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THE NOVA SCOTIA MEDICAL BULLETIN

In Praise of Scholars

"Uncommon parts require uncommon opportunities for their Exertion"

Samuel Johnson (quoted by J. Boswell)[1]

There can be few biographers as fastidious as Boswell, or few subjects as fascinating as the bizarre Dr. Samuel Johnson. The strange circumstance which brought the young James Boswell from his native city of Edinburgh to reside in London and devote his talents to recording this literary genius, is one of those rare treasures of historical good fortune. Aged 22, living on an allowance of 200 pounds a year (just enough to enable him to enjoy the trappings of an English gentleman),[2] he seems an unlikely companion and mentor for this eccentric man of letters, who was twenty years his senior. Yet Boswell's admiration of Johnson never faltered. The biographer's enthusiasm and charm enabled him to penetrate the strange world that surrounded Johnson and portray its rich literary tableau with such imagination and veracity that it remains a vivid landscape for posterity.

The contrast between these two figures must have been striking.[3] The slovenly eccentric, poorly sighted, impoverished, gesticulating hulk of a human being and the slim, well-groomed fun-loving elegant young gentleman seem strange companions. Fortunately for us, Boswell's genius as a writer was no mere happenstance.[4] He developed a highly sophisticated method of note-taking which he used to embellish his daily journal. Dr. Johnson himself encouraged Boswell to keep his diary which surely rivals even Pepys' in its candid revelations of contemporary events and people's behavior.

In this *Bulletin* we are fortunate to publish Dr. Jock Murray's astute analysis of Dr. Samuel Johnson's numerous medical conditions. In days when diseases such as the plague and cholera were rampant, tuberculosis widespread and sanitation elementary, it must have been unusual for someone with Dr. Samuel Johnson's infirmities to survive to the age of 73.

Poorly sighted, blighted by the King's Evil, bedevilled with a melancholy disposition, impoverished and inclined to idleness, the vigor of his literary achievements and the sagacity of his wit are remarkable. His Dictionary (which took seven years to complete) and his Lives of Poets, became landmarks at a time of great scholarship.[3] It is his vivid conversation that has become enshrined in the classical literature thanks to the pertinacious enthusiasm of James Boswell. It is the interesting role of the medical historian to penetrate the aura of great personalities and analyze the special circumstances of their existence. Like a forensic medical specialist assembling the clues of a crime to provide a logical explanation for its performance, so does Dr. Murray's expert analysis allow us to piece together the numerous maladies which were Dr. Johnson's daily burden.

We may question how such a personality would fare in today's complex medical society. Certainly his poor eyesight might have been enormously relieved and his hearing improved, but then perhaps he would not have been so adamant about the beauties of his wife "Pretty Polly", or so fluent in his oratory — as the very nature of his eccentricities, excited interest and confrontation. His neurological abnormalities would certainly have attracted neurological consultations and he might even have been subjected to the dramatic Rapid Neuroleptization of Haloperidol as described by Dr. Blair Hicken and Dr. Patrick Flynn. It is interesting to reflect upon which side effects might have ensued — catatonia, severe hypertension, or neuroleptic malignant syndrome. Physicians of his era had no such powerful neuro-psychiatric weapons. Whilst they may have related headaches to diet — as discussed by Dr. J.A.R. Tibbles and Dr. R.S. Burrell —they lived in a world of powerful remedies, purges and blood letting.

Dr. Johnson himself was a biographer of Sydenham who attributed the Sage's neurological peculiarities to St. Vitus's dance.

John Locke is more widely remembered as a philosopher than a physician and yet his intellectual mission of initiating criticism of human knowledge and diffusing a spirit of inquiry and universal toleration could well be applied to our present epoch of scientific confusion and commercial exploitation. His philosophy, however, has not been abandoned and thrives in the energetic pursuit of knowledge such as that currently being applied to the study of diabetes.

Fortunately for us, two brilliant scholars both born in the South-West of England brought a new reign of reason, combined with careful observation, to the practice of medicine truly worthy of the Johnson era. We are fortunate to be able to publish Dr. Douglas G. Cameron's fine lecture on these two physicians, Dr. Thomas Sydenham and Dr. John Locke, and for his dissertation "The Practical Art: Then and Now". Thomas Sydenham is regarded by many as the Hippocrates of British Medicine. He believed in doing the best for his patients and made as little as possible of the mysteries and traditional dogmas of the craft.

Sydenham conceived acute illnesses, fevers and inflammations as the unwholesome effect on the reaction of the organism to meet the blow of injuries and influence on the body from without.[4] Chronic illnesses, he considered were a depressed state of humours mostly due to errors of diet, and manner of life for which we ourselves were responsible. His methods of careful observation, rational medication and frankness brought a new standard of ethics of medicine which as Dr. Cameron remarks still have relevance today. Here is an example of his astute clinical sense.[5]

A gentleman of furtune who was a hypochondriac was told by Dr. Sydenham that he could do no more for him, but that there was a certain Dr. Robertson in Inverness who had great skill in cases like his. The patient journeyed to Inverness full of hope and finding no such doctor returned to London in great wrath, but cured withal of his disease.

As Boswell says, Johnson's superiority over learned men consisted chiefly in what may be called the art of thinking; the art of using his mind; a certain continual power of seizing the useful substance of all that he knew; and then exhibiting it in a clear and forcible manner, so that the knowledge which we often see no better than lumber in men of dull understanding, was in him true, evident and actual wisdom.

Finally, do not miss the clearly written article on "Meniscectomies as an Out-Patient" by Dr. Reginald H. Yabsley and Murray Berall. The message is clear and it presages a new era of out-patient surgery and opens the acceptance of the art of intra-arthroscopic procedures which are currently becoming popular. It would take Samuel Johnson to make a succinct and wise exposition on the subject of "Meniscectomies and their impact on our present Society". □

Floreant opera Johnsoniensis

B.J.S.G.

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The Practical Art*

THEN AND NOW

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This turbulent 20th Century has sent man soaring with glimpses of Utopia almost within his grasp, while holding over his head the threat of total extinction. It rushes on creating problems faster than they can be resolved and this is true in medicine as in other affairs of men. We are living in an era marked by noisy, confusing and rapid change. Amidst the clamor can be heard a clear and rising demand by Society for better and better health care at a cost the economy can sustain. The role of Government has become decisive. What are the implications for our profession? Change we must, to meet effectively the needs of the changing community we serve, but in the process what parts of our professional heritage must we retain, and what must we discard? I certainly do not profess to know the answers to these questions. One suspects that many of them are really old problems which our changing society seems determined to address. I am concerned that in the process, doctors may come to be considered as technicians and medicine just another commodity to be distributed by the State.

The identity and importance of internal medicine is critical. Having been Chief of a fairly large Department of Medicine, responsible for teaching medical students for more than 20 years, I have often pondered this matter. What is an internist? Perhaps a semantic problem can be obviated by reminding you that in England a distinction is made between physicians — the doctors, and surgeons — the cutters, who are called Mister. To me the internist is the physician, and internal medicine stands as one of the pillars of the healing arts. There are of course many specialists in our profession who have chosen to confine their interests and activities to parts or systems or mechanisms or sexes or ages or what not. Gunnar Biorck of Sweden has defined the physician as an individual who possesses "the combination of a broad knowledge and eminent power of observation, wisdom and human understanding, a compassion free from illusions and a natural disposition to comfort always."

Implicit in the specialist concept is the notion one is dealing with diseases or procedures using knowledge in depth and sophisticated technology. It is in this area that internal medicine has been fighting a losing battle against inroads by the super medical specialties for several decades. Theoretical medical knowledge is becoming available at a pace beyond the capacity of the individual human brain to store and use. There is insufficient time to acquire the personal experience with a wide variety of disorders expected in an expert. But I do not conclude that the Internist must therefore become a sort of medical Jack-of-all-trades. It is possible to cultivate other qualities and virtues to a high degree. The power to analyze and synthesize from actual observations given an adequate general frame of experience represents the cultivation of a type of talent not limited to the medical profession, but nevertheless essential in the physician (internist). He must indeed treat patients not diseases and this will include ensuring that appropriate sub-specialist care is sought and provided when necessary.

In our changing society the physician's patronage seems to be shifting from the patient to the authorities of society and there is increasing doubt as to whom he is really serving, the suffering patient or the interests of society. Where is our society going and what are the implications for medicine? Forecasts by students of the future are gloomy indeed. The limits to growth appear invevitable, Energy resources are dwindling while costs are mounting. Food and water may not suffice for growing world populations. Violence breeds out of despair. The defence of civil rights may restrict the opportunities to claim them. Sensing the imminence of waning productivity and a shrinking part of the remaining Gross National Product for Medicine, some people — both inside and outside the profession — are openly advocating a return to natural healing and have an unduly compliant attitude towards suffering and death.

Are there any lessons for us in our history? in this dilemma I believe the answer is "yes". For example, it has seemed to me that the 17th Century in England was also a time of apocalyptic change: that bewildered mankind in that era 300 years ago had to face with uncertainty, the certainty of future shock as we now do. Society changed a great deal, and so did Medicine, but in the end they emerged stronger than ever.

The intellectual revolt of the Renaissance had burst the medieval bonds of scholastic philosophy and Aristotelian physics. Great schisms had appeared in religious interpretations, dogma and practice. The vested economic interests of a landed gentry came more and more in conflict with the interests of absolute monarchy. The society of the day became deeply divided, polarized and drawn inexorably into the vortex of civil war. Devastating epidemics enhanced the atmosphere of chaos and tragedy. Nor was the subsequent Commonwealth a panacea. It led, as you recall, to Dictatorship and, eventually to the Restoration.

A restoration of the Monarchy it is true, but certainly not a restoration of the old order of government, nor a return to the old order of philosophic thought. Henceforth, the Monarch was bound by common law and the dictates of Parliament. But a Parliament representing only the vested

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interests of a powerful gentry would not for long be any more acceptable than the old Absolute Monarchy. The armed conflict and the conflict of ideas had involved directly all classes of a class society. The common man, illiterate though he was, had glimpsed and grasped the emerging concept that individual man in the State of Nature can keep secure for himself "life, liberty and the pursuit of happiness". From now on it would be encumbent on organized society to secure these natural rights for all men. And this challenge, I suggest, is at the crux of our dilemma in the 20th Century.

But what has all this to do with Medicine? Let me recall two towering figures we can claim for our own from that earlier, turbulent century — Sydenham and Locke. How did they influence contemporary thought, and what is more important, are there lessons for us to learn from their concepts and example? The story of the friendship of these two great men and something of their impact on medicine was told by John Brown in his delightful essay, *Locke and Sydenham*, nearly a hundred years ago[1], Payne's biography of Sydenham at the turn of the century refers to their association, as did Osler in his essay on John Locke in the *Alabama Student*.[2,3] In recent years, a great deal of additional historical data have come to light, and Dewhurst has drawn on much of this in the preparation of his separate biographies of the two men.[4,5]

Who then was this Thomas Sydenham known so widely as the English Hippocrates and recognized as the greatest clinician in the history of British Medicine? And on what basis does such a lofty reputation rest? Sydenham was born in 1624, a younger son of a country gentleman in Dorset. No doubt his early life and education followed the pattern of his class. He went up to Oxford in 1643 when the conflict between King and Parliament had reached the point of no return. Bacon, Raleigh and Coke had brought a refreshing spirit of free enquiry, based on reason and experience rather than authority, into science, history and the law. The great ferment of ideas stemming from Puritanism in its widest context had prepared men's minds for revolution.

After two scant months at Oxford, young Sydenham joined the men of his family in the Parliamentary army. He came to manhood on the battlefields of Dorset amidst the bitter clash of opinion and conscience which divided his countrymen. When he returned to Oxford in 1647 the University was a shambles. As Royalists were purged from office, vacant Fellowships passed to loyal Parliamentarians. Sydenham was awarded an M.B. degree within a year and elected a Fellow of All Souls a few months later. He was thus a medical don while still a medical student!

Sydenham was bored with the mixture of classical learning, anatomical dissections and formal disputations. There was no training in clinical medicine and the curriculum was only remotely related to the physicians' primary task of healing the sick. Many of his friends were busily investigating the infant sciences but he never joined in their experiments. Already a staunch utilitarian he failed to appreciate that some of this work was destined later to contribute directly to clinical medicine. Nonetheless, the sensational revival of Nan Greene after she was hanged for murdering her infant could hardly have escaped his notice. This may well have been the first recorded instance of resuscitation after cardiopulmonary arrest. "After being duly declared dead by the Sheriff, she was stretched out in a coffin in a cold roome and Season of the year, when a lusty fellow stamped on her breast and stomach severall times with all the force he could".[4] The anatomists were cheated of a subject; Anne survived; the undergraduates took up a collection for her and with this dowry, she married, had several children and was wont to celebrate her strange experience in doggerel verse. Here is a couplet attributed to her:

"Thus 'tis more easy to recall the Dead,
Than to restore a once-lost Maidenhead."

Four years later Sydenham rejoined the Parlimentary forces as a Captain of Horse. He was wounded in action and on recovery returned to Oxford for three more years. The convulsive political aftermath of the revolution saw him established in Westminister and practising as a physician. However, it was not until the Restoration, when stripped of political patronage and with his family's fortunes in eclipse, that Sydenham turned his undivided attention to the practice of Medicine. Supplementing observations on his own patients with frequent visits to the sick at one of the London hospitals, his clinical experience grew rapidly. Well versed in the hypothetical explanations of disease current in his day, he discarded them all for the method of Hippocrates. The feature which distinguishes the works of Hippocrates from other ancient medical classics is that they include so many clinical observations on sick people. They record what actually happened to the sick patient, not just what the physicians thought about him. Hippocrates' celebrated treatise on epidemics was also well known to Sydenham.

Subsequent medical literature had added little or nothing to this work. Thus it was that Sydenham set about making and recording detailed clinical observations on his patients, freeing himself from theoretical bias and prepared to accept only what he was able to observe. Stimulated by Robert Boyle, whom he knew at Oxford, he undertook his important study of the London epidemics. He first classified fevers, which composed two-thirds of his practice, into three groups: Continued, Intermittent and Smallpox. We now know that typhus, typhoid and relapsing fever were prominent in the first group. Malaria was the typical intermittent fever and he included measles with smallpox in his third group. He studied the natural history of these diseases carefully and solely on the basis of clinical observation. Then, empirically, on a trial and error basis, he worked out the best method of treating them at the time.

What then is the enduring value of his work and example? "He rid the pharmacopoeia of many dangerous and obnoxious remedies and introduced several useful therapeutic innovations. His pioneering of quinine was of immense benefit in fever-ridden England, and countless lives were saved by his cooling regimen in the treatment of smallpox. He prescribed iron either in the form of steel filings or as a syrup, in the treatment of hysteria and chlorosis. In a pain-racked age, he wisely realized the value of opium which he gave in the form of liquid laudanum, Sydenham often dispensed with drugs altogether and prescribed such simple remedies as fresh air, exercise, a moderate diet, and the purgative waters of Barnet or Lewisham. These were bold innovations in an age when

excessive doses of drugs were usually prescribed. But his reputation does not depend so much on the many sensible and effective remedies he helped to introduce, as upon the general clinical principles which guided his own practice of medicine and illustrated his writings. Sydenham's revival of the Hippocratic method of studying the natural history of diseases by making a series of accurate and detailed observations set the clinical pattern of future progress".[4]

In an age heavily committed to scientific research in medicine, let us, in our century, not desist from our efforts, but let us never forget that empiric knowledge as well as scientific knowledge is essential for every doctor in his daily work. Ours is still a practical art and the prestige of our profession has always depended on the responsible skill with which it is practised.

