



Medicine for Managers

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Bloodletting

Bloodletting is a process where blood was intentionally withdrawn from a person using either a knife (called venesection) or leeches to remove what was believed to be an excess of bad blood. The process dated back to at least Ancient Egypt and Ancient Greece when it was believed that there were four 'humours' in the body, yellow bile, black bile, phlegm and blood. Maintaining health was about balancing the four humours.

The humours were related to temperaments – choleric (bad-tempered or irritable), phlegmatic (unemotional and stolidly calm), sanguine (optimistic and positive) and melancholic (sad and pensive). They corresponded with the four elements of earth, air, fire and water and also the four seasons of the year, the four ages of man (childhood, adolescence, maturity and old age) and hot, cold, moist and dry.

The Ebers Papyrus of Ancient Egypt indicates that bloodletting was accepted practise to balance humours and bloodletting instruments have been found at some Egyptian burial sites.



Hippocrates only mentioned the procedure. The Hellenic physician Erasistratus (304 -250 BC) produced theories suggesting that many diseases were caused by excesses in the blood. He used the technique in association with

sweating and vomiting. Other Greeks shared his views. Galen (129-216 AD) expanded the process, producing descriptions of the technique based on age, constitution and the weather for a range of diseases and disorders.



He related conditions to the vein to be used, suggesting, for example, a vein on the right for liver problems and a vein on the left for spleen problems.

By Medieval times, bloodletting charts were used, aligned with planets and the zodiac.

Muslim techniques were disseminated and bloodletting became much more widespread. Some doctors recommended ***heroic bleeding***'

(bleeding till the patient became weak and unable to move).

From the 1600s to the late eighteenth century, bloodletting was the most commonly used 'medical' procedure performed by surgeons and barber surgeons. The red and white striped



barber's pole is derived from the practice.

In Britain it was used for virtually any disease whilst in France, Jacques Ferrand, in 1623, advocated its use for

'heartbreak', bloodletting to the point of heart failure.

Leeches were extremely popular. In the first half of the nineteenth century the French imported 40 million leeches a year, most from Russia, six million of which were exported to England.

Amazingly, **Isabella Beeton**, in her **Book of Household Management**, written in 1861, gave instructions for doing one's own bloodletting. She wrote:

"Place a handkerchief tightly round the arm . . . above the elbow. Once the vein is swollen . . . thrust the tip of a lancet into the vein".

There were further instructions on wound bandaging and what to do if the person fainted.

In America, in the mid-nineteenth century, Philadelphia surgeon Samuel Goss promoted the technique as a 'spring tonic'. The process became used by lay bloodletters.

One wrote in 1867:

"One day a stout, hale-looking Irishman came in to be bled. The Irishman said 'how much do you charge for taking a pint of blood?' (the customary amount removed).

'Nothing' was the reply.

'Then, by St Peter' said the Irishman, 'you may take a whole quart'.

By no means all physicians were in support of bloodletting. Indeed at Edinburgh School of Medicine, Dr William Alison (1790-1859) and Dr Hugh Bennett (1812-1875) expressed entirely contrary views.

The former, a resolute traditionalist, was a strong believer in bloodletting, whilst the latter, regarded as an arrogant newcomer, resolutely debunked it. Alison was evangelical, citing tradition, Bennett was a modernist relying on the microscope and the stethoscope.

The antagonism persisted for years.

By the late 19th Century, harmful effects of bloodletting were accepted and the treatment was largely abandoned, although some proponents persisted.

Indeed, well into the twentieth century some enthusiasts continued and in the **Principles and Practice of Medicine**, the textbook originally written by Sir William Osler, but continued by other authors after his death in 1919, it was recommended.

However, studies by Pasteur, Koch and Virchow confirmed scientific advances and bloodletting was phased out.

Interestingly leeches are increasingly used again in medicine, in microsurgery and reimplantation surgery. Leeches secrete anticoagulants which reduce venous congestion and prevent tissue death.

Nowadays, phlebotomy therapy is used only for a few specific conditions under strict medical supervision.



Phlebotomy reduces iron levels to prevent it being deposited. **Polycythaemia vera** is a slow-growing blood cancer involving the production of too many blood cells.

Again, phlebotomy reduces the red blood cell mass and diminishes the risk of blood clotting.

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They include haemochromatosis and polycythaemia vera.

Haemochromatosis is a genetic disorder where excess iron accumulates in liver, pancreas, heart, pituitary gland and other sites.