

AUSTRALASIAN SOCIETY OF BLOOD TRANSFUSION INC.

Topics in

Transfusion

Medicine

SPECIAL EDITION:

GUIDELINES FOR

PRE-OPERATIVE AUTOLOGOUS BLOOD COLLECTION

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Guidelines for Pre-operative Autologous Blood Collection

1996

**Prepared by
The Scientific Subcommittee of
The Australasian Society of Blood Transfusion Inc.**

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FOREWORD

I am pleased to write the Foreword to the Guidelines for Pre-operative Autologous Blood Collection. One of the objectives of the Australasian Society of Blood Transfusion Inc. (ASBT) is the "promotion of improved standards in the practice of blood transfusion" and these Guidelines are designed to fulfil that objective.

Similarly to previously published Guidelines covering other areas of transfusion medicine, this publication is produced by the ASBT Scientific Subcommittee to represent "best practice" at the time of publication. If the recommendations incorporated into this publication are followed, pre-operative collection of autologous blood can be performed in a safe and efficient manner. However, they should not be taken as "Standards" by any government or regulatory authority as many points included in this document are open to individual opinion by transfusion medicine and other medical specialists and are deliberately in excess of minimum requirements. The criteria for acceptance of patients for autologous collection which are outlined here are based on the optimal safety for the patient and may well be amended by the patient's consultant after consideration of all aspects of the particular case.

I commend Dr Sandra Deveridge and her Scientific Subcommittee for their thorough and wide ranging review of current practice and for producing these Guidelines which represent the majority view of quality and safety in pre-operative autologous blood collection.

Derek S Ford
President, ASBT

INTRODUCTION

The Scientific Subcommittee of the ASBT has drawn up Guidelines for Pre-operative Autologous Blood Collection after wide consultation.

It is recognised that there are several contentious areas in these recommendations

- the extent of testing for viral disease markers
- the use / rejection of units testing positive for viral disease markers.

The recommendations reflect the ASBT endorsed best practice guidelines with respect to the safety of autologous blood transfusion. It is recognised however that experienced practitioners in this field differ in their views on these issues which remain in debate in current international literature.

The recommendations for the acceptance of donors with cardiovascular disease are not intended to be proscriptive for practitioners experienced in this field in the setting of tertiary referral cardiovascular units.

Sandra Deveridge
Chair
ASBT Scientific Subcommittee

Preamble

Since the Scientific Subcommittee has only considered autologous blood collection outside the Red Cross Blood Transfusion Service (RCBTS) facilities in Australia, the proposed guidelines relate only to autologous collections outside the RCBTS. However, the use of common labels and documentation should apply to autologous blood collected by hospital/private collection centres.

Definition

Pre-operative autologous blood collection is a procedure whereby a patient's own blood is collected and stored to meet their transfusion needs during elective surgery.

Homologous blood is that collected from a blood donor for transfusion to another person.

Introduction

Autologous blood collection is a technique aimed at minimising the use of homologous blood. Use of autologous blood eliminates the risk of allo-immunisation and acquisition of diseases transmissible by homologous blood transfusion. However, autologous blood is not 100% safe. It has the same risk for bacterial contamination as homologous blood.

The following points should be considered before attempting autologous blood collection in a patient scheduled for elective surgery:

1. Patients undergoing surgery who would not normally require crossmatched blood should not be offered autologous collection and transfusion. Requests for autologous blood collection should be related to locally developed Maximum Blood Order Schedules.
2. The patient is in good general health to tolerate a phlebotomy (450-470 mls) over 10-15 minutes.
3. The indications for transfusion of autologous blood are the same as those for homologous blood. The availability of autologous blood should not influence the decision to transfuse unless there are clear clinical indications.

Patients when offered autologous blood collection, should be informed that the procedure has its own inherent risks. A decision for autologous collection is a matter of assessing and balancing the relative risks of autologous collection and transfusion with transfusion of blood from voluntary donors. It is necessary to inform the patient that they may require homologous blood and blood products in addition to the autologous blood. Errors which may occur with autologous collection and transfusion can include labelling, documentation, appropriate storage and transportation. Infusion of the wrong blood is a remote, but real possibility.

A regular audit of the Autologous Blood Collection Programme should be performed. Suggested criteria for review could include:

- Deferrals.
- Usage rates of autologous blood.
- Usage rates of homologous blood.
- Adverse reactions.
- Transcription errors or transport problems.

General Considerations

The scope of this document does not include 'directed' blood donation, peri-operative collection, intra-operative or post-operative salvaging.

The guidelines in this document relate to blood collected and stored at 2-8°C for up to 35 days before an elective surgical procedure.

