



GRANTS ACROSS CANADA

Since it was first set up in 1972, Sick Kids Foundation has been granting funds for child health research not just at the Hospital but also across Canada. We are the only hospital foundation in Canada that has a national grants program -- it is a testament to the vision of the Foundation's founders that they realized the importance of investing in child health research across Canada. This expansive vision of the contribution Sick Kids Foundation could make in Canada complements the internationally recognized research which takes place at the Hospital. Indeed, we draw on the expertise of Sick Kids' international renowned leaders to inform the investments we make.

This past year, the Foundation invested \$2.7 million nationally. We invest in research in areas in which no one else in Canada is funding, as well as building Canada's research capacity by funding researchers at the beginning of their careers when project funding is difficult to obtain. Through support of conferences and networks, the Foundation insures that the results of research are shared with the wider community – parents, clinicians, policy makers and the public.

Building the Capacity for Child Health Research in Canada:

Through the three programs below, the Foundation is making a significant contribution to the development of child health research capacity nationally and making sure that the young researchers we invest in have opportunities to use their talents to benefit all Canadian children.

New Investigator Awards

The Foundation invested \$1.6 million on New Investigator awards in 2003/04, to support researchers within the first six years of their research careers. The Foundation is partnering with the CIHR's Institute of Human Development, Child and Youth Health on this grants program. Through this program, the Foundation is not only funding important research into a number of critical child health issues, we are also helping to build Canada's capacity for research and prevent "brain drain" to other countries – an investment in future child health research in Canada.

Canadian Child Health Clinician Scientist Program

When health care providers caring for children are also engaged in research, the research questions they ask are more likely to be informed by the problems they see every day. And the results of these highly relevant research studies will begin to be applied in clinical care much more quickly. Recognizing the central role of the clinician-scientist in the optimization of child health and the prevention and treatment of disease, The Foundation is funding a national network for training clinician-scientists (at \$300,000/year). Through the program, which has 13 participating sites, individual trainees will engage in a

common multi-disciplinary curriculum, be mentored by world experts and have the opportunity to engage with one another at regional and national symposia.

Duncan L. Gordon Fellowship

Through the Duncan L. Gordon Fellowship Program, The Foundation improves the care of children by enabling trainees who have just finished their PhD or physician-training to further advance their skills in patient care, teaching and research. This thirty-two year old program has provided vital post-doctoral funding for many of today's leaders in child health in Canada (including 3 of 16 current Chairs of Paediatrics in Canada). We continue to fund exceptional individuals through this program.

Developing new knowledge in specific areas:

The Foundation has two focused grants programs in areas in which no one else is investing in Canada. Through these programs, we have funded innovative and exciting projects. In both cases, we have committed \$400,000/year for these ground breaking grants programs.

Children, Youth and Home Care

When we hear the term "home care" we tend to think of elderly people. But an increasing number of children and youth who have a short or long term illnesses and/or disabilities receive professional care in their homes or other community settings where they grow and develop. And the needs of children and youth – and their parents and siblings -- are very different from those of adults. Research is needed into when it is safe to care for children in the home rather than in hospital; how best to design and fund paediatric home care systems; what ethical issues arise for families and health care providers caring for a sick child at home; and how to evaluate the effectiveness of various home and community care programs. Over the past four years, Sick Kids Foundation's investment in this area has facilitated the creation of a national network of researchers, policy makers and practitioners interested in paediatric home care, called the Children and Youth Home Care Network (CYHN). Using the expertise of the Network, the Foundation is funding research, doctoral awards, advocacy, and conferences in children and youth home care. In 2005, the Network will be hosting the third national forum on children, youth and home care which will bring people from across the country to discuss areas of concern and learn from one another. For more information on the Children and Youth Home Care Network, go to our website at www.cyhn.ca.

Complementary and Alternative Medicine

We know that children – particularly children who have significant health challenges – are being administered a variety of complementary therapies including acupuncture, chiropractic treatment, naturopathy, herbal medicine, use of vitamins and certain diets, homeopathy, massage, and various mind-body healing practices. In many cases, we do not know if these treatments are effective, safe, or how they interact with conventional therapies – there is not a lot of research on many of them, and this is particularly true in the paediatric population. Sick Kids Foundation is the only granting agency in Canada funding in the area of Complementary and Alternative Health Care with a specific focus on children. The Foundation is investing \$400,000/year into research, research training, workshops, and the development of a national research network. In December, 2004, The

Foundation will be hosting a national meeting which will showcase the research funded to date in this area.

