

Vital Link

The journal of the Canadian Association of Naturopathic Doctors

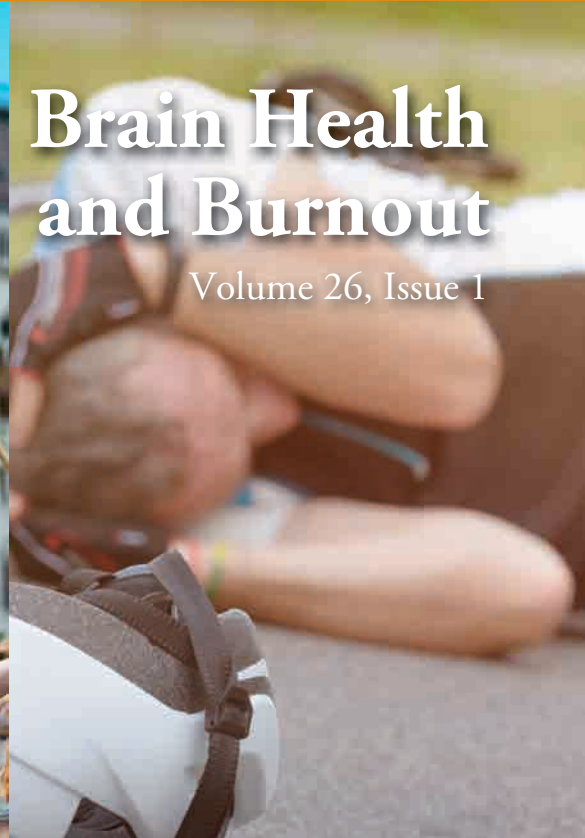
Feature Articles

- 🔥 **Treating the Whole Person Then and Now**
- 🔥 **Mental Health Care for Youth and Adolescents who Identify as LGBTQ**
- 🔥 **Stop and Smell the Roses: Avoiding Burnout**
- 🔥 **Foundational Approaches to Concussion Management**



Brain Health and Burnout

Volume 26, Issue 1



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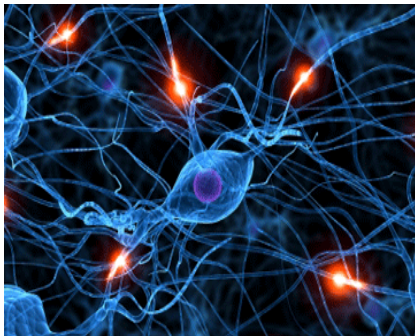
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Vital Link

The journal of the Canadian Association of Naturopathic Doctors

Volume 26, Issue 1

Brain Health and Burnout

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The *Vital Link* is the journal of the Canadian Association of Naturopathic Doctors (CAND). It is published primarily for CAND members and features detailed reviews of specific causal factors of health and disease, philosophical and research-based papers, clinical practice articles and case reviews.

Forthcoming Themes

Vol. 26, Issue 2 Collaboration/Teamwork

Vol. 26, Issue 3 Planetary Health

Vol. 26, Issue 4 Case Study Competition

Submissions

When writing for the *Vital Link*, contributors should bear in mind their role as ambassadors for the naturopathic profession. Although writing submissions should first and foremost be relevant to naturopathic doctors, contributors are encouraged to consider the journal's wider distribution to other professions. Your contribution to the *Vital Link* will benefit the naturopathic profession as a whole and provide you with personal professional exposure. Previously unpublished material is preferred. Please contact the managing editor for submission guidelines.

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The *Vital Link* is published three times per year and is distributed to over 2300 qualified Canadian NDs and students of CNME-accredited naturopathic programs in Canada and the U.S. The *Vital Link* is also distributed to the CAND's corporate members and in our media kit. The journal is available in print and e-formats, by paid subscription. Additionally, the *Vital Link* is a tool promoting qualified naturopathic doctors to corporations, insurance companies, and the provincial/territorial, and Federal branches of government in Canada.