John Locke was born in 1632 of a Puritan family in Somerset, who rallied to the Parliamentary cause during the Civil War. When he came up to Oxford from Westminster School in 1652, it was to quite a different atmosphere than Sydenham had experienced a decade earlier. An austere, hard-working Oxford, under firm Puritan sway presented him with the contrast between academic orthodoxy and the unofficial new philosophy which led to the formation of the Royal Society. The rational theorizing of Descartes merged with the scientific empiricism of men like Bacon and Boyle, and the clinical empiricism of Sydenham to stir the stagnant pools of Scholasticism.

Locke began the study of medicine right at the beginning of his university career. Awarded the M.A. degree in 1658 he was elected to a senior studentship at Christ Church. His official duties were those of a classical don but his medical studies were not neglected. He read widely and during the next four years set about writing his own text books of Botany. About this time, Boyle, Lower and Hooke were embarking on their remarkable pioneering studies concerning the the physiology of respiration and a few years later, Locke joined them. Meanwhile, he had been promoted and was concerned with the teaching of Philosophy. He chose the Law of Nature as the main subject for his disputations with the Bachelors of Arts. When he travelled to the Continent as secretary to a diplomatic mission, he took the opportunity to make the acquaintance of several prominent German physicians and chemists. Back in Oxford he undertook active laboratory studies with Boyle's group and his later theory of perception may have had its origins here.

In 1666 he took the step from laboratory to clinical practice by assisting Dr. David Thomas, a physician in the Oxford area. Lord Ashley, one of his early patients, was greatly impressed by Locke and a year later arrangements had been completed to have him live in Exeter House in London as physician to the Ashley household.

At Oxford Locke had read widely in politics, philosophy and theology; had written poetry, lectured on the Law of Nature; had given tutorials and made an excursion into diplomacy. Despite these varied interests, medicine was the thread of continuity throughout his Oxford career. During these years he was much more concerned with what we would call the basic medical sciences than with clinical medicine. In London he was a close friend and professional associate of Thomas Sydenham. The direction of his medical interests changed. The bedside became his laboratory, for Sydenham convinced him that this was the place to study clinical medicine.

The canvas of history is properly crowded with portraits of Locke as economist, theologian, political theorist, educationalist, scientist, man of affairs and philosopher. But the concept that he was a physician whose interest in medicine never waned and who was actively concerned with treating patients throughout a long career, has been for too long overlooked, considered doubtful historically, or summarily dismissed as irrelevant. Osler concluded that Locke was an experienced and skillful physician and hinted that Locke devoted much more time to the study and practice of medicine than was revealed in the manuscripts available at the turn of the century. When the Lovelace collection of Locke's unpublished papers became available after the Second World War, Osler's assumption was amply confirmed. Further research will clarify the relationship between Locke's medical work and his philosophy. His long experience in medicine — much of it in close association with Sydenham — provided a constant focus for the growth of empiricism. After a lifetime of study, experiment and practice, he had come to discard other hypotheses in favour of careful clinical observation. His treatment was always simple and safe. He believed that judgment, finely tempered on the anvil of experience, not merely book knowledge should be the physician's sure guide. This empiricism developed and confirmed during a lifelong study and practice of medicine, is also the hallmark of Locke's philosophy.[5]

The citizens of the British colonies in North America founded in the 17th Century brought with them a strong Parliamentary and Puritan tradition. Our great neighbour, the United States of America, recently celebrated her 200th anniversary and I should like to suggest that the American ethos, at its best, owes very much indeed to Locke, the author of the *Essay on Human Understanding,* the *Epistle on Toleration,* the *Treatise on Education,* and the *Constitution of Carolina.* It was Locke who wrote those famous words "all men are naturally in a state of freedom, also of equality".

And, here in Canada, let us remember too that much of the inspiration for the founding of our own country a century later derived from the same philosophic tradition.

In this 20th century doctors are trained as scientists and the scientific approach to medicine is essential — let us make no mistake about it — but it is not sufficient by itself. Technical knowledge illumined solely by a scientific method of thought did not suffice for clinical medicine in the 17th century. Nor does it today. Moral and ethical attitudes were, still are, and will remain of critical importance. As Sir Thomas Browne put it "Some have digged deep yet glanced by the Royal Vein; and a man can come unto the pericardium but not the heart of truth".[6]

Canadian medicine was spawned in this tradition and your own famous Faculty of Medicine at Dalhousie has played an important role in the development and maturation of the profession in this country.

I have been privileged to know Dr. Robert Dickson very well personally in war and peace for some forty years.

Named lectureships are usually created as memorials to loved and respected but departed individuals. And ordinarily it would be appropriate on an occasion like this to indulge in a bit of nostalgia and certainly to deliver a short eulogy. But Bob is very much alive and happily he is here with us today. It is clear that the Dickson Lecture was established as a tribute to him personally and it is a great honor for Jeanne and me to join this distinguished company in saluting him.

I have no doubt that the Founders of the Lecture were well aware that in a long and distinguished career, Robert Dickson personified those very qualities of mind and character which are the hallmarks of a true physician. Moreover, they understood clearly the importance of ensuring that these same qualities, attitudes and skills remain the heritage of succeeding generations of doctors. They did something about it in establishing the Dickson Lecture.

Thus, Ladies and Gentlemen, I believe there is room for optimism despite the harbingers of doom. It is quite possible for us to face future shock as our cultural forebears did 300 years ago, and to emerge, changed perhaps but stronger and with our sense of values in better focus. Ours is still a practical art and we must ensure that it continues to be practised with responsible skill. □

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The Medical History of Doctor Samuel Johnson*

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Sam Johnson was born in Lichfield, Staffordshire, son of a bookseller. The house where he was born, overlooking the market, still stands today as a museum to Johnson. He attended a number of schools in Lichfield and later spent a year at Pembroke College, Oxford. He could not continue at university, however, for lack of funds. After a number of unsuccessful attempts at securing a position as teacher or headmaster, he started his own school. Very few students attended his school so he moved to London with one of his pupils, David Garrick, who was later to become the great English actor.

In the next decades in London he wrote for a number of periodicals, and began his own journal, *The Rambler*. He wrote reports of the parliamentary debates, as there was as yet no official Hansard, but he often made up the details and speeches rather than attend parliament. He felt embarrassed and guilty later in life when he heard politicians' speeches he had made up quoted as history. He wrote an ill-fated play, *Irene*, a magnificent folio on Shakespeare still used by scholars today, the *Lives of the Poets*, and his famous Dictionary of the English Language. He only wrote when under pressure of debt, and felt that only a blockhead would write for any other reason. He married Tetty Porter, a woman almost twice his age when he was in his 20s. When his fame later grew he was noted for his ability as a conversationalist, intellect and wit. Many of the famous artists, politicans, physicians and lawyers gathered around him to join in discussion and argument, and he later started two conversation clubs, the Ivy Lane Club and the Literary Club. He and his friends would meet in taverns and converse on various topics through the evening and into the night. He was later given a pension by the King and never wrote seriously again. He died at age 76 and was buried in Westminister Abbey.

He is remembered as one of the greatest Englishmen of all time. Next to Shakespeare he is quoted more than any other, and probably has more books, essays and papers written about him than any other person.

MEDICAL HISTORY OF DR. SAMUEL JOHNSON

> *"Had Johnson lived a later date, science would have been able, if not to cure his oddities at least to name them."*

The continuing fascination in our age with this giant of the 18th century relates more to his life, his personality, his impact on his fellows and on the society of his time, rather than to his largely forgotten and rarely read writings. He was such an object of interest to those who knew him that we now have a wealth of their writings outlining a brilliant portrait of a man during one age in history. As to the comment of Hollis above, I suggest that we can now name his various complaints and infirmities, and I dare say, could cure them if he lived today.

Samuel Johnson was born to Michael and Sarah Johnson on Wednesday, September 18, 1709, in Lichfield, Staffordshire. Michael was 52 and Sarah 40, and there was great concern for a first pregnancy at such a late age; so George Hector, a prominent Lichfield surgeon, was called rather than a midwife. In 1709 a "man midwife" was unusual. Johnson later stated that he was born almost dead and could not cry. There must have been serious concern about the infant's survival because the vicar from St. Mary's parish was called within a few hours to baptise the baby in the mother's bedroom. Dr. Swinfin, a lodger at the Johnson house, stood as the godfather.

THE KING'S EVIL

Michael Johnson decided that his wife should not breastfeed the baby and hired Joan Marklew, wife of a bricklayer in his employ, to wetnurse the new child. When young Sam was brought home after 10 weeks it was noted that his eyesight was poor and they felt that his left eye might become blind. Johnson remembered that his mother told him he had swellings on his neck at that time. These were later regarded as scrofula or "The King's Evil" and it was felt that Joan Marklew was responsible for giving him this infection through her breast milk. Dr. Swinfin felt that Joan Marklew was responsible because the Markley son also had scrofula, a type of lymphatic tuberculosis. It is more likely that they developed it from infected cow's milk later in infancy.

The swollen tuberculous lymph glands on his neck began to drain and when they would not heal an incision was made in his left arm and kept open in an attempt to cure the neck. He was about age two at the time and not in good health.

It was common to create an incision or issue in one part of the body to drain evil humors and the issue was kept open either with a small foreign body such as a metal ball, horsehair or silk, or by inverting a flap of skin into the incision. Creating an issue on his left arm would be expected to help heal the draining lymph glands on the left side of the neck and possibly also to help cure his poor vision in the left eye. This therapy did not succeed but the issue was allowed to drain until he was age six.

Various forms of therapy were tried unsuccessfully for young Sam's scrofula, a disorder called at the time "The King's Evil". The most highly regarded form of therapy was The Royal Touch. Johnson in his Dictionary defined "The King's Evil" as, "A scrofulous distemper, in which the glands are ulcerated, commonly believed to be cured by the

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* Based on an address to The Academy of Medicine, Toronto, Section of The History of Medicine, October, 1978.

**Professor, Department of Medicine and Head, Division of Neurology, Dalhousie University, Halifax, N.S.

touch of the King". At age 2½ Sam was taken to be touched by Queen Anne at the recommendation of Sir John Floyer, a prominent physician of Lichfield and a former physician to Charles II. During the long coach journey to London Johnson became ill with a violent cough.

Sarah Johnson had with her a parish certifcate with a statement from a local physician verifying that her son had The King's Evil and had not received Royal Touch before. On arrival in London he was then examined by a Court Surgeon to further verify the diagnosis. Sarah Johnson presented her certificate at Whitehall and obtained an entry ticket to St. James's Palace where the ceremony was to be held. Little Sam Johnson was only one of the 200 individuals to receive The Royal Touch that day.

The ceremony began with a Collect from the communion service and was followed by a Gospel of St. Mark and some versicles and The Lord's Prayer. The individual to be touched was then brought by the surgeons, one at a time, to kneel before the Queen. She laid her hands upon them, then took the touch piece from the Clerk of the Closet and placed it on a white sick ribbon around the individual's neck. The chaplain turned towards the Queen and said, "God give a blessing to this work and grant that the sick persons, on whom the Queen lays her hands, may recover through Jesus Christ our Lord". After all were touched, the chaplain said a final versicle to which the sick responded.

Johnson was presented with his touch-piece from the Queen and kept it all his life. It was a Golden Angel coin worth 6s.8d., a coin struck by Edward IV in 1465. It is called the Golden Angel because Michael the Archangel is on the obverse. The coin that Johnson received can be seen in the British Museum.

JOHNSON'S VISION

He did not start school until age eight because his vision was so poor. His eyes were diseased in infancy, probably with ophthalmia neonatorum, but Johnson and others felt his lifelong visual difficulty resulted from scrofula. Whatever the cause, it must have been present at an early age as he was taken to a prominent oculist at age two, even before he received the Royal Touch. It delayed his schooling and he was brought to and from school by a servant. It was said he was so nearsighted he had to stoop down on his hands and knees to see a curb before he ventured to step over it.

His protraits usually show him squinting which suggests myopia. His eyes were in good alignment and the cause of his poor vision can not be seen in the portraits of him as his eyes appeared normal, described as wild and piercing and of a light gray color. Sir Joshua Reynolds' sister stated that, "Dr. Johnson's sight was so defective that he could scarcely distinguish the face of his most intimate acquaintances at a half-yard's distance from him, and, in general, it was observable that his critical remarks on dress, etc. were the result of a very close inspection of the object."

His embarrassment about his bad vision led to him skipping school and church to go into the fields to read. His memory for everything he read was legendary and some suggested he attempted to memorize the first time because reading was so difficult for him, a rather fanciful idea. Bishop Percy stated that Johnson only wrote a final draft because writing was so difficult as he was obliged to hold the paper close to his face. Later in life it was said that his wig was often singed by candles held too close while reading in bed.

Many portraits show him squinting and holding his book close to him. In his dictionary he defined "blink" as "to see obscurely" and a "blinkard" as "one who has bad eyes". When he saw one portrait of himself squinting closely over a book Mrs. Thrale noted he was very unhappy with it. She said he complained, "He would not be known to posterity for his defects only." He said Reynolds "could paint me deaf if he chooses, but I will not be blinking Sam".

Lord Brain also felt that Johnson had myopia, and not tuberculous keratitis. It is odd then that he did not wear spectacles, which were available in Johnson's time. Johnson discussed the uses of lenses with George III so he must have been aware of their use. Other authors note he never wore glasses but I did find one old print in Gough House in London which shows Johnson with glasses. Such prints were often done much later and often incorporate fanciful inaccuracies.

JOHNSON'S HEARING

Just as Johnson's dislike of the visual arts was ascribed to his visual difficulty, his dislike of music and the theatre was blamed on poor hearing. He was hard of hearing and quite deaf in his left ear. There are more than a dozen references in his own writings to his hearing problems, which he felt resulted from scrofula. Mrs. Thrale also stated that scrofula did "irreparable damage to the auricular organs which never could perform their function since I knew him".

Miss Reynolds, sister of the great artist Sir Joshua Reynolds, felt that Johnson's unaccommodating manners may have been due to his deafness as he often didn't perceive the expressive tone of the voices of others, nor the boisterous sound of his own.

Johnson had a pew in St. Clement Danes Church, down the Strand in London. His pew was in the east end of the north gallery, just above the pulpit so that he could hear better. He would occasionally shock the churchman delivering the sermon by coming down from his seat, walking down the main aisle and standing under the pulpit to hear.

JOHNSON'S DEPRESSION

Throughout life Johnson was subject to recurring depressions. Later in his school days he began to show that "dismal inertness of disposition" that would trouble him the rest of his life.

