

# **CURRICULUM VITAE**

**PROFESSOR J M SAVAGE, OBE**

## **CURRICULUM VITAE**

**Name:** Joseph Maurice Savage

**Position:** (a) **Professor of Paediatrics and  
Director of Medical Education  
School of Medicine, Dentistry & Biomedical Sciences  
Queen's University Belfast**

(b) **Consultant Paediatric Nephrologist  
The Royal Belfast Hospital for Sick Children**

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## **ACADEMIC QUALIFICATIONS AND DISTINCTIONS**

MB, BCh, BAO The Queen's University of Belfast (QUB) 1971

DCH Royal College of Physicians in Ireland 1973

MRCP (UK) London, February 1976

Robert Leatham Scholarship in Child Health 1977 (QUB)

Colonel Davis Scholarship in Child Health 1978 (QUB)

Medical Research Council Training Fellowship in Nephrology 1977-1978

JCHMT Accreditation in Paediatrics December 1980

JCHMT Accreditation in Paediatric Nephrology March 1981

Fellowship of Royal College of Physicians of London April 1989

Fellowship of the Royal College of Paediatricians and Child Health 1996

President of the British Association for Paediatric Nephrology 2002-2006

OBE Services to Medicine New Years Honours 2010

## **PRESENT APPOINTMENTS**

Consultant Paediatric Nephrologist, The Royal Belfast Hospital for Sick Children and Belfast City Hospital

Professor of Paediatrics, Department of Child Health, The Queen's University of Belfast

Director, Centre for Medical Education, School of Medicine, Dentistry & Biomedical Science, Faculty of Medicine, Health and Life Sciences, Queen's University Belfast

## **PREVIOUS APPOINTMENTS**

**August 1971-72** House Physician, Royal Victoria Hospital, Belfast.

**August 1972-73** Senior House Physician, Royal Belfast Hospital for Sick Children and Junior Tutor, Department of Child Health, The Queen's University of Belfast.

**August 1974-76** Paediatric Registrar Rotation, N.Ireland

**August 1976-77** Senior Registrar, Royal Belfast Hospital for Sick Children and Senior Tutor in Paediatrics, Department of Child Health, The Queen's University of Belfast.

**August 1977-78** MRC Research Fellow, Renal Unit and Department of Immunology, Institute of Child Health, London. Honorary Senior Registrar, Renal Unit, The Hospital for Sick Children, Great Ormond Street, London

**August 1978-79** Lecturer in Child Health, University of Manchester and Senior Registrar in Nephrology. The Royal Manchester Children's Hospital and Booth Hall Children's Hospital, Manchester.

**August 1979-80** Consultant Paediatrician (Locum), Ulster Hospital, Dundonald and Royal Belfast Hospital for Sick Children, Senior Tutor, Department of Child Health, The Queen's University of Belfast.

**March 1980** Consultant Paediatrician and Nephrologist, The Royal Belfast Hospital for Sick Children, and The Belfast City Hospital, Senior Lecturer, Department of Child Health, The Queen's University of Belfast.

**June 1990** Professor of Paediatrics, The Queen's University of Belfast

**August 1997** Assistant Director for Medical Education, The Queen's University of Belfast

**September 2001** Director for Medical Education, Queen's University Belfast

## **PERSONAL PROFILE**

**Professor Maurice Savage MB ChB BAO FRCP FRCPCH OBE**

### **Clinical Training and Responsibilities**

After qualifying in Medicine at The Queen's University of Belfast I undertook higher specialist training in Paediatric Nephrology at Great Ormond Street Children's Hospital as an MRC Training Fellow and subsequently as a Lecturer in Manchester University. At the age of 33, I was appointed as an Academic Paediatrician at The Queen's University of Belfast and The Royal Belfast Hospital for Sick Children (RBHSC), the Regional referral centre for N.Ireland. For the following 15 years I was the only Paediatric Nephrologist in N.Ireland and therefore had a major clinical commitment developing a renal dialysis and transplant service for the whole Province. We have performed over 150 kidney transplants with survival rates for organs and patients comparable favorably with major centres in the UK, Europe and North America.