Each health care provider who undertakes procedures requiring transfusion of patients should establish a policy covering the circumstances of whether, when and how autologous blood should be collected and provided. Relevant points that should be taken into account include:

1. The indications for blood transfusion.
2. Selection of patients.
3. Clinical supervision of autologous blood collection.
4. The means for testing, storage and supply of autologous blood.

The general fitness of the patient to tolerate several venesections over a short period is of primary importance, but other factors such as age, venous access and reliable dates for elective surgery are also important.

Patient selection is based on a medical history and findings of a physical examination after the patient has been referred from a medical officer. Selection criteria may differ from those for homologous donations. Patients who are deferred should be given a full explanation of the reasons for such deferral.

The level of support needed to collect autologous blood from patients varies with their level of fitness. Patients at high risk of the procedure should be venesected at a venue with appropriate medical support facilities.

Consent

The patient or person legally responsible for the patient should give their informed consent for the procedure. If the patient is unable to sign, the collection procedure will depend upon local policy. If the patient is unable to understand English then the form can be translated and then signed, witnessed by the medical officer.

This consent should include:

1. The risks associated with autologous blood collection.
2. The range of serological tests performed (Hep B & C, HIV, HTLV, Syp) on the units and that any confirmed positive test for infectious disease markers will result in the units not being released for transfusion.
3. That other homologous blood or blood products may be needed.
4. Permission to notify the patient's physician of positive infectious disease markers.
5. That blood will be discarded if not used by the patient.

Collection

Collection and storage of blood for autologous transfusion should be initiated upon written authority of the clinician requesting the units. Each collecting facility should have a standard referral and request form to be completed by the requesting clinician. The patient must have a confirmed operation date.

Patients undergoing elective surgery who are suitable for autologous blood collection can have stored 1-5 units of their blood, with collection commencing up to 28 days prior to surgery. Each unit is stored for up to 35 days. Autologous units are usually collected at weekly intervals (minimum recommended interval is 72 hours), with the last collection at least 72 hours before surgery to permit equilibration of plasma proteins and restoration of blood volume.

Patients must not have fasted for greater than 3 hours prior to blood collection and should rest for 15-30 minutes after the procedure. A drink must be offered following collection.

The doctor supervising the autologous programme may recommend a patient not to participate or continue due to medical reasons. Patients are also free to withdraw from autologous blood collection programmes at any time.

Selection Criteria

Autologous blood collection should only be offered to those patients in whom there is a reasonable expectation that blood will be required. Patients who would not normally require crossmatched blood (eg Group and Save only) should not be considered, unless there is a specific clinical reason. Direct patient requests should be discouraged after adequate explanation.

Selection of patients and consideration of their fitness for the procedure and of other criteria in this section should be undertaken by an appropriate medical officer.

A standard patient questionnaire (Appendix 2) including questions about high risk factors for transmission of infectious diseases and medical suitability should be completed by the patient.

It is recommended that patients known to be positive for hepatitis B, hepatitis C, HIV or HTLV should be excluded from autologous blood collection.

There are no upper age limitations to autologous collection. Patients over the age of 65 should be considered in the context of their general health. Children can have autologous units collected provided they have good venous access, are co-operative and accompanied by a parent or guardian. Blood collection from children below the weight of 25 kg is technically difficult and rarely justified. Parental consent is necessary where children are younger than the legal age of consent.

There are no weight limitations for patients undergoing autologous blood collections. Patients who weigh less than 50 kg should have 8ml/kg collected. For patients weighing less than 35 kg the volume of anticoagulant should also be adjusted accordingly. In any given collection, not more than 10% of blood volume should be venesected (see Appendix 1 for calculation of blood volume to be collected from underweight patients).

Estimation of the haemoglobin should be carried out before each blood collection and should be 110 g/L or greater. The patient may take oral iron during the collection period and continue until the day before surgery. It may be useful to provide the patient with an information leaflet on iron replacement.

Physical Examination

The patient must have suitable veins.

Pulse: Should be between 50-100/min. If abnormalities have not been previously documented or assessed:

If <50/min refer patient to referring medical officer for assessment.

If >100/min, rest for 30 minutes and recheck.

If irregular in rhythm and rate which was not previously known or documented, the patient may need cardiac assessment pre-operatively.

Blood Pressure: If BP >180/100 then rest supine for 15 min. If still >180/100 defer collection and refer patient to referring medical officer for assessment.

SELECTION CRITERIA FOR PRE-OPERATIVE COLLECTION OF AUTOLOGOUS BLOOD

CONTRA-INDICATIONS

These are guidelines only, specific parameters may vary between institutions.

1. NO definite surgical date.
2. Current systemic infection - viral, bacterial or fungal.
3. Poor venous access.
4. Anaemia: Hb <110 g/L prior to commencement of autologous collection.

