chapter asks whether such individuals, not to mention the whole system of biomedicine itself, might benefit from such a programme of preventive medicine, which ensured that fewer people presented themselves to doctors with needs for drugs and other therapies, and fewer people were numbered in statistics predicting high levels of diabetes, heart disease and depression in coming decades.

Such an approach to preventive medicine would where necessary complement other forms of preventive interventions such as inoculation against infectious diseases and the prescribing of drugs to those known to be at risk in the production of cholesterol, for example, or to reduce hypertension. This latter category would belong in Galen’s terms to those with a constitution in need of slight modification in order to remain healthy. To these interventions would be added a programme for good health and well being which an individual might follow in his or her daily life in order to maintain good health, with some advice from a general practitioner, but also with a large degree of independence. Such a regime would include balancing diet with exercise, sleeping in a healthy way and maintaining a good state of mental and emotional health.

Some people might object that such a programme is common sense, that everyone knows how to do this. But that is not what medical researchers and the World Health Organisation are predicting for the countries of western Europe and North America, as I have mentioned. The WHO, in fact, is predicting diabetes, heart disease and depression as the diseases with the highest incidence in all five continents. Another challenge to this kind of preventive medicine, which is frequently voiced, is that a person’s way of life is for him or her to choose, and that any attempt to medicalise eating and exercise among a broadly healthy population is an invasion of personal freedom by the medical and other authorities of the state. The freedom argument is very important and to be respected. Smoking has been a key area in which this issue has been debated and played out. Should it however outweigh the

objective of living in a healthy city or a healthy country? There may be other, equally weighty considerations to set against it.

I believe that Galen's *On Maintaining Good Health* does have something important to tell us. It may be that this importance will be very general, and limited to two things, first, a general appreciation of certain lessons from the Greco-Roman world such as 'nothing in excess' and 'moderation in all things'; and secondly the perspective that can be gained by comparing our western medical practice with a completely different approach. Comparing western medicine with Galen's advice would then be similar to comparing health care in China or Japan, for example. The cultural framing of medicine is a very powerful component of our understanding of health, and such comparative knowledge would be valuable. Do Japanese people have the greatest longevity on earth solely thanks to the medical treatment they receive, or for that reason and others, including the Japanese approach to fish and plants; to nature more broadly; and to exercise?

In order to address these questions, the remainder of this chapter is divided into three sections. In the first, I summarise the main features of Galen's programme, which we have seen in previous chapters of this book. Next, I identify what seem to me to be the key issues that emerge from Galen's approach. I will then, thirdly, suggest how those key issues might work for us too, in a modern country in Western Europe.

Concluding summary of Galen's programme for good health

In his concluding remarks, Galen says (6.14; 197.13-16), 'I advise those who are appropriately educated to take careful note of what helps them and harms them. If they do, they will find they need doctors little, as long as they are in good health.' This is a programme, Galen tells us, for educated readers, doctors and allied health-care professionals such as children's nurses and gymnastic trainers and 'experts' (*epistemonēs*) to oversee a person's healthy life. Galen sees this as a programme to enable *ho anthropos*, 'the person', rather than *ho noson*, 'the patient' to maintain himself in health. Galen does not envisage micromanaging of health by hypochondriacs, but people at work, dealing with the stresses of daily life.

People need to know two things about themselves. Firstly, what sort of 'nature' or constitution do they have? Is it good and stable, or inclined to imbalances in humours, too much phlegm or too much yellow bile, for example? A doctor might need to advise on this, because indications can be misleading. Secondly, how should people adjust their lives to take their particular nature into account?

Galen has a very strong emphasis on the body as a natural organism, which, like the bodies of other animals, tries to maintain itself in balance during a lifetime, adjusting to meet a constant need to replace energy lost through body heat. The replacement material (food in particular) has a different nature from the body and may produce harmful residues after digestion. It is essential to eat the right kind of food and drink, so that the heat of the body can convert it successfully into blood. Incomplete conversion leads to accumulations of bad humour, which are eliminated in healthy people through the action of the kidneys (stimulated where needed by diuretics) and the pores (stimulated by massage). The vital organs in a healthy body are in balance with the body tissue and the whole organism is ideally self-sustaining. The organs and muscles of the body are toned by exercise, but any excess in exercise leads to fatigue, which can combine with bad humour to unbalance the body. A final

challenge to the organism throughout life is the aging process, which gradually dries and cools a body from birth.

This 'natural' body with a constitution firmly set at birth needs to live 'according to nature', that is in a way for which the tissues, organs and body functions (especially the innate heat of the body) are designed by Nature.

