

Case histories

Hypertension

For most of its history medicine has not been a matter of numbers. Just as an early modern physician felt entirely justified in diagnosing without a fine-level grasp of anatomy, so he could confidently prognosticate and prescribe without a great deal of quantifying. Although the classical tradition took a close interest in the movement of blood, seeing it as a kind of nutritious tide originating in the liver, practitioners were more concerned with pulse rate and quality—hard, soft, languid—as markers of general health.

In the early 17th century, the English physician William Harvey—a conservative Galenist who took seriously Aristotle’s injunction to see for oneself—became convinced that classical interpretations of the heart and the bloodstream were wrong. In *De Motu Cordis* (1628) Harvey argued that the heart was a pump, circulating a limited volume of blood around the body. In the work of early modern natural philosophers mechanical pumps were tied up with the definition and quantification of pressure. If the heart was a pump, it made sense to talk about blood pressure, and to find ways to measure it. In his *Haemastatics* (1733) the English clergyman-naturalist Stephen Hales described a brutally simple technique, inserting a long glass tube into the carotid artery of a horse.

Clinicians, and the industrialising European nations in which they practised, fell in love with numbers at the end of the 18th century. The “numerical method” of the French physician Pierre Louis offered a powerful though controversial new form of evidence, and the philosopher-historian Ian Hacking has remarked on “the avalanche of printed numbers” that characterised 19th-century life and society. A “haemodynamometer” developed by the Parisian physiologist Jean Poiseuille introduced the now-familiar unit of mm Hg, but the modern sphygmomanometer was developed by two more obscure practitioners: the Italian physician Scipione Riva-Rocca, who introduced the inflatable arm-cuff, and the Russian military doctor Nikolai Korotkov, who used a stethoscope to pick out systolic and diastolic pressure. Leading American clinicians like Harvey Cushing popularised this combination, and by the mid-20th century family doctors all over Europe and the USA could measure blood pressure accurately, using a simple, reliable piece of kit. But what did these measurements mean? Cases of “malignant hypertension”, with immediate pathological effects, were one thing, but what (if anything) should be done with patients whose blood pressure was consistently higher than average but not associated with symptoms?

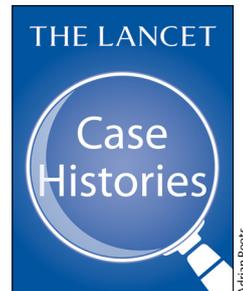
Arguments over the significance of raised blood pressure were captured in a dispute between two leading British clinicians. For Robert Platt, professor of medicine at Manchester in the 1950s, hypertension was a disease in

itself, caused by genetic factors. But George White Pickering, professor of medicine at St Mary’s Hospital, London, saw it as merely one end of a normal distribution. In 1957 the first results of the US Framingham Heart Study showed a strong correlation between raised blood pressure and high mortality rates from stroke and heart attack. As national health became a major concern for welfare states and insurance markets, clinicians began to monitor blood pressure, and patients began to expect a measurement as part of every clinical encounter.

If hypertension was a disease, how should it be treated? Two approaches seemed promising: reduce the circulatory volume with diuretics, or modify the action of the heart through the nervous system. From 1958 the US pharmaceutical giant Merck marketed chlorothiazide as Diuril, the first widely used antihypertensive, and by the late 1960s treatments included a generation of “designer drugs”— β blockers, calcium-channel blockers, and angiotensin-converting-enzyme inhibitors.

Effective and life-saving though they have been, these drugs have put immense pressure on health systems in high-income countries. Writing in 2006, the historian Carsten Timmermann noted that the annual cost of antihypertensives in the USA was \$15 billion, roughly a tenth of the total US drugs bill. Meanwhile, access to drugs to treat hypertension remains a problem in developing countries. Debates over the nature of hypertension have not disappeared, raising perennial questions over the boundaries of normality and the definition of pathological abnormality. In the early 21st century those diagnosed with hypertension, and those who treat them, might well sympathise with what the historian Jeremy Greene has called “the modern predicament of the subjectively healthy but highly medicated individual”.

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For more on Case histories see [Comment Lancet 2016; 387: 211](#) and [Perspectives Lancet 2017; 389: 25, 591, 998, 1386, 1971](#)

Further reading

- Greene JA. Prescribing by numbers: drugs and the definition of disease. Baltimore, MD: Johns Hopkins University Press, 2006
- Pickering GW. High blood pressure. London: Churchill, 1955
- Platt R. Heredity in hypertension. *Quart J Med* 1947; **16**: 111–33
- Timmermann C. A matter of degree: the normalisation of hypertension, c. 1940–2000. In: Ernst W, ed. Histories of the normal and the abnormal: social and cultural histories of norm and normativity. London: Routledge, 2006: 245–61

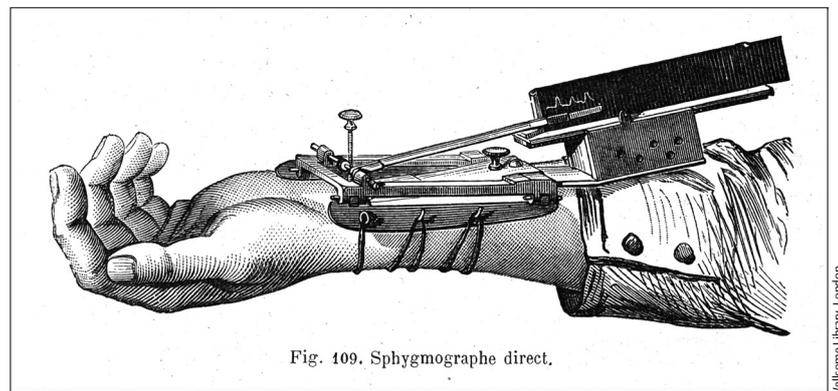


Fig. 109. Sphygmographe direct.