Patients with the following medical conditions would not generally be considered for autologous blood collection:

5. CARDIAC DISEASE

- a. aortic stenosis: gradient > 80 mmHg
- b. mitral stenosis valve area < 1.0 cm
- c. unstable angina
- d. crescendo angina
- e. angina within 48 hours prior to collection
- f. left main coronary artery disease > 60%
- g. uncontrolled C.C.F
- h. 2nd degree or complete heart block
- i. pulmonary hypertension
- j. cyanotic congenital heart disease
- k. acute myocardial infarct within last 3 months
- l. ejection fraction <30%
- m. acute onset of S.V.T
- n. severe hypertension: systolic >180 diastolic >110
- o. marked hypotension: systolic <90 diastolic <60
- p. idiopathic hypertrophic sub-aortic stenosis

6. CEREBROVASCULAR DISEASE

- a. symptomatic disease (T.I.A, CVA)
- b. any patient with a cerebral tumour with signs or symptoms of raised intracranial pressure

7. RESPIRATORY DISEASE

- a. acute U.R.T.I. or L.R.T.I. receiving antibiotics
- b. acute onset of asthma
- c. FEV1/FVC <50% of predicted normal
- d. DLCO <50% of predicted normal
- e. pO₂ <65 mmHg room air
pCO₂ >45 mmHg room air
Hb O₂ saturation <94% room air

8. PREGNANCY with any of the following

- a. any condition with impaired placental blood flow
- b. intra-uterine growth retardation
- c. hypertension
- d. pre-eclampsia
- e. concomitant: (1) cardiac disease
(2) severe asthma
(3) insulin dependent diabetes

9. Symptomatic ulcerative colitis/Crohn's Disease

10. Patients who have been blood donors and have sustained a delayed faint, ie. weakness or loss of consciousness several hours after donation, should not be considered

11. Uncontrolled epilepsy

HIGH RISK

Autologous units from high risk patients should only be collected in centres where medical supervision, oxygen and resuscitation equipment and appropriate monitoring are readily available.

All patients who fall within the high risk category should have a letter from their attending physician ensuring that the patient's condition is stable and that their medical management is optimal, and that their condition is not a contra-indication for autologous collection.

Patients who have cardiac disease requiring cardiac surgery should be monitored with E.C.G. and if necessary have fluid replacement during blood collection

Persons collecting autologous blood should maintain adequate training in CPR

1. HYPERTENSION MODERATE

Diastolic >95 <100 mmHg

Systolic >160 <180 mmHg

Hypertensive patients are more at risk of having coronary artery disease and congestive cardiac failure.

In general, patients with mild, controlled hypertension on a single or double agent therapy of diuretics, ACE inhibitors, low dose vasodilators or low dose calcium antagonists are acceptable. Patients with more resistant hypertension requiring multiple agent therapy or who are on β -blockers are at increased risk of hypotension and must be closely assessed and require regular blood pressure monitoring during collection.

2. HYPOTENSION MODERATE

Systolic 90-100 mmHg. Check with attending physician as to patient's normal BP.

Volume replacement may be necessary if blood pressure falls 10mmHg or more after collection.

3. MULTIFOCAL Ventricular Ectopic Beats (VEB) or MORE THAN 4 VEBs per minute.

May be secondary to ischaemia. Refer patient for 12 lead E.C.G. Check with local medical officer before collection if patient is scheduled for cardiac surgery, then do not collect if the VEBs are a new finding. E.C.G. and BP monitoring may be required.

4. BRADYCARDIA ie. HR <50/min.

May be due to β blockers or calcium channel blockers. If patient is fit it may be his/her normal heart rate. If necessary refer patient for a 12 lead E.C.G. to eliminate heart block. E.C.G. and BP monitoring may be required.

5. MYOCARDIAL INFARCT

History of MI in preceding 3 months - exclude.

a. must monitor HR and BP before and after collection.

b. volume replacement may be required.

6. ANGINA

a. must monitor HR and BP before and after collection.

b. volume replacement may be required.

7. PATIENTS on β Blockers, Vasodilators, ACE inhibitors, Nitrate and Calcium Channel Blockers.

May get hypotension and if on β blockers unable to get reflex tachycardia and increased cardiac output in response to hypotension.

a. must monitor HR and BP before and after collection.

b. volume replacement may be required.

8. VALVULAR HEART DISEASE
Moderate Aortic and Mitral Valve Stenosis: Monitor BP and HR every 5 minutes during collection.
9. GENERALISED ARTERIO-SCLEROSIS or LARGE VESSEL DISEASE
Patients with these conditions are at increased risk of occult ischaemic heart disease and should be assessed accordingly (ie patients undergoing elective aortic aneurysm repair or large vessel bypass surgery).
10. ASTHMA INDUCED BY ANXIETY
 - a. must have their bronchodilators readily available.
11. DIABETES - INSULIN REQUIRING
Not necessarily high risk, but are more at risk of ischaemic heart disease and cerebrovascular disease and should be assessed accordingly.
12. PREGNANCY - Last trimester. Discourage. 99.5% do not need a transfusion.
 - a. collect as per Royal College of Obstetricians and Gynaecologists' guidelines.
 - b. may require volume replacement.
 - c. collect blood in lateral position.
 - d. fetal monitoring.