The huge amount of physiological theory and detail in the treatise, which underpins all that Galen has to recommend on adjustments to daily life and confusions that people have, is often not clear to the individual, nor to many other doctors. Galen claims repeatedly in a familiar rhetorical formulation that most of his predecessors have contradicted each other and produced hopelessly confusing advice because they have not been clear on basic principles, causes and argument. Rival doctors and gymnastic experts mistake the body's signs because they use only partial evidence. Galen with his powerful understanding of anatomy, physiology and logic describes all these processes clearly (in his own view at least). Thus the ordinary person needs Galen to take charge of all the physiological theory of the humours, balances and residues in their bodies. And also needs Galen to identify what sort of nature or constitution he or she has.

To establish clear parameters, Galen sets up in the early books an ideal model, of a young man who has the best nature or constitution, one that is internally well balanced and able to maintain all body functions in self-regulating equilibrium, and also able to adjust itself to daily activities and the environment. The body with the best nature will take account of seasonal differences, temperature, the amount of food and drink needed, how best to exercise and what sort of bathing and massage to take (2.2, 2.7). This ideal model sets Galen's physiological system fully and clearly in the context of daily life, and all the other less than perfect natures or constitutions that people have can be measured against the model. The doctor understands indications of an underlying constitution that cannot easily be discerned by the patient. Advice is thus needed on the basis of physiological theory, which only the doctor fully grasps. Examples discussed in previous chapters include the feverish philosopher and the centenarian goat herd with wide channels in his liver, who safely drank milk all his life; others with a different kind of liver suffered sickness, indigestion, obstruction of the liver, kidney stones or loss of teeth. Other people benefited from drinking milk.

Identification of a person's nature, both his humoural mixture and his physiological idiosyncrasies, thus remains fundamental. Ordinary people will simply risk their health if they do not have Galen to advise on their nature and how it deviates from the best. Once they know this, they can make well-informed adjustments. One group that particularly needs to make adjustments are the elderly, whose natures are well advanced in the drying and cooling out of the body. An example in Chapter Three was an old man who had to eat small meals, of foods such as non-oily fish and mountain birds that would not produce thick humours; exercise carefully in movements suitable for the old; take care with the temperature of his home; and take massage, especially in the morning in case his body heat had not fully metabolised the previous day's food. The old man's body could maintain its correct proportions of humour, but care was needed.

The treatise follows a human life in successive stages of seven years from birth to death, with the first half focussing on the 'best nature', the model, and the latter on the vulnerability of age, and the possible need for therapy as well as prevention. Special arrangements are needed for infants, and additional care is needed for the elderly because their systems are more frail. But the same principles apply throughout a life. The person is born with a certain constitution or nature, and this

shapes their health through life. A few people have an excellent nature. Most people however fall short of excellence and have a nature which is cooler or hotter than the ideal, or a disposition to produce more of one of the humours than is ideal. Such predispositions might be the equivalent of producing too much cholesterol or having higher blood pressure in modern practice.

While a doctor will need to advise on this individual constitution because an untrained person may be misled by symptoms and indications which may suggest a different diagnosis, once this nature is understood, the child and then young adult will need strict guidance in order to support its healthy development, but this can come from a nurse or trainer. It doesn't need to be a doctor (unless an illness develops).

Interventions, then, are patient centred. They support the body in what is 'natural' and customary for it. A healthy regime is devised by a young person's trainer, advisor or hygienist, and 'treatment' in this form of medicine is as much by 'similar' supports, supportive of the body's healthy nature, as by 'opposites', which correct it, though these may be needed in unbalanced natures. Preventive medicine, in contrast to therapeutic medicine, supports the natural processes of the body and does not normally introduce sudden change, whereas therapy is likely to counter illness (an unnatural state for Galen) with opposites.

The regime the person follows focuses on what Galen calls necessary activities (which resemble the 'non-naturals' of the Arabic and later Galenic traditions). These are identified as air and environment; food and drink; motion and rest; sleeping and waking; filling and emptying; and state of mind (what Galen calls the soul). Galen has inherited these features through the Hippocratic tradition he is working in. Air and environment cover seasons of the year, location of the home, climatic conditions, effects on breathing and transpiration and so on. Food and drink are what the individual can particularly adjust. Motion includes exercise, athletics, work, running and walking, horse-riding, and transport in vehicles. Sleep is a key area for the body to restore natural balances: in another treatise Galen says that manual workers, because of the demands of labour on their energy levels, sometimes eat their food so quickly that the body is not able to digest it properly, leading to complications in humoral imbalances and serious disease. If they sleep after such eating, however, the body can regulate itself back into balance. Similarly, the body needs to empty waste products and toxins through normal excretory processes. In preventive medicine this can be stimulated by adjustments in diet, more diuretics, for example to stimulate the kidneys; and by massage. The person can go to the Roman baths and with the help of massage stimulate transpiration through the pores to disperse accumulations of bad humour in blood vessels and under the skin. A person's state of mind is also key. This covers mood, emotions such as anger, and ethical disposition. A disciplined life is necessary if one is to keep oneself healthy, and a child's nurse must bring him or her up strictly to lead an orderly life from an early age.

