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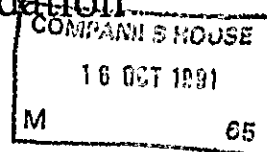
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British Heart Foundation



Report of the Council and Accounts

31 March 1991

Report of the Council for the year ended 31 March 1991

The Council presents its Report and Accounts for the year ended 31 March 1991

I. Principal Activities

The Foundation's principal activity is to fund research into the causes, prevention, diagnosis and treatment of diseases of the heart and the circulation. A record number of worthwhile applications for funds was received by the Foundation from research bodies during the year. This underlines how much more there is to do in carrying out our primary objective and how many well qualified researchers there are willing to devote their time to improve the quality of life for so many people. We do not have the resources to fund all research proposals that are put forward and a strict qualitative judgement has to be made by our specialist medical committees before funds are committed to research projects.

The Policy Review Committee chaired by Lord Kearton to undertake a comprehensive review of the objectives of the Foundation produced its report in September 1990. Its fundamental conclusion was that the policy of identifying the most rewarding fields of heart research and committing approximately 80% of the Foundation's disposable income to those fields was correct. Basic scientific research continues to be of the utmost importance. The complementary role of providing the public with an authoritative source of advice and information was strongly re-emphasised, as was the need to educate the public and the medical profession in the latest methods in practical life saving techniques. The Heart Information Series of leaflets and training videos on resuscitation were examples quoted of successful advice which should be extended. New initiatives in promoting "centres of excellence" where research could be concentrated were explored, as was the need to encourage the government of the day to foster academic development in the field of cardiology. An increase in the grants to clinical and non-clinical research workers was recommended in order to encourage research generally and in particular to make a career in research an attractive proposition. Finally the Committee recommended that a similar formal review of the Foundation's achievements should be undertaken at least every 10 years.

Our programme of equipping ambulances throughout the United Kingdom with defibrillators was completed during the year. The welcome intervention of government resources in the final phase enabled us to divert the balance of the budget to funding new educational initiatives.

The calendar year 1991 is our 30th anniversary year. Our theme for the year is Exercise for Life with regional offices promoting exercise through various special events, competitions and activities. Many of these link fundraising with the exercise theme. Education aimed at all ages of the community is an important component of our list of objectives and we are committed to a campaign to introduce the public - and particularly young people - to cardiopulmonary resuscitation (CPR) as a way of saving life. This involves the Foundation in co-ordinating specific emergency aid training schemes through a wide range of educational establishments, in conjunction with a number of national agencies such as St John Ambulance and the British Red Cross Society, with the aim being to teach the person in the street how to administer immediate treatment to heart attack victims.

2. Results for the Year

Record total income for the year of £29.89m was not sufficient to prevent us from having to withdraw £173,000 from reserves to meet our charitable dispositions. Legacy income rose by 23% to £14.10m but the recessionary climate in the country had an adverse effect on our general fundraising income, which fell by £2.23m following the completion of our special effort to raise funds for the purchase of equipment in 1989/90. This reduction was despite the unceasing efforts of so many willing volunteers throughout the country. Expenditure included £2.09m transferred to the Chairs Maintenance Fund in order to meet our continuing obligations to the 23 chairs of cardiology across the country. Following the Policy Review Committee's recommendations to make grants for building and equipment projects at established centres of cardiology, the Foundation received a number of applications from which two projects were selected. These were the National Heart & Lung Institute in London and the University College of Wales in Cardiff, each of which was awarded £500,000.

During the year we completed the purchase of our new head office building at 14 Fitzhardinge Street and moved our head office staff into one building for the first time in many years. This, together with the

introduction of new computer applications and hardware in most head office departments, has already improved the efficiency of head office operation. The addition to freehold property amounted to £9.13m and the previous head office properties, having been transferred to property investments, are being let to produce a continuing income to the Foundation.

There is continuing need to provide even greater resources to meet the growing financial demands of research projects and the maintenance of our chairs of cardiology, both of which are subject to the constant pressure of inflation. The Foundation's liability to meet the cost of committed research at the year end was £33.08m as shown in note 5 to the Balance Sheet. The cost of providing funds for such research, which has been increasing year by year, is largely met from donations from local and national fundraising events and from legacies, all sources on which we continue to rely. The fund designated for chairs maintenance amounted to £24.67m at the year end, having been increased by £2.09m during the year. The investments specifically appropriated to this fund provided the income which was needed to meet our commitment for our chairs of cardiology; any additional endowments of chairs or increase in the cost of supporting existing chairs would call for further transfers from the Foundation's income.

During the year we have continued to build on the successful pilot scheme of charity shops and the numbers have risen from 36 at the beginning of the year to 74 at 31 March 1991. This steady programme of searching out sites, negotiating, refurbishing, staffing and stocking up with donated goods has been rewarded with a year of profitable trading contributing to Foundation income. It is planned that a further 40 shops will be opened in 1991/92 to maintain the momentum, contribute substantially to income and serve the needs of the community.

3. Directors and Officers

For the purposes of the Companies Act 1985 the directors of the Foundation are the members of the Council. Names of those who served during the year are listed on the inside front cover of the main report. The following members retired during the year:-

Mr John Lister
Sir Alastair Pilkington
Mr Edgar Sowton
Mr George B Young

The following members were elected during the year:-

Mr Robin Broadley
Director Barings Plc; Member of the Council of the Baring Foundation;
Non-Executive Director: Ferranti International Plc, Royal Insurance
Holdings Plc, Blue Circle Industries Plc

Dr Douglas A Chamberlain CBE MD MA FRCP
Consultant Cardiologist, Royal Sussex County Hospital; President, British Cardiac Society

Mr Graham A W Hornett MA MB MRCGP DRCOG
General Practitioner; Honorary Fellow, Department of Epidemiology and Primary Health Care, University of Surrey; Fellow of the Royal Society of Tropical Medicine and Hygiene

Sir Keith Ross Bt KCVO FRCS
Consultant Cardiac Surgeon; President, Society of Cardiothoracic Surgeons 1987-88; Royal College of Surgeons Council Member.

Brigadier M Christopher Thursby Pelham OBE
Former Director General of the British Heart Foundation.

No Council members received any remuneration for services as members of the Council, but a total of £1,058 was reimbursed for travelling expenses.

Mr Ian Cameron, a Council member, is a director of Panmure Gordon & Co Limited who are the Foundation's stockbrokers.

Mr Donald Newell, a Council member, is a partner in Hillier Parker, the Foundation's property agents.

The Secretary, Mrs Marion Grainge, retired on 30 April 1991 and was replaced by Mr Michael Livingstone.

4. Auditors

A resolution will be proposed at the Annual General Meeting to re-appoint BDO Binder Hamlyn as auditors to the Foundation.

By Order of the Council
Michael G Livingstone
SECRETARY

British Heart Foundation

Income and expenditure account for the year ended 31 March 1991

	Note		1991 £000	1990 £000
Donations and fundraising	2	10,319		12,550
Legacies	1c	14,097		11,452
Investment income	3	5,476		5,043
Total income			29,892	29,045
Fundraising and publicity costs	4	3,374		2,938
Administration expenses	4	1,009		754
			4,383	3,692
Disposable income			25,509	25,353
Medical department		443		373
Education		1,013		822
Research, fellowships and cardiac equipment awards	5	20,437		17,953
Maintenance of chairs of cardiovascular disease	6	2,147		1,609
Direct charitable expenditure			24,045	20,757
			1,464	4,596
Release of provision for endowment of chairs	7		450	-
Balance available before transfers			1,914	4,596
Transfer to Chairs Maintenance Fund	8	2,087		1,008
Transfer to specific reserves	9	-		3,000
			2,087	4,008
Balance (from) to Accumulated Reserve	9		(173)	588

Statement of investment gains for the year ended 31 March 1991

	General Fund		Chairs Maintenance Fund	Al Maktoum Lectureship Fund
	£000	£000	£000	£000
	Listed	Unlisted		
Unrealised gains/(losses) at 31 March 1991	8,124	-	(207)	(4)
Unrealised gains/(losses) at 31 March 1990	6,004	-	(3,130)	(27)
Change in unrealised gains/losses	2,120	-	2,923	23
Realised gains (losses) on disposal	514	8	(589)	7
Net investment gains	2,634	8	2,334	30

British Heart Foundation

Balance Sheet at 31 March 1991

	Note	1991 £000	1990 £000
Fixed assets	10	11,645	2,630
Investments	11	69,635	56,194
		<u>81,280</u>	<u>58,824</u>
Current assets			
Investments – short term deposits		844	5,500
Debtors	12	1,116	1,664
Cash on deposit, at bank and in hand		1,719	1,963
		<u>3,679</u>	<u>9,127</u>
Creditors: amounts falling due within one year			
Awards	5	15,251	11,239
Maintenance of chairs of cardiovascular disease	6	1,854	1,611
Endowment of chairs of cardiovascular disease	7	–	450
Other creditors	13	1,331	362
		<u>18,436</u>	<u>13,662</u>
Net current liabilities		14,757	4,535
Total assets less current liabilities		<u>66,523</u>	<u>54,289</u>
Creditors: amounts falling due after more than one year			
Awards	5	17,829	12,531
		<u>48,694</u>	<u>41,758</u>
Represented by:			
Funds			
Chairs Maintenance	8	24,673	20,252
Al Maktoum Lectureship	14	320	274
GM Yule Bequest	15	74	74
Reserves	9	23,627	21,158
		<u>48,694</u>	<u>41,758</u>

Approved by the Council on 9 August 1991

Sir Raymond Hoffenberg, Chairman }
 Sir Richard Lloyd, Honorary Treasurer } Members of the Council

Phoffenberg
R. Lloyd

British Heart Foundation

Statement of source and application of funds for the year ended 31 March 1991

	1991 £000	1990 £000
Source of funds		
Balance available before transfers	1,914	4,596
Items not involving the movement of funds		
Depreciation	411	293
Profit on sale of fixed assets	(1)	(2)
Awards	20,437	17,953
Maintenance of chairs	2,147	1,609
	<u>24,908</u>	<u>24,389</u>
Proceeds on disposal of investments	11,991	8,715
Proceeds on disposal of fixed assets	1,627	49
Outside funding - Al Maktoum Lectureship	16	(14)
	<u>38,542</u>	<u>33,139</u>
Total funds generated		
Application of funds		
Purchase of investments	20,426	14,062
Purchase of fixed assets	11,052	632
Awards paid	11,127	12,555
Payments for maintenance of chairs	1,904	1,856
Payment for endowment of chairs	-	250
	<u>44,509</u>	<u>29,555</u>
(Decrease) increase in working capital	(5,967)	3,584
Decrease (increase) in debtors	548	(1,178)
Increase in creditors and endowments	519	134
Decrease (increase) in current asset investments	4,656	(2,781)
(Decrease) in liquid funds: bank balances and cash	<u>(244)</u>	<u>(241)</u>

Report of the Auditors to the members of British Heart Foundation

We have audited the accounts on pages 3 to 11 in accordance with Auditing Standards.

In our opinion the financial statements give a true and fair view of the state of affairs of the Foundation at 31 March 1991 and of the results and source and application of funds for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

BDO Binder Hamlyn
Chartered Accountants
20 Old Bailey
London EC4M 7BH

BDO Binder Hamlyn

27th Aug 1991

Notes to the accounts

1. Accounting policies

The financial statements comply with the Statement of Recommended Practice on Accounting by Charities except that, as mentioned in 1d, all awards approved in the year are included in expenditure.

The following are the more important accounting policies adopted by the Foundation:

a. Basis of accounting.

The financial statements have been prepared under the historical cost convention except for listed investments which are included at market value.

b. Income and expenditure.

Income is brought into the accounts when received by the Foundation and expenditure is accounted for on an accruals basis. Income and expenditure of local committees is not accounted for in these accounts as they are autonomous and net remittances from them are brought into the accounts when received.

c. Legacies.

These are treated as income. Investments are included at the mid-market value on the day the certificates are received.

d. Awards.

The total sum awarded is shown in the Income and Expenditure Account, notwithstanding that a proportion will be disbursed in subsequent accounting periods.

e. Fixed assets.

These are stated at cost. Depreciation is provided by the straight line method calculated to write off assets over their estimated useful lives at the following rates:

Freehold property – over fifty years on cost of buildings.

Leasehold property – over the life of the lease.

Shop fittings – over seven years.

Vehicles, furniture and equipment – over four years.

Depreciation has not been charged on land.

f. Investments.

Listed investments are shown at market value; unlisted investments are valued at cost. Purchase of foreign investments are converted at the rate ruling at the date of acquisition; market values are translated at rates ruling at the Balance Sheet date. Income derived from these investments is converted at the rate ruling when it is received.

Movements in value arising from investment changes or revaluation have been taken to the investment reserve, for General Fund investments, and to the relevant fund in the case of other investments. The effect of this policy is shown in the Statement of Investment Gains (page 3). Profits on disposals of investments have been transferred to the investment reserve.

2. Donations and fundraising

	1991 £000	1990 £000
Donations	4,182	6,882
Regional fundraising	4,394	4,232
National events	1,592	1,462
Shops – income	2,595	1,070
– expenditure	(2,444)	(1,106)
	<u>10,319</u>	<u>12,550</u>

Donations are stated net of any potential tax charges on affinity card income.

Shops expenditure includes costs incurred in the establishment and development of the charity shops operation.

3. Investment income

General Fund		
British Government stocks	677	604
UK equities – listed	1,433	1,080
– unlisted	61	60
Foreign investments	180	186
Property	3	–
Chairs Maintenance Fund	2,427	2,110
GM Yule Bequest Fund	7	7
Bank interest and deposits	688	996
	<u>5,476</u>	<u>5,043</u>

4. Departmental costs

	1991 £000	1990 £000	1991 £000	1990 £000
	Fundraising and Publicity		Administration	
Staff costs and fees	1,389	1,272	646	591
Operating costs	790	664	271	323
Depreciation	84	67	72	24
Audit fee	-	-	20	16
Advertising	857	839	-	-
Public relations and information	254	96	-	-
	<u>3,374</u>	<u>2,938</u>	<u>1,009</u>	<u>754</u>

The depreciation charge within other departments amounts to £255,000 giving a total for the year of £411,000 (1990 £233,000).

5. Research, fellowships and cardiac equipment awards

	1991 £000	1990 £000
1 April 1990	23,770	18,372
Awarded		
Research	13,624	10,786
Fellowships	4,845	1,842
Cardiac equipment	<u>1,968</u>	<u>5,325</u>
	20,437	17,953
	<u>44,207</u>	<u>36,325</u>
Paid	11,127	12,555
31 March 1991	<u>33,080</u>	<u>23,770</u>
Awards falling due within one year	15,251	11,239
Awards falling due after more than one year	17,829	12,531
	<u>33,080</u>	<u>23,770</u>

6. Maintenance of chairs

1 April 1990	1,611	1,858
Provided for year	2,147	1,609
	<u>3,758</u>	<u>3,467</u>
Paid	1,904	1,856
31 March 1991	<u>1,854</u>	<u>1,611</u>

7. Endowment of chairs

1 April 1990	450	700
Transfer to Income and Expenditure Account	(450)	-
	<u>-</u>	<u>700</u>
Paid	-	250
31 March 1991	<u>-</u>	<u>450</u>

Notes to the accounts

8. Chairs Maintenance Fund

	1991 £000	1990 £000
1 April 1990	20,852	20,432
Transfer from Income and Expenditure Account	2,087	1,028
	<u>22,939</u>	<u>21,460</u>
Change in market value during year	2,834	3,188
31 March 1991	<u>24,673</u>	<u>24,648</u>

The transfer from Income and Expenditure Account represents additional capital required to provide the necessary income to support the expenditure on the maintenance of chairs for the ensuing year. The Chairs Maintenance Fund is represented by investments at market value (note 11).

9. Movements on Reserves

	Accumulated Reserve £000	Investment Reserve £000	Shops Reserve £000	Property Reserve £000	Total £000
1 April 1990	2,608	9,550	2,000	7,000	21,158
Transfer between reserves	7,000	—	—	(7,000)	—
Transfer to Income and Expenditure Account	(173)	—	—	—	(173)
Change in market value	—	2,642	—	—	2,642
31 March 1991	<u>9,435</u>	<u>12,192</u>	<u>2,000</u>	<u>—</u>	<u>23,627</u>

10. Fixed assets

Cost	Freehold land and buildings £000	Leasehold property £000	Shop fixtures and fittings £000	Vehicles £000	Furniture and equipment £000	Total £000
1 April 1990	1,763	511	371	252	456	3,353
Additions	9,132	929	498	168	325	11,052
Disposals/transfers	(1,747)	—	—	(80)	(85)	(1,912)
	<u>9,148</u>	<u>1,440</u>	<u>869</u>	<u>340</u>	<u>696</u>	<u>12,493</u>
Depreciation						
1 April 1990	170	82	81	59	331	723
Charge for year	87	81	82	73	88	411
Disposals/transfers	(175)	—	—	(39)	(72)	(286)
	<u>82</u>	<u>163</u>	<u>163</u>	<u>93</u>	<u>347</u>	<u>848</u>
Net book values						
31 March 1991	<u>9,066</u>	<u>1,277</u>	<u>706</u>	<u>247</u>	<u>349</u>	<u>11,645</u>
31 March 1990	<u>1,593</u>	<u>429</u>	<u>290</u>	<u>193</u>	<u>125</u>	<u>2,630</u>

The cost of £1,747,000 and depreciation of £175,000 shown under freehold land and buildings reflects the transfer of 102/4 Gloucester Place and 109 Gloucester Place to General Fund investments (note 11).

11. Investments

	1991 Market Value £000	1990 £000	1991 Cost £000	1990 £000
Listed				
General Fund				
British Government Stocks	6,725	5,755	6,454	6,516
UK equities	30,317	23,591	23,448	17,911
US and other foreign holdings	5,467	5,761	4,483	4,676
	<u>42,509</u>	<u>35,107</u>	<u>34,385</u>	<u>29,103</u>
Chairs Maintenance Fund				
British Government stocks	24,673	20,252	24,880	23,982
Al Maktoum Senior Lectureship Fund				
British Government stocks	320	274	324	301
	<u>67,502</u>	<u>55,633</u>	<u>59,589</u>	<u>52,786</u>
Unlisted				
General Fund				
Equities	487	487		
Property	1,572	-		
G M Yule Bequest Fund	74	74		
	<u>69,635</u>	<u>56,194</u>		

Movements in investments were as follows:

	General Fund Listed £000	General Fund Unlisted £000	Chairs Maintenance Fund £000	Al Maktoum Lectureship Fund £000	GM Yule Bequest Fund £000
1 April 1990 at market value	35,107	-	20,252	274	-
1 April 1990 at cost	-	487	-	-	74
Additions/transfers	11,740	1,572	6,791	323	-
Disposals at market value	(6,972)	-	(4,704)	(307)	-
Disposals at cost	-	-	-	-	-
Change in market value	2,634	-	2,334	30	-
31 March 1991	<u>42,509</u>	<u>2,059</u>	<u>24,673</u>	<u>320</u>	<u>74</u>

The freehold property at 102/4 Gloucester Place and 109 Gloucester Place, occupied by the Foundation until 22 July 1990, has been transferred from fixed assets to investments, at net book value of £1,572,000 which approximated to market value at that date.

