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NATIONAL BLOOD TRANSFUSION SERVICE

MEMORANDUM ON THE SELECTION, MEDICAL EXAMINATION, AND CARE OF BLOOD DONORS

SECTION I. Selection of Donors.

1. Donors should be healthy persons of either sex between 18 and 65 years of age. The removal of 420-440 c.cm. of blood from such healthy persons has, in general, no deleterious effect on health or resistance to disease, and only a temporary effect, rapidly recovered from, on the circulation.

2. Minors: Every practicable effort should be made to obtain parental consent before donors under 21 years of age are bled. In the case of a married woman under 21 years of age, the husband should give his consent. Likewise, in the case of a minor married to a man under 21 years of age, the husband's consent should be asked.

3. Hazardous occupations: Any occupation of a donor hazardous to himself or to others (e.g. civil air crew, train or bus driver, heavy machinery or crane operator, one entailing climbing ladders or scaffolding) should be kept in mind (see also Air Council Instruction No. 900 regarding R.A.F. donors). It is often possible to arrange at factories for staff whose work is hazardous to be bled at the end of the working day.

4. The decision whether a person is fit to act as a blood donor rests solely with the doctor who is to collect the blood.

5. It is the policy of the service to maintain donor panels at a size which will permit an interval of 6 months between donations

SECTION II. Medical Examination of Donors.

1. Medical History:

The examination to which a donor is subjected must determine whether the donor is in normal health Of this the donor is the best judge, and if he will truthfully answer simple questions concerning his medical history and general health, the main part of the examination has been done. The donor should thus be subjected to a short series of questions about his present health and medical history.

(a) Each time a donor presents himself he should be questioned to satisfy the doctor:

(i) that he is in normal health

(ii) that he is not suffering and has not recently suffered from,
(a) any serious illness
(b) intercurrent infection (e.g. tonsillitis, laryngitis, boils), and
(c) an infectious disease in the past 2 years nor, as far as he knows, been in contact with any case of infectious disease during the past 6 months.

Note: An individual who has had undulant fever or glandular fever within the past 2 years, or leptospirosis within the past year, should not be accepted as a donor.

(iii) that he has not received transfusions of blood or plasma within the past 6 months.

(iv) that he has not received smallpox vaccine or yellow fever vaccine within the past 3 weeks or poliomyelitis vaccine within the past 2 weeks.

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All Regional Transfusion Directors
Dr. Diver
" J. G. Thomson
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Note: the injection of diphtheria or tetanus toxoid, diphtheria or tetanus antiserum, or T.A.B. vaccine has been associated with a dangerously high haemolysin titre. A safe period between inoculation and bleeding cannot be given. Apart from this, there is no reason why the blood of donors who have been given injections of diphtheria or tetanus toxoid or T.A.B. vaccine should not be used without a waiting period providing the donor feels well; an interval of 3 weeks should elapse between injections of diphtheria and tetanus antiserum and blood donation to allow elimination of the foreign (horse) protein from the donor's circulation and thus to avoid the risk of sensitizing the recipient.

(b) At enrolment all donors should be specifically questioned about the following conditions:-

* Allergy (hay fever, food sensitivity, hives, asthma etc.)	Heart disease
Anaemia	Hypertension *
Cancer	Jaundice or hepatitis *
Diabetes	Kidney disease
Epilepsy	Stroke
Goitre	Tuberculosis
	Tropical diseases *

Existence of any of these conditions usually disqualifies but persons with a history or evidence of them may be accepted, deferred, or rejected after consideration (see APPENDIX A for notes on conditions marked *)

Records: A written record is desirable of the answers given at the time of enrolment regarding these diseases. It should be initialled or signed by the donor, or by the clinic clerk taking the medical history if the donor's signature is not for some reason obtained. In practice, a simple method of recording the answers has been found to be the completion of the "medical history box" on the donor registration card (N.B.T.S. 101) at the time of enrolment of the donor, or when he presents himself to give blood for the first time, the entry in the "box" being initialled by the donor (or clerk)

On subsequent occasions, the donor should be shown a list of the above conditions, e.g. N.B.T.S. 110, and asked to sign either this form, which is attached to the donor session work sheets, or the N.B.T.S. 101, to show that he has read the list.

(c) Venereal Diseases: It is not customary to question donors about venereal disease. Information may, however, be volunteered. A person who is known to have, or to have had, syphilis is unacceptable as a donor (see Therapeutic Substances Regulations, 1963, Statutory Instrument, No. 1456, Pt. II para. 4, and British Pharmacopoeia, 1963). An accepted syphilis test shall be performed each time a donor is bled; donors whose blood reacts positively shall be excluded permanently from the donor panel.

(d) Toxoplasmosis: It is not practicable to test for the presence of toxoplasma as a routine and it is not known whether the blood of persons recently ill from toxoplasmosis is infective. It would seem wise not to accept blood from volunteers with a known history of toxoplasmosis until a year has elapsed from the complement fixation test becoming negative.