The necessary activities appear in many Galenic treatises where a healthy regime is under consideration. In this treatise on maintaining good health, which I have called preventive medicine, they are applied to life as it was lived in a city in the Greco-Roman empire, such as Pergamum or Rome. The baby's state of mind will be set on a firm footing if the nurse in charge trains discipline and introduces proper exercises in movement and music. The youth will be introduced to the city gymnasium and bath houses (of which Pergamum had several) and will practice many different kinds of sports, according to the needs of his particular constitution, in order to exercise mind and body in a suitable way. He might need exercises involving speed, such as running, or heavy duty exercise such as boxing or wrestling. When an

adult, unless he is a very wealthy person, he will have to work. Galen mentions an enormous range of jobs, from digging and harvesting to teaching, being a soldier or athlete, politics, office work and even being a doctor. Galen reveals that he himself does not have an ideal constitution, nor does he have ideal working habits, since he has medical responsibilities and then sits up at night reading and researching when he ought to be asleep. Adjustments would be needed to his necessary activities to remain healthy in such circumstances, which he claims to have done. From what he says elsewhere in the treatise, he is likely to have included in his diet 'thinning foods' such as barley and garlic, exercised before eating and to have been massaged.

More than in most of his other treatises, Galen in this one proposes how to stay healthy in a city, eating at meal times, walking through the streets, going to work, spending much of the afternoon at the gymnasia and bath complexes for bathing and massage, and then eating with friends in the evening, before going to sleep. The city seems to be the civilised environment in which the natural organism of the body can be helped to flourish. The countryside, about which Galen was reasonably well informed, compared with other ancient writers, was probably less suitable for such a regime, because food shortages were more likely there, and work was harder. Interestingly, Galen has built his preventive medical system around the great civilising achievements of the Greco-Roman Empire, the major building complexes of gymnasia and bath houses; the aqueducts bringing water to the city; the streets and colonnades within which people met their friends and went about their business. This is a programme for a range of citizens, not just for the pampered rich, and is designed to maintain the natural proportion of the body.

Galen, while subject to many assumptions of his culture, about male superiority over women, for example, and valuing the educated life that was available only to a wealthy minority, also reveals interesting differences from many authors of his day. He does not romanticise the countryside and he does not undervalue manual labour. A philosopher may lead a potentially unhealthy life because he is largely sedentary and given overmuch to thought and reflection, while a manual worker has a strong and healthy nature, otherwise he would not be able to meet the demands of his work.

Galen was writing for a medical audience and for an educated elite. His programme is expressed with the rhetorical force characteristic of his time, with a very strong underpinning in earlier medical texts, the Hippocratic corpus above all, which Galen interprets with panache, and presents as a great authority of the past who confirms his own physiological theory.

Key ideas to take from Galen

Galen's educated readership was a narrow section of the whole population. Quite different is the population of a country of Western Europe, where almost everybody has been educated to some degree, and many have the resources to make choices about the way they live that earlier generations could not imagine. These choices need to be well informed. It is surely desirable, for example, that people buying products from the powerful industries selling dietary products and exercise programmes should be able to make *knowledgeable* choices, and to do the same with all the food they buy. Galen's system allows people much greater control of these choices.

I would like to pick up on four areas that have been prominent throughout this book, and suggest that these are areas in which the modern world might be able to

engage with Galen's ideas. These are: balance, nature, knowledge, and the doctor/patient relationship; all within the context of the individual living a healthy life as a person rather than a 'patient' receiving support passively from a doctor. And within the context of staying healthy in order not to need prescription drugs.

Balance

Balance, for Galen as for many of his predecessors back to Alcmaeon in the fifth century BC, was a cultural and political concept as well as a physiological imperative. The notion that Galen had in mind, as we have seen, is not so much that of balancing scales as maintaining different liquids in their proper proportion (*summetria*). This proportion is needed in the humours of the body, in the vital organs, in the surrounding natural and social environment, and in food, exercise, and other necessary physical and mental activities. If a person does not have the best natural constitution, then proportions will need to be modified in order to live healthily in the environment and daily activities. More or less exercise than average may be needed, for example, or food of a slightly different kind, to prevent the accumulations of body fluids in the wrong place.

Nature

Along with the role of proportion, *summetria*, Galen stresses 'nature' in leading a healthy life. In the Hippocratic system that he has adapted, every individual *nature* is different, and the doctor must develop a programme for the individual's needs. He or she may have a *nature* which is the 'best' or close to the best. That nature will have been forged at conception by 'Nature the creator' who fashions all life in the best way possible. Once born, the individual will be nursed and brought up in ways that may be 'in accordance with nature' or 'contrary to nature'. These three senses of nature (the creative force of life; a person's individual constitution; living in a natural way) pervade Galen's thought, as it had governed much thought for many centuries before him. For Galen and Hippocrates, health is 'natural' and disease 'unnatural'.