12. Debtors

	1991 £000	1990 £000
Amount owed by subsidiary company	379	200
Other debtors	219	355
Prepayments	346	44
Prepayments for fixed assets	9	915
Income Tax recoverable	163	150
	<u>1,116</u>	<u>1,664</u>

Notes to the accounts

13. Other creditors

	1991 £000	1990 £000
Accruals	1,108	256
Deferred income	30	27
Deposit covenants	37	39
Taxes and social security	156	40
	<u>1,331</u>	<u>362</u>

14. Al Maktoum Lectureship Fund

Capital 1 April 1990	273	312
Change in market value during year	30	(39)
	<u>303</u>	<u>273</u>
Unexpended income	17	1
31 March 1991	<u>320</u>	<u>274</u>

The fund produced income of £33,000 to support a senior lecturer at The Institute of Child Health, London.

15. G M Yule Bequest

The income from this bequest is available for the general objectives of the Foundation.

16. Staff costs

Salaries	2,027	1,603
Social security	196	159
Other pension costs	304	277
	<u>2,527</u>	<u>2,039</u>

The number of staff whose emoluments fell within the prescribed ranges were:

£30,001-£35,000	-	3
£35,001-£40,000	3	1
£40,001-£45,000	1	1
£45,001-£50,000	1	-
£50,001-£55,000	1	-

The average number of staff employed during the year was:

Administration and Secretariat	31	27
Fundraising	49	55
Medical department	11	12
Shops	70	36
	<u>161</u>	<u>130</u>

17. Pensions

Pension costs are charged to the Income and Expenditure Account so as to spread the cost of pensions over the service lives of employees.

The Foundation operates a defined benefit pension scheme. The assets of the scheme are held in a separate trustee-administered fund, independent of the Foundation's finances. Contributions are made according to funding rates advised by the scheme's actuaries, and are invested through a managed fund operated by Pensions Management (SWF) Ltd, a subsidiary of Scottish Widows Investment Management Ltd.

The latest valuation of the scheme was carried out at 1 July 1988 using the "projected unit" method of valuation. The market valuation of the scheme's assets at that date was £1,117,892. The actuarial value of those assets represented 100.4% of the value of benefits which had accrued to members after allowing for expected future increases in earnings and pensions. The principal actuarial assumptions used in the valuation were a real return on investments of 1.5% per annum greater than salary increases, and pension increases of 5% per annum.

Pension scheme costs charged in these accounts amounted to £283,726 (1990 £271,000).

18. Subsidiary company

Consolidated accounts dealing with the non-charitable subsidiary company, Heart Cards Limited, which sells Christmas cards and gifts, have not been prepared. To do so, in view of the difference in the nature of its activities from those of the Foundation, would be incompatible with the obligation to give a true and fair view. The net profit of £60,173 was covenanted to the British Heart Foundation and is included with donations and fundraising, as are donations totalling £155,825 generated by Heart Cards Limited activities

Profit and Loss Account for the year ended 31 March 1991

	1991 £	1990 £
Sales and royalty income	1,722,518	1,680,579
Less:		
Cost of sales	1,232,465	1,180,532
Operating costs	429,880	416,329
	<u>1,662,345</u>	<u>1,596,861</u>
Net profit covenanted to British Heart Foundation	<u>60,173</u>	<u>83,718</u>

The net profit is stated after charging audit fee £2,450 (1990 £2,185), and interest on inter-company balances at normal commercial rates £34,849 (1990 £21,450).

Balance Sheet at 31 March 1991

	1991 £	1990 £
Fixed assets	—	—
Current assets	403,324	232,821
	<u>403,324</u>	<u>232,821</u>
Current liabilities	403,322	232,819
	<u>2</u>	<u>2</u>
Represented by: issued share capital	<u>2</u>	<u>2</u>



British Heart Foundation

The heart research charity

Patron

His Royal Highness
The Prince Philip KG KT

President

The Rt Hon Earl Jellicoe KBE DSO MC
FRS PC

Vice-President

The Rt Hon Lord Forte FRSA

Hon Treasurer

Sir Richard E B Lloyd Bt

Director-General

Major General Leslie Busk CB

Consultant Medical Director

Professor Desmond Julian MD FRCP

Director of Fundraising

Lt Col Richard Besly

Secretary

Michael G Livingstone FCA

Chief Administrator

Lt Col Michael G Roberts MBE

Donations Secretary

Richard Emery

Chief Executive Shops Division

Colin Sandford

Press and Information Manager

Miss Elaine Snell

Auditors

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20 Old Bailey, London EC4M 7BH

Bankers

National Westminster Bank Plc
Tavistock Square, London WC1H 9JA

Investment Advisors

Panmure Gordon & Co Ltd
9 Moorfields Highwalk
London EC2Y 9DS

Solicitors

Slaughter and May
35 Basinghall Street
London EC2V 5DB

The British Heart Foundation is a
company limited by guarantee.

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London W1H 4DH
Telephone (071) 935 0185
Registered charity number 225971

Members of Council

Chairman

Professor Sir Raymond Hoffenberg
KBE MD PhD FRCP

Vice-Chairman

Sir John C Batten KCVO MD FRCP

Treasurer

Sir Richard E B Lloyd Bt

Members

Sir John Badenoch MA DM FRCP(Ed)
Robin D Broadley MA(Oxon)
Ian D Cameron
Douglas A Chamberlain CBE MD FRCP
Lady Margaret Colville
Anthony M Dawson MD FRCP
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Richard W Emanuel DM FRCP FACC
Desmond J Fitzgerald BSc MB
FRCP(Ed)
Jeffrey H Fryer MB BS(Lond)
Graham A W Homett MA MB BChir
FRCP
Lord Kearton Kt MA DSc LLD DCL
OBE FRS
Professor David N S Kerr MBChb MSc
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Andrew Ross Lorimer MD FRCP(Glas)
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Sir Harry H R Moore CBE MA
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Nigel J Robson
Sir Keith Ross Bt RD MS(Ldn)
FRCS(Eng) FRCS(Ed)
Professor Peter Sleight MD DM FRCP
Brigadier M Christopher Thursby
Pelham OBE
Professor Leslie A Turnberg MD FRCP
Sir Douglas W G Wass GCB MA
D Litt(Hon)

Executive Committee

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Our aims and objectives

The British Heart Foundation is the major charity in the campaign against heart disease. We work in a variety of ways:

We research

- into the causes and prevention of cardiovascular disease
- into the improvement of early diagnosis
- into improving the treatment of patients who already have a heart or circulatory problem.

We educate

- young people with a video and lively publications aimed particularly at 12-13 year olds
- the public by producing literature and videos to help people understand different aspects of heart disease and its treatment
- the medical profession by organising conferences and symposia for doctors, medical researchers and scientists and by producing *Factfile*, a monthly information sheet for the country's 37,000 GPs.

We provide

- resuscitation training equipment to ambulance services
- diagnostic and cardiac care equipment to hospitals.

Rehabilitation

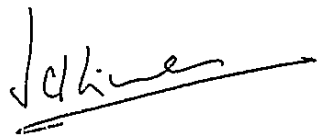
- We fund rehabilitation projects for heart attack patients.

A message from the President

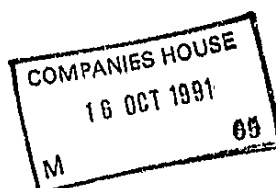
I am delighted to have taken over as President of the British Heart Foundation, and I look forward to working closely with all our volunteers and staff to further the very worthwhile objectives.

Although many thousands of men, women and children owe their lives to the research that has already been done, sadly heart disease still remains Britain's biggest killer. A lot more needs to be done and I was pleased to hear on my introductory visits of the scale of research we now support.

I am most grateful to all our volunteers for their unstinting support. It is essential that we continue to have their help if we are to press on with our fight against all aspects of heart disease.



The Right Honourable Earl
Jellicoe KBE DSO MC
FRS PC



Thirty years of progress

This year the British Heart Foundation is 30 years old. *Professor Desmond Julian*, its Consultant Medical Director, looks back on three decades of progress in the fight against heart disease and forecasts new developments in research, diagnosis and treatment.

"The state of care for a patient suffering from a heart attack 30 years ago was, to be blunt, primitive compared with now. Today's doctors and nurses would be horrified if they were transported back to work in 1960", says Professor Julian.

"There was neither the ability nor were there the facilities to treat cardiac arrest; coronary care units did not exist and the chances of death from a heart attack in hospital would be 30% compared with about 10% today."

Electrocardiograms (ECGs) existed then, but the medical profession did not have other diagnostic tools such as enzyme tests and echocardiography which are considered indispensable today. Coronary artery surgery, angioplasty and transplantation were unheard of and many of the drugs

1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976

Coronary care units were set up in hospitals (1962). These units were developed in five phases: the resuscitation phase, the control of irregular rhythms, the treatment of pump failure, pre-hospital coronary care and the prevention of sudden death.

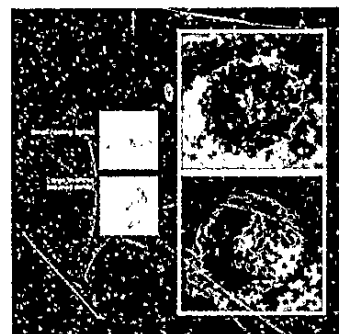


Open heart surgery was established following the development of the heart-lung bypass machine.

Beta-blockers, drugs to treat angina and high blood pressure, were introduced.

In 1966 the first mobile coronary care unit was on the road in Belfast. In his paper on the subject, Professor Julian says: "Coronary care remains an expensive form of management that can only be justified if it is restricted to those patients likely to benefit from it. The most urgent need is to accelerate the initiation of coronary care...outside and inside hospital."

Pacemakers were first used successfully to regulate disturbances of the heart's rhythms.



Major steps were taken in diagnostic techniques, including echocardiography, which provides a 'picture' of the heart's structure and movement, and nuclear imaging, involving the injection of isotopes which make it possible for a camera to assess the function of the heart in coronary disease.

First successful coronary artery surgery and heart transplantation.

E

s in heart research

used then have been replaced by safer and more effective treatment.

The British Heart Foundation, which is funded entirely by voluntary contributions, has likewise grown beyond recognition. It is now the largest single source of funds for independent heart research in this country and has played a significant role in many of the major developments seen during its history.

What will the 1990s offer?

"We have to admit that although the incidence of coronary disease has fallen in the UK", Professor Julian adds, "it is still unacceptably high and many questions remain to be

answered. We need to discover why some people suffer from high blood pressure, why South Asians in the UK have such a high incidence of coronary disease and why the incidence is so low in France and Japan. How can we identify at a young age those with genetic abnormalities? What will lead to heart disease and how can we prevent it?"

The British Heart Foundation is now collaborating with agencies such as the British Red Cross Society and St John Ambulance to help train the public in cardiopulmonary resuscitation. Immediate action at the time of a cardiac incident helps to present the patient in better condition at the hospital and saves lives.

An important development is balloon angioplasty. In this technique a catheter tube with a deflated balloon at its tip is inserted into an artery in the leg under local anaesthetic.



Professor Desmond Julian

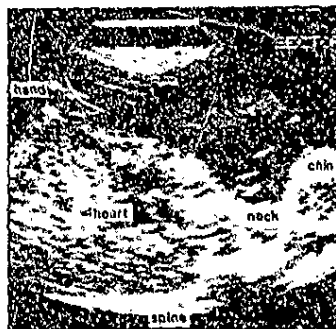
1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993

New drugs, calcium antagonists, were used to treat angina, high blood pressure and rhythm disturbances.

Solutions were developed which allow the heart to be stopped for prolonged periods for safer surgery.



The first angioplasty was undertaken: an inflatable balloon widens the narrowed area of an artery to assist the circulation (1977).



Fetal echocardiography became of practical value in detecting heart disease in unborn children as early as 16 weeks from conception.

The 'clotbusting' drug, streptokinase, when combined with aspirin, was discovered to have the potential ability to halve the mortality from heart attacks when they are treated in hospital.



Defibrillators became widely available, permitting large numbers of people to be rescued from cardiac arrest outside hospital, either by ambulance crews or by suitably equipped GPs.



The identification of the cause for inheriting high blood fats, an important factor in coronary disease; a link was also found between clotting factors in the blood and the subsequent development of coronary disease, giving hope for new approaches to prevention.

► Under X-ray guidance it is manipulated into the site of narrowing in the coronary artery and inflated. This dilates the restriction and thus restores the circulation to the heart. The technique has an over 90% success rate and it is estimated that there is a need in the UK for about 15,000 angioplasties annually. Unfortunately, in a number of patients, the arteries re-narrow which may require a further angioplasty. Research is currently under way to find out why this happens and how it can be prevented.

Another ongoing initiative for which BHF provided partial funding is the International Study of Infarct Survival (ISIS) which is now in its fourth phase. ISIS-3, involving nearly 50,000 patients, is the largest ever study of the emergency treatment of heart attacks and one of the largest drug trials ever undertaken. It examined the comparative efficacy of three different thrombolytic (clot-dissolving) drugs - streptokinase, APSAC and tPA - and the value of adding heparin to these drugs. In ISIS-4 a survey is being made of 45,000 people in 17 countries comparing new treatments for infarct, of which ace inhibitors, nitrates and magnesium all look promising.

Rehabilitation is another area which exercises the attention of BHF. Every cardiologist wants to see his or her patient return to as near a normal life as possible but after-care is provided by only about one-third of the hospitals in this country. Jointly with the Chest, Heart and Stroke Association, BHF has been awarding funds to hospitals over a period of two years to help them set up this important facility.

"A comparatively new area of research is the study of vitamins", says Professor Julian. "Our knowledge and interest has been building up over the last few years and it has been discovered that there is a deficiency of vitamins E and C in sufferers from angina. We will be continuing to fund research into the part which vitamins play in the prevention of coronary disease."

Computers will continue to be used extensively in the diagnosis and treatment of heart disease. They will be helping to reduce the number of animals used in research because it is now possible to simulate on computer many of the characteristics of animal models.

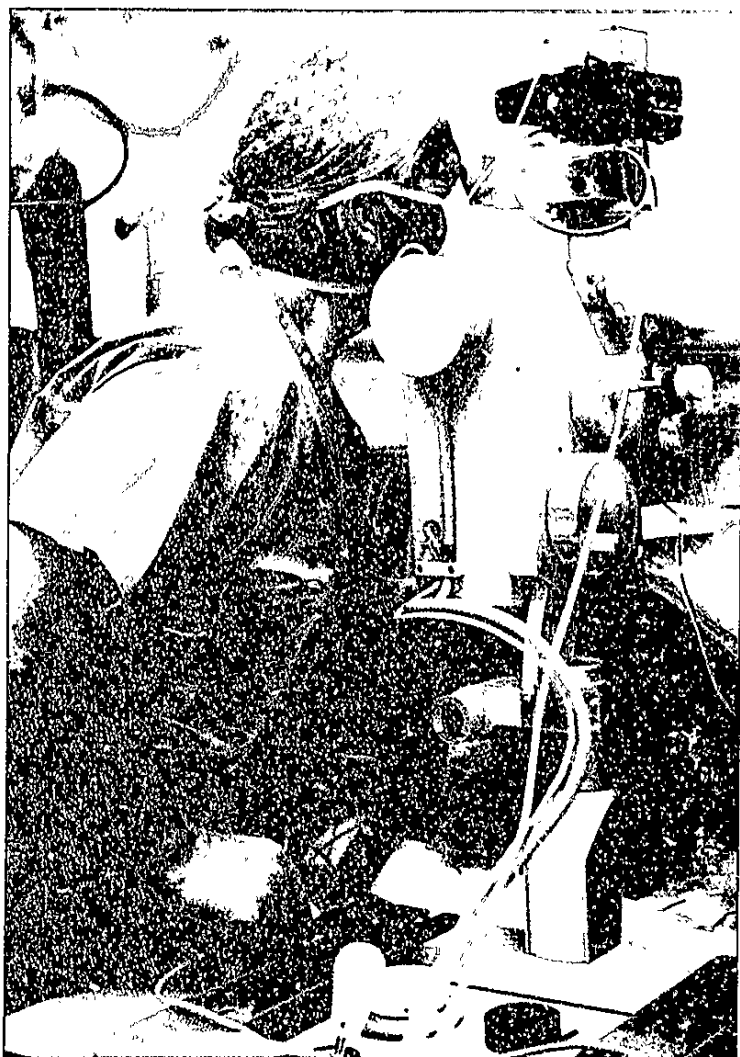
The British Heart Foundation has shown itself to be an innovative and far-sighted organisation, and the next few years are going to be formative in the way that we look at the next 30. "These are exciting times for heart research", says Professor Julian. "There is now hope that the trend in rising mortality from coronary artery disease has been reversed. I feel sure that the efforts of the Foundation's researchers in this country, together with others throughout the world, will lead to further reductions, not only in deaths but also in the disability suffered by so many heart patients."

Advances in heart surgery

The Chair of Cardiac Surgery at the Royal Postgraduate Medical School, University of London is held by *Professor Ken Taylor*. He reviews the progress of cardiac surgery over the last 30 years and forecasts ways in which it can be assisted by new drugs and techniques.

"**T**here's nothing magical about surgery on the heart but the heart-lung bypass machine is a unique feature which keeps the patient alive during the operation by taking over the function of the heart and lungs." Professor Taylor's speciality is the technology associated with the heart-lung machine.

In the 1950s open heart surgery was in its infancy. Once a consensus had emerged in the late 60s of a reasonably reliable and safe way of using heart-lung bypass machinery, there was an explosion in the number of operations for valve replacement, coronary artery surgery and the correction of deformities in the hearts of babies and young children. In the 70s the emphasis turned to the development of surgical techniques with a corresponding reduction in the



Professor Ken Taylor in surgery at Hammersmith Hospital

mortality rate. Within the last ten years there has been intense activity with new techniques emerging almost every month and the question has been how to get rid of all the risks associated with surgery.

"The problem now", says Professor Taylor, "is not mortality but morbidity. When blood passes over artificial materials a cascade of changes takes place, producing abnormal functions in many bodily systems. The impetus now is to make the support machinery as near to normal physiology - the way the body works - as possible."

Basic scientific research is being carried out in several areas. One is the effect on blood cells of artificial materials. The cells tend to react in a defensive way and cause inflammation throughout the body. The effects of that inflammation response are seen in various parts of the body

including the lungs, the brain and in blood clotting processes. Bio-materials are being developed which, it is hoped, will not be recognised by blood cells as being artificial. Drugs to block the inflammatory process are being developed and the use of Aprotinin in this context, pioneered at Hammersmith Hospital in 1985, is used in 60% of all heart operations in Germany. It is now being licensed throughout the world. "It is profoundly effective in its ability to reduce blood loss following cardiac surgery and consequently blood transfusion is becoming less necessary, reducing the risk of transmitting viral diseases."

Research is also focusing on brain functions during cardiac surgery. BHF-funded research has revealed that the eye is a useful and accurate indicator of cerebral circulation before, during and after surgery. "It's a window on the circulation of the whole brain", says Professor Taylor. The blood supply to the retina is an integral part of the brain's own blood supply. Studies have shown that within a few moments of the patient being connected to the heart-lung machine, the small blood vessels in the retina begin to become blocked. To prevent the blockage a new type of artificial lung is used which reduces the visible abnormality in the retinal circulation from 100% of patients to less than 50%.

Professor Taylor says: "Any patient of any age anywhere who has a heart operation goes on a heart-lung machine which has been developed from research funded by BHF." The Hammersmith team are confident that continuing research in this area will make cardiac surgery even safer for patients by helping to achieve bio-compatibility between the artificial lung and the patient's physiology.

