



# **BRITISH REGIONAL HEART STUDY**

## **BRHS 20 year follow-up (Q20)**

### **Physical examination protocol**

#### **1998-2000**

British Regional Heart Study:

A follow-up study of cardiovascular risk factors and outcomes in older men

Funded: BHF

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## **1.0 BACKGROUND**

The British Regional Heart Study (BRHS) is a unique national prospective investigation into the fundamental causes of coronary heart disease (CHD), hypertension and stroke in men, including the reasons for the marked regional and social class variations in cardiovascular disease in Great Britain.

In 1978-80, 7735 men aged 40-59 were drawn at random from one general practice in each of 24 towns in England, Wales and Scotland and had a detailed assessment including a questionnaire on personal and family factors, an electrocardiogram, lung function tests and a blood sample for 24 biochemical and haematological measurements. Serum samples from men in 18 towns were deep frozen (-20°C) for later studies.

In 1998-2000, 20 years after baseline, a detailed remeasurement of the surviving men from the British Regional Heart Study cohort will be carried out. Remeasurement will be based on all 24 study towns. All survivors in those towns (N = 5800) will be invited to attend for remeasurement. Allowing a response rate of 80%, approximately 4500 men will be remeasured. The original General Practice or a Health Clinic in the town will be used as the survey base. Transport will be arranged for frail or disabled participants. Men who have migrated (i.e. moved) from the study towns will be invited for remeasurement, with a choice of attending either in the town where they were originally measured, or at the London Research Centre. Travel expenses will be paid

### **1.1 Who is invited to take part?**

In each town all surviving men (approximately 250) who took part in the original BRHS in 1978-1980 and who are still alive have been invited to attend.

Participants who have migrated from the original town have been invited for remeasurement, either :

- (a) returning to their original town
- (b) going to another BRHS town which is closer and more convenient for them
- (c) attend a London examination centre

Q20 invitation stationery – **(Appendix 1)**

### **1.2 Liaison with General Practices**

The study will focus on the single General Practice in each town which was originally involved in the study and where participants were recruited from. Most study participants are still registered at these general practices.

By the time the Study Field Team visits a particular town, the town Practice will already have been visited by a member of the BRHS team and a meeting held with the Practice Staff to confirm the survey arrangements in the town. The survey will take place either within the Practice or (where this is not possible) in a local Health Clinic or other Health Authority premises.

### **1.3 Invitations to participants**

The study participants have received a letter inviting them to take part in the study one month in advance. Where a participant is still registered with the original study Practice in the town, the invitation letter is signed by the Practice partners. For participants who are no longer registered

in the original study Practices, an invitation letter is organised by the BRHS manager and sent directly from the British Regional Heart Study directors.

The package received by the study participants will include:- **(Appendix 1)**

- the main invitation letter
- an appointment card (with tear-off reply slip)
- a questionnaire on Physical Activity and Diet (Yellow)
- an information sheet
- a reply paid envelope

The participants are asked to return:-

- the reply slip confirming, changing or declining their appointment
- the self administered Physical Activity and Diet questionnaire **(Appendix 2)**, which aims to provide detailed information on the diet and physical activity patterns of the participants

In preparation for the survey visit they are asked:-

- to fast overnight or (in the case of appointments at or after 11.20) for about five and a half hours
- to wear clothing which is easily adjustable
- to bring reading glasses and their medications or a prescription list.

#### **1.4 Framework of assessments being made**

A team of three trained research nurses will comprise the field study team who will carry out all the physical measurements in the 24 BRHS study towns. In addition, at each examination centre there will be a receptionist, recruited locally, to meet and greet the participants and prepare the participants for the physical examination.

On arrival the participants will present themselves to the receptionist where each participant will:-

- be logged in and have documents prepared
- prepare for assessment (given a dressing gown etc)
- receive local anaesthetic cream (if required)
- receive the self-completed questionnaire and data sheet on a clipboard (all labelled)

The participants will proceed from the Receptionist to Workstation 1 and Workstation 2 in order, returning to the Receptionist before departing.

**At Workstation 1**, each Participant will:-

- have measurements of anthropometry
- blood pressure
- lung function/spirometry

**Workstation 2**, each Participant will:-

- be asked to provide information on medications
- have a resting electrocardiogram
- provide a blood sample
- be asked about consent for record tracing, result recording, blood storage

**Workstation 3:** The research nurse operating this station will have a participant contact free day and will prepare the blood aliquots and assist the receptionist as required

The participants will proceed from the Receptionist to Workstation 1 and Workstation 2 in order, returning to the Receptionist before departing.

The Research Nurses **will rotate** between the workstations daily.

### **Scheduled dates for the physical examination in each study town 1998/2000 (Appendix 3).**

List of dates when the physical examination was carried out in each BRHS study town.

## **2.0 RECEPTIONIST PROCEDURES**

### **2.1 Equipment needed for the Receptionist workstation**

- Log Book
- The 20 year follow-up survey (main) questionnaire Q20 (**Appendix 5**)
- Physical examination data collection forms ('Data sheets') (**Appendix 4**)  
(blank forms will be at the back of the pack for unconfirmed appointment)
- Labels for questionnaire
- Appointment Schedule \* = confirmed , ? = Unconfirmed
- Removal list with name of current GP
- Travel Claim Cards for Removals to be reimbursed
- Repeat test request information in plastic folders
- Fasting instructions
- Clip boards x 6
- Pens, Stapler, Scissors, Ruler, Paper clips etc
- Emla cream, tegaderm, tourniquet, dish
- TNT receipts etc.
- Kettle, toaster, refreshments disposables etc
- Dressing gowns and hangers etc x 5
- 1 Folders for ECGs
- 1 Folder Data Sheets

### **Weekly Time sheets Approximately**

- 8.45-12.45 Morning Session
- 1.45- 5.45 Afternoon Session
- 40 hours week due to early finish on Fridays

## 2.2 Receptionist Duties on screening site

Participant arrival – greet and ONLY THEN:

### 2.2.1. Participant Registration

- Enter participant's serial number, batch number, full name, and time of arrival in log book
- check the identity of each participant on arrival at the centre, including name, date of birth, address and G.P. - log any changes
- If the participant is a Removal (i.e. no longer in original study practice), check GP name & address on list supplied Tick if correct or amend
- log arrival time and any change of address/G.P.
- Prepare participant clipboard with:  
Data sheet and a labelled Main Questionnaire(blue)
  - If Participant is a Removal (i.e. no longer registered at original study practice) also attach a travel claim
- If a Participant does not attend - mark **DNA** (did not attend) on the appointment list in **red pen** with a line through his name

### 2.2.2 Preparation for assessment

Ask the Participant

- to remove clothes (above waist) and shoes and put on a dressing gown (and slippers if necessary)
- give him a carrier bag for his clothes (Recommend using bag as this prevents loss of belongings)
- to pass urine if needs to do so before being measured (we are not planning to test urine in the protocol)
- if they would like anaesthetic cream for the blood test
  - apply with dressing to the inside of the elbow or ask a research nurse for help.
  - if a vein can be easily identified in the left arm, Receptionist will apply local anaesthetic cream. If not, Research Nurse 3 will be called to advise.
- to complete the main 20 year follow-up survey questionnaire (Blue) while waiting for the Research nurse from Workstation 1
- The receptionist will direct the Participant to Research Nurse at Workstation 1

### 2.2.3 Participant documents

Each participant receives a clipboard with attached with documents which he takes with him to the different workstations:

- The physical examination data collection form(data sheet). DOB ticked.
- The main 20 year follow-up survey questionnaire (Blue) labeled with participant study number
- Prepare travel claim form for those living outside area (removals/migrants or special cases requested by participant)
- Information sheet for Repeat testing (1st week only, to be seen again in 2nd week)

#### 2.2.4 Removals(migrants)

Participants who are no longer registered at the GP practice they were recruited from at baseline 1978-80)

##### Reimbursed for travel expenses

- We have offered to reimburse travel expenses if participant has moved to a new GP. Ask how much their travel has cost, put this on the travel claim form and attach to clipboard. The Research Nurse will give him the money at the end of the examination.
- On his return to reception the claim will be signed if he has accepted payment. Give the claim form a number and enter amount in petty cash book
- If participant has a receipt of travel expenses keep this on a green tag with the cards etc.

#### 2.2.5 Repeat measurements ( 1st week only )

Repeat measurements. The importance of making replicate measurements in a section of the population to estimate the consequences of measurement imprecision is now well recognized. A random sample of 5% of all study participants will be invited for a complete repeat survey.

- At the end of their physical examination, if the participant has undergone **all** the assessments , he will be asked to volunteer to return for a repeat examination and blood test. If he agrees to return, then:
  - Give participant a new appointment and new serial and batch number from allocation at the end of the appointment listing, enter his name against this new number
  - Add fasting instructions to day slot allocation on card
  - Add the participant's details to the APPOINTMENT list, inform nurses at the end of the day
  - When this participant comes back for the repeat examination write his NEW SERIAL NUMBER / NEW BATCH NUMBER / OLD BATCH NUMBER and other details in RED ink.
- If No blood sample was obtained this participant should not be invited to return

#### 2.2.6 Other information to be recorded in logbook

- If **no blood sample** was obtained this will be recorded on the front of the questionnaire by the nurse.
- Please put this in the logbook in **RED** ink e.g. No blood (Failed or Refused as appropriate)

### 2.2.7 End of Assessment: participant returns to Reception

The Receptionist will

- Take the clip board from the participant
- Ask the participant to get dressed
- Check that he has completed ALL PAGES in the main 20 year follow-up survey questionnaire (Blue). If not ask participant to complete it before leaving.
- Ask if the questionnaire on Physical activity and Diet (Yellow) was returned via the post, issuing duplicate if necessary
- If participant willing to return for the repeat measurements- please provide appointment card see above
- Enter Log out time in logbook
- Give the Participant Tea / Coffee and Toast / Biscuits

### 2.2.8 Other Duties

- **Questionnaires** - file in serial number order
- **Data sheets** - file in batch number order (3 digits)
- **ECG 's** folded in half and clipped together in attendance order with listings of ECG's on top the nurse will provide this for you

### 2.2.9 General

- Make tea & coffee for nurses and Participants
- Keep things organized
- Take delivery of Dry Ice on Mondays & Wednesdays. Keep receipts
- Give the TNT courier the blood samples, Research nurse 3 will the packed samples to you. Keep docketts

#### **Purchases**

- Buy Bread & Milk & Newspapers for busy days -
- Get money from Petty Cash - File receipts on a green tag and enter amount in the petty cash book

## MEASUREMENT PROCEDURES/PROTOCOL

### 3.0 Workstation 1 PROCEDURES

Research Nurse for workstation 1 will be responsible for setting up and calibrating measurement equipment for this workstation. (q.v.)

### 3.1 CALIBRATION AND CHECKING OF INSTRUMENTS

The following calibration steps should be undertaken every morning:-

#### 3.1.1 Stadiometer - Harpenden stadiometer

Please check recorded height of standard 1 metre ruler once instrument set up, and record result. (This ensures that recorder has not become displaced)

#### 3.1.2 Scales - Soehnle digital electronic scales

The zero setting on the scales should be checked by pressing the reset button with the scales empty. This should be 00.0. The result should be recorded. If there is a problem:-

- check that correct adapter voltage (9.0 volts) is being used
- if persists, please discuss with base at earliest convenience

#### 3.1.3 Spirometer/ Vitalograph

Instrument: Vitalograph Compact II instrument (Vitalograph Ltd, Buckingham, United Kingdom) , with calibration scyringe & printer paper, disposal mouthpieces, milton cleaning solution.

Please ensure that spirometer is turned on early and left to warm up before testing.

- Check paper supply.
- Enter 'set up' mode and go to 1 'accuracy + calibration'. when the machine invites you to blow air through the flowhead to equilibrate temperatures, please blow 3 litres through slowly, then 'continue'.
- Set ambient (room temperature) consulting the electronic thermometer.
- Pump 5 litres of air slowly (each litre must take more than 1 second) through the flowhead to calibrate and then 'exit'.
- Read in 5.00 as reference volume and enter.
- Update calibration if error is 1% or greater.
- 'Retest' by putting a further 5 litres of air through the flowhead. If error is 1% or greater update calibration again and retest one more time.
- If calibration will not settle, raise threshold for correction to 3%.
- When you have finished, move to main menu and to FVC test, and when the machine says 'perform blow', blow 1 litre through calibration syringe and record the result.
- **Recalibrate the Vitalograph as before for the afternoon Session.**

### 3.1.4 Dinamap blood pressure recorder

Instrument: Dinamap 1846 oscillometric blood pressure recorder & selection of BP cuffs, printer roll Insertion tape (CMS Ltd, London, United Kingdom).

- check paper supply in the printer
- put machine in auto mode and use set button to set interval between readings at one minute

The calibration procedure is as follows:-

- Set up the instrument with the adult cuff to be used in place. Insert the calibration kit on one of the cuff connector leads. Turn the instrument on with the SET button held in. The CYCLE display should show 88, and will continue to do so while the instrument is in calibration mode. The machine is now in calibration mode 1.  
Display read:- CYCLE 88  
MAP 0  
All others blank
- Inflate the cuff until the mercury column reads 200mm Hg (top of the mercury meniscus). RECORD the MAP result. Check that there are no leaks (pressure remains above 190mmHg for at least 10 seconds).
- Check MAP readings at 150, 100, 50, 0mmHg on the mercury column, RECORDING the result each time.
- If leaks in system:-
  - try replacing cuff with reserve
  - try replacing blue cable with spareIf problem not solved discuss instrument servicing/replacement with Lead investigator Peter Whincup at earliest opportunity

### 3.2 MEASUREMENTS

Procedures with each participant will be as follows:-

- Research nurse will greet participant, checking identity on arrival and taking the clipboard with questionnaire and data sheet.
- participants should be asked to remove shoes and to remove any heavy or bulky item from pockets and place in a receptacle (bowl)

**The measurements will be taken in order as follows:-**

#### 3.2.1 Height

Participants will be asked to stand on the stadiometer (on the feet placement card). The Research Nurse should check for the following points:-

- FEET: ankles should be together and resting on the bar at the back,
- ARMS: should be resting by sides, not behind or in front,
- HEAD: participant should be looking straight ahead (i.e. lower edge of orbit is in line with external auditory meatus [earhole])

Taking the measurement:

- The index fingers of both hands should then be placed below the mastoid process on each

side. During inspiration the increase in height should be maintained and during expiration gentle stretch should be applied. The measurement is recorded at the end of expiration. Care is needed to ensure that the participant does not stand on tiptoe.

- Record any problems which the participant has which may lead to underestimation of height in the 'problem with height' box
- Reasons may include problem with **balance/standing OR problem with posture**

### 3.2.2 Weight

- Before standing on the scales ask participant for his estimate of his current weight, if known.
- Weight is recorded on the Soehnle digital electronic scales. Press button before asking participant to step on.
- Participant should stand reasonably straight if possible - leaning to one side (or forwards) can affect the weight recorded
- If the weight registered is between two 0.1 kg marks, take the lower one.

Then ask

- whether weight has changed in the past 3 years

If has changed, record

- whether change was intentional
- specific reasons for change
- what is the most that the participant has ever weighed?

### 3.2.3 Arm circumference (right arm)

- With the participant's right arm flexed to 90°, identify the acromial process and the lower tip of the olecranon.
- Using the Holtain steel tape measure, identify the midpoint of the upper arm and mark with a felt tip pen.
- With the arm hanging loosely at the side the arm circumference should be measured at this point to the last completed millimetre.

### 3.2.4 Skinfold thicknesses (right side) using calipers

- Explain that you want to measure the thickness of the tissue behind the arm and shoulder.
- Measure the **triceps skinfold** at the midpoint of the upper arm as marked above. Measure the **subscapular skinfold** immediately below the tip of the scapula.
- In each case grasp the skinfold firmly (not too firmly!) and apply calipers immediately below fingers. Record reading as soon as caliper reading stabilizes.
- Record first measurements in each site and then repeat procedure.