Making sure the research reaches the community: Conference grants

Parents of children who have particular diseases or health challenges frequently want to organize conferences at which they can meet one another and share information and the latest research, as well as have health professionals and researchers come and speak with them. The Foundation supported thirteen such conferences in 2003/04, making sure that research and clinical experience is shared with the people who need it most – parents of children affected by a particular disease or condition.

NEW PROJECTS FUNDED IN 2003-04

Below is a list of all of the grants the Foundation has made through the National Grants Program in the past year. If you would like more information on any of our grants programs, please e-mail us at <national.grants@sickkids.ca>.

New Investigator Research Grants

Induction of Innate Immunity Against Genital HSV-2 Infection via TLR3 Signaling, Dr. Ali A. Ashkar, McMaster University, \$120,500 over two years

The majority of microbes enter our body via mucosal surfaces, including herpes simplex virus type 2 (HSV-2) and HIV. HSV-2 is the agent that causes the most common viral sexually transmitted disease among adolescents in North America and worldwide and yet we do not have an effective vaccine or innate protection against HSV-2 infection. At least 7% of Canadian adolescents are positive for HSV-2. Use of an effective hormonal contraception, Depo-Provera, is very common among adolescents. However, this form of contraception significantly (3 times) increases the rate of HSV-2 shedding from genital tract and makes them more susceptible to sexually transmitted diseases. Currently there is no effective vaccine for HSV-2. In this project, the researchers will study the effects of a substance which mimics the virus genetic material, on the natural defense system against HSV-2 in the genital tract. Results of these studies will contribute to our understanding of the natural defense system against sexually-transmitted virus infections and could lead to novel prevention and or treatment of HSV-2 infection in neonates and adolescents.

Regulation of MafF by Cytokines in Uterus and Placenta, Dr. Volker Blank, Lady Davis Institute for Medical Research/Jewish General Hospital, \$81,600 over two years

About one third (10, 000/year) of all preterm births in Canada are associated with bacterial infections which cause preterm labour. Preterm babies face a higher incidence of brain, lung and metabolic disorders so understanding and preventing infections that cause preterm labour is crucial. These infections also cause elevated levels of cytokines – a signaling molecule in reproductive tissues which is important for fetal development and birth – in the uterus and amniotic fluid. MafF, a regulatory protein, is strongly activated by cytokines. This research, on the regulation of MafF by cytokines, will result in a better understanding of the processes regulating fetal growth and labor. This study will help in the development of novel therapeutic strategies to diagnose and treat gestational disorders leading to preterm labor, fetal prematurity, fetal and maternal morbidity and mortality.

The Roles of Arginine, Nitric Oxide and Blood Flow in Small Intestinal Adaptation in the Neonatal Piglet, Dr. Janet Brunton, Memorial University of Newfoundland, \$116,713 over two years

Infants and children with digestive diseases sometimes require surgery to remove a large proportion of damaged small intestine. Shorter intestines are less capable of digesting and absorbing nutrients resulting in a high risk for nutrient deficiencies and growth failure. Commonly, life long intravenous nutrition is the only

resource to sustain life. The objective of this research is to identify nutrients that might stimulate small intestinal growth and function. There is evidence that the amino acid arginine (a component of all dietary proteins) acts in this manner. A component of arginine, delivered into the small intestine following surgery, may enhance the recovery and growth of the intestine. If successful, this enhancement of gut function will reduce the need for intravenous nutrition, and support the transition to a 'normal' diet.

Reliability Study of Non-Invasive Assessment of the 3-D Trunk Asymmetry in Adolescent Idiopathic Scoliosis, Dr. Farida Cheriet, Hôpital Sainte-Justine Centre de Recherche, \$129,680 over two years

Adolescent idiopathic scoliosis is a complex deformation of the spine and more globally the trunk. Since scoliosis typically progresses during the adolescent growth spurt, patients are regularly monitored with X-rays during these years. However the cumulated radiations from X-rays are hazardous for the long-term health. This exposure could be reduced and the frequency of visits increased with a reliable assessment of the scoliotic deformity using a non-invasive analysis of the external trunk surface. The general objective of this research proposal is to develop a reliable, clinically useful system suitable to quantify the external asymmetry from the 3D non-invasive reconstruction of the trunk surface in order to document the trunk deformity of scoliotic patients. If successful, the research will provide the right index to diagnose, detect, and follow the progression of scoliosis.

A Prevention Strategy to Reduce the Incidence of Injury in High School Sport: A Cluster Randomized Clinical Trial, Dr. Carolyn Emery, University of Calgary, \$78,960 over two years

Participation in physical activity by adolescents has significant implications for individual and public health benefits. Sports are the leading cause of injury requiring medical attention in Canadian adolescents and basketball is one of the top three injury producing activities in adolescents. The purpose of this research is to assess the effectiveness of a prevention strategy in reducing sports injury in high school basketball. The specific strategy to be examined in this research is a six-week home-based balance training program in addition to a sport specific balance training warm-up routine in high school basketball. Follow-up for participation and injury data will continue throughout the five month basketball season.