He spent only one term at university withdrawing because of insufficient funds. After leaving Oxford he became very depressed about his future. Catherine Bolderston elaborates the modernistic view that Johnson's "deep-rooted psychic maladjustment" was founded on unrecognized erotic ideas in his subconscious mind. Bolderston bases her opinion on passages from Mrs. Thrale, but, as Chase points out, Mrs. Thrale was inclined to immediately write down any thought that came into her mind and these were often conflicting and contradictory. He feels that any argument can be justified by quotations from Mrs. Thrale.

In a catalogue of Mrs. Thrale's library and personal effects there is a padlock labelled "Johnson's padlock commited to my care in the year 1768". There have been many vague theories about the padlock and its connotations but much of it is idle and unfounded.

Boswell wrote, "He felt himself overwhelmed with a horrible hypochondria, with perpetual irritation, fretfulness and impatience; and with a dejection, gloom and despair, which made his existence a misery". At the age of 20 he developed a horror of going insane. His terrible dread of madness recurred frequently during his life and he had many personal treatments to stave off any feeling of madness, including doing arithmetic and taking very long walks. He would walk 30 miles if he felt he was becoming depressed, in order to free himself from the grip of madness. On one walk to Birmingham he presented to his godfather, Dr. Swinfin, a list of his symptoms written out in Latin. The doctor was amazed and impressed by the Latin description of his symptoms and showed it to some of his colleagues. Johnson was angry, embarrassed and shocked that his godfather would commit such a breach of confidence and never fully forgave him for this act.

There has been much speculation about the basis of Johnson's depressions and his fear of madness. Irwin felt he really hated his mother although he outwardly appeared to be a devoted son. He makes much of the fact that Johnson did not visit her in Lichfield for the last 19 years of his life. It could not have been because travel was difficult as he loved to travel, or because the town was unfriendly to him, as he visited the town at least 12 times after her death.

In the later years his depressions were milder but he still expressed repeated fears of losing his mind. On his journey to the Hebrides with Boswell, he "was not free from perturbation" and bought a copy of Cocker's Arithmetic in order to ward off the Black Dog of Melancholy.

For the last 30 years of his life he was very concerned about freeing himself from "overpowering and involuntary melancholy". He sometimes felt that his melancholy was due to his indolence and a too active imagination. Irwin felt that he was afraid of being corrupted by sensual thoughts and feelings and that he took many steps to prevent himself from indulging in lewd thoughts. At other times he told Boswell that his vile melancholy probably came from his father and that it was an inherited distrubance.

JOHNSON AND ALCOHOL

Johnson was an immoderate man in many things, and this included drink at various portions of his life. I don't think there is much to support Madden's suggestion that he may have been an alcoholic but, when he did drink he did tend to drink rather a lot.

In 1778 he stated, "I now drink no wine, sir. Early in life I drank wine; for many years I drank none. I then for some years drank a great deal". It appears that Johnson drank rather heavily at a few periods in his life and then abstained completely at others. As Madden points out, the portion of his life in which he drank rather heavily is not well documented. Johnson on his deathbed destroyed a lot of private papers but the manuscripts given to George Strahan record a struggle with alcohol from 1760 to 1767, and demonstrate an effort to decrease and eventually to abstain from alcohol.

The Birmingham surgeon, Mr. Hector, said that Johnson "loved to exhilarate himself with wine", although he "never knew him intoxicated but once". When Boswell met Johnson in 1763 they drank together a lot to the point where Boswell began to develop a lot of headaches, but when Boswell returned from Corsica in 1766 Johnson was drinking only tea. He had completely put aside alcohol until 1781 when Boswell described him drinking wine. "He poured a large quantity of it into a glass and swallowed it greedily. Everything about his character and manners was forcible and violent; there never was any moderation; many a day did he fast, many a year did he refrain from wine; but when he did eat; it was voraciously, when he did drink wine, it was copiously. He could praise abstinence, but not temperance". However, for the rest of his life he appears to have used alcohol only for distinctly medicinal purposes, such as the wine he took, after his stroke caused difficulty with speech, as wine "has been celebrated for the production of eloquence".

Johnson's views on alcohol appear to be somewhat ambivalent. He both criticized and praised it at various times. He stated that "a tavern chair was the throne of human felicity" and he was able to justify giving money to beggars who might spend it on gin and tobacco because, "Why should everyone else find pleasure necessary to their existence and deny the poor every possible avenue to it?"

One of the reasons for Johnson's ambivalence about alcohol might also have resulted from the fact that his wife was undoubtedly alcoholic and addicted to drugs. Levett stated, "She was always drunk and reading romances in her bed, where she killed herself by taking opium".

When he gave up the periods of immoderate alcohol he began to be just as immoderate about tea. MacAulay stated, "The old philosopher is still among us, in the brown coat with the metal buttons and the shirt which ought to be at wash, blinking, puffing, rolling his head, drumming with his fingers, tearing his meat like a tiger, and swallowing his tea in oceans". It was stated that he drank often more than 25 cups of tea per day but his tea set is still in existence and the small cups indicate that this was not as excessive as it sounds. One would wonder, however, if some of the minor complaints that he suffered including insomnia might have been due to the excessive caffeine he took in, as tea contains about half the amount of caffeine as does coffee. He referred to himself as "a hardened and shameless tea drinker, who with tea abuses the evening, with tea solaces the midnight and with tea welcomes the morning".

Johnson's eating habits were also noteworthy. He often ate with his hands, and it was said he always ate fish with his fingers because his eyesight was too poor to see the bones. His uncouth and voracious appetite was accompanied by gustatory sweating as he broke out in profuse perspiration each time he ate.

CONVULSIVE STARTS AND ODD GESTICULATIONS

I would like now to examine Johnson's unusual tics and gesticulations, his involuntary vocalizations, and his compulsive behavior, and suggest that they constitute the clinical picture of Tourette's syndrome.

In this syndrome there is sudden repetitive muscle twitching and jerking most commonly in the face, neck, shoulders and arms, but there may be larger, more complex motor movements and acts. The involuntary vocalizations

may be mouthing sounds, breathing noises, sniffing, barking, whistling; repetitive sounds, words, or phrases, and in half the cases, sudden swearing and obscenities. These patients also manifest compulsions varying from the rituals common to most children such as avoiding the cracks in pavement, to very bizarre and complex compulsive behavior.

Johnson's ticks and gesticulations often surprised and shocked those who met him for the first time, expecting his physical appearing to reflect the intellect and wit of the greatest man of that day. Instead, they observed a man, as Lucy Porter told Boswell, who "often had, seemingly, convulsive starts and odd gesticulations, which tended to excite at once surprise and ridicule." Fanny Burney described him by saying,

> His mouth is almost constantly opening and shutting as if he were chewing. He has a strange method of frequently twirling his fingers and twisting his hands. His body is in continual agitation seesawing up and down; his feet are never a moment quiet; and in short his whole person is in perpetual motion.

She further comments on the "cruel infirmities to which he is subject; for he has almost perpetual convulsive movements, either of his hands, lips, feet or knees, and sometimes all together. Miss Frances Reynolds, younger sister of Sir Joshua Reynolds, noted that in her company at Twickenham Meadows his gestures were so extraordinary "that men, women and children gathered around him, laughing."

At age 27 Johnson was rejected for the post of Assistant Headmaster at a grammar school in Staffordshire because of his peculiar appearance and odd movements. It was thought that his involuntry motions would make him an object of ridicule with his students. That same year he applied for another master's position at Solihull School but was again rejected because "He has the character of being a very haughty, ill-natured gent., and yet he has such a way of distorting his face (which though he can't help) the gent. think it may affect some young lads."

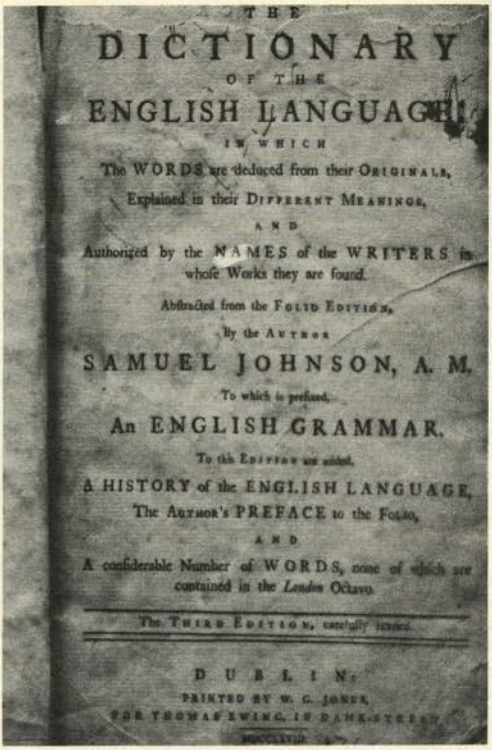
Johnson began his own school with David Garrick, later to become the great actor, as one of his few pupils. But Boswell states, "From Mr. Garrick's account he did not appear to have been profoundly reverenced by his pupils. His oddities of manner, and uncouth gesticulations, could not but be the subject of merriment to them."

Boswell was perhaps the most acute observer of Johnson's manner and behavior and noted,

> That while talking or even musing as he sat in his chair, he commonly held his head to one side towards his right shoulder, and shook it in a tremulous manner, moving his body backwards and forwards, and rubbing his left knee in the same direction, with the palm of his hand.

There are frequent references to his continual habit of rocking and seesawing back and forth as he sat thinking or when engaged in conversation. Johnson's student, David Garrick, who became his lifelong friend, delighted friends with impersonations of Johnson's ticks and noisemaking, and even did so at Johnson's wake, although Fanny Burney indicates that it was not done in any irreverent manner.

Another interesting episode occurred when Hogarth came to see Mr. Samuel Richardson, unaware that Johnson was in the room.


THE
DICTIONARY
OF THE
ENGLISH LANGUAGE:
IN WHICH
The WORDS are deduced from their ORIGINALS,
Explained in their DIFFERENT MEANINGS,
AND
Authorized by the NAMES of the WRITERS in
whose Works they are found.
Abstracted from the FOLIO EDITION,
By the AUTHOR
SAMUEL JOHNSON, A. M.
To which is prefixed,
An ENGLISH GRAMMAR.
To this EDITION are added,
A HISTORY of the ENGLISH LANGUAGE,
The AUTHOR's PREFACE to the FOLIO,
AND
A considerable Number of WORDS, none of which are
contained in the *London* Octavo.
The THIRD EDITION, carefully revised.
DUBLIN:
PRINTED BY W. G. JONES,
FOR THOMAS EWING, IN DAME-STREET.

The frontispiece of the Third Edition of Dr. Samuel Johnson's Dictionery of the English Language. (First Edition published in 1755)

> While he was talking, he perceived a person standing at a window in the room, shaking his head, and rolling himself about in a strange ridiculous manner. He concluded that he was an idiot, whom his relations had put under the care of Mr. Richardson, as a very good man.

Sir Joshua Reynolds painted a number of portraits of Johnson in which he showed Johnson's fingers and hands in a twisted and contorted position; other portraits show facial distortion and squinting.

The numerous descriptions of Johnson's movement disorder document repetitive sudden jerking movements of his face, lips, head and neck, shoulders, arms and legs. This twitching did not interfere with his motor ability since he was capable of occasional feats of agility and strength, and his handwriting was unaffected. The effect on his appearance was quite striking, however, and many who met him felt that they were meeting a lunatic or madman, and certainly one of the most peculiar looking individuals they had ever seen.

The date of onset of Johnson's movement disorder is not clear, but David Garrick was delighting friends with imitations of him when Johnson was in his early 20's. The disorder persisted throughout his life, although there are few references to it in his last years, probably because his friends tended to give dramatic descriptions when first meeting him, but commented little on his physical attributes as they came to know and admire him. Boswell says that his peculiarities were forgotten the moment he began to talk.

INVOLUNTARY VOCALIZATIONS

The second symptom of Tourette's syndrome is involuntary vocalizations. While sitting in taverns or in private drawing rooms, or when walking in the streets, Johnson was often noted to moan continually, grunt, whistle and talk to himself.

Johnson's boyhood friend, Hector, remembered that even as a young man, he was always talking to himself. Boswell writes,

> talking to himself was, indeed, one of his singularities ever since I knew him. I was certain that he was frequently uttering pious ejaculations; for fragments of the Lord's Prayer have been distinctly overheard.

Although he talked to himself, he also surprised companions by blurting out meaningless and unintelligible sounds. Both Boswell and the Reverend Dr. Thomas Campbell comment on Johnson's frequent tendency to make whistling sounds. Perhaps the best description of his involuntary vocalization comes again from Boswell,

> In the intervals of articulating he made various sounds with his mouth, sometimes as if ruminating, or what is called chewing the cud, sometimes giving a half whistle, sometimes making his tongue play backwards from the roof of his mouth, as if clucking like a hen, and sometimes protruding it against his upper gums in front, as if pronouncing quickly under his breath *too, too, too:* all this accompanied sometimes with a thoughtful look but more frequently with a smile. Generally when he had concluded a period, in the course of a dispute, by which time he was a good deal exhausted by violence and vociferation, he used to blow out his breath like a whale.

Although Johnson's involuntary vocalization was most often in the form of moaning, groaning, blowing, whistling, sighing and deep heavy breathing, he also talked to himself in long sentences and repeated experessions he heard as well as long phrases from poetry and literature for which is memory was legendary. Boswell noted his tendency to repeat fragments of the Lord's Prayer and he also repeated over and over lines from an ode of Horace. Others said that if you sat near his chair when he was not engaged in conversation you could hear him repeating snippets of Shakespeare.

A tendency to echolalia, the repetition of sounds or expressions heard, was also documented by Mrs. Thrale.

He was never noted to swear, and had a low opinion of those who did. On one occasion he asked a man to desist from using profanities and left the room when he refused to do so.

COMPULSIVE BEHAVIOR

Miss Frances Reynolds vividly details his peculiar and complex compulsive behavior. She wondered why none of his biographers had noticed his tendency to repeat expressions and thoughts over and over. She also comments on his peculiar method of entering a house.

> Nor has anyone, I believe, described his extraordinary gestures or antics with his hands and feet, particularly when passing over the threshold of a Door, or rather before he would venture to pass through *any* doorway. On entering Sir Joshua's house with poor Mrs. Williams, a blind lady who lived with him, he would quit her hand, or else whirl her about on the steps as he whirled and twisted about to perform his gesticulations; and as soon as he had finish'd, he would give a sudden spring and make such an extensive stride over the threshold, as if he were trying for a wager how far he could stride, Mrs. Williams standing groping about outside the door unless the servant or the mistress of the house more commonly took hold of her hand to conduct her in, leaving Dr. Johnson to perform at the Parlor Door much the same exercise over again.
>
> But the strange positions in which he would place his feet (generally I think before he began his straddles, as if necessarily preparatory) are scarcely credible. Sometimes he would make the back part of his heels to touch, sometimes the extemity of his toes, as if endeavouring to form a triangle, or some geometrical figure. And as for his gestures with his hands, they were equally as strange; sometimes he would hold them up with some of his fingers bent, as if he had been seized with the cramp, and sometimes at his Breast in motion like those of a jockey on full speed; and often would he lift them up as high as he could stretch over his head, for some minutes. But the manoeuvre that used the most particularly to engage the attention of the company was his stretching out his arm with a full cup of tea in his hand, in every direction, often to the great annoyance of the person who sat next him, indeed to the imminent danger of their cloaths, perhaps of a Lady's Court dress; sometimes he would twist himself round with his face close to the back of his chair, and finish his cup of tea, breathing very hard, as if making a laborious effort to accomplish it. . . .
>
> It was not only at the entrance of a Door that he exhibited his gigantick straddles but often in the middle of a room, as if trying to make the floor to shake; and often in the street, even with company, who would walk on at a little distance till he had finished his ludicrous beat, for fear of being surrounded with a mob; and then he would hasten to join them, with an air of great satisfaction, seemingly totally unconscious of having committed any impropriety.