### 3.2.5 Blood Pressure (right arm)

The participant should sit down at the measurement table and rest their right arm on the table. This will ensure that the participant is sitting with their upper arm at chest level.

- **Select the cuff size** in accordance with the measured arm circumference. Between 28.0 and 35.0cm use standard adult cuff. Less than 28.0 use small adult cuff, more than 35.0 use large adult cuff. The cuff should be placed around the upper arm with the bladder centre over the artery.
- **Check that the participant is familiar** with having his blood pressure taken (he should have had it done once!). Explain that:
  - you plan to take 4 measurements one minute apart, the first two sitting and the second two standing
  - the cuff will inflate and slowly deflate automatically
  - encourage the participant to keep the arm still and not to talk during measurement
- The Dinamap should have been set to take repeated measurements at one minute intervals. To take two measurements at one minute intervals, switch the AUTO/MANUAL switch to AUTO. The machine will immediately inflate the cuff and the first reading will begin.
- Once the cuff is deflating the participant should be warned that the machine will make a funny noise as it prints out the results.
- The second measurement will be made after a one minute interval on the Dinamap's automatic cycle. While waiting for the second measurement, the first result should be recorded and entries on
  - 'room temperature',
  - ethnic origin should be made, with a note on the
  - presence of alcohol and
  - presence of obvious dementia where appropriate.
- Once the second reading is complete, ask the participant to stand up, allowing the right arm to rest loosely by his side. Allow the instrument to continue with two additional measurements, and proceed with waist and hip measurements while these are being done.

### 3.2.6 Waist circumference

This should be measured with the participant standing with feet one foot apart on a marked template.

- The waist should be identified as the mid point between the iliac crest below and the lower edge of the ribs above, i.e. measured at the sides.
- Pass the tape around the waist (for large participants, ask them to help passing the tape around) and reinsert at front, positioning level at the waist.
- Ask participant to breathe out gently and record measurement at the end of expiration to the last completed millimetre.
- If you are not satisfied about the accuracy of your measurement, record a 1 in the appropriate coding box.
- Repeat the measurement

### 3.2.7 Hip circumference

This is measured by placing the tape measure around the hips at the point of maximum circumference.

- The tape should be horizontal and the gluteal muscles not contracted. Record to the last completed millimetre.
- If you are not satisfied about the accuracy of your measurement, record a 1 in the appropriate coding box.
- Repeat the measurement

### 3.2.8 Spirometry

- Preliminary explanation to participant. "This machine measures the size of the lungs. What I want you to do is to take a very big breath in and to blow out as hard and as long as you can, until your lungs are empty. Watch me."
- (Demonstration by nurse)
- Participant then practices: ensure that:-
  - full breath in
  - lips tightly around mouthpiece
  - long hard blow right to the end
- Before measurements made check about participant's use of inhaler and about the time of previous inhaler use.
- Before starting the test enter the participant's 6 digit serial number and press the 'enter' key in order to proceed.
- On the main menu press 'FVC test'. The machine will then say 'perform test', indicating that it is ready for the first blow.
- We want to record three definitive blows.
- Please ensure that you encourage the participant during the blow, particularly towards the end, by saying 'blow...blow...blow' (or other agreed text).
- After each blow, press 'end test' to expedite results and then 'retest' to go on to the next test.
- The machine takes a short period to calculate results, after which FVC, FEV1 and PEF figures will then be displayed on the screen. Once the results of each of the first two blows are displayed press 'retest' and the machine will display 'perform test' to indicate readiness for the next reading.
- Once the result of the third reading is recorded, check the 'best test variation' which is recorded on the screen. If best test variation is more than 5% after 3 readings, please take an additional reading by pressing 'retest' again.
- If you are not satisfied that the participant has done an adequate blow on at least one of the readings, please enter 1 in the 'problem' box.
- Once the 3 (4) readings are complete, press 'end test' to return to the main menu. Press 'print' and then 'selected' to print out the results. The printed output should be stapled onto the front of the data sheet in the space provided. Then press the 'new patient' category and agree to delete old patient's results. This will leave the machine waiting for the next participant's serial number to be entered in due course.

### **3.2.8.1 In the event of Vitalograph printer failure**

Please record the number of readings and the best test variation directly from the screen before leaving the test screen. Then on main menu press option 5, display results and write down the other parameters on the data sheet.

### **3.2.9 Completion**

- Participant should remain in dressing gown and proceed to Research Nurse 2
- Ensure that any possessions are restored or stored for collection later.
- Medicines/records should be taken through to Research Nurse 2.

### **3.2.10 At end of day**

- General clearing-up
- Coding of questionnaires

## **4.0 Workstation 2 PROCEDURES**

Research Nurse 2 will be responsible for setting up this station

### **4.1 Preparation**

Research nurse on arrival to:

- Set up relevant equipment
- Prepare blood syringes and collection tubes for the morning and (if possible) afternoon session, following the appointment list for the day

### **4.2 Measurements**

Research Nurse 2 will greet the participant, checking his identity on arrival and taking the data sheet and questionnaire.

#### **4.2.1 Questionnaire (20 year follow-up survey (main) questionnaire (Blue)) (Appendix 5)**

- Ask the participant whether he had any problems filling in the questionnaire; check any specific items.
- Ask the participant to provide their medicines etc and to remove dressing gown and lie on the couch.
- Nurse will record medicine list on the questionnaire (question 18.0, 18.2) (**Appendix 5**) while the participant is undressing and will check the indications for medicines
- Final questions including time of last meal will also be recorded on the questionnaire (question 20.0) (**Appendix 5**) at this point.
- For the next stages the participant should lie as flat as is possible on the couch, though a pillow is quite acceptable.

#### **4.2.2 Electrocardiogram**

**Instrument:** ECG, Siemens Sicard 460- 12 lead ECG(crocodile clips, electrodes, printer paper).

ECG computer interpreted - University of Glasgow ECG core laboratory based at Glasgow Royal Infirmary. Analyzed and coded in accordance with Minnesota Coding definitions.

- Place ECG electrodes and record electrocardiogram (separate instructions will be required via PMacF).
- Remove the ECG electrodes and the local anaesthetic patch, to allow time for any local oedema to subside before blood taking.

## Other measurements taken while participant is lying down on the couch.

### 4.2.3 Ankle oedema

- Check for presence of **ankle oedema** and for presence/absence of all four foot pulses.

### 4.2.4 Venous ulcers

- Check for presence of **venous ulcers** on the shin/above ankles

### 4.2.5 Bioelectrical impedance analysis (BIA)

Check whether participant has pacemaker

- If not, participant lies with legs, arms uncrossed, forearms pronated for **measurement of bioimpedance** as shown on instruction sheet (Bodystat).
- Nurse to **record coefficient(impedance value) only.**
- Bioelectrical impedance analysis (BIA) is a method for measuring body composition based on the rate at which an electrical **current** travels through the body measured in Ohms ( $\Omega$ ). Body fat (adipose tissue) causes greater resistance (impedance) than fat-free mass and slows the rate at which the current travels.
- Fat-free mass was determined by bioelectrical impedance analysis (BIA) using a Bodystat 500 (Bodystat Ltd, Douglas, uk) and the Deurenberg et al equation  
<https://link.springer.com/content/pdf/10.1007/s12603-013-0336-9.pdf>

### 4.2.6 Blood sampling

- The blood sample will be taken at the end of the examination, after the electrocardiogram is completed.
- The blood sample should be taken with the participant lying down.
- Check whether the participant has had previous problems with blood sampling.
- Alcohol swabs will be provided for skin cleaning - allow to dry after use.
- A tourniquet may be used throughout. Wear the rubber gloves provided for taking the sample. A 21 gauge butterfly needle (or Sarsted needle) should generally be used; a small supply of 23 gauge needles will also be supplied for exceptional use.
- If blood is not obtained at the first attempt, a single further attempt may be made in the opposite arm if the participant consents. No further attempt to obtain blood should be made.
- Each participant's blood collection tubes will be prepared in advance by the nurse in a polythene bag with an identification label on the front and individual tube labels throughout. Please check the label against the data sheet. The tube labels will have the participant's batch number and the full serial number for identification.

The first priority tubes are:-

green	citrate tube	code AE	9.0 ml
red	EDTA tube	code FJ	9.0 ml
yellow	fluoride tube	code K	2.7 ml
white	serum tube	code WN	9.0 ml

The second priority tubes are:

red	EDTA small	code T	2.7 ml
yellow	fluoride	code U	1.2 ml
white	serum tube	code OQ	9.0 ml

After venepuncture, raise participant's arm and encourage participant to press firmly on cotton wool pad to avoid bruising. Plasters are provided. Please check for elastoplast allergy - if present, use cotton wool and tape.

After venepuncture the tubes should be gently agitated and placed in a rack.

Please record:-

- the time of venepuncture
- the full success/partial success/failure of sampling
- if partial success, which of the 'primary' collection tubes have no blood in them
- Samples can then be passed directly to Research Nurse 3 with the data sheet .

#### **4.2.7 Written consent to follow-up study (Appendix 5)**

- Nurse 2 should then take the participant through the consent procedure. (consent to follow-up participant's future health through his health records, passing on test result information to his G.P. and consent to storing his blood sample for future use). The consent form is contained in **question 21.0** of the **20 year follow up questionnaire(blue questionnaire)**. (Appendix 5).

#### **4.2.8 Participant expenses**

- If the participant is a 'migrant' (ie no longer registered at the original study General Practice), Nurse 2 should confirm travel expenses and reimburse as required.

#### **4.2.9 Recruiting to the Repeatability/Variability Study**

- If the participant is a non-migrant (i.e. registered at original study General Practice) seen during the first week of the study, she should ask whether he would be prepared to return for a further check during the second week of the study (measurements only, no questionnaire).

##### Possible text

"I wonder whether you would be willing to help us with our quality control procedures and return next week for a repeat measurement. This helps us to find out how much the measurements we are doing vary from day to day and helps us to assess how important the different factors are in relation to heart disease. Is there any possibility that you would be prepared to come back next week for a repeat check up (measurements and blood test, but no questionnaire)?"

Nurse 2 will mark on her appointment list those participants invited for repeat and whether they agree. If the Participant agrees, Nurse 2 will give him a card to take to the receptionist. The receptionist will record the name of each participant in the log book and provide a new appointment card with fasting time recorded.

A maximum of 12 participants per town should be recruited.

#### **4.2.10 Research Nurse 2 tasks at the end of day**

- Transmit ECGs to Glasgow

## 5.0 Workstation 3. Procedures

### Equipment and consumables required:

BOC Dry Ice, Aliquot tubes & Caps, Electronic pipettes, manual pipettes, centrifuge, mini freezer, TNT courier labels, Camlab aliquot boxes, metaphosphoric acid.

Research Nurse 3 will be responsible for setting up this station. Research Nurse 3 will have sole responsibility for the organization and handling of blood samples. Gloves and aprons will be provided. Where necessary, she will assist the receptionist in placing local anaesthetic cream.

### 5.1 Prepare the blood aliquots

At the start of the day

Before the first samples come through there should be time:-

- to label sample tubes for the day
- to prime tube F with metaphosphoric acid. 1 ml of metaphosphoric acid is placed in the tube, using the accurate manual pipette. (The mixture is made up fresh each town, 10 grams of metaphosphoric acid to 100 ml of deionized water). By the end of the study this was made up weekly by the nurses.
- to collect dry ice for use during the day

### 5.2 Handling of blood samples for each Participant

#### 5.2.1 Tubes T and U

- Tubes T and U will be set aside, as these are whole blood samples which do not require additional preparation. They should be stored in batch number order in a cool place (**not** frozen!) for TNT collection later in the day to be delivery overnight to Whittington Hospital.

#### 5.2.2 Citrate tube (A-E), EDTA tube (F-J)

- Special priority should be given to the handling of the citrate tube (A-E), which is for coagulation factors. However, the handling of the EDTA tube (F-J) and the glucose tube (K) can take place alongside this one.

#### Centrifuging

After each pair of participants, the citrate tubes (A-E), the EDTA tube (F-J) and the glucose tube (K) should be spun at 3500 rpm for 5 minutes and then aliquotted. Ideally this will be completed within an hour of collection.

#### Aliquotting

##### Citrate tube A-E is aliquotted as follows:

Into 5 equal 1 ml aliquots A 1.0 ml, B 1.0 ml, C 1.0 ml, D 1.0 ml, E 1.0 ml [any extra to tube E] (use electronic pipette, discard pipette after use). Take particular care with this tube to ensure the buffy coat layer is untouched.

##### EDTA tube F-J is aliquotted as follows:-

Into F 0.5 ml using accurate manual pipette

Into G 0.5 ml, H 0.5 ml, I 2.0 ml, J 1.5 ml [any extra to tube J] (using electronic pipette, discard pipette after use)

### **Freezing**

These aliquot tubes should be snap-frozen in dry ice once separated. Once snap frozen, they can then be placed in the separate boxes labelled A-J in the -20°C freezers in batch number order.

### **Residues**

The cell residues of the original citrate tube A-E and the EDTA tube F-J should be kept and placed in the freezer at convenience in bags of seven.

#### **5.2.3 Glucose tube (K)**

- The glucose tube K should be aliquotted using the hand bulb pipette into tube K (1.2 ml or so - tube slightly more than half full).
- They can then be transferred twice daily to the boxes labelled K in the -20°C freezer in batch number order; no snap freezing is needed.
- The residue of the first tube K can be discarded.

#### **5.2.4 Serum tubes W-N and O-Q**

- As time permits, the serum tubes W-N and O-Q should be dealt with.
- They should be allowed a minimum of 30 minutes to settle before centrifuging.

### **Centrifuging**

They should be centrifuged at 3500 rpm for 10 minutes. A small number of tubes may not separate well and require recentrifuging at 4000 rpm for a further 5-10 minutes.

### **Aliquotting**

After centrifugation they should be sorted into pairs for each individual; each pair should be aliquotted in turn. The allocation of the two tubes should be sorted in order as follows; do W-N tube first, and aliquot as far as it will go. Serum from W-N and O-Q is interchangeable - can be used for top ups if needed. Both of these can be done with one electronic pipette.

- Tube W 1.5 ml, L 0.5 ml, M 0.5 ml, N 0.5 ml
- Tube O 1.0 ml, P 1.0ml, Q 1.0ml [any extra to tube Q].

### **Freezing**

These aliquots should be transferred into the appropriate boxes L to O and placed in the -20 freezer and placed in batch number order; there is no need to snap freeze the samples.

### **Residues**

The cell residues of the serum tubes L-N and O-Q can be discarded.

Blood aliquot plan is in **Appendix 6**.

## **5.3 Documentation of blood sampling**

### **5.3.1 Paper printouts**

For the tubes which will be most rapidly analysed, which are:-

- tube T (full blood count)- Whittington Hospital London N19- Couriered Daily

- tube U (carboxyHb) - Whittington Hospital London N19 - Couriered Daily
- tube W (biochemistry) - Chemical Pathology Royal Free Hospital NW3
- tube K (biochemistry) - Chemical Pathology Royal Free Hospital NW3

it will be necessary to mark on a paper printout which samples are not present. For tubes T and U this will need to be updated regularly and checked before samples collected at 2.00 p.m. The listing will need to be cut at the collection point and later afternoon samples will go with the following day's material.

A summary for each of tubes W and K will be needed for the whole town.

A summary of all other major tube categories will also be made.

### **5.3.2 Data sheet blood sample documentation**

It is very important that we are aware of any tubes which have **not** been filled. These should be recorded on the data sheet as soon as possible. It will not be possible to make a final data sheet entry for each Participant until **all** that Participant's tubes are dealt with.

The default code will be 'all tubes filled? yes = 1' No other entry will then be needed.

If all tubes filled? no = 2 we then need to mark the individual tubes which have **not** been filled. Tubes which have blood in, even if short, should be considered as filled for this purpose.