A person with the best 'nature' or a nature close to it will need from birth nurture, which will 'preserve their natural state in bodies according to nature'. Breast milk, preferably the mother's is closest to the baby in nature, and best. The baby will need to be exercised in a natural and proportionate way, to sleep, and to be washed. These activities, along with ethical training, will maintain natural proportions. This proportion continues through childhood and adulthood, and a person's nature will remain broadly stable, though there will be inevitable changes that come with age, specifically a drying and cooling body that will require dietary and other modifications.

Most people do not have the best nature, and may need a doctor's advice about adjustments in their necessary activities to keep their nature in proportion.

Knowledge

To many people, Galen might appear to be an improbable adviser on preventive medicine. He is the authoritative doctor par excellence in the Western Tradition, refining sometimes enigmatic Hippocratic writings in scholarly commentaries; appointed at the court of the Roman Emperors; confounding his

opponents (by his own account, at least) with practical demonstrations and theoretical treatises, and outshining in influence most rivals for more than 1500 years. The author of *On Prognosis*, on his success with powerful clients in Rome, and of *On the Use of Parts* on the physiology of the body might seem to be the last person to hand over control to the patient to live a healthy life. And yet he has written a long treatise in six books on just that subject. It is precisely that combination of clear and systematic medical science with health care in a person's everyday life that is at the heart of his message to the modern world. Diet, nutrition, exercise, well being, sleep and mental health, Galen's 'necessary activities', are matters for the doctor to oversee. Galen's reader has the latest science as the guiding principle and is thus freed from the masses of contradictory and confusing advice that was directed at the public by doctors and others in the medical market place of the second century AD.²

For all his enormous authority, Galen does hand over considerable control to his patients, when they knew what they were doing. I think preventive medicine may be able to complement biomedicine just as it added to Galen's therapy. In both knowledge and the doctor/patient relationship, Galen presents himself as the great authority. In other treatises he is polemical and competitive, presenting himself always as the best researched, best reasoned and best-evidenced doctor: the best physiologist, the best anatomist, the best logician. In preventive medicine, however, he brings this medical evidence to bear, but applies it to the daily life of a member of the public. What that person normally eats, or the way he normally bathes and takes exercise, is fine, provided he stays healthy. The knowledge of the medical school, or of the latest research is applied to how people live. It seems to me that in applying his methodology to the lives of people in the city, Galen offers us a model for how preventive approaches might work now.

Doctor/Patient

Galen raises large questions about the relationship of power between doctor and patient. As I have suggested earlier, he is the supreme example of the doctor with all the research data and the rhetorical strength to make any encounter with a patient completely unequal in power. There is nowhere in the treatise that a patient or healthy person brings information or arguments to Galen and persuades him to change his mind. On the other hand, we do not often see Galen in the home or surgery. In most cases, he seems to stay in the background and advise professionals such as nurses and trainers what is needed for a particular constitution. He therefore implies how the doctor patient relationship might work differently, no longer in a one to one appointment but with the patient now an autonomous person. He has adapted his physiological models and interventions to work within the demands of a person's daily life, going to work, sleeping and eating and so on, with modifications for infancy, adulthood and old age.

Preventive medicine in the twenty first century

Balance

Balance and the intersecting regulating systems of homeostasis (or perhaps rather the dynamic equilibrium which maintains the complex systems of the body)

² For the medical market place see van der Eijk, Horstmanshoff and Schrijvers 1995.

remain important in modern physiology.³ Their interrelation may be complex but the notion of balance or regulation remains important. Ideas of balance in the modern world remain strong, too, in people's lives - a balanced diet, a work/life balance, for example. Such balances are not easy to achieve if work is stressful and with long hours. Work continues to impinge on health as Galen described, and counterbalancing mechanisms are needed to restore good order. On a larger scale, there is little balance between the power of the consumer and that of big suppliers of foods and drugs. For individuals to rebalance this relationship, if needed, they may need to work more in groups rather than as individual consumers so as to control better how their food is prepared and to gain more knowledge about how smaller food producers source their food, feed animals and so on. Individuals may in particular need to rebalance food and exercise to take account of our highly mechanised culture which massively reduces muscle activity.

Nature

Galen's natural system is not ours, and is no longer sustainable. Disease is no longer unnatural, nor does 'Nature' do things always for the best. A virus is as 'natural' as a human being. However, questions about nature are insistent in our world, with big medical implications. Is the western lifestyle sustainable or will it bring malnutrition? Are current levels of meat-eating sustainable and medically desirable? Is global warming endangering life in cities and in large parts of the globe? And what of Galen's mapping of the body's physiological and self-regulating mechanisms on to a person's way of life? Patients could have a clearer picture of how cholesterol production can be modified by diet rather than by drugs. Do we really need such salty bread and burgers? Do we need transfats? And how will such information be portrayed and the knowledge transmitted? By public health leaflets? By the internet? Or by other means?