A patient who suffers from severe vaso-vagal syncope following a collection should not continue with the program.

Appendix (5) provides an extensive list of deferral criteria for autologous blood collections.

Labelling

The patient must state their name and date of birth whenever blood is collected. After checking all the details on the autologous label are correct the patient must sign the label which must be affixed to the bag during the collection procedure.

The autologous label for each unit should include all necessary information for correct identification of the patient and should have a suitable adhesive for refrigerated storage.

The labels must clearly state:

1. **Autologous Blood**
2. unique blood pack number.
3. collection and expiry date.
4. place of collection.
5. patient details (name, DOB, hospital number).
6. patient's signature.
7. witness name and signature.

It is recommended that the labels are green.

Appendices 6 and 7 give examples of an Autologous Blood Pack label and Notification of Autologous Collection Forms.

All autologous units should be identified with a unique blood pack number so that the transfusion records permit tracing of each unit from the patient, through all procedures performed on the unit, transfusion to the patient or disposal.

In addition to the unique autologous label, blood pack labels indicating the blood group (ABO/Rh D) and any compatibility tests may be affixed to each unit by the laboratory performing these tests.

Laboratory Testing

Each pre-deposited autologous unit must be tested for ABO and Rh D to confirm the patient's blood group.

It is recommended that screening for hepatitis B surface antigen, hepatitis C, HTLV and human immunodeficiency virus (HIV) antibodies and syphilis are performed on each autologous unit. This testing of autologous units, despite increased costs, maximises safety, allowing units with positive tests to be appropriately handled.

Units confirmed positive for infectious markers should be destroyed. If a unit is found to be positive for infectious markers, the referring doctor must be contacted and informed of the results. It is recommended that the clinician in charge of the patient who orders the collection of blood informs the patient of the result.

Pre-transfusion testing including a group and antibody screen should be performed on the patient prior to surgery, as homologous blood may be required. The compatibility testing procedure should include ABO and Rh D checks on the patient and on each unit collected.

Storage

Autologous blood should be stored in a refrigerator at a controlled temperature between 2-8°C, with alarms set at 3-7°C, and physically separated from homologous blood stocks and cross-matched blood. This refrigerator should be equipped with a recorder and with an alarm similar to those on other fridges used for blood storage and comply with AS3864-1991.

Transport

Autologous collections must be transported in compliance with AS3864-1991.

Disposal of Unused Autologous Units

An unused unit of blood collected for autologous transfusion must not be transfused to another patient. Unused units of autologous blood should be kept until expiry and then be discarded.

Records

The fate of each autologous unit of blood must be fully documented to ensure that each unit can be accounted for. All consent forms, questionnaires and donor records should be retained in accordance with the guidelines for homologous units.

Appendices

1. Procedure for collecting autologous blood from underweight patients.
2. Patient questionnaire.
3. Patient information sheet.
4. Consent form.
5. Alphabetical listing of deferrals.
6. Autologous blood pack label.
7. Notification of autologous blood collection form.
8. References.

Appendix 2

MEDICAL QUESTIONNAIRE AUTOLOGOUS BLOOD COLLECTION

NAME:.....BLOOD PACK NUMBER:.....

To the best of my knowledge my answers to the following are true.

*Partner is defined as a person with whom you have had sexual contact in the last 12 months

1. Have you or your partner* any reason to believe that you have been infected with HIV, the virus that causes AIDS?
2. In the last 6 months have you had:
 - persistent night sweats?
 - unexplained weight loss?
 - persistent fever?
 - persistent diarrhoea?
 - persistent swollen glands?
3. Have or your partner had sexual activity in the last 5 years with any person whom you know to have been exposed to HIV, the virus that causes AIDS?, or Hepatitis B or C
4. Are you in good health today?
5. Do you currently have a cold, the flu or any other illness or infection?
6. Have you ever had any serious illnesses or operations
7. Have you ever had:
 - rheumatic fever?
 - high blood pressure?
 - diabetes?
 - kidney disease?
 - gastric or duodenal ulcers?
 - heart disease?
 - liver disease?
 - chest trouble?
 - bleeding disorders?
 - asthma or hay fever?
 - other allergies?
 - cancer?
 - a stroke?
8. Have you ever had hepatitis or any other infectious disease?
9. Do you suffer from fits, fainting or are afraid of needles?
10. Have you taken any medications within the last 3 days?