### **5.4 Problems - Insufficient sample.**

Simply fill as many tubes as possible from what has been collected, in the usual order.

### **5.5 Problems - Blood into the wrong tubes.**

The samples should be left in and the tubes relabelled in biro (not felt-tip) - (spare blank labels might be helpful).

### **5.6 At the end of the day**

- Clean out centrifuges as needed
- Ensure that samples are all packed appropriately into their receiving boxes (tube A, tube B etc) and that no samples are still on dry ice.
- Set pipette buoys to charge
- Return the complete days set of completed datasheets to reception.

## **6.0 REPEAT MEASUREMENTS**

A subset of non-migrant participants seen in the first week of the study will be asked to return for a repeat measurement during the second week of the study. The aim is to obtain remeasurements in about 5% of the total. This will involve 10 participants per town (suggest we attempt to recruit 12).

These participants will be recruited by RN2 from the outset. Need to be clear about who invited and who agreed. The Receptionist will book them an appointment at the end of the survey. For their second visit they will be provided with one of a pre-prepared list of supplementary serial numbers, which will be allocated by the Receptionist at the time of booking.

On the return visit, the Participant will skip the questionnaire, but will go through the remaining aspects of the measurement and blood taking procedure as before.

## 7.0 FEEDBACK OF RESULTS

When the participant consents, results will be fed back to the participant's G.P.

These will include :

- a verified copy of the ECG tracing
- Height, Weight
- Body mass index with cut offs as a comment,  
20 or less = underweight  
>20-25 = acceptable  
>25-30 = overweight  
>30 = obese
- BP : Systolic BP (mean of 2 readings, minus 8 mm)/ Diastolic BP (mean of 2 readings)
- **Blood results**
- Biochemistry include:  
Total, LDL, HDL cholesterol and triglycerides, blood glucose, urea, k, na, creatinine, urate, tprotein, alb, bili, alk phos, ast = aspart transam, alt = alanin transam  
ggt = gamma gt. (exclude mg ca corr ca po4)
- Haematology include: wbc, hb, platelets, rbc, hct, mcv, mch, mchc only

**Abnormal values** as defined by the laboratory will be indicated with a star next to the abnormal parameter. A copy of the ECG with report will be attached to this output.

A template of results sheet sent to participant's GP is in **Appendix 7**.

Protocol for reporting abnormal values requiring more urgent attention are summarized on the next section.

### 7.1 MARKEDLY ABNORMAL RESULTS

During study measurements- The only abnormalities which are likely to be identified during the study measurements are a high blood pressure reading or an abnormal electrocardiogram.

#### 7.1.1 Action for high blood pressure readings

##### Comparability issue

Bear in mind that the Dinamap records systolic pressure about 8mm Hg higher than the mercury

sphygmomanometer; diastolic readings are virtually identical. This is taken into account in the following recommendations, which refer to actual DINAMAP readings.

#### Diastolic pressure readings

Average 120mm Hg or more: severely raised

Average 100-119mm Hg: moderately raised

#### Systolic blood pressure readings

Average 210mm Hg or more: severely raised

Average 180-209mm Hg: moderately raised

#### **Severely raised BP**

If either systolic or diastolic pressure is **severely** raised, should tell the Participant:-

'Your blood pressure is **high** today. Has your blood pressure been high before, or have you received treatment for high blood pressure?'

(If no), 'Blood pressure can vary from day to day, so that one high reading does not necessarily mean that you have high blood pressure.'

(All) 'You would be well advised to arrange to see your doctor **within a week** to have a further check on your blood pressure. I will give you a card with a note of your blood readings today to give to your doctor' (Copy of card/ template for reporting abnormal results is in **Appendix 8**).

#### **moderately raised BP**

If either systolic or diastolic pressure is **moderately** raised, should tell the Participant:-

'Your blood pressure is **on the high side** today. Has your blood pressure been high before, or have you received treatment for high blood pressure?'

(If no), 'Blood pressure can vary from day to day, so that one high reading does not necessarily mean that you have high blood pressure.'

(All) 'You would be well advised to arrange to see your doctor **during the next two or three weeks** to have a further check on your blood pressure. I will give you a card with a note of your blood readings today to give to your doctor'

Direct notification of GP - to be discussed with participant (participant consent is required)

#### **7.1.2 Abnormalities on Electrocardiograms**

Always consider the state of the Participant first in interpretation. If the Participant is well and symptom-free, threshold for rapid action on the ECG will be higher.

If the ECG specifies 'acute myocardial infarction' ask the Participant about recent chest pain, breathlessness or other symptoms of ill-health and about any previous history of heart trouble. Irrespective of answers to these questions, should refer Participant directly to G.P.

If the ECG specifies digoxin toxicity and the Participant is taking digoxin or any other cardiac glycoside, he should be referred to the G.P. directly.

### **7.1.3 Abnormalities on biochemical/haematological tests**

Results which should be phoned through to the General Practitioner directly would include:-

- blood glucose above 15 mmol/L (provide urea and electrolytes also)
- blood urea above 20 mmol/L
- serum potassium below 2.5 mmol/L or above 6.0 mmol/L
- serum sodium below 120 mmol/L
- Haemoglobin below 8.0 g/dl; acute leukemia

### **8.0 PROTOCOL VIOLATIONS/DEPARTURES FROM PLAN**

These will need to be dealt with as they arise. Details should be recorded in the study log book.

- If a member of staff is ill:-  
please phone base so that a replacement can be found as soon as possible and any other arrangements made
- Shortened Protocol  
if one nurse is out of action without replacement:-
  - Research Nurse 1 should omit skinfolds and do medication checks
  - Research Nurse 2 should do only the ECG, blood test and consents, sorting out bloods as time permits

### **9.0 ANSWERING QUESTIONS ABOUT THE STUDY**

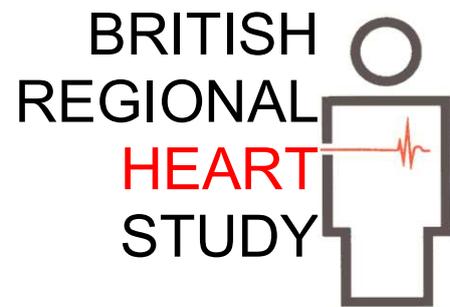
- What is the study for?
- What has the study shown so far?
- Will you want to see me again?
- Will these results be seen by my doctor?
- What happens if my tests are abnormal?

### **10. Ethical approval**

Ethical approval for the physical examination was provided by both Local Research Ethics and London Multi-centre research ethics committee (MREC/02/2/91) – (**Appendix 9**)

## APPENDIX 1 BRHS 1998-2000 20 year follow-up Study Invitation letters

Date as postmark



Mr <INITIAL> <SURNAME>

ADDR1

ADDR2

ADDR3

ADDR4

ADDR5

Dept. Primary Care & Population Sciences  
Royal Free Hospital School of Medicine  
Rowland Hill Street  
LONDON NW3 2PF

Telephone : 0171 794 0500 ext.3048

Direct Line : 0171 830 2335

Fax: 0171 794 1224

Dear Mr «SURNAME»,

Twenty years ago you kindly agreed to take part in the British Regional Heart Study and to be examined by a team of research nurses. The information you provided has been of great value in helping to understand and explain some of the causes and risk factors for cardiovascular disease in Britain today, and in contributing towards its prevention in the future.

We are writing to you now to invite you to a second Heart Study check up by the same study team from London, funded by the British Heart Foundation, which will take place at <Venue > from <SURVEY DATES> for two weeks. The examination will include a questionnaire on past medical history and lifestyle, height, weight and waist measurement, an assessment of your heart (electrocardiogram), blood pressure, lung capacity and a blood sample. **The examination should take about one hour.**

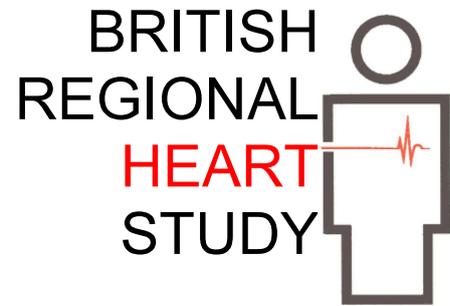
We hope that you will be willing to return for this check up, whether or not you already have heart trouble, as we believe it will provide valuable new information about the health of British men and will also be in your own interest. However, should you choose not to take part in the study, it will have no effect on your usual medical care.

Enclosed with this letter is a dietary questionnaire and an appointment invitation offering a date and time for you to attend. Please tick the box either:

- 1        Accepting the appointment offered
  - 2        Choosing another date and time on the calendar provided.
  - 3        Declining to take part
- or
- 4        Providing your telephone number if you wish to attend but are unable to do so.

Please return the reply slip and completed questionnaire in the enclosed pre-paid envelope even if you are unable to accept the appointment. No stamp is needed. Further information relating to the study can also be obtained directly from the research team on 0171-830-2335 who will call you back if you leave your number.

Date as postmark



Dept. Primary Care & Population Sciences  
Royal Free Hospital School of Medicine  
Rowland Hill Street  
LONDON NW3 2PF

Telephone : 020 7794 0500 ext.3048  
Direct Line : 020 7830 2335  
Fax: 020 7794 1224

Dear Mr «SURNAME»,

We wrote to you recently but as we have not heard from you we are writing once again.

Twenty years ago you kindly agreed to take part in the British Regional Heart Study and to be examined by a team of research nurses. The information you provided has been of great value in helping to understand and explain some of the causes and risk factors for cardiovascular disease in Britain today, and in contributing towards its prevention in the future.

We are writing to you now to invite you to a second Heart Study check up by the same study team from London, funded by the British Heart Foundation, which will take place at the <VENUE> on <DATES>. The examination will include a questionnaire on past medical history and lifestyle, height, weight and waist measurement, an assessment of your heart (electrocardiogram), blood pressure, lung capacity and a blood sample. **The examination should take about one hour.**

We hope that you will be willing to return for this check up, whether or not you already have heart trouble, as we believe it will provide valuable new information about the health of British men and will also be in your own interest. However, should you choose not to take part in the study, it will have no effect on your usual medical care. We will reimburse your travel expenses and the results will be sent to your GP for your records.

Enclosed with this letter is a dietary questionnaire and an appointment invitation offering a date and time for you to attend. Please tick the box either:

- 1      Accepting the appointment offered
  - 2      Choosing another date and time on the calendar provided.
  - 3      Declining to take part
- or
- 4      Providing your telephone number if you wish to attend but are unable to do so.

Please return the reply slip and completed questionnaire in the enclosed pre-paid envelope even if you are unable to accept the appointment. No stamp is needed. Further information relating to the study can also be obtained directly from the research team on 020-7830-2335 who will call you back if you leave your number.

With our best wishes  
Yours sincerely

A handwritten signature in black ink, appearing to read 'Peter Whincup'. The signature is written in a cursive style with a long, sweeping underline.

Peter Whincup  
Reader in Clinical Epidemiology

Date as Postmark

Dear Mr

For the past twenty years you have been among 8000 men from all parts of Great Britain helping us to understand the causes of heart disease and stroke in British men. With this letter we are sending a summary of our findings.

We are very grateful for the help you have given us in the past and we are now writing to let you know that we are revisiting the Regional Heart Study towns during 1998/9 and to inviting all men for re-examination. We should like to give you the opportunity to choose a town as near as possible to your present home. Whichever destination you choose, we shall re-imburse your travel expenses, as your participation in this study is of great importance to us and to the British Heart Foundation who are funding this research.

Enclosed is a **provisional** schedule of our re-visits so that, at this stage, you can indicate in which **town** you would prefer to be examined. We will then be able to send you an invitation/ appointment nearer the time. Please tick your preference and return the sheet to us in the reply-paid envelope provided. It would be very helpful to have your phone number for assisting with any travel arrangements and appointment times.

If you change your address between now and the examination date we would appreciate it if you could let us know. Our direct dial phone number is 0171-830 2335 or 0171-794-0500 ex 3048.

We do hope you will be willing to respond as your participation in this study will help us with the many questions still to be answered. In particular, we wish to examine the effects of retirement and lifestyle on the risk factors for cardiovascular disease in later life. Please let us have your reply now, even though at this stage you may not be sure how you feel about travelling in the future.

We look forward to meeting you again.

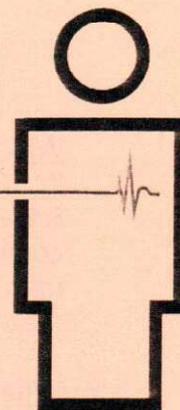
With all good wishes  
Yours sincerely

Mrs Mary Walker  
Research Administrator

## INFORMATION SHEET

The study which you are invited to take part in includes almost 8000 men from all parts of Great Britain. All the tests have been widely used, are safe and designed to minimise discomfort and inconvenience. The whole measurement procedure will take approximately one hour.

# BRITISH REGIONAL HEART STUDY



Dept. Primary Care & Population Sciences  
Royal Free Hospital School of Medicine  
Rowland Hill Street  
LONDON NW3 2PF

Telephone: 0171 794 0500 ext.3048  
Direct Line: 0171 830 2335  
Fax: 0171 794 1224

In order to obtain accurate blood measurements we are asking that, if possible, you come to the check-up having had nothing to eat or drink (except water) for a few hours. Detailed timing instructions are on your appointment card. All medicines should be taken as usual with water. If you are a diabetic patient taking either insulin or tablets for diabetes, please eat and drink as normal and disregard the fasting instructions. We will be providing refreshments for everyone after the check-up.

You will have your blood pressure measured and then be asked to blow into a machine to test the volume of your lungs. You will also be weighed and measured. An electrocardiogram will be carried out which involves having small pads (electrical sensors) put around your wrists and ankles and on your chest, so that a record of the activity of your heart can be obtained. This test is completely painless.

Finally, you will be asked to provide a blood sample for measurements of cholesterol and other related factors. We are offering all participants local anesthetic cream before the blood sample is taken, in order to reduce the sensation of the needle prick.

During the survey you will be asked questions on your general health and medication, so please bring your reading glasses and your medicines or prescription card with you.

We recommend that you wear simple, easily removed clothing as we ask you to undress to the waist and put on a gown.

We hope this explanation will help you to decide to participate in the study as it is a valuable opportunity to have a cardiovascular check-up and to contribute to our knowledge and prevention of heart disease in Britain today.

The results will be sent to your GP after 3-4 weeks and only if there is the need for further investigation will your doctor ask you to make an appointment at the surgery.

When answering the dietary questionnaire, please give us the best estimate you can. If further clarification is needed we will discuss this with you at the examination.

THANK YOU FOR YOUR HELP.

## THE BRITISH REGIONAL HEART STUDY: UPDATE 1997

### Why was the study carried out?

In 1978 we set out to provide information on the causes of heart disease and stroke in British men and to examine the reasons why coronary heart disease and stroke are commoner in Northern England and Scotland than in South Eastern England. Almost 8000 men in 24 towns drawn from all parts of Great Britain agreed to take part, and were measured between 1978 and 1980.

### What important information has the study provided?

#### Risk factors for heart attack and stroke

It has been known for many years that high blood cholesterol, cigarette smoking and high blood pressure influence heart attack risk. The findings of the British Regional Heart Study confirmed the importance of these factors, and emphasised particularly that high levels of blood cholesterol were very common in middle-aged British men. The study drew attention to the important role of overweight, which is associated with raised levels of blood pressure and cholesterol, as well as a risk of diabetes. The study also showed the protective effect of exercise - even very moderate exercise - on the risk of heart attack and stroke. Results from the study have also shown that men who drink small amounts of alcohol (up to 3 small drinks a day) occasionally or regularly are at relatively low risk of heart trouble; those who drink substantial amounts of alcohol appear to be at increased risk. Overall, men who do not smoke, who stay reasonably active and do not gain much weight as they grow older are those most likely to stay free from heart trouble.

