

EXPANDING THE EVIDENCE BEHIND NATUROPATHIC MEDICINE

CCNM's Best-in-class Research







Atlanta, Georgia, April 21–25 bjsm.bmj.com

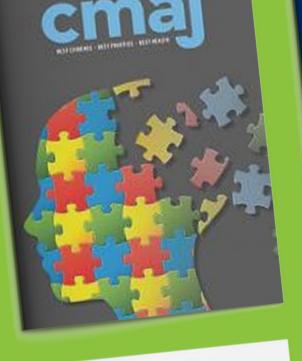
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CCNM'S RESEARCH INITIATIVES INFORM PRACTICE DECISIONS

The evidence of safety for naturopathic care has always been strong, the evidence of efficacy is becoming increasingly strong, and the evidence of positive financial benefit to the health-care system is becoming compelling.



Chronic conditions are driving significant increases in health-care costs and these conditions can, in many cases, be effectively treated by health-care providers who focus on nutrition and lifestyle. Employers are now discovering that expanded health benefits may be a path to reduced health-care expenditures.

For instance, a survey of attitudes towards naturopathic medicine in Ontario by Innovative Research Inc. found for those reporting they were seeing naturopathic doctors, 30 per cent said it reduced their visits to specialists, 42 per cent claimed it reduced their visits to their family doctor, and 29 per cent stated that it reduced their visits to hospitals. One of the most significant results was the reduction in use of pharmaceuticals where 48 per cent claimed a reduction and 11 per cent stated that the reduction was "substantial."¹

To further assess whether these changes could be expected in actual patient behaviour, we asked patients who were visiting the naturopathic clinic at CCNM how this impacted their visits to general practitioners (GPs), and 63 per cent claimed doing so reduced their GP visits. Finally, CCNM opened a new teaching clinic within Brampton Civic Hospital and we asked those patients, many of whom were new to naturopathic medicine, the same questions and the results were again very similar. Here, 77 per cent claimed coming to the clinic reduced their visits to general practitioners; 19 per cent reduced their visits to specialists; 14 per cent reduced their visits to Brampton Civic Hospital; and 59 per cent claimed it reduced their use of pharmaceuticals.²

The evidence for naturopathic medicine has a strong foundation upon which to build. As the leading institution in naturopathic medicine research, CCNM is doing just that – please read on to learn more about the College's focus on expanding the evidence behind naturopathic medicine.

"CCNM aims to be a leader and advocate of naturopathic medicine as positive change to our health, our environment and our health-care system. Research will be the driver that will allow us to do so."

BOB BERNHARDT, PhD, PRESIDENT & CEO



^{1.} Ontario Telephone Omnibus. (2011)

^{2.} Brampton Naturopathic Teaching Clinic Patient Survey. (2014)

(L-R) Dr. Kieran Cooley, ND (Class of 2003), director of research, and Dr. Monique Aucoin, ND (Class of 2012), research fellow

CCNM'S BEST-IN-CLASS RESEARCH

Our research department is a leader in advancing our understanding of complementary and naturopathic medicine as a contributor to a sustainable health-care system.



As one of CCNM's core goals, expanding research relevant to enhancing naturopathic medicine and developing skills among faculty, students, and graduates that foster research activity, is of utmost importance. Our research department is a leader in advancing our understanding of complementary and naturopathic medicine as a contributor to a sustainable health-care system.

CCNM operates in a culture of evidenceinformed clinical practice, with research results published in top-tier medical journals including *Canadian Medical Association Journal* (CMAJ), *The Lancet* and *The British Medical Journal*, as well as in leading journals specific to complementary and integrative medicine.

Members of CCNM's research team are regular fixtures at conventions and

symposia across North America and around the world, including ones hosted by the Association of Accredited Naturopathic Medical Colleges (AANMC), the American Association of Naturopathic Physicians (AANP), the Naturopathic Medicine Collaborative (NMC), and the International Congress for Complementary Medicine Research (ICCMR) to name a few.

CCNM's research department also organizes and moderates a Research Club which is an open forum for academic discussion. The Research Club is held monthly during the academic year and all students and faculty are invited to attend and discuss new research and presentations on topics relating to medicine, health care and naturopathic medicine.