Until 2006, I was Lead Clinician for the Renal Unit at the RBHSC. There are now 3 Paediatric Nephrologists and a full multidisciplinary team.

At a management level, I have been Lead Clinician in the Academic Paediatric Unit and have been Chairman of The Medical Staff Committee of The Royal Belfast Hospital for Sick Children. I have represented the Hospital on the Eastern Health and Social Services Board Paediatric Advisory Committee of which I was Chairman for 10 years, and also sit on the Department of Health (NI) Special Advisory Committee on Paediatrics. I am a member of the Paediatric Committee of the Northern Ireland Medical and Dental Training Agency (NIMDTA). Nationally, I have been an Executive Committee member of the British Association for Paediatric Nephrology, holding the office of President from 2002-2006.

### **Research Interests**

Despite major clinical and teaching commitment I have produced over 70 publications many in the area of paediatric renal disease. Because of the close relationship between hypertension and kidney disease in children I have also developed an interest in preventative medicine. This has resulted from my interest in hypertension leading to studies in the genesis of adult cardiovascular disease in childhood. In this area I have been awarded major grants to perform a longitudinal study of coronary risk factors in a random sample of children in Northern Ireland where the incidence of coronary heart disease is one of the highest in the world (The Young Heart's Project). These grants have been from the Department of Health and Social Services for £50,000, from The Chest Heart and Stroke Association for £86,000 from the British Heart Foundation £243,076 and The Wellcome Trust £136,000. From 2010, I have been supervising a national project examining the incidence and treatment of acute renal failure in neonates.

## **Summary of Personal Research and Academic Related Interests**

### **Paediatric Origins of Adult Disease**

- a) Coronary Risk Factors in Northern Ireland School Children.  
Co-coordinator of a major research project with an associated health education and intervention programme. Funded grants from The Department of Health and Social Services, £50,000 The Chest Heart and Stroke Association £86,000, British Heart Foundation £178,000.
- b) Paediatrician to the Northern Ireland Fitness Survey aimed at evaluating fitness exercise lifestyle and health knowledge in N.I. school children.

### **Renal Disease in Childhood**

- a) Hypertension in Childhood
- b) Paediatric Dialysis and Transplantation
- c) Use of Human Growth Hormone and Erythropoietin to correct renal endocrine deficiencies in chronic renal disease in children
- d) Acute Renal failure in the Neonatal Period

### **International Paediatrics**

- (i) Nutritional Problems in children in Tanzania. Supervisor of Research Project in conjunction with Nutrition Research Unit, The University of Ulster
- (ii) Paediatric advisor to the Irish Romanian Orphanage Appeal. This charity has financially supported the upgrading and rebuilding of facilities for handicapped children in Romania. I have visited 4 times to advise on medical needs and to set up a training programme for local therapists.
  - Author of Report on Videle Orphanage, Romania I, 1991
  - Author of Report on Videle Orphanage, Romania II, 1992
  - Author of Report on Gradinari Orphanage, 1992
  - Author Final Report Videle and Gradinari Orphanages, 1995

## **Education and Administrative Responsibilities**

My interest in education dates back to my appointment as Senior Lecturer in Child Health in 1980, when I became responsible for the paediatric undergraduate course. Subsequently, in 1987, I was invited to take charge of the entire undergraduate Final Year clinical course. I joined the Faculty of Medicine Education Committee, which at that time had responsibility for course design, development and quality assurance. I subsequently became Chairman of this Committee in 1995.

In October 1998, I was appointed Assistant Head of the Faculty of Medicine with responsibility for education and from September 1999 became Director of a new Medical Education Department.

