



**THE LIVER GROUP**  
**ANNUAL REPORT AND ACCOUNTS**  
**FOR THE YEAR ENDED 31 DECEMBER 2003**

**Charity Registration Number 1024533**

**BEEVER AND STRUTHERS**  
**Registered Auditors**

**THE LIVER GROUP**  
**TRUSTEES REPORT**  
**IN RESPECT OF THE ACCOUNTS**  
**FOR THE YEAR ENDING 31 DECEMBER 2003**

**Legal and administrative information**

**Patron:** The Rt Hon Lord Bingham of Cornhill,  
Senior Law Lord

**Trustees:** Jeff Faulkner FCCA  
Kay Glendinning MBE  
Prof Humphrey Hodgson FRCP, F Med Sci  
Prof David Kerr CBE  
Prof Sir Roger Penrose OM FRS  
Clare Selden PhD

**Principal office:** The Liver Group  
Centre for Hepatology  
Department of Medicine  
Royal Free Campus  
Royal Free and University College Medical School  
Rowland Hill Street  
Hampstead  
London  
NW3 2PF

**Charity registration number:** 1024533

**Bankers:** HSBC  
Oxford Circus Branch  
196 Oxford Street  
London  
W1A 1EZ

**Auditors:** Beever and Struthers  
Chartered Accountants  
Alperton House  
Bridgewater Road  
Wembley  
Middlesex HA0 1EH

Generally, the charity is established for the relief of patients suffering from disease of, and genetic defects affecting, the liver and the promotion of research into the causes and treatment of diseases of the liver.

**THE LIVER GROUP**  
**CHAIRMAN'S REPORT**  
**IN RESPECT OF THE ACCOUNTS**  
**FOR THE YEAR ENDING 31 DECEMBER 2003**

The aim of the liver group charity is to improve the treatment of liver disease through research, with our particular thrust into the development of the bio-artificial liver, the BAL. The research and development involved in achieving this long term aim necessarily – and beneficially - include the education and training of scientists and clinicians in the field, as well as the actual research both at the laboratory and the clinical interface.

The Liver Group's achievements – summarised in the record of publications and communications made in the last year – exemplify both the progress that we are making and the breadth of the work required to bring a bio-artificial liver to a clinical reality.

At the clinical interface, we have made exciting progress in analysing the processes by which the blood in patients with liver failure causes damage to liver cells and initiates a vicious circle in which a poorly performing liver leads to a build-up of toxins in the blood, leading to a worse performing liver. We are linking this work with a clinical study on one form of artificial liver in patients to see whether it can help reverse that spiral – although as that particular artificial liver has no cell component we know its scope will be limited.

At the laboratory bench we are developing further the cell-based system that we concentrate on, and have useful progress on two fronts. We have improved the culture systems to allow a greater number of cells to be grown and thus increase the capacity of the machine, and we have genetically manipulated the cells to improve missing functions to bring them back towards normal function. We continue to investigate other naturally better cell sources which don't need genetic manipulation for the machine, and have found exciting evidence for an adult stem cell in human liver that might – although much further work would be needed – provide an alternative source.

Other achievements from the group – not directly in science but important contributions as already referred to – include the graduation of three more PhD students to fully fledged post-doctoral scientists; our web-site will go public in the coming year, and this we hope will both further raise our profile and aid our continuing endeavours in fund-raising. As always, the Trustees and the workers in the Liver Group remain enormously grateful to those who have made our work possible.

Humphrey Hodgson *FRCP, F Med Sci.*  
Chairman

**THE LIVER GROUP**  
**TRUSTEES REPORT**  
**IN RESPECT OF THE ACCOUNTS**  
**FOR THE YEAR ENDING 31 DECEMBER 2003**

The Trustees present their report, together with the audited accounts, for The Liver Group for the year ended 31 December 2003.

**Constitution**

The Liver Group is a registered charity constituted under a Trust Deed dated 28 May 1993.

**Principal aims and activities**

The principal activity of the charity is the project being conducted to develop an artificial liver. The artificial liver project is being carried out with the funds raised for the continuing "Liver for Life" Appeal.

**Reserves policy**

Except for such funds as the trustees consider prudent to maintain for the purposes of management and administration of the charity for the foreseeable future, all unrestricted funds are designated for the purposes of the "Liver for Life" project and the general charitable objects of the charity.

**Trustees' responsibilities statement**

Charity legislation requires the trustees to prepare accounts of the charity for each financial year. In accordance with the Trust Deed, such accounts are required to be subject to audit. In so doing, the Trustees are required to prepare accounts which show a true and fair view of the state of affairs of the charity and of the application of its resources for the financial period. In preparing those accounts, the trustees:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- follow applicable Accounting Standards;
- prepare the accounts on the going concern basis unless it is inappropriate to presume that the charity will continue in operation.