In addition, CCNM hosts an annual CCNM Research Day, a conference that celebrates

high quality student-faculty research collaborations, providing opportunities for its students to showcase their involvement in research.³

CCNM's research focus has expanded to conditions and diseases representing significant health burdens for patients and the health-care system. Where there is an unmet need for treatment options, CCNM is progressing its research in key areas such as: mood disorders, family and children's health, pain management, digestive disorders, cardiovascular disease and integrative oncology.

CCNM hosts an annual Research Day that celebrates high quality student-faculty research collaboration.

Pictured (I to r): Dr. Leslie Solomonian, ND (Class of 2005), with Lauren McKinney and Owen Wiseman (both Class of 2020)



Aucoin M, Dertinger J, Zheng Q, Cooley K. The 2nd annual CCNM research day: Student research & innovation in naturopathic medicine. URNCST Journal. 2018Jan18: 2(1). DOILink: https://doi.org/10.26685/urncst.17
Dertinger J, Hassan S, Zheng Q, Bhardwaj S, Aucoin M, Cooley K. The 3rd annual CCNM Research Day: Student research & innovation in naturopathic medicine. URNCST Journal. 2019 Mar 01: 3(3).
DOI: https://doi.org/10.26685/urncst.137

CCNM is progressing its research in key areas such as cardiovascular disease, mental health, family and children's health, digestive disorders, pain management and integrative oncology

CARDIOVASCULAR DISEASE RESEARCH

Several studies in this area show reduced cardiovascular disease risk factors due to naturopathic treatments





One of CCNM's most significant and well-known research studies – involving the Canada Post Corporation and the Canadian Union of Postal Workers – demonstrated a long-term reduction of cardiovascular disease risks. The study, published in *CMAJ*, showed naturopathic treatments reduced the risk factors for heart attacks and strokes among participating postal employees. Further, that better cardiovascular health led to increased productivity.⁴

A companion economic study, published in the *Journal of Occupational and Environmental Medicine*, estimated \$1,187 per participant in direct savings, making a compelling case for incorporating naturopathic medicine into employee benefits packages.⁵ Additional studies in this series demonstrated the efficacy of naturopathic care for treating chronic back pain, rotator cuff tendonitis and anxiety.

- Seely, D., Szczurko, O., Cooley, K., Fritz, H., Aberdour, S., Herrington, C., Herman, P., Rouchotas, P., Lescheid, D., Bradley, R., Gignac, T., Bernhardt, B., Zhou, Q., Guyatt, G. (2013). Naturopathic medicine for the prevention of cardiovascular disease: a randomized clinical trial. *CMAJ*, 185(9). doi: 10.1503/ cmaj.120567
- Herman, P. M., Szczurko, O., Cooley, K., & Seely, D. (2014). A naturopathic approach to the prevention of cardiovascular disease: cost-effectiveness analysis of a pragmatic multi-worksite randomized clinical trial. *Journal of Occupational and Environmental Medicine*, 56(2), 171-176. doi: 10.1097/JOM.0000000000000066

A study with Canada Post Corporation showed naturopathic treatments reduced the risk factors for heart attacks and strokes among participating postal employees.



MENTAL HEALTH RESEARCH

CCNM's naturopathic researchers are uncovering the links between healthy lifestyle changes and mental wellness



Food for Mood Disorders

Funded by the Canadian CAM Research Fund, CCNM is collaborating with researchers from McGill University and the Centre for Addiction and Mental Health (CAMH) to develop a tool that can be used by various health-care providers to support the implementation of food-based approaches to treating various mood disorders.



Diet and Mental Health

CCNM's Chief Naturopathic Medical Officer Dr. Jonathan Prousky, ND, won first prize in the Townsend Letter's 2015 "Best of Naturopathic Medicine" competition with his study, *The Manifestations and Triggers of Mental Breakdown, and Its Effective Treatment by Increasing Stress Resilience with Psychosocial Strategies, Therapeutic Lifestyle Changes, and Orthomolecular Interventions.*⁶

As stated in this article:

Our bodies have their own unique biochemical needs that cannot be met from diet alone and demand the proper provision of micronutrient supplementation. This is where orthomolecular therapies (i.e., combinations of diet modifications and/or supplementing vitamins, minerals, amino acids, and/or essential fatty acids) can have a tremendous impact, since they can moderate symptoms of mental distress and improve a patient's capacity to emotionally (i.e., affectively) regulate. Prousky, J. (2015). The Manifestations and Triggers of Mental Breakdown, and Its Effective Treatment by Increasing Stress Resilience with Psychosocial Strategies, Therapeutic Lifestyle Changes, and Orthomolecular Interventions. *Townsend Newsletter.*

CCNM's Chief Naturopathic Medical Officer Dr. Jonathan Prousky, ND, won first prize in the *Townsend Letter's* 2015 "Best of Naturopathic Medicine" competition with his study on orthomolecular health.