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Naturopathic notes: Linking Communication and Nature to Good Clinical Practices

Dr. Marianne Trevorrow, MA, ND



I am writing this editorial during what is hopefully the last of the snow and ice storms that have characterized much of this Winter for our naturopathic colleagues across Canada. While these extremes of weather have wreaked havoc on many of our clinical schedules, they also invite us to look at how we are often at our most disconnected from nature during Winter.

When we think of using the tools of the natural world to treat our patients, I imagine most of us think of the warmer seasons. Still, even in Winter, there is an opportunity to reflect on things outside of our control, whether it's schedule chaos, an unplanned snow day, or a loss of power due to rain or wind storms.

To start off 2019, this edition of *Vital Link* is an eclectic mix of articles on nature and environment, clinical communication, brain health, and reflection on our changing role in the Canadian health care eco-system.

Dr. John Bender, ND leads off this edition with an editorial commentary on the therapeutic trends he has seen in the profession over his 40 years as an ND practicing in Waterloo, Ontario. He asks us to reflect on the importance of good clinical communication in cementing and the role of ND as a trusted advisor in an increasingly commercialized health care market. Compassionate care, he writes, ties into the central principles of naturopathy, but is increasingly being lost in our embrace of what he calls 'band wagon' therapies.

Following this theme, Dr. Oscar Hernandez, ND and myself explore good clinical communication and strategies for dealing with depression and anxiety in LGBTQ youth. Dr. Hernandez currently practices in Brampton, Ontario at Raven Naturopathic Health Services, with a clinical focus on LGBTQ health and clinical care. We argue for the importance of understanding the unique vulnerabilities of LGBTQ youth to mood disorders and suicidality, and of building community resource support teams for emergent situations. Additionally, we challenge clinicians to ask questions about social environments in a way that supports the patient's safety and provides space for therapeutic success.

Our third article is a broader philosophical discussion of the role of nature, eco-psychology and environment in naturopathic practice. Dr. Denis Marier, ND has served as clinical supervisor at CCNM in Toronto, performed overseas medical relief work, and for many years has been a wilderness therapy guide. He discusses practical strategies for incorporating what he calls a 'nature history', involving elements of our natural environment, as well as our place in the natural world, into clinical care and our physical office spaces.

Finally, our evidence-informed practice article is from Dr. Nikole MacLellan, ND and David Nelson (ND cand.), on the subject of naturopathic concussion assessment and management. Dr. MacLellan is a dual licensed ND and Registered Dietician practicing in a sports medicine clinic in Burnside Nova Scotia, and Mr. Nelson is a fourth-year CCNM ND student, member of the *inVIVO* Planetary Health research group., and a long-time certified strength coach. Their discussion shares emerging consensus about mechanism of injury in concussion, as well as assessment, and effective naturopathic interventions. This is an area where, as the authors point out, naturopathic doctors have a wealth of modalities to draw from and can be valuable members of an effective multi-disciplinary approach to these complex disorders.

Lastly, just as we were going to press, we learned of the passing this week of a highly esteemed leader of the ND profession in North America, Dr. Walter Crinnion, ND. Dr. Crinnion was a former faculty member at Bastyr and Southwest Naturopathic schools, as well as a researcher and prolific writer and speaker. His pioneering work on environmental illness and detoxification inspired and mentored many ND researchers and clinicians, including your editor. Walter made several contributions to the *Vital Link* over the years, each to the great pleasure of our readers. He will be sorely missed.

As always, we welcome feedback about the *Vital Link* and inquiries about contributing to upcoming editions. My email, as always, is open at drmarianne@ionacare.ca. 🍁

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Treating the Whole Person Then and Now - A philosophical paper

Dr. John Bender, Naturopathic Doctor, Elder

In this article, I'll attempt to identify how to *treat the whole person* (one of the core principles of Naturopathic Medicine), and how that has changed over the 30- plus years that I've been in practice. The observation that stands out to me is that the rate of change in the practice of naturopathic medicine has accelerated dramatically and shows no signs of slowing down.

