The long term results of these methods is unknown, although registry data for radiofrequency ablation suggests 90% success at 1-2 years (as good as conventional surgery),[4] and it is possible that avoidance of scarring in the groin may reduce the neovascularisation which can lead to recurrence.[10] Recurrence seems a particular risk after injection of sclerosant foam, but this treatment is repeatable.

All these methods require a duplex ultrasound machine with a skilled operator, and considerable experience is needed for good teamwork with the surgeon. The equipment for radiofrequency and laser ablation is costly, and operating time is substantially longer than for conventional surgery. Widespread use of the techniques in the health service seems unlikely in the near future because of pressure on time and resources, and the current lack of good evidence of long term clinical effectiveness compared with traditional surgery.

In addition to techniques that avoid stripping the long saphenous vein, new equipment is available for removing varicose veins by "illuminated powered phlebectomies." This involves a suction device with guarded blades which removes veins like a vacuum cleaner. Fluid is instilled around the veins, and they are then illuminated from beneath the skin with a powerful light source. The technique can reduce the number of incisions for phlebectomies, and may have an advantage for patients with varicose veins which are very numerous or in large clumps.

For the present, inquiring patients can be reassured that the new techniques usually replace only one part of the operation for varicose veins (they will still need phlebectomies) and no technique has yet been shown to better conventional surgery in the long term.

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Modern worries, new technology, and medicine

New technologies mean new health complaints

Over recent years there has been a steady and important change in the public's perception of the relation between aspects of modern life and health. Now, at the beginning of the 21st century, people's suspicion of modernity has increased to such an extent that it has undermined their view of their own health, increased their worries about environmental causes of poor health, and fostered a migration to complementary medicine. Concerns about the safety of mobile phones, environmental pollution, vaccines, bovine spongiform encephalopathy, genetically modified food, and food in general have led to a heightened awareness of the effect of environmental changes on health. We believe that these concerns about technological change, which have been largely unrecognised by researchers, have important implications for the way patients interact with health services.

This change in public concerns has obvious and more subtle effects. Despite considerable recent research and official inquiries into new technologies such as mobile phones and genetically modified food, public suspicion remains high. In clinical settings patients are reluctant to start medication or to continue it for an extended period for fear of putting "unnatural chemicals" into their body. At the same time the consumption of unproved herbal and alternative "natural" remedies is increasing.[1] This anxiety is reflected in the pattern of presentations of psychosomatic illness: the number of illnesses attributed to environmental factors—for example, sick building syndrome, multiple chemical sensitivity, total allergy syndrome, and 20th century disease—has increased.[2]

The milieu that has fostered this unease with modernity is an increase in the public's fascination with personal health and medicine, as evidenced by the burgeoning of gyms and fitness programmes, and the widespread adoption of a "healthy lifestyle."[3] The media's increased coverage of health topics, in stories on the dangers lurking in ordinary activities such as air travel and vaccination, has raised worries about routine health care and increased people's perception of their vulnerability to new and exotic illnesses. Media stories also tend to misrepresent the dangers of new environmental influences and aspects of modernity, while playing down more mundane causes of ill health, such as the link between tobacco and heart disease.[4] This focus of the media on risks with a novelty value fosters the belief that they are far more common than they actually are.

The result of this deluge of information on the supposedly pervasive risks to personal health is that people now feel much more vulnerable. Normal everyday symptoms such as headache and fatigue are now more easily interpreted as signs of disease or ill health. Attributions made by patients about the cause of their illness often involve environmental pollution, and they

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see the effects of modern life as undermining the effectiveness of their immune system. Not surprisingly, recent research has shown that patients who are the most concerned about the effects of modern life on health are also more likely to complain of symptoms in the previous month, have more functional illness, and be consumers of complementary health care than patients with fewer concerns about modernity.[5]

Historically, the introduction of new technologies has frequently been accompanied by new complaints, fears, and illnesses, such as railway spine and electric allergy.[6] George Beard, the founder of the diagnosis of neurasthenia, ascribed the cause of this disorder to "wireless telegraphy, science, steam power, newspapers and the education of women; in other words modern civilisation."[7] Currently the adoption of new technologies is accelerating and is occurring in a climate of suspicion and mistrust in medical evidence or reassurances.

Distrust of experts is now commonplace, and at its extreme it can merge into the conspiratorial thinking that is part of a modern paranoid style.[8] Well publicised crises, most obviously bovine spongiform encephalopathy and foot and mouth disease, have severely dented confidence, although the trend was clear long before. Mismanaged environmental incidents and easily recalled examples of the fallibility of experts, such as in the cases of new variant Creutzfeldt-Jakob disease and thalidomide, add to the fears of the public and undermine its trust in the people and authorities responsible for managing risk. Sadly, trust once lost is difficult to restore.

The internet has brought a new dimension to the spread of worries and health scares. Whereas previous health scares—amalgam fillings, saccharin, and fluoridation of water—were published in the usual media sources, new and unsubstantiated health worries can be instantly transmitted to an internet audience eagerly seeking information on health or to special interest networks, such as illness support groups. A recent US study of hospital outpatients found that 25% of the patients had used the web for medical information in the past year and that 60% planned to do so in the next year.[9] Medical scares recently transmitted on the web and through email lists include antiperspirants that cause breast cancer, and the spread of necrotising fasciitis by bananas. We believe it is only a matter of time before a mass psychogenic illness is identified as being spread electronically.

It is difficult to feel optimistic. Despite all the evidence of the extraordinary improvements in public health during the past century, surveys show that we experience more symptoms and feel worse than our ancestors.[10] The rapid introduction of new technologies, while improving the quality of life of millions of people, has been accompanied by important adverse effects in the way people make sense of illness and present with health complaints.

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Air pollution and short term mortality

Temperature is a complex confounder and may be inadequately accounted for

The widely held belief that European levels of air pollution might seriously affect human health has been hard to verify. Most studies investigate the immediate effects on mortality, comparing day to day variations in atmospheric pollutants, temperature, and humidity with variations in deaths. High and low temperatures increase mortality while the effects of cold at least are prolonged[1] and temperature is associated with pollution. Most investigators attempt to adjust for this confounding, although methods vary. Because both relations are complex, simple adjustments for confounding may be inadequate and some or all the apparent effects of pollutants may be indirect associations caused by the effects of temperature. A recent paper by Keatinge and Donaldson now questions whether this is true for some recent studies such as those from the "air pollution and health—a European approach" (APHEA) project, citing sulphur dioxide as an example.[2]

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Several reports suggest that atmospheric sulphur dioxide is associated with short term mortality, although the variability in results needs explanation. The APHEA project was designed to investigate this by, among other things, using several years of daily measurements from 15 European cities and standardised analyses.[3] Katsouyanni et al concluded from it that rising sulphur dioxide levels increased mortality in western but not eastern Europe, although their results also varied.[4] The protocol for temperature adjustment for the APHEA project was deliberately simple and used