The Search for an Optimal Bladder Substitute, Dr. Walid Farhat, The Hospital for Sick Children, \$130,000 over two years

There are a variety of diseases that cause bladder failure and some of the diseases will unfortunately necessitate urinary bladder replacement. The search for a bladder substitute have failed to date due to the fact that tissue engineered substitutes are permeable to urine, which leads to inflammation, fibrosis, and shrinkage. The objective of this research is to develop an engineered tissue hybrid for bladder replacement. The results from this study will have a significant impact on the field of bladder tissue engineering and further the efforts in development of a suitable and versatile bladder replacement.

The Role of the Zinc Finger Transcription Factor Krox-26 in Developmental Defects of Tooth and Enamel Formation, Dr. Bernhard Ganss, University of Toronto, \$86,300 over two years

Tooth defects in children occur with high incidence. Defects in tooth development and the resulting malformations have a strong negative impact on the physiological and psychological health of children. The majority of tooth defects affect the tooth enamel surface and are responsible for increased susceptibility to tooth decay. The normal development of teeth is regulated by the co-ordinated expression of certain genes at the right time in the right place. Genes are switched "on" or "off" by proteins known as transcription factors. Enamel is formed by highly specialized cells during development, but little is known about the molecular or genetic mechanisms that control how these cells form or how they produce specific enamel material. Enamel defects cannot be repaired by a natural process after tooth eruption and, thus, a more detailed understanding of the molecular mechanisms that regulate enamel formation is urgently required to prevent or treat these developmental defects. This research may help to develop future gene therapy strategies for the repair and regeneration of enamel that is lost to dental caries and other forms of tooth decay.

Pain Behaviours in Extremely Low Birth Weight Infants, Dr. Sharyn Gibbins, Sunnybrook & Women's College Health Sciences Centre, \$91,838 over two years

Existing pain measures do not include extremely low birth weight infants (ELBW). We have little understanding of the physiological, behavioral and biochemical pain responses in a population of infants who receive the most number of painful procedures. This study will involve 50 infants who will be observed twice

within the first week of life. The first observation will occur during routine care (such as diaper changes or positioning) and the second observation will occur during a regularly scheduled painful procedure (such as an intravenous start). Physiological, behavioral and biochemical data will be collected before, during and immediately following the observation period. The results of this study will assist practitioners in identifying the physiological, behavioral, and biochemical responses to pain in a vulnerable, non-verbal population, since the identification of pain is the first step towards appropriate management.

Illness to Wellness: Building Health Capacity for Youth with Spinal Cord Injuries, Dr. Donna Goodwin, University of Saskatchewan, \$49,950 over two years

The purpose of this research is to explore the meaning given by youth with spinal cord injuries to physical activity opportunities during the two-year period following injury. The rehabilitation process for youth with spinal cord injuries is a complex interplay of family, rehabilitation staff, community organizations, and personal redefinition. The research will be designed to build health capacity at the individual, family, community, and hospital organizational level by understanding the role of physical activity in independence, self-reliance, self-efficacy, disability identity development, and the return to previous activities. The study will further our understanding of the transition that occurs as youth move from the medical model of acute care for spinal cord injury to a model of health promotion and long term wellness

High Affinity Receptor of IgE (FceRI) in Airway Smooth Muscle Cells, Dr. Abdelilah Soussi Gounni, University of Manitoba, \$130,000 over two years

Asthma is the most common chronic disease in children and its prevalence has dramatically increased over the last four decades. Asthma affects approximately 10% of the pediatric population and remains the most common cause of any chronic disease for Emergency Department visits and admission to hospital for children. A need for better understanding the basic mechanisms of the disease process is a prerequisite to the development of any future successful therapeutic approaches. It is well recognized that most asthma in children is associated with an increased synthesis of certain kinds of proteins called immunoglobulin E (IgE) antibodies. In a predisposed person, the body responds to the environmental substances - things like dust, pollen - known as allergens by producing IgE. Allergens interact with immune cells such as basophil or mast cell, and leads to activation of cell surface receptor for IgE (FceRI). This activation provokes the release of inflammatory mediators that leads, among other things, to airway smooth muscle contraction and consequently to clinical symptoms observed in allergic asthma. This research will further investigate how the IgE receptor is produced in smooth muscle cells and whether it can affect airway smooth muscle behavior in asthma.