In the early 1990's, the University was becoming aware that the current undergraduate course needed to be completely redesigned with the introduction of new teaching and learning methods, and with the integration of scientific and clinical aspects of medical education following the publication of 'Tomorrow's Doctors' by the General Medical Council. (A strategy document laid out "The Development of a New Undergraduate Medical Programme at QUB"). As Chairman of the Medical Education Committee and Assistant Director for Education within the School of Clinical Medicine, I had the major responsibility for introducing staff training to facilitate new teaching and learning methods in preparation for the introduction of the new integrated curriculum. As a member of the New Curriculum Working Party and subsequently the Undergraduate Medical Education Committee (UMEC), I played a key role in laying the ground work for the massive change involved in re-organising teaching away from a traditional clinical department based model to an integrated scientific and clinical model, system-based in the early years and introducing early clinical skills acquisition and contact.

I chaired the Joint Clinical Board - the staff student liaison committee addressing student problems, and played a crucial role as the new course was introduced, trouble shooting teething problems and responding to student feedback. A new quality assurance structure was developed with committees (PQAC) for each phase of the new course composed of equal staff and student numbers with student secretaries and staff chairmen. Reports on activities are disseminated electronically to the entire faculty of staff and students.



Re-organisation within the University created a Faculty of Medicine and Health Sciences in 1997 and I became Chairman of the Faculty Teaching and Learning Committee with responsibilities for quality assurance of not only the medical but also nursing and dentistry courses.

Since the millennium, I have been a key member of the Senior Management Team of the School of Clinical Medicine and latterly of the Faculty of Medicine and Health Sciences with major responsibilities for undergraduate medical education. I was the Coordinator of the Teaching Quality Assessment (TQA) Preparation Group within the Faculty of Clinical Medicine achieving an excellent score of 22 out of a possible 24 in the TQA assessment and a highly complementary report from the GMC. I became an Assessor for the Teaching Quality Assurance Agency of the Higher Education Funding Council (HEFCE) for monitoring higher education in the UK. My expertise in medical curriculum design and quality assurance has led to my appointment with the GMC as an assessor of the quality of undergraduate education (QABME). I have acted as an advisor to the Irish Medical Council on undergraduate medical courses within Irish Medical Schools.

### **Quality Assurance**

In 2005, I was again responsible for the preparation for a GMC Inspection of our Medical School. The report was generally complementary but highlighted a requirement to move from traditional assessment methods (long and short cases) in the Final MB to build on the good practice demonstrated in the earlier years with the use of modern methods, including OSCE style examinations, demonstrating an increasing skill and knowledge acquisition in our spiral curriculum.

### **Course Review and Innovation**

Two years intensive work developing and instituting a new strategy has resulted in an assessment process based on best medical educational methodology with rigorous standard setting and statistical analysis ensuring reliability. Standard setting and blue printing of all assessment procedures is now standard procedure.

We are currently on a rolling review programme of the entire curriculum, driven in part, by a massive increase in student numbers, but also with the recognition of the importance of the scientific basis of clinical practice and the need to integrate undergraduate and Foundation training.

The Year 1&2 course integrating the Scientific Basis of Clinical Practice with early clinical exposure is now in place. Year 3 has been completely reviewed and the entire course supported by online lectures and interactive learning materials.

The introduction of a 3-month Assistantship and a Patient Safety/Preparation for Practice programme has completely modernized the Final year curriculum in 2010-11.

Over the past 2-3 years, the auditing of the Financial Supplement for Medical and Dental Education (SUMDE) has been introduced following a major negotiation at the DHSSPS led by Professor Patrick Johnston, head of School, and myself. To facilitate this, I had lobbied for the creation of Sub-Deaneries within the NHS Trusts and the development of designated University Teaching Hospitals. This structure is now in place and has revolutionized the delivery of clinical teaching.

I have pioneered new developments in Interprofessional Education involving Nursing, Pharmacy, and Dramatic Arts which have been successful. A new Fitness to Practice and Professional Behaviour theme and regulations have been put in place, with supportive workshops to train staff delivered jointly with the GMC.

The intensity of the monumental changes in the Faculty and School, the enormous expansion in student numbers (from 150-275), the revision of the undergraduate course and the development of Sub-Deaneries, have demanded on my time in the past 5-10 years while I have continued to have a busy clinical role as a Paediatric Nephrologist. I envisage an ongoing role in Medical Education as Professor Emeritus.