Miss Reynolds further describes his tendency to stretch out his legs as far as possible and press on the floor as heavily as he could press and notes an incident when the owner of the house assured Dr. Johnson that the floor was safe.

Boswell described Johnson's odd habit of always measuring his way out of a room with his feet. He would start off step by step until he reached the doorway. If he arrived there on the wrong foot (Boswell couldn't remember if it were the left or right foot) he would go back and do it again until he came to the door with the correct foot.

There are also references to Johnson's tendency to mild self-destructive or damaging behaviour such as hitting and rubbing his legs continually, and also cutting his fingernails deeply. Boswell said, "Not only did he pare his nails to the quick, but scraped the joints of his fingers with a pen-knife till they seemed quite red and raw." Some of Johnson's other compulsive habits included never walking in the cracks of paving stones and touching every post along the street or road as he walked. If he missed a post he would keep his friends waiting until he went back to touch it.

OTHER THEORIES

Most authors have felt that Johnson's tics and odd behavior were either a reflection of his underlying neurotic and depressive personality, or just the expected eccentricities of a great genius. Boswell, however, felt the mannerisms were, "of the convulsive kind, and of the nature of that distemper called St. Vitus's Dance; and in this opinion I am confirmed by the description which Sydenham gives of that disease." Thomas Tyers agreed. "He was to the last a convulsionary . . . . his gestures, which were a degree of St. Vitus's Dance, in the street attracted the notice of many, the stare of the vulgar but the compassion of the better sort."

Sir Joshua Reynolds seemed to support the psychogenic theory, even 200 years ago. He felt Johnson was trying to "reprobate some part of his past conduct."

Cahall felt the problem resulted from a rheumatic condition, and MacKeith thought it the result of athetoid cerebral palsy. Lord Brain, noting that there was no evidence of any organic neurological disorder at autopsy, felt that his movement disorder was probably a psychogenic habit spasm. Hitschmann, in true psychoanalytical style, stated,

> "It is sure that the movements ward off or express hostile and anal impulses, following the psychic pattern of compulsive neurosis."

Chase favored an organic etiology, noting that anoxia at birth can result in tics, mannerisms and personality change. Johnson had a very difficult birth and probably did suffer some degree of cerebral anoxia.

McHenry in an excellent review of Johnson's tics and gesticulations, suggested that tics were a spectrum that could be divided into four categories, all of which Johnson manifested. He felt Johnson showed features of four syndromes: (1) simple tics or habit spasms as described by Gowers and Wier Mitchell, (2) the convulsive tics or Gilles de la Tourette syndrome, (3) coordinated tics, and (4) psychical tic. This was the first mention of Tourette's syndrome to at least partly explain Johnson's movement disorder, although he did not conclude Johnson had Tourette's syndrome.

It is of interest that Johnson never commented on his own movement disorder. Perhaps the only exception might be his response to a lady who jokingly put her foot in the line of Johnson's hand, which was moving back and forth as he sat at the dinner table. Her shoe was knocked off, and to the tittering company who recognized the joke, he responded "I know not that I have justly incurred your rebuke. The motion was involuntary, and the action not intentionally rude."

Boswell also overhear his response to a small child who asked, "'Pray, Dr. Johnson, why do you make such strange gestures?'. .'From bad habit, (he replied). Do you, my dear, take care to guard against bad habits.'"

JOHNSON'S STROKE

On June 16, 1783 Johnson was 73 years old and in failing health. He was getting repeatedly short of breath and had numerous episodes of gout. This is Reynold's last portrait of Johnson. On June 16th Miss Frances Reynolds, sister of the great artist Sir Joshua Reynolds, was painting Dr. Johnson's portrait. Johnson did not like this portrait and it has been unkindly said about Frances Reynolds that she "painted pictures that made everyone laugh — and her brother cry". Johnson was tired after the long day and went to bed. He awoke in the middle of the night with some symptoms which indicated to him that he had had a stroke. It is not clear what these symptoms were but he became alarmed about losing his mind as a result of the stroke. He then composed a prayer to preserve his mind and intelligence and did this in Latin to test his capabilities. Later he stated that it was not a good verse but he thought it of significance that he was aware that it was not. He was relieved, however, that he could write the verse and do it in Latin. He then took some brandy, understanding that it was good for eloquence of voice, and fell asleep again. When he awoke the next morning his speech was still impaired but he was able to write a note to his servant asking for Mr. Allan, his next-door neighbor, to come and assist him and to summon Dr. Heberden. It is evident from this that, although his speech was impaired, he was able to write legibly and intelligently what he wished to communicate. Heberden prescribed blisters to be applied to his head and throat.

His speech improved slowly over the next few weeks and Johnson clearly details his recovery in daily letters and notes. However, by the 37th day of his illness he was still complaining that he had some difficulty with his voice, although it had recovered very well. Critchley examines his writings in great detail over the period of his recovery and even subjected his letters and punctuation to statistical analysis to show the difficulties that he had with his handwriting and with his ability to communicate.

In his last years Johnson was in failing health and his friends worried about his tendency to ignore his problems and put off making a will. He had recurring respiratory symptoms and heart fialure.

At age 71, in 1780, he wrote to Mrs. Thrale saying, "Last year I perceived the remission of those convulsions in my breast which had distressed me for more than 20 years.". One might wonder if these were episodes of tachycardia, or chronic respiratory disease. At his autopsy they noted, "On opening the cavity of the chest, the lungs did not collapse as they usually do when air is admitted, but remained distended, as if they had lost the power of contraction; the air cells on the surface of the lungs were also very much enlarged". This suggests that his difficulty may have been emphysema and this may explain the episodes of marked cough and wheezing he experienced in the last years of his life.

When he was 72 he began to suffer more from chronic shortness of breath and dropsy and he began to take a lot of opium for relief, often three grains a day. He eventually found that opium was not of much help and he gave it up.

Although he did not place much faith in many medical treatments including phlebotomy, he did get some relief from blood-lettings at this time, probably because of his heart failure.

In the last few months of his life he was very short of breath, and suffering from orthopnea and paroxysmal nocturnal dysponea. His ankle swelling had worsened and he was very weak. In February 1784 he had a sudden diuresis of 20 pints of urine, possibly from taking mercury. Although he was attended by Doctors Heberden and Brockelsby who shared the dubious honor of being his unpaid physician, Johnson asked Boswell to obtain the opinion of the Scottish physicians about his case and Sir Alexander Dick, Doctors Gillesbie, Cullen and Munro were all consulted by letter. He began to take vinegar of squills and by April 1784, after four months confined to his house, he was well enough to go to church.

Three months later it was recommended that he rest in bed for heart failure and shortness of breath. However, he set out for a jaunt to Staffordshire, Derbyshire and made a visit to Lichfield, Birmingham and Oxford for the last time. Lord Brain refers to this as a heroic defiance of death but, in fact, it probably hastened his death.

THE DEATH OF JOHNSON

On these last trips, amazing feats for such an ill man, he had more and more difficulties. A sarcocele enlarged on one of his testicles, became inflammed and eventually burst. He had previously refused operation on his testicle, understandable in these preanesthetic days but allowed it to be punctured.

He developed an attack of arthritis that kept him in bed and only by the use of two canes could he get from bed to a chair. He developed an abscessed tooth and a dentist was called to extract it.

In his good days he was enthusiastic and in good humor, and even planned a new conversation club which began to meet. Ill though he was he held parties at home, and even went out to dine and to attend an exhibition of pictures at the Royal Academy.

After trips to Oxford and Lichfield he returned to London with less than a month to live. Badgered by Hawkins for so long about making a will he suddenly dictated one in exasperation. He began to burn a lot of his private papers and made other final arrangement for his family graves.

His edema was marked, his shortness of breath worse and he slept fitfully sitting in a chair. He made an effort to get up and around and said "I will not capitulate". But he became so dyspneic he could barely speak.

He lay helplessly in bed, and asked Dr. Brockelsby if he could recover. He was told that he could not without a miracle. Johnson said he would refuse all medication in that case so as not to meet God in a state of idiocy with opium in his head.

The surgeon William Cruickshank was asked to make cuts in his legs to drain the edema. Afraid of gangrene he made very superficial cuts. Johnson cried out "deeper, deeper. I want length of life, and you are afraid of giving the pain which I do not value."

When Cruickshank left, Johnson took scissors and stabbed deeply into the calves of his legs. He bled a great deal and Cruickshank had to be called back to dress the wounds.

On Monday, December 13, 1784 Johnson in a delirium echoed the ancient salutation of the dying gladiators to Caesar "Iam Moriturus" — I, who am about to die. He died that evening.

As Bate states in his new biography of Johnson "With all the odds against him, he had proved it was possible to get through this strange adventure of life, and to do it in a way that is a tribute to human nature."

An autopsy was performed by James Wilson and his handwritten account can be found in the library of the Royal College of Physicians in London. His death mask shows the scars of scrofula and a slight right facial weakness from his stroke.

A reading of the documentation on Johnson would suggest to me the following diagnostic conclusions:

1. Birth trauma, possibly with anoxia.
2. Ophthalmia neonatorum.
3. Lymphatic tuberculosis.
4. Deafness left ear.
5. Myopia, worse in the left eye.
6. Manic depressive — depressive.
7. Obesity.
8. Gout.
9. Sarcocele.
10. Tourette's syndrome.
11. Emphysema.
12. Left middle cerebral infarction.
13. Cardiac failure and cor pulmonale.

DR. JOHNSON AND MEDICINE

Dr. W. Russel Brain, later Lord Brain, commented that Johnson had a threefold interest for doctors, firstly as a friend of doctors, secondly as an amateur of medicine and science, and lastly as a patient.

Johnson consulted many physicians in his time but felt free to evaluate the efficacy of their suggestions and treatments. He seems never to have paid them, except with a free copy of one of his books on occasion, and accepted this relationship as quite natural.

Although Johnson often consulted physicians, and the best physicians of the age, he also sought them out for their company. A number of physicians belonged to both the Ivy Lane Club and the Literary Club.

Johnson had a large collection of medical books and was well read in medicine. He wrote sections in Dr. Robert James *Medicinal Dictionary* and he wrote the lives of Sydenham and Boerhaave, although he was more interested in discussing their philosophical views than their lives or their contributions to medicine.

Johnson liked to discuss medicine and current forms of therapy and seems to have had some ideas which were in advance of some of his physician friends. Although he himself was bled a number of times he was in general against phlebotomy and polypharmacy commonly practiced during the 18th century.

He liked to prescribe for others and was often mistaken for a physician by chemists when he presented his own prescriptions written in Latin.

When he prescribed for Mrs. Boothby's indigestion he cautioned her "I would not have you offer it to the doctor as my medicine: Physicians do not love intruders." How true!

He was even brash enough to prescribe for the President of the Royal College of Physicians, Dr. Lawrence, when he suffered a small stroke, suggesting electricity applied to the hand frequently, would be of value.

Johnson advised people to manage their complaints and illnesses with diet, abstinence from alcohol, rest from the anxiety of life, and sleep. He often advised them also to avoid many medicines and treatments.

He felt illness was often an idle preoccupation filling a life of boredom and complacency. He noted laboring men who work hard are free of many of these ailments the symptoms which are the product of "imagination operating on luxury".

He stated that "with an unquiet mind neither exercise, nor diet, or physic can be of much use".

Johnson had a ready answer for the question of whether physicians should tell their patients the truth. "I deny the lawfulness of telling a lie to a sick man, for fear of alarming

him. You have no business with consequences, you are to tell the truth." He added, "Besides you are not sure what effect your telling him that he is in danger may have. It may bring his distemper to a crisis and that may cure him".

Although very obese, he was not entirely tolerant of other obese people. Johnson stated that another obese gentleman ate too much but Boswell said that some people eat moderately and become fat and others are thin who eat a great meal. Johnson replied, "Nay, sir, whatever may be the guantity that a man eats, it is plain that if he is too fat he has eaten more than he should have done". He was no less tolerant of smoking which Boswell defended as a soothing sedative. "It is a shocking thing, blowing smoke out of our mouths into other people's mouths, eyes and noses, and having the same thing done to us".

At other times Johnson was prepared to discuss infant mortality in London, the relationship between density and population and epidemics, and the fruitlessness of Dr. Radcliffe's Travelling Fellowships.

Dr. Johnson held physicians in very high regard. Dr. Warbasse listed 57 physicians associated with Samuel Johnson and he did not include them all. He wrote that medicine is a profession "which must, undoubtedly, claim the second place among those which are of the greatest benefit to mankind". He was impressed by the amount of work that physicians did for nothing, which is not surprising, as he appears himself never to have paid fees. He once said, "Illness is a little expense to me, thanks to the generosity of my physicians". "I believe every man has found in physicians great liberality and dignity of sentiment, very prompt effusions of beneficence, and willingness to extend a lucrative art where there is no hope of lucre".

"Such was SAMUEL JOHNSON, a man whose talents, acquirements, and virtures were so extraordinary, that the more his character is considered, the more he will be regarded by the present age, and by posterity, with admiration and reverence."

In describing and commenting on the medical problems of this great man I in no way wish to lessen his image. I am reminded that, when accused of mentioning unflattering anecdotes, particularly of an intimate friend, in his *Lives of the Poets,* Johnson remarked that this was quite appropriate when the man was dead, as it was done historically. Moreover, Johnson said, "All knowledge is of itself of some value. There is nothing so inconsiderable that I would not rather know than not."

Boswell noted that Johnson "had a peculiar pleasure in the company of physicians." I hope that this dissertation has given you some pleasure in the company of Dr. Samuel Johnson. □

Rapid Neuroleptization With Haloperidol

A GENERAL PHYSICIAN'S GUIDE

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IM AND IV THERAPY WITH HALOPERIDOL

There are ample reports of the efficiency and safety of haloperidol (Haldol®) in the treatment of acute psychosis. When administered with care, it can be given within a wide range of dosage depending on patient response and tolerance, with less likelihood of the sedative, cardiovascular and anticholinergic side effects, and propensity to lower the seizure threshold which are associated with Chlorpromazine (Largactil®).

Haloperidol is of especial use in the rapid termination of psychomotor agitation. While delusions and hallucinations may persist for days, extreme agitation and aggressive behaviour are usually controlled within hours. Given to the elderly in small doses, it can allay symptoms of psychosis which accompany organic brain disease while maintaining patient alertness. For severe psychosis and those which must be immediately terminated to facilitate treatment of physical illness, parenteral haloperidol has proved invaluable.