It has also been discovered that arteries are far stronger than veins when used in coronary grafting. "They seem to last indefinitely", says Professor Taylor.

There are now moves towards looking at long-term results in various categories of patients. A unit set up by the Department of Health in 1986 at Hammersmith Hospital registers every artificial heart valve in use in the UK and is able to make comparisons between the ways different countries use their valves, select their patients and use their resources.

Fifteen years ago Professor Taylor received his first research funding from the British Heart Foundation and eight years ago he was appointed to the Chair of Cardiac Surgery. He says: "The BHF Fellowship option funded by the Foundation is a superb way of introducing bright young research trainees to cardiac surgery. I think it's an absolutely excellent scheme. The techniques which are being pioneered here are being used in many parts of the world today." (C)

Keeping hearts ticking over

There has been quite remarkable progress over the last 30 years in the evaluation of cardiac electrical instability and the assessment of all forms of cardiac muscle disease. *Professor John Camm*, holder of the Prudential Chair of Clinical Cardiology at St George's Hospital Medical School, University of London, looks at the past and predicts the future of clinical cardiology.



Professor John Camm

"Prior to 1961 nobody really knew what to do about most forms of clinical heart rhythm abnormalities. There were few drugs and no surgery for arrhythmias. There were 100,000 sudden deaths in the UK per year, pacemakers were only three years old and only about 100 patients had received them. Thirty years later 10,000 patients receive them each year in the UK alone and hundreds of thousands are implanted worldwide. In 1961 the pacemaker was inserted into an open chest under general anaesthetic and was effective for about six months. Today it is inserted under local anaesthetic and the patient is usually discharged the same day. The pacemaker will last for ten years." Thus Professor Camm outlines the extraordinary advances in skill and technology that have been made in the last three decades.

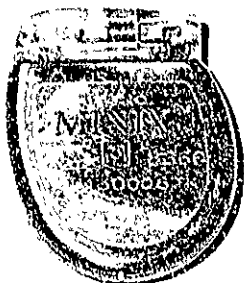
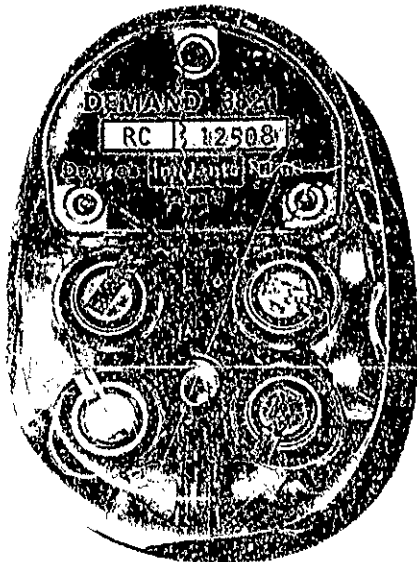
Half the pacemakers implanted are for complete heart block, which would normally mean a 50% mortality rate within six months of medical intervention becoming necessary; now the figure is 50% in six years and it must be remembered that many patients are usually elderly at the time of implant.

The original pacemakers were unreliable and not versatile in their response to the heart's moment-by-moment needs for stimulation. Today's counterpart has many transistors, multiple battery sources and sensors which assess the patient's activity, breathing rates or metabolic status. As a result it can replicate the normal heartbeat and create a natural rhythm for the needs of the patient. Surprisingly the cost has not changed in 30 years; a pacemaker is still in the £500 to £2,000 bracket, the more expensive ones having greater flexibility and versatility.

Another development in recent years is the implantable defibrillator, which has the capability to reverse very rapid rhythms. Sometimes the heart will start to 'beat' 600 times a minute, at which stage it is just trembling and there is no co-ordination in the beat. In the 60s external defibrillators on trolleys were used; nowadays the device weighs only 200g, is implanted and has a lifespan of seven years. "It is not yet as sophisticated as the pacemaker but it is saving the lives of and being implanted in 20,000 patients a year round the world.

Professor Camm also reports another advance in the surgical treatment of arrhythmia. Until recently that part of the muscle which was causing the rhythm disturbance could only be removed surgically, but open heart procedures are considered unattractive unless no alternative can be found. Now catheter-based ablations can be performed which do not involve open heart surgery, whereby a catheter is inserted into the heart via an artery and radio frequency energy destroys the malfunctioning tissue. "Because it is extraordinarily effective and very valuable", says Professor Camm, "we will require a major expansion of cardiac services. But we are constrained by a lack of rhythm doctors; there are only five to ten in the UK. However, training over the last years of these skilled 'medical electricians' has been helped considerably by grants from the British Heart Foundation."

C



An early pacemaker (top), compared with a modern one (below) — both shown actual size

On the subject of anti-arrhythmic drugs, Professor Camm is emphatic. "Prescribing has to be carried out carefully in highly selected groups of patients, and the downside of therapy must be realised. Certain anti-arrhythmic drugs have a tendency to cause as well as regulate electrical disturbances, so there has been a dramatic movement away from them in the last three or four years." He concludes: "The British Heart Foundation has done an excellent job in putting a number of highly-motivated people into senior jobs."



Three operations but doing well

Christopher Hurst was born with an appallingly constructed heart. It was a mass of congenital defects including holes, leaking valves, blocked arteries and much of his heart was the wrong way round. Day one of his life saw the first surgery on the tiny heart, followed by an operation at three months and then again at the age of four.

He's now eight and is doing well. At some time in the future he may need corrective or replacement surgery. Meanwhile his parents have nothing but praise for the doctors.

"It's difficult to express in words our admiration for the surgeon and consultant paediatrician at the Freeman Hospital in Newcastle", says Christopher's father Ken. "We still go back there even though we've moved to Hull. We have every faith in them."

RESEARCH

Genetics - the medicine of tomorrow

Professor John Burn, Director of the Northern Region Genetics Service at the University of Newcastle upon Tyne, looks at 30 years of development in one of the most dynamically growing disciplines in medicine.

The changing pattern of disease has combined with dramatic scientific advances over the last 30 years to bring clinical genetics to the fore. In 1961 centres around the world were rushing to apply the new technique which made it possible to show that children with Down's syndrome had an extra small chromosome. In that year several other syndromes involving heart malformation were shown to be due to a chromosome fault.

"In the 70s new banding techniques made possible the recognition of faults within chromosomes and cases where the fault might recur in the family. Meanwhile obstetricians began to develop in the mid-70s the techniques to allow prenatal diagnosis of these faults", explains Professor Burn.

"In the 60s dozens of new rare diseases were identified caused by failure of individual genes to produce essential enzyme catalysts. Since then the chemical pathways of the body have yielded many of their secrets and we understand more clearly how, for example, the body handles fats or causes the blood to clot at the right and wrong times. Very often genetic faults are discovered, such as the variety of faults in the lipoprotein receptor, which lead to familial hypercholesterolaemia. The ability to diagnose and in some cases treat such single gene faults has been made possible

by the advent of molecular genetics. And in the past 10 years the 60s advances in studying single genes have led to new insights about their structure and function."

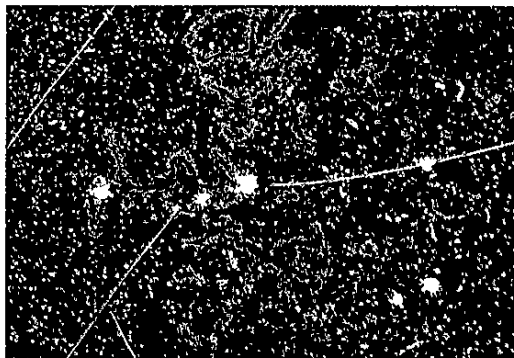
"A major challenge for our work in the coming decade will be to use these latest techniques alongside traditional clinical studies to learn why over 4,000 children are born each year with a malformed heart. Thanks to surgical advances 30 years ago, we now have a growing number of young adults whose heart defects have been successfully treated, but many of them fear for the health of their children. We have traced 750 young adults operated on around Britain for the most serious heart defects to see what happened to their children. Four per cent of their children have heart malformations and the chance is higher if the mother has the heart defect. This may be because the genes inherited in the egg play a greater role in the heart development than those from the father. This variation between the parents is called imprinting and may be one reason why genetic faults which cause heart defects do not show themselves every time. Chance factors may also decide whether someone with a faulty gene will have a heart defect.

"When we identify families with several affected members we are comparing their DNA to see which genes they have in common. This process is more feasible when we have a candidate gene - one which we know can cause the heart to develop incorrectly. Our main interest at present is in a small area of chromosome 22 which is usually missing in children with a rare pattern of problems called Di-George syndrome. This pattern was first recognised in 1965 and combines faults in the immune system and low calcium levels due to a hormone fault. The heart is often malformed. In collaboration with colleagues at St Mary's Hospital, London, we are seeking the faulty gene and using the new genetic techniques to see whether faults at this point on chromosome 22 can cause similar heart defects without the other features of the syndrome. This project, like our 'offspring' study, is funded by the British Heart Foundation which is the major 'shareholder' in our cardiovascular research team. Learning why so many children are born with heart defects will take a long time. Thanks to the vision of BHF we have made a beginning. I hope the next 30 years will bring us some answers to the question 'why?' for only then will true prevention become possible."

Professor John Burn
with his laboratory team



Study using fluorescent-
labelled DNA probe
demonstrating one extra
chromosome



Clotbusters

Professor Keith Fox, holder of The Duke of Edinburgh Chair of Cardiology at the University of Edinburgh, has seen substantial changes in cardiology over the last decade. Here, with Dr Rudolf Riemersma, Senior Lecturer in Cardiovascular Biochemistry, he reviews progress in the treatment of coronary artery disease and looks to the future with confidence.



Professor Fox

“My predecessor Professor Michael Oliver and Professor Desmond Julian, who is now Consultant Medical Director to the British Heart Foundation, set up the first European Coronary Care Unit (CCU) here in Scotland in 1966. They were prompted to do so because Scotland has a record for heart disease which is the worst in the world. We are still trying to find out why.”

In the last 30 years two main areas of progress can be identified. These are defibrillation and the new 'clotbuster' treatments for heart attack. Defibrillation and coronary care have played a major part in increasing the survival rates of patients suffering from heart attacks. Now that every frontline ambulance in Scotland has a defibrillator, a programme is in hand to improve further the chances of survival of patients with heart attack.

Meanwhile, there has been a resurgence of interest in thrombolytic 'clotbusting' research and treatment in the last ten years, preliminary clinical tests having first been carried out in the 40s. While in the United States Professor Fox and colleagues undertook the original experimental studies with new-generation thrombolytic agents in 1981. The important 'clotbusters' still carry a risk of reclosure of the artery after

drug treatment and we need to know more so that the treatment can be maximised and the harmful effect minimised.

There is a need now to find out what happens before the vessel becomes blocked. It is very important that patients at high risk are identified by their blood-borne markers, the platelets which clot the blood, in conjunction with the use of electrocardiograms and angiography. Research is now progressing in the development of anti-platelet agents.

"In 1986 very few people with clear-cut symptoms were being treated with thrombolytics - only about 4%", says Professor Fox. "Today they are the treatment of choice in more than 70%. The emphasis on thrombolysis has increased our awareness of what happens before the clot develops."

Of the contribution made by the British Heart Foundation to his department's work, he says: "BHF is not just supporting research which would otherwise be underfunded; it is permitting the development of new areas of research. Without this support academic cardiology in Britain would be in a disastrous situation."

The Cardiovascular Research Unit has been specialising in the problems of heart disease in Scotland. In 1978 the first

RESEARCH



Biopsy being taken for lipid analysis

- Finding came that diet might in some way affect the incidence of heart disease and in 1984 a study discovered that people who had less linoleic acid in their body and diets were more prone to coronary heart disease. In 1987 firm data from a huge study of 6,000 patients confirmed the theory.

"We discovered that people with low levels of linoleic acid eat less of this essential fatty acid and are more likely to smoke and drink more. There has been a general change and an improvement in diet over the last 12 years. Plant oils, such as those found in sunflower margarine, are rich in linoleic acid and are much more available - supermarkets have played a big part. The health education message has got through to the better-educated sector of the public and we have to hope that it will eventually filter through to all sectors of the community."

The Scots have lower vitamin levels than people of many other nationalities and it has been discovered that the levels of vitamins E and C are lower in people who are developing heart disease. Material deprivation is closely associated with increased risk of coronary heart disease. The research of Dr Riemersma and his colleagues has started by looking at the population and making sure that he has true random samples. "We would like to do more work comparing people at risk with those not at risk. We would like to look at the role of social deprivation in contributing to heart disease. We would like to know why cholesterol is more prevalent in some races than in others. And why is heart disease so localised?"

The British Heart Foundation is supporting Dr Riemersma and his team in their important and fascinating work with long-term funding which we hope will answer these and many other questions associated with the influence of diet and social habit on the prevalence of heart disease. ○

"I feel marvellous"

"I feel marvellous now", says Sue McLone, "but I would have been dead if it hadn't been for the doctors at the Freeman Hospital in Newcastle". Sue had emphysema and asthma, and a lung transplant seemed the only solution. A heart and lung transplant is technically more feasible to perform, so in 1989 she had the operation, and her heart, which was in good shape, was given to another patient. Within two months she was playing volleyball. Soon she was swimming, walking and playing badminton. Now she participates in the Transplant Games and this year is taking up the long jump and shot putt.

"The after-care is tremendous; you can't help but carry on and get better. They're really dedicated. It's been a new life for me since my operation." Perhaps it's needless to say that she has had no recurrence of her old breathing problems and is looking forward to a big celebration on her fortieth birthday this year.





Dr William McKenna

Genetic heart conditions - the work of a senior researcher

Doctor William McKenna is a Reader in clinical cardiology at St George's Hospital Medical School, London. His major interest is in patients with hypertrophic and dilated cardiomyopathy. These are genetically determined conditions which are characterised by abnormal function of the heart muscle and a high incidence of premature sudden cardiac death.

Dr McKenna is a Canadian who completed his undergraduate degree at Yale University, Connecticut and his medical training at McGill University in Montreal. His interest in cardiomyopathies began at the Hammersmith Hospital where he was a cardiac registrar for three years and a Canadian Medical Research Council training fellow for five years. He subsequently moved to St George's Hospital as BHF Senior Lecturer with Professor John Camm. He now has several BHF research fellows working under him and his work is supported by several BHF grants.

Like most people of his seniority, Dr McKenna spends an increasing amount of his time with administration. To direct a research team much of his day is spent planning and supervising the work. He is also increasingly involved with the task of raising money from industry, as well as

from charities such as the British Heart Foundation. But he will cut into this time to decide when a patient with cardiomyopathy can be moved from another hospital into St George's for transplant evaluation. He will look at X rays, listen to the reports of his researchers and make decisions and diagnoses even as he tries to find the appropriate resources and manpower to staff his group. "But there is less and less personal time for seeing patients, doing the research and teaching", he says.

One exciting aspect of the present daily schedule he directs is the examination of the genetic basis of hypertrophic cardiomyopathy (HCM). It is the commonest cause of sudden death in young people and is often the initial presentation in otherwise apparently healthy individuals, including highly-trained athletes. His current research aims to identify the abnormal genes which cause HCM in families. He has established a collaborative study with the Harvard School of Medicine, supported by BHF, where British scientists are advancing the work and learning new techniques which will be brought back to St George's. The collaboration has discovered the gene for familial HCM in several families. In each instance the abnormality is a simple one letter spelling mistake in the genetic make-up of myosin, one of the major contractile proteins in the heart. "It's like having the word FAT spell with an E instead of an F: EAT vs FAT."

Dr McKenna believes that a molecular approach to the investigation of cardiac disease will dramatically advance our understanding of diseases which at present we treat with varying degrees of success but little understanding of the mechanisms of their occurrence. Part of his ever-present problem is trying to find the few young scientists who are trained in the application of molecular techniques to cardiac disease. University salary and career structures do not compare with industry and it is exceptional to have more than short-term funding. "The British Heart Foundation have helped enormously by providing continuity through their funding."

He emphasises that research should come from and go back to the patient. Part of his day-to-day schedule includes the clinical programme which he directs and which is aimed at early diagnosis and the prevention of sudden cardiac death. His team of research fellows, a genetics nurse and a clinical nurse are responsible for comprehensive testing of the patient, counselling and support, dealing particularly with young people at risk. The 'pedigree' of the patient is of great interest and the genetics nurse visits the family and looks into the medical history through several generations.

With two new HCM patients a week being referred to the team as a result of screening by cardiologists and physicians, the St George's unit has no shortage of work on its hands. But it will never have a surfeit of funds and as Dr McKenna says: "Without the British Heart Foundation the situation would be desperate in cardiovascular research."



Changes in muscle protein filaments responsible for inherited hypertrophic cardiomyopathy

Testing fetal hearts

Dr Lindsey Allan, Director of the BHF-funded Perinatal Cardiology Research Group at Guy's Hospital, London, reviews the development of echocardiography in the examination of babies before birth and the implementation of a nationwide teaching programme to improve the quality of information coming from obstetric ultrasound departments in hospitals.

Ultrasound techniques had been thought of 30 years ago and in the early 60s machines were developed for the examination of unborn babies. These machines were huge and had poor resolution but they paved the way for a gradual improvement in quality to the point that, in the late 60s, it was possible to see the growth of the fetal head, determine the number of babies in the womb and verify the dates in the period of pregnancy.

By the end of the 70s it was possible to detect abnormal as well as normal development. "In 1979", says Dr Allan, "real-time machines had been developed which can build up an image faster than the baby can move or its heart can beat. In the early 80s we began to see what the heart is all about."

Guy's was one of the first hospitals to have imaging equipment and with the help of BHF funding from 1980 onwards it has pioneered echocardiography as a reliable and non-invasive tool in fetal diagnosis.

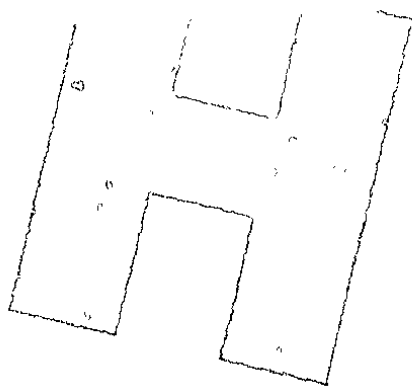
It was in 1985 that Dr Allan developed an idea which may change the face of perinatal cardiology in this country. "The French presented an idea which was so obvious and simple that I knew something should be done. Specialists can't look at every pregnancy and 90% of heart disease occurs in pregnancies where there are no obvious risk factors. So

why not teach radiographers who are looking for signs of abnormality in other organs to look for signs in the heart too? The normal incidence is eight in 1,000, and four or two of those eight we will find. Looking even in a simplified way we can detect two in 1,000 and these are the worst cases. The French were achieving good results and this was an exciting advance. Routine scans can help us find major problems."

Dr Allan started a teaching programme which has made great changes since 1986 even though the UK attitudes to prenatal scanning are inconsistent. There is no policy on whether a scan should be made, when it should be made and to what standard the radiographer should be trained. The equipment is variable and the system haphazard. A research registrar was appointed for the South East region who selected ten obstetric units for the programme. Less than 5% of what could be detected was actually being seen before the programme was set up. Now, in the last three years the figure is 70%, although the national average is still only 10%. "We would like to implement the same organisation over a wider area and involve GPs, obstetricians and cardiologists", says Dr Allan. "We can change the attitudes of technicians by enthusing them and showing them what faults they've missed. It's had a good effect on sound scanning and it's a service the patient can reasonably expect."