Appendix 3

FACTS ABOUT AUTOLOGOUS BLOOD COLLECTION AND TRANSFUSION FOR PATIENTS ABOUT TO HAVE SURGERY

Introduction

Some people who undergo surgery require blood transfusion during or just after the operation. Whether you will need a blood transfusion or not will vary with the type of operation. It is possible to collect and store some of your blood (autologous blood) before surgery for use during the operation, instead of using blood from someone else (homologous blood). Blood can be stored for up to 35 days between collection and use. This service is now available for suitable patients who would like to donate their own blood. When you see your doctor you should take the opportunity of asking whether you are suitable. It is not compulsory to do so.

What are the advantages of autologous blood?

Autologous blood collection and transfusion eliminates the possible risk of transmission of infectious disease, and formation of antibodies or allergy to red cells, platelets and plasma proteins.

Are there any problems?

In general, collection of autologous blood carries some of the same minimal risks as any blood collection. Your doctor will assess you before collection of blood and determine whether you are suitable for participation in the program.

When is it collected?

The blood is collected weekly within the four (4) weeks prior to the date of the operation.

How long does the procedure take?

The whole procedure of blood collection takes about 30 minutes each time. At the end of this time the nurse will apply a bandage which should not be disturbed for 1-2 hours. Sometimes a small scab forms, but will disappear in a few days. To aid the healing process, keep the arm dry and avoid strenuous activity for a few hours after collection.

You may be asked to rest for 15 minutes before leaving the collection centre. You can drive if you feel perfectly well, but should inform the nurse in charge if you have any doubt. Some occupations involve some personal safety risks or include responsibility for the safety of others. If you have such an occupation, ask the nurse how long you should wait before resuming your duties.

Most people feel well after having autologous blood collected.

However, if you should feel light-headed when you get up from the bed, it may mean your body has not had quite enough time to adjust. You will be assisted to lie down and asked to rest for a while.

Drinking extra fluids helps to replace some of the fluid portion of the blood you donated.

Eating a balanced diet with lots of fluids helps your body to produce other necessary elements of your blood. Some foods recommended to help restore the iron content of your blood are meats, liver, kidneys, beans and nuts. If you are on a fluid restricted diet, discuss this with your doctor.

From 1 to 2 hours after your blood collection, you may remove the bandage from your arm.

If your arm starts to bleed, do not be alarmed; simply raise the arm over your head and apply pressure immediately on the needle entry site until the bleeding stops.

Occasionally the area may appear bruised.

The discolouration will disappear within a few days and should cause you no concern.

Usually the venipuncture site heals without difficulty.

However, if the site should become reddened and some discomfort results, see your own doctor immediately.

What else is involved?

Your blood count will be checked and your blood tested for Hepatitis B & C, HIV (AIDS) and HTLV on each occasion you donate. For cardiac patients, during the collection, your electrocardiograph (ECG) and blood pressure may be monitored.

Does the collection of autologous blood make certain that homologous blood will not be used?

In most cases, homologous blood will not be needed if you have had your own blood collected. However, should you bleed more than average during or after the operation, it may be necessary to give you homologous blood. You should remember that the risk of complications from homologous blood is very low. The doctors will determine the need for homologous blood, depending on your clinical condition.

What happens to the autologous blood if it is not used?

Unused autologous blood, when it has expired, is discarded by the hospital Blood Bank .

Further queries -

If you have any enquires or wish to use this service, please contact the hospital where your blood was collected.

Appendix 4

NAME:.....

**STATEMENT OF CONSENT FOR AUTOLOGOUS BLOOD COLLECTION
AND TRANSFUSION**

1. The nature of autologous blood collection and transfusion and the risks and possible complications have been explained to me. I have read and understand the information on the sheet entitled "Facts about autologous blood collection and transfusion for patients about to have surgery".
2. I consent to the withdrawal of blood by authorised staff for autologous transfusion.
3. I am aware that my blood will be tested for Hep B, Hep C, HIV, HTLV and Syphilis and that my doctor will be notified of any positive results.
4. (Optional clause - cross out if not applicable and initial)
If my blood is not required for autologous transfusion, I consent to the use or disposal of that blood in a manner deemed appropriate by the Blood Bank.

SIGNATURE..... DATE.....

WITNESS..... DATE.....

Appendix 5

DEFERRALS

The following are common examples and serve only as a guide. The deferral period may be extended at the discretion of the medical officer.