There is considerable experience with intramuscular administration and somewhat less with intravascular techniques, but initial studies have shown considerable advantage in using the latter route where extremely rapid control of psychosis is required:

i) a wide range of dosage may be used (up to 185 mg/24 hours in one series);
ii) there is rapid onset of a calming effect (within 10 to 30 minutes);
iii) no significant blood pressure, pulse or EKG changes are noted;
iv) significant adverse respiratory effects are unusual;
v) very infrequent and very mild extrapyramidal symptoms occur;
vi) there is minimal risk of adverse interaction between haloperidol and other drugs administered to patients; and
vii) a high therapeutic response rate has been observed, and there is evidence that it is useful for delirium tremens and in the control of anxiety and psychomotor excitation in acute cardiovascular events.

TECHNIQUES OF IM RAPID NEUROLEPTIZATION

There are two schools of thought regarding initial dosage of haloperidol. One approach favours low doses to initiate treatment (e.g. 1 mg or 2 mg IM) with increasing increments (e.g. 5 mg IM) each hour until the desired response is obtained. The other approach starting with a higher initial dose (e.g. 5 mg or 10 mg IM) repeating the same dose each hour as before. With high doses the incidence of extrapyramidal side effects is no higher than with lower ones, and the speed of onset is faster (although striopallidal reactions may be more severe).

After the initial dosage, the blood pressure should be taken in an hour and, depending on the response, a decision can be made as to whether to proceed with further injections or with oral medication. On some occasions, especially in elderly patients, the clinical response to the first dose will be considerable and then the clinician will have to substantially decrease the succeeding dosages. As a rule, most symptomatology is under control within six hours, although in rare circumstances, parenteral medication may be required for up to two days with a maximum dose of 100 mg/24 hours being given.

Upon switching to the oral form, the maintenance daily dose should be between 10 mg. and 30 mg. per day, two-thirds of the total being given at bedtime. This can be tapered over one or two weeks to the lowest effective dosage, the sleep pattern being a good indicator of satisfactory control.

TECHNIQUE OF IV RAPID NEUROLEPTIZATION

The intravenous route is favoured in Coronary Care Units and in Medical and Surgical Intensive Care Units. A simple rule for intravenous therapy is as follows: 5 mg I.V. followed by 10 mg I.V. in one-half hour if there isn't sufficient response initially; if the desired clinical effect is still not achieved, 20 mg is given after another one-half hour. Twenty mg repeats I.V. may be given at one hour intervals if need be, up to a maximum of 100 mg. Once sedation has been achieved, the amount and frequency of dosage are carefully tapered, substituting the IM or oral route for maintenance whenever possible.

COMPLICATIONS ASSOCIATED WITH PARENTERAL HALOPERIDOL

The success of parenteral haloperidol has led to widespread use but this, unfortunately, has meant a concomitant rise in the number of reports of serious complications. While complications are uncommon, it is important to review briefly various side effects of parenteral neuroleptic therapy, their possible prophylaxis and management:

1. Extrapyramidal Side Effects

Interestingly, fewer extrapyramidal side effects are noted with parenteral and high dose haloperidol compared with small doses taken orally. Prophylaxis against these side effects with anticholinergic drugs is contraindicated

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because of potential side effects which these may produce: they should only be given when extrapyramidal reactions actually occur. Antiparkinsonian agents (APA) may be effective but, beyond moderate doses, there is a danger of a toxic psychosis and physical complications. It is best to use a small dose of the antiparkinsonian agent with either a benzodiazepine, or a sedative phenothiazine (e.g., methotrimeprazine; Nozinan®) or an antihistamine (e.g., diphenhydramine; Benadryl®). Some specific extrapyramidal complications include:

a) Akinesia

— lethargy may be associated with the patient's illness and be a mistaken indication for further IM neuroleptic administration. A test dose of benztropine mesylate (Cogentin®) may help in sorting this out.

b) Akathisia

— symptoms may be mistaken for worsening of the psychosis; again caution is advised in the further use of neuroleptic, and again a test dose of Cogentin® may be useful.

c) Acute Dystonic Reactions

— these usually occur within 48 hours of the beginning of treatment or after an increase in dosage.
— use diazepam (Valium®) 10 mg I.V., slow push; or 5 mg of Cogentin® IM

d) Laryngeal/Pharyngeal Dystonia

— use Benadryl® 50 mg. I.V. or Cogentin 2 mg I.V.

e) Parkinsonism

— use an APA such as Cogentin® orally; decrease the dose of neuroleptic; increase the interval between injections.

2. Severe Hypotension

— infrequent complication.
— treat with levarterenol (Levophed®) or phenylephrine (Neo-Synephrine®).
— never use epinephrine! This causes a further lowering of blood pressure.

3. Cardiac Arrest/Arrhythmia

— rare.

4. Catatonia

— diagnostic dilemma as to whether the catatonia is neuroleptic-induced or a sign of refractory schizophrenia (the latter is rare).

5. Neuroleptic Malignant Syndrome

— characterized by hyperthermia, hypertension, diaphoresis, rigidity and various levels of coma.
— treatment consists of supportive measures, cessation of the neuroleptic and the use of an APA such as Artane® or Cogentin® for at least several days. The cautious use of physostigmine (Antilirium®) may be considered.

Note that a patient who is unresponsive to the usual therapeutic doses after several days is at higher risk for pharyngeal/laryngeal dystonia and the neuroleptic malignant syndrome. For this reason, the agent should be stopped after a couple of days if there is not progress.

SUMMARY

Physicians should know that in recent years internists and psychiatrists experienced in the proper use of parenteral haloperidol given rapidly for those patients requiring such therapy find the procedure safe and effective. It not only provides effective "medication restraint" of excited and delirious patients, but it also improves the central psychotic symptoms. The procedure involves titrating the drug against psychotic behaviour by using a series of doses parenterally over a period of hours. Some of the possible adverse effects and their management are listed. □

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Economic Advantages of Outpatient Meniscectomy

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SUMMARY

Performing meniscectomies as an outpatient procedure results in a minimum economic saving of $2301.02 per operation. In addition, patients undergoing outpatient meniscectomy are seen by the Orthopaedic Outpatient Clinic 4.55 times less often than those individuals who had their meniscectomy done as inpatients. In 1980, a minimum of $156,388.54 could have been saved by the Victoria General Hospital (VGH) if outpatient surgery had been utilized when possible.

INTRODUCTION

The cost of a hospital bed in the Victoria General Hospital (VGH) is already at a minimum of $304 per day (including room, board, drugs, tests, and x-rays). With no end in sight to the ubiquitous problems of inflation, it behooves the medical profession to reduce, where possible, health care costs to patients, taxpayers, hospitals, and the government — but only if there is *not* a concomitant decrease in the quality of medical care. It is the purpose of this paper to prove that by performing meniscectomies as an outpatient procedure in a selected population (ie. those patients who have no medical contraindications to outpatient surgery), definite economic (and other) advantages can be obtained without compromising the quality of the health care.

METHOD

The medical records of 87 patients who underwent knee arthrotomy and meniscectomy only at the Victoria General Hospital between 1973 and 1980 inclusive were studied. By design, in order to minimize the possible complications arising from inter-surgeon operative techniques and experience, all but one patient were operated upon by one Orthopaedic Surgeon and his residents. The charts of these patients were then randomly selected by the medical records staff.

Whether the patient had the meniscectomy as an outpatient or an inpatient procedure did not affect the operative protocol — only the type and site of the incision varied (as the situation warranted) but this did not relate to whether or not the patient was admitted. The costs involved in the use of an operating theatre (including nurses and technicians), anaesthesia, recovery room, and dressings are independent of the patient's status with respect to admission. In addition, the professional fees of the attending orthopaedic surgeons, anaesthesiologist, radiologist, and pathologist are the same for either group of patients. After the operation itself was finished, the patient was moved to a nearby recovery room until he or she was sufficiently recovered to be discharged (outpatients) or returned to his or her hospital bed (inpatients).

RESULTS

Table I presents some of the characteristics of the patient populations. There was very little difference in the sex and age make-up of the two groups.

TABLE I

SOME CHARACTERISTICS OF PATIENTS HAVING MENISCECTOMIES

Characteristics	Type of Patient	
	Outpatient	Inpatient
Sex:		
Male	39 (88.6%)	35 (85.4%)
Female	5 (11.4%)	6 (14.6%)
Average Age	37.8 years	37.3 years
Age Range	15-58 years	15-64 years

Table II presents figures identifying which meniscus was removed. Four lateral and zero medial menisci were found to be cystic. The medial meniscus was removed more than 5 times as often as the lateral meniscus (83.7% vs. 16.3%) when all meniscectomies were considered. As well, the right knee (45.4%) was involved almost as often as the left knee (54.6%). All of these figures are in agreement with those commonly reported in the literature.[1,2]

TABLE II

SITE OF MENISCECTOMY

Type of Meniscectomy and Site	Type of Patient		
	Inpatient* (n=41)	Outpatient (n=44)	Total
Lateral:			
Left knee	2	6	8
Right knee	2	4	6
Total number	4	10	14
Medial:			
Left knee	22	17	39
Right knee	16	17	33
Total number	38	34	72

*One of these patients had both the medial and the lateral menisci removed from her left knee.

Table III shows the average length of stay (LOS) in hospital for all patients undergoing meniscectomies. For all inpatients, the average LOS was 6.6 days. This is similar to the data published by Statistics Canada which states that the average LOS for excision of the semilunar cartilage of the knee joint is 5.3 to 7 days;[3,4] in the United States, the

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50th percentile for LOS for this operation is 5 days, the 75th percentile is 6 days.[4] The average LOS for those inpatients who had no medical problems other than that for which their meniscectomy was performed was 5.45 days. However, those individuals who had meniscectomy performed as an outpatient procedure averaged only 0.24 days within the confines of the hospital.

A breakdown of some of the commoner costs accrued during the patients' LOS in hospital are examined in Table IV. The charges accumulated by an inpatient range from 3.3 to 6.3 (an overall average of 3.8) times as much as those accumulated by an outpatient. Table V depicts the fact that a patient undergoing a meniscectomy as an inpatient procedure visits the Orthopaedic Outpatient Clinic (post-

TABLE III

DATA ON LENGTH OF STAY

Type of Patient	Average Length of Stay	Range of Length of Stay
Outpatients (n=44)	5 hours 47 minutes (0.24 days)	2 hours 57 minutes to 10 hours 45 minutes (0.12-0.45 days)
Outpatients Admitted* (n=2)	1 day 12 hours 47 minutes (1.53 days)	1 day 1 hour to 2 days 35 minutes (1.04-2.02 days)
Inpatients Uncomplicated** (n=34)	5 days 10 hours 48 hours (5.45 days)	2 days 19 hours 12 minutes 50 12 days (2.8-12 days)
Complicated*** (n=7)	14 days 1hour 43 minutes (14.07 days)	7 days to 22 days (7-22 days)

*This group consists of the two patients who were originally operated on as outpatients and were subsequently admitted for observation due to post-operative complications.
**This group includes those meniscectomy patients who had no other medical problems.
***This group includes those meniscectomy patients who had other medical problems which could have increased their length of stay.

TABLE V

POST-OPERATIVE ORTHOPAEDIC CLINIC VISITS

Type of Patient	Total number of Visits to Clinic	Average number of visits per patient	Cost* Per Patient
Outpatients (n=44)	17	0.39	$ 6.24
Outpatients Admitted** (n=2)	0	0	0
Inpatients			
Uncomplicated*** (n=34)	54	1.58	$25.28
Complicated**** (n=7)	19	2.71	$43.20

*Based on a cost per outpatient clinic visit of $16.00
**This group consists of the two patients who were originally operated on as outpatients and were subsequently admitted for observation due to post-operative complications.
***This group includes those meniscectomy patients who had no other medical problems.
****This group includes those meniscectomy patients who had other medical problems which could have increased their length of stay.

TABLE IV

COST OF COMMON PROCEDURES DURING PATIENTS' STAY IN HOSPITAL FOR MENISCECTOMY

Procedure	Cost per Procedure	Average cost per Outpatients (n=44)	Outpatients Admitted* (n=2)	Inpatients Uncomplicated** (n=34)	Inpatients Complicated** (n=7)
CBC and Differential	$ 8.50	$ 8.50	$ 8.50	$ 15.25	$ 26.71
Chest X-ray	12.50	—	—	5.15	10.71
Drugs	.66	.31	2.99	1.84	3.28
EKG	13.50	—	—	3.57	11.57
SMA-12	6.00	—	6.00	6.53	11.14
Urinalysis	2.00	2.00	2.00	1.88	3.71
VDRL	1.50	—	1.50	1.50	1.50
TOTAL	$ 44.66	$ 10.81	$ 20.99	$ 35.72	$ 68.62

*This group consists of the two patients who were originally operated on as outpatients and were subsequently admitted for observation due to post-operative complications.
**This group includes those meniscectomy patients who had no other medical problems.
***This group includes those meniscectomy patients who had other medical problems which could have increased their length of stay.

operatively) from 4.05 to 6.95 (an overall average of 4.55) times as often as does the individual who had the meniscectomy performed as an outpatient process; the cost per patient per clinic visit therefore also ranges from 4.05 to 6.95 times as much for an inpatient as for an outpatient.

Table VI presents the cost per average LOS. Using the data in Table III as a base, the average cost of a meniscectomy performed as an out-patient procedure is $73.26. Inpatient meniscectomies, on the other hand, are an average of $2031.02 higher (with a range of $1583.54 to $4202.48).

TABLE VI

COST PER AVERAGE LENGTH OF STAY (BASED ON DATA FROM TABLE III AND THE CURRENT COST OF $304 PER HOSPITAL DAY.)

Type of Patient	Average Cost	Range of Cost
Outpatients (n=44)	$ 73.26	$ 37.37-$ 136.17
Outpatients Admitted* (n=2)	$ 465.92	$ 316.67-$ 615.38
Inpatients Uncomplicated** (n=34)	$ 1656.80	$ 815.20-$ 3648.00
Complicated*** (n=7)	$ 4277.74	$ 2128.00-$ 6688.00

*This group consists of the two patients who were originally operated on as outpatients and were subsequently admitted for observation due to post-operative complications.

**This group includes those meniscectomy patients who had no other medical problems.

***This group includes those meniscectomy patients who had other medical problems which could have increased their length of stay.

DISCUSSION

Approximately 20,000 meniscectomies are performed in Canada every year, making this a very common orthopaedic operation.[3,4] Complications arising from this surgery are very uncommon[1,2,5,6] and they relate to factors intrinsic to the operation and not to the patient's status as an outpatient or an inpatient.

An outpatient meniscectomy is contraindicated if the patient is in poor health, has a bleeding disorder, has a past history of thrombophlebitis, or has previously experienced complications with anaesthesia or surgery. In any other patient who requires a meniscectomy, male or female and young or old, consideration should be given to performing the procedure as an outpatient. Should an operative or a post-operative complication arise, the surgeon still has the option to admit the patient for observation and skilled nursing care. In fact, Tables III, IV, and VI show what happened to two patients treated in this manner. These patients came to the VGH for an outpatient operation, developed post-operative pain severe enough to warrant admission, and were subsequently discharged — their total hospital stay averaged 1.53 days. This LOS of only 1.53 days is a minimum of 4 days less in hospital than the LOS for patients undergoing meniscectomy as an inpatient operation. Using the data from Tables IV and VI, this difference in LOS is reflected in the financial burden of health care — tremendous economic savings could be realized if those patients who otherwise had no contra-indications for outpatient surgery (the group we have labelled "inpatients — uncomplicated") had their meniscectomies performed as an outpatient procedure retaining the option of admission post-operatively as required.