These results have been published in medical journals and reported to the Department of Health. We now understand better how to use risk factors to identify people who need further investigation and treatment to prevent heart trouble in the future - information which has been made available to General Practitioners across the country.

#### Differences in heart trouble and stroke across Britain

Differences in the pattern of cigarette smoking (people in Northern England and Scotland smoke more on average) account for some of the differences in heart trouble across the country. Another important factor here is blood pressure, which tends on average to be higher in the North and Scotland. Differences in overweight, in alcohol consumption (alcohol raises blood pressure) and perhaps in salt intake (high salt intake raises blood pressure) may be important in explaining these blood pressure differences between different parts of the country. Cholesterol levels however tend to be high in ALL parts of Britain, and do not explain the North-South differences in heart trouble.

#### Treatment of heart trouble and stroke

The study has also provided important information on the factors which affect whether people receive heart bypass surgery for coronary heart disease. We have also been studying how widely aspirin (a medicine which can be very helpful in some patients who already have certain forms of heart trouble and stroke) is being used in practice. In both cases the aim of our work has been to ensure that individual patients receive the treatment which is most appropriate to them.

#### The future

We know that patterns of diet, drinking and smoking are changing in Britain. We recently visited Maidstone and Dewsbury men who took part in the original study. The results of this preliminary work are very encouraging; many men had stopped smoking, and the average cholesterol levels of men had fallen particularly in Maidstone. We now need to see what changes are occurring across the country, and how these changes will influence the risk of heart trouble and stroke in the future. We also plan to extend our future work to include women, and have already started a series of studies in school children, focussing on the early prevention of heart disease risk.

# Appointment Card

**PLEASE DRINK AT LEAST CUPS OF WATER BEFORE YOUR APPOINTMENT**

«INIT» «SURNAME»  
 «ADDR1»  
 «ADDR2»  
 «ADDR3»  
 «POSTCODE»

Ref: «SERNO»

Your appointment is at:

Venue  
 VenueAddr1  
 VenueAddr2  
 VenueAddr3  
 VenuePOSTCODE1

on : Day DATE AT TIME

**Please bring with you**

- Your reading glasses.
- All regular medicines.  
(including tablets, inhalers, sprays etc.)

**Preparation for the survey**

- If you can manage, please have nothing to eat or drink **(except water - at least 2 cups)** from **FaSTIME**.
- Take any medicines as usual with water.
- **If you are a diabetic patient taking either insulin or tablets for diabetes, please eat and drink as normal.**

We will provide refreshments after your check up. If required please call us on 0171 830 2335 for further information.

Please bring this part with you.

Please tear off and return this part with your questionnaire using the reply paid envelope.

«CODE»

If you would like to accept your appointment please tick this box.

DAY	MONTH	Date	9am-12pm	2-4pm
DAY	MONTH	Date	9am-12pm	2-4pm

If you would like to change your appointment please tick this box and mark the times you are available on the calendar.

DAY	MONTH	Date	9am-12pm	2-4pm
DAY	MONTH	Date	9am-12pm	2-4pm
DAY	MONTH	Date	9am-12pm	2-4pm
DAY	MONTH	Date	9am-12pm	2-4pm

If you do not wish to take part tick this box.

If you wish to attend but are unable to do so please tick here and give us your telephone number.

Telephone Number :

Day **dAY** Slot **slot** «SERNO»

Signature	Date
-----------	------

Please alter address if necessary:

«INIT» «SURNAME»  
 «ADDR1»  
 «ADDR2»  
 «ADDR3»  
 «ADDR4»  
 «POSTCODE»

## APPENDIX 2

Study Number : 

--	--	--	--	--	--	--	--

 serial

<p style="text-align: center;"><b>BRITISH REGIONAL HEART STUDY</b></p> <p style="text-align: center;"><b>20 YEAR FOLLOW-UP SURVEY</b></p> <p style="text-align: center;"><b>QUESTIONNAIRE ON PHYSICAL ACTIVITY AND DIET</b></p>
---

We should be very grateful if you would complete this questionnaire which asks about your physical activities and diet. Please return it to us with your appointment reply card in the reply paid envelope provided. You may wish to seek help from others with some of the questions on diet, especially if you do not do your own cooking. If you have any difficulties in completing this questionnaire, please phone us on 0171 830 2335 and leave your telephone number so that we can call you back and answer your queries.

All information will be treated as **strictly confidential**.

Thank you for your help.

British Regional Heart Study  
Department of Primary Care & Population Sciences  
Royal Free Hospital School of Medicine  
Rowland Hill Street  
London NW3 2PF

## **PART I: PHYSICAL ACTIVITY**

---

These questions are designed to find out how physically active you are in everyday life, both inside and outside your home. Please try to answer all questions, describing your usual activities **OVER THE LAST YEAR**.

### **Getting About**

1.0 Which of the following forms of transport do you use most often? (tick only one box)

- |                    |   |                            |
|--------------------|---|----------------------------|
| Car                | 1 |                            |
| Public transport   | 2 | <a href="#">q20pa_q1_0</a> |
| Walking or Cycling | 3 |                            |

### **Walking**

1.1 How many miles do you walk in total in an average week ? [q20pa\\_q1\\_1](#)          miles / week

1.2 How many journeys of at **least a mile** do you walk each week ? [q20pa\\_q1\\_2](#)          journeys

(Please write '0' if none)

2.0 **Household Activities**

About how many hours each week do you usually spend on the following household activities ?  
(please tick one box for each question)

	None <small>1</small>	Less than 1 hour a week <small>2</small>	1 to 3 hours a week <small>3</small>	3 to 6 hours a week <small>4</small>	6 to 10 hours a week <small>5</small>	More than 10 hours a week <small>6</small>
<b>Light Activities</b> (eg preparing food, cooking, washing up, dusting) <a href="#">q20pa_q2_0la</a>						
<b>Moderate Activities</b> (eg cleaning, sweeping, hoovering washing floors, shopping) <a href="#">q20pa_q2_0ma</a>						
<b>Heavy Activities</b> (eg scrubbing floors, walking with heavy shopping) <a href="#">q20pa_q2_0ha</a>						

3.0 **Climbing Stairs**

How many flights of stairs do you climb up each day ? (a flight of stairs = 10-15 stairs)

	None <small>1</small>	1 to 5 flights <small>2</small>	6 to 10 flights <small>3</small>	11 to 15 flights <small>4</small>	More than 15 flights <small>5</small>
On a weekday <a href="#">q20pa_q3_0wky</a>					
On a weekend day <a href="#">q20pa_q3_0wkd</a>					

4.0 **Other Activities in the past year**

Please indicate how often you did these activities **during the past year**.  
If you didn't do a particular activity at all, simply write 'X' in the first column.

	How many times each month ?		How many months of the year?		Average time on each occasion?	
	<input type="text"/>		<input type="text"/>		Hours <input type="text"/>	Minute <input type="text"/>
Walking on specific journeys (eg to shops, errands)	q20pa_q4_0walk_tmonth	→	q20pa_q4_0walk_myear	→	q20pa_q4_0walk_hocc	q20pa_q4_0walk_mocc
Rambling / Hiking	q20pa_q4_0ramb_tmonth	→	q20pa_q4_0ramb_myear	→	q20pa_q4_0ramb_hocc	q20pa_q4_0ramb_mocc
Cycling	q20pa_q4_0cycle_tmonth	→	q20pa_q4_0cycle_myear	→	q20pa_q4_0cycle_hocc	q20pa_q4_0cycle_mocc
Light gardening (eg watering the lawn/garden)	q20pa_q4_0lgarden_tmonth	→	q20pa_q4_0lgarden_myear	→	q20pa_q4_0lgarden_hocc	q20pa_q4_0lgarden_mocc
Moderate gardening (eg planting, cutting grass)	q20pa_q4_0mgarden_tmonth	→	q20pa_q4_0mgarden_myear	→	q20pa_q4_0mgarden_hocc	q20pa_q4_0mgarden_mocc
Heavy gardening (eg digging, shovelling)	q20pa_q4_0hgarden_tmonth	→	q20pa_q4_0hgarden_myear	→	q20pa_q4_0hgarden_hocc	q20pa_q4_0hgarden_mocc
DIY (eg home / car maintenance, carpentry)	q20pa_q4_0DIY_tmonth	→	q20pa_q4_0DIY_myear	→	q20pa_q4_0DIY_hocc	q20pa_q4_0DIY_mocc
Swimming	q20pa_q4_0swim_tmonth	→	q20pa_q4_0swim_myear	→	q20pa_q4_0swim_hocc	q20pa_q4_0swim_mocc
Jogging	q20pa_q4_0jog_tmonth	→	q20pa_q4_0jog_myear	→	q20pa_q4_0jog_hocc	q20pa_q4_0jog_mocc
Exercises (stretching, bending, keep fit, etc)	q20pa_q4_0exer_tmonth	→	q20pa_q4_0exer_myear	→	q20pa_q4_0exer_hocc	q20pa_q4_0exer_mocc
Dancing	q20pa_q4_0dance_tmonth	→	q20pa_q4_0dance_myear	→	q20pa_q4_0dance_hocc	q20pa_q4_0dance_mocc
Bowling (indoor, lawn, tenpin)	q20pa_q4_0bowl_tmonth	→	q20pa_q4_0bowl_myear	→	q20pa_q4_0bowl_hocc	q20pa_q4_0bowl_mocc
Golf	q20pa_q4_0golf_tmonth	→	q20pa_q4_0golf_myear	→	q20pa_q4_0golf_hocc	q20pa_q4_0golf_mocc
Tennis / Badminton	q20pa_q4_0tennis_tmonth	→	q20pa_q4_0tennis_myear	→	q20pa_q4_0tennis_hocc	q20pa_q4_0tennis_mocc
Fishing	q20pa_q4_0fish_tmonth	→	q20pa_q4_0fish_myear	→	q20pa_q4_0fish_hocc	q20pa_q4_0fish_mocc
Other exercises (please specify)	q20pa_q4_0oth1_tmonth	→	q20pa_q4_0oth1_myear	→	q20pa_q4_0oth1_hocc	q20pa_q4_0oth1_mocc
	q20pa_q4_0oth2_tmonth	→	q20pa_q4_0oth2_myear	→	q20pa_q4_0oth2_hocc	q20pa_q4_0oth2_mocc

OFFICE USE  
 q20pa\_q4\_0oth1\_off\_use\_box  
 q20pa\_q4\_0oth2\_off\_use\_box

5.0 Did you do any of these activities vigorously enough to cause sweating, breathlessness or fast heartbeat? Yes  No  q20pa\_q5\_0

5.1 If Yes, for about how many minutes did you do such vigorous activities each week? \_\_\_\_\_ (mins) q20pa\_q5\_1

5.2 Compared with your level of activity three years ago, are you doing more  1 q20pa\_q5\_2  
 about the same  2  
 less  3

5.3 If less, please give the reason q20pa\_q5\_3 OFFICE USE

**PART II : YOUR DIET**

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1. Are you on any special diet (eg vegetarian , low fat, diabetic) ? Yes  No  q20pa\_q5\_4  
OFFICE USE
- If Yes, please give details \_\_\_\_\_ q20pa\_q5\_4ifyes

How to fill in the diet questionnaire

The following questions are mostly about how often you **USUALLY** eat different sorts of food each week.

If you usually eat a food **every day**, ring **7** days a week

If you usually eat a food on **three days a week**, ring **3**, and so on

For foods which you eat **less than once a week** :-

Ring **M** if you eat it **at least** once a month

Ring **R** if you eat it **less than** once a month, or if you **never** eat it at all

Please ring **one** answer for each of the foods listed. Remember to circle **R** if you never eat a food.

**Example**

	Number of days each week							Monthly	Rarely/ Never
Food eaten every day (7 days a week)	<input type="radio"/>	6	5	4	3	2	1	M	R
Food eaten on three days a week	7	6	5	4	<input type="radio"/>	2	1	M	R
Food eaten less often than once a week but at least once a month	7	6	5	4	3	2	1	<input checked="" type="radio"/> M	R
Food eaten never or less than once a month	7	6	5	4	3	2	1	M	<input type="radio"/>

Please ring the correct number or letter for every food item (one circle only per line)

0 8

			Number of days each week							Monthly	Rarely/ Never
<b>2. Meat</b>											
q20di_q2a	(a)	Beef (including minced beef, beef burgers)	7	6	5	4	3	2	1	M	R
q20di_q2b	(b)	Lamb	7	6	5	4	3	2	1	M	R
q20di_q2c	(c)	Pork, bacon, ham, salami	7	6	5	4	3	2	1	M	R
q20di_q2d	(d)	Chicken, turkey, other poultry	7	6	5	4	3	2	1	M	R
q20di_q2e	(e)	Tinned meat (all types, corned beef, etc)	7	6	5	4	3	2	1	M	R
q20di_q2f	(f)	Pork Sausages	7	6	5	4	3	2	1	M	R
q20di_q2g	(g)	Beef Sausages	7	6	5	4	3	2	1	M	R
q20di_q2h	(h)	Meat Pic, Pastics	7	6	5	4	3	2	1	M	R
q20di_q2i	(i)	Liver, kidney, heart	7	6	5	4	3	2	1	M	R
<b>3. Fish</b>											
q20di_q3a	(a)	White fish (cod, haddock, hake, plaice, fish fingers, etc)	7	6	5	4	3	2	1	M	R
q20di_q3b	(b)	Kippers, herrings, pilchards, tuna, sardines, salmon, mackerel (including tinned)	7	6	5	4	3	2	1	M	R
q20di_q3c	(c)	Shellfish	7	6	5	4	3	2	1	M	R
<b>4. Vegetables (fresh, tinned, dried, frozen)</b>											
q20di_q4a	(a)	Potatoes: boiled, baked, mashed	7	6	5	4	3	2	1	M	R
q20di_q4bi	(b)	Potatoes									
q20di_q4bii	(i)	chips or fried ( from shop)	7	6	5	4	3	2	1	M	R
q20di_q4biii	(ii)	chips, fried or (cooked at home)	7	6	5	4	3	2	1	M	R
q20di_q4c	(c)	Green vegetables, salads	7	6	5	4	3	2	1	M	R
q20di_q4d	(d)	Carrots	7	6	5	4	3	2	1	M	R
q20di_q4e	(e)	Parsnips, swedes, turnips, beetroot, and other root vegetables	7	6	5	4	3	2	1	M	R
q20di_q4f	(f)	Baked or butter beans, lentils, peas, chickpeas, sweetcorn	7	6	5	4	3	2	1	M	R
q20di_q4g	(g)	Onions (cooked, raw, pickled)	7	6	5	4	3	2	1	M	R
q20di_q4h	(h)	Garlic	7	6	5	4	3	2	1	M	R
q20di_q4i	(i)	Spaghetti and other pasta	7	6	5	4	3	2	1	M	R
q20di_q4j	(j)	Rice ( all types except pudding rice)	7	6	5	4	3	2	1	M	R
q20di_q4k	(k)	Tomatoes (fresh, tinned, pureed)	7	6	5	4	3	2	1	M	R
q20di_q4l	(l)	How often do you eat fresh vegetables in : <b>summer</b>	7	6	5	4	3	2	1	M	R
q20di_q4m	(m)	<b>winter</b>	7	6	5	4	3	2	1	M	R

Please remember to circle ® if you never eat a food

5. **Fresh fruit**

		Number of days each week							0	8
									Monthly	Rarely/ Never
q20di_q5a	(a)	<b>summer</b>							M	R
q20di_q5b	(b)	<b>winter</b>							M	R
q20di_q5c	(c)	Number of apples eaten a week							___	___
q20di_q5d	(d)	Number of pears eaten a week							___	___
q20di_q5e	(e)	Number of oranges or grapefruit eaten a week							___	___
q20di_q5f	(f)	Number of bananas eaten a week							___	___
q20di_q5g	(g)	Number of other fruits eaten a week (please give name and quantity)								

Name	Quantity	Name	Quantity	
.....	.....	.....	.....	OFFICE TISE  <input type="checkbox"/>
.....	.....	.....	.....	
.....	.....	.....	.....	