What are the main benefits of echocardiography in





prenatal diagnosis? Diagnosis early in the pregnancy has a major impact on management of the individual pregnancy affected by congenital heart disease. Despite great improvements in the surgery for children's heart disease there are still many conditions which are fatal in children. "We have to be honest about looking at the result of the scan and telling the patient. We must not raise false hopes and any decision concerning continuing the pregnancy has to be theirs. We have to counsel them because whatever decision they make will be a tough one. We believe that we treat our patients at Guy's straightforwardly and honestly. If we don't know the survival chances of their baby we say so."

Another important benefit of prenatal diagnosis is that some problems, like fast heart beat, can be treated before birth with drugs. It is possible sometimes to use balloon catheter technology on the heart before the baby is born for relatively simple problems like an obstructed valve.

Dr Allan has two main aims for her BHF-funded Research Group: the implementation of her training programme nationwide and the improvement of the results of treatment.

"BHF have supported us from the start", she says, "and it has been invaluable. Their involvement in the development of the programme has positioned us, we hope, for secure funding from the Health Service." ○

Dr Lindsey Allan scanning an expectant mother



"Absolutely brilliant"

To walk up Snowdon once is an achievement. To do it three times, after a heart bypass operation, is most miraculous, but it's what Penry Greenaway has done - and the last time was for the British Heart Foundation. A heavy smoker, the quality of his life had deteriorated until his heart attack. "That was the day I gave up smoking", he says. After his operation at St Bartholomew's Hospital he describes life now as "absolutely brilliant".

He is a Group Scout Leader who teaches archery to his Scouts and enjoys gardening and woodwork as well as walking up mountains. He'll be swimming again soon. "You shouldn't do ridiculous things", says Penry, "but you should try to forget that you had a heart attack and live as normal a life as possible. My family and friends have been wonderful; I can't tell you how important this support is."

RESEARCH

The heart of

How the computer can help

Computers will soon be simulating serious abnormalities in the rhythm of the heart, according to Professor Denis Noble and his group of BHF-funded researchers at Oxford University.

These reconstructions, which may be a reality as early as 1992, will be invaluable in helping us to understand the chaos of the heart's abnormal electrical activity and the underlying processes involved in heart attacks.

Pioneering work funded by BHF over many years on isolated single cell technology and on the physiology of the heart's own pacemaker, the sinoatrial node, has produced the experimental information necessary to allow parallel computing.

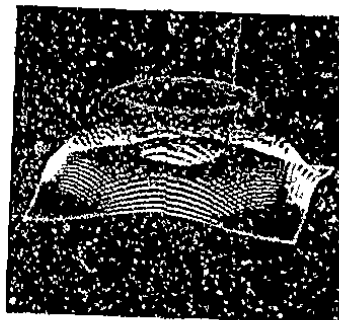
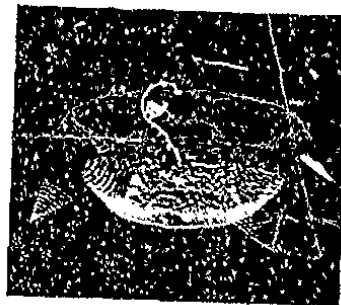
In 1990, collaborating with Dr Rai Winslow of the University of Minnesota, a link was established with a powerful American computer located at the High Performance Computer Center which has enabled a model of the sinoatrial node to be devised and its function studied. It should be possible sooner or later to reconstruct what happens in a heart attack.

The power of the parallel computer, located in the \$70 million High Performance Computer Center and with 32,000 individual processors

working simultaneously, has already made it possible to study networks of 16,000 single cell models. The calculations required to reconstruct one second or two beats of normal heart activity involving 16,000 cells would take about 18 months on a conventional computer. Using the parallel computer they can be made in a matter of hours.

Professor Noble commented: "This is a real success story for the British Heart Foundation. Were it not for their continued funding of our research over many years, the data necessary for the parallel computing would simply not be available. This is a very exciting long-term development with tremendous potential. Our next step will be to expand to an atrial network of 100,000 single cells, then to one or two million, which will enable us to look at fluttering heartbeat. Looking still further ahead it should be possible to make a 'region' of the network and to study how atrial fibrillation results."

According to Professor Noble (right), computers may soon help us to understand the chaos of the heart's abnormal electrical activity.



Three-dimensional computer simulations of a model for heart cells

BHF's largest-ever single grant of £1,479,960

The Thrombosis Prevention Trial, currently being conducted under the direction of Dr Thomas Meade at Northwick Park Hospital, Harrow, has received the largest grant ever made by BHF.

It is intended to recruit 8,000 apparently healthy men between 45 and 69 years old who are considered to be at high risk of coronary disease.

The randomised trial will assess the role in the prevention of heart attacks of low-dose aspirin and low-dose anti-coagulants which reduce the risk of blood clotting, an implication in nearly every heart attack. The trial already includes 4,500 men and the award will be devoted to the recruitment of the remaining participants and their careful follow-up until 1998.



BRITISH MEDICAL JOURNAL

the matter

Angioplasty versus bypass surgery

£218,810 has been awarded to the Randomised Interventional Treatment of Angina to complete recruitment and follow-up of patients involved in a randomised comparison of angioplasty and coronary bypass surgery in the treatment of angina pectoris.

Angioplasty is a technique in

which a deflated balloon at the tip of a catheter tube is guided into a narrowed coronary artery and inflated. This dilates the restriction and restores the circulation to the heart.

The trial is being carried out in 16 centres throughout the UK under the chairmanship of Professor John Hampton, Department of Medicine, Queen's Medical School, Nottingham.

Heart attacks and diabetes in Asians

The results of a study by BHF-funded researchers at the London School of Hygiene and Tropical Medicine, published this year, suggest that South Asians' high rates of heart attack and diabetes are associated with metabolic defects and central distribution of body fat. The British Heart Foundation project led by Dr Paul McKeigue comprised a two-year study of more than 3,700 South Asian and European men and women in Southall.

In England the death rate from coronary heart disease in Asian men and women is 40% higher than the national average, a fact that has puzzled scientists for many years.

Research showed that South Asians are affected by a disturbance of body chemistry in which very high levels of insulin have to be produced to keep blood sugar levels normal. This leads to the development of diabetes, high blood pressure and changes in the fat-carrying particles in the blood which increase the risk of coronary disease. The disturbance is called insulin resistance.

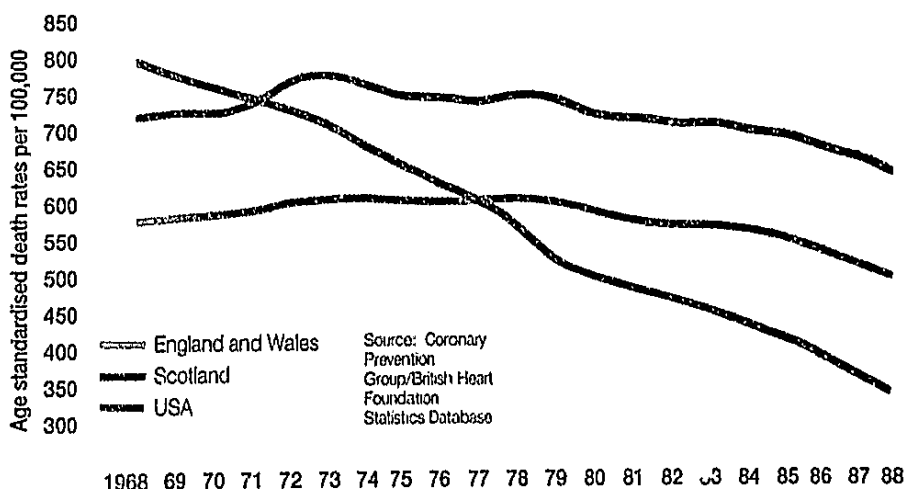
Dr McKeigue says: "The only ways to prevent or reverse this insulin resistance syndrome are to lose weight and take more exercise. This is important not just for South Asians but for anyone similarly at risk - that is those with central obesity."

But why is this happening in particular to South Asians? Dr McKeigue suggests that in the past they may have adapted to a life of hard physical work and insufficient food. Insulin resistance would help to conserve blood sugar during long periods of under-nourishment. Only in urban environments with ample food and less active occupations would central obesity and insulin resistance become a health risk.

So much to be done...

The good news is that the death rates from coronary heart disease in Britain have started to fall. But death rates in many other countries, including the USA, have fallen faster.

Death rates from coronary heart disease among men aged 35-74 in England, Wales, Scotland and USA.



RESEARCH

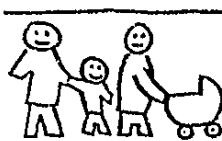
New personal Chair of Cardiovascular Science

A new personal British Heart Foundation Chair of Cardiovascular Science, with funding for the first year of £100,000 by BHF, at King's College School of Medicine and Dentistry, London, was inaugurated in October 1990. The chairholder is Professor John Martin, internationally known for his work in clinical and basic vascular biology. This was the eighth personal chair that BHF has set up in addition to 14 endowed in perpetuity. The linking up of clinical medicine with basic science is the surest way of enhancing clinical service and the mission of this new chair is to perform fundamental research into the origin of hardening of the arteries which carry blood to the heart muscle, and the cause of the clot which forms on the hardened area. Most previous research has studied events that occur later, either during or after the heart attack. The research will study the bone marrow of men with a heart attack and those at risk. If blood is more likely to clot during a heart attack, the altered blood must be produced from an altered bone marrow. "The research will be unique in the world in its aims and unique in its organisation as set up by the British Heart Foundation", says Professor Martin.



Professor John Martin (right) with Major General Busk

The need for animal research in medicine



RESEARCH FOR HEALTH CHARITIES GROUP

To deny medical scientists the right to use animals in experiments would be to deny the possibility of further advances in medical knowledge such as the development of clot-busting drugs, defibrillators which restore a normal heart rhythm, drugs to control high blood pressure, coronary bypass surgery and operations for congenital heart defects.

Animals are used in research only when there is no alternative: indeed alternatives are actively sought but they will never replace the need for some

animal experiments. Computers help us predict how drugs work but the body is more complex than any computer model. No simulation of a drug's effects can replace the need for thorough animal testing. However, the British Heart Foundation's medical committees closely scrutinise every application for grants for research involving the use of animals. Only about 7% of money awarded for research is spent on projects which require the use of animals.

The vast majority of animal experiments cause no pain and if pain is likely to occur an anaesthetic is administered. All animal laboratories and the scientists working in them must hold a licence from the Home Office. Premises can be inspected without warning and closed if they fail to meet strict

government standards of animal welfare.

Vital progress has been made in medicine and surgery. Future advances require research and a crucial part of that research involves animals. We must allow scientists and doctors to use all the means at their disposal to fight against disease because the lives of many we love and perhaps our own lives depend on research.

Several research charities including the British Heart Foundation have got together to form the Research For Health Charities Group. Their leaflet *The Need for Animal Research in Medicine* and others can be obtained from the British Heart Foundation or Research for Health Charities Group, PO Box 123, Lincoln's Inn Fields, London WC2A 3PX.

Three new BHF Chairs

Professor David Hearse earned international recognition for his early work on fundamental factors which promote recovery of the heart after cardiac arrest or coronary bypass surgery. He has now been appointed to a BHF personal chair at St Thomas's Hospital and United Medical and Dental Schools, University of London. Funding for five years should help to make a major impact on the current high death rate from heart attacks in the UK. He and his colleagues were among the first to realise the importance of toxic forms of oxygen which may precipitate life-threatening, abnormal heart rhythms.

At the Institute of Child Health in London, Professor John Fabre

has been appointed to the Vandervell Chair of Paediatric Cardiology. In collaboration with groups in the UK and abroad, he will attempt to identify and characterise genes associated with the susceptibility to congenital heart disease. A second area of research will aim to set up a programme to study the immunology of rheumatic carditis which is a major problem in developing countries. On the clinical side, exploratory work has already commenced in the detection of the very early signs of atheroma in children. He will also be looking at the problem of fluid retention seen in children following bypass surgery. Early results indicate the potential for therapeutic intervention.

Paediatric cardiologist Professor Glennis Haworth, also at the Institute of Child Health, will be carrying out research on the blood

circulation in the lungs of children born with an abnormal heart. She will pay particular attention to the basic mechanisms causing pulmonary vascular disease, its detection and management. This disease occurs when the fragile blood vessels in the lungs are underdeveloped or damaged.

All three chairholders will be working on organ transplantation. Professor Hearse will be examining methods to protect donor hearts from damage prior to a transplant operation. Professor Fabre will explore new approaches to switching off rejection responses. Professor Haworth will be conducting research into optimising the preservation of a donor lung and the subsequent growth and development in young recipients.

TOOLS OF THE TRADE

The British Heart Foundation's Cardiac Care Committee meets regularly to allocate funds for equipment for NHS hospitals and ambulance services. BHF makes a contribution towards the cost and the balance is made up by local fundraising efforts.

Vital equipment for the West Midlands

Dr Jane Flint runs the new cardiology department at Corbett Hospital, Stourbridge in the West Midlands. Dismayed by the lack of reasonable equipment in her area, she became a champion fundraiser. In 1989 she acquired a Pathfinder 3 analyser with the help of BHF who paid over half the cost. She then started to raise money for an echocardiograph machine because patients were having to be transferred to another hospital for this diagnostic service. Local efforts raised £30,000 and with some financial assistance from BHF a £65,000 Hewlett Packard echocardiograph and ancillary equipment were purchased for £47,000. This now gives her department a comprehensive non-invasive service, including a treadmill.



"People don't realise how much echocardiographs cost", says champion fundraiser, Dr Jane Flint, pictured above.

"People don't realise how much cardiology costs and how much the equipment will be used once cardiologists and doctors know it's available", she says. "BHF has contributed very significantly to getting an echocardiograph and other equipment into this department."



Defibrillators save hundreds of lives every year.

Defibrillators now in every frontline ambulance

In July last year the government decided to supply defibrillators to all frontline ambulances not already equipped, throughout England, Scotland and Wales. This move was welcomed by BHF who over the previous four years had provided 1,800 defibrillators to ambulances at a cost of around £8m. In 1989 we know that 1,435 people's lives were saved in Great Britain by ambulance personnel equipped with these machines. The money that was still being raised at the time of the government's decision is to be put to equally good use.

The defibrillator fundraising campaign, now concluded, did much to increase local awareness and support for the British Heart Foundation and we would like to thank all those people who worked so hard to raise so much money for this vital piece of equipment. But our work is nowhere near finished in educating people in what action to take before the ambulance team and defibrillator arrive at the scene of a cardiac arrest.

TOOLS OF THE TRADE

Heart charities fund 15 more cardiac rehabilitation centres

The British Heart Foundation and the Chest Heart and Stroke Association have jointly awarded grants totalling £280,000 to help start up more new cardiac rehabilitation programmes.

Fifteen hospitals successfully applied for funds bringing our total number of rehabilitation projects to 26. The grants are intended to pay a member of staff rather than buy equipment, because salary costs prevent many hospitals from starting a scheme.

Senior sister Karen Hodgson is in charge of the coronary care unit at Leighton Hospital, Crewe. She has set up the programme with the aid of funding from BHF and CHSA together with the NHS. It ensures that a log of all acute heart attack patients is kept, that they receive home visits and are given lifestyle and primary prevention counselling with supervision by a physiotherapist, a dietitian and a pharmacist.

Roger Manning is the coronary rehabilitation nurse at the Taunton and Somerset Hospital. He has helped infarct patients to set up a self-support group and with the assistance of a nurse and part-time physiotherapist funded by BHF he co-ordinates an exercise rehabilitation programme. His aim is to encourage patients back to health with sensible eating, stress reduction and regular exercise. Gym sessions show them how they can be safely active and he assesses each patient individually.

In January 1990 the Walton Hospital in Liverpool had neither a cardiological department nor a cardiologist. Today cardiologist Dr Irwin Rodríguez oversees with a second cardiologist a Coronary Care Unit which he implemented. A nursing sister has been employed whose salary is partly funded by BHF and CHSA and a support programme for myocardial infarction (heart attack) patients is supervised by the unit. It includes support for in-patients and their families, rehabilitation at home and a two-month programme of two sessions a week of exercise and education.

BHF branches out

After much discussion, it has been decided that the British Heart Foundation will take over all the aspects of heart disease previously the responsibility of the Chest, Heart and

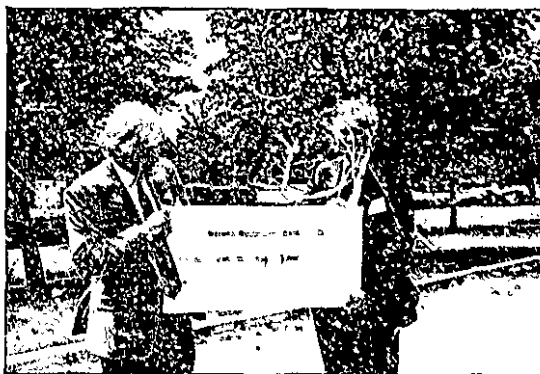
Stroke Association. The majority of the work will focus on funding short-term rehabilitation projects in hospitals. BHF will provide a counselling service and a wider range of factual information, and develop other cardiac services, such as local support groups. BHF welcomes the opportunity to expand and meet the increasing needs of the public in this way.

Innovative funding package from BHF

An accommodation crisis severely threatened the future of vital research in Cardiff into the development of fatty deposits in the arteries which can lead to heart attacks. In an unprecedented move BHF have contributed £500,000 towards expanding the accommodation at the University of Wales College of Medicine. The remaining £1.5m required will be raised by the Welsh Heart Research Institute Appeal.

Research funding has previously focused on people and not buildings, but when we hear of constraints on space which inhibit research we are presented with a case for a change in policy.

A grant of £500,000 has also been made to the National Heart & Lung Institute towards the reconstruction of the existing building at the Royal Brompton National Heart & Lung Hospital, London. The money will go towards a building complex where new research programmes will be developed into the causes of vascular disease and the metabolic expertise acquired will be passed on to the next generation of students. This grant from the British Heart Foundation will do much to raise the international profile of the Institute because it will bring together a multi-disciplinary group committed to the study of coronary heart disease and the most effective ways to prevent it.



BHF's Director-General presenting a cheque to Professor Henderson for the Welsh Heart Research Institute

EDUCATION

The educational work of the British Heart Foundation is constantly undergoing change as we learn more and adapt to new information and techniques.

Health Education Authority's 'Look After Your Heart' Campaign.

We are now having regular meetings to keep up to date with what each group is doing.

Videos, leaflets, programmes, books, conferences, workshops, symposia and news sheets are all tools which we use to make sure that important information is made available throughout Britain.

Emergency aid training

Many heart attacks and accidents happen in the home so it is not necessarily strangers in the street to whom emergency aid is applicable. It is, therefore, important that everyone should know the basic techniques of lifesaving, because the life they save could be that of a relative or friend.

The British Heart Foundation, together with the British Red Cross Society, St John Ambulance, the Royal Life Saving Society UK and St Andrew's Ambulance Association, firmly believe that every member of the public should be conversant with lifesaving techniques. A Working Group of representatives from these organisations as well as the ambulance service and teaching profession has been formed to promote and encourage emergency aid training for the public. This will include cardiopulmonary resuscitation (CPR) as the first line of defence in the event of a heart attack, as well as emergency treatment for haemorrhage and choking.