Of the total of 207 meniscectomies performed at the VGH in 1980, 93 (44.9%) were done on an inpatient basis. However, not all of the other 114 inpatients were operated on as outpatients. Some (no figures recorded) were patients from another area hospital who had the procedure performed at the VGH and were then returned to the other hospital to complete their convalescence. Of the inpatients in our survey, 82.9% (34/41) were free of complicating factors — assuming this group to be representative of all 93 patients (supported by Tables I and II), 77 of the 93 inpatients of 1980 were also free of problems which could have necessitated an increased LOS. Overall, this means that $156,388.54 extra was incurred in 1980 for pre- and post-meniscectomy inpatient care when these same patients might have been operated on as outpatients. (This figure underplays the true situation, however, since some of the other 114 patients were actually inpatients).

In addition to being economically attractive, McCue *et al*[5] elucidate other advantages to outpatient procedures: the operation causes less disruption to the patient, the patient is allowed to convalesce in the comfort of his or her own home, and the hospital staff and beds are freed for patients who require skilled nursing care. All outpatients at the VGH are not only discharged with medication for post-operative pain, but also with written and verbal instructions which include how to do straight leg raises and other quadriceps exercises.

Outpatient operations are also important in that the patient necessarily takes a more active role in his rehabilitation. Perhaps this is one of the major explanations for the data in Table V. As stated, meniscectomy inpatients average 4.55 more visits to the Orthopaedic Outpatient Clinic than do those meniscectomy patients who had their surgery as outpatients.

CONCLUSION

Outpatient meniscectomies can be as safe to perform as inpatient operations. This may result in considerable saving to a participating hospital. Also important is that hospital staff spent time caring for patients who could just as safely looked after themselves in their own homes. On a broader scale, theoretically, the Provinces could have saved $15,638,854.00 in 1980 by performing meniscectomies, unless otherwise contraindicated, on an outpatient basis. □

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Diet and Migraine Headaches in Children

A PRELIMINARY STUDY

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INTRODUCTION

In the approach to the management of migraine headaches in children, emphasis is placed on the identification of triggers which may precipitate the headache. These triggers include stress, fatigue, trauma, exercise, illness, diet, menses and birth control pills. Even with this emphasis identification is generally unsatisfactory.

Often the easiest trigger to identify, and therefore modify, is diet. Some of the many foods implicated include alcohol, cheese, chocolate, citrus fruits, spiced and preserved meats, chicken liver and foods rich in monosodium glutamate. Most studies suggest that only a small proportion of childhood migraine is due to dietary factors. Current reports on the role of tyramine rich foods in the induction of migraine are controversial.

Since dietary control is both a common and controversial approach to the management of childhood migraine, this preliminary study examines some aspects of the role of diet in the management of migraine in children.

SUBJECTS AND METHODS

The records of all recent (within the past three years) migraine patients (common and classical) seen in the office of two Halifax pediatric neurologists were reviewed. There were 142 patients — 69 from office A, and 73 from office B. The patients selected for the study were those who had been placed on an elimination diet by the neurologists. These included 24 of 69 patients (35%) from office A, and 31 of 73 patients (42%) from office B. The presence or absence of an allergic condition in the child was also noted.

The parents of the 55 patients were sent questionnaires, with an accompanying letter explaining the purpose of the study. The patients from office A had been placed on a simplified exclusion diet which eliminated the following foods: chocolate, cheese, nuts including peanut butter, cola drinks and highly spiced foods. Patients from office B were on a more extensive diet which eliminated cheese, tea, coffee, cola, nuts, chocolate, sausage, highly spiced meats, pizza, various fruits, and foods containing monosodium glutamate.

The questionnaire asked the parent to list the foods they had omitted from their child's diet. This information was used to check whether the originally prescribed diet was followed. The parent was also asked to determine subjectively whether the diet changed their child's headaches in either frequency or severity. They were also asked to note whether they thought diet played a role, and if so, which foods could trigger the headache.

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RESULTS

As noted, 55 questionnaires were sent out; of these, 8 were returned by the post office. Three weeks later, unreturned questionnaires were followed up with a query by telephone. On completion, 38 of the 47 patients (80%) in the study had returned questionnaires. Of those completed, 16 were from office A and 22 from office B.

On analysis of the 55 original patients who were mailed questionnaires, 11 of the 24 patients (46%) from office A were noted to have an allergic condition and only 3 of 31 patients (10%) had allergies from office B.

TABLE I

Office	Number of Patients		Total
	with allergy	no allergy	
A	11	13	24
B	3	28	31

When asked about the effects of the diet on the child's headache, with regard to frequency and severity, the answers were as noted in Table II.

TABLE II

	Office A	Office B
No response	1	4
More frequent and severe	0	1
Less frequent and severe	7 (43%)	15 (68%)
No change in frequency or severity	8	2

Combining the two, headaches were improved in 57%.

The parents were then asked if they felt diet played a role in their child's headache. The following table shows their responses. One parent from office B did not respond to this question.

TABLE III

	Office A	Office B	Total
Diet does play a role	7 = 43%	14 = 66%	21 = 54%
Diet does not play a role	9 = 53%	7 = 33%	16 = 43%

Among those who thought diet played a role in their child's headache, each parent was able to identify a food or foods. Of those 21 parents who thought diet played a role in their children's headaches, the following table lists the number where each food was implicated as a trigger.

TABLE IV

1. chocolate	12
2. hot dogs or preserved meat	9
3. cheese	11
4. cola drinks	5
5. peanut butter	3
6. gum	1
7. chips	1
8. mushrooms	1
9. coffee	1
10. bananas	1
11. pizza	2
12. nuts	1
13. milk	1

DISCUSSION

Certain foods have been implicated as a cause of headaches ever since the times of Hippocrates. The writings of Hippocrates note that milk and wine are contraindicated for those who suffer from headache.[2] The search for a scientific basis to this claim has intensified over the past decade and yet no conclusive answer is available.

The etiological factors responsible for the changes in cerebral blood flow remain uncertain. There are hypotheses adhered to by those who recommend diet as management for the migraine patient. One theory states that at least a portion of migraine sufferers have an inherited or acquired defect in the activity of the enzyme monoamine oxidase (MAO)[7] which is responsible for the deamination of many vasoactive substances. Another explanation is that certain individuals have a particularly sensitive cerebral vasculature to circulating amines such as tyramine. A further theory[7] is that some migraine sufferers have an inherited deficiency in the enzyme responsible for sulphate conjugation of tyramine.

The vasoactive substance which is most commonly implicated as a "trigger" to migraine attacks is tyramine. Experimentation by Sandler's group reports that there is a decrease in MAO activity during the headache episode which causes a rise in tyramine concentration. Other vasoactive amines have been implicated in the pathogenesis of migraine. In one study[2], 75% of those questioned linked chocolate ingestion with their headache. Investigations by Sandler's group[7], found a "highly significant" decrease in phenylethylamine oxidizing ability in migraine patients compared with control patients.

Elimination of tyramine and phenylethylamine containing food stuffs might be a simple remedial diet, but unfortunately the list of dietary vasoactive amines has grown longer, while opposition to this rather simplistic theory has become greater. Other vasoactive amines include octopamine in citrus fruits, 5 hydroxytryptamine in bananas and pineapple, and histamine in meat extracts.

Of practical interest is the effect of oral tyramine ingestion on migraine sufferers. About 5% of migrainous patients have attributed their headaches to foods rich in tyramine.[5] Of these susceptible patients, Hanington *et al.*[2], showed that about 70% will develop a headache after oral ingestion of tyramine. These results and the fact that tyramine will induce hypertension and headaches in patients exposed to MAO inhibitors[4], further support the MAO deficiency hypothesis. In disagreement with these findings, when experiments using a double blind clinical trial further evaluated this tyramine induced headache hypothesis, no significant increase in migraine attacks were noted.[5]

A further double blind study[6] used patients who had previously noted that headaches regularly occurred after the ingestion of small amounts of chocolate products. This study concluded that even among this highly selective group, chocolate was rarely implicated as a precipitant in migraine. In a study by Medina and Diamond[4] in which migraine patients were placed randomly on one of three diets (tyramine free, tyramine rich, and a no restriction diet), those patients placed on the tyramine rich diet (containing high levels of tyramine, phenylethlyamine, dopamines, and nitrates) did not have an increase in severity of headaches nor a significant increase in frequency of headaches. These authors concluded that tyramine does not seem to be an important substance in relation to migraine.

In addition to the above critisms of the "tyramine induced migraine", Jessup[3] also points out the long and variable delay between the ingested suspect food and the migraine attack. This timing which was noted in Sandler's and Hanington's studies are not typical of a pharmacological effect. Jessup[3] further pointed out that the time delay before the headache (up to twelve hours from the time of food ingestion) fits the characteristics of a learned taste aversion rather than a pharmacological response.

With these considerations in mind, it was thought worthwhile to reevaluate the role of diet in the child with migraine. This retrospective study was designed as an initial step. One must interpret the results with caution.

In order to be able to evaluate precisely the effect of any management therapy, whether it be with drugs or diet, one needs to have a well controlled study. Obviously this is not possible retrospectively. This requirement has been further handicapped in this study by the looseness in which the diet was either prescribed or adhered to. Of the patients for whom diets were prescribed by the neurologists, no two parents were found to be eliminating exactly the same foods from their child's diet. Such confounding variables make analysis and interpretation very difficult. Further studies must therefore be more strictly controlled.

An allergic mechanism has been proposed[1] as the basis for at least some migraine headaches. This study determined the frequency with which the presence of such an allergy had been used as the basis for prescription of diet therapy. It was found that of the patients given a prescribed diet, 46% from office A and 10% from office B were allergic individuals. Hence, not only was there a considerable difference in the diet prescribed, but also the criteria used for prescribing the diet. Since too few of the allergic

patients returned questionnaires, any further analysis of this subgroup was not possible.

One variable that is hard to evaluate in migraine is to the placebo effect of any treatment including the value of the mere visit to the neurologist, and confirmation that the headache is benign process. It is interesting to note that a total of 21 of the 38 patients (57%) thought their headaches got better after using the elimination diet. As noted above, this figure is rather high and doubtless includes a considerable placebo effect.

Below in table V are the foods listed in a much larger, adult study[2], which were implicated as triggers for their migraine headaches.

TABLE V

chocolate	75%
cheese and dairy products	48%
citrus fruits	30%
alcoholic drink	25%
fatty fried food	18%
vegetables, especially onions	18%
tea and coffee	14%
meat, especially pork	14%
seafood	10%

It is of interest that of the foods implicated as "triggers", all those excluded in the less strict diet of office A were implicated as trigger agents more than once. These foods include chocolate, spiced meats, cheese, cola drinks and peanut butter. Other foods excluded in diet B were less often implicated so that it appears as though the more rigorous diet has only a limited further benefit.

In conclusion, in the light of the recent criticisms of the dietary approach to migraine, while further controlled clinical trials must be completed in order to evaluate whether elimination diets are actually of value, the relief afforded to over 50% of children with migraine whether due to placebo or dietary response is an impressive result and has the added benefit of being completely safe. □

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What Makes a Good Doctor?

Times have changed since a young doctor upon graduation from medical school could immerse himself immediately into the perils and pleasures of a country practice.

The Dalhousie Medical School has provided hundreds of physicians with the basic ingredients of medical knowledge and skills required to cope skillfully and conscientiously with the incredible variety of problems that face the family physician. Two authors submit important contributions in expressing their views on the training of family practitioners.

Dr. Carlyle Phillips emphasizes the shortcomings that he experienced personally. The lack of training in special fields such as Ear, Nose and Throat, Ophthalmology, Dermatology and Psychiatry were important deficiencies, but so was the absence of any background in the organization, management and political aspects of a busy practice. No one has told him how to deal with difficult patients. Nonetheless, although Dr. Phillips adjusted to his problems of enthusiastic study and diligent application of common sense, he recognizes the need for a comprehensive training scheme. He acknowledges the desirability of a resident training program in Family Medicine such as that reported in this journal by Dr. Murray Nixon.

In this article Dr. Nixon outlines the current status of the Dalhousie scheme. Over ninety physicians have completed this plan which enables successful participants to complete a certification examination.

The elegant offices of Fenwick Towers and Gerard Hall are a far cry from the battlefields of general practice. It was individual effort, determination, adaptability and personal integrity which were the most important ingredients that enabled Dr. Lamont MacMillan[1] to cope successfully and happily with the exigencies of country practice in Cape Breton for over thirty years. Yet his residency in General Practice consisted of a locum for two and a half months in Lunenburg. Grim determination and resourceful personality saw him trudging through the snow, riding by horseback or snowmobile to deliver hundreds of babies at home, and the glow of many a lantern lit his pathway to his patients homes. He became so involved in the local community that his life became a legend, woven into the rich tapestry of Cape Breton history.

Each generation of doctors brings new demands which reflect the changing social scene and differing political pressures. In my father's day at the turn of the century, medical training at the London Hospital brought the young medical students in touch with the cruelities of poverty and disease which fringed the glories of the British Empire. "On the district" in Whitechapel, he delivered some 100 babies in two weeks amongst the sordid back streets of London. After "dressing wounds" and completing house surgeon's or physician's jobs in the maze of human suffering, the young doctor of those days could buy a practice or become apprenticed to a veteran practitioner.

A couple of generations later, doctors training in the Second World War were exposed to unusual opportunities. At St. Mary's Hospital, Paddington, London, for instance, you could watch any one of six different operations being conducted in a single Emergency Ward (from a thoracotomy to varicose veins) whilst taking call as a fire watcher. Alternatively, you might be involved with facio-maxillary injuries, fractures, burns and multiple injuries evacuated from Europe or, on the other hand, you might have the good fortune to be a member of the first penicillin unit in the world and watch the miracle of a few thousand units of penicillin curing the incurable. Some students were even involved in assisting to clear up the carnage of Belsen — the concentration camps in Germany were in desperate need after the holocaust. There was certainly no shortage of clinical experience.

The conditions in general practice today do not resemble the more leisurely times when the country doctor carried out his rounds in style, made house calls and often expected his wife to make a diagnosis, dispense the medicines and answer the telephone. Life has become more technical, less personal, and everyone is more critical expecting only the best solution no matter the cost.

Nonetheless, the family physician is still the backbone of our medical service and we must endeavour to provide the best scientific training and medical expertise that will suit them to conditions that will exist in the future. Whether this is by a residency training program or some other combination it still leaves room for individual motivation, enthusiasm, and characteristics of many physicians of previous eras. □

B.J.S.G.

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A Personal View of Family Medicine Training

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The medical school at Dalhousie University has had the reputation for its high quality training of students planning a career in general practice. That the medical school has, in fact, been preparing its students to do general practice is, in my opinion, a myth. True, a large percentage of graduates have entered general practice but this in no way implies that the students were adequately trained for the needs which are unique to general practice. If the medical school did train students to do general practice, then it must have been prior to my graduation in 1961.