When I started naturopathic college in 1975 at NCM in Portland Oregon, it was the only naturopathic school in North America. There were approximately 50 registrants in Ontario and no schools in Canada. Now in 2019 we have grown to over 1000 registrants in Ontario, with two schools in Canada, five in the U.S., and a candidate school in Puerto Rico. Furthermore, in my experience, when I started my practice, no one knew what a naturopathic doctor was or did. Today, many people either know or know of someone who does. This is remarkable progress in a mere 30 years.

Naturopathic doctors have always purported to treat the whole person. However, from my perspective, I have observed in our profession what I call band-wagon trends.

Initially, there were the naturopathic "raw food enthusiasts." They believed that all our ills could be traced back to eating improperly. The solution was to eat only raw foods. This "shoots and sprouts, beads and seeds" philosophy was quite popular at the beginning of the resurgence of naturopathic medicine in the early '70s. After a while, its limitations became obvious. Then, in the middle '70s, it was thought that many of our patients had hypoglycemia and that correcting that condition would lead to perfect health. Still later on, many patients were believed to have singular conditions, such as a candida dysbiosis. Then there was a focus on conditions such as chronic fatigue, multiple food sensitivities, Epstein Barr virus, hypothyroidism and Lyme disease. Virtually, everyone that walked in the door had one or more of these problems and practitioners became "experts" in treating these particular ills.

Currently, there is a band-wagon trend toward embracing IV therapies for chelation or nutrition and that every illness can be solved with that therapy. There also seems to be a clamour for the latest protocols to practice what I refer to as "cookbook" medicine which is where a patient fits neatly into a "disease entity" and can be treated according to a particular formula gleaned from the latest seminar. There is a move to seek legislation to extend our prescribing capabilities in order to prescribe pharmaceuticals. This has happened in British Columbia and Ontario (and it is possible that other

provinces might also seek prescribing authority). Consequently, naturopathic doctors are becoming increasingly reliant on blood tests and lab work, which is not a bad thing but it may mean that we lose sight of wholism or the "whole person." Thus, we may view our patient as, for example, a chronic lymphocytic leukemia (CLL) case rather than a person who happens to be diagnosed with CLL.

There have also been band wagon trends in therapeutics, particularly in Homeopathy. The Kentian approach was considered the best way to treat. Then came Vitoulkis' methods: the only Classical "Truth." Following this, Eisayaga from Argentina had the most practical method. Soon other practitioners from overseas such as Jeremy Sherr, Schroyens, and other European masters became prominent. More recently the methods of Indian masters led by Sankaran are considered the only good way to practice. Always the controversy of the use of complex versus classical homeopathy has existed. We hope that a more unified stance on using Homeopathy will eventually prevail.

Another issue is that naturopaths are gravitating toward specialization. They seem to be reluctant to treat certain conditions and instead refer to ND experts in a given field (for example: oncology). While that can be relevant and beneficial for the patient, we should not be fearful of treating anyone with basic naturopathic principles.

At any rate, these band wagon trends had their usefulness and they weren't necessarily wrong or negative in and of themselves, but they can, I believe, detract from the philosophy of treating the whole person.

Core and accepted Naturopathic principles such as "treating the whole person" are congruent with the basic tenets of naturopathic medicine. *Primum Non Nocere*, *Vis Medicatrix Naturae*, *Tolle Causam*, and "Doctor as Teacher" are all solid principles on which to build a practice. We must be ever vigilant and not lose sight of these foundational ideas.

Primum Non Nocere or "Above all, do no harm"

This must remain as one of our most important goals. After all, we want to alleviate suffering, but while attempting to do that, NDs

should make sure they do not make things worse. The recent changes in overall naturopathic practice such as embracing IVs and pharmaceutical prescribing, definitely increases the risk of harming patients.