Knowledge

Medical knowledge is a problematic area in our own century. Much medical evidence is complex, inaccessible to the general public, and, furthermore, specific to specialist disciplines. The disciplines of medicine are therefore, in comparison with Galen, fragmented into small compartments. The paediatrician operates in a different sphere from the gerontologist or the cancer specialist. How then would preventive medicine be approached? It could be taught to prospective general practitioners in medical schools. A GP might steer 'patients' towards keeping themselves healthy under their own auspices, with GPs only intervening if therapy is needed. GPs might integrate more fully all the services offered to patients in clinics so that self-healing becomes much more prominent, with less expectation of GP appointments and more of on-line advice or library resources.⁴

The individual would have a clear idea of how lifestyle, physiology and health intersect within the enormous span of a life from birth to death. Of how to keep the healthy person healthy; how to see old age less as a problem than a stage in life that is integrated with earlier stages. How the latest medical knowledge is to be applied to the way people live their ordinary lives as citizens.

³ Pocock and Richards 1999.

⁴ Such as *Choosing Health* 2004.

At present some would not see these as medical questions at all, but questions for ancillary services maintained by a clinic. A matter for nurses, nutritionists and other support staff. But these are not the powerful people in the medical profession. It is the medical research community and the doctors and consultants who are setting the agenda, with statistical studies predicting high levels of chronic poor health in coming years, but few remedies to propose for the predicted challenges to health services.

If people are to live more healthy lives, can that best be done by official communications from doctors' surgeries, public health officials and government, or is it better done through General Practitioners supervising the population in their care? The doctor can provide a systematic physiological overview, at the right level of sophistication for a particular patient group, as Galen does. The patient group, meanwhile, can explore what modifications in daily life might be needed. The doctor's overview seems to me to be important, since the media currently delight in mocking scientific studies on salt, additives, wine etc, and picking up their contradictions with other studies. The doctor would give essential perspective to such studies, and help focus on the bigger picture.

Doctor/Patient relationship

The doctor in the twenty first century has the same option as Galen, to recommend the change in eating or exercise, rather than, for example, a drug-based solution that the patient might prefer. This might be a cheaper option for health services, and a more permanent solution for the patient. The doctor still has the same time slot for the patient and the same risk management. But there are further attractive possibilities that might reduce the burdens of doctors.

Since preventive medicine is an area that is within the patient's experience and competence (experience of preparing meals, jogging, swimming, sleeping, childcare, care for the elderly), the 'patient' might be able to bring more knowledge and experience to the doctor's clinic and contribute to a more equal relationship with the doctor. Furthermore, 'patients' might be able to work together in patient groups in such a way that they can share good practice between themselves under the general umbrella of the surgery, so that they become more autonomous, less passive as 'patients', becoming, rather, a population in the doctor's care. They may be more able to live healthy lives, in touch with other areas of knowledge that apply here. Such areas might be environmental concerns (water supplies, temperature rises in major cities); concerns about food supplies, the processing of foods and the proper treatment of farm animals destined for the table; concerns about local foods that people can monitor in contrast to foods prepared by large companies with little information on exactly what the production circumstances may be. Galen is interested in whether an edible bird has been raised in mountain air or in lowland circumstances. The nature of the food to be consumed remains an issue. Whether or not it is a 'medical' issue is a key question. Similar considerations apply to child care and the care of the elderly in independent circumstances. To what extent are these medical matters? It seems to me that Galen's integrating a whole life into the way care for the elderly is organised, with some medical intervention by medical practitioners among patient groups would be a real benefit, and a potential way out of the present difficulties experienced in Britain at least, where care of the elderly is seen as a massive problem separated from the rest of a person's life. Much biomedical and therapeutic attention is inevitably needed for the elderly, since, as Galen himself says, old age like infancy is somewhere between health and illness. It is a more fragile time of life, but many of its

needs can probably be met more appropriately at a preventive rather than therapeutic level, if life-style is adjusted earlier in life.

The same might apply to those with mental disorders. A purely therapeutic approach, whether based on drugs or cognitive and other therapies might be less urgent if properly supported by other remedies based on how the person is living and interacting with those around. This could be another area for general practitioners working with patient groups to operate. The problems that currently present at a serious, therapeutic stage, might be less severe if earlier symptoms of an emotional and psychological kind had been treated in a preventive framework.

Doctors might be able to work more effectively with 'patients' (in groups or as individuals) in this area of style of life and well being, in order to reduce the demand on health services for therapeutic and other costly interventions. This might be a way to return the National *Health Service* to one of its original purposes, to maintain health as well as combat disease. Galen believed it could be done, and adapted his therapeutic procedures to do so. He did this too with the full apparatus of his theoretical system of balancing and modifying humours and his philosophical overview, and produced a blueprint for living as a healthy human animal in a Greco-Roman city with all the complications that came with it (demands of work, unsuitable ways of life, unhealthy living conditions, unhelpful states of mind). His approach takes into account psychology and ethics but builds this into a physiological model. It is not a moralising approach, as is much ancient literature on how to live well, nor, because the foundation is physiological, is it elitist.