Perinatal Steroids are Necessary for the Normal Development of the Respiratory Controller Network, Dr. Vincent Joseph, Centre hospitalier universitaire du Quebec (CHUQ), \$72,769 over two years

This research will help elucidate the role of early hormonal influences on respiratory control during early life. The researchers recently showed that in utero exposure to estradiol contributes to the programming of the respiratory control system. Since the formation of estradiol to the fetus is almost exclusively dependent on the placental synthesis of this hormone, this model may serve to explain the well known association between premature births and disabilities of neural respiratory control in a fast growing clinical populations. If a better understanding can be developed of the effects of prenatal hormonal exposure on the development of respiratory control, this research may explain the mechanisms causing respiratory instabilities observed in preterm newborn, and may also be relevant to understand some of the patho-physiological aspects of Sudden Infant Death Syndrome. Ultimately this research should lead to new strategies for the management of premature birth.

Neuroimaging and Cognitive Function in Children with Brain Tumors, Dr. Donald J. Mabbott, The Hospital for Sick Children, \$129,395 over two years

In the last 20 years, treatment for pediatric brain tumours has improved greatly and many children are cured. Unfortunately, children who are treated with radiation experience a decline in the intelligence. This decline is likely due to damage to the brain from the life saving radiation, although the exact relationship between the brain damage and the decline in intelligence is not known. The part of the brain that is damaged is the white matter and white matter is important for communication and normally grows considerably in childhood. This research will investigate whether damage to white matter slows down communication in the brain and causes the decline in intelligence. This research will help to identify children with brain tumours who are at greatest

risk for later learning problems, which is important so that they can be provided with early education support. The overall goal of this research is to reduce the burden of radiation treatment and improve the quality of life for children with brain tumours.

Understanding Respiratory and Mucosal Allergy Using an Ex Vivo Lymph Node Model, Dr. Bruce Mazer, McGill University, \$129,176 over two years

Diseases such as asthma, rhinitis and food allergies are caused by IgE antibodies. These antibodies are produced by cells known as B lymphocytes, but in order to produce IgE, B-lymphocytes receive signals from several other cells in structures known as lymph nodes. At present, there are no human tissue-based models that allow us to study the regulation of IgE production against common substances such as dust mites, ragweed or peanuts in a milieu with all cells and structures of intact lymph nodes. Tonsils, which are lymph nodes within respiratory tissues, are ideal tissues for studying IgE regulation. This research will culture the tonsil tissue taken from children who have had elective surgery with common allergens including dust mites, ragweed or peanut and then look at the interactions of B-lymphocytes with other cells in the lymph node, in order to determine if we can turn on and turn off the production of allergy antibodies. Understanding the cells and mediators responsible for IgE synthesis will help develop treatment strategies aimed at preventing allergic diseases in children.

Improving the Effectiveness of Brace Treatment for Adolescent Scoliosis, Dr. Marc J. Moreau, University of Alberta, \$76,640 over two years

Scoliosis is a three-dimensional deformity caused by lateral curvature of the spine with vertebral rotation within the curve. This lateral curvature affects the rib cage and presents as a deformity of the trunk. Scoliosis is usually detected between age ten and skeletal maturity, with girls comprising around seven of every ten cases. Bracing is the most commonly used non-surgical method for the treatment of scoliosis. The purpose of brace treatment is to arrest curve progression during the high-risk growth period of early adolescence and to reduce ultimately the number of surgeries. Brace treatment is a big commitment: it may require a patient to wear the brace for 22 hours per day and for up to 2 years. To be effective patients must wear their braces frequently as well as to the appropriate tightness; however, most brace wearers do not adjust the brace tightness after it is donned and brace effectiveness also varies during daily activities. An intelligent brace system which has been designed by the research group will be added to a standard brace. The intelligent system consists of a microcomputer, force transducer and a force feedback component. This proposed work will help brace candidates wear their braces more effectively and hopefully receive the most benefit from brace treatment. If successful, this research will help brace candidates wear their braces more effectively and thus receive the most benefit from this treatment. As a result, brace wear times may be reduced, decreasing internal deformity, which would result in a better cosmetic appearance, and ultimately reduce the number of surgeries.