Vis Medicatrix Naturae or “the healing power of nature”

Sometimes we think we know better than nature and are in too much of a hurry to let nature take its course. This is counter-productive because nature has a habit of getting her own way whether we try to hurry her or not. Obeying nature’s rhythms always pays great dividends to both patient and practitioner. For example, wanting to go back to work immediately instead of allowing time for the body to heal after an acute illness often leads to unwanted complications.

Tolle Causum or “Treat the cause”

Again, do we have or do we take the time needed to get right down to the cause of disease? Is the patient depressed because of some cause you may have missed? Have their parents died, for example? If we don’t get to know our patients well, engage in some small talk or do a thorough history, we may miss some important information.

Docere or “Doctor as Teacher”

This is where we can have our most profound influence and impact on people’s lives. For example, recently, there has been good solid “scientific” evidence showing the importance of diet and lifestyle. In his book, *Overdosed America*, John Abramson discusses an article which claims that the drug Pravachol reduces the risk of stroke by 19%. That sounds impressive until you realize that there are other well documented pharmaceutical free ways to reduce the risk of stroke. For example, eating fish once a week reduces the risk by 22%! Controlling high blood pressure reduces stroke risk by 35-45%. Moderate exercise for less than two hours each week reduces the risk by about 60% in an elderly population! These lifestyle modifications are extremely powerful natural therapies, often more powerful and a great deal safer than drug therapy, and **naturopathic doctors are or should be the experts.**

We need to position ourselves as the experts in natural medicine. We need to be able to recommend credible websites and be familiar with studies that support *natural* treatments, diet and lifestyle. In this information age, the internet has made an incredible amount of information available, so most patients have already read about their condition online and often think they know more about it than their doctors do, and sometimes they’re right! However, the information they get in their searches is often misleading or wrong and we need to be able to point them in the right direction. As a result, we need to be our patients’ trusted source of information as they seek to enhance and achieve optimal health.

Treating the Whole Person also means treating people on a physical, mental/emotional and spiritual level. Evidence shows that belonging to a religious/spiritual organization and/or a supportive group and having a belief system in a higher power are all part of achieving optimal health. Practitioners should be encouraging patients to participate in a spiritual organization and/or spiritual journey.

Another aspect of our role as teachers is to encourage our patients to do volunteer work, look beyond themselves and to make a positive contribution to their community. How often have we heard of retired people determined to enjoy their retirement by not moving or doing anything meaningful, and consequently dying shortly afterwards? We all need meaning and movement in our lives, particularly after retiring. Therefore, counselling our patients or referring them to a competent life coach/counsellor upon their retirement might be the most important thing you can do for them.

Often overlooked is the importance of routine. There is increasing evidence showing that routine contributes a great deal to our well-being. Going to bed at the same time, getting up at the same time, eating meals at the same time, establishing healthy patterns are all important to our overall health. We all know about circadian rhythms, and recent evidence that each organ has its own rhythm reinforces this concept. Further, the lowest cortisol/stress levels are found in people that strictly adhere to routine, such as certain religious groups.

Culturally-speaking, our world has changed considerably in the past 30 years. In our multicultural society, our patients should be encouraged to get to know and interact with other cultural and religious groups rather than staying isolated. A monumental change took place in 2001 when the World Trade Center was destroyed. Since then there have been many economic and political shocks that harm our sense of safety and predictability. For example, the long-term impact of climate change. These events and their impacts on us and our patients, must be considered when ‘treating the whole person’.

Other events that impact our health have to do with unbelievably rapid advances in technology. Virtually everyone has a smart device. This is demonstrated when I go for a walk in the morning and try to greet other pedestrians. Often they do not notice the people around them because they are engrossed in the information on their device: *They are not in touch with their environment, with how the earth feels, the birds singing, the wind, the sun and their fellow travelers!* Although the technological advances in personal mobile devices may be wonderful, the result is our preoccupation with a device. This means anyone can get interrupted anytime, making it difficult to experience “down” or meditative time. This was not the case a mere 30 years ago! When “treating the whole person,” this too needs to be addressed. We need to be more in touch with ourselves, our lives and our surroundings.