6. **Cheese**

		Number of days each week							0	8
									Monthly	Rarely/ Never
q20di_q6a	Full-fat cheese (eg Cheddar, Leicester, Stilton, Brie, soft cheeses)	7	6	5	4	3	2	1	M	R
q20di_q6b	Low-fat cheese (eg Edam, Cottage cheese, reduced fat cheeses)	7	6	5	4	3	2	1	M	R

7. **Bread**

q20di_q7a	(a)	White bread							M	R
q20di_q7b	(b)	Brown bread							M	R
q20di_q7c	(c)	Wholemeal							M	R
q20di_q7d	(d)	Bread rolls							M	R
q20di_q7e	(e)	Crispbread (Ryvita, cream crackers, etc)							M	R

please give name of crispbread etc.....

(f) Further details about your bread

		How many slices or rolls a day ?	Are the slices thick, medium or thin? Circle your answer.		
q20di_q7fi	(i) White Bread	<u>q20di_q7fi_s</u>	thick <sub>1</sub>	medium <sub>2</sub>	thin <sub>3</sub>
q20di_q7fii	(ii) Brown Bread	<u>q20di_q7fii_s</u>	thick	medium	thin
q20di_q7fiii	(iii) Wholemeal Bread	<u>q20di_q7fiii_s</u>	thick	medium	thin
q20di_q7fiv	(iv) Bread Rolls	<u>q20di_q7fiv_s</u>	large	medium	small

Please remember to circle ® if you never eat a food

		Number of days each week							0	8
									Monthly	Rarely/ Never
<b>8.</b>	<b>Breakfast Cereals</b>									
q20di_q8a	(a) Grapenuts, Porridge, Ready Brek, Special K, Sugar Puffs, Rice Crispies	7	6	5	4	3	2	1	M	R
q20di_q8b	(b) Cornflakes, Muesli, Shredded Wheat, Sultana Bran, Weetabix	7	6	5	4	3	2	1	M	R
q20di_q8c	(c) Bran Flakes, Puffed wheat	7	6	5	4	3	2	1	M	R
q20di_q8d	(d) All Bran, Wheat Bran	7	6	5	4	3	2	1	M	R
q20di_q8e	(e) Another Cereal	7	6	5	4	3	2	1	M	R
	please give name .....									
<b>9.</b>	<b>Biscuits, puddings and sweets</b>									
q20di_q9a	(a) Digestive biscuits, plain biscuits	7	6	5	4	3	2	1	M	R
q20di_q9b	(b) Sweet biscuits, sponge cakes, scones, buns	7	6	5	4	3	2	1	M	R
q20di_q9c	(c) Ice cream, sweet yoghurts, trifle	7	6	5	4	3	2	1	M	R
q20di_q9d	(d) Fruit cake, fruit bread, plum pudding	7	6	5	4	3	2	1	M	R
q20di_q9e	(e) Fruit tart, jam tart, fruit crumble	7	6	5	4	3	2	1	M	R
q20di_q9f	(f) Milk puddings (rice, tapioca)	7	6	5	4	3	2	1	M	R
q20di_q9g	(g) Tinned fruit, jellies	7	6	5	4	3	2	1	M	R
q20di_q9h	(h) Sweet sauces (chocolate, custard)	7	6	5	4	3	2	1	M	R
q20di_q9i	(i) Chocolate, chocolate bars, sweets (all types)	7	6	5	4	3	2	1	M	R
<b>10.</b>	<b>Eggs</b>									
q20di_q10a	(a) Eggs (boiled, poached, fried, scrambled)	7	6	5	4	3	2	1	M	R
q20di_q10b	(b) Eggs in baked dishes (eg flans, quiches, soufflés, egg custard, etc)	7	6	5	4	3	2	1	M	R
<b>11.</b>	<b>Other foods</b>									
q20di_q11a	(a) Soups (all kinds, home-made, tinned, packet)	7	6	5	4	3	2	1	M	R
q20di_q11b	(b) Nuts, nut butter (eg salted or unsalted peanuts)	7	6	5	4	3	2	1	M	R
q20di_q11c	(c) Savoury snacks (eg potato crisps, corn chips, crackers)	7	6	5	4	3	2	1	M	R
q20di_q11d	(d) Chutney, brown sauce, tomato sauce	7	6	5	4	3	2	1	M	R
q20di_q11e	(e) Sweet spreads (eg jam, honey, marmalade, chocolate spread)	7	6	5	4	3	2	1	M	R
<b>12.</b>	<b>Drinks and Juices (non-alcoholic)</b>									
q20di_q12a	(a) Natural fruit juices (including tomato juice)	7	6	5	4	3	2	1	M	R
q20di_q12b	(b) Fizzy drinks and Non-diet squashes	7	6	5	4	3	2	1	M	R
q20di_q12c	(c) <b>Low calorie</b> (diet) squashes and fizzy drinks	7	6	5	4	3	2	1	M	R

Please remember to circle ® if you never eat a food

**13. Milk**

q20di\_q13a (a) Roughly how much milk do you drink a day in tea, coffee, milky drinks or cereals ? (Tick only one box)

- 1  none at all
- 2  half pint or less
- 3  between half and one pint
- 4  more than one pint

q20di\_q13b (b) What kind of milk do you usually use? (Tick only one box)

- 1  full fat milk, fresh or dried
- 2  semi-skimmed milk, fresh or dried
- 3  fully skimmed milk, fresh or dried
- 4  other kinds of milk, eg condensed, evaporated

**14. Fats**

(a) What do you usually spread on bread ?

OFFICE USE

q20di\_q14a\_butter

1  butter Give brand name .....

q20di\_q14a\_ffsmarg

1  full-fat soft margarine Give brand name ..... q20di\_q14a\_ffsmarg\_box

q20di\_q14a\_lfsmarge

1  low-fat soft margarine Give brand name ..... q20di\_q14a\_lfsmarge\_box

q20di\_q14a\_hmarge

1  hard margarine Give brand name .....

q20di\_q14b (b) How do you normally spread the fat ?

- 1  thinly
- 2  average
- 3  thickly

(c) How often do you eat home-fried food (including chips), cooked with :-

q20di\_q14c\_lard

	Number of days each week							0	8
	7	6	5	4	3	2	1	Monthly	Rarely/ Never
Lard, dripping, solid vegetable oil								M	R
Give brand name and type .....									

q20di\_q14c\_lard\_box

q20di\_q14c\_lvo

Liquid vegetable oil								M	R
Give brand name and type .....									

q20di\_q14c\_lvo\_box

**15. Salt**

q20di\_q15a (a) How much salt is added to your food, on cooking ?

- 1  a lot
- 2  a little
- 3  none

q20di\_q15b (b) How much salt is added to your food on your plate ?

- 1  a lot
- 2  a little
- 3  none

Please remember to circle ® if you never eat a food

16. **Your household**

How many people normally eat in your household ?

Number of adults (including yourself)  Number of children 1 to 4 years old

Number of children 5 to 16 years old  Number of babies under 1 year old

17. How much of the following foods does **your household** use on average **each week** (including cooking and baking )? If you live on your own, please give the amounts which you yourself eat a week.

	If rarely or never used tick here					
Butter	<input type="checkbox"/>	<input type="text"/>	lbs	<input type="text"/>	OZS	or <input type="text"/> grams
Margarine (all types)	<input type="checkbox"/>	<input type="text"/>	lbs	<input type="text"/>	OZS	or <input type="text"/> grams
Lard and solid vegetable oil	<input type="checkbox"/>	<input type="text"/>	lbs	<input type="text"/>	OZS	or <input type="text"/> grams
Liquid vegetable oil (eg Sunflower, Corn, Groundnut oil)	<input type="checkbox"/>	<input type="text"/>		<input type="text"/>	OZS	or <input type="text"/> ml
Olive Oil	<input type="checkbox"/>	<input type="text"/>		<input type="text"/>	OZS	or <input type="text"/> ml
Cream	<input type="checkbox"/>	<input type="text"/>		<input type="text"/>	OZS	or <input type="text"/> ml
Full- fat cheese (eg Cheddar, Leicester, Stilton, Brie, and soft cheeses)	<input type="checkbox"/>	<input type="text"/>	lbs	<input type="text"/>	OZS	or <input type="text"/> grams
Low-fat cheese (eg reduced fat cheddar, reduced fat soft cheeses, Edam)	<input type="checkbox"/>	<input type="text"/>	lbs	<input type="text"/>	OZS	or <input type="text"/> grams
Sugar	<input type="checkbox"/>	<input type="text"/>	lbs	<input type="text"/>	OZS	or <input type="text"/> grams

18. **Hot drinks**

**Coffee**

(a) How many cups of **coffee** do you have a day ?  cups a day

Is this  ground coffee  instant coffee

Is it decaffeinated ?  Yes  No

(b) How many teaspoons of sugar do you take in each cup ?  teaspoons  
(Do not count artificial sweeteners)

**Tea**

(c) How many cups of **tea** do you have a day ?  cups a day

(d) How many teaspoons of sugar do you take in each cup ?  teaspoons  
(Do not count artificial sweeteners)

**Other Hot Drinks**

(e) How many cups of other hot drinks (eg drinking hot chocolate,  
malted milk, Horlicks) do you have a day ?  cups a day

19. **Alcoholic drinks**

- (a) Have you ever consumed alcoholic drinks ? Yes No  
<sub>1</sub> <sub>2</sub> q20di\_q19a
- (b) Do you take alcoholic drinks at present ? Seldom  
<sub>1</sub> <sub>2</sub> <sub>3</sub> q20di\_q19b

- (c) Think back carefully over the last seven days.  
Please write the number of alcoholic drinks you have consumed on each day during the past week. It may help if you try to remember where you were and who you were with on each day.

For each day, write in how much you have drunk:

- (i) the **number of pints** of non-alcoholic beer, lager, etc  
(ii) the **number of pints** of low-alcohol beer, lager, etc  
(iii) the **number of pints** of beer, lager, shandy, cider, stout, etc  
(iv) the **number of single glasses** of whisky, vodka, gin, rum, etc  
(v) the **number of single glasses** of wine, sherry, martini, port, etc

	(i) Pints of Non-alcoholic Beer <input type="checkbox"/> <input type="checkbox"/>	(ii) Pints of Low-alcohol Beer <input type="checkbox"/> <input type="checkbox"/>	(iii) Pints of Beer, Lager, Shandy <input type="checkbox"/> <input type="checkbox"/>	(iv) Single glasses of Spirits <input type="checkbox"/> <input type="checkbox"/>	(v) Single glasses of Wine <input type="checkbox"/> <input type="checkbox"/>
Monday	q20di_q19c_M_i	q20di_q19c_M_ii	q20di_q19c_M_iii	q20di_q19c_M_iv	q20di_q19c_M_v
Tuesday	q20di_q19c_Tu_i	q20di_q19c_Tu_ii	q20di_q19c_Tu_iii	q20di_q19c_Tu_iv	q20di_q19c_Tu_v
Wednesday	q20di_q19c_W_i	q20di_q19c_W_ii	q20di_q19c_W_iii	q20di_q19c_W_iv	q20di_q19c_W_v
Thursday	q20di_q19c_Th_i	q20di_q19c_Th_ii	q20di_q19c_Th_iii	q20di_q19c_Th_iv	q20di_q19c_Th_v
Friday	q20di_q19c_F_i	q20di_q19c_F_ii	q20di_q19c_F_iii	q20di_q19c_F_iv	q20di_q19c_F_v
Saturday	q20di_q19c_Sa_i	q20di_q19c_Sa_ii	q20di_q19c_Sa_iii	q20di_q19c_Sa_iv	q20di_q19c_Sa_v
Sunday	q20di_q19c_Su_i	q20di_q19c_Su_ii	q20di_q19c_Su_iii	q20di_q19c_Su_iv	q20di_q19c_Su_v

- (d) Would you say last week was fairly typical of what you usually have to drink in one week ? Yes No  
<sub>1</sub> <sub>2</sub> q20di\_q19d

- (e) If last week was not typical, would you normally drink more or less in a week ? More Less  
<sub>1</sub> <sub>2</sub> q20di\_q19e

20. **Birth Weight**

Recent research has suggested that circumstances around the time of birth, and particularly birthweight, may influence the heart and circulation many years later.

If you can tell us about your birthweight and the birthweight (s) of your children (asking other family members if necessary) this would be very helpful :-

(a) **Your birth weight:**   q20di\_q20a\_bwt\_lb lb   q20di\_q20a\_bwt\_oz oz  q20di\_q20a\_bwt\_dk Not known  1

(b) **The birthweight of your children:-**

			<b>Boy</b>	<b>Girl</b>	<b>Not known</b>
First Child	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch1_lb</small> lb	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch1_oz</small> oz	<input type="checkbox"/> <small>1</small>	<input type="checkbox"/> <small>2</small>	<input type="checkbox"/> <small>q20di_q20b_ch_bwt_dk</small> <input type="checkbox"/> <small>1</small>
					<b>Does not apply</b>
					<input type="checkbox"/> <small>q20di_q20b_ch_bwt_dna</small> <input type="checkbox"/> <small>1</small>
Second Child	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch2_lb</small> lb	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch2_oz</small> oz	<input type="checkbox"/> <small>1</small>	<input type="checkbox"/> <small>2</small>	
Etc	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch3_lb</small> lb	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch3_oz</small> oz	<input type="checkbox"/> <small>1</small>	<input type="checkbox"/> <small>2</small>	
	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch4_lb</small> lb	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch4_oz</small> oz	<input type="checkbox"/> <small>1</small>	<input type="checkbox"/> <small>2</small>	
	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch5_lb</small> lb	<input type="text"/> <input type="text"/> <small>q20di_q20b_bwt_ch5_oz</small> oz	<input type="checkbox"/> <small>1</small>	<input type="checkbox"/> <small>2</small>	

Thank you for your help with this questionnaire.

Please check that you have answered all questions and return the questionnaire to us in the envelope provided.

No stamp is required.

For comments:

beer1 - converted to alcohol Units from Q15( c) Mon	q20di_qbeer1_alc_units_M
beer2 - converted to alcohol Units from Q15( c) Tues	q20di_qbeer1_alc_units_Tu
beer3 - converted to alcohol Units from Q15( c) Wed	q20di_qbeer1_alc_units_W
beer4 - converted to alcohol Units from Q15( c) Thur	q20di_qbeer1_alc_units_Th
beer5 - converted to alcohol Units from Q15( c) Fri	q20di_qbeer1_alc_units_F
beer6 - converted to alcohol Units from Q15( c) Sat	q20di_qbeer1_alc_units_Sa
beer7 - converted to alcohol Units from Q15( c) Sun	q20di_qbeer1_alc_units_Su

## APPENDIX 3

### Appendix 3 BRHS Examination Assessment Schedule 1998/2000

Date of Screening	Town
<b>1998</b>	
	Pilot
16/02/1998	Harrogate
16 /03/1998	Shrewsbury
13/04/1998	London Screen
20/04/1998	Lowestoft
26/05/1998	Mansfield
22/06/1998	Southport
20/07/1998	Merthyr Tydfil
01/09/1998	Gloucester
28/09/1998	Burnley
26/10/1998	Newcastle-U-Lyme
23/11/1998	Exeter
<b>1999</b>	
11/01/1999	Falkirk
08/02/1999	Ipswich
08/03/1999	Guildford
12/04/1999	Ayr
10/05/1999	Dunfermline
07/06/1999	Darlington
05/07/1999	Carlisle
02/08/1999	Grimsby
06/09/1999	Bedford
04/10/1999	Wigan
01/11/1999	Scunthorpe
29/11/1999	Hartlepool
10/01/2000	Dewsbury
07/02/2000	Maidstone
01/03/2000	LONDON4
06/03/2000	Islington Repeatability study

**APPENDIX 4 - 20 year follow-up Physical examination data collection form**

**British Regional Heart Study Datasheet 1998-2000**

Serial:  Batch:   
 Name:   
 DOB:

**Station 1: MEASUREMENTS**

Observer

Height:  .  (cm)

Current weight estimate:

st/lb  .