In other countries children as young as five are taught CPR and efforts are being made to include this and other lifesaving techniques in the national curriculum. At present under a third of schools in this country take in courses run by organisations such as St John Ambulance. The Working Group hopes to promote an ongoing training programme to fit with the national curriculum starting with teaching pupils aged five to seven how to recognise an emergency and call for help, and developing in stages through to full CPR at ages 12 to 14. In Norway, where emergency aid is a mandatory part of the curriculum, children have saved around 1,000 lives over the past ten years.

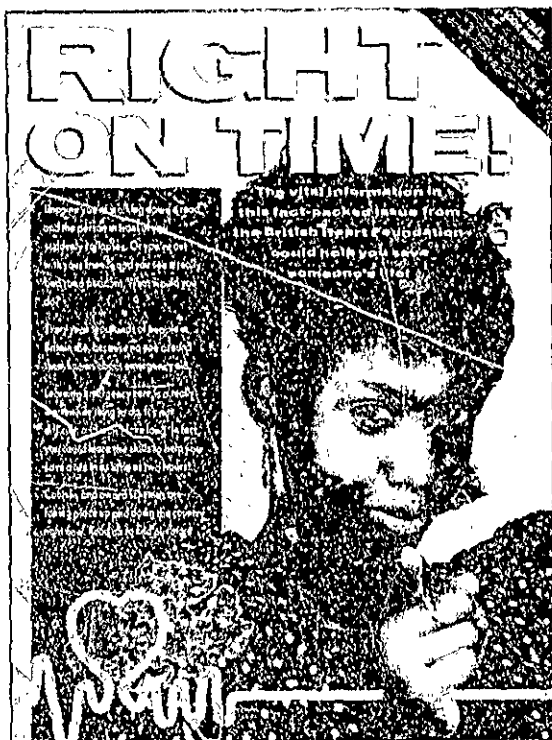
The Working Group meets at the Foundation's head office under the Chairmanship of Dr Tom Evans, Consultant Cardiologist at the Royal Free Hospital, London and Chairman of the UK Resuscitation Council. The initial role of the Working Group is to review current emergency aid training programmes throughout the UK and to develop a co-ordinated approach to build on the excellent work already being undertaken by these voluntary organisations. A National Co-ordinator has been appointed by BHF to advise and liaise with health and educational bodies and to find ways of encouraging more groups within society to learn how to give emergency aid. It is our aim that emergency aid training will eventually be seen as the norm for the majority of the British public.

How we keep Britain aware

We need constantly to keep the medical profession and the general public informed and we do this in a variety of ways.

In order to ensure that there is no duplication of efforts by the various educational bodies and groups, we liaise with the National Forum for Coronary Heart Disease Prevention, the Coronary Prevention Group and the

EDUC



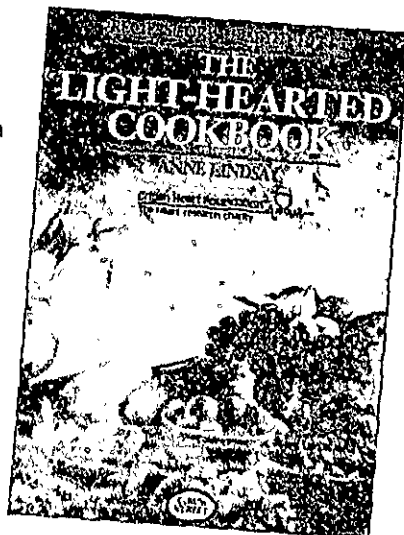
Teaching young teenagers

Our teenage newsletter is circulated to every school in Britain with a 12 to 13 year age range, teachers ordering as many copies as they need.

Light-hearted menus

In May 1991 we published *The Light-Hearted Cookbook*, a collection of menus endorsed by the British Heart Foundation.

It explains why you should eat a healthy, balanced diet and offers imaginative and tasty recipes. Obtainable from the BHF gift catalogue, W H Smith, Menzies and most good bookshops, priced £9.95



The latest video

We have just produced the third in a series of three videos dealing with heart surgery. The first, *Bypass Surgery*, prepares patient and family emotionally for the operation. The second, *Life after heart surgery*, anticipates the life style that a patient can expect after successful surgery. It was produced by Charles Boydell, a 28-year-old heart patient himself, and it strikes a positive note for patient and family, stressing in particular the support that a family must give to help a patient achieve full recovery.

In it a nursing sister discusses the pain that a patient will continue to experience in the chest and leg (from where the vein for bypass surgery is taken) and explains that coughing and deep breathing exercises are an important part of the recovery process. A doctor affirms the importance of taking medicines and it is stressed that a 'normal' life does not mean returning to the old drinking and smoking habits. Changes in diet are also advised, as is a

gradual increase in exercise and patients are reassured about resuming a normal sex life. Jill Dando from the BBC Breakfast News programme describes how she has come to terms with her chest scar. It is equally important for relatives to understand what the operation has meant to the patient and realise that recovery is a gradual process requiring some adjustments.

Copies are available from BHF head office. No charge is made but a donation towards costs (£5 for each video required) is invited. Cheques should be made payable to the British Heart Foundation



Educating the professionals

Our Education Committee meets four times a year to award a wide range of grants with the aim of promoting and increasing knowledge of what makes and keeps the heart healthy.

How nutritious are school meals?

A computer-aided programme for the benefit of school caterers has been funded until now by the Health Education Authority. For the next two years it will be assisted by a grant of £20,000 from BHF. The programme encourages caterers to consider the nutritional content of school meals, with the aim of making meals healthier and more appetising.



BHF is helping to make school meals healthier and tastier.

International Agency on Tobacco and Health

We are a founder sponsor of this new agency, with a funding of £50,000 over a period of five years. We have viewed with considerable concern the fact that the tobacco industry is now targeting the Third World in its advertising and marketing efforts. We and fellow sponsors have teamed up to combat what we consider to be an invidious development in this threat to world health.

New booklet on heart muscle disorder

The British Heart Foundation has funded the production of a booklet about hypertrophic cardiomyopathy, an inherited heart muscle disorder. It is estimated that 10,000 people may have the condition in the UK and an Association has been formed to improve the quality of life for sufferers. The Association was launched in 1989 and provides a nationwide information service, staffed by patients and their relatives and friends, all of whom are trained volunteers. The booklet is available from the Hypertrophic Cardiomyopathy Association, 44 Minerva Road, Park Royal, London NW10 6HJ.

Teaching undergraduates coronary disease prevention

In order to stimulate the teaching of coronary heart disease prevention in undergraduate medical education, BHF is funding the education of undergraduate doctors and nursing students to the tune of £75,000 over the next two years. The programme will produce teaching materials and will review current teaching for undergraduate medical education. It will be spearheaded by a medically-qualified project officer.

Why Toulouse is healthier than Belfast

This is just one of the facts which were discussed at a biennial symposium for cardiologists, general practitioners and hospital doctors, organised by BHF and held in Edinburgh on May 30 and 31, 1991.

Other topics aired were the role of screening in the prevention of coronary heart disease and the evaluation of foods in cardiac health - the first time that there has been a conference on the progress made in coronary heart disease prevention.

Speakers from the UK, the Netherlands and Sweden discussed epidemiology, clinical trials, the high incidence of heart disease in Asians, genetics and risk factors and their modification.

Nurses' symposia - BHF leads the way

In 1990 we identified the need for making information about coronary disease and its prevention available to practice nursing staff.

Three symposia were organised in Newport, Edinburgh and London. They were found to be a valuable adjunct to the medical education of the delegates and four more are planned this year.

Topics will vary from area to area depending on the needs of the nurses and will include subjects such as 'Nursing the cardiac transplant patient', 'Update on thrombolysis' and 'Coronary care monitoring'. Eight-page booklets will be produced on each subject.

37,500 general practitioners get Factfile every month

GPs are kept up to the minute with information about research into heart disease through our monthly information service, Factfile, now in its sixth year of publication. Each monthly issue deals with one aspect of heart disease and is compiled by one or more experts in a particular area of cardiology, in collaboration with the British Cardiac Society. It is designed to be authoritative, helpful and easy to use. It is free of charge and back issues are always obtainable. Recent titles include *Lipid-lowering drugs*, *Measuring blood cholesterol in primary care* and *Management of mild hypertension*.

EXERCISE FOR *Life!* Here's proof that we should

We all know that smoking, high blood pressure and high blood cholesterol contribute to coronary heart disease. But now, according to a report published in March 1991 by a British Heart Foundation Working Group, physical inactivity is likely to be almost as serious a factor.

The Working Group was set up in 1987 to look at the benefits of physical activity to health and to the role of physical inactivity in the causation of coronary heart disease. It consisted of representatives from the Department of Health and the National Foundation for Community Health Education, from cardiology, physiology, epidemiology and the Parliament, occupational therapists, sports scientists and others.

In spite of the fact that most people are aware of the health benefits of exercise, they simply do not do enough about it. So the Group tried to identify the attitudes and constraints which prevented people from taking exercise.

This is what they discovered (and it makes you want to read for couch potatoes!)

1. People do not believe that physical inactivity is an important risk factor for coronary heart disease (CHD), and many members of the medical profession remain unconvinced. Forty years of research in many countries indicate that regular physical activity reduces the risk of CHD, and that inactivity doubles the risk of heart attacks. It is likely that fewer than one in five individuals takes sufficient exercise to benefit their heart's health.



2. Only energetic sport is seen as effective. Yet simple sociable forms of exercise like swimming, cycling and brisk walking have proved to be beneficial. In a group of formerly sedentary British women aged 42, a modest programme of sustained brisk walking was sufficient to provoke a marked increase in the type of cholesterol which protects against CHD.

3. Taking up exercise may be seen as risky even for people with no symptoms, while in those with symptoms it is seen to be likely to cause further problems. The report says that habitual vigorous exercise is favourable, while warning people who are not regularly active or who are middle aged or over that there are hazards attached to unaccustomed strenuous exercise. Regular exercise among those people who have had a heart attack has three benefits: their life expectancy is increased, they feel better and physically reassured, and they can return to work.

4. There are too few facilities at school, work or in the community for taking exercise in an agreeable and affordable environment. Also, insufficient attention is paid to the needs of cyclists and walkers.

The Working Group's report entitled *Exercise and The Heart* has made nine specific recommendations to help people to take more exercise.

1. Every GP should encourage patients to take regular, adequate exercise.
2. Doctors should practise what they preach and take exercise, too.
3. Better guidelines are needed for primary health care teams and health professionals when advising on exercise.
4. Health promotion agencies should correct the impression that the only exercise that does any good has to be very vigorous and of a sporting nature.
5. Traffic and environmental planners should positively promote walking and cycling.
6. Local government should make sure that there are facilities for physical recreation.
7. Occupational health physicians, led by those in the NHS, should demand exercise facilities both in and outside the workplace.
8. Rehabilitation programmes for CHD should include structured exercise.
9. Doctors should try to persuade schools and governing bodies of sport that children should be provided with a wide range of physically demanding activities.

Just as once general practitioners set an example to their patients by giving up smoking, they are now being identified as key elements in a government campaign to tackle the causes of premature death, of which the major one is heart disease. The BHF report has been mailed to all GPs and marks a major step in our 'Exercise for Life' campaign which continues through this our 30th anniversary year. Doctors are uniquely placed to help everyone realise that they can enjoy some sort of exercise.

Commenting on the Foundation's recommendations, Professor Desmond Julian, BHF Consultant Medical Director, said: "The medical profession has given an excellent lead to the public in the campaign against smoking; the profession should now use its undoubted influence in encouraging enjoyable exercise."



a better-looking body, greater energy and a more relaxed attitude to life by taking regular exercise. It shows you the many activities available, either organised by local groups or that you can do on your own. Just remember the best activities are those you really enjoy. Finally it advises how to protect your heart by giving up smoking, watching your weight, eating less fat and more fibre, having your blood pressure checked regularly and cutting down on alcohol. *Exercise for Life!* is available from your local BHF branch or from head office. Send stamps to the value of 33p (first class) or 27p (second class).



Exercise for Life Workouts

Fitness expert to the stars, Derrick Evans, was the man behind our fundraising exercise programme - a series of mass workouts for the whole family. Known as 'Exercise for Life Workouts' they were held in leisure and sports centres around the country between May and October 1991. Each workout was led by Derrick, one of the country's top instructors in exercise to music and consisted of one and a half hours of 'cardio-conditioning'. The workouts raised money for BHF - sponsorship per minute ensured that for every moment you worked out you were raising funds for this worthwhile cause. Anyone raising more than £10 got their £3 entry fee returned and there were prizes for the top fundraisers.

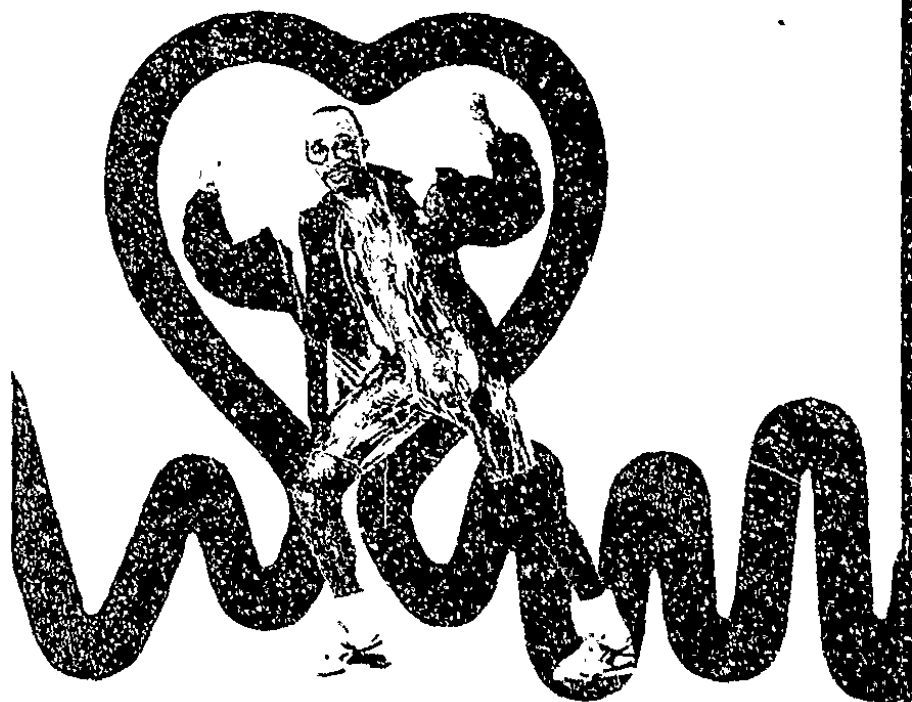


1991, Year of *Exercise for Life*

Inactivity has been identified as being as harmful to the heart as smoking or high cholesterol. Regular exercise is good for the heart and reduces the risk of having a heart attack, provided that it is part of a healthy lifestyle.

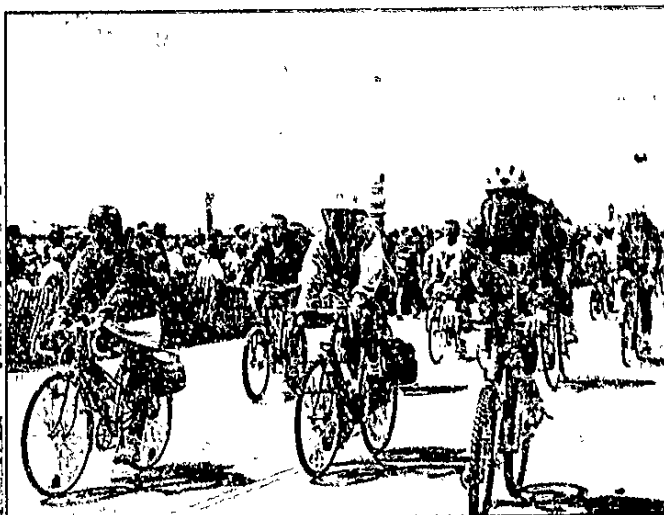
To celebrate 30 years of the British Heart Foundation, 1991 was declared Exercise for Life Year and was marked by a programme of initiatives round the country and the publication of our booklet *Exercise for Life! How to enjoy getting fit - and staying fit!*

We want everyone to make exercise a part of their life, not just today but for life. If you exercise regularly you will probably find that your ability to exercise increases and this booklet shows you how to get started on your own programme. It explains how you can have a healthier heart,



Help raise funds for BHF

The British Heart Foundation is one of the nation's top five charities, with almost £30 million pounds raised last year. We can only keep funding heart research if you keep raising the funds. We have fundraising programmes which make it easy to give, and are fun, too. Here are ways in which you can help.



The Bike Rides

Probably the most visible and best-known of our fundraising events, the London to Brighton, Bike Ride, was sponsored last year for the first time by Granada and became part of their 'Wheel Appeal' campaign. Two other rides were added (which benefited other charities as well as BHF) and the London to Brighton event grossed £1,300,000 with 30,000 cyclists taking part - the biggest bike ride in the world. The Manchester to Blackpool and Birmingham to Oxford rides together raised £400,000, with a total of 8,000 cyclists out for the day.

Jump Rope for Heart

The idea of Jump Rope for Heart came originally from the United States and is now in its fourth year in this country. Skipping is not only good fun, it is good exercise, too. Last year 400 schools raised over £150,000 for the British Heart Foundation by taking part in events throughout the country. Schools retain 25% of the money they raise and the Foundation provides ropes and instructional material as well as certificates of merit and badges for participants. For the first three years costs were reduced by having a sponsor but this year we have decided to go it alone. So far over 750 schools have registered and we hope to raise over £200,000.

We also run skipping workshops in conjunction with local health authorities which may be attended by teachers whose schools are planning to participate. For details contact Ms Fiona Goff, BHF Jump Rope Co-ordinator, at Loughborough University, Ashby Road, Loughborough, Leicestershire LE11 3TU.

Encourage your colleagues to give

There is a huge potential for fundraising through Payroll Giving, a source of BHF income which has almost doubled in the last year. Why not let us come and talk to your management and staff about the advantages of this simple, regular and tax-effective method of giving? We will be only too pleased to explain to you how the scheme operates and then encourage your staff to participate.

Your employees can make a tax-free gift of up to £600 a year which is deducted in small amounts directly from their pay packets. It is a painless way of helping which many people find attractive because they do not have to remember to make payments, since it is all done through the company payroll.

To find out more about Payroll Giving contact BHF head office or your local BHF office.

Legacies are for life

Last year over 44% of donations to the British Heart Foundation came from legacies; they are one of our most valued sources of income. It's common sense to make a will and it is a sense of loyalty which has made so many people leave money to a charity which is working for the benefit of future generations while it is improving the quality of life for thousands of sufferers today. If you have not yet made a will, why not write for our booklet *Leave Nothing to Chance*? It includes a form which you can fill in without consulting a legal adviser.

The Leeds Visa Card

Anyone over the age of 18 can apply to the Leeds Permanent Building Society for a Leeds Visa Card with which they make a contribution to one of three charities every time they use it. The charities are Mencap, the Imperial Cancer Research Fund and the British Heart Foundation. Last year we received £250,000 through this scheme which is an excellent example of how charities can work together with the public to raise money across a broad spectrum of charitable activity. Details are available from any Leeds or BHF branch or BHF head office.