Arthroscopy		Defer 1 week
Bronchoscopy	-without biopsy	Defer 48 hours
	-with biopsy/lavage	Defer 1 week
Colposcopy and cone biopsy		Defer 1 week
Colonoscopy	-without biopsy	Defer 48 hours
	-with biopsy	Defer 1 week
Dental work	-filling	Defer 48 hours
	-extractions	Defer 1 week
Dilatations and curettage (D&C)		Defer 1 week
Endoscopic procedures	without biopsy	Defer 48 hours
	with biopsy	Defer 1 week
Fine needle biopsy		Defer 48 hours
Lumbar puncture		Defer 48 hours
Myelogram		Defer 48 hours
Puerperium (post childbirth)		Inappropriate to collect
Prostatic massage		Defer 1 week
Radiological procedures	-angiogram	Defer 48 hours
	-sialogram	Defer 48 hours
Trauma	-cuts and abrasions	Defer until healed
	-sutures	Defer until healed

The other guidelines are listed in alphabetical order

Accept for autologous blood collection provided general criteria acceptable

Note: Not all medical conditions are covered in these guidelines. Those not included should be discussed with the responsible medical officer

A

Accident		Accept if injuries healed
Acne		Accept unless purulent
Alcoholism		Accept if sober and co-operative
Allergies		Accept if clinically stable
Angina		See high risk category
Arrhythmia		See high risk category
Arthritis		Accept
Asthma		Accept if mild-moderate and clinically stable; severe (at discretion of medical officer.)

B

Blood Disease		Requires medical specialist approval
Blood Pressure high		Systolic >180 diastolic >100. Rest and recheck. If still defer for local medical officer review
Boils		Defer until healed
Bradycardia		See physical examination
Bronchitis	-acute	Defer until well - 4 weeks
	-chronic	Accept if symptom-free

Bypass

See high risk category

C

Cancer		Accept if other criteria satisfactory
Cardiac arrhythmia		See high risk category
Cerebrovascular disease		See high risk category
Cholangitis		Defer 4 weeks
Cholecystitis		Accept after 1 week if well
Cirrhosis		Accept if other criteria satisfactory
Colitis	-simple	Defer 4 weeks
	-ulcerative	Defer if active disease
Concussion	-mild	Defer 4 weeks
	-moderate/severe	Defer 3 months
Convulsions		Accept if stable on medication
Coronary Heart Disease		See high risk category
Crohn's Disease		Defer if active disease

D

Dental work	-filling	Defer 48 hours
	-extraction	Defer 1 week
Dermatitis	-local	Accept if minor and collection site clean
	-generalised	Defer until healed
Diabetes Mellitus	-diet	Accept
	-oral hypoglycaemic	Accept
	-insulin	Accept at discretion of medical officer.
Diarrhoea		Check cause. Accept minimum of 1 week after recovery
Diverticulitis		Defer if active disease
Drugs		See 'Medications'

E

Eczema	-local	Accept if minor and collection site clean
	-generalised	Defer until healed
Embolism		Check cause. Accept if well. Anticoagulant drugs acceptable
Emphysema	-mild-moderate	Accept if stable and not septic
	-severe	At discretion of medical officer
Epilepsy		Accept if well-controlled
Epistaxis		Accept

F

Fainting		Defer if previous severe faints or delayed loss of consciousness after blood collection
Fractures	-minor	Accept
	-major	Accept when healed

G

Gallstones		Accept
Gastroenteritis		Accept minimum of 1 week after recovery
Glaucoma		Accept
Gout		Accept

H

Haemochromatosis	Accept
Hay Fever	Accept
Head Injury (mod-severe)	Defer 3 months
Heart Murmur	See high risk category. If asymptomatic or surgery for another reason accept with authority of specialist medical officer
Hepatitis (A, B, C)	See Infections - ACUTE
Hypertension	Accept if controlled. Defer if BP>180/100
Hyperthyroidism	Accept if controlled
Hypotension	Defer if BP<95/50; refer back to referring medical officer.

I

Immunisation	
Passive or Active	Accept
Infections - ACUTE	
Bacterial	Accept 1 week after recovery
Boils	Defer until healed
Common cold	Accept when well
Cystitis	Accept if asymptomatic for 1 week
Gastroenteritis	Accept minimum of 1 week after recovery
Hepatitis A	Defer until fully recovered
Hepatitis B	Defer until anti-HB _s status detected
	Carrier state - permanent deferral
Hepatitis C	Permanent deferral
HIV	Permanent deferral
Impetigo	Accept if asymptomatic and healed
Sore throat	Accept when recovered
Thrush	Accept when recovered
Viral (others)	Accept when recovered
Infections - CHRONIC	
Infected hip/knee prosthesis	Permanently deferred
Osteomyelitis	Defer until 6 months after recovery
Irregularity of pulse	Accept if between 50-100/min and occasional VEB; otherwise send back to referring medical officer.