Weight change in the last 3 years

No = 1, Gain = 2  
 Loss = 3, Fluct = 4

Arm Circ. (R)  .  (cm)

Triceps Skinfold (R) 1

.  (mm)

Triceps Skinfold (R) 2

.  (mm)

Waist Circumference 1

.  (cm)

Waist Circumference 2

.  (cm)

Waist circ.  
 Inadequate = 1

Blood Pressure (R arm)

← SITTING →				← SITTING →			
SBP1	<input type="text"/>	<input type="text"/>	<input type="text"/>	SBP2	<input type="text"/>	<input type="text"/>	<input type="text"/>
DBP1	<input type="text"/>	<input type="text"/>	<input type="text"/>	DBP2	<input type="text"/>	<input type="text"/>	<input type="text"/>
MAP1	<input type="text"/>	<input type="text"/>	<input type="text"/>	MAP2	<input type="text"/>	<input type="text"/>	<input type="text"/>
PULSE1	<input type="text"/>	<input type="text"/>	<input type="text"/>	PULSE2	<input type="text"/>	<input type="text"/>	<input type="text"/>

Cuff  Inst.

Alc  1= yes

Temp. (C)

Dementia  1 = Yes

READINGS  
 INADEQUATE ?

Actual Weight

.  kg

Was loss intentional?

Yes = 1, No = 2

28.0 to 35 cm inclusive → Adult Cuff = 1  
 <28.0cm → Small Adult= 2; >35 cm → Large Adult Cuff = 3

Posture=2

Ever weighed more than  present?  
 If Yes, Maximum weight ever  Yes = 1  
 No = 2  
 DK = 3

st/lb  .

Reason for change

Personal choice = 1,  
 Doctor's advice= 2,  
 Illness = 3, Change in  
 smoking = 4, Other = 5

Subscapular skinfold (R) 1

.  (mm)

Subscapular skinfold (R) 2

.  (mm)

Hip Circumference 1

.  (cm)

Hip Circumference 2

.  (cm)

Hip circ.  
 Inadequate = 1

← SITTING →				← SITTING →			
SBP1	<input type="text"/>	<input type="text"/>	<input type="text"/>	SBP2	<input type="text"/>	<input type="text"/>	<input type="text"/>
DBP1	<input type="text"/>	<input type="text"/>	<input type="text"/>	DBP2	<input type="text"/>	<input type="text"/>	<input type="text"/>
MAP1	<input type="text"/>	<input type="text"/>	<input type="text"/>	MAP2	<input type="text"/>	<input type="text"/>	<input type="text"/>
PULSE1	<input type="text"/>	<input type="text"/>	<input type="text"/>	PULSE2	<input type="text"/>	<input type="text"/>	<input type="text"/>

Ethnicity

Faintness on standing  1 = Yes  
 Cau = 1, A/C = 2, Asian = 3,  
 Orien = 4, Other = 5  
 Breathless  1 = Yes

**SPIROMETRY** Instr

No. Readings  BTV% .

FVC

FEV .5

FEV1

PEF

FEF25-75

FEF75-85

FEF25

FEF50

FEF75

Readings inadequate ? Inad=1

Spirometer Output

**Station 2**

Observer

**LEFT SIDE**

Ankle oedma  Yes= 1, No= 2

Leg ulcer  Sole = 1, Ankle =2, Shin= 3

Pulses

Dorsalis Pedis  Yes= 1, No= 2

Post Tibial  Yes= 1, No= 2

Pacemaker  Yes= 1, No= 2

**RIGHT SIDE**

Ankle oedma  Yes= 1, No= 2

Leg ulcer  Sole = 1, Ankle =2, Shin= 3

Pulses

Dorsalis Pedis  Yes= 1, No= 2

Post Tibial  Yes= 1, No= 2

Impedance

ECG  Yes= 1, No= 2

**BLOOD SAMPLING**

Success  No=0, Part =1, All =2

Failure  Refusal = 1, No sample =2

Time  .

**Station 3 BLOOD ALIQUOTTING**

Observer

All tubes Filled?  Yes= 1, No= 2

Tube missing(=1)

A B C D E

F G H I J

K

L M N O P

Q R

Study Number : 

--	--	--	--	--	--	--	--

serial

<p><b>BRITISH REGIONAL HEART STUDY</b></p> <p><b>20 YEAR FOLLOW-UP SURVEY</b></p>
---

Thank you for attending this follow-up survey. It would be very helpful if you could complete this questionnaire, which will bring us up to date with your health and lifestyle.

Most questions can be answered simply by ticking the correct box

All information will be treated as **strictly confidential**.

The Research Nurse will help you with any problems.

Thank you for your help.

### Conditions affecting the heart or circulation

- 1.0 Have you **ever** been told by a doctor that you have or have had any of the following conditions ?
- |   | Yes                               | No                       | If after 1996,<br>please give year |
|---|-----------------------------------|--------------------------|------------------------------------|
| (a) Heart attack (coronary thrombosis or myocardial infarction)         | q20q1_0a <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q1_0a_y                     |
| (b) Heart failure   | q20q1_0b <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q1_0b_y                     |
| (c) Angina  | q20q1_0c <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q1_0c_y                     |
| (d) Other heart trouble   | q20q1_0d <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q1_0d_y                     |
| (e) High blood pressure   | q20q1_0e <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q1_0e_y                     |
| (f) Aortic Aneurysm   | q20q1_0f <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q1_0f_y                     |
| (g) Narrowing or hardening of the leg arteries (including claudication) | q20q1_0g <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q1_0g_y                     |
| (h) Deep Vein Thrombosis (clot in the deep leg vein)                    | q20q1_0h <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q1_0h_y                     |
| (i) Pulmonary Embolism (clot on the lung)                               | q20q1_0i <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q1_0i_y                     |

### Treatment for heart trouble

- 2.0 Have you **ever** had any of the following **TREATMENTS** for chest pain or heart disease ?
- |  | Yes                               | No                       | If <b>Yes</b> , please give year of treatment |                    |
|--|-----------------------------------|--------------------------|---|--------------------|
| (a) Angioplasty of coronary arteries ('balloon treatment') | q20q2_0a <input type="checkbox"/> | <input type="checkbox"/> | q20q2_0a_y<br>19_                             | q20q2_0a_y2<br>19_ |
| (b) Coronary artery bypass graft (CABG) operation          | q20q2_0b <input type="checkbox"/> | <input type="checkbox"/> | q20q2_0b_y<br>19_                             | q20q2_0b_y2<br>19_ |

### Stroke

- 3.0 Have you **ever** been told by a doctor that you have had a stroke ?
- |  | Yes                      | No                       | Year of first diagnosis |
|--|--------------------------|--------------------------|-------------------------|
|  | <input type="checkbox"/> | <input type="checkbox"/> | 19_ q20q3_0a_y          |
| (a) <b>If Yes</b> , did the symptoms last for more than 24 hours ? | <input type="checkbox"/> | <input type="checkbox"/> |                         |

**Cancer**

4.0 Have you **ever** been told by a doctor that you have or have had Cancer ?  Yes  No q20q4\_0

**If Yes**, please give the following information:-

OFFICE USE

(a) Cancer Site q20q4\_0a  Year first diagnosed 19 q20q4\_0a\_y

**Diabetes**

**Please answer all the questions**

5.0 Have any of your close 'blood' relatives ( your parents, brothers or sisters) **ever** had diabetes ?  Yes  No q20q5\_0

**If Yes**, please list any of these relatives who have had diabetes and if possible their age when they were first diagnosed:

OFFICE USE

(a)	Mother	<u>q20q5_a_y</u>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Father	<u>q20q5_b_y</u>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	Brothers	<u>q20q5_c q20q5_c_y</u>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	Sisters	<u>q20q5_d q20q5_d_y</u>	<input type="checkbox"/>	<input type="checkbox"/>

5.1 Have you **ever** been told by a doctor that you have (or have had) diabetes?  Yes  No q20q5\_1

(a) **If Yes**, in what year was your diabetes first diagnosed ? 19 q20q5\_1a

**Chest pain**

6.0 Do you ever have any pain or discomfort in your chest ? q20q6\_0

Yes

No  → If No, go to Question 7.0 on the next page

6.1 Do you know the cause of the pain ? Yes  No  q20q6\_1

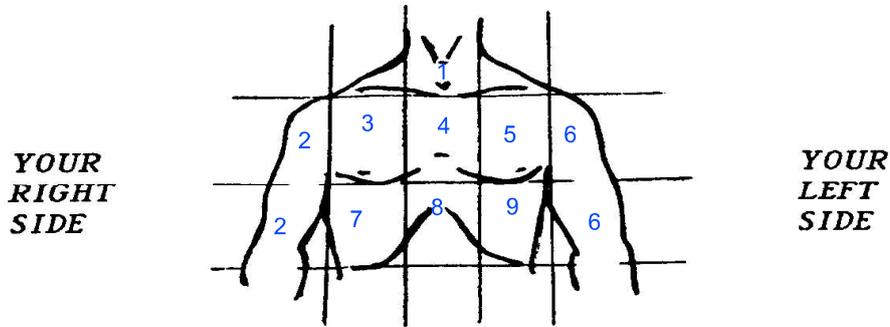
(a) **If Yes**, please state:

\_\_\_\_\_ q20q6\_1a

OFFICE USE

(b) Where do you get this pain or discomfort ?

Please mark **X** on the appropriate places



q20q6\_1b\_1  
q20q6\_1b\_2  
q20q6\_1b\_3

OFFICE USE

Codes 4 5 8 are given priority

(c) When you walk at an ordinary pace on the level does this produce the chest pain ?

Yes \_1 q20q6\_1c  
No \_2  
Unable to walk on level \_3

(d) When you walk uphill or hurry does this produce the chest pain ?

Yes \_1 q20q6\_1d  
No \_2  
Unable to walk on level \_3

**Chest pain continued**

- (e) When you get any pain or discomfort in your chest on walking, what do you do?  
Yes <sub>1</sub>  
No <sub>2</sub> [q20q6\\_1e](#)  
Continue at the same pace <sub>3</sub>
- (f) Does the pain or discomfort in your chest go away if you stand still? Yes  No  [q20q6\\_1f](#)
- (g) How long does it take to go away? 10 minutes or less <sub>1</sub>  
More than 10 minutes <sub>2</sub> [q20q6\\_1g](#)
- (h) Overall is the chest pain Becoming more frequent <sub>1</sub>  
Staying about the same <sub>2</sub> [q20q6\\_1h](#)  
Becoming less frequent <sub>3</sub>

**Previous Chest Pain**

- 7.0 Have you previously had chest pain, which has stopped because of an operation? Yes  No  [q20q7\\_0](#)
- (a) If Yes, please give details: \_\_\_\_\_ [OFFICE USE q20q7\\_0a](#)

**Severe chest pain**

- 8.0 Have you **ever** had a **severe** pain across the front of your chest lasting for half an hour or more? Yes  No  → If No, go to question 9.0 on the next page [q20q8\\_0](#)
- (a) If Yes, what year did this happen? 19 \_\_\_\_\_ [q20q8\\_0a](#)
- (b) Did you see a doctor because of this pain? Yes  No  [q20q8\\_0b](#)
- (c) If Yes, what were you told was the cause \_\_\_\_\_ [OFFICE USE q20q8\\_0c](#)

**Leg pain**

**9.0** Do you get pain or discomfort in your leg (or legs) when you walk? q20q9\_0

Yes  
 No  
 Unable to walk

<sub>1</sub>  
<sub>2</sub>  
<sub>3</sub>

→ If **No** or **Unable to walk**, go to question 10.0, on the next page

**9.1** Do you know the cause of the pain ? q20q9\_1  Yes  No

(a) If **Yes**, please state: -

q20q9\_1a

OFFICE USE

(b) Does this pain ever begin when you are standing still or sitting ?  Yes  No q20q9\_1b

(c) Do you get the pain if you walk uphill or hurry?

Yes q20q9\_1c  
 No  
 Unable to walk

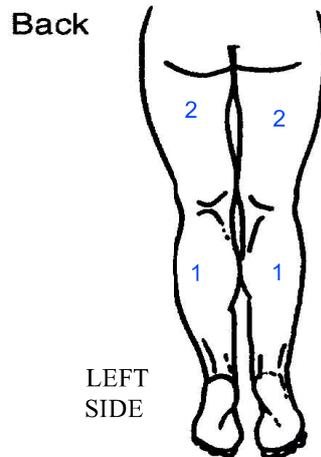
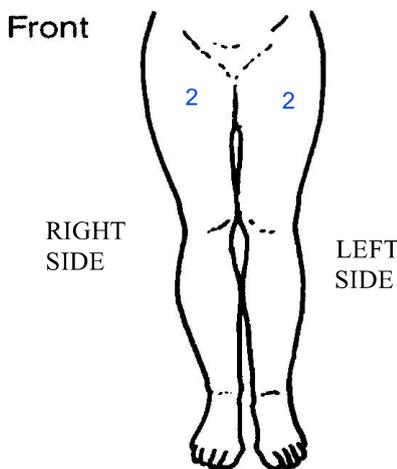
(d) Do you get the pain walking at an ordinary pace on the level?

Yes q20q9\_1d  
 No  
 Unable to walk

(e) What happens to the pain if you stand still? q20q9\_1e

Usually continues more than 10 minutes <sub>1</sub>  
 Usually disappears in 10 minutes or less <sub>2</sub>

(f) Please mark on the diagram below where you get the pain.



