organisations that attempt to unite the different registering bodies in massage and aromatherapy but not in reflexology. It is probably wise to choose a practitioner from an organisation that is a member association of the British Complementary Medicine Association (BCMA) as these associations are regularly reviewed by the BCMA panel (see earlier article on complementary medicine in practice for contact details of BCMA).

Conventional healthcare professionals, who may have undertaken massage training but not have formal qualifications, are regulated by their own professional body.

Training

The variety of training courses is enormous, with many specifically aimed at conventional healthcare workers such as nurses. A central examinations agency, the International Therapy Examinations Council (ITEC), holds examinations in massage and related therapies that are accepted by many organisations. Other courses range from weekend courses in basic massage to university degree courses in therapeutic massage.

The ABC of complementary medicine is edited and written by Catherine Zollman and Andrew Vickers. Catherine Zollman is a general practitioner in Bristol, and Andrew Vickers will shortly take up a post at Memorial Sloan-Kettering Cancer Center, New York. At the time of writing, both worked for the Research Council for Complementary Medicine, London. The series will be published as a book in Spring 2000.

BMJ 1999;319:1254-7

Umbrella organisations involved in registering massage based therapies

British Massage Therapy Council

17 Rymers Lane, Oxford OX4 3JU. Tel: 01865 774123 (for lists of registered practitioners 0181 992 2554). URL: www.bmtc.co.uk

Aromatherapy Organisations Council

PO Box 19834 London SE25 6WF. Tel: 0181 251 7912. Fax: 0181 251 7942. URL: www.aromatherapy-uk.org

Further reading

- Vickers A. *Massage and aromatherapy: a guide for health professionals*. Cheltenham: Stanley Thornes, 1998

The pictures of full massage and of massage oil are reproduced with permission of Damien Lovegrove/Science Photo Library. The pictures of baby massage and hand massage are reproduced with permission of BMJ/Ulrike Preuss. The picture of massage in a hospital is reproduced with permission of the Royal London Homoeopathic Hospital. The picture of essential oils is reproduced with permission of Steve Horrell/Science Photo Library.

An hour that might have made history

Before transfusion became established procedure

Between 11 00 am and 12 00 noon on 20 May 1910, Thomas Addis transfused "about 300cc of freshly drawn human phosphated blood" to a patient with haemophilia whose plasma clotting time was thereby shortened from 245 to 24 minutes (normal, 13 minutes). It was 30 minutes two days later, 32 at four days, 55 at eight days, and 200 at 25 days.

Throughout 1910 Addis was Carnegie research fellow at the laboratories of the Royal College of Physicians of Edinburgh, close to the Royal Infirmary at No 2 Forrest Road. The transfusion was his only recorded foray in vivo; he was otherwise investigating the haemophilic abnormality in vitro. His methods with oxalated venous blood plasma were advanced, antedating Quick's "prothrombin time" (1935) and Brinkhous's "one stage partial thromboplastin time" (1950). He showed haemophilic blood to lack inhibitors, to have normal fibrinogen and thrombin, and its blood cells to have normal thromboplastic activity. Addis concluded controversially—but correctly—that the haemophilic defect lay in the plasma, but wrongly that haemophilic prothrombin abnormally resisted conversion to thrombin; however, "prothrombin" was still a hypothetical concept in 1910.

In 1890 chemicals binding calcium in blood were found to prevent coagulation, which could be restored by adding back calcium chloride. This helped clotting investigators greatly and by 1909 several were using potassium oxalate, although its use for blood transfusion was prevented by fears about toxicity and the resulting insoluble calcium oxalate. Phosphate also binds calcium—relatively weakly. In Edinburgh in the 1890s Brakenridge had transfused phosphated blood to people with pernicious anaemia. Addis presumably knew of this as he used the identical (rather concentrated) formula of one part 5% sodium phosphate to three parts blood. Phosphated transfusions had also been conducted by Braxton Hicks in the 1860s. Although Addis's procedure was experimental rather than therapeutic, the blood probably contained an effective dose of factor VIII.

Addis published this work only in 1916, after Ottenberg reported a similar experience with citrated blood. In 1910 even citrate was considered too toxic, although Todd and White had transfused citrated blood between cattle. In 1915 several reports led to citrate being rapidly adopted for human transfusions. Both Addis and Ottenberg were puzzled by other findings—Addis by an apparent efficacy of transfused serum, Ottenberg by a similar efficacy of sodium citrate by itself. Residual "thromboplastins" and "pyrogens" probably explain these effects.

Addis was not the first to transfuse a patient with haemophilia. Lane (1840) successfully transfused George Firmin, aged 11, after six days' postoperative bleeding, with "5½ ounces" of blood; and Grile (1909) referred to three other episodes. Addis's donor—probably himself—and patient were presumably compatible serologically but no pretransfusion testing was recorded. Such precautions were still rare although Landsteiner had described the ABO groups in 1901. However, ABO frequency distribution among the Scots would have favoured Addis.

Addis had hoped to complete his work before publication, but transfusion practice was not quite ready for wider application. Routine blood grouping and safe anticoagulant and preservative regimens came only with the tragic battlefields of the first world war. In 1911, aged 30, Addis emigrated to the new medical faculty at Stanford, California, where he specialised in renal medicine (describing the "Addis count" in urine) and gained a reputation for good teaching and scientific thoroughness. By 1916 he was disinclined to resume his Scottish work. He died on 4 June 1949. He would have been intrigued by the future of the college's laboratories; they are now occupied by the research division of the Scottish National Blood Transfusion Service.

Frank Boulton *consultant in transfusion medicine, Southampton*