(e) Oral Contraceptives: Volunteers who are taking oral contraceptives are not debarred from giving blood The progestogens are short-lived so that any amount that might be contained in blood from such donors could not have an effect lasting for more than a few hours at the most in the recipient

(f) Pregnancy: Mothers should not act as donors during pregnancy or until a period of one year has elapsed since the last confinement In certain circumstances, e.g. to collect serum containing antibodies, mothers may be bled before the lapse of this time, if shown by medical examination to be fit to give blood.

2. Examination of donor:

(a) The medical history should be coupled with a careful assessment of the donor's appearance. The experienced doctor can detect at a glance the potentially unsuitable donor. Those of poor physique, the debilitated, the undernourished, the mentally unstable, and those bearing the obvious stigmata of disease should not be bled.

(b) The superficial medical examination (auscultation and percussion of the chest, pulse, and blood pressure) is, in general, so incomplete and unrevealing that it is in most cases not of great value.

In some cases, particularly in middle-aged and older donors, examination of the pulse may reveal unsuspected defects of the cardiovascular system, which may be confirmed by measurement of the blood pressure. While it is usually sufficient to rely on a normal medical history, general appearance, and haemoglobin level, it is advisable to examine the pulse and, if considered necessary, the blood pressure in these older donors.

(c) Haemoglobin: The haemoglobin should be determined each time the donor presents himself. Female donors with less than 12.5g haemoglobin per 100 ml (85% Haldane) or male donors with less than 13.3g haemoglobin per 100 ml (90% Haldane) should not be bled. The type of test is left to the discretion of the Regional Transfusion Directors, but the Phillips-Van-Slyke copper sulphate method (Reference: J.Biol.Chem. 1950-183-305), using a sample of blood obtained from the finger, is recommended for use as a screen test.

Donors whose haemoglobin is below the appropriate level should be informed that they are not fit to be bled at present. In these cases, it may be advisable and helpful, if a screen test has been used to take a sample of blood (and preferably also at the same time a blood film) for an exact determination of the haemoglobin level and, if possible, a red blood cell count, etc., the result of which may, at the Regional Transfusion Director's discretion, be communicated to the donor, with the advice that he should consult his own doctor.

Note: A complete medical examination, to include X-ray examination electrocardiogram, haematological examination, etc., is obviously impracticable.

SECTION III. IMPORTANT POINTS IN SELECTION AND EXAMINATION.

1. All donors should be healthy persons of either sex between 18 and 65 years of age. Parental consent should be obtained before donors under 21 years of age are bled.

2. The medical examination should consist of:-

(a) A short series of questions designed to reveal the donor's present state of health and his medical history. The new donor should be asked specific questions regarding certain diseases, mentioned above and in Appendices A and B.

(b) An assessment of his general appearance, together with an examination of the pulse and blood pressure in certain donors.

(c) A haemoglobin determination. Female donors with less than 12.5g haemoglobin per 100 ml (85% Haldane) or male donors with less than 13.3g haemoglobin per 100 ml (90% Haldane) should not be bled. They should be informed that they are not fit to give blood at the present time and advised to visit their own doctor, if the medical officer considers this necessary

3. The above procedure should be carried out meticulously. It is one of the most wearing parts of the routine collection of blood, but, if skilfully used, will lead to the rejection or deferment of donors unfit to be bled. When in doubt, it is better to reject or defer. The medical officer should see that an appropriate entry is made upon the donor's record card.

4. In general, only persons in normal health with a good medical history should be accepted as donors.

SECTION IV. Medical Care of Donors.

Apart from courteous and considerate treatment by all members of the blood collecting team, the donor's medical well-being should be assiduously watched by the medical officer and the members of the team while he is at a blood donor session.

The donor's medical well-being depends upon:-

(1) The use of carefully prepared sterile apparatus.

(2) An immaculate technique of venepuncture. Sterilisation of the skin should be carried out by a well-tried method, such as that described in M.R.C. Memorandum No.34, 1957, H.M.S.O.

(3) Skilfully performed venepuncture preceded by the injection of a local anaesthetic. Normally, not more than 420-440 c.cm. of blood should be withdrawn. No matter how skilled the doctor he will occasionally "miss" a vein. Further attempts should not be made without the donor's permission. It is usually not advisable to use the other arm, unless there is some special reason for making another attempt. In factories, it is good policy never to use the other arm.

(4) The enforcement of a definite routine upon the donor during the resting period after withdrawal of blood. The resting period is of special significance in regard to the prevention of the "delayed faint" (see (5) below).

(a) A donor attendant should assist the donor to the rest room, where he should lie recumbent for at least 15 minutes by the clock, after which he should sit up for at least 5 minutes.

(b) During the resting period of 20 minutes, the donor should consume at least one cup of fluid and a few biscuits.

(c) Before the donor leaves, the site of venepuncture should be inspected, preferably by the doctor, who will on occasion be able to forestall complaints from a donor by warning him that his arm will become bruised from a haematoma, etc. A form of dressing should be placed over the venepuncture. The donor may be given tabs. ferrous sulphate gr.iii, sufficient for 7 days, if the medical officer considers this desirable. It is not intended that the practice of issuing iron tablets to all donors, which is customary in some regions, should cease.