The philosophy of the medical school today is to produce a non-differentiated physician. My interpretation of this is that, upon completion of the clerkship, all students who graduate were to have an equivalent basic training regardless of what field of medicine they ultimately entered. My feeling is that this situation has always existed at Dalhousie. Prior to 1974 when graduation occurred at the end of the internship, training received by those of us entering general practice was the same as those entering specialties. Yes, I learned to treat pneumonia and congestive heart failure, and to deliver babies, but there was minimal or no exposure to areas which are vital to family medicine. My training in such areas as ENT, opthalmology, dermatology and office psychiatry, was extremely inadequate. There was absolutely no time devoted to such areas as the management of a practice, the business and financial aspects of practice, the hiring and firing of office personnel, consulting properly, using the telephone, establishing suitable office records, involving allied health professionals, dealing with difficult patients, and helping patients and their families coping with chronic handicaps, death and dying, etc. If Dalhousie has been producing high quality general practitioners, then why were these essential areas not taught?

Having spoken to many physicians in the past twenty years, I have concluded that there are several ways in which one can become a general practitioner. The majority, it would seem, are doing so by *choice;* but there are many people in this field of medicine by *default.* In other words, if they had had a choice, they would have chosen a specialty or some other branch such as research or administration. It is my firm belief that this group of physicians represents one of the most unhappy lot of practitioners in our profession. The reasons why these people are in general practice might include failure to meet standards required to do specialty training, or those who attempted specialty training but failed to complete their training for whatever reason. There are a few who entered general practice with the intent to get some experience, planning to return for specialty training at a later date, but who became "locked into" a situation from which they were unable to escape. Lack of finances was a major deterrent to many. (It would be of interest to compare specialists to general practitioners as a group regarding the degree of satisfaction or dissatisfaction with their choice of specialty.)

The practice of family medicine has been tremendously rewarding for me, an experience which, I hope, is being enjoyed by all physicians. However, my first five years of practice were a different story. I was extremely uncomfortable in many situations which I discovered to be part of every-day practice. With refresher courses, reading, discussion with colleagues, learning from patients, etc., I eventually became more skilled in dealing with these situations, and the practice of medicine then became enjoyable which it should have been in the first place.

Also, my knowledge in dealing with the hard core of ambulatory medical problems was grossly inadequate. Like everyone else who came through the Dalhousie system, my training was hospital-based, provided by specialists. The types of problems to which I was exposed generally were severe and chronic, the emphasis of the discussion being disease or organ orientated. The depth of knowledge I was expected to acquire paralleled that of the specialist which which often was inappropriate for my needs as a future family doctor. The specialist naturally confined his teaching to his specific area of interest and consulted with other services whenever a different problem arose, no matter how minor. Because of this approach, I missed seeing comprehensive care. These minor medical problems were often of a similar nature to those I see now in my office. Because of this approach in my training, I resorted to x-rays, blood tests, consultations, many of which were unnecessary, resulting in a tremendous cost to our health-care system and adding to the patient's discomfort. This unfortunate experience was and still is preventable. I hear from speaking with various specialists that they have considerable criticism about the kind of care provided by many family doctors. Does the quality of care parallel the quality of training received? We are a product of the system.

These are a few of the reasons why I am personally committed to residency training in family medicine. These doctors need to be just as competent in their discipline when they enter practice as is the surgeon or the obstetrician. The primary care physician must be prepared to make decisions with a high degree of expertise in situations which are extremely difficult. How often have we been caught by patients lightly referring to a symptom as they were about to leave the office which later turned out to be something serious? There is great difficulty in assessing complaints of neurotic patients. Not infrequently serious problems get missed. The family physician must be confident in dealing with psychosocial problems. To identify and help families during difficulties, one must understand something about the function of a normal family; understand fully the natural history of common illnesses and healing processes, be critical of health-care

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screening of all ages, and know how to implement this into one's practice.

These are just a few of the many skills which the family physician needs and which must be addressed in the curriculum. In 1982, at a time when the physicians' public image is at its lowest ever, we must be aware of the attitude of the public towards doctors. The patient, like any consumer, has become more vocal and is critical of the kind of service she/he gets. Patients are objecting to the loss of control and decisions which are made unilaterally, and more people are requesting treatment outside of the hospital where they do have control. The clinical clerks are always amazed at the frequency with which patients are involved in the decision-making process such as whether or not she/he will have a test done. Most state that in the hospital this is rarely seen. When a patient is given options, the clinical clerk is often surprised at the choice the patient makes.

It is impossible for anyone to be competent in everything. The family physician, therefore, must know the skills of other health professionals and know when to consult them. The indications for consultations in my own practice changed considerably over the years, with the pattern of consultation tending to decrease in some areas but increase in others. This should result in a higher level of satisfaction to the consultant, reducing cost to the health-care system, producing a satisfied consumer and, hopefully, reducing unnecessary drug prescribing. The family medicine resident receives training in both urban and small community practices. This enables him to compare practices in areas which have minimal consulting services, x-rays, and lab tests, with areas where such services are plentiful. In both situations the residents see how members of the allied health professionals work as a team.

It is unfortunate that our present fee system penalizes one for providing high quality patient care. There is no question that the faster one sees patients, the more money there is to be earned. Currently, there are communities which are underdoctored and the patients' needs demand that doctors see seventy-five to one hundred patients a day. Having at times practised when I saw fifty patients a day, the frequency referral for consultations, blood tests, etc. was much higher than it was when I saw my usual thirty/thiry-five patients a day. I needed the laboratory to help me make the diagnosis because there was inadequate time to assess the problem properly. Patients with emotional problems were treated with tranquilizers rather than helping them deal with the underlying problem. It is very difficult to place a dollar value on a specific service such as sorting out a vague problem like fatigue, recurrent abdominal pain, or headaches. Diagnosis might be straightforward, but the management is often extremely difficult.

I appeal to everyone in the health-care system, including those who control the purse strings in government, to take a fresh look at the training requirements of the family physician. The Faculty Intern Committee, a sub-committee of the Medical School Curriculum Committee, recommended in 1980 that the rotating internship was inadequate training for family practice. Some teachers in the major specialties have stated that graduates ought to have six months of additional training in their specialty after internship. That would mean two and one-half years. In Canada the family medicine residency training programs recommends one year of training after internship. It has been suggested that additional training in obstetrics, emergency medicine and anesthesia, taken as a third year, should be considered by those who plan to practise in remote parts of our country. I predict that it will be shown that the cost of additional training will result in reduced costs to the health-care system, with more appropriate use of x-rays, blood tests, and consultations. Also, participation in the politics of medicine should be greater. The family medicine residents are required to prepare topics and conduct seminars which help them to become more comfortable speaking in public.

Please be assured that it is not the intent of the residency training program to produce mini-internists or mini-psychiatrists. It is our intent purely and simply, to assist our young physicians who choose to do family medicine to become damn good family doctors. □

The more patient pedestrians the fewer pedestrian patients.

Residency Training in Family Medicine

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Family doctors have a special type of experience which distinguishes them from other physicians. They combine being the physician of first contact for patients, with being available for any type of health problem in any member of the family, with accepting continuing responsibility for their patients even after referring them temporarily for specialist treatment.

The pattern of illness encountered by family doctors is that found in the general population with significant transient, chronic and emotional illness. In fact, the illness is at times a complex mixture of physical, emotional and social factors seen in the context of family life. Often, disease is encountered in its earlier stages before the full clinical picture has developed, and when symptoms may be more important than signs. The family doctor's relationship with patients is continuous, is often a close personal one, and is a major source of professional satisfaction.

Family doctors need special skills, such as diagnostic skills, the skills for the prevention and early detection of disease, those necessary for the assessment of the behavioural and environmental aspects of illness, and the skills essential for effective communication with patients. To assist in the development of these skills, the family doctor requires knowledge from a number of subjects, which must be selected, integrated and applied to the special problems of family medicine. The family doctor must be a skilled clinician in the assessment of symptoms, signs and common diagnostic tests. Certain skills, e.g. in the areas of obstetrics, anaesthesia and surgery are practised by many family doctors. In doing so, he/she is using skills of other specialties in the same way as members of these disciplines but within the context of family medicine.[1]

Through the combined efforts of Canadian medical schools and the College of Family Physicians of Canada, and with support from government, Canadian residency programs leading to certification in family medicine were among the first in the world to provide an opportunity for the specific training of family physicians.[2] All 16 Canadian medical schools offer residency training in Family Medicine with 800 positions in 1981-82 split between the two years.

The Department of Family Medicine at Dalhousie University offers an integrated two-year residency program in Family Medicine, accredited by the College of Family Physicians of Canada as satisfying requirements to sit their Certification Examinations. In 1981-82, the program provided 30-34 weeks in Family Practice office settings, 54 weeks in hospital settings (in Family Medicine, Medicine, Surgery, Obstetrics & Gynecology, Pediatrics, Psychiatry and Emergency Medicine), 8-12 weeks electives in both hospital and office settings, and 8 weeks vacation.

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The Dalhousie Family Medicine Centres are modern clinical facilities, housed on the ground floor of Fenwick Place, at Cowie Hill, and at Gerrard Hall adjacent to the Halifax Infirmary. During the 22 weeks in the Family Medicine Centres, residents participate in the care of families under the supervision of family physician teachers and also participate in regular seminars on problems presented in family practice. In the second year, 8-12 weeks are spent working with a Community Residency Supervisor in his/her practice, in a setting possibly similar to that of the resident's future practice.

94 physicians (one-quarter coming from this medical school) completed full Family Medicine residency training at Dalhousie from 1971 to 1981. 46 (almost one-half) entered practice in the Maritimes (31 in Nova Scotia and 15 in New Brunswick). The Maritimes therefore gained 22 family doctors who came from other parts of Canada to do their Family Medicine residency training at Dalhousie and remained to practice. □

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The Canadian Centre for Occupational Health and Safety

WHAT IT IS, AND HOW ANY PHYSICIAN CAN USE IT

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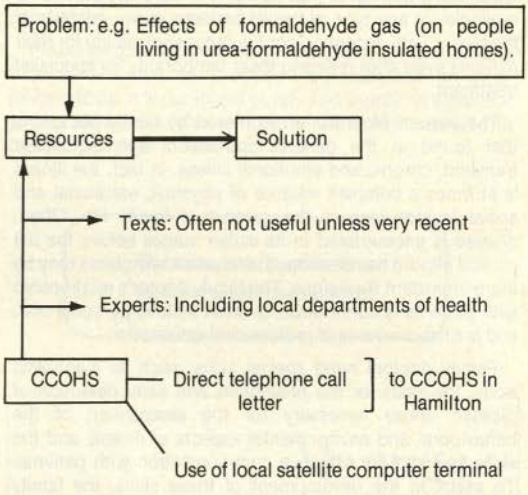
How many general or family practitioners reading this article have had patients complain at one time or another of illnesses that may be related to their occupation, for example, dermatitis or a lung problem or vague neurological signs? The answer is doubtless, most, but if the complaint is a problem, how is the problem solved? It is one thing to know what the ailment is and be able to connect it with the workplace and perhaps even to suspect a specific causative agent, but how does one identify exactly what is going on with respect to that agent and the patient's health? What resources does the physician have to help elucidate the pathophysiology involved in an occupational illness? Indeed, it is often necessary to understand, for example, some chemistry, toxicology, exposure limits and so on in order to be able to treat the patient and to help prevent further exposure to a toxic chemical. At the same time one must remember that occupational hazards include not only chemical substances, but physical, biological *or* chemical agents.[1]

The purpose of this article is to outline a newly available and accessible resource that could be of great use to any physician faced with an occupational health problem. The resource is the Canadian Centre for Occupational Health and Safety (CCOHS).

Let us suppose that a patient comes to you, the family physician, with what appears to be an upper respiratory tract infection with headache, rhinitis and conjunctivitis. Being astute, you suspect that it may *not* be due to a cold and enquire further regarding the patient's occupation and lifestyle. You find out that he lives in a house recently insulated with ureaformladehyde foam. Something "clicks" in your mind and you connect the "U.R.I." with formaldehyde, but are in a quandary as to what to do next. Do you treat? Do you prevent? *How* do you prevent? What if you do *nothing*?

The broad spectrum of resources that the general physician might use have been discussed previously[2,3] and are outlined in the schematic.



WHAT IS CCOHS?
(The Canadian Centre for Occupational Health & Safety)

As illustrated above, it is a *resource* in the form of a computerized data base that is easily accessible by any citizen, but by its very nature should be of greatest use to physicians.

The Canadian Centre for Occupational Health and Safety (CCOHS) was established by an Act of Parliament in April 1978, the purpose being to promote the fundamental right of Canadians to a healthy and safe working environment by creating a national institute concerned with the study of, and co-operative advancement of matters relating to occupational health and safety. Although the centre is supported by Federal funds, it is not an agency of the Federal Government.

In May 1980, approval was granted by the CCOHS's council of governors to provide an information service, i.e., a computerized data base. This was provided by the International Occupational Safety and Health Centre (CIS), an arm of the International Labour Organization. The computerized data base encompasses an entire system devoted to gathering, analysing and storing information on occupational health and safety. The information contained in this system is obtained by scanning more than thirty thousand documents annually relating to national and international information on work place hazards and the means of dealing with them. The selected documents are then entered into the international data base by the staff manning the national centre, the Canadian Centre for Occupational Health and Safety, located in Hamilton, Ontario.[4]

In addition, the Centre ties in with NIOSH, the National Institute for Occupational Safety and Health, a U.S. — based organization which fosters research into occupational health and safety. The tie in comes in the form of the computer tape for the NIOSHTIC data base, bibliographic in

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format, and containing 80,000 journal articles on occupational health and safety. In addition to giving CCOHS this data base, which is expanding at the rate of 10,000 articles per year, NIOSH will be giving CCOHS access to its current research and trade names data base as well as making its professional staff available to CCOHS to help answer enquiries.[5]

In an attempt to provide a more accessible information service, satellite networks are being established. A satellite consists of a computer terminal connected by telephone line directly to the CCOHS in Hamilton. Nova Scotia is the third area in Canada to acquire the service (Hamilton itself and Yellowknife, N.W.T. being the other two). The Nova Scotia terminals are located respectively in the Department of Health offices in Halifax, and in the office of the Atlantic Foundation for Occupational and Environmental Health in Sydney. Future terminals are to be located in Sorel, Quebec,; Vancouver; Edmonton and Winnipeg.[6] It was originally hoped to have computer terminals in every province by the end of 1981, but this has not yet, apparently, come to pass.

AVAILABILITY

This service is available to anyone with a legitimate interest in occupational health and safety. Some of the identified users include:

Government departments and agencies, professional groups, workers, unions, employers, employers' associations and the public.