Role of Oxidative Stress in Utero Programming of Hypertension, Dr. Anne Monique Nuyt, Hôpital Sainte-Justine, \$129,910 over two years

Hypertension related cardiovascular diseases represent one of the leading causes of morbidity and mortality in North America. The inverse relationship between birth weight and the risk of adult hypertension and cardiovascular diseases has been termed "fetal programming". Programmed hypertension is associated with increased activity of a hormonal system called the rennin-angiotensin system and with blood vessel dysfunction. In hypertensive adults, there is in the vessels an increased amount of molecules called reactive oxygen species. These molecules are generated during normal cell metabolism but when in excess can be detrimental. This occurs when there is enhanced production (while breathing high concentration of oxygen or after stimulation by angiotensin) or when there is insufficient antioxidant capacity of the organism. Low birth weight infants have an increased susceptibility to oxidative injuries, which have been hypothesized to lead to long-term cardiovascular consequences. The researchers will investigate whether the role of rennin-angiotensin in programming of hypertension is mediated by oxidative stress from early-on in life. The studies planned will further our understanding of the mechanisms of "fetal programming" and can lead to specific measures aiming at preventing risks associated with altered intra uterine environment (such as identification of important classes of nutrients or timely use of antioxidants).

Effect of Postural Control Devices for Preschoolers on Child Performance, Family Functioning and Caregiver Assistance, Mr. Stephen Ryan, Bloorview MacMillan Centre, \$104,860 over two years

Young children with disabilities who live at home usually rely upon their parents and other family members for help with everyday tasks. This dependency often increases with age and results in heavy demands on parents that can lead to debilitating personal problems and strain family relationships. Mothers of children with disabilities tend to be at higher risk as they tend to be the primary caregivers. Assistive technology for children shows promise as a supplementary strategy for providing caregiver relief in the home. In particular, special body positioning devices - such as adaptive floor seats and toileting devices - allow children to do more activities on their own. This study will look at mothers of preschoolers with cerebral palsy to see if postural control devices used in the home improve child performance, improve family life, and reduce caregiver assistance. Positive outcomes of this research may influence healthcare professionals, parents of children with physical disabilities and third party payers to consider these devices as an important way to improve child performance and family life.

Epigenetic Approaches to Identifying Autism Susceptibility Genes, Dr. John B. Vincent, Centre for Addiction and Mental Health, \$129,550 over two years

Autism is a serious concern in terms of prevalence, morbidity, outcome and cost to affected families and to society. Autism spectrum disorders have a population prevalence of 30 per 10,000. By this estimate, 192,000 Canadians suffer from autism spectrum disorder. The contribution of genetic factors to autism is well established, and it is believed that a number of genes in addition to environmental factors contribute significantly to the disease risk. This project aims to identify susceptibility genes for autism spectrum disorder. The identification of these susceptibility genes will contribute significantly to our understanding of the underlying biochemistry and neurobiology that lead to the disease, and will assist in the development of new and more effective treatments. This will ultimately lead to a reduction of the devastating effects that autism has on the affected child and his or her family.

Bone Mass and Growth Following Necrotizing Enterocolitis, Dr. Wendy Ward, University of Toronto, \$86,236 over two years

Infants born prematurely are susceptible to necrotizing enterocolitis (NEC). This is an inflammatory disease that severely damages the intestine and can result in death. There is no effective treatment and prolonged intravenous feeding or surgery is often required because of the damaged intestine. The overall incidence of necrotizing enterocolitis (NEC) is estimated at 2-5% of all admissions to newborn intensive care units and over 20,000 infants are admitted each year to neonatal intensive care units across Canada. The exact cause of NEC is not understood, and whether survivors have a similar bone mass or remain smaller than other preterm infants who did not have NEC is uncertain. Survivors may be at risk of developing osteoporosis during later life. This study will compare bone mass and growth of survivors of NEC with premature infants who did not develop NEC to determine the extent to which this disease affects bone development. It is expected that infants who survived NEC will have a lower bone mass and experience delays in overall growth compared to infants who did not develop NEC. The information obtained from this study will lead to the development of improved nutritional interventions that promote optimal bone development and growth among preterm infants following NEC, and thereby reduce their risk of developing osteoporosis.

Home Care

Measuring Paediatric Home Care Outcomes, Dr. Peter Rosenbaum, McMaster University, \$10,000 over one year

This is a three-phase project with the ultimate goal of creating an evaluation research template which can be used by paediatric home care programs across Canada. This will make evaluation of programs easier for those who are not experienced researchers, as well as facilitating comparisons of various home care programs. The first phase of the project is to do a literature review in the area of evaluating outcomes of home care services provided to children and youth in Canada. From this literature review, an evaluation framework for paediatric home care programs will begin to be developed. In the second phase of the project experts will develop an evaluation template with key outcomes measures that may be adapted and used across Canada for pediatric home care program evaluations.

At Home in New Brunswick: Parenting Children with Complex Care Needs, Prof. Heather MacDonald, University of New Brunswick, \$5,000 over one year

The delivery of care in the home is increasing yet there is much we do not know about the impact of homecare on the family. In New Brunswick, a province that is rural in nature, little is known about homecare and the services these families receive. This grant will assist the researcher in developing a project where families providing homecare will be invited to take part in a telephone questionnaire and then some of those families will be asked to meet and talk with the researcher in their homes. This study will help us better understand what is happening in New Brunswick and to relate this to homecare in other parts of Canada.