Like much ancient philosophy on living well, Galen's programme may also lead us to question our own assumptions and practices. For all their city amenities, Galen's healthy community lived closer to nature than we do. They had less heating in the home and almost no glazing (though Antiochus had good environmental control at home). They enjoyed a less industrialized diet, closer to the recommendations of the World Health Organisation for a 'Mediterranean' diet.⁵ They exercised more, walking where many now use cars; they were entertained *together* outside in public buildings rather than sitting in front of the television with a zapper. They almost certainly had better mental health (or at least less depression).

People in the twenty first century might benefit from making some of these comparisons. Research at the Peninsula Medical School suggests that people benefit from taking exercise in the countryside and by the sea (in the 'green gym' and the 'blue gym'), and from trees and green spaces in cities.⁶ The world outside the city, I have suggested, was too challenging for Galen, and he based his preventive programme firmly in the city. That is no longer the case. Cities have impacted on the planet to such an extent that they produce pollution that is unhealthy for the individual and the climate. Rethinking what health in the city should be, and how the balance between human culture and nature may be reset could be a twenty first century response to Galen's unspoken but clear choice of the city as the healthiest place. Modern city dwellers have an enormous advantage over their ancient counterparts: knowledge, information and resources about health and urban living that are unparalleled in much of human history.

The ancients faced many severe challenges. They certainly had much less effective therapeutic medicine; they had short life expectancy for many, particularly mothers and children; they had slavery, sexual inequality and no 'democracy' in

⁵ WHO report, 1990.

⁶ De Pledge

Galen's period. For all the unenviable aspects of their culture, however, they perhaps had in preventive medicine (to reverse the title of David Wootton's book) good medicine.

Sceptics might say that preventive interventions are fine for alternative and holistic medical systems but are unsuitable for the biomedical mainstream.⁷ Alternative medicine is not my subject in this book, important though it is. I believe that 'preventive' medicine based on support and modifications to a person's style of life really might make a contribution to biomedicine in a way that supports and in no way interferes with the big challenges that biomedicine has to face in such key research areas as alzheimer's disease, cancer and genetics. Far from interfering, it might at the same time contribute to long-term concerns about obesity, diabetes and depression. In that sense, the way people eat, exercise, sleep and relax are as much a challenge for the twenty first century as for Galen's system of humours.

Such a programme might make a general practitioner's workload easier and hospital admissions lower, because 'patients' will be able to take greater responsibility for their general health, within a systematic framework overseen by the general practitioner. They will seek to rebalance their own lives, or rather regulate what they do according to need; they will focus on personal and family wellbeing; they may do so in a community of fellow citizens; they may do this with basic physiological guidance from their GP, freed from the random information of the internet and the demonisation of certain groups in the media, such as youthful use of alcohol, single mothers, and the poor being responsible for their own difficult conditions.

Sceptics might also say that much therapy needs aftercare, the monitoring of diabetes and heart conditions, for example, and that general practitioners cannot extend that work further into preventive medicine. I suspect however that there is already considerable exploration of patient-focused activity with minimal medical intervention.

I can give some examples taken from the British press last year. A café in a hospital in Essex enabled elderly patients to meet each other over a social ritual in a shared space, a process that reduced hospital therapy costs by £270,000. A project in a general practitioner's clinic in Devon invited patients at risk of fractures to a coffee morning once a week. Fractures were reduced by 70%. On the *Today* radio programme 22/3/11, it was reported that patients in East Anglia were being encouraged to mentor those at risk of diabetes from the perspective of what they had suffered. This is a mechanism for the transfer of knowledge between fellow sufferers with similar experiences. Overweight people are more likely to develop dementia, according to *The Guardian* (3/5/11, quoting a Swedish study in *Neurology*). Of 8500 people studied over the age of 65, the overweight had an increased risk of 80%, the obese of 300%. These are recent examples noted in passing of attention to lifestyles and wellbeing that do not necessarily demand a huge amount of time from general practitioners, but offer enormous reductions in time and money spent on therapy.

If we listen to Galen, a programme for preventive medicine needs to be underpinned by the status and systematic knowledge of a general practitioner, but with much of the work perhaps being done by hygienists, nutritionists and other health workers. The population under the doctor's care might also provide knowledge

⁷ On the many similarities between Galen's system and the Ayurveda or Chinese medicine see Lloyd, Pitman 2006.

and experience. This would be healthy living, dynamic and well informed, with structured guidance, like the advice that Galen had provided.