J

Jaundice - Obstructive	Accept
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K

Kidney disease	
Nephritis	- acute
	- chronic
Pyelonephritis	Accept when recovered
Renal calculi	Accept if well
	Accept if asymptomatic and MSU clear
	Accept when well

L

Lipidaemia	Accept
Liver disease	Check cause. Accept with authority of specialist medical officer. See also hepatitis

Lupus erythematosus

At discretion of medical officer

M

Malaria	Previous infection	Accept once well
	Travel to area	Accept
Malignant disease		See 'Cancer'
Meniere's disease		Accept
Migraine		Accept
Miscarriage		Defer 1 week

MEDICATIONS

Many patients undergoing autologous blood collection are on long-term medication at the time of donation. These patients are generally acceptable to have blood collected, but must be assessed on an individual basis.

β -Blocker therapy is considered a relative contra-indication, but patients may be acceptable for blood collection if pulse and BP are satisfactory and collection is monitored.

Any patients on antibiotic therapy for an **active infection should be deferred**. Patients must have completed a course of antibiotics and have no sign of the infection recurring for at least 5 days before they are accepted to have blood collected.

Note: Exceptions do exist; see 'Antibiotics' below.

DRUGS

Analgesics - No contra-indications to autologous collection provided patient is clinically stable.

Anti-arrhythmic - See high risk section.

Anti-Asthmatic drugs - No contra-indications to autologous collection.

Antibiotics - Depends on why patient is on antibiotics, if long-term treatment for acne or long-term prophylaxis for U.T.I. or bronchitis - accept for autologous blood collection. Any active infection requires temporary deferral or permanent deferral (eg. infected prosthetic hip). If infection resolved and asymptomatic defer for 5 days or after cessation of treatment.

Anticoagulants and anti-platelet drugs eg. aspirin, NSAIDS (non-steroidal anti-inflammatory drugs), Warfarin, S/C Heparin. Accept for autologous collection. Aspirin/like drugs cease 5 days prior to surgery.

Anti-convulsant drugs - No contra-indications to autologous collection provided patient is clinically stable.

Anti-diabetic agents - Oral - accept; Insulin at discretion of medical officer.

Anti-histamines - No contra-indications to autologous collection provided patient is clinically stable.

Anti-inflammatory - No contra-indications to autologous collection provided patient is clinically stable. Cease 5 days prior to surgery.

Anti-malarial - No contra-indications to autologous collection provided patient is clinically stable.

Anti-neurotic - No contra-indications to autologous collection provided patient is clinically stable.

Anti-Parkinson's drugs - No contra-indications to autologous collection provided patient is clinically stable.

Anti-psychotic medication - No contra-indications to autologous collection provided patient is clinically stable.

Anti-thyroid drugs - No contra-indications to autologous collection provided patient is clinically stable.

Cardiac and anti-hypertensive drugs - See High Risk Category. No contra-indications to autologous collection providing pulse and BP satisfactory and no history of unstable angina. Care with β -Blockers - may require a longer period of supervision.

Immunosuppressive agents - (prednisolone, cytotoxics). No contra-indication to autologous blood collection provided other criteria, eg. Hb are met.

Myocarditis
Accept with authority of specialist medical officer. If symptomless then accept for hospital based blood collection with monitoring as recommended.

N

Nephritis
acute
chronic
Accept when recovered.
Accept if well.

O

Obstructive -
Osteomyelitis
Osteoarthritis
Jaundice
Accept.
Defer until 6 months after recovery.
Accept.

P

Paget's disease
Parkinson's disease
Peptic ulcer
Pericarditis
Peripheral vascular disease
Phlebitis
Pleurisy
Pneumothorax
Polycythaemia vera
Pregnancy -
Accept.
Accept.
Accept if asymptomatic.
Defer until full recovery. Then accept with authority of specialist medical officer.
See High Risk Category.
Defer until well.
Defer until well.
Accept at discretion of medical officer.
Accept.

There are few indications for autologous blood collection in pregnancy. If indicated, the Royal College of Obstetricians and Gynaecologists recommend pregnant women can have 300-500 mls of blood collected for autologous transfusion on not more than 3 occasions during the 2 weeks before anticipated delivery. The pregnant woman must also have a haemoglobin greater than 110g/L. **Note:** Since <2% of pregnant woman would be transfused, autologous collection would not appear to be indicated unless there is a specific reason to suspect that the woman will require transfusion. Routine blood collections in the third trimester of pregnancy could aggravate iron deficiency found during pregnancy or may compromise the fetus. Attending obstetrician to advise.

Psoriasis
Psychotic disorder
Pulse
Accept if localised.
Accept if stable.
Accept if 50-100/min and regular. Defer if >100 after rest.

R

Rheumatic fever
Rheumatoid arthritis

Defer until well.
Accept if other criteria are satisfactory.