In accordance with charity legislation, the trustees are responsible for keeping proper accounting records which disclose with reasonable accuracy at any time, the financial position of the charity. They are also responsible for safeguarding the assets of the charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Signed on behalf of the trustees:

**Humphrey Hodgson**  
Trustee

**REPORT OF THE INDEPENDENT AUDITORS  
TO THE TRUSTEES OF  
THE LIVER GROUP**

We have audited the financial statements which comprise the statement of financial activities, the balance sheet and the related notes. These financial statements have been prepared under the historical cost convention and the accounting policies set out therein. We have been appointed as Auditors under Section 43 of the Charities Act 1993 and report in accordance with Regulations made under Section 44 of that Act.

**Respective Responsibilities of the Trustees and Auditors**

The Trustees responsibilities for preparing the Annual report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards are set out in the Statement of the Trustees Responsibilities.

Our responsibility is to audit the financial statements in accordance with relevant legal and regulatory requirements and United Kingdom Auditing Standards. This report is made solely to the Trustees, as a body, in accordance with Section 43 of the Charities Act 1993. Our audit work has been undertaken so that we might state to the Trustees those matters we are required to state to them in an auditors report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Trustees as a body, for our audit work, for this report or for the opinions we have formed.

We report to you our opinion as to whether the financial statements give a true and fair view, of the state of affairs as at the year-end, and of the incoming resources and application of resources of the charity in that year, and comply with Regulation 3 of the Charities (Accounts and Reports) Regulations 2000. We also report to you if, in our opinion, the accounting records have not been kept in respect of the charity in accordance with Section 41 of the 1993 Charities Act, if the statement of accounts do not accord with the records of the charity, if any information contained in the statement of accounts is inconsistent in any material respect with any report of the charity Trustees prepared under Section 45 of the Charities Act 1993, and if any information or explanations to which we are entitled have not been given to us. We will also report to you if the accounts do not comply with the Trust Deed of the Charity.

We will communicate to the Charity Commissioners any matter of which we come aware which relates to the activities or affairs of the charity which is likely to be of material significance to the Charity Commissioners.

We read information contained in the Annual Report, and consider whether it is consistent with the audited financial statements. This information comprises only the Trustees Report. We consider the implications for our report if we become aware of any apparent misstatements or material inconsistencies with the financial statements. Our responsibilities do not extend to any other information.

**Basis of Opinion**

We conducted our audit in accordance with United Kingdom Auditing Standards issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosures in the financial statements. It also includes an assessment of significant estimates and judgements made by the Trustees in the preparation of the financial statements, and of whether the accounting policies are appropriate to the charity's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or other irregularities or error. In forming our opinion we also evaluated the overall adequacy of the presentation of the information in the financial statements.

**Opinion**

In our opinion the financial statements give a true and fair view of the state of affairs of the Charity as at 31 December 2003 and of the incoming resources and the application of resources of the charity for that year, have been properly prepared in accordance with the Charities Act 1993 and comply with Regulation 3 of the Charities (Accounts and Report) Regulations 2000.

Alperton House  
Bridgewater Road  
Wembley  
Middlesex HA0 1EH

**Beever and Struthers**  
Chartered Accountants  
Registered Auditors  
An auditor under S43(2)(a) of the Charities Act 1993

Date

**THE LIVER GROUP**  
**STATEMENT OF FINANCIAL ACTIVITIES**  
**FOR THE YEAR ENDED 31 DECEMBER 2003**

	Notes	Unrestricted funds £	Restricted funds £	<b>Total 2003 £</b>	Total 2002 £
<b>Incoming resources</b>					
Donations		17,047	-	<b>17,047</b>	296,948
Bank interest receivable		45,914	-	<b>45,914</b>	49,382
<b>Incoming resources for year</b>		<u>62,961</u>	<u>-</u>	<u><b>62,961</b></u>	<u>346,330</u>
<b>Resources expended</b>					
	1				
Direct charitable expenditure					
Research expenditure - UCL		159,406	31,249	<b>190,655</b>	216,638
Management and administration of the charity		1,992	-	<b>1,992</b>	2,369
<b>Outgoing resources for year</b>		<u>161,398</u>	<u>31,249</u>	<u><b>192,647</b></u>	<u>219,007</u>
<b>Net incoming (outgoing) resources for the year</b>		(98,437)	(31,249)	<b>(129,686)</b>	127,323
<b>Fund balances at 1 January 2003</b>		1,386,285	32,749	<b>1,419,034</b>	1,291,711
<b>Fund balances at 31 December 2003</b>		<u>1,287,848</u>	<u>1,500</u>	<u><b>1,289,348</b></u>	<u>1,419,034</u>