1- Calf Muscles (takes priority)  
 2- Thigh/Buttock  
 3- Pain in other site  
 4- No pain in that leg

OFFICE USE

L  
 R

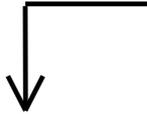
q20q9\_1f\_1

q20q9\_1f\_r

**Smoking**

**10.0** Have you **ever** smoked cigarettes regularly (at least 1 a day) ?

Yes \_1 q20q10\_0  
No \_2 → If **No**, go to question 10.3 below



**10.1** Do you smoke cigarettes at present?

Yes \_1 q20q10\_1  
No \_2

(a) **If Yes**, how many cigarettes do you smoke a day at present ?   q20q10\_1a\_ci  
(If hand-rolled, how much tobacco do you use a week ?   oz / q20q10\_1a\_oz  
   grams) q20q10\_1a\_gr

(b) **If No**, at what age did you give up ?   years q20q10\_1b

**10.2** Have you changed your cigarette smoking habits over the last three years ?

No \_1 q20q10\_2  
Yes, increased \_2  
Yes, decreased \_3  
Yes, given up \_4

**Pipe & Cigar Smoking**

**10.3** Have you **ever** regularly smoked a pipe ? Yes  No  q20q10\_3

(a) **If Yes**, do you currently smoke a pipe ? Yes  No  q20q10\_3a

(b) **If Yes**, how much tobacco do you smoke per week?   oz / q20q10\_3b\_oz  
   grams q20q10\_3b\_gr

10.4 Have you **ever** regularly smoked cigars ?

<sub>1</sub> Yes  
<sub>2</sub> No → If **No**, go to question 10.5 below q20q10\_4

(a) **If Yes**, do you currently smoke cigars ?      Yes     No  q20q10\_4a

(b) **If Yes**, how many cigars do you smoke per week ?   q20q10\_4b

**Other exposure to Cigarette smoke**

10.5 Does your wife / partner smoke cigarettes ?

Yes <sub>1</sub> → Number per day   q20q10\_5  
Ex -Smoker <sub>2</sub> q20q10\_5a  
No <sub>3</sub>  
Does not apply <sub>4</sub>

10.6 For about how many hours each day are you exposed to other people's cigarette smoke ?

(a) at home   (hours) q20q10\_6a

(b) outside the home   (hours) q20q10\_6b

(c) Tick here if rarely exposed to cigarette smoke <sub>1</sub> q20q10\_6c

**Alcohol**

- 11.0 Would you describe your present alcohol intake as
- Daily/most days \_1 q20q11\_0
  - Weekends only \_2
  - Occasionally (once or twice a month) \_3
  - Special occasions only \_4
  - None \_5

One drink is **HALF** a pint of beer /cider, a **SINGLE** whisky, gin, etc. or **ONE GLASS** of wine or sherry

- 11.1 How much do you usually drink on the days when you drink alcohol ? q20q11\_1
- More than 6 drinks \_1
  - 3-6 drinks \_2
  - 1-2 drinks \_3
  - None \_4

- 11.2 How many alcoholic drinks do you have during an average week ?    q20q11\_2

- 11.3 What type of drink do you usually take? q20q11\_3
- Beers, Lagers \_1
  - Wines, Sherry \_2
  - Spirits \_3
  - Variety of Beers, Wines or Spirits \_4
  - Low alcohol drinks \_5

- |                               | Yes                      | No                       | If Yes, glasses per week                  |   |
|-------------------------------|--------------------------|--------------------------|---|---|
| (a) Do you drink white wine ? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> <input type="text"/> | <span style="float: right;">q20q11_3a_w<br/>q20q11_3a_wx</span> |
| red wine ?                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> <input type="text"/> | <span style="float: right;">q20q11_3a_r<br/>q20q11_3a_rx</span> |

- 11.4 Is the alcohol which you drink usually taken (tick whichever applies) :-
- before meals \_1 q20q11\_4\_1
  - with meals \_1 q20q11\_4\_2
  - after meals \_1 q20q11\_4\_3
  - separate from meals \_1 q20q11\_4\_4

- 11.5 Have you changed your alcohol intake in the last three years?
- No \_1
  - Yes, increased \_2 q20q11\_5
  - Yes, cut down \_3
  - Yes, given up \_4

- 11.6 If you have **CUT DOWN** or **GIVEN UP** Was this due to (tick which ever apply):-
- Personal choice \_1 q20q11\_6\_1
  - Doctor's advice \_1 q20q11\_6\_2
  - Illness or ill health \_1 q20q11\_6\_3
  - Health precaution \_1 q20q11\_6\_4
  - Being on medication \_1 q20q11\_6\_5
  - Financial reasons \_1 q20q11\_6\_6
  - Other \_1 q20q11\_6\_7

**Physical Activity**

12.0 Do you make regular journeys every day or most days either walking or cycling ?

No	<input type="checkbox"/>	1	q20q12_0
Walk	<input type="checkbox"/>	2	
Cycle	<input type="checkbox"/>	3	
Both	<input type="checkbox"/>	4	

12.1 How long do you spend on all forms of walking in an average week ?   hours q20q12\_1

12.2 Which of the following best describes your usual walking pace

Slow	<input type="checkbox"/>	1	q20q12_2
Steady average	<input type="checkbox"/>	2	
Fairly brisk	<input type="checkbox"/>	3	
Fast (at least 4 mph)	<input type="checkbox"/>	4	

12.3 How long do you spend cycling in an average week ?   hours q20q12\_3

12.4 Compared with a man who spends four hours on most weekends on activities such as: walking, gardening, household chores, DIY projects, how physically active would you consider yourself?

Much more active	<input type="checkbox"/>	1	q20q12_4
More active	<input type="checkbox"/>	2	
Similar	<input type="checkbox"/>	3	
Less active	<input type="checkbox"/>	4	
Much less active	<input type="checkbox"/>	5	

12.5 Do you take active physical exercise such as running, swimming, dancing, golf, tennis, squash, jogging, bowls, cycling, hiking, etc.?

No	<input type="checkbox"/>	1	q20q12_5
Occasionally (less than once a month)	<input type="checkbox"/>	2	
Frequently (once a month or more)	<input type="checkbox"/>	3	

(a) If you ticked **frequently** please state type of activities :

OFFICE USE  
q20q12\_5a

(b) How many years have you been engaged in these sort of physical activities ?   q20q12\_5b

(c) How many times a **month** (on average) do you take part in these activities (give overall total)?

In winter   q20q12\_5c\_w

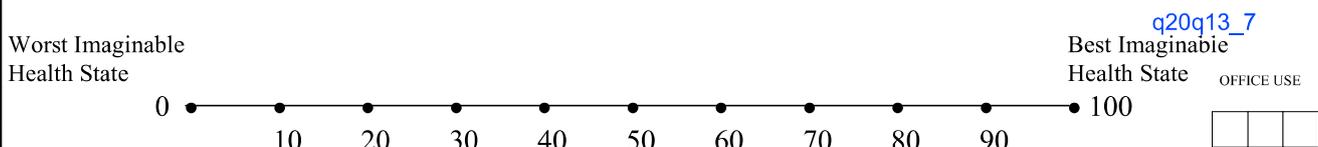
In summer   q20q12\_5c\_s

**Your Health Overall**

Please indicate which statements best describe your health **TODAY**  
 ( Do not tick **more than one** box in each group)

- 13.0 General Health:-      Excellent      <sub>1</sub>      q20q13\_0  
    Good              <sub>2</sub>  
    Fair              <sub>3</sub>  
    Poor              <sub>4</sub>
- 13.1 Pain / Discomfort:-    I have no pain or discomfort      <sub>1</sub>      q20q13\_1  
    I have moderate pain or discomfort      <sub>2</sub>  
    I have extreme pain or discomfort      <sub>3</sub>
- 13.2 Usual Activities ( e.g. work, study, housework, family or leisure activities):-  
    I have no problems with performing my usual activities      <sub>1</sub>      q20q13\_2  
    I have some problems with performing my usual activities      <sub>2</sub>  
    I am unable to perform my usual activities      <sub>3</sub>
- 13.3 Self Care:-              I have no problems with washing and dressing      <sub>1</sub>      q20q13\_3  
    I have some problems with washing and dressing myself      <sub>2</sub>  
    I am unable to wash or dress myself      <sub>3</sub>
- 13.4 Mobility:-              I have no problems in walking about      <sub>1</sub>      q20q13\_4  
    I have some problems in walking about      <sub>2</sub>  
    I am confined to a chair / wheelchair      <sub>3</sub>
- 13.5 Anxiety /Depression:-  
    I am not anxious or depressed      <sub>1</sub>      q20q13\_5  
    I am moderately anxious and /or depressed      <sub>2</sub>  
    I am extremely anxious and /or depressed      <sub>3</sub>
- 13.6 Your Memory:- compared to five years ago, is your memory  
    improved      <sub>1</sub>      q20q13\_6  
    the same      <sub>2</sub>  
    almost as good      <sub>3</sub>  
    worse      <sub>4</sub>  
    much worse      <sub>5</sub>
- 13.7 Health Scale

We have drawn a health scale (rather like a thermometer) on which perfect health is 100 and very poor health is 0. Please put a cross (X) on the scale to reflect how good or bad your health is today.



**Disability**

14.0 Do you have any long-standing illness, disability or infirmity ? Yes  No  [q20q14\\_0](#)

**('long-standing' means anything which has troubled you over a period of time or is likely to do so)**

- If Yes,**
- |     |   |                          |  |
|-----|---|--------------------------|--|
|     |   | Yes                      | No   |
| (a) | Does this illness or disability limit your activities in any way? | <input type="checkbox"/> | <input type="checkbox"/> <a href="#">q20q14_0a</a> |
| (b) | Do you receive a disability allowance ?                           | <input type="checkbox"/> | <input type="checkbox"/> <a href="#">q20q14_0b</a> |

14.1 Do you currently have difficulty carrying out any of the following activities on your own as a result of a long term health problem?

	Yes	No	Date started	Cause of problem	OFFICE USE
(a) Difficulty going up / down stairs	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_1a</a> 19 _____	<a href="#">q20q14_1a_y</a> <a href="#">q20q14_1a_c</a> _____	[ ][ ][ ]
(b) Difficulty bending down / straightening up	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_1b</a> 19 _____	<a href="#">q20q14_1b_y</a> <a href="#">q20q14_1b_c</a> _____	[ ][ ][ ]
(c) Falling or having great difficulty keeping balance	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_1c</a> 19 _____	<a href="#">q20q14_1c_y</a> <a href="#">q20q14_1c_c</a> _____	[ ][ ][ ]
(d) Difficulty walking for a quarter of a mile on the level	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_1d</a> 19 _____	<a href="#">q20q14_1d_y</a> <a href="#">q20q14_1d_c</a> _____	[ ][ ][ ]

14.2 Is your present state of health causing problems with any of the following ?

	Yes	No	Cause of problem	OFFICE USE
(a) Job at work (paid employment)	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_2a</a> <a href="#">q20q14_2a_c</a> _____	[ ][ ][ ]
(b) Household chores	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_2b</a> <a href="#">q20q14_2b_c</a> _____	[ ][ ][ ]
(c) Social life	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_2c</a> <a href="#">q20q14_2c_c</a> _____	[ ][ ][ ]
(d) Interests and hobbies	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_2d</a> <a href="#">q20q14_2d_c</a> _____	[ ][ ][ ]
(e) Holidays and outings	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_2e</a> <a href="#">q20q14_2e_c</a> _____	[ ][ ][ ]
(f) Family relationships	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">q20q14_2f</a> <a href="#">q20q14_2f_c</a> _____	[ ][ ][ ]

**Contact with relatives and friends**

15.0 How often do you see or speak to :-

	Every week <sub>1</sub>	Every month <sub>2</sub>	Every few months <sub>3</sub>	Every Year <sub>4</sub>	Rarely or Never <sub>5</sub>	Does not apply <sub>6</sub>
Your Children						q20q15_0_1
Brothers / Sisters						q20q15_0_2
Friends						q20q15_0_3
Neighbours						q20q15_0_4

15.1 Is the amount of contact you have with each of these:-

	Too little <sub>1</sub>	About right <sub>2</sub>	Too much <sub>3</sub>	Does not apply <sub>4</sub>
Your Children				q20q15_1_1
Brothers / Sisters				q20q15_1_2
Friends				q20q15_1_3
Neighbours				q20q15_1_4

**Present Circumstances**

16.0 Are you at present :-

- single
- married
- widowed
- divorced or separated
- other

- <sub>1</sub>
- <sub>2</sub> ↘
- <sub>3</sub> → 19 \_\_\_\_\_
- <sub>4</sub> ↗
- <sub>5</sub>

Please give year

q20q16\_0  
q20q16\_0\_y

16.1 Are you at present :-

- living alone
- living with a partner or spouse
- living with other family member(s)
- living with other people

- <sub>1</sub>
- <sub>2</sub>
- <sub>3</sub>
- <sub>4</sub>

q20q16\_1

16.2 Your accommodation

- Are you :-
- an owner occupier
  - renting from the local authority
  - renting privately
  - other (please give details) \_\_\_\_\_

- <sub>1</sub>
- <sub>2</sub>
- <sub>3</sub>
- <sub>4</sub>

q20q16\_2

OFFICE USE

q20q16\_2x

**Present Circumstances continued**

16.3	Do you have a car available for your own use ?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	q20q16_3	
16.4	Do you have a pet ?	<input type="checkbox"/>	<input type="checkbox"/>	q20q16_4	
(a)	<b>If Yes</b> , what kind of pet do you own :- _____			q20q16_4a	OFFICE USE <input type="checkbox"/>
16.5	<b>Heating</b> Please tick the fuels you use to heat your home:-				
	q20q16_5_1 Natural gas <input type="checkbox"/>	q20q16_5_2 Oil <input type="checkbox"/>	Wood <input type="checkbox"/>	q20q16_5_3	
	q20q16_5_4 Calor gas <input type="checkbox"/>	Coal <input type="checkbox"/>	q20q16_5_5		OFFICE USE
	q20q16_5_6 Electricity <input type="checkbox"/>	Other <input type="checkbox"/>	please specify _____	q20q16_5_7	q20q16_5_8 <input type="checkbox"/>
16.6	Does your home have:-	Yes	No		
	Central heating	<input type="checkbox"/>	<input type="checkbox"/>	q20q16_6_1	
	Open fires	<input type="checkbox"/>	<input type="checkbox"/>	q20q16_6_2	
	Double Glazing	<input type="checkbox"/>	<input type="checkbox"/>	In part <input type="checkbox"/>	q20q16_6_3
16.7	Please tick the fuels you use for cooking:-				
	Natural gas <input type="checkbox"/>			q20q16_7_1	
	Electricity <input type="checkbox"/>			q20q16_7_2	
	Other <input type="checkbox"/>	(Please specify) _____		q20q16_7_3	q20q16_7_4
					OFFICE USE <input type="checkbox"/>

**Work and Retirement**

17.0	At present are you :-				
	retired	<input type="checkbox"/>	age at retirement	<input type="text"/>	<input type="text"/>
	employed, full time	<input type="checkbox"/>	q20q17_0	q20q17_0_y	
	employed, part time	<input type="checkbox"/>			
	unemployed, seeking work	<input type="checkbox"/>			
	unemployed, not seeking work	<input type="checkbox"/>			
(a)	If you are <b>retired</b> , did you retire because of:-				
	normal retiring age	<input type="checkbox"/>			
	early retirement, voluntary	<input type="checkbox"/>	q20q17_0a		
	early retirement, compulsory	<input type="checkbox"/>			
	retirement, medical grounds	<input type="checkbox"/>			
	other reasons	<input type="checkbox"/>			
17.1	Please give details of your current occupation <b>or</b> the last job you held before retiring: -				
(a)	What kind of work do you / did you do _____				OFFICE USE
(b)	Type of business or industry _____		q20q17_1b		<input type="checkbox"/>
(c)	How many years have you done or did you do that kind of work ? _____		q20q17_1c		<input type="checkbox"/>

**Medications / treatments**

18.0 Are you on any regular medication ?

Yes

q20q18\_0

No  → If No, go to question 18.3 on the next page

For Research Nurse use only	
Actual medications	<input type="checkbox"/> 1
Prescription Card (repeat)	<input type="checkbox"/> 2 q20q18_0m
Other list	<input type="checkbox"/> 3
No formal documentation	<input type="checkbox"/> 4

18.2 Which medications ( including tablets, medicines, inhalers, sprays, injections) you are taking ?  
Please list medications below:

Medication	Dose	Frequency	Reason for taking	OFFICE USE	
				BNF CODE	ICD CODE
q20q18_2_bnf12_1 q20q18_2_bnf34_1 q20q18_2_bnf5_1 q20q18_2_bnf6_1			q20q18_2_icd1	<input type="text"/>	<input type="text"/>
q20q18_2_bnf12_2 q20q18_2_bnf34_2 q20q18_2_bnf5_2 q20q18_2_bnf6_2			q20q18_2_icd2	<input type="text"/>	<input type="text"/>
q20q18_2_bnf12_3 q20q18_2_bnf34_3 q20q18_2_bnf5_2 q20q18_2_bnf6_2			q20q18_2_icd3	<input type="text"/>	<input type="text"/>
q20q18_2_bnf12_4 q20q18_2_bnf34_4 q20q18_2_bnf5_4 q20q18_2_bnf6_4			q20q18_2_icd4	<input type="text"/>	<input type="text"/>
q20q18_2_bnf12_5 q20q18_2_bnf34_5 q20q18_2_bnf5_5 q20q18_2_bnf6_5			q20q18_2_icd5	<input type="text"/>	<input type="text"/>
q20q18_2_bnf12_6 q20q18_2_bnf34_6 q20q18_2_bnf5_6 q20q18_2_bnf6_6			q20q18_2_icd6	<input type="text"/>	<input type="text"/>
q20q18_2_bnf12_7 q20q18_2_bnf34_7 q20q18_2_bnf5_7 q20q18_2_bnf6_7			q20q18_2_icd7	<input type="text"/>	<input type="text"/>
q20q18_2_bnf12_8 q20q18_2_bnf34_8 q20q18_2_bnf5_8 q20q18_2_bnf6_8			q20q18_2_icd8	<input type="text"/>	<input type="text"/>
q20q18_2_bnf12_9 q20q18_2_bnf34_9 q20q18_2_bnf5_9 q20q18_2_bnf6_9			q20q18_2_icd9	<input type="text"/>	<input type="text"/>
q20q18_2_bnf12_10 q20q18_2_bnf34_10 q20q18_2_bnf5_10 q20q18_2_bnf6_10			q20q18_2_icd10	<input type="text"/>	<input type="text"/>



**Vitamins & Minerals**

18.6 Do you regularly take any vitamin or mineral tablets? Yes  No  q20q18\_6

(a) **If Yes**, please give details :-

Name of vitamin / mineral <input type="checkbox"/>	Daily Dose <input type="checkbox"/>	Year Started <input type="checkbox"/>
q20q18_6a_1	q20q18_6a_2	19_____ q20q18_6a_3
q20q18_6a_4	q20q18_6a_5	19_____ q20q18_6a_6
q20q18_6a_7	q20q18_6a_8	19_____ q20q18_6a_9
q20q18_6a_10	q20q18_6a_11	19_____ q20q18_6a_12

**Blood Cholesterol Test**

19.0 Have you ever had your blood cholesterol measured? Yes  No  q20q19\_0

(a) **If Yes**, were you told that the result was High <sub>1</sub> q20q19\_0a  
 Normal <sub>2</sub>  
 Low <sub>3</sub>  
 Not told <sub>4</sub>

(b) **If High**, have you been advised to take any particular action? (please give details)

Diet <sub>1</sub> q20q19\_0b\_di  
 Drugs <sub>1</sub> q20q19\_0b\_dr

**Eating and drinking**

20.0 What time did you last have something to eat or drink other than water?

.  hours  
 q20q20\_0h q20q20\_0m

If yesterday please tick <sub>1</sub> q20q20\_0y

## 21.0 Consent to follow up studies

An important part of this study is to observe the future health of the people taking part. We are therefore seeking your permission to receive specific information related to heart disease and stroke, particularly from the records held by your general practitioner. All these details would be treated in **absolute confidence** by the Research Team.