### **Recreation**

Road Running and Mountain Walking and distance cycling are a major part of my physical relaxation. Twenty Road Marathons (including London, New York, Berlin and Amsterdam) in the past 15 years and 3 mountain marathons.

### **Membership of Learned Societies**

<b>1978</b>	British Association for Paediatric Nephrology
<b>1978</b>	Renal Association (UK)
<b>1978</b>	British Paediatric Association
<b>1978</b>	Paediatric Research Society
<b>1978</b>	Ulster Paediatric Society Honorary Secretary 1979-1983 President 1998-2002
<b>1979</b>	Ulster Medical Society
<b>1980</b>	Irish Paediatric Association
<b>1980</b>	European Society for Paediatric Nephrology
<b>1980</b>	Irish Nephrological Association
<b>1984</b>	Fellow of Faculty of Paediatrics Royal College of Physicians in Ireland
<b>1987</b>	European Dialysis and Transplantation Society
<b>1987</b>	International Paediatric Nephrology Association
<b>1989</b>	Irish Hyperlipidaemia Society
<b>1989</b>	Fellow of the Royal College of Physicians, London
<b>1992</b>	Member Association for the Study of Medical Education
<b>2005</b>	Fellowship of the Academy of Medical Educators

### **Areas of Special Responsibility Related to NHS**

1. Director of Paediatric Nephrology Service, RBHSC
2. Lead Clinician Academic Medical Unit, RBHSC
3. Chairman of Paediatric Advisory Committee, EHSSB, prior to re-organisation
4. Member of DHSSPS Specialty Advisory Committee in Paediatrics
5. Secretary to Medical Staff, RBHSC 1993-1995
6. Hospital Bereavement Quality Group Co-ordinator
7. GP Liaison Physician, RBHSC
8. Member of The Royal Group of Hospitals Research Committee
9. Member of the Paediatric Training Committee, NI Postgraduate Medical and Dental Training Agency
10. Member of the DHSSPS Manpower Planning Committee
11. Member of the DHSSPS Managing Medical Students Group

## **Administrative Committee Membership**

### **National Health Service**

<b>1983-1989</b>	Specialty Advisory Committee
<b>1998-</b>	Paediatrics, Northern Ireland Department of Health and Social Services
<b>1983-1998</b>	N.I Eastern Health and Social Services Board Paediatric Advisory Sub-Committee (Chairman 1989-1998)
<b>1982-89</b> <b>1993-96</b>	The Royal Belfast Hospital Planning Committee
<b>1988-2002</b>	Area Medical Advisory Committee Eastern Health and Social Services Board
<b>1995-2000</b>	N.I. Physical Activity Strategy Group, Health Promotion Agency
<b>2006-2009</b>	Planning Committee for new Mother & Children's Hospital, RGH

### **Academic**

Current Director of Medical Education, School of Medicine and Dentistry,  
Queen's University Belfast

<b>1988-2007</b>	Academic Council (by election) The Queen's University of Belfast Member, School of Medicine and Dentistry Management Board
<b>1988-2011</b>	Chair, Undergraduate Medical Education Committee, School of Medicine and Dentistry
<b>1997-2008</b>	Chair, Learning & Teaching Committee, School of Medicine and Dentistry
<b>1998-2011</b>	Member, Phase I&II, III, IV and V Teaching Committees and Phase Quality Assurance Committees, Undergraduate Staff/Student Consultative Committee Chair, Postgraduate Admissions Committee

- 1998-2011**      Chair, Exam Board for Masters in Education for Health Care Professionals  
Chair, various Student Progress Committees
- 2003-2010**      Management Committee, Centre for Excellence in Interprofessional Education (CEIPE)
- 2006-2011**      Chair, Student Progress Committee, School of Medicine and Dentistry
- 2007 -2011**      Chair, Medical Education Executive, School of Medicine and Dentistry

### **Voluntary Sector**

- 1982-1999**      Northern Ireland Chest, Heart and Stroke Association Council Member
- 1987-88**          Community Relations in Schools  
(Chairman) - Cross Community Project
- 1988-1998**      Coronary Prevention Group

## **EDUCATION AND TEACHING APPOINTMENTS**

**Junior Tutor** Queen's University, Belfast 1972-73  
- undergraduate clinical tutor - bedside teaching and tutorials

**Senior Tutor** Queen's University Belfast 1976-77  
- undergraduate clinical tutor - bedside teaching and tutorials

**Clinical Teacher** Postgraduate Nephrology Course, University of London  
1977, 1978, 1989, 1999. Lecture based.

**Lecturer in Child Health**, University of Manchester 1989-79.

Responsibility for undergraduate paediatric course and postgraduate MRCP course.