**THE LIVER GROUP  
BALANCE SHEET  
AS AT 31 DECEMBER 2003**

	Notes	2003 £	2002 £
<b>Current assets</b>			
Interest receivable		7,286	20,943
Other debtors		780	783
Cash at bank			
- Current account		500	2,715
- On short-term deposit		1,321,512	1,445,628
		<b>1,330,078</b>	<b>1,470,069</b>
<b>Less: Creditors</b>			
Amounts falling due within one year			
Amount due to UCL		38,730	49,135
Other		2,000	1,900
		<b>40,730</b>	<b>51,035</b>
<b>Net current assets</b>		<b>1,289,348</b>	<b>1,419,034</b>
<b>Financed by</b>			
Unrestricted funds			
- General		87,848	186,285
- Designated	2	1,200,000	1,200,000
Restricted funds	3	1,500	32,749
<b>Total funds</b>		<b>1,289,348</b>	<b>1,419,034</b>

These Accounts were approved by the Trustees on

and signed on their behalf by:-

Clare Selden  
Trustee:

**'Liver for Life' Appeal – Five Year Projections (2004-2008)**

Research salaries and studentships	1,010,000
Consumables	900,000
Equipment budget	500,000
Research presentations	25,000
Administration of charity	25,000
	<b>£2,460,000</b>
	=====

These projections do not form part of the audited accounts of the charity.

**THE LIVER GROUP**  
**NOTES TO THE FINANCIAL STATEMENTS**  
**FOR THE YEAR TO 31 DECEMBER 2003**

**PRINCIPAL ACCOUNTING POLICIES**

**Basis of accounting**

The accounts have been prepared under the historical cost convention and in accordance with applicable Accounting Standards and the Statement of Recommended Practice, Accounting and Reporting by Charities (2000) issued by the Charity Commission.

**Voluntary income**

Donations represent voluntary amounts received during the period and arise within the United Kingdom. Covenant and Gift-Aid income is included gross of attributable tax recoverable.

**Investment income**

Interest receivable is credited to income in the period in which it is earned and is included gross of attributable tax recoverable.

**Expenditure**

Research expenditure, incurred on behalf of the charity and recharged to The Liver Group by University College London (UCL), is charged to the statement of financial activities (SOFA) on an accruals basis. The accounts include expenditure from the charity's funds on capital equipment and laboratory infrastructure, treated as resources expended in these accounts.

**Fund accounting**

Total funds comprise the accumulated surplus or deficit on the statement of financial activities. Unrestricted funds are available for use at the discretion of the Trustees in furtherance of the general objectives of the charity. Restricted funds are funds subject to specific restricted conditions imposed by donors. The purpose and use of the designated funds are set out in the notes to the accounts.

**Taxation**

The charity is not liable to income tax on income derived from its charitable activities as it falls within the various exemptions available to registered charities.

The charity is not registered for value added tax (VAT) and is therefore unable to reclaim the input tax it suffers on its purchases. Expenditure in the accounts is therefore shown inclusive of VAT where appropriate.

**THE LIVER GROUP**

**NOTES TO THE FINANCIAL STATEMENTS**

**FOR THE YEAR ENDED 31 DECEMBER 2003**

<b>1. Resources expended</b>		<b>2003</b>	2002
	Resources expended include:		
	Staff costs	<b>£121,574</b>	£151,668
	Research consumables and laboratory	<b>£69,081</b>	£64,970
	Auditors' remuneration (including VAT)		
	- audit	<b>£700</b>	£700
	- accounting	<b>£1,292</b>	£1,200
		<u>          </u>	<u>          </u>

The average weekly number of employees of UCL working for the Liver Group during the year was 4 (2002: 5). At the year-end there were 5 employees of UCL working on the Liver Group research. In addition there were 3 PhD students paid a stipend under a 3-year studentship scheme.

Trustees' expenses reimbursed during the year amounted to £nil (2002: £nil).

**2. Designated funds**

Designated funds of £1,200,000 have been set aside by the Trustees for the purposes of the "Liver for Life" project.