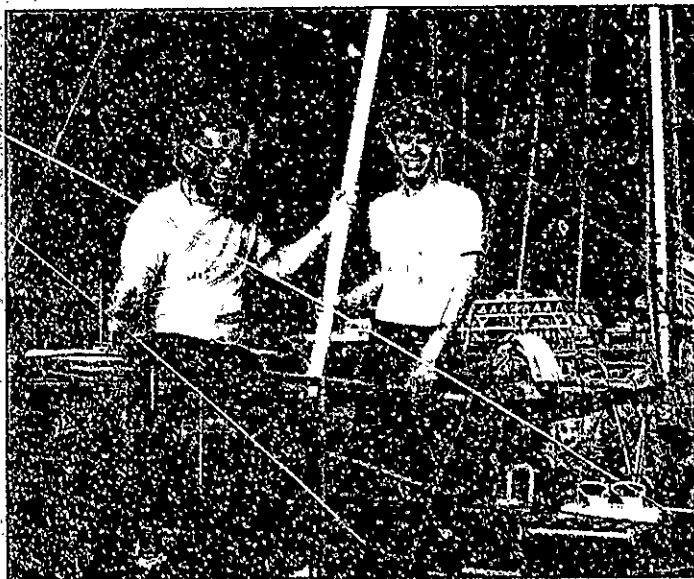
"Every day is an important day"

"When we were told that my son Duncan, at the age of 15, had a heart murmur and an enlarged heart, I couldn't cope. I cried and got very emotional", says Mrs Catherine Frewen.

But Duncan, she remembers, was very matter of fact about it all and had a major operation on a constricted aorta. Now he's training to be a chiropractor.

Five years later her husband Laton became increasingly unwell. He could not walk the dog or climb the stairs and an examination revealed that he had two blocked arteries in his heart. "I was relieved because I knew what the matter was", says Catherine. "It could be repaired." But he had to wait six months for the operation - which seemed forever. Her full-time job kept her going, together with the fact that, like her son, her husband did not want sympathy.

"He has been given a second chance and he's doing what he wants to do, which is sailing with Duncan to the Azores, having already sailed extensively in Europe and Scandinavia." For the whole family, every day is an important day.



Duncan Frewen (right), on board the yacht *Thankful* with his father Laton.

Covenants help us to plan ahead

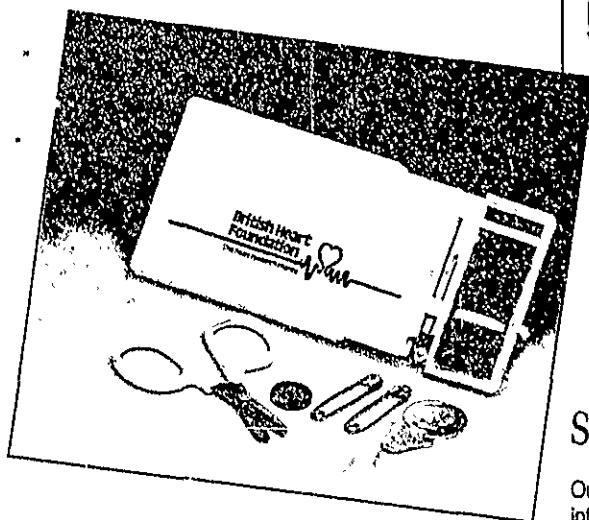
Any long-term commitment to funding helps us to plan ahead, something we desperately need to be able to do if heart research programmes are to have continuity. A Deed of Covenant not only gives us that long-term funding, it means that the Inland Revenue will refund to BHF the basic rate tax you have paid on your donation. This increases the value of the donation to us by one-third, without costing you any more.

Deeds of Covenant entitle you to become a British Heart Foundation Key Supporter and to receive regular copies of our newsletter. Non-taxpayers can become Key Supporters too, simply by filling in a Banker's Order.

Gift Aid

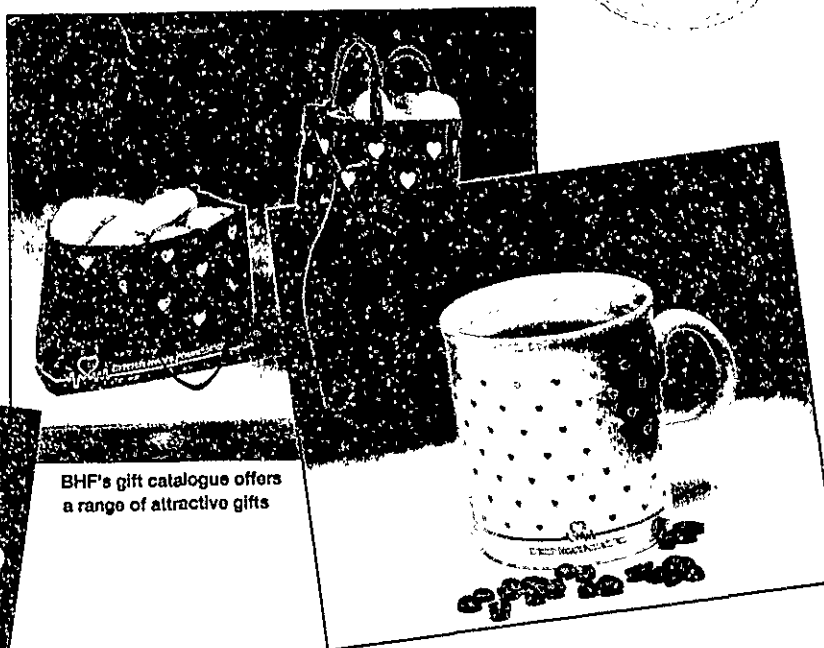
This is another tax-effective way of giving to BHF and is attractive to companies and individuals wanting to give a one-off cash donation. Gift Aid could make a significant contribution to our research programmes in the future.

Companies or individuals wishing to donate must be resident in the UK. For a close company or individual the minimum permitted donation is £600. Full details of the conditions of Gift Aid are available from BHF head office.



Catalogue trading for heart research

Our annual gift catalogue is another source of income through which we profit as a trading activity. More than 60,000 orders are made through the catalogue and half these orders have an extra donation added to the order total. Last year we made a profit of £140,000 and received £150,000 in donations through our catalogue business, from which we sold not only five million Christmas cards (each carrying the BHF logo to remind recipients of our work) but also pens, sewing kits, first aid kits, umbrellas, mugs, aprons, bags and a host of other merchandise including practical household items, gifts and games.



Spreading the word by direct mail

Our direct mail activity serves the double purpose of informing the general public about BHF and increasing donations for our funds. Whether directed to committed supporters or casual enquirers, we are able to tell them what our work is about and to keep them up to date with our continuing success in funding research and the provision of equipment throughout the country.

We find that direct mail is a successful way of encouraging our donors to become regular supporters, thus raising the level of contributions and ensuring a longer-term commitment to research programmes.

Corporate sponsorship - the mutually beneficial way of giving

The benefits of corporate sponsorship are far-reaching, not only for BHF but for the companies concerned as well. Medical research is often a more appropriate candidate for sponsorship than the arts or sports for certain organisations and sponsorship has many advantages for the benefactor. The community-conscious company which places its money and name behind a project gives its workforce a worthwhile focus. Corporate sponsorship can sometimes be beneficial to staff health, while the general public can relate to a company which is sponsoring a research project which will benefit the world.

The British Heart Foundation is engaged in a wide variety of projects which need continual financial support and which can be named after the benefactor. Chairs, fellowships, lectureships and departments can be established with the title of a corporate identity. We welcome the opportunity to work closely with companies not only in finding the right kind of project to fit their profile but also, where possible, one which could be of special interest to employees.

Current corporate sponsorship projects range from £2,500 to £1.25m over a three-year period.

Medical research and academic involvement are not the only ways that a corporate sponsor can participate; there are fundraising events to support, too.

If you wish to involve your company in sponsoring a BHF activity please contact Gillian Gallagher at BHF's head office.

Every year more than 70,000,000 working days are lost due to heart and circulatory diseases and it is Britain's most expensive illness. The BHF Calculator, available from your nearest BHF office, estimates the cost of heart disease and lost productivity to British industry.



BHF benefited from the sales of a new term deposit bond. Clydesdale Bank donate 0.5% on all monies invested.

News Release **British Heart Foundation** News
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Why we spend money on publicity and advertising

Publicity is an important part of the British Heart Foundation's existence - if the public are to support us they need to be told about our work. Public relations activities which are undertaken nationally and locally aim to inform the public, via the media, how we spend the money we receive, about the advances and progress that we have made and our dependency on supporters to continue to raise money. As a result we receive an average of 600 press cuttings a month and numerous opportunities for television and radio exposure.

Our advertising generates public awareness of the role of BHF in the fight against heart disease. Press and poster campaigns draw attention to our work and our constant need for funds, all of which are spent on research and BHF's other objectives, apart from the administrative, fundraising and public relations budgets.


1961  1991


PRESS OFFICE
14 FITZARDINGE STREET, LONDON W1H 4DH
TELEPHONE: 071-938 0185 FAX: 071-488 1273


30 years of heart research


Bold, brave and sometimes barmy!


There's no limit to the varied and imaginative events which are put on by our fundraisers all over the country. Here are just a few which helped to realise almost £30 million.


 25,000 bird fanciers gathered in Blackpool for the world's largest bird show, the **British Homing World Show of the Year**. £20,000 was raised for BHF.


 70-year-old Jack Davies is swimming his 1000th mile for BHF.


 Miller Group, Edinburgh not only encouraged but participated in a World Cup Draw organised by staff members.


 The mid-Sussex branch of BHF organised an Auction of Promises. People offered their services to clean windows, babysit, bake cakes - to name but a few promises. These promises were auctioned and £5,660 was donated to BHF.


 British Telecom supported clerical worker Eleanor Thorpe in her efforts to lose weight in BHF's Merseyside 90.


 Bowie & Aram, Agricultural Engineers held their first Charity Day with Scottish comedian Johnnie Beattie and Gaiety Front Page dancers.


 Sue Stasko won The Whitbread Award for voluntary work in North Yorkshire and for helping the Clayton Surgery to purchase an ECG machine.

 Actress Maurar Kennedy performed in a one-woman play, written by her husband Royce Ryton, called 'Queen Victoria's Granddaughters.' This performance raised more than £600 for the Yeovil branch of BHF.

 Instead of buying chocolates and traditional Valentine's gifts for her boyfriend, Helen Harrison made a donation to BHF.

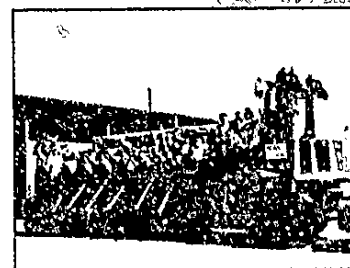
 The link between the hearts and flowers of Valentine's Day and BHF's heart research was established once again from the proceeds of sales of Valentine gifts from Just Balloons, Crabtree & Evelyn and Penhaligons.

 Readers of Kind Hearts weekly column in the Daily Record in Scotland have donated more than £50,000.

 Leeds streetbrokers, Redmayne-Bentley donated £1 to BHF for every successful application form they handed in. Powergen, National Power and the regional Electricity Boards' shares.



Mr 'Sonny' Pugh, aged 79, can only walk very slowly with the aid of a walking frame. But that didn't stop him from doing a sponsored walk and raising £182 for the Bala and Penllyn Branch of the British Heart Foundation.



Sun Valley Poultry Co. in Hereford supported BHF on their carnival float.



Three British Aerospace employees set out to collect signed footballs from every English and Scottish first division football club. They were auctioned and the proceeds donated to Imperial Cancer Research Fund and BHF.



Reflecting on the past 50 years of his life, Tom Parker, from Dronwath, celebrated his 51st birthday by cycling from Land's End to John O'Groats. He shed a few pounds and raised a few more for BHF.



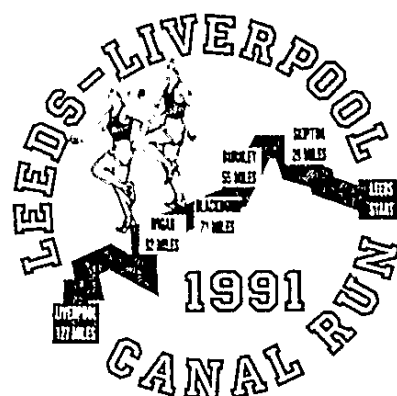
Young offenders in Staffordshire made a wooden trellis and planters, donating profits to BHF.



Serck Marston were the champions on the second annual White Water Raft race. This was one of 24 participating companies. Other trophy winners included Nationwide Cable, Dunlop GRG Ltd and Hansen Transmissions.



Walkers at the 1990 Harrier Photo Family Fun Walk. Despite terrible weather, 1,170 took part.



Merseyside Health Authority worker Robin Ireland and drama teacher Chris Bu pounded the 127 mile length of the Leeds-Liverpool canal in effort to raise £1000.

Artist Norman Adams exhibited his paintings at the Christopher Hull Art Gallery in London, inspired by the fact that both the artist and gallery owner are former heart patients. Proceeds from the sales were donated to BHF and to two hospitals.



Shopping with BHF is becoming a national habit

At the beginning of 1991 we had 34 retail shops selling a wide variety of quality donated goods on behalf of the charity. Just 12 months later we had 74, an average of one shop opening every nine days! This indicates the importance which we attach to retail outlets stocked with good quality merchandise, as a means of raising funds.

Our turnover exceeded £2.5m this year against £1m last year, and as we expand we expect our shops to become an



increasingly important source of revenue. Colin Sandford, Chief Executive of BHF Shops, says: "We try to create a shopping environment which encourages people to browse and buy and which is distinctly BHF. As a charity we have to spend money wisely but to be successful we believe that charity shops, like any multiple retailer's stores, have to be comfortable, relaxing and well lit. We hope to go on to ensure that BHF shops are represented nationally."

He and most of his management team have senior multiple retail experience and believe that BHF shops should be in good shopping positions wherever this is economically practical.

The management of the Shops Division is streamlined and professional, with shop managers reporting to area managers and with a back-up team of senior field management, financial control and property services.

"We will always need volunteers and good quality second-hand merchandise, even though we are now experimenting with new merchandise in a small way", said Mr Sandford, "and of course the shops are a natural point for the public to make contact with us, whether to make donations or to obtain information."




Intercity generously sponsored the Tiverton Parkway Cycle Ride in Devon, launched by Jill Dando.



Miss World, with the Chairman of the BHF Hartlepool Branch, Dr Roger White. Gina Tolleson from the USA made a visit to a Hartlepool night club to support fundraising by the local branch. Lending her heart to a local man who won an evening in her company in a 'blind date' competition, she helped to raise £1,000 for the British Heart Foundation

How we spend your money



The past year has been a difficult one for almost everybody. At a time when inflation is affecting the cost of research, economic recession and high interest rates make it difficult for people to be as generous as they would wish to deserving charitable causes. Nevertheless, in the year to 31 March 1991 our total income increased by 3% to close to £30m and our expenditure on research, cardiac equipment and education (including additional funds for the maintenance of chairs) went up to a record £26.1m, as much as 20% above the previous year. On first impressions it may seem disappointing that donations and fundraising income was reduced by £2.14m but it should be remembered that in 1989/90 over £4m was raised for defibrillators for ambulances in a specific campaign which was enthusiastically supported throughout the country. As the task was accomplished, so the fundraising efforts to raise money for our main objectives - research and education - remained undiminished and our voluntary branches managed to increase income for these objectives by 7% against considerable odds.

Income from legacies increased by 23% and it is most encouraging that so many benefactors remember the Foundation's work in their wills. By this final gesture of generosity the continuing work of research can be intensified through the agency of a gift from one generation to another.

During the year support for the government's Payroll Giving and Gift Aid schemes showed very welcome increases from their original disappointing starts. Both are designed to encourage charitable giving, but more publicity needs to be given to the schemes and there is still room for simplification to ensure that they become a feature in the overall pattern of charity income.

The London to Brighton Bike Ride in aid of the British Heart Foundation continued to combine healthy exercise and fun with a successful fundraising venture. Almost £1.4m was raised through the efforts of over 30,000 riders and their energy in cycling from London to Brighton was matched by their tenacity in raising donations. The Foundation also benefited from two other bike rides, also under the sponsorship of the Granada Wheel Appeal.

These were the Birmingham to Oxford and Manchester to Blackpool bike rides.

There was an encouraging increase in the number of good applications being received for research awards and for fellowships, and the Foundation was able to increase its support for research projects by one third. During the year building and equipment shortcomings were identified as holding back new research initiatives and therefore specific building project grants have been made to hospitals in Cardiff and London. We hope that resources will be available to continue to increase our support for major centres of research and to concentrate resources where they are most effective.

The impact of inflation is particularly severe on the research projects which we have undertaken to support. It is also essential that grants for fellowships and research groups continue to reflect appropriate salary scales so that the best research workers are attracted to the work that we are funding. As a result it has been necessary over the past year to review our grants and awards and the cost of this action has contributed to the current pressure on our resources.

The Charity Shops Division had a successful third year of operation with the number of shops growing to 74 at 31 March 1991. Sales of donated goods were in excess of £2.5m and this enabled a profit to be made as a contribution to fundraising income. Our thanks are due to the professional managers and volunteers who work with enthusiasm to make our shops a profitable extension of our fundraising activities as well as a feature of an increasing number of high streets.

Each year the Chancellor's Budget is looked forward to, with optimism by charities as they hope to see relief from various forms of taxation which appear to select some of their targets at random. This year's Budget was disappointing as a minor increase in Gift Aid limits was outweighed by the increase in VAT to 17.5% which will cost the Foundation an additional £50,000 a year in irrecoverable tax.

The Foundation's administration and fundraising expenses were again tightly controlled during the year. However, there was exceptional expenditure relating to the move from two separate offices in Gloucester Place to one head office building in Fitzhardinge Street. It is, of course, essential that the Foundation operates as effectively as possible and suitable premises and efficient systems mean that the maximum effect is obtained from the research and education work which is undertaken.

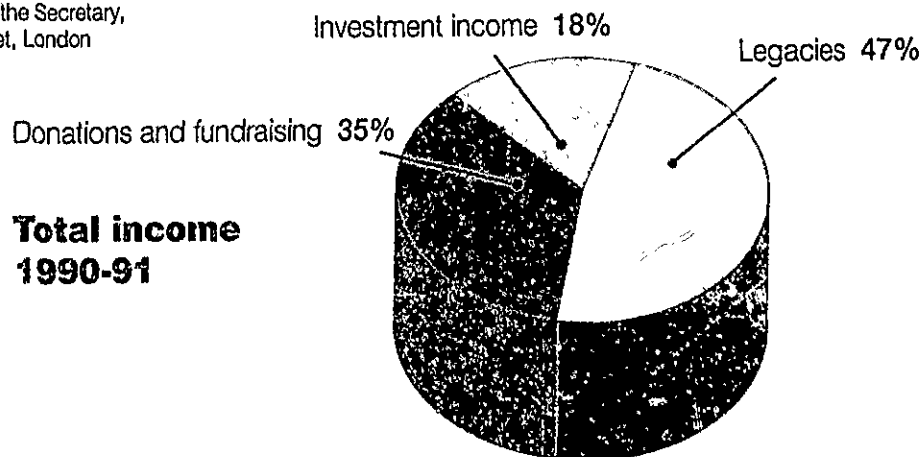
Income and expenditure account for the year ended 31 March 1991

	1991 £000	1990 £000
Donations and fundraising	10,319	12,550
Legacies	14,097	11,452
Investment income	<u>5,476</u>	<u>5,943</u>
Total income	29,892	29,945
Less:		
Fundraising and publicity costs	3,374	2,938
Administration	<u>1,009</u>	<u>754</u>
	4,383	3,692
Disposable income	25,509	25,353
Expenditure on:		
Research, cardiac equipment and education	21,898	19,148
Chairs of cardiovascular disease	<u>2,147</u>	<u>1,609</u>
	24,045	20,757
Transfer to designated funds	2,087	1,008
Changes in provisions	(450)	-
Transfer to specific reserves	<u>-</u>	<u>3,000</u>
	25,682	24,765
Deficit for year (surplus 1990)	(173)	588

Balance sheet as at 31 March 1991

Tangible assets	11,645	2,630
Investments	<u>69,635</u>	<u>56,194</u>
	81,280	58,824
Current assets	<u>3,679</u>	<u>9,127</u>
	84,959	67,951
Liabilities	<u>36,265</u>	<u>26,193</u>
Net assets	48,694	41,758
Represented by:		
Designated funds	25,067	20,600
Reserves	<u>23,627</u>	<u>21,158</u>
	48,694	41,758

The figures above are an abridged version of the Foundation's full audited accounts, a copy of which is included with this report, or is obtainable from the Secretary, British Heart Foundation, 14 Fitzhardinge Street, London W1H 4DH.