Paediatric Palliative Care: A Comprehensive Workshop for Health Care Professionals, Hospice Caregivers and Volunteers, Ms. Laura Beaune, The Hospital for Sick Children, \$5,000

The goal of the conference is to address a knowledge gap for health care professionals and volunteers by providing specialized paediatric palliative care education. It is expected that the results of the conference will include an increased understanding of the disease process, its trajectory and the end of life experience for children and their families; an enhanced ability to evaluate and treat pain and symptoms in palliative and dying children and their families, and; an enhanced understanding of grief and bereavement issues and needs for children and families.

Ontario Rehabilitation Research Network (ORRN) Workshop entitled "Rehab Research-It's Our Move", Ms. Debra Cameron, Lawson Health Research Institute, \$6,500

This workshop brought together families, researchers, funding agencies and industry to strengthen partnerships, form networks and create the groundwork for sustainable funding in paediatric rehabilitation research. Participants discussed both existing research tools and funding opportunities available and identified opportunities for collaborative research projects.

Complementary and Alternative Health Care and Paediatrics

Evidence-Based Reviews of the Safety and Efficacy of Natural Health Products for Children and Expecting Mothers, Dr. Heather Boon, University of Toronto, \$97,675 over two years

Children, pregnant women and parents are using complementary and alternative medicine (CAM) and they are, along with their healthcare providers, are searching for high quality information on the safety and efficacy of CAM to inform use. This information is difficult to find. The CAMline website (www.camline.ca) has been developed to meet the complementary and alternative medicine information needs of both healthcare providers and consumers. The researchers will write 20 technical and lay language reviews about the safety and efficacy of natural health products relevant to children and pregnant/lactating women for inclusion on the CAMline website; and promote these reviews to these groups and their healthcare providers. The overall goal of this study is to meet the natural health products information needs of parents and expecting mothers across Canada. By providing free, easy access to objective, quality evidence-based information on natural health products these groups will be empowered to make informed decisions about their children's healthcare that will ultimately lead to better health for their children.

Complementary & Alternative Medicine: A Survey of its Use by Children & Youth, Dr. Tammy Clifford, Children's Hospital for Eastern Ontario, \$91,133.50 over two years

The use of Complementary and Alternative Medicine (CAM) by Canadian children has received little attention by way of systematic study. The lack of information, particularly as it relates to which Canadian children use CAM and why, suggests the urgent need for research because we know that many children are using these therapies yet we don't know if they are safe and whether or not they have any benefit. This study will survey selected groups of children in Ottawa and Edmonton in order to assess children's use of CAM. Specifically, these surveys will track who is currently using CAM, what kinds of CAM are being used and for what reason, surveying both children with a chronic and/or serious illness and are seen at hospital-based clinics and children who are otherwise healthy, but visit their regular doctor for scheduled "well child" visits or because of an acute illness. The researchers will then be able to identify instances where the results of the study suggest that the use of a particular CAM modality is quite high, despite little evidence to support its utility. These "mismatches" once identified, would permit research to target those areas in most need of exploration, with the eventual hope that validated CAM modalities can be incorporated into patient care.

Complementary and Alternative Medicine in the Pediatric Emergency Department, Dr. Ran D. Goldman, The Hospital for Sick Children, \$78,650 over two years

Most pediatric literature regarding complementary and alternative medicine is limited to the US and based on non-randomized self-administered questionnaires, with a low response and completion rate, that have not taken into account the non-English speaking families. The purpose of this cross-sectional study is to determine the rate of CAM use by children visiting the Pediatric Emergency Department in a large tertiary medical center in Toronto, to characterize the children and caregivers, including non-English speaking families and to determine if the visit to the Emergency Department is possibly caused by an adverse effect of CAM use or due to drug interactions with CAM. Performing the study in a large tertiary Pediatric Emergency Department in Toronto is important due to its multiethnic population, the higher rate of children with chronic diseases seen in our center and possible identification of adverse effects and drug interaction due to the use of CAM therapy.

Utilization of Alternative and Complementary Medicine among Canadian Youth, Dr. Mary Ann McColl, Queen's University, \$43,000 over two years

Current research suggests that between 2% and 15% of children and youth use Complementary and Alternative Medicine (CAM) and the percentage has increased in the past several years. The majority of these studies have been conducted with clinic-based samples and there have been few population-based studies, especially in Canada. This study addresses this gap in the research literature. The researchers will look at how Canadian youth (12-19 years) use complementary and alternative medicine and what their health and socio-demographic characteristics are. This research will provide new information describing the relationships between CAM and traditional medicine for youths.