Many other professions are beginning to do what we do. TCM and homeopathy, for example, are regulated separately under the Ontario Ministry of Health. We are seen as competing with what MDs do. We must be very careful that we don’t lose sight of our basic principles because if we do, we’ll rightfully lose our unique position in the health care field.

Naturopathic doctors need to be trend setters, and leaders. We are all blessed to be part of this profession through which we can

make lasting, useful, and meaningful changes in people's lives. We are also incredibly fortunate that our profession is so vibrant and diverse. This is both a strength and a weakness; a strength in that here are many roads to healing, and in diversity there is strength; a weakness in that we can become scattered and not effective in any one treatment. Overall NDs play a different role than MDs in our health care system, which can be best fulfilled by sticking to our core principles.

Naturopathic doctors can help our society rediscover its innate healing capabilities. Now is our time – *Carpe Diem!* 🍂

About the author

Dr. John Bender, ND believes that optimal health is essential for a good life. He is passionate about helping others achieve optimal health using complex homeopathy, botanicals, vitamins, minerals, and other nutritional means. A balanced lifestyle and lifestyle habits are also essential to the whole program.

He believes that in our present daily toxic environment, it is important to assist the body in eliminating toxins and to prevent or limit further exposures.

Dr. Bender received the Naturopath of the Year Award in 2003 from the Ontario Association of Naturopathic Doctors. In 2007, John was one of 50 Faculty of Science graduates of the University of Waterloo to receive the Alumni of Honour Award. He recently received the Award for Excellence in Holistic Medicine from the Holistic Doctors Recognition Board.

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Mental Health Care for Youth and Adolescents who Identify as LGBTQ

Dr. Oscar Hernandez, ND and Dr. Marianne Trevorrow, MA, ND

As a naturopathic doctor, you certainly have some patients who are lesbian, gay, bisexual, transgender, or questioning (LGBTQ). You may even have friends or colleagues that identify as part of this population. But what many clinicians fail to realize are the many struggles and hardships a young LGBTQ person faces, particularly within their families of origin, who may see their sexual orientation as “lifestyle choice”.

Research has shown us that LGBTQ individuals are at risk for higher rates of depression, anxiety and suicidality due to social and/or religious exclusion, discrimination, violence, homelessness, addiction, and associated issues. LGBTQ youth face a significantly increased risk of suicide—approximately 14 times the risk of heterosexually identified youth according to a recent study.¹ As part of treating the whole person, it is crucial that clinicians be alert for signs of depression and suicidality in this demographic, and be aware of needed resources, including mental health professionals and community resources to refer to for further evaluation and support. Most importantly, we believe that NDs need to understand the critical role of cultural sensitivity for this population and learn to spot signs indicating imminent risk of harm that goes beyond the treatment room.

The Context of Depression and Anxiety in LGBTQ Youth

Some important statistics to keep in mind: in the United State in 2017, 34.8% of LGBTQ students missed at least one entire day of school in the past month because they felt unsafe or uncomfortable, and 10.5% missed four or more days in the past month.² The Canada, the 2011 *Every Class* report found that “30.2% of LGBTQ students, compared to 11.0% of non-LGBTQ students, reported skipping because they felt unsafe at school or on the way to school.”³

Some factors to keep in mind when talking with LGBTQ youth⁴: first, they may be negotiating sexual and gender identity, as well as ethnic identity, at a time when they are negotiating their own transitions from childhood, through adolescence to adulthood. They may not

have disclosed their sexual orientation to either family members or friends for a variety of reasons, and may be high anxious about when or how to disclose this level of intimate personal information, and to whom. They may face rejection or potential violence from family, other adolescents, and other adults. They may themselves have been abused in their families of origin, either emotionally, physically, or sexually, and have developed post-traumatic coping strategies, including hypervigilance. Although adolescence is a challenging time in general, LGBTQ youth in practice have more likely than not to have faced homophobia/transphobia, bullying, or being marginalized by health care providers, which can lead to a challenging communication environment.