Diet and Psychosis

Schizophrenia spectrum disorders (SSD) represent a cluster of severe mental illnesses. Diet has been identified as a modifiable risk factor and opportunity for intervention in many physical illnesses and more recently in mental illnesses such as depression; however, no dietary guidelines exist for patients with SSD. CCNM, along with the CAMH, the University of Toronto, and the University of Technology, Sydney, presented dietary recommendations as well as recommendations for further research including more studies that modify dietary patterns to detect mental health outcomes.⁷



Depression

Low levels of vitamin D have been associated with depression. A large multicentred trial was conducted in partnership with the START Anxiety and Mood Disorders Clinic to assess the effect of vitamin D on treatment-resistant depression. Funded by the Lotte and John Hecht Memorial Foundation, with the provision of vitamin D by Biotics Research, this study was completed and published in the *Complementary Therapies in Medicine Journal* in 2018.⁸

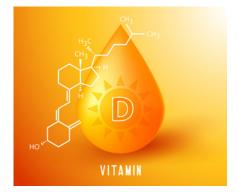


The Microbiome

The microbiome is the genetic material of all the microbes – bacteria, fungi, protozoa and viruses – that live on and inside the human body. CCNM's Microbiome Researcher is embarking on a landmark study to explore the interaction between the microbiome and maternal and infant health. This work aims to provide a better understanding of if and how our microbiome can impact post-partum maternal and newborn health, including assessing the safe use of pharmaceutical drugs during pregnancy and the impact of exposure to pesticides and insecticides. Aucoin, M., LaChance, L., Cooley, K., & Kidd, S. (2018). Diet and Psychosis: A Scoping Review. Neuropsycholobiology. doi: 10.1159/000493399

 Aucoin, M., Cooley, K., Anand, L., Furtado, M., Canzonieri, A., Fine, A., Fotinos, K., Chandrasena, R., Klassen, L.J., Epstein, I., Wood, W., & Katzman, M. A. (2018). Adjunctive Vitamin D in the treatment of non-remitted depression: Lessons from a failed clinical trial. *Complementary Therapies in Medicine*, 36, 38-45. doi: https://doi.org/10.1016/ j.ctim.2017.09.011

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FAMILY AND CHILDREN'S HEALTH RESEARCH

Improving long-term health outcomes for the communities' youngest members and their families using naturopathic medicine





Healthy Family Healthy Kids

Educational programs that target caregivers of young children have the potential to change behaviors that contribute to noncommunicable diseases, such as diabetes, cardiovascular and respiratory disease. We know that healthy behaviours established in childhood tend to persist throughout a person's lifetime. As a result, early intervention can reduce illness and death as well as lower health care costs.

Primary caregivers directly control factors such as nutrition, emotional bonding, health care approaches, and physical activity with their children. The Healthy Family Healthy Kids naturopathic education program provided prevention education to caregivers and was well-accepted over the six-week program. Future research is needed to assess the longer-term impact of the education provided.⁹ Solomonian, L., Kwan, V., & Bhardwaj, S. (2019). Group-Based Naturopathic Education for Primary Prevention of Noncommunicable Disease in Families and Children: A Feasibility Study. *The Journal of Alternative and Complementary Medicine*, 25(7), 740-752. doi: 10.1089/acm.2019.0067

The Healthy Family Healthy Kids naturopathic education program provided prevention education to caregivers and was well-accepted over the six-week program.