**Senior Lecturer in Child Health**, Queen's University, Belfast. 1980 -

Responsibility for Child Health Course and Examinations 1980 -

**Final Year Clinical Medicine Course Coordinator** - 1987-1994  
Internal Medicine, Surgery, Psychiatry, Paediatrics, Obstetrics and Gynaecology

**Member Faculty of Medicine Education Committee** 1987-1998  
Oversight of course quality assessment.

**Member Joint Clinical Board - Staff/Student Liaison Committee** 1987-2008. Chairman 1995 - 2004

**Assistant Director for Education**, School of Clinical Medicine, Queen's University Belfast 1993 - Quality assurance of 3 years clinical medicine course. Introduction of new teaching and learning methods in preparation for introduction of new curriculum following publication of 'Tomorrow's Doctors'.

**Chairman Joint Clinical Board**, Queen's University Belfast  
1995-2002 - Addresses student problems with teaching delivery and any problems identified by student body.

**Chairman Education Committee**, School of Clinical Medicine, Queen's University Belfast 1993-1998. Responsibility for delivery and quality of undergraduate clinical medicine teaching. Monitoring of new teaching and learning methods as new curriculum developed.

**Chairman Faculty of Medicine and Health Sciences Teaching and Learning Committee (QME) 1997.** Quality Assurance of Medical, Nursing and Dentistry Courses.

**Student Progress Committee 1994 -** Counselling and evaluation of students failing to achieve satisfactory examination standard.

**Chairman, Staff Training and Development Committee**  
College of Health Sciences - 1996 -

**Chairman, Undergraduate Medical Education Committee (UMEC) -**  
1995-1998. Responsible for the development of new undergraduate curriculum following the publication of 'Tomorrow's Doctors' – 1998-current

**Convener, Faculty Academic Standards Committee - 1997.** Subcommittee of UMEC.

Member of the **Medical and Dental Education Network 1995**

Member of the **Association for the Study of Medical Education - 1995**

**Assessor for Quality Assurance Agency for Higher Education**  
Assessment, England, Wales & Northern Ireland 1998 - 2001

**Teaching Quality Assessment Co-ordinator,** Faculty of Medicine, The Queen's University of Belfast. 1998 - 1999.

**Director of Medical Education Unit** The Queen's University of Belfast – 1998 ➔

**Assistant Head (Education)** of Queen's University Medical School 1997 -➔

**Professor of Paediatrics (Personal Chair)** Queen's University of Belfast 1999

**Examiner MRCP CH Examination** Royal College of Paediatrics and Child Health, London (current) ➔

**External Examiner** Royal College of Surgeons in Ireland, Diploma in Child Health Examination (current) ➔



**External Advisor** to Irish Medical Council on Undergraduate Education 2002-2006. **Co-author** of Report on Medical Education in Ireland for the Council.

**General Medical Council QABME Associate** with appointment as visitor to review quality of undergraduate medical education a) Birmingham b) Leeds c) Manchester d) Cambridge e) St Andrew's. **Appointed Deputy Team Leader** for Inspection at St George's Medical School 2008. Reappointed March 2011.