Galen has had his critics over the centuries. I mentioned three of them in the Introduction, who have made links between Galen's world and ours, and have evaluated Galen's work in a modern context.

Garnsey 1998 and 1999 has an unanswerable case. Galen's preventive medicine did neglect the health of women and did give insufficient attention to the needs of pregnant and nursing mothers. If we now consider Galen's preventive medicine in twenty first century Western terms, with national health care systems, gender equality and education for all, there is much potential for building on Galen's system. His prejudicial treatment of women is a warning to all that medicine is a social construction as well as a science.

Wootton 2006 attacked the 'bad medicine' of Hippocrates and Galen, and in particular the authority of Hippocratic and Galenic medicine in the seventeenth and eighteenth centuries, which, he argues, hindered research into microbiology and continued to practise bloodletting. Wootton's approach has a problematic methodology, assuming that things should have been discovered earlier than they were discovered (as if discovery were a rational rather than an often fortuitous process). Wootton assumes too that present medicine is 'good' and the past 'bad'. The past is never going to prevail over the present inhabited by the living. But Wootton does need, I believe, to consider Galen's promotion of preventive medicine, whose methods may complement rather than impede biomedicine. Of course, the contribution of preventive medicine to Galenic medicine and to biomedicine will not be the same. In humoral medicine, therapeutic procedures are mild compared with biomedicine and its armoury against disease meagre, both in resources, knowledge and effectiveness. Galen could do little about infectious diseases, and resorted to cures in the temples of Asclepius when he thought appropriate. Galen *needed* preventive medicine because his own therapy was insufficiently powerful. It was a benefit for Galen if the patient remained healthy by his or her own efforts. Biomedicine by contrast might need preventive medicine because of its very power and success in many areas (not all of course). Many people do not believe that they need take responsibility for their health because the doctor is at hand when anything goes wrong, to reveal the complex workings of the body; to dispense powerful drugs; and to deploy ingenious technologies. Such people run the risk of leading unhealthy lives with dire consequences in later life, as Galen pointed out.

Galen offers a number of constructive responses to Wootton. Wootton's criticisms are based on the observations of microbiology, whose observations and deductions do not conflict with Galen's own experimental approach. In a coda at the end of *Bad Medicine* 269-82, Wootton turns his fire on biomedicine, to make the point that medicine has contributed only about 20% of the improvement in life expectancy in the modern population, the much larger contribution going to improved nutrition and sanitation. Wootton directs his arguments exclusively towards therapeutic medicine. He is not interested in Galen's complement to therapy, the preventive approach. But by this means, Galen delivered what the World Health Organisation would classify as a Mediterranean Diet, low in meat and saturated fat and high in pulses, fruits and olive oil; he wrote for cities with often good levels of nutrition (as far as we can tell)⁸ and with good supplies of water and reasonable sanitation; and he thought that educated individuals could keep themselves healthy.

⁸ Garnsey 1999.

Wootton's focus on medicine in three arguments, the cure of disease, the use of comparative statistics and germ theory led him to conclude (283) that Hippocratic medicine 'was almost totally ineffectual, indeed positively deleterious. Except in so far as it mobilised the placebo effect'. If twenty first century medicine were to accept Galen's other half of medicine, preventive medicine, doctors might be able to address the statistic of 40% of the British population predicted to be obese by the year 2030, as debated in *The Lancet* in 2011. Researchers find few clear answers to this threat to health, other than to tax the large corporations who supply unhealthy food. But taxation and large corporations give no power to the individual trying to lead a healthy life and to stay away from the doctor. That comes from balancing the six necessary activities in a healthy regime.

A similar response would be useful to Edelstein 1967. He recognized the importance of dietetics throughout antiquity but saw it as medical interference in a person's life, leading to hypochondria in the wealthy and little of relevance to the majority of the population. Edelstein was writing at a time (1931) when medicine had made many life-saving discoveries, and had many more to make, and had the prospect of being able to contain many diseases scientifically. Understandably, perhaps, Edelstein underestimated the role of the individual in maintaining his or her own health and nutrition. In the 1930s and 40s there were possibilities of a scientific solution to problems of malnutrition, and new methods of industrial production for the masses. For Edelstein, the writings of the Hippocratic doctors on nutrition were not addressing the big questions. Eighty years later, however, Europeans have handed over control of health to highly professionalised general practitioners and of control of food to big corporations and supermarkets. There have been great benefits, but as far as individuals are concerned, they have less control over their health and nutrition. One consequence of the latter is that many Europeans are not just well fed; they are in some cases overfed, as we have just seen. I believe that biomedicine has come to need preventive medicine, to encourage the general population to monitor its health better and to take responsibility for it, in order to reduce the threat of obesity and diabetes.