HEALTHY PLATE



Diabetes

CCNM, the William Osler Health System (Brampton Civic Hospital) and the Wise Elephant Family Health Team were awarded a \$418,000 grant in 2015 to assess outcomes of adjunctive naturopathic care for type 2 diabetes including blood sugar control and quality of life. Of the more than 10,000 Family Health Team patients in the study's catchment area, approximately 15 per cent present with type 2 diabetes; enabling researchers to collect and compare health outcomes related to specific ethnic and cultural groups. This study on long-term effects of care is expected to be completed by 2022.¹⁰

10. For more information on this study, please contact Dr. Kieran Cooley, ND, at kcooley@ccnm.edu.

Natural Health Products

This is the first study documenting the recommendations for natural health product (NHP) use for the pediatric population from two popular complementary medicine professions; naturopathic doctors and chiropractors. Common NHPs at standard doses are the most frequently recommended products, with use and doses adjusted according to age. High-quality evidence regarding the efficacy, safety, and dosing for NHP use in children is scarce; and development of evidence-informed pediatric guidelines is recommended, particularly for the most commonly used and recommended NHPs.¹¹

 Porcino, A.J., Solomonian, L., Zylick, S., Doucet, C., Gluvic, B., Vohra, S. (2019). Pediatric natural health products recommended by chiropractic and naturopathic doctors in Canada. *Complementary Therapies in Medicine*, 43, 196-200. doi: https://doi.org/10.1016/j.ctim.2019.02.001

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DIGESTIVE DISORDERS RESEARCH

Canadians are increasingly seeking out naturopathic and complementary care to treat digestive issues





Irritable Bowel Syndrome (IBS)

As a lead steering committee member for the International Research Consortium of Naturopathic Academic Clinics, CCNM is poised to facilitate projects that collect data from naturopathic teaching institutions globally. The first pilot project investigating naturopathic approaches for IBS is in place, helping us attest to the outcomes of care that naturopathic interns provide for this chronic, difficult to manage disorder. IBS affects 11 per cent of the population, and up to 50 per cent of patients report using complementary and alternative medicines (CAM) for it.¹² These results will inform future randomized controlled clinical trials in this area.

 Goldenberg, J. Z., Ward, L., Day, A., & Cooley, K. (2019). Naturopathic Approaches to Irritable Bowel Syndrome—A Delphi Study. The Journal of Alternative and Complementary Medicine, 25(2), 227-233.

Irritable Bowel Syndrome affects 11 per cent of the population, and up to 50 per cent of patients report using complementary and alternative medicines for it.

of the population have IBS

50%

patients use complementary medicines



PAIN MANAGEMENT RESEARCH

CCNM's research into pain management includes investigations into fibromyalgia and the opioid crisis



Fibromyalgia

Integrative approaches to chronic pain management are essential to addressing the opioid crisis in North America. Researchers from CCNM are involved in a multitude of projects synthesizing or assessing various therapies used by naturopaths and conventional providers for addressing pain.

In addition, winners of the 2019 Student Innovation Fund research grant competition, supported by Biotics Research Inc., are assessing the impact of naturopathic care being provided to patients with fibromyalgia at the Robert Schad Naturopathic Clinic.

2012

RSNC initiated the Fibromyalgia and Chronic Fatigue Syndrome (FM/CFS) Focus Shift, which has quickly become one of the busiest shifts in the clinic.

The impact of naturopathic care and fibromyalgia is being assessed at the Robert Schad Naturopathic Clinic.

Third-year students Bisleen Attli and Christilynn Guerin were the recipients of the Student Innovation Fund in 2019 for their joint research proposal on evaluating the use of naturopathic care provided to patients with fibromyalgia at the Robert Schad Naturopathic Clinic (RSNC).



INTEGRATIVE ONCOLOGY RESEARCH

conventional and naturopathic therapies

As more people living with cancer seek out complementary care options, CCNM research is building the bridge between

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Partnerships Strengthen Cancer Care

CCNM is currently conducting more than \$10 million in studies, many of which focus on examining a variety of adjunctive therapies for integrative cancer care, to advance understanding and improve practices in Canada.

CCNM and the CCNM Patterson Institute for Integrative Cancer Research (the Patterson Institute), which was established in 2016, are leading the field of integrative cancer care. Together, they are creating foundational information that is changing the oncology landscape and providing high quality, patient-centred care.

\$10M+

in studies is currently being conducted to advance understanding and improve integrative cancer care practices in Canada.