SYSTEM ACCESS

The system is made available to physicians in the Maritimes by contacting the following location by mail, telephone or in person:

Data Research
Nova Scotia Dept. of Health
Occupational Health Division
1690 Hollis Street, 7th Floor
P.O. Box 488, Halifax, N.S.
B3J 2R8

or by telephoning:

(902) 424-6660 — Jim LeBlanc, Occupational Hygienist
Occupational Health Division
Nova Scotia Dept. of Health

(902) 424-8692 — Jean O. Nickerson
Occupational Health Nursing Consultant
Occupational Health Division
Nova Scotia Dept. of Health

(902) 424-4281 — Wendy Reid,
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Program Development Evaluation Division
Nova Scotia Dept. of Health

The Atlantic Foundation for Occupational and Environmental Health may be similarly utilized as a resource by writing the Foundation at:

75 Dodd Street
Sydney, Nova Scotia
B1P 6J1

or by telephoning: (902) 562-5532

What this means is that any professional faced with an occupational health problem can obtain local help, *without a great expenditure of time,* towards solving the problem. Alternatively, one may write or telephone the CCOHS directly (Ms. Judy Biggin, Inquiry Co-ordinator) in which case the response from Hamilton may consist of one of the following:

a) a bibliography in microfiche or paper;
b) data sheets supplied to CCOHS by companies or unions;
c) "direct" information based on the expertise and knowledge of CCOHS staff;
d) referral to other expert agencies or people.

One can contact the Centre directly by using the following address:

Canadian Centre for Occupational Health & Safety
McGregor Clinic
250 Main Street E.
Hamilton, Ontario
L8N 1H6 Telephone: (416) 527-6590

There are three factors that may benefit Health Professionals utilizing the system either through a satellite in Halifax or Sydney or directly (Hamilton) and these are as follows:

1) The response is rapid.
2) The system may be used at no cost to the user (at least at the present time).
3) The system, being somewhat underutilized as it is at present will be "moulded" by the queries of health professionals if these become the major users, and this should be to their subsequent advantage.

At any rate, the system is a definite boon to Canadian physicians and should be considered as important a source of ready recent information for solving problems as would be an up-to-date textbook or a personal consultation with an expert. With such a powerful tool at our disposal, there is no excuse for any of us saying "I'm sorry, I can't help you."

Where is the answer to the sample problem on formaldehyde exposure, you say? Now you *know* the answer! □

References

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2. Cappon I D and Cappon P S. Occupational Health and the Family Physician, Part I: Definition and resources *Can Fam Physician* 1982; **28:**329-333.
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4. Atherley G. "President's Third Report to the Council of Governors 1980". Canadian Centre for Occupational Health and Safety 1980.
5. At the Centre; Canadian Centre for Occupational Health and Safety, December 1981, Vol. 4, No. 3.
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7. Internal Memorandum, Nova Scotia Department of Health, Occupational Health Division, August 7, 1981.

Doctor Extraordinary

Marguerite G. Steele,

Middleton, N.S.

Now that the new wing to Soldiers' Memorial Hospital in Middleton is nearing completion, I would ask my readers to go back with me, in imagination, to an era following World War I when a group of our town fathers gathered together to consider the choosing of a fitting monument to commemorate the men of this area who had paid the supreme sacrifice. Through the dedicated efforts of these men, Soldiers' Memorial Hospital came into being! For many years the old hospital had served faithfully and well but, due to the advent of the RCAF base at Greenwood (6 miles east of Middleton), it soon became apparent that a larger and more up-to-date hospital was a necessity. So once again a ways and means committee went into high gear and, on a particular day in 1961, the corner stone to the New Soldiers' Memorial Hospital was laid. Standing among the spectators that day was a tired and weary doctor. A friend standing beside him was heard to remark, "Doctor, you will soon have a new hospital in which to work." He replied, "Maybe I will be like Moses; allowed to see the promised land but never permitted to enter!" But, happily, he was privileged to enter and he continue to practise for eight additional years.

I regret that it seems necessary, in this case, to single out one particular dedicated life. I am sure there have been many others deserving of recognition.

Gratitude is the memory of a glad heart! As I gaze upon the inscribed bronze plaque affixed to the door of room #222, my heart is gladdened because friends and patients of Dr. Hugh Edgar Kelley, M.D., C.M., by their freewill offerings, had paid tribute to him while he was still active among us. The setting apart of this room is most meaningful to me inasmuch as I am persuaded that the project was divinely inspired. Its accomplishment was an incredible activity. The required $3,000.00 was acquired within a period of two weeks. During the entire time Dr. Kelley remained unaware as to what was happening. A miracle to be sure! The project was so enthusiastically received and the fund was oversubscribed to such an extent, it was possible to purchase an incubator for use in the nursery of the hospital.

Dr. Kelley came to Middleton during 1929. Up against the stiff competition of three well established practitioners, it was tough going for him during those lean years when, for the most part, his patients were categorically listed as "Poor, financially!" During this period it was rumored that the compassionate doctor would remove the remaining dollar from his pocket to buy medicine for a suffering patient. Undaunted by his humble beginning, Dr. Kelley lived to see his practice grow to a point where his services were in constant demand. In births alone he attended the delivery of five thousand and eight babies. And, incredible as it may seem, he could call each child by name. He will be remembered as one of the last of the family doctors. As a general practitioner, he gave of himself unreservedly. Years before modern equipment kept the highways open, Dr. Kelley spent many a winter's night travelling by car, horse, sleigh, and on snowshoes, to reach a patient living in many an inaccessible area. Hundreds of calls were made in this manner, without hope or concern of monetary reward. A man of quiet speech, calm and even-tempered, his very presence shed the quality of healing. It would be impossible to assess his contribution to society in the healing of mental and physical disorders. Perhaps it is sufficient to say that, after forty years of dedicated and sacrificial service, his name is legend. Dr. Kelley had no time to indulge in social pleasures. His sense of humor, his appreciation of an interesting human yarn, and his delight in reminiscing over numerous and unexpected situations, contstituted his chief enjoyment.

On April 11, 1969, the soul of Dr. H. E. Kelley, M.D., C.M., "Crossed the Bar." A great man, a beloved Doctor, a genial and upright citizen, and a friend to all, had been called to his eternal home. In his eulogy, the Reverend Fred Archibald said, "On one of my visits to the Kelley home, during the doctor's terminal illness, I found him engaged in the study of French. When I asked 'why' he replied, 'I am studying the language that I may be of greater service to my patients living in the Greenwood area.'" This is a further example of the dedication of the man.

And, so *My* eulogy comes to an end. Room #222, and the incubator, were tributes given at a time when Dr. Kelley could appreciate receiving them. Now they remain as monuments; symbols which reflect the unselfish dedication of a doctor, unique in devotion to those to whom he ministered. □

NEW MEMBERS

The Physicians listed below have joined The Medical Society of Nova Scotia between April 1, 1982 and June 30, 1982. A most cordial welcome is extended by the Society.

BARBER, L.E.	Digby
BUCHHOLZ, K.P.W.	Annapolis Royal
BUTLER, G.J.	Kentivlle
ERNEST, G.P.	Liverpool
GIBB, G.I.R.	New Glasgow
GIBSON, R.J.	Dartmouth
*GILLIS, A.M.	California
*HENDERSON, J.M.	Ottawa
HOSKIN, A.E.	Halifax
LINCE, D.P.	Yarmouth
LO, FRANK	Halifax
MYATT, G.L.	Bedford
MACKENZIE, M.A.	Antigonish
SMITH, J.D.	Porter's Lake
SRIHARSHA, H.V.	Yarmouth
SULLIVAN, J.A.	Bedford
THAKKER, KIRIT	Halifax

Personal Interest Notes

Ms. Ann D. Nevill, Librarian at the W.K. Kellogg Health Sciences Library, Tupper Building has written to thank the Society for the yearly contribution from the Cogswell Library Fund Investments. She also writes — "It may interest your members to know that the Hannah Institute for the History of Medicine has recently completed a microfiche reproduction of all Canadian medical journals, 1826-1910. We have purchased this, using Cogswell funds, and expect delivery within the month."

Dr. Nuala Kenny has worked steadily for the past seven years to develop a regional Paediatric Service for the whole of Nova Scotia. In addition, she has enthusiastically organized a "Care by Parent" program which enables parents to become an integral part of the sick children's care whilst in hospital. She takes her skills and understanding to her new appointment as Director of Medical Education in Toronto Hospital for Sick Children. This enables her to contribute to the biggest paediatric training centre in North America.

Dr. Carlyle Phillips, Director of Dalhousie Family Medicine Centre, was awarded the above title for his services to the college and outstanding contributions to students and the general community.

The VII Pan American Wheelchair Games will be held in Halifax this summer from August 20th to the 29th. **Dr. Basil J. S. Grogono,** our own Editor, is Games Chairman. As a former medical director of the Canadian Wheelchair Sports Association, he is well qualified for the position. He was a member of the organizing committee for the 1967 Pan American Games for Wheelchair athletes in Winnipeg. He has gained much administrative experience as medical director of the Wheelchair Games in Argentina (1969), and Jamaica (1971), and served on the medical committee of the Toronto Olympiad in 1976. We all wish Dr. Grogono and the Games every success.

RESEARCH GRANTS

Dr. Philip Welch and **Dr. Elizabeth Winsor** have been funded by the National Cancer Institute for their study on leukemia. They are working with doctors **L.A. Fernadez, G.R. Langley** and **J.M. MacSween,** together with **Dr. Ford Doolittle** from the Biochemistry Department, of Dalhousie University. The grant amounts to $270,362 and forms part of the 21 million dollar program instituted by the National Cancer Institute.

Dr. Ingrid Sketris has received support for a program to educate primary school children about poisons.

Over half of adult Canadians have contracted or have been exposed to various strains of Cytomegalovirus. The significance is not fully known, but it is thought that the agent may be responsible for birth defects, skin eruptions and cold sores. **Dr. Juan Embil** and **Dr. Sandra McFarlane** will spend some $86,000 investigating this fascinating problem.

Dr. Alexander Leighton, Dalhousie University has been awarded $45,088 in federal funds for a study of the prevalence of different categories of psychiatric disorders across a large study population. Using data collected over an extended period of time, he will examine the emergence of psychiatric problems at various time intervals and death rates associated with psychiatric illness. This is important research for the planning of psychiatric services.

Two Dalhousie University medical researchers, **Dr. Gerald C. Johnston**, a geneticist, and **Dr. Richard A. Singer**, a biochemist, have been granted $197,790 by the Medical Research Council of Canada for a three-year-long study of the control of cell division.

1982 DALHOUSIE UNIVERSITY FACULTY OF MEDICINE CONVOCATION

Graduation exercises were held on May 21, 1982, when 96 students received their M.D. degrees. Of this class 59 were from Nova Scotia, 23 from New Brunswick, 6 from Prince Edward Island, 2 from Newfoundland, 2 from Quebec, 2 from British Columbia and 2 from the United States.

One student, **Dr. Patricia Kim Dauphinee** of Shelburne, Nova Scotia received her degree in a different manner. At a pre-convocation reception President MacKay made a deal with Patty that if she delivered on May 21, he would personally go to the Hospital and confer the degree. Thus

Dr. Patricia Daphinee shown holding Baby Bentley and her Medical Degree as (from left to right) Dean J. Donald Hatcher, President W. A. MacKay, Mr. Robert Bentley and Dr. Byron Reid look on.

on May 21 at 5 p.m., President MacKay in company with Dean Hatcher, Dr. Byron Reid and others, Dr. Dauphinee was granted her degree with the same pomp and dignity afforded other members of her Class. In attendance were her husband Robert Bentley, and their baby boy, Major Eleanor Johnson, Executive Director of the Hospital, who made the arrangements for the ceremony, Mrs. G. MacKay, R.N., Miss Barbara Hinds, Miss Barbara Blauvelt and a reporter and photographer from the Halifax Herald. It was a very moving experience for those who attended and a historic moment as this was the first such degree granted at the Grace Maternity Hospital to anyone's knowledge.

Honorary Degrees were presented to **Dr. William A. Cochrane,** former Professor and Head of the Department of Paediatrics and Chief Physician at the I.W.K. Hospital for Children; **Mrs. Nora Balders** of Halifax who is the Vice-Chairman of the Dalhousie Medical Research Foundation and to **Mr. William M. Sobey,** Chairman of the Dalhousie Medical Research Foundation. A total of 99 degrees were granted making this the largest number of graduates in the history of the Faculty of Medicine, Dalhousie University.

Prize Winners at the Convocation

David Bruce MacDonald, Halifax, N.S.	Dr. C.B. Stewart Gold Medal; Dr. J. W. Merritt Prize for highest standing in Surgery over the four years, Lange Company Book Prize and the Dr. John F. Black Prize for highest standing in Surgery
Siân Elizabeth Iles, St. Andrew's, N.B.	Dr. Clara Olding Prize for the highest aggregate in fourth year; The Andrew James Cowie, M.D. Memorial Medal for highest standing in Obstetrics and Gynaecology; the Lange Company Book Prize and the Dr. John F. Black Prize for highest standing in Surgery.
Andrew Donald Lynk Halifax, N.S.	Dr. Clara Olding Prize for the highest aggregate in fourth year; the Dr. G.B. Wiswell Prize for greatest distinction in Paediatric studies in fourth year; Poulenc Prize for highest standing in Psychiatry in fourth year.
Kathleen Lynn Flemming, Halifax, N.S.	The Dr. G.B. Wiswell Prize for greatest distinction in Paediatric studies in fourth year.
Allan Murray Cook, Halifax, N.S.	The Dr. W. H. Hattie Prize in Medicine and the Prize in Medicine for highest standing in Medicine.
Cyril Blake Gilks Fredericton, N.B.	The Dr. S.G.B. Fullerton award in Family Medicine.
Kenneth Bruce Sutherland, Bridgewater, N.S.	Dr. A.F. Miller Prize for elective work in Respirology.
Hugh MacPherson Parsons Hudson, P.Q., and **Anne Karen Trollope,** Sherbrooke, P.Q.	Department of Surgery Essay Prize
Howard Ward Murdock, Truro, N.S.	Dr. Frank G. Mac Prize in Urology
Katherine Sue Robinson Halifax, N.S.	Dr. Lawrence Max Green Memorial Award

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TEL-MED SYSTEM

If you live in Cape Breton, you can now dial a tape and select any of the several hundred programs now available. Subjects vary from alcohol, birth control, death and dying, divorce, parents talk, preganancy and sexuality.

The idea of a taped information service originated in San Bernardino, California and has become a great success in the United States where 350 branches are in action. The program is available by phoning 539-4480, Monday to Friday, from 9:00 a.m. to 8:00 p.m. This is the first of the Tel-Med Services in Canada and, no doubt it will lead to other centres providing instant medical information to the public. □

OBITUARIES

Dr. Martin S. MacDonald (63) died on May 2nd., 1982 at the Dartmouth General Hospital. Born in North Sydney, he received his MD, CM, from Dalhousie Medical School in 1945. He was a member of the Canadian Army Medical Corps and served overseas. He practised in Glace Bay and in Sydney before opening his practice of Medicine in Dartmouth in 1955. Our deepest sympathy is extended to his wife and family.

Dr. Alan K. Stokes (50) of Freeport, Digby Co., N.S. died June 5, 1982 in Freeport. Born in England, he graduated from The London Hospital in 1963 with his medical degree. He practised in England and in Saskatchewan before coming to Nova Scotia. Our sympathy is extended to his family.

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