**3. Restricted funds**

	Balance b/f at 1 January 2003	Incoming resources	Resources expended	Balance c/f at 31 December 2003
Dunhill Medical Trust Fellowship	31,249	-	31,249	-
Billingsgate Christian Mission Charitable Trust Studentship	1,500	-	-	<b>1,500</b>
	<u>£32,749</u>	<u>£nil</u>	<u>£31,249</u>	<u><b>£1,500</b></u>

**4. Financial commitments**

At 31 December 2003, the charity, through UCL, was committed to staff contracts amounting to £500,000 (2002: £482,000) for varying periods to end of January 2007.

**5. Research assets**

As explained in the accounting policies (expenditure) the Charities' expenditure on capital equipment and laboratory infrastructure has been treated as an expense and not an asset of the Charity. The Charity owns the capital equipment and laboratory infrastructure but since the assets are of such a specialist nature the Trustees do not believe they are readily realisable and should, as a consequence, not be recognised in the Charities' balance sheet as an asset.

## THE LIVER GROUP

### NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2003

#### “Liver for Life Appeal” – List of donors to date

We are grateful to the following for donations to the “Liver for Life” Appeal:

Associated British Ports	Violet M Richards Charity
BAE Systems	Wilkinson Hardware Stores Ltd
Bank of England	Anonymous
Barclays Bank (Knightsbridge Limited)	Anonymous
Billingsgate Christian Mission Charitable Trust (The Fishmongers' Company	The Telegraph Plc
Boots Plc	Pfizer Ltd
Bowring Plc	Schroders Plc
British Aerospace	Brian Wright Esq.
BTR Plc	C E Heath Plc
Charles Littlewood Charitable Trust	Morgan Crucible Company Plc
Citybank	Honeywell Plc
Clydesdale Bank/Yorkshire Bank	Thomson Corporation
Commercial Union	Life Technologies
Communis plc	Lloyds Bank Plc
Cookson Group Plc	Price Waterhouse Plc
Council of Forte Trust Fund	IBJ
Courage Plc	Seagrams Distillers Plc
Coutts and Co	In Memoriam
D M Wilton	Jardine Insurance Services Ltd
Dako Limited	KPMG Peat Marwick
Economist Plc	Laing, London
EJH Stephenson (Deceased) Charitable Trust	Royal London Insurance Ltd
Friends Provident	Tomkins Plc
Glaxo Plc	Morgan Grenfell
Guardian Royal Exchange Plc	Robert Fleming Holdings Ltd
HJ Heinz Co. Ltd Charitable Trust	New Brunswick Plc
Hon C A Pearson's Charity Trust	Sunlife Assurance Plc
Mars UK Corporate Services Ltd	Smiths Industries
Menzies Group	Vauxhall Plc
Rio Tinto plc	Pharmaceutical Brand Consultancy Int.
Societe Generale United kingdom Charitable Trust	The Really Useful Group Ltd
The Bergqvist Charitable Trust	Richard Wilkinson Esq
The Bowerman Memorial Trust	Rudolf Wolff & Co. Ltd
The Clothworkers' Foundation	Securicor Plc
The Dunhill Medical Trust	Special Trustees for Hammersmith and Acton Hospitals
The Fitton Trust	Racal Charitable Trust
The Garfield Weston Foundation	TI Group
The Haberdashers Company	Land Securities Plc
The Hamamelis Trust	Conoco Philips
The Hartnett Charitable Trust	Cooper Charitable Trust
The John Ellerman Foundation	The Mary Webb Trust
The Mercers Company	The Oakdale Trust
The Paul Balint Charitable Trust	Thriplow Charitable Trust
The Sobell Foundation	The Penny in the Pound Fund Charitable Trust
The Stella Symons Charitable Trust	N Smith Charitable Settlement
The Thomas Sivewright Catto Charitable Settlement	The Gerald Palmer Trust
The Wolfson Foundation	

## THE LIVER GROUP

### NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2003

#### Publications in 2003 arising from work in the Liver Group Laboratory

Selden, C., Casbard, A., Themis, M., & Hodgson, H.J. (2003a) Characterization of long-term survival of syngeneic hepatocytes in rat peritoneum. *Cell Transplant.* **12**, 569-578.

Selden, C., Chalmers, S.A., Jones, C., Standish, R., Quaglia, A., Rolando, N., Burroughs, A.K., Rolles, K., Dhillon, A., & Hodgson, H.J. (2003b) Epithelial colonies cultured from human explanted liver in subacute hepatic failure exhibit hepatocyte, biliary epithelial, and stem cell phenotypic markers. *Stem Cells* **21**, 624-631.

Ala, A., Dhillon, A.P., & Hodgson, H.J. (2003) Role of cell adhesion molecules in leukocyte recruitment in the liver and gut. *Int. J. Exp. Pathol.* **84**, 1-16.