Do you agree to us following your future health through your health records ?

<sub>1</sub> Agreed    <sub>2</sub> Not Agreed  
q20q21\_0\_1

We will arrange to have your blood sample checked for cholesterol and other factors which are important for heart disease risk. The results of these tests will be sent back to your doctor in the next four to five weeks. If any of the results give cause for concern, you will be asked to make an appointment with your doctor.

Do you agree to us passing the test results to your doctor ?

<sub>1</sub> Agreed    <sub>2</sub> Not Agreed  
q20q21\_0\_2

Part of your blood sample will be frozen and kept for special scientific studies of factors affecting heart disease risk, which may help us to understand how to prevent heart disease in the future. Among the factors we may need to study will be the way in which genetic factors affect heart disease risk.

Would you allow us to use your sample in this way ?

<sub>1</sub> Agreed    <sub>2</sub> Not Agreed  
q20q21\_0\_3

I agree to allow the Research Team to continue to study my health in accordance with the criteria above. I understand that any details recorded will be treated in complete confidence.

Signed:

q20sig

\_\_\_\_\_

Date:

q20date1 q20\_date2 q20\_date3

\_\_\_\_\_

## APPENDIX 6 20 year follow-up -Blood collection and aliquot schedule

### Appendix 6- Blood collection and aliquot schedule

#### Blood Tubes- 1 bag person

Blood Collection Tubes to be placed securely in plastic bags (7 Tubes)

- 9ml EDTA (Red) Tube x1 02.1066
- 9ml CITRATE (Green) Tube x1 05.1071
- 2.7ml Yellow Tube x1 05.1073
- 2.7ml EDTA (Red) Tube x1 05.1167
- 9ml Serum (White) Tube x2 01.1063
- 5ml Serum (White) Tube x1 03.1730

EDTA	9ml	(Tube F-J)	02.1066
Citrate	5ml	(Tube A-E)	05.1071
Flu Oxlate	2.7ml	(Tube K)	05.1073
EDTA	2.7 ml	(Tube T)	05.1167
Fluoroide Oxalate	1.2ml	(Tube U)	06.1665
Serum	9ml	(Tube L-P)	01.1063
Serum	9ml	(Tube Q-S)	01.1063
Serum	5ml	(Tube W)	03.1730

**Blood Aliquoting all tubes to be 2ml**

1<sup>st</sup> Box

Red									
Red									
Red									
Red									
Purple									
Green									
Green									
Green									
Green									
Green									

Front of Box

2<sup>nd</sup> Box

White/ Netural									
"	"	"	"	"	"	"	"	"	"
"	"	"	"	"	"	"	"	"	"
"	"	"	"	"	"	"	"	"	"
"	"	"	"	"	"	"	"	"	"
"	"	"	"	"	"	"	"	"	"
White/ Netural									
Yellow									

Front of Box

BLOOD TUBES

A B C D E I

GORDON LOWE

GLASGOW

F G

BRUCKDOFER

BIOCHEMISTRY

K W

WINDER

CHEMICAL PATHOLOGY

H J N O P Q R

STORED AT -70 C

CHEMICAL PATHOLOGY

L M RED & GREEN RESIDUES

STORED AT -20 C

9<sup>th</sup> floor

BRITISH REGIONAL HEART STUDY RESCREEN BLOOD SAMPLES

Description	Qty(ml)	Analysis	Laboratory	Storage
CITRATE (Green) aliquots				
A	1	II VII VIII IX	GL (GLA)	Residue to be returned to -70C
B	1	AP©R	GL (GLA)	Residue to be returned to -70C
C	1	Reserve /CCS	GL (GLA)	Residue to be returned to -70C
D	1	vWF t-PA d-Dimer	GL (GLA)	-70C (1 <sup>st</sup> samples in GLA
E	1	Unknown	GL (GLA)	-70C (1 <sup>st</sup> samples in GLA

Description	Qty(ml)	Analysis	Laboratory	Storage
EDTA (Red) aliquots				
F	0.5	VITAMIN C	B (RFH)	No Residue
G	0.5	VITAMIN E	B (RFH)	No Residue
H	0.5	HOMOCYSTEINE	HR (Nor)	-70C
I	2.0	VISCOSITY/ CRP	GL (GLA)	Residue to be returned to -70C (GLA 2004/2005)
J	1.5	Unknown	GL (GLA)	-70C

Description	Qty(ml)	Analysis	Laboratory	Storage
GLUCOSE (Yellow) aliquots				
K		BIOCHEMISTRY	RFH	No Residue

Description	Qty(ml)	Analysis	Laboratory	Storage
SERUM (White/ Netural) aliquots				
W	1.5	BIOCHEMISTRY	RFH	Residue -70
L	0.5	Insulin	Alb(NUT)	-20
M	0.5			-70
N	0.5	Cotinine		-70 ABS Lab SGHMS (Dec 06)
O	1.0	Unknown		-70
P	1.0	Nested case control	GL (GLA)	-70 (Feb 07)
Q	1.0			

Description	Qty(ml)	Analysis	Laboratory	Storage
T		Full Blood Count	ML (Whittington)	No Residue
U		CARBOXY Hb	ML (Whittington)	No Residue

BRITISH REGIONAL HEART STUDY RESCREEN BLOOD SAMPLES- Planned analysis

Description	Qty(ml)	Analysis	Laboratory	Storage	Sent	Returned
CITRATE (Green) aliquots						
A	1	II VII VIII IX	GL (GLA)	Residue to be returned to -70C	1998-2000	
B	1	AP©R	GL (GLA)	Residue to be returned to -70C	1998-2000	
C	1	Reserve /CCS	GL (GLA)	Residue to be returned to -70C	1998-2000	
D	1	vWF t-PA d-Dimer	GL (GLA)	-70C (1 <sup>st</sup> samples in GLA)	1998-2000	
E	1	Unknown	GL (GLA)	-70C (1 <sup>st</sup> samples in GLA)	1998-2000	

Description	Qty(ml)	Analysis	Laboratory	Storage		
EDTA (Red) aliquots						
H	0.5	HOMOCYSTEINE	HR (Nor)	-70C		
I	2.0	VISCOSITY/ CRP	GL (GLA)	Residue to be returned to -70C	1998-2000	
I	2.0		NS	GLA	2004-2005	
J	1.5	Unknown	GL (GLA)	-70C		

Description	Qty(ml)	Analysis	Laboratory	Storage		
SERUM (White/ Netural) aliquots						
L	0.5	Insulin	Alb(NUT)	-20	Mar 2000	Sent to Norway
L	0.5	HOMOCYSTEINE	HR(Nor)	-20	Nov 2000	
M	0.5			-70		
N	0.5	Cotinine		-70 ABS Lab SGHMS	Dec 06	
O	1.0	Unknown		-70		
P	1.0	Nested case control	GL (GLA)	-70	06 Feb 07	
Q	1.0	Unknown				

Residue			Laboratory	Storage		
EDTA	0.5	Genetic Studies				-70 SGHMS
CITRATE	0.5	Genetic Studies			May 2004	-70SGHMS

No Residue						
Description	Qty(ml)	Analysis	Laboratory	Storage		
F	0.5	VITAMIN C	B (RFH)	No Residue		
G	0.5	VITAMIN E	B (RFH)	No Residue		
K		Glucose	RFH	No Residue		
W	1.5	BIOCHEMISTRY	RFH	No Residue		
T		FULL BLOOD COUNT	ML (Whittington)	No Residue		
U		CarboxyHb	ML (Whittington)	No Residue		

**BRITISH REGIONAL HEART STUDY SCREENING RESULTS 2000**

<b>Serial No:</b> «SERNO»	<b>Appointment Date :</b>
«INIT» «SURNAME»	<b>DOB :</b> «DOB»
«ADDR1»	
«ADDR2»	
«ADDR3»	
«ADDR4»	
«POSTCODE»	

Height	cm	Systolic BP <sup>+</sup>	mm Hg
Weight	kg	Diastolic BP	mm Hg
Body Mass Index	kg/m <sup>2</sup>		

**Biochemistry**

Total Cholesterol	mmol/l	Urea	mmol/l
LDL	mmol/l	Potassium	mmol/l
HDL	mmol/l	Sodium	mmol/l
Triglycerides	mmol/l	Creatinine	μ mol/l
Blood Glucose	mmol/l	Urate	mmol/l

Total Protein	g/l	Aspartate transaminase	u/l
Albumin	g/l	Alanine transaminase	u/l
Bilirubin	μ mol/l	Gamma GT	u/l
Alk Phosphate	mmol/l		

**Haematology**

White cell count	x10 <sup>9</sup>	/l	Haematocrit	l / l
Haemoglobin		g/dl	Mean Cell Volume	fl
Platelets	x10 <sup>9</sup>	/l	Mean Cell	pg
			Haemoglobin	
Red cell count	x10 <sup>12</sup>	/l	Mean Cell	g/dl
			Haemoglobin	
			Concentration	

\* Ref: Department of Health 1995.

+ Measured with the Dinamap 1846 which reads about 8mm higher than mercury sphygmomanometer.

## Reference Ranges

### Biochemistry

Total Cholesterol	3.0 - 6.5 mmol/l	Urea	3.0 - 6.5 mmol/l
LDL	0.00 - 5.50 mmol/l	Potassium	3.5 - 5.0 mmol/l
HDL	0.9 - 1.7 mmol/l	Sodium	135 - 145 mmol/l
Triglycerides	0.70 - 2.20 mmol/l	Creatinine	60 - 120 $\mu$ mol/l
Blood Glucose	2.9 - 7.2 mmol/l	Urate	0.10 - 0.40 mmol/l
Total Protein	60 - 80 g/l	Aspartate transaminase	5 - 40 u/l
Albumin	35 - 50 g/l	Alanine transaminase	5 - 40 u/l
Bilirubin	5 - 17 $\mu$ mol/l	Gamma GT	10 - 48 u/l
Alk Phosphate	35 - 130 mmol/l		

### Haematology

White cell count	4 - 12 x 10 <sup>9</sup> /l	Haematocrit	0.40 - 0.54 l/l
Haemoglobin	13.0 - 16.5 g/dl	Mean Cell Volume	80 - 100 fl
Platelets	140 - 400 x 10 <sup>9</sup> /l	Mean Cell Haemoglobin	27 - 32 pg
Red cell count	4.5 - 5.5 x 10 <sup>12</sup> /l		

## APPENDIX 8 BRHS 1998-2000 20 year follow-up Participant abnormal BP reporting template

Template for reporting abnormal BP

Dear Doctor \_\_\_\_\_,

### British Regional Heart Study

Your Participant \_\_\_\_\_ attended our survey examination. His sitting blood pressure readings were:-

SBP\* \_\_\_\_\_ DBP \_\_\_\_\_

SBP\* \_\_\_\_\_ DBP \_\_\_\_\_

We recommended that he should attend your surgery for a further blood pressure measurement within a week/within two-three weeks.

Thank you for your attention.

British Regional Heart Study

\* These measurements were made with a Dinamap instrument, which overestimates systolic blood pressure by about 8 mmHg compared with a mercury sphygmomanometer.

## APPENDIX 9 BRHS 1998-2000 20 year follow-up LREC approval Local Research Ethics Committees (LRECs)

Appendix 9 : Ethics Approval 1998-2000

Local Research Ethics Committees			
Town	Ethics Committee Area	Project Ref	Date of approval
Harrogate	Harrogate Health Care NHS Trust	CG/ db MREC/02/2/91	23/07/97
Shrewsbury	Shropshire	97/47/OTH (MREC/02/2/91)	17/07/97
Mansfield	North Nottinghamshire	NNHA/290 (MREC/02/2/91)	11/07/97
Lowestoft	Great Yarmouth & Waveney	CLE/LREC/22/97 (MREC/02/2/91)	11/06/97
Southport	Sefton	Research Protocol 219 (MREC/02/2/91)	15/07/97
MT	South East Wales	97/1991 (MREC/02/2/91)	03/09/97
Guildford	South West Surrey	EC68 /97 (MREC/02/2/91)	16/06/97
Burnley	East Lancashire & South Cumbria Agency	MJ/AB (MREC/02/2/91)	04/07/97
NUL	North Staffordshire	Project 777 (MREC/02/2/91)	01/09/97
Exeter	North and East Devon	Study 946 (MREC/02/2/91)	17/09/97
Dewsbury	Dewsbury District Hospital	MREC/99/2/92 (MREC/02/2/91)	01/10/99
Falkirk	Forth Valley NHS Board	MREC/02/2/91	01/10/97
Ipswich	East Suffolk	SFMG/pmf (MREC/02/2/91)	30/09/97
Gloucester	Gloucestershire	97/42W (MREC/02/2/91)	08/10/97
Ayr	Aryshire & Arran NHS Board	FVERC Study No: 343 MM1/519/GC (MREC/02/2/91)	18/11/97
Dunfermline	Fife	MREC/02/2/91	27/10/97
Darlington	County Durham & Darlington	Study 51/Sept97 (MREC/02/2/91)	16/01/98
Carlisle	North Cumbria	MREC/02/2/91	03/10/97
Maidstone	Maidstone & Tunbridge Wells	MAID 69/99 MREC/99/2/92 (MREC/02/2/91)	25/11/99
Grimsby & Scunthorpe	South Humber Health Authority	PF/KW/97.9.4 (MREC/02/2/91)	29/09/97
Bedford	North Bedfordshire	NS/MC/16-11-97 (MREC/02/2/91)	11/11/97
Wigan	Wrightington, Wigan & Leigh	10-97/ 312 (MREC/02/2/91)	31/10/97
Hartlepool	Hartlepool and North Tees	MREC/02/2/91	29/10/97
Multi Centre	London MREC	MREC/02/2/91	01/10/99