## **EDUCATION TRAINING COURSES COMPLETED**

### 1. At The Queen's University Of Belfast

Assessment Methods  
Curriculum Design and Development  
Factors that Influence Student Learning  
Planning and Delivering Lectures  
Presentation Skills  
Small Group Teaching Techniques  
Interpersonal Communication Skills Training  
Enhanced Training and Learning  
Design and Preparation of Study Guides

### 2. Other Centres

Regular participant in Association for Medical Education (ASME) meeting  
Regular participant in 'MADEN' Medical and Dental Education Network workshops  
Participant "Teaching Paediatrics" Workshop, University of London 1991  
Course on Teaching Child Health, University of Newcastle upon Tyne 1993

Participation in Annual Association for Medical Education Meetings and Workshops

Course for Leaders in Medical Education, Harvard Medical School (Harvard Macy Programme) 1999

National Learning & Teaching Support Network (LTSN) Subject contact QUB 2000 – current

General Medical Council – courses on development of Fitness to Practice procedures and workshops, Quality Assurance procedures in undergraduate medical education

## **POSTGRADUATE RESEARCH SUPERVISION**

- MD**      An examination of the factors associated with the presentation of children at the Royal Belfast Hospital for Sick Children and of the hospital resources used in their management.  
Moir Stewart, 1986
- MSc**      Aspects of Psychological Functioning in Children and Adolescents with Chronic Renal Insufficiency.  
Jacqueline Hinds, 1987
- MD**      Coronary Risk Factors in N.I. School Children  
Daphne Primrose, 1992
- MD**      Nutritional interactions in Tanzanian pre-school children with special reference to hypothyroidism and vitamin A deficiency.  
Dr Nigel Rollins 1995
- MD**      Longitudinal Trends in Childhood Cardiovascular Risk  
Dr David Watkins 2001
- MD**      Longitudinal tracking of coronary risk factors and antioxidant status of N.I. school children. Dr Caroline McKinney 2003
- M.Phil**    Childhood Bone Mineral Density in Health and Disease  
Dr Clodagh Sweeney 2004

## **PUBLICATIONS**

1. Savage JM. Meningococcal infections in Belfast Children 1972-73. *Ulster Med J* 1974;43:129-135.
2. Savage JM, Slattery C. Hyperosmolar coma as a complication of Diazeoxide therapy in infantile hyperinsulin states. *Ulster Med J* 1976;46:123-126.
3. Savage JM. A review of renal disease in childhood in Northern Ireland between 1971-76. *J Irish Med Assoc* 1977; 70: 432-436.
4. Savage JM, Shah V, Dillon MJ. Renin and blood pressure in children with renal scarring and vesico-ureteric reflux. *Lancet* 1978; ii: 441-444.
5. Savage JM, Dillon MJ, Taylor J. Clinical evaluation and comparison of the infrasonde, arteriosonde and mercury sphygomamamometer in measurement of blood pressure in children. *Arch Dis Child* 1979; 1: 492-495.
6. Gerdtz KG, Savage JM, Dillon MJ, Shah V. Renal vein renin measurements in normotensive children. *Journal of Paediatrics* 1979; 95: 953-8.
7. Savage JM. Hospital paediatrics and child health care. *Ulster Med J* 1980; 49: 2, 131-9.
8. Morgan G, Postlethwaite RJ, Houston IB, Savage JM. Physical abnormalities in infants with congenital nephrotic syndrome. *Arch Dis Child* 1981; 56: 959-961.
9. Savage JM, Postlethwaite RJ, Lendon M, Houston IB. Quadruple therapy in the treatment of progressive renal failure in children with glomerulonephritis. *Int J Paed Neph* 1982; 3: 167-169.
10. Savage JM, McClure BG. Neonatal oliguria and Acute Renal Failure. *Int J Paed Neph* 1982; 3: 143-144.