BHF in the regions

The British Heart Foundation has nine regional offices covering the whole of the United Kingdom. Each area has many volunteers organising local fundraising events. To find out what is going on near you, contact your regional office.

Thank you



JUSTIN GRANGE

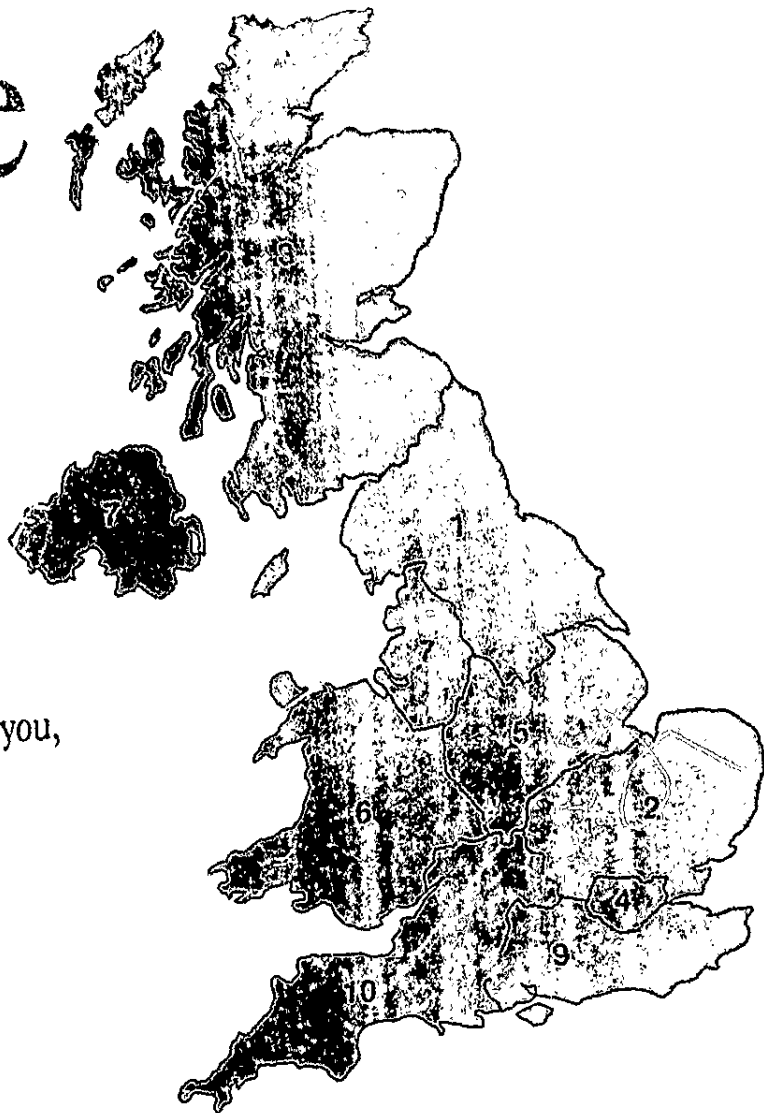
Although this year has not been easy, with the recession, our total free income is up by 14.6%. This satisfactory result is due to a very large increase in both the number of legacies and their average value, and to the sterling efforts of our branches with a contribution greater by 7.2% than last year.

We are dependent for much of our funds on the hard work and imagination of our volunteers either directly, through the myriad of events which are so painstakingly and efficiently organised by our branches or indirectly, by spreading the word of the Foundation throughout Great Britain. I am astonished again and again to hear of new schemes thought up, new events organised and new people brought in to help and to tell others of our work. We are enormously grateful to our volunteers, in both the branches and the shops, for their energy and enthusiasm in pursuit of our worthwhile cause. We have received a great deal of help, too, from corporate sponsors, from clubs and societies up and down the country and from many individuals. We much appreciate their kindness and generosity.

I am afraid that this year, too, will not be easy, but I am confident that with your help we will weather it so that our research into the causes, diagnosis, treatment and prevention of heart disease will continue, leading to its eventual elimination.

Leski Busch

Major General L F H Busch CB
Director-General



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Northern England:
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Tadcaster
N. Yorkshire LS24 9AL
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Beds, Bucks & Northants:
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Saffron Walden
Essex CB10 1JW
Tel: (0799) 21420

3
Scotland:
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Edinburgh EH3 6BQ
Tel: (031) 226 3705

4
Greater London:
Langthorne Hospital
Langthorne Road
London E11 4HJ
Tel: (081) 539 8828

5
Midlands:
16 The Ropewalk
Nottingham NG1 5DT
Tel: (0602) 417835

6
Wales, Shropshire,
Hereford & Worcs:
Brighton House
Temple Street
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Liverpool L2 4SW
Tel: (051) 236 6988

9
South-East England:
33 High Street
Ticehurst
Wadhurst
E. Sussex TN5 7AS
Tel: (0580) 200443

10
South-West England:
6 Terrace Walk
Bath
Avon BA1 1LN
Tel: (0225) 463616

The British Heart Foundation's medical committees meet quarterly to dispense funds for cardiovascular research. There are a large number of applications which have to be assessed not only by merit but also in competition with others for the limited funds available. (Lists of members of each medical committee can be found on the inside back cover.) Awards made during 1990-1991 are listed on this and the following pages.

Project Grants

(Formerly Research Grants)

Project Grants are awarded to graduates wishing to undertake a short-term research project in the UK. These grants may be for salaries, expenses and equipment for a period of up to three years. During 1990-91, 159 grants were awarded.

BIOCHEMISTRY

Professor John McGrath and Dr Godfrey Smith, *University of Glasgow*. Stimulation of single heart muscle cells by noradrenaline.

Dr Richard Ashley and Dr David Hulmes, *University of Edinburgh Medical School*. Channels of calcium release in heart muscle.

Dr Malcolm Lewis and Professor Andrew Henderson, *University of Wales College of Medicine*. Chemical control of contractions in heart muscle.

Professor Phillip Lowry and Ms Esther Irvine, *University of Reading*. Structure of atrial natriuretic peptide.

Dr Martin Wilkins and Dr Robert Unwin, *Royal Postgraduate Medical School, London*. Investigation of new class of diuretic and hypotensive agents.

Dr Paul Barton, *National Heart & Lung Institute, London*. Genetic control and function of troponin, a protein found only in heart muscle.

Dr George Hart, *John Radcliffe Hospital, Oxford*. Role of calcium in heart cells and relationship to arrhythmias.

Dr Mohammed Ameen, *Radcliffe Infirmary, Oxford*. Effect of disease and drugs by sodium and potassium pumps in cells.

Dr Steven Marston, *National Heart & Lung Institute, London*. Chemical control of blood vessels.

Professor Reginald Chapman and Mr Mohammed-Saadah Suleiman, *University of Bristol*. Possible protective effects of taurine against heart disease.

Professor Reginald Chapman, *University of Bristol*. Effect of changes of sodium within heart cells on strength of the heartbeat.

Professor Sir Philip Randle and Dr Alan Kirby, *John Radcliffe Hospital, Oxford*. Regulation of oxidation of sugars, determinants of insulin resistance.

Dr Michael Wakeham, *University of Glasgow*. Effect of peptides on constriction of blood vessels.

Professor Edward Saggerson, *University College London*. Regulation of use of energy by the heart by an enzyme.

Dr David Miller, *Institute of Physiology, University of Glasgow*. Investigation of imidazoles which sensitise the heart to the action of calcium.

Professor David Robins, *University of Glasgow*. Identification and synthesis of chemical compounds to treat cardiovascular disease.

Dr Kenneth MacLeod, *National Heart & Lung Institute, London*. Regulation of calcium in heart muscle cells.

Dr John Trinick, *University of Bristol*. Functions of titin on the heart.

Professor Richard Denton, *University of Bristol*. Chemical basis of generation of energy by the heart.

Dr Malcolm Lewis, *University of Wales College of Medicine*. Effect on the heart of release of chemicals from cells lining blood vessels.

BLOOD PRESSURE

Dr Susan Clark, *John Radcliffe Hospital, Oxford*. Ambulatory blood pressure in general population.

Dr Stephen O'Neill, *University of Liverpool*. Response of the heart to disorders such as high blood pressure.

Dr Brent Williams and Dr Brian Walker, *Western General Hospital, Edinburgh*. Effect of steroid hormones on blood pressure.

Professor James Ritter and Dr John Cockcroft, *United Medical & Dental Schools, London*. Disturbance in production of nitric oxide causing raised blood pressure.

Professor Geoffrey Burnstock, *University College, London*. Development of new drug treatment for elderly patients with raised blood pressure.

Dr Edward Johns, *University of Birmingham Medical School*. Effect on blood pressure of stimulation of nerve supply to kidneys.

Dr John Brown, *University of Cambridge*. Links between the brain and control of blood pressure.

Dr Trevor Batten and Dr Peter McWilliam, *University of Leeds*. Regulation of heart rate and blood pressure by the brain.

Dr Aled Evans, *University of Glasgow*. Development of new method to measure blood pressure.

TRANSPLANTS

Mr John Bradley and Dr Eleanor Bolton, *Western Infirmary, Glasgow*. Potential use of monoclonal antibodies to prevent rejection of transplanted hearts.

Professor Gerta Vrbova, *University College London*. Grafting of embryonic heart muscle to replace damaged heart muscle as an alternative to transplantation.

Professor Glennis Haworth, Institute of Child Health, London. Prolonging of storage life of organs for transplantation.

Dr Marlene Rose and Dr Sian Harding, National Heart & Lung Institute, London. Analysis of immunological mechanisms in rejection of transplanted hearts causing damage to the heart; inflammatory heart disease in non-transplant patients.

Dr Michael Dunn and Dr Marlene Rose, National Heart & Lung Institute, London. Antibodies associated with damage of diseased and transplanted hearts.

Dr Colin Clelland, Northern General Hospital, Sheffield. Problems of rejection of heart transplants.

Dr Teri Millane, St George's Hospital Medical School, London. Effect of diminished magnesium content in cardiac muscle following transplantation.

Dr Brian Shenton, University of Newcastle upon Tyne. Investigation of antibodies causing rejection of heart or heart-lung transplants.

Dr Stephen Pennefather, Newcastle General Hospital. Methods of preserving donor hearts for transplantation.

Mr David Taggart, National Heart & Lung Institute, London. Effect of toxic forms of oxygen on the heart during heart transplant operations.

Mr Ian Colquhoun and Mr John Dark, Freeman Hospital, Newcastle upon Tyne. Effect of temperature on preservation of donor lungs for transplantation.

BLOOD VESSELS AND CIRCULATION

Dr Janette Bulloch and Dr Ian Montgomery, University of Glasgow. Study of blood vessels by electron microscope in normal and hypertensive patients.

Dr Filippo Crea, Royal Postgraduate Medical School, London.

Redistribution of coronary blood flow from normal to ischaemic heart muscle (the 'Robin Hood' effect) by theophylline and other drugs.

Dr John Warren, National Heart & Lung Institute, London. Factors controlling blood flow.

Dr David Pratt and Mr David Hopkinson, Orthotic and Disability Research Centre, Derbyshire Royal Infirmary. Pneumatic system for treating patients with swollen legs due to poor blood flow.

Professor Peter Rubin and Dr Sheila Gardiner, Queen's Medical Centre, University of Nottingham. Role of magnesium sulphate on blood supply to brain of women with eclampsia.

Dr Nicholas Standen and Dr Philip Langton, University of Leicester. Investigation, with specialised equipment, of arterial tone.

Dr John Wharton and Professor Julia Polak, Royal Postgraduate Medical School, London. Reactions of vascular endothelium.

Professor Roger Greenhalgh, Charing Cross & Westminster Medical School, London. Prognosis of small aneurysms to establish need for surgery.

Dr Susan Wray, University College London. Factors affecting control of blood vessels.

Dr Alan Hughes and Professor Peter Saver, St Mary's Hospital, London. Vascular reaction to new drugs for hypertension.

Dr Anthony Davenport, Addenbrooke's Hospital, Cambridge. Effects of novel peptides on cells lining blood vessels.

Dr Philip Babil, University College London. Molecular control of excessive growth of smooth muscle in blood vessels.

Dr Herbert Thurston and Dr Robert Sayers, Leicester Royal Infirmary. Function of small vessels in legs of patients with chronic arterial disease.

Dr Paul Durrington and Dr Michael Mackness, Manchester Royal Infirmary. Protective effects of an

enzyme against arterial disease.

Dr William Penny and Dr Malcolm Lewis, University Hospital of Wales, Cardiff. Investigation of drugs used to prevent re-narrowing of coronary arteries following angioplasty.

Dr James Maccallie and Dr Peter Weissberg, Addenbrooke's Hospital, Cambridge. Prevention of proliferation of cells in arterial disease.

Professor Peter Lachmann and Dr Pamela Ewan, University of Cambridge Clinical School. Fundamental mechanisms causing systemic capillary leak syndrome.

Dr Dinah Parums, John Radcliffe Hospital, Oxford. Possibility that chronic inflammation associated with dilatation of arteries is an autoimmune disease development of monoclonal antibodies.

Dr James Gillespie and Dr John Greenwell, University of Newcastle upon Tyne Medical School. Mechanisms controlling cells lining blood vessels which lead to inflammation.

Professor Julia Polak, Royal Postgraduate Medical School, London. Reason for re-narrowing of arteries following angioplasty.

Dr Leslie Smith, Royal Brompton National Heart & Lung Hospital, London. Methods to retard narrowing of arteries following angioplasty using interferon.

Dr Janet Powell and Professor Roger Greenhalgh, Charing Cross & Westminster Medical School, London. Inheritance of abdominal aneurysms.

Professor John McGrath, University of Glasgow. Control of blood vessels in the placenta and the lungs of the fetus.

Dr Lynda Blayney, University of Wales College of Medicine. Factors responsible for lowering of blood vessel tone.

Dr John Warren, National Heart & Lung Institute, London. Basic mechanisms controlling size of blood vessels.

Dr Barbara Ward and Professor David Tomlinson, Queen Mary & Westfield College, London. Effect of diabetes on blood vessels in the heart.

Dr Michael Barnes, Strangeways Research Laboratory, Cambridge. Role of smooth muscle cells in narrowing blood vessels.

Dr Ian MacGregor and Dr Nuala Booth, Scottish National Blood Transfusion Service, Edinburgh. Formation of proteins by cells lining blood vessels.

Dr Francis Fowkes, University of Edinburgh. Effects of smoking on arterial disease of the legs.

NERVOUS SYSTEM & THE HEART

Dr Anthony Heagarty and Dr Kevin West, Leicester Royal Infirmary. Nervous control of arteries in patients with high blood pressure.

Professor John Coota, University of Birmingham Medical School. Development of method to measure effect on the heart rate of impulses passing down the vagus nerve.

Dr Stephen Logan, University of Birmingham. Nervous control of the circulatory system.

Dr Mary Sheppard, National Heart & Lung Institute, London. Fundamental studies of conducting system of the heart.

Professor John Coota, University of Birmingham Medical School. Nervous control of the heart to establish action of cardiac drugs.

Professor Robert Anderson, National Heart & Lung Institute, London. Conduction system of congenitally malformed hearts.

Dr Noel McHale, Queen's University, Belfast. Nerve supply of the lymphatic system and its function for the heart.

Dr Allan Levi, University of Bristol. Investigation of the atrioventricular node in the control of the heartbeat.

CAUSES AND PREVENTION OF CORONARY HEART DISEASE

Dr David Lloyd Davies, *Western Infirmary, Glasgow*. Investigation of plasma cholesterol and platelets as risk factors in heart disease.

Dr Michael Burr, *MRC Epidemiological Research Unit, University of Wales*. Reduction of risk of heart attack in angina patients through diet or stress control.

Dr Paul Roderick, *Northwick Park Hospital, Harrow*. Dietary intervention in general practice to reduce serum cholesterol and risk of coronary heart disease.

Dr Malcolm Mitchinson, *University of Cambridge*. Efficacy of vitamin E to reduce process of atheroma.

Professor Andrew Steptoe, *St George's Hospital Medical School, London*. Responses by the heart, circulation and hormones to mental stress in men and women of varying age groups.

Professor Gustav Bom, *St Bartholomew's Hospital, London*. Prevention of arterial disease by reducing uptake of low density lipoproteins.

Dr Andrew Newby and Dr Malcolm Davies, *University of Wales College of Medicine*. Abnormality of growth cells in atheroma.

Dr Keith Frayn, *Radcliffe Infirmary, Oxford*. Part played by insulin resistance in development of heart disease.

Professor John Reid and Dr Mary Grant, *Western Infirmary, Glasgow*. Development of premature atherosclerosis in patients with a rare inherited metabolic defect, homocystinuria.

Dr Kevin Pritchard and Dr Steven Marston, *National Heart & Lung Institute, London*. Formation, early detection and treatment of arterial plaques.

Dr Catherine Demoliou-Mason, *Thrombosis Research Institute, London*. Mechanisms underlying formation of fatty plaques in arterial walls.

Dr Anthony Gershlick, *Glenfield General Hospital, Leicester*. Effectiveness of heparin in preventing re-narrowing of coronary arteries after angioplasty.

Professor Paul Nurse, *University of Oxford*. Basis of atherosclerosis by studying biochemical processes in yeasts and man.

Professor David Barker, *University of Southampton* and Professor Charles Hales, *University of Cambridge*. Analysis of childhood growth and current health of middle-aged women.

Dr Peter Hall, *Royal Postgraduate Medical School, London*. Role of growth factors in atherosclerosis.

HEART ATTACK AND ANGINA

Professor Stuart Cobbe, *Royal Infirmary, Glasgow*. Assessment of the success of semi-automatic defibrillators used by Scottish ambulance crews.

Dr Richard Mayou, *Warneford Hospital, Oxford*. Evaluation of advice or psychological treatment in patients experiencing chest pain but with no evidence of heart disease.

Dr Edward Glucksman, *King's College Hospital, London*. Evaluation of training programmes in the use of semi-automatic defibrillators.

Dr Dorian Haskard and Dr Adrian Peters, *Royal Postgraduate Medical School, London*. Use of monoclonal antibodies to investigate trigger initiation of heart attacks.