(d) Small cards giving advice to donors, should be displayed in the rest room.

(5) The immediate and considerate treatment of those who faint. A proportion of donors, variously estimated at 2-5%, faint. This is usually only a transient matter, quickly recovered from, but in a few instances prolonged and troublesome. The "delayed faint" is the potentially dangerous type, since the donor may be in the street or at work. Fainting is probably psychological in origin and cannot be forecast by the most elaborate medical examination.

The importance of these measures and the reasons for them must be carefully impressed upon the lay members of the bleeding team. The reputation of the National Blood Transfusion Service and the readiness with which donors will volunteer depends largely upon the standard of medical care given to the donor.

SECTION V. Donors: Complaints and Accidents.

The need for sympathetic, prompt, and thorough investigation of all complaints made by the donors, no matter how trivial, is obvious. Complaints of a medical nature should invariably be investigated by a doctor. The following routine, which has proved of value in practice, is recommended:-

1. Minor accidents and any untoward incidents occurring during a blood collecting session, e.g., haematoma, fainting, damage to, or loss of, a donor's property, should be noted at the time upon the donor's record card or donor session work sheet. The recording of apparently trivial incidents has, in practice, proved of value as long as two years later.

2. Serious incidents or accidents occurring during blood collecting sessions, or complaints made direct to the regional transfusion centre, should be fully recorded in a book kept for the purpose, together with full notes of the investigation made.

An analysis of complaints and accidents thus recorded should be made annually, using the following headings:-

Haematoma, cellulitis, thrombosis, accidents due to fainting, dermatitis, unclassified, total: ratio to total number of donors bled: number of accidents serious enough to merit financial compensation, together with, if available, the amount of compensation paid.

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NOTES ON CERTAIN CONDITIONS CAUSING REJECTION OR DEFERMENT

(1) **Allergy**: persons who give a history of frequent severe allergic manifestations should not be accepted as donors. Otherwise donors need only be rejected if they are suffering from an allergic attack when they present themselves.

(2) **Hypertension**: The hypertensive should be treated on his merits. In general, the practice of accepting hypertensives as donors is not recommended, because of the possible complications which may follow a sudden lowering of arterial tension caused by the withdrawal of blood. Such persons should not be bled without their own doctor's recommendation in writing, and then only if the medical officer concerned is himself satisfied that they are fit to be bled. It is felt that if hypertensives are to be bled for the relief of symptoms, they should be bled by the family doctor, or in a hospital, where complications, should they occur, can be dealt with more satisfactorily than at a donor session

(3) **Jaundice or Hepatitis**: A person, giving a history of jaundice or hepatitis (other than a history of neonatal jaundice or an incontrovertible history of obstructive jaundice in which the occurrence of viral hepatitis can be excluded) or who has been in contact with a case of hepatitis in the past 6 months, should not be accepted as a donor.

(4) **Tropical Diseases**: Donors should be asked if they have visited places abroad (other than in Europe or N. America) or recently lived in such places. The most important disease to bear in mind when considering the fitness of such donors is malaria because of its world wide incidence, but certain other tropical diseases must also be considered before accepting, deferring or rejecting such donors (see Appendix B).

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TROPICAL DISEASES.

The following notes give general guidance regarding the fitness of persons as donors who have had certain tropical diseases, or who have returned to the U.K. from certain tropical countries:-

1.	Malaria:	(a) The blood of those who have had malaria or who are natives of or who have lived until recently in endemic malarious areas (see list, Appendix C) may be used only for preparing plasma.
		(b) The blood of U.K. residents, born in U.K. and normally resident there, who have visited or passed through endemic malarious areas may be used as whole blood providing they have been back in U.K. for at least 8 weeks, have had no feverish illness since returning, and have taken anti-malarial drugs for one month after return. If there is any doubt, blood from such donors should be used only for preparing plasma.
2.	Amoebic dysentery:	Does not debar.
3.	Schistosomiasis:	Does not debar.
4.	Filariasis:	Does not debar.
5.	Kala-azar:	Persons giving a history of kala-azar should not be enrolled as donors.
6.	Relapsing fever:	Persons may be accepted as donors 2 years after recovery from the disease.
7.	Trypanosomiasis:	The blood of persons who have resided in endemic areas should be used only for preparing plasma.
8.	Yaws:	As for syphilis.
9.	Yellow fever:	The virus is said to be present in the blood stream only during the disease. A history of yellow fever therefore does not debar.
10.	Dengue fever Rift Valley fever Sandfly fever West Nile virus fever Arthropod-borne encephalitides	A history of any of these diseases does not debar.
11.	General	Persons returned from Africa should not be used as donors until 8 clear weeks after arriving in the U.K. The diseases in (10) above, for example, may take the form of a short-lived viraemia, without specific clinical symptoms. Persons harbouring any of these viruses will automatically be excluded during the potentially dangerous period by adopting this 8 week period of "quarantine".

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ENDEMIC MALARIOUS AREAS

Malaria may be regarded as being endemic in:-

Central and South America
West Indies
Tropical Africa
Middle East
Asia, including Indian subcontinent
East Indies
Australia (Northern Territory).

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