Five priority research areas have been identified as being fundamental to advancing integrative oncology practice and policies:

- 1. Clinical effectiveness
- 2. Safety
- 3. Economic context of care
- 4. Development and evaluation of integrative oncology models
- 5. Knowledge translation and dissemination



Some examples of research being conducted to further naturopathic care within cancer care settings, both complementary and traditional, include:



Intravenous Vitamin C

CCNM and the Ottawa Hospital Research Institute are conducting a randomized controlled trial on high dose intravenous vitamin C in lung cancer.



The Canada/US Integrative Oncology Study (CUSIOS)

Working in partnership with Bastyr University, CCNM has initiated a \$3-million North American multi-site study to explore the impact of integrative oncology care delivered by naturopathic doctors for patients with advanced (stage 4) cancer. Seven clinics across North America are recruiting patients to participate in this observational study to describe quality of life and survival outcomes for patients with advanced stage breast, colorectal, ovarian, and pancreatic cancers. The CUSIOS study will run over six years with the goal of enrolling more than 400 patients with late stage cancer. Changes in quality of life measures and survival rates will be assessed.

Seven

clinics across North America are recruiting patients to participate in the CUSIOS study

CCMM and the Ottawa Hospital Research Institute are conducting a randomized controlled trial on high dose intravenous vitamin C in lung cancer.



INTEGRATIVE ONCOLOGY RESEARCH CONT'D

Some examples of research being conducted to further naturopathic care within cancer care settings, both complementary and traditional, include:



Complementary and Alternative Medicine

CCNM is collaborating with Australia's Endeavour College of Natural Health to conduct the first global study on the use of complementary and alternative medicine for pain in patients with cancer.



The Thoracic Peri-Operative Integrative Surgical Care Evaluation (POISE) Trial

Working in collaboration with the Ottawa Hospital Research Institute (OHRI), CCNM research has launched an 11-year study to explore the impact of integrative cancer care for patients with lung and gastroesophageal cancers. The Thoracic POISE Trial¹³ uses a randomized design to enroll patients into either a combination of conventional and complementary medicine care (integrative care group) or conventional care alone (control group). Outcomes associated with thoracic surgery, quality of life, survival and cost effectiveness will be evaluated within three centres across Canada. These include Ottawa, Hamilton and Kelowna with an aim of involving 340 participants.



Melatonin on Lung Cancer Recurrence and Mortality (AMPLCaRe)

A large multi-year multicentred trial investigating adjuvant melatonin on lung cancer recurrence and mortality (AMPLCaRe) is being conducted in partnership with the Canadian Association of Thoracic Surgeons. The study is funded by the Lotte and John Hecht Memorial Foundation, with the provision of melatonin by SISU Inc.



Yoga Therapy

CCNM is collaborating with Ottawa University on a clinical trial to explore the impact of yoga on nervous system function and psychosocial health among cancer survivors. This is a randomized trial funded by the Canadian Complementary Medicine Research Fund and is expected to be completed by 2020.

^{13.} Dugald Seely, Julie E. Ennis, Ellen McDonell, Anna Fazekas, Linlu Zhao, Tim Asmis, Rebecca C. Auer, Dean Fergusson, Salmaan Kanji, Donna E. Maziak, Tim Ramsay, Paul Chamberland, Chris Spooner, Jennifer Threader, and Andrew Seely. *The Journal of Alternative and Complementary Medicine*. Mar 2019.S112-S123. http://doi.org/10.1089/ acm.2018.0419

In addition to these research projects, the Patterson Institute is creating guidelines for integrative oncology that will provide a much-needed platform of synthesized knowledge and structure for naturopathic education and practice.

Other research projects at the Patterson Institute include the following areas of focus:

Natural health products in integrative cancer care

• Which ones have the most promising evidence from 218 recent reviews of human controlled studies?

Human Controlled Studies in Integrative Cancer Care: Part 1 – The Role of Herbal and Mushroom Products

• Future investigations to include the role of nutrients and traditional Asian formulas.

Review on the use of natural health products during the surgical period in integrative cancer care

• Future investigations to include the use of natural health products during chemotherapy, radiation and in palliative care.

Program Manual for an Integrative Cancer Retreat Model

- A cancer retreat is a unique part of integrative cancer care and can provide valuable support to people living with cancer.
- The design and delivery of evidence-based retreats will provide an opportunity to study the impact of a group environment and exploration of different integrative therapies for people with cancer and their caregivers.