11. Savage JM, Koh J, Dillon MJ, Shah V. Plasma Renin Activity and blood pressure in children with long-standing reflux nephropathy - results of a 5 year study. Int J Ped Neph 1984; 5: 107-110.
12. Miller J, Speirs N, Savage JM, Aporicio C et al. Long term prognosis of recurrent haematuria. Arch Dis Child 1985; 60: 420-423.
13. McKinsty CS, Savage JM. Acute Lobar Nephronia. Br J Radiol 1985; 58: 1217.
14. Jenkins J, Lim J, Savage JM, Bell A. The effect of peritoneal dialysis on transcutaneous blood gases in infants with acute renal failure and respiratory distress. Int J Paed Nephrology 1986; 7: 85-86.
15. Savage JM, Koh CT, Shah V, Barratt TM, Dillon MJ. Five Year Prospective Study of plasma renin activity and blood pressure in patients with longstanding reflux Nephropathy. Arch Dis Child 1987; 62: 678-681.
16. Brown DC, Savage JM. Therapeutic aspirin overdose. Ulster Med J 1987; 1: 63-64.
17. Stewart M, Savage JM, Bell B, McCord B. Long Term Renal Prognosis of Henoch-Schonlein Purpura in an unselected childhood population. Eur J Pediatr 1988; 147: 113-116.
18. Jardin H, Shah V, Savage JM, Dillon MJ. Ten Year Prospective Study of plasma renin activity and blood pressure in subjects with longstanding reflux nephropathy. Pediatr Nephrol 1988; 2: 132-136
19. Savage JM. Management of enuresis in children. Irish Doctor 1989; 2: 390-394.
20. Stewart MC, Savage JM, Scott MJ, McClure BG. Primary Medical Care in paediatric Accident and Emergency Department. Ulster Med J 1988; 58: 29-33.

21. Stewart M, Savage JM, Scott MJ. Are too many children still admitted to hospital? Irish Journal of Medical Science 1989; 158; 1: p.27-29.
22. Stewart MC, Savage JM, Scott MJ, McClure BG. Medical Audit - Why children attend out-patient clinics. Irish Med J 1991; 84: 1:P.15-18,
23. Jardin H, Savage JM, Shah V, Barratt TM, Dillon MJ. Prediction of blood pressure from plasma renin activity in reflux nephropathy. Arch Dis Child 1991; 66: 1213-1216.
24. Shanks JH, Hill CM, Savage JM, Boston V. Clinicopathological findings in congenital nephrotic syndrome. Pediatr Nephrol 1991; 5: 29-31.
25. Primrose DE, Savage JM, Boreham C, Cran GW, Strain JJ. Coronary risk factors in Northern Irish schoolchildren - Results of a pilot study. Irish Med J 1991;
26. Riddoch C, Savage JM, Murphy N, Cran GW, Boreham C. Long term health implications of fitness and physical activity patterns. Archives of Disease in Childhood 1991, 66: 1426-1433.
27. Primrose ED, Savage JM, Boreham CAG, Cran GW, Strain JJ. Coronary risk factors in Belfast schoolchildren. Paediatric Rev. Commun., 1991, Vol 4, pp. 263-270.
28. Boreham CAG, Primrose D, Savage JM, Cran GW, Strain JJ. Coronary risk factors in schoolchildren: preliminary findings of the Northern Ireland "Young Hearts Project". In: J. Coudert and E van Praagh (Eds) Children and Exercise XVI - Pediatric Work Physiology, Masson (Part 5), pp 93-96, 1992.
29. Savage JM, Barakat M, Burns A, Stewart M. Efficacy of continuous ambulatory peritonitis as the primary treatment for end stage renal failure in children. Child Nephrology and Urology 1992; 12: 216-220.