Collins P, Choudhury S, Hubank M, Selden C, and Hodgson HJF. 2003a. Mitochondrial uncoupling proteins 2 and 5 are up-regulated in 3-Dimensional HepG2 cell cultures and are associated with an increase in reactive oxygen species. *J Hepatol* **38**:239.

Collins P, Damelin L, Choudhury S, and Hodgson HJF. 2003b. Up-regulation of uncoupling protein 2 in HepG2 cells results in a reduction in whole cell oxygen consumption and may protect against hypoxia. *J Hepatol* **38**:665.

Hodgson, H. (2003a) Liver cells: biology to therapeutics. *Clin. Med.* **3**, 161-165.

Laurson, J., D.Mavri, P.Oakley, H.Hodgson, and C.Selden. 2003. A proliferating population of human cells expressing hepatocyte and biliary epithelial cell markers cultured long term in non-differentiating conditions. *Oral presentation at EASL monothematic conference Strategies for liver support: From Stem Cells to Xenotransplantation.*

Lindsay, J.O., Ciesielski, C.J., Scheinin, T., Brennan, F.M., & Hodgson, H.J. (2003) Local delivery of adenoviral vectors encoding murine interleukin 10 induces colonic interleukin 10 production and is therapeutic for murine colitis. *Gut* **52**, 363-369.

Malik, R., Mellor, N., Selden, C., & Hodgson, H. (2003) Triiodothyronine enhances the regenerative capacity of the liver following partial hepatectomy. *Hepatology* **37**, 79-86.

Rahman, T.M. and Hodgson, H.J. (2003) The effects of early and late administration of inhibitors of inducible nitric oxide synthase in a thioacetamide-induced model of acute hepatic failure in the rat. *J. Hepatol.* **38**, 583-590.

R.C. Saich, C.Selden, P.Oakley, J.Laurson, H.Hodgson. The effect of epidermal growth factor (EGF) and hepatocyte growth factor (HGF) on FAS-ligand binding-induced apoptosis in primary human hepatocytes. Presented at BASL Annual meeting 2003

R.C. Saich, C.Selden, P.Oakley, J.Laurson, H.Hodgson. Epidermal growth factor protects primary human hepatocytes against fas-ligand binding induced apoptosis in-vitro. Presented at "State-of-the-art Molecular and Cell Biology" FALK meeting, Freiburg, Germany, October 2003

Ala, A., Dhillon, A.P., & Hodgson, H.J. (2003) Role of cell adhesion molecules in leukocyte recruitment in the liver and gut. *Int. J. Exp. Pathol.* **84**, 1-16.

R.C. Saich, P. Collins, A.R Suddle, D. Patch, H.J.F Hodgson, A.K.Burroughs. A case of erythropoietic protoporphyria treated with MARS. Submitted for publication to *The Lancet*.

Rebecca Saich, Peter Collins, Aftab Ala & Humphrey Hodgson. A green man on MARS! – benign recurrent intrahepatic cholestasis treated with extra corporeal albumin dialysis (MARS). Submitted for publication to *Digestive and Liver Diseases*.

L Damelin, S Choudhury, S Coward, M Hubank\*, H Hodgson, C Selden.(2003) HepG2 cells in 3-D culture exhibit elevated expression of genes associated with lipid metabolism - further evidence that cells cultured in alginate can provide the cellular component of a bioartificial liver. *Hepatology* **38(4 - suppl 1)** 678A

C Selden, S Coward, C Jones, M Khalil, D Mavri, HJF Hodgson (2003) Designer cells for a bioartificial liver - Restoring Ornithine carbamyl tranferase activity to Hep G2 cells by transfection and 3-dimensional culture restores urea synthesis to in vivo levels. *Hepatology* **38 (4- suppl. 1)** 676A

S.M. Coward, C. Selden & H. Hodgson. (2003) Incubation with an RGD-containing peptide increases proliferation of alginate encapsulated HepG2 cells. Presented at "State-of-the-Art Molecular and Cell Biology" FALK meeting, Freiburg, Germany.

Collins P, Hodgson.(2003) Increased expression of mitochondrial uncoupling protein 2 protects against apoptosis in an hepatocyte cell culture model of hypoxia/re-oxygenation. Presented as poster abstract at *BASL Annual meeting*

S Choudhury, SA Chalmers, H Hodgson, C Selden. (2003) Alginate capsules provided a milieu in which proliferation of HepG2s is sustained and function modulated: Evidence from BrDU and KI-67 staining. Presented at "State-of-the-Art Molecular and Cell Biology" FALK meeting, Freiburg, Germany.