Feasibility Study for a Controlled, Randomized Trial Comparing Ritalin and Neurofeedback Therapy in the Management of Attention Deficit Hyperactivity Disorder Dr. Liana Urichuk & Dr. Lola Baydala, Child and Adolescent Services Association (CASA), \$122,932 over two years,

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common psychiatric disorders in the childhood population, affecting approximately 3-5% of children under 18 years of age. Despite the known efficacy of ritalin in treating ADHD, there are ongoing concerns about adverse short-and long-term effects of using stimulant medications to treat ADHD. Parents commonly seek alternative therapies to stimulant medications for the management of ADHD symptoms. This research will look at whether neurofeedback (NF) therapy is effective in the treatment of children with ADHD and how it compares to the standard community treatment of medication (Ritalin) management. In order for parents to make informed decisions about alternative therapies, it is important that they have access to information about the efficacy, the expected duration, the cost of the alternative treatment, and the long-term outcomes of the alternative treatment. This study will provide valuable information about the utility of neurofeedback as a non-invasive treatment.

CAHC Masters Award, Mr. Bradley C. Johnston, University of Alberta, \$10,000 over two years

Bradley Johnson is a trained naturopath who is doing a Masters of Paediatrics at the University of Alberta. His research is in the area of probiotics -- an organism which contributes to the health and balance of the intestinal tract; also referred to as the "beneficial" bacteria which acts to maintain a healthy intestinal tract -- use in children.

CAHC Masters Award Ms. Anna Sivojelezova, University of Toronto, \$6,000 over two years

Anna Sivojelezova is enrolled as a part-time student in the Masters program in Pharmaceutical Sciences at the University of Toronto. She is studying the risks to pregnant women of taking glucosamine, a natural health product which is taken for osteoarthritis.

National Paediatric Complementary and Alternative Health Care Network, Dr. Sunita Vohra, University of Alberta, \$110,000 over three years

A grant was made to the Complementary and Alternative Research and Education Program at the University of Alberta to develop a nation network in paediatric complementary and alternative medicine. This network will facilitate the development of research, policy, and information sharing and transfer in this area. The network will be Canada-wide, multidisciplinary and inclusive.

Developing a National Vision for Complementary and Alternative Medicine (CAM) in Undergraduate Medical Education (UME), Dr. Marja Verhoef, University of Calgary, \$5,000

At this workshop, participants discussed realistic educational objectives, content, and teaching methods for all medical schools wanting to include CAM in their curriculum, as well as to help build faculty capacity to support the inclusion of CAM in undergraduate medical education. Prior work in this area documenting (a) the content and methods of CAM teaching in Canadian UME programs, (b) the opinions of faculty, medical students, and community physicians about the inclusion of CAM in UME, and (c) Canadian regulatory policies that impact on physicians incorporating CAM into their practice or referring patients to CAM practitioners, was presented.

First Natural Health Products Research Conference, Dr. Allison McCutcheon, BCIT Foundation, \$5,000

The central issue that this conference addressed is the critical need for reliable evidence and accurate information on the safety, efficacy, and quality of natural health products, as well as their usage and the impact of this usage on health care and the health care system. The session dedicated to children and youths addressed general issues such as the safe use of NHPs and determining appropriate children's dosages, as well as specific issues such as the safety and efficacy of Echinacea, and the use of probiotics to reduce antibiotic side effects.

Conferences

Child Psychiatry Day 2003, Dr. Leslie Atkinson, The Hospital for Sick Children, \$5,000

This conference focussed on the important role of infancy to mental health across the lifespan. Participants discussed the degree to which empirical findings on infant development can inform understanding of psychopathology and its treatment.

Attention and Behavioral Difficulties among Northern Youth Dr. Alan Bowd, Lakehead University, \$5,000

This conference focussed on the best approaches to prevention, early intervention and support for youth with attention and behavioral difficulties living in northern and rural Canada.

Growing up with Heart Disease Conference, 2003; Building Bridges and Sharing Expertise, Ms. Laurie Cender, Pacific Children's Heart Network, \$5,000

This conference provided education about issues related to congenital heart disease (CHD) and foster effective relationship between children, youth, families, and health care providers.

Child Maltreatment Symposium, Ms. Tina Gatt, Child Abuse Prevention Council, \$5,000

By providing information regarding the identification, reporting, and treatment of child abuse, this conference enhanced the knowledge and skills of the professional community serving children and families.