30. Primrose ED, Savage JM, Boreham CAG, Cran GW. Coronary risk factors in Belfast school children. Irish Med J 1993; 86: pp 17-20.
31. Boreham CAG, Savage JM, Primrose ED, Strain JJ. Coronary risk factors in school children. Arch Dis Child 1993;68: pp 186-191.
32. Boreham C, Cran G, Savage M, Primrose, D, Strain J. Differences in health, fitness and diet between grammar secondary schoolchildren in Northern Ireland. Pediatric Exercise Science 1993; 5: 386-491.
33. Ramsey ML, Boreham CAG, Savage JM, Sibert BS. The acute effects of aerobic and resistance exercise on ambulatory blood pressure and heart rate. J Sports Sci 1994;13:41-42.
34. Primrose ED, Savage JM, Boreham CAG, Cran GW, Strain JJ. Cholesterol screening and family history of vascular disease. Arch Dis Child 1994;71:239-242.
35. Strain JJ, Robson PJ, Livingstone MBE, Primrose Ed, Savage JM, Cran GW, Boreham CAG. Estimates of food and macronutrient intake in a random sample of Northern Ireland adolescents. Brit J Nutr 1994;72:343-352.
36. Savage JM. The investigation and follow-up of urinary tract infection. Current Paediatrics 1994;4:240-244.
37. Boreham CAG, Savage JM, Primrose ED, Cran GW, Mahoney C, Strain JJ, Murphy NM. Risk factor assessment in school children. The NI Young Hearts Project J Sports Sci 1994;10:6:565-567.
38. McNulty H, Eaton-Evans J, Cran GW, Boreham CAG, Savage JM, Strain JJ. Nutrient intakes and impact of fortified breakfast cereals in schoolchildren. Archives of Disease in Childhood 1996;75:474-481.
39. Savage JM. Children's weight and lifestyle. British Nutrition Foundation Bulletin 1996;Vol 21:Supplement 1:23-32.

40. Boreham CAG, Savage JM, Twisk J, Cran GW, Strain JJ. Physical activity, sports participation and coronary risk factors in adolescents. *Medicine and Science in Sports and Exercise* 1997;29:788-793.
41. Boreham CAG, Strain JJ, Twisk JWR, Van mechelen W, Savage JM, Cran GW. Aerobic fitness, physical activity and body fatness in adolescents. *Children and Exer* XIX 1997; XIX: 69-74.
42. Boreham C, Strain S, Twisk J, Savage JM. Longitudinal relationships between social class and lifestyle risk factors for cardiovascular disease in adolescents. *Scandinavian Journal of Medicine and Science in Sports* 1998;8;5:II.316-317.
43. Ong G, Barr JG, Savage JM. Streptococcus mitis: urinary tract infection in a renal transplant patient (L). *Journal of Infection* 1998; 37: 91-92.
44. Twisk JWR, Boreham C, Cran G, Savage JM, Strain JJ, Mechelen van W. Clustering of biological risk factors for cardiovascular disease and longitudinal relationship with lifestyle of an adolescent population: The Northern Ireland Young Hearts Project. *Journal of Cardiovascular Risk* 1999;6:355-362.
45. Savage JM, Jefferson JA, Maxwell AP, Hughes AE, Shanks JH, Gill D. Improved prognosis for congenital nephrotic syndrome of the Finnish type in Irish families. *Archives of Disease in Childhood* 1999;80:466-469.
46. Boreham C, Twisk J, Mechelen van W, Savage M, Strain J, G Cran. Relationships between the development of biological risk factors for coronary heart disease and lifestyle parameters during adolescence: The Northern Ireland Young Hearts Project. *Public Health* 1999;113:7-12.
47. MRC BHF, Savage JM, et al. MRC BHF heart protection study of cholesterol-lowering therapy and of antioxidant vitamin supplementation in a wide range of patients at increased risk of coronary heart disease death: early safety and efficacy experience. *European Heart Journal* 1999; 20: 725-741.
48. Robinson M, Savage JM, Stewart M. Sweeney L. The diagnostic value, parental and patient acceptability of micturating cysto-urethrography. *Irish Medical Journal* 1999;3:366-368.



49. Mayes C, Savage JM. Paediatric renal transplantation in Northern Ireland. The Ulster Medical Journal 2000;69:90-96.
50. Walton KA, Murray LJ, Gallagher AM, Cran GW, Savage JM, Boreham C. Parental recall of birthweight: a good proxy for recorded birthweight? European Journal of Epidemiology 2000; 16: 793-796.
51. Robson PJ, Gallagher AM, Livingstone MBE, Cran GW, Strain JJ, Savage JM, Boreham CAG. Tracking of nutrient intakes in adolescence: the experiences of the young hearts project, Northern Ireland. British Journal of Nutrition 2000; 84: 541-548.
52. Savage JM. Complications with reformulated one-alpha vitamin D (L). British Medical Journal 2001; 322: 799-799.
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