S

Septicaemia
Shingles
Sprains
Stroke

Accept 6 months after recovery.
Accept after healed.
Accept.
At discretion of medical officer.

T

Tonsillitis

Tooth extraction
TIA
Thalassaemia minor
Thyrotoxicosis

Accept once recovered, or until 5 days after antibiotics completed.
Defer 1 week.
At discretion of medical officer.
Accept.
Accept if stable.

U

Ulcer peptic

Accept if asymptomatic.

V

Vaccination: Live or killed

Accept.

W

Warts

Accept unless infected.

Appendix 6

BLOOD PACK LABEL REQUIREMENTS

Blood for autologous transfusion should be identified with an overstick label * which includes the following information:

BLOOD FOR AUTOLOGOUS TRANSFUSION ONLY

COLLECTION SITE

SURNAME

GIVEN NAMES

DATE OF BIRTH

HOSPITAL NUMBER

COLLECTION DATE

EXPIRY DATE

ABO and Rh D TYPES

COMPONENT TYPE

COLLECTION NUMBER

PATIENT'S SIGNATURE

WITNESS

The patient must state their name and date of birth before signing the pack to confirm that the details on the label (apart from the ABO and Rh D type which may not be entered when the first unit is drawn) are correct. The signature can also be compared as part of a pre-transfusion checking procedure with the signature on the consent form which by then will be in the patient's notes.

* This label should not occlude the information given on the manufacturer's standard pack label.

Where possible bar-coded autologous labels and collection numbers should be used.

* **Autologous labels should be black printed text on a green background.**

AUTOLOGOUS BLOOD PACK LABEL

This is an example of an autologous label.

Appendix 7

Example 1

NOTIFICATION OF AUTOLOGOUS BLOOD COLLECTION

This form to be **sent** after first unit collected to the hospital blood bank or private pathologist performing pre-transfusion testing.

TO: _____
Hospital **or** Pathologist performing pre-transfusion testing

FROM: _____
Collection Centre Address

_____ Telephone _____ Fax _____

The first autologous unit has been collected

today _____
(date)

from _____ Surname _____ First Name _____ Date of Birth _____

It is planned that a further _____ unit/s will be collected, if possible.

The patient _____ is scheduled to have:
_____ performed
(procedure)

on _____
(date)

by _____ (surgeon) at _____ (hospital)

Example 2

NOTIFICATION OF AUTOLOGOUS BLOOD COLLECTION

To: _____

Via: _____

Please find enclosed _____ units of Autologous Blood

Collection Number	Collection Date

Collected from: _____
(NAME OF PATIENT AND DATE OF BIRTH)

is scheduled to have a _____
(TYPE OF SURGERY)

on _____ at _____
(DATE OF SURGERY) (NAME OF HOSPITAL)

being performed by _____
(NAME OF SURGEON)

If you have any queries regarding these units, please call _____ on _____

Time and date despatched: _____

Time and date received: _____

Please phone _____ on receipt

Appendix 8

REFERENCES

1. Macpherson CR & Grindon AJ. Ethical issues in autologous transfusion. *Transfusion* 1995;35:281-283
2. Vanston V, Smith D & Eisenstaedt R. Should patients with human immunodeficiency virus infection or chronic hepatitis donate blood for autologous use? *Transfusion* 1995;35:324-330
3. Yomtovian R, Kelly C, Bracey AW, McCraney SK, Renner SW, Williamson KR & Attar S. Procurement and transfusion of human immunodeficiency virus-positive or untested autologous blood units: issues and concerns: a report prepared by the Autologous Transfusion Committee of the American Association of Blood Banks. *Transfusion* 1995;35:353-361
4. Gould SA & Forbes JM. Controversies in transfusion medicine: Indications for autologous and allogeneic transfusion should be the same: Pro. *Transfusion* 1995;35:446-449
5. Miller RD & von Ehrenburg W. Controversies in transfusion medicine: Indications for autologous and allogeneic transfusion should be the same: Con. *Transfusion* 1995;35:450-452
6. National Heart, Lung, and Blood Institute Autologous Transfusion Symposium Working Group. Autologous transfusion: current trends and research issues. *Transfusion* 1995;35:525-531
7. National Heart, Lung, and Blood Institute Expert Panel on the Use of Autologous Blood. Transfusion alert: use of autologous blood. *Transfusion* 1995;35:703-711
8. Rutherford CJ & Kaplan HS. Autologous blood donation - Can we bank on it. *N Eng J Med* 1995;332:740-742
9. Etchason J, Petz L, Keeler E, Calhoun L, Kleinman S, Snider C, Fink A & Brook R. The cost effectiveness of preoperative autologous blood donations. *N Eng J Med* 1995;332:719-724
10. AABB Anonymous Autologous Survey Report. AABB FaxNet #220
11. RCOG Autoguidelines

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