Retinoblastoma 2003: A Focus on the Future, Ms. Peggy Gronsdahl, Canadian Retinoblastoma Society, \$5,000

Canadian families with retinoblastoma learned more about this disease while providing mutual support and a sense of community, thus helping them cope with this rare childhood cancer.

The Canadian Neuro-Oncology conference, Dr. Abhijit Guha, Toronto Western General, \$2,500

Physicians, social workers, nurses, parents, and patients from across Canada discussed the state of the art treatment for patients with different types of brain tumors at this conference.

Jewish Genetic Diseases-Who's At Risk? Mr. Michael E. Meyer, The Canadian Society for the Weizmann Institute of Science, \$5,000

This one day meeting reached out to all sections of the Jewish Community to increase their awareness of the presence of Jewish Genetic Diseases which can affect their children and their community.

Parents As Partners, Annual Conference of the OAFCCD, Ms. Alison Morse, Ontario Association for Families of Children with Communication Disorders, \$5,000

The annual conference brings together families and professionals to share information about speech and language services and research as well as to strengthen partnerships.

15th Annual Project Rainbow Conference, Mr. David Neal, Reach for the Rainbow, \$5,000

This conference is designed for individuals working with children with disabilities, to increase awareness, understanding, confidence as well as providing tools and strategies for working with the children.

The Second National Conference on Asperger's Syndrome: Celebrating our Achievements, Setting Our Sights, Ms. Margot Nelles, Aspergers Society of Ontario, \$5,000

At this conference the most current research, opinions and strategies available on how to best support someone with Asperger's Syndrome were shared with participants.

1st Canadian Educational Symposium for von Hippel-Lindau Disease, Dr. Stephen Pautler, Canadian von Hippel-Lindau Family Alliance, \$5,000

Practicing physicians and patients/families affected by von Hippel-Lindau Disease attending this conference learned about the disease, its diagnosis and management.

North American Conference on Shaken Baby Syndrome, Ms. Marilyn Sandberg, B.C. Children's Foundation, \$5,000

The education given to medical professionals, prevention organizations, lawyers, law enforcement, day care providers, parents and other caregivers regarding shaken baby syndrome (SBS)/Abusive Head Injury at this conference will be used to diagnose, treat, investigate, try, and prevent cases of SBS.

Let's Talk...A National Capacity Building Conference on Children, Youth and Families Affected by HIV/AIDS, Ms. Karen Vance-Wallace, The Teresa Group, \$5,000

This conference had as its goals to facilitate the creation of a body of expertise and skills necessary to more effectively address the complex issues facing HIV/AIDS affected children, youth and families in Canada, and to develop and deliver a media campaign that assists in the development of more public awareness on issues relating to HIV/AIDS in the family.

Special Projects:

Child and Adolescent Health Research Network for Growth (CAHR-NG), Dr. Adrienne Witol and Dr. Janet Olds, Stollery Children's Hospital, \$8,000

CAHR-NG will be conducting a comprehensive analysis of current capacity in clinical research, by surveying clinicians to get a more representative idea of, among other things, who is engaging in research, what percentage of their time they are spending on it, how they are being supported by their institutions, and what barriers they are encountering. The information will provide a baseline against which to measure future research capacity and efforts to enhance it.

Editorial office of Pediatric Research, Dr. Alvin Zipursky, The Hospital for Sick Children, \$43,106 over one year

Pediatric Research is published monthly and contains articles dealing with many aspects of research into diseases and development in children. The editorial offices of this prestigious international journal were located at The Hospital for Sick Children for a five year period from 1998-2003. During that time, the Foundation supported the operating costs of the office with a yearly grant, of which this is the last year.

THE GRANTS PROCESS

The Grants Advisory Committee, a standing committee of the Board of Directors of the Foundation, establishes the policies of the National Grants Program. All of our research grants and training awards are subject to external peer review by at least three reviewers. These peer reviews insure a level of excellence in our grant making. The applications are then assessed by the Grants Review Committee, the Duncan L. Gordon Fellowship Selection Committee, the Complementary and

Alternative Health Care Review Committee or the Children and Youth Home Care Network Steering Committee. The members of these committees include scientists and clinicians from The Hospital for Sick Children, as well as representatives from the broader child health community. Informed by the peer reviews and by their own expertise, committee members rate the applications on both scientific merit and the proposed study's overall impact on child health. The Foundation's Board, or in the case of Children and Youth Home Care Grants and of Complementary and Alternative Health Care Grants, the Grants Advisory Committee, makes final funding decisions based on these committees' recommendations. Through this careful three-stage process, which draws on the expertise of many people in paediatric health science across Canada and beyond, we are confident that we fund only the very best and most promising research and trainees.

We would like to thank the following individuals who have kindly volunteered their time and expertise on these committees over the past year.

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