Wootton's final chapter is entitled 'death deferred', which is precisely Galen's definition of what preventive medicine is, to ensure that the decaying processes of aging and mortality are deferred as long as possible (1.3; see Chapter One). This is achieved by maintaining the body (including in a biomedical context the immune system) in as healthy a state as possible and by showing people that if they lead a healthy life, well being is achievable in mental as well as physical health. What should be the criterion for 'balance' and 'nature' and making one choice over another? For Galen it is at all times the physiological design and needs of the body. And that design and those needs could be adjusted to life in the modern city of 200 AD. I suggest that a similar approach can be built into the lives of all of us in our own century. The general practitioner should be on hand in whatever format works well to provide physiological advice as independently as possible of commercial interests. But this could be a background role, like that adopted by Galen in his treatise. Citizens may go to other experts, or even to each other within their communities to work out together how to lead the healthy lives that they need.

As the individual takes back responsibility for his/her health and has a relationship with the doctor based on health as well as sickness, the doctor can then devote his/her time to the more critical areas of peri-natal complications; infectious and incurable diseases; heart disease and cancer; and serious mental illness. The number of those suffering from these major challenges should not increase, if people

are keeping themselves in good health, with a good diet, pattern of sleep, exercise regime (with massage) and good psychological state.

I have tried to show in this book that Galen's medicine was not 'bad'. We have few statistics to show where it worked and where it failed. But his preventive regime can, I believe, be adapted to work in our own society and culture, as a powerful means to address the health crises predicted for coming decades. It is true that Galen's medicine was not based on measurement and statistics as we now conceive of them. That is a problem for his medical science. We however *do have* the statistics for our own futures, and they do not look good. What are we going to do? Buy more drugs from global corporations? Or learn to live in a healthy way? We could do worse than lead a balanced life, attending to the *necessary activities* of breathing in a healthy environment, eating a healthy diet, taking exercise and massage that is suitable for each of us, sleeping well, maintaining bodily functions to remove toxins, and having a healthy sexual and psychological life. That is what Galen proposed for the ancient city with its baths, aqueducts bringing clean water, sewers and paved streets. I believe this preventive medicine can be adapted to the city of the twenty first century, and Galen's preventive half of medicine be reunited with its therapeutic (now normally biomedical) half.

The healthy life in the twenty first century will not be the same as in 200 AD. Where a minority was educated in the Roman Empire, all are now taught to the age of sixteen. How 'balanced' and 'natural' living should be conceptualised in schools and adult life will be a matter for debate and many variations. It however remains a vital concern to educated people in their millions. The Greco-Roman cities had excellent exercise and bathing facilities, and multiple demands on the muscles of the body, in walking, sport and daily activity. Machines such as cars and washing machines have greatly reduced the use of muscles. There are facilities in cities to be sure, but what exercise a body needs in cultures dominated by mechanised transport will need much attention. As will plentiful supplies of food at relatively low cost. What to eat and how it is prepared remain major questions for us, as for Galen. We may (or may not) need less massage and bathing than he envisaged, but we certainly need to attend to our psychological well being, since predictions in this area from the World Health Organisation are as alarming as obesity statistics. Mental well-being in the Greco-Roman city and in our own cities are key areas for research (Gill 2010) and for preventive measures. Galen's disciplined model for upbringing into good habits may be one avenue of many.

The modern city, like its ancient counterpart, is subject to pressures of excess. Capitalism, like the desires of the wealthy in antiquity, stimulates periods of expansion and unlimited desire. Galen's location of the body within *natural* systems of balance addresses this problem, as must a modern health system.

Whatever evolves in the preventive medicine of the modern city will require the active engagement of the people, collectively and as individuals. The authority of a Galen-like figure whether as medical scientist, politician or general practitioner will not suffice alone. Advice may be given and accepted; but telling people (above the age of ten) will not suffice. People will need to take on preventive measures themselves and adapt it to their lives in ways which will work, so as, as far as possible, to follow Galen's advice (6.14), to observe what benefits and what does harm, and as a result, to need to visit the doctor *for therapy* much more rarely.

Galen urged people (6.14) to judge for themselves, 'from experience, which foods and drinks do harm, and which and how many exercises do likewise'. Doctor

and ‘patient’ operate within a broadly based belief system, and for Galen, the ‘patient’ provides the knowledge of daily life and the doctor the physiology:

All men, to be sure, recognize bread and lentil soup and barley gruel alike, and flesh and porridge and honey-water, but they do not yet know whom or when each of these foods harms or helps or helps ... therefore they know bread and flesh and barley gruel, but they do not understand what is beneficial and injurious to health (*On the Elements according to Hippocrates* 103.19-23 CMG, trans de Lacy)

Only the doctor understands the elements⁹ and their impact on the body. But people can monitor their own health, and adapt according to home and work needs, about which Galen does not comment. They should do this in the light of a belief system (whatever that may be) that roots them in a bigger context of nature, the environment, and the balance that a human being should find with those larger forces.

⁹ Galen has the four Hippocratic elements in mind, not the periodic table, but the point stands.