Dr Derrick Yellon and Dr David Latchman, *University College Hospital, London*. Possible protection of the heart during a heart attack by 'heat-shock and stress proteins'.

Dr Kent Woods, *Leicester Royal Infirmary*. Effect on circulation of intravenous magnesium sulphate.

BLOOD FATS AND DIET

Dr Victor Zammit, *Hannah Research Institute, Ayr*. Study of synthesis of cholesterol.

Dr Gilbert Thompson, *Hammersmith Hospital, London*. Comparison of effects of cholesterol lowering drugs and blood filtration procedure.

Dr Michael Munday, *School of Pharmacy, University of London*. Formation of lipids responsible for increasing risk of vascular disease.

Dr Peter Mayes, *Royal Veterinary College, London*. Removal of cholesterol from the arteries and its transportation to the liver.

Dr Rudolph Riemersma, *Royal Infirmary, Edinburgh*. Relationship between changes of diet and plasma linoleic acid.

Dr Yolanta Kruszynska, *Royal Free Hospital, London*. Effect of high fat diets on insulin resistance.

BLOOD CLOTTING

Dr Stephen Hill, *University of Nottingham Medical School*. Adhesions of platelets in the blood.

Dr Richard McGivern, *Musgrave Hospital, Belfast*. Electrical stimulation of calf muscles to reduce incidence of deep vein thrombosis.

Dr Thomas Meade, *Northwick Park Hospital, Harrow*. Frequency of low protein C levels in men participating in thrombosis prevention trial.

Dr Nuala Booth and Dr Ian McGregor, *Scottish National Blood Transfusion Service, Edinburgh*. Dissolution of blood clots.

Dr Felicita Andreotti, *Royal Postgraduate Medical School, London*. Factors responsible for formation of blood clots.

Professor Francis Preston, Dr Kingsley Hampton and Dr Charles Douglas, *University of Sheffield*. Cause of clumping of platelets by bacteria found in the mouth in patients with infective heart disease.

DISORDERS OF HEART RHYTHM

Dr Edward Rowland, *Brompton Hospital, London*. Assessment of rapid cooling of the heart using new method of clinical electrophysiology.

Professor Denis Noble and Dr Susan Noble, *University of Oxford*. Background currents and amino acids in heart cells.

Dr Peter Taggart and Dr Peter Sutton, *Middlesex Hospital, London*. Links between abnormal movements of heart muscle and disturbances of heart rhythm.

Professor Desmond Sheridan, *St Mary's Hospital, London*. Electrophysiological causes of sudden death in patients with enlarged hearts.

Dr Thomas Farrell, *St George's Hospital Medical School, London*. Twenty-four hour monitoring of heart attack patients at high risk of sudden death following discharge from hospital.

Dr Thomas Farrell and Dr Marek Malik, *St George's Hospital Medical School, London*. Identification of patients with potential heart rhythm disturbances using non-invasive techniques.

Dr Jaswinder Gill, *St George's Hospital Medical School, London*. Regulation of rhythm and contractility of heart cells.

Dr Jonathan Kentish, *United Medical & Dental Schools, London*. Reduction of strength in heartbeat following a heart attack.

Dr Mark Boyett, *University of Leeds*. Chemical control of heart rate and its effect on the heart's own pacemaker.

Dr Francis Murgatroyd, *St George's Hospital Medical School, London*. Telephone monitoring of patients with attacks of heartbeat irregularities.

Dr Gerald Kaye and Dr Edward Perrins, *Leeds General Infirmary*. Improvement of diagnostic range of automatic defibrillators.

HEART MUSCLE

Dr Alan Chipperfield and Dr Alexander Harper, *University of Dundee*. Transportation of sodium and potassium in arterial muscle.

Dr Celia Oakley, *Royal Postgraduate Medical School, London*. Equipment to measure ambulatory blood pressure in patients with diseases of the heart muscle.

Dr Alan Williams and Dr Anthony Lai, *National Heart & Lung Institute, London*. Basic mechanisms of heart muscle.

Dr Susan Dodd, *The London Hospital*. Investigations of heart muscle.

Professor Banatvala, *United Medical & Dental Schools, London*. Role of enterovirus in development of cardiomyopathy.

Dr Christopher Fry, *United Dental & Medical Schools, London*. Effect of alteration of chloride ions on heart muscle function.

Dr John Mowbray, *University College London*. High energy system used by heart muscle.

Dr Peter Cobbold, *University of Liverpool*. Effect of lack of oxygen on heart muscle.

HEART FAILURE

Dr Debra King, *Clatterbridge Hospital, Liverpool*. Explanation of emaciation of patients with heart failure.

Dr Martin Wilkins and Dr John Wharton, *Royal Postgraduate Medical School, London*. Treatment of heart failure using atrial natriuretic peptide.

Dr Goldspink, *University of Leeds*. Training of skeletal muscle from the back to be used to supplement pumping action of a damaged heart.

HEART SURGERY

Dr Alan Crew, *Killingbeck Hospital, Leeds*. Development of a computer-based alarm system for use in cardiac care unit.

Dr Peter Richards, *University of Surrey*. Storage of human aortic valves for use in valve surgery.

Dr David Chambers, *Rayne Institute, London*. Reduction of damage to the heart during coronary artery bypass surgery.

Mr Gerard Stansby, *Royal Free Hospital School of Medicine, London*. Placement of fat cells on to surfaces of vascular grafts to prevent later blockage.

Dr Roger Freeman and Dr Janice Wheeler, *University of Newcastle upon Tyne*. Causes of 'sepsis syndrome' following emergency open heart surgery.

Professor David Wheatley, *Royal Infirmary, Glasgow*. Comparison of membrane oxygenator and standard bubble oxygenator to reduce complications after cardiopulmonary bypass surgery.

Professor Stanley Salmons, *University of Liverpool*. Development of a computer model to simulate behaviour of the ventricle.

Dr John Christy and Dr Norman McLeod, *University of Edinburgh*. Detection of blood clots formed on some artificial heart valves using ultrasound.

GENETICS

Dr Anna Kessling, *St Mary's Hospital, London*. Identification of genes responsible for heart defects in children with Down's syndrome.

Dr Sarah-Jane Richards, *University of Cambridge Clinical School*. Control of the development of the heart by genetic mechanisms.

Dr Christopher Peckard, *Royal Infirmary, Glasgow*. Genetic factors in production of chemicals linked to high cholesterol levels and risk of inherited coronary heart disease.

Dr John Burn and Dr Judith Goodship, *University of Newcastle upon Tyne*. Congenital abnormalities associated with Di George syndrome.

Professor Kent LaRoy, Dr Paul Sharpe and Dr George Giraud, *University of Manchester*. Genetic control of development of fetal heart.

CHILDREN

Mr Martin Elliott, *Hospital for Sick Children, Great Ormond Street, London*. Effects of heart-lung machine in children with a view to reduction in use of donor blood.

Dr Colin Green and Dr Nicholas Severs, *University College London*. Development of communication pathways in the fetus and the formation of defects.

Professor Donald Heath, *University of Liverpool*. Effects of low oxygen pressure on blood vessels in the lungs of babies.

Dr Eric Rosenthal, *Guy's Hospital, London*. Non-surgical treatment of 'blue babies'.

Professor Glennis Haworth, *Institute of Child Health, London*. Biochemistry of heart muscle in children and adolescents with heart failure.

Dr Patricia Hamilton, *St George's Hospital, London*. Assessment of fluid balance in premature babies with breathing problems.

Dr David Goldspink, *University of Leeds*. Effect of diabetes in expectant mothers on the developing fetal heart.

Professor Michael Levin and Professor Jonathan Lamb, *St Mary's Hospital Medical School, London*. Identification of a toxin associated with Kawasaki disease.

HEART & LUNGS

Dr Jill Bishop and Dr Geoffrey Laurent, *National Heart & Lung Institute, London*. Development of high blood pressure in the lungs.

Dr Patrick Kesteven, *Freeman Hospital, Newcastle upon Tyne*. Damage to lungs following coronary bypass surgery.

Professor Michael Spyer and Dr Michael Gilboy, *Royal Free Hospital School of Medicine, London*. Performance of lungs as matched to the action of the heart.

Dr Timothy Higenbottam, *Papworth and Addenbrooke's Hospitals, Cambridge*. Control of blood pressure in the lungs.

Dr Robert Winter and Dr Timothy Evans, *Royal Postgraduate Medical School, London*. Effects of a new compound on the pulmonary vascular system.

Dr Allison Gurney, *St Thomas's Hospital, London*. Relaxation of pulmonary blood vessels.

Senior Research Fellowship

To qualify for a Senior Research Fellowship, an applicant's published results should show outstanding ability in original thought and practical application, and be recognised outside their institution, both here and abroad. Senior Research Fellows are expected to gain high office in teaching and research institutions.

Dr George Sutherland, from Thoraxcenter of the Academic Hospital, Rotterdam to Western General Hospital, Edinburgh. The use of ultrasound to improve methods of measuring function of the heart and its supply in patients at their bedside.

Intermediate Research Fellowships

Postgraduates demonstrating evidence of having undertaken independent research may apply for funding for three years initially to pursue their research objectives.

Dr Ajay Shah, *University of Wales College of Medicine*. Influence on chemical substance on the regulation of the heart's pumping action.

Dr Joanne Williams, *University of Exeter*. The response of blood lactate to exercise, an indicator of cardiopulmonary fitness in children

Ms Beverly Millar, *Queen's University, Belfast*. Control of contractile state of heart cells through signalling system by peptides.

Dr Carol Shoulders, *Royal Postgraduate Medical School, London*. Genetic make up of three major proteins found in blood's lipid transport system related to high blood fat levels and premature coronary heart disease

Dr Peter Whincup, *Royal Free Hospital School of Medicine, London*. Combination of studies of average blood pressure levels in children in nine British towns, based on dietary, environmental and genetic factors; the link with blood pressure levels and cardiovascular mortality rates in adult population in the same towns

Dr Philip Langton, *University of Leicester*. Control of coronary arteries by nerves and the action on the arteries by chemical substances released by these nerves.

Mr Simon Thompson, *London School of Hygiene & Tropical Medicine*. Risk factors in population for coronary heart disease, in particular the influence of blood lipid and clotting factors

Dr Deborah Harding, *Addenbrooke's Hospital, Cambridge*. Occurrence of increased sensitivity of nerve receptors in the heart

Dr Jill Bishop, *National Heart & Lung Institute, London*. Mechanisms controlling interaction of heart cells to collagen concentration with a view to development of therapeutic agents to prevent excessive deposition

Dr Fiona Lyall, *Western Infirmary, Glasgow*. Contribution to high blood pressure and effect on vascular smooth muscle cells of hormones such as angiotensin II

Dr John Warren, *Royal Postgraduate Medical School, London*. Damaging effects of white blood cells to the heart muscle in the event of a heart attack

Dr Michael Marber, *University College London*. Role of stress proteins in protecting the heart against damage caused by narrowing of coronary arteries

Junior Research Fellowships

Junior Research Fellowships are designed to train talented postgraduates in the principles and practice of scientific research for one to two years under the direct supervision of senior researchers

Dr Peter Groves, *University Hospital of Wales*. Investigation of drugs which reduce rates of narrowing of coronary arteries after angioplasty

Dr Simon Dubrey, *Charing Cross & Westminster Medical School, London*. Inherited and environmental factors responsible for development of coronary heart disease in the parents of twins suffering from stroke

Dr Bradley Marchant, *London Chest Hospital*. Assessment of arterial pain during angioplasty and its relation to heart disease in diabetic patients

Dr Peter Ludman, *Royal Brompton National Heart & Lung Hospital, London*. Blood flow in heart muscle and its relation to heart failure and abnormalities in pumping action of the heart

Dr Peter Stafford, *Royal Sussex County Hospital, Brighton*. Assessment of abnormal electrical conduction in upper chambers of the heart

Dr Christine Roffe, *Leicester Royal Infirmary*. Investigation of early molecular signals in heart muscle during development of enlargement of the left ventricle

Dr Paul Higham, Freeman Hospital, Newcastle upon Tyne. Effect of transmission through body tissues on cardiac electrical signals.

Dr Jonathan Townend, Queen Elizabeth Hospital, Birmingham. Regulation by prostaglandins of kidney and blood flow in heart failure.

Dr Philip Keelling, St George's Hospital Medical School, London. Role of viruses and genetic factors as a cause of dilated cardiomyopathy.

Dr Richard Cope, St Thomas's Hospital, London. Protection of the heart from the effects of high levels of potassium in the plasma sometimes responsible for cardiac arrest.

Dr Hugh McIntyre, St Thomas's Hospital Medical School, London. Changes in cardiac muscle cells leading to heart failure.

Dr Bernard Cheung, Addenbrooke's Hospital, Cambridge. Identification of peptides and their responses in patients with heart failure.

Dr Azfar Zaman, University of Leeds. Thinning and stretching of cardiac muscle caused by abnormal rhythms following a heart attack.

Dr Nicholas Peters, National Heart & Lung Institute, London. Nature of junctions between heart cells and their role in controlling normal functions of the heart.

Dr Sara Thome, Royal London Hospital. Damage to the heart muscle occurring when blood supply returns after a period of deprivation associated with the use of 'clotbusters'.

Dr Robert Davies, St Mary's Hospital Medical School, London. Movement of pressure waves down the arteries and the ways in which they are affected by arterial disease.

Dr Neal Uren, Hammersmith Hospital, London. Effect of narrowing of small arteries in the heart in coronary disease.

Dr Anoop Chauhan, Papworth Hospital, Cambridge. Link between reflux of acid in the stomach and reduction of blood flow in coronary arteries.

Dr Richard Clayton, Freeman Hospital, Newcastle upon Tyne. Cause of rhythm disturbance leading to sudden death.

Dr James Shedden, St George's Hospital Medical School, London. Changes in posture causing abnormal reactions such as fainting; effects on circulation and action of certain drugs.

Basic Science Lectureships

Non-clinical lecturers or senior lecturers must show outstanding ability in carrying out original and independent research in order to secure funding for a research programme in the UK for a maximum of ten years.

Dr John Colyer, University of Leeds. Effect of nervous and hormonal influences on the flow of calcium through muscle cells.

Dr Rebecca Sitsapasan, National Heart & Lung Institute, London. Observation of movement of calcium in single heart cells using an artificial membrane; the effect of various agents on this process.

Dr David Paterson, University of Oxford. Rise in levels of potassium in the blood during exercise to a level that could lead to cardiac arrest at rest; the body's ability to protect itself against this potentially dangerous change.

Clinical Science Fellowships

Awards are made for a period of up to seven years to clinicians demonstrating a potential for clinical research. The first three years are spent in a basic science laboratory with the subsequent four years in cardiological centres.

Dr Hugh Watkins, commencing at Harvard Medical School, USA and continuing at St George's Hospital Medical School, London. Investigation of families of patients with hypertrophic cardiomyopathy using molecular genetic techniques to develop early diagnostic system.

Dr Andrew Grace, University of Cambridge. Effects of concentration of acid, sodium and calcium in the heart cells in determining strength of heartbeats.

Dr Martin Bennett, University of Wales College of Medicine. Abnormal growth of smooth muscle cells lining blood vessels and the effect on the process of atheroma.

Overseas Visiting Fellowships

Overseas Visiting Fellowships are available to talented and established overseas research workers wishing to take up research in a recognised centre in the UK for up to two years. He or she is expected to make a significant contribution to the work of the UK host department. Senior Travelling Fellowships allow researchers to acquire special knowledge abroad.

Dr Akio Nakamura from Kagawa Medical School, Japan to University of Birmingham. Role of angiotensin and its effect on raising blood pressure.

Dr Phillippe Bodin from Merrell Dow Research Institute, Strasbourg to University College London. Function of cells lining the blood vessels and their role in recurrence of narrowing of coronary arteries following angioplasty.

Dr Won-Kyung Ho from Seoul National University to University of Oxford. Electrophysiological studies of the cells of the pacemaker region of the heart.

Professor Lionel Opie from University of Cape Town to St Thomas's Hospital, London. Mechanisms and treatment of heart failure.

Professor Chin Lee from Cornell University Medical College, New York to University of Bristol. Intracellular ion regulation and cardiac muscle physiology under flow and attempted flow repair.

Dr Barbara McDermott from Queen's University, Belfast to Carlton University, Ottawa. Interactions of factors controlling cell fate.

International Reciprocal Fellowships

Awards are made in association with overseas heart foundations for postgraduates demonstrating exceptional talent in original research. This enables successful applicants to visit research centres in the host country.

Mr Timothy Hooper from Wythenshawe Hospital, Manchester to Harper Hospital, Detroit. Application of skeletal muscle to support the failing heart.

Miss Eileen McCall from University of Leeds to University of California. Basic cellular mechanisms and interactions of processes responsible for contraction of the heart.

Mr Ashley Izzard from Leicester Royal Infirmary to University of Vermont. Examination of the effects and flow pressure on intracellular pH and vascular tone in resistance arteries.

Dr Albert McNeill from Waveney Hospital, Ballymena, Northern Ireland to Erasmus University, Rotterdam. Use of two dimensional echocardiography and exercise stress testing to assess myocardial left ventricular performance of patients with coronary artery disease.

Dr Donald MacLeod from Royal Infirmary, Edinburgh to Erasmus University, Rotterdam. Factors precipitating re-narrowing of arteries following balloon angioplasty - use of drugs to prevent this.

PHD Studentships

Studentships are available for overseas students wishing to undertake a three year PhD programme in the UK. Successful candidates will be offered a fully funded studentship and a place on the programme.

Mr Stephen Blanchard, University of Leeds. Regulation of the function of the heart in the rat. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Ms Heather Pay, University of Loughborough. Effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Mr Jonathan Moore, University of Leeds. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Ms Sara McMahon, University of Leeds. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Ms Lucia Piacentini, University of Strathclyde. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Ms Rachel Fisher, Radcliffe Infirmary, Oxford. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Dr Patrick Richmond, University of Oxford. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Ms Theresa Thomas, University of Birmingham Medical School. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Ms Wanda Brooks, University of Manchester Medical School. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Ms Laura Wollaston, Radcliffe Hospital, Oxford. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Mr Robert Lewin, Astley Ainslie Hospital, Edinburgh. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Mr Robert Blake, University of Oxford. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Student to be appointed - c/o Dr Coker, University of Liverpool. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Student to be appointed - c/o Professor Wheatley, Royal Infirmary, Glasgow. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

Student to be appointed - c/o Dr Sugden and Professor Saggerson, Queen Mary and Westfield College, London. Regulation of the heart rate and the effect of the heart rate on the sympathetic nervous system. The effect of the sympathetic nervous system on the heart rate and the effect of the heart rate on the sympathetic nervous system.

BHF Committees

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A 30th anniversary dinner at St James's Palace, hosted by the Rt Hon Earl Jellicoe (third from left), in the presence of the Patron, HRH The Prince Philip, Duke of Edinburgh.

VISCOUNT DE L'ISLE

VC KG PC GCMG GCVO

An Appreciation

It was with deep regret that we heard of the death of Lord de L'Isle who served as President of the British Heart Foundation from 1976 to 1983, and then as Vice-President until his death.

During his years in office the income of the Foundation grew from some £1m to £8m at the end of 1983 to nearly £30m last year. This of course allowed us to increase our expenditure on the objectives enormously, and with good effect. We are most grateful for Lord de L'Isle's commitment and support during his long service with us, and we extend our deepest sympathy to his family.

Text by Dick Laurie

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