85%

"If you define alternative treatments broadly, around 85% of people with cancer are seeking alternatives to conventional care. So health providers are trying to adjust to what the patients are already doing, but they aren't getting a lot of guidance."

Dr. Peter Papadogianis, ND, Director, Patterson Institute

The Patterson Institute is a research institute focused on a whole-person approach to cancer care. This approach encompasses the social, psychological, emotional, spiritual and functional aspects of the patient journey.



COLLABORATION AT THE CENTRE OF CCNM RESEARCH

CCNM has collaborated with many major medical research institutions, including McMaster University, The Hospital for Sick Children, University of Toronto, Ottawa Hospital Research Institute, University of British Columbia, Centre for Addiction and Mental Health, and Dalhousie University.



Equally important is CCNM's collaboration with institutions and populations that are developing capacity for research, bringing together collective wisdom and helping to build bridges for evidence-based practices as well as expanding the network of research-based institutions in integrative medicine.

Research conducted with these institutions contributes to the overall best-in-class approach that CCNM applies when deciding which research projects to undertake. Disseminating CCNM's research through various activities ensures the results of our work are shared across the naturopathic and integrative communities and that clinical care is supported by the most up-to-date evidence in the field.

By fostering this culture of collaborative research, CCNM is exploring the strength of naturopathic medicine, testing therapies and influencing health policy across an expanding range of diseases and conditions. In doing so, CCNM and the outcomes from its research projects support care and treatment approaches and lead to healthier outcomes for patients and their families.

For further information on CCNM's research projects or to find out how you can support naturopathic research at CCNM, please contact: **Dr. Kieran Cooley, ND, Director of Research at kcooley@ccnm.edu**

You can also read more about our research at: **www.ccnm.edu**

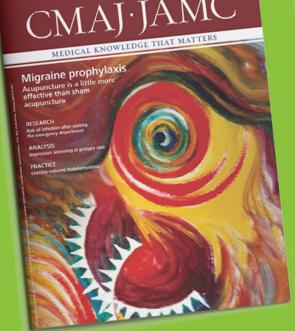
CCNM has collaborated with **SickKids** UNIVERSITY OF the following research institutions: TORONTO The Ottawa L'Hôpita| THE UNIVERSITY DALHOUSIE Camh Centre for Addiction and Mental Health Hospital d'Ottawa OF BRITISH COLUMBIA UNIVERSITY RESEARCH INSTITUTE INSTITUT DE RECHERCHE

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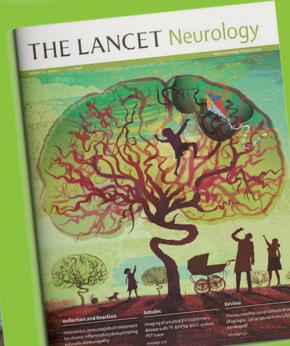
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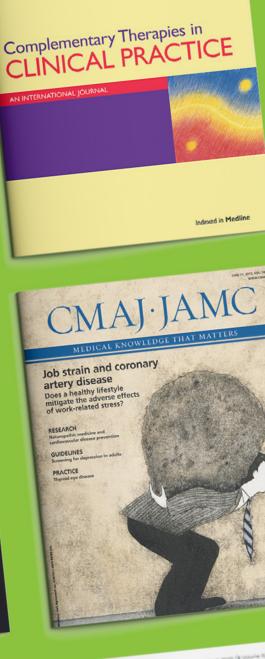




Diabetes & bariatric surgery p 304 Trump's antiscience stance p 306 Off-label antidepressants p312 UK is falling on child obesity p 320 1CPD hour in the education section ELSEVIER

The case against ultrasound for bone healing







Veuropsychobiology



BEST OF NATUROPATHIC MEDICINE

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Integrative

for Childhood

Treatment

Absence

Epilepsy

TOWNSENDLETTER.COM The Examiner of Alternative Medicine

Natural Treatments for Trauma-Associated Pain

Naturopathic Prescribing for Digestive Disorders

Sussanna Czeranko, ND Therapeutic Benefits from Peat, Clay, and Earth

CCNM's department of research is a leader in advancing our understanding of complementary and naturopathic medicine as a contributor to a sustainable health-care system.

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