For LGBTQ youth, it is of critical importance to ask about the supportiveness of their environments. Risks for LGBT youth who come from highly rejecting families are more than three times as likely to have attempted suicide than LGBT peers who reported little to no rejection from the family⁵. Risks are reduced by factors such as; acceptance from the family of origin, supportive educational and workplace environments, and community support.⁵⁻⁷ We recommend as part of an initial intake, that clinicians ask self-identifying LGBTQ adolescent patients whether they are ‘out’, to whom, and to what extent. Most importantly, we recommend that NDs ask about *safety* in home, school, workplace, or community environments. While confidentiality of any patient encounter is a cornerstone of naturopathic care, and clinicians should strive to maintain the confidentiality of sexual orientation, even to family members, this should not come at the expense of ensuring that the patient is not at risk of immanent harm. We recommend that if clinicians have any questions about confidentiality requirements, that they seek guidance from provincial naturopathic regulatory colleges and their Professional Liability providers.

Evaluation of social determinants of health in LGBTQ Youth: critical communication skills for NDs

Although depression is marked by a loss of interest in normally pleasurable activities and/or a down, hopeless or depressed mood that persists for two weeks or longer, that is not the full criteria. In many cases a mental health provider is the best person to make a diagnosis, and help the patient access community resources. Adolescent depression, for example, may present differently than in adults, with insomnia, weight loss, irritability, anger, or self-harming. The adolescent may start missing school, using substances, acting out, doing poorly academically, or develop physical symptoms

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that cannot be explained. Eating disorders, oppositional defiant, or conduct disorders may also be present. If you suspect depression in an adolescent patient, you can readily screen for it using standardized instruments such as the PHQ-9 modified for teens, a Beck Depression Inventory, or similar instruments. Remember this while these are helpful *screening* instrument, the full diagnosis of depression or similar mood disorders must be made using the DSM-V criteria⁸, and are best done by a licensed mental health professional.

If an ND suspects their LGBTQ patient is suffering with an undiagnosed mood disorder, we recommend that the social contributors to their mood disorders be explored, but while stressing to the patient that the information they disclose will only be shared with their permission. *This is foundational to establishing trust.* If your patient is running home from school in terror to avoid physical assault, then they need resources to stop the bullying and violence. If they are suicidal, they need assessment and skilled care of mental health professionals. If an underage child is in imminent danger of self-harm, the parents need to be informed of the situation according to your professional duties to inform, but we recommend clinicians familiarize themselves with jurisdictional requirements in this regard, and if in doubt, ask for clarification from their relevant ND College or Association.

Depending upon training, scope of practice, and community resources clinicians may need to refer patients, either to urgent or emergency care, or the patient's family doctor, if they have one.⁹ As appointments with mental health providers often need to be arranged well in advance, we recommend clinicians familiarize themselves with urgent or semi-urgent LGBTQ-aware community health resources.

Other aspects to consider include home, school, and neighbourhood safety. Report suspicions of abuse, neglect or exploitation to the relevant provincial authorities, such as the Children's Aid Society (CAS), in Ontario, Child Protective Services (CPS) in British Columbia, or Ministry of Children's Services in Alberta. If the young LGBTQ patient has supportive parents, they will need to work with the schools or school district regarding bullying, or consider changing schools to ensure a safe learning environment.

Canadian conventional family practice guidelines call for monitoring mild depression in adolescents for some weeks before escalating care. Ongoing LGBTQ aware counselling and support can make a crucial difference for many adolescents with self-image issues, however, *make sure that the therapist is not attempting to provide "reparative" or "conversion therapy" which has been condemned by both the Canadian and American Psychiatric Associations, as well as numerous other countries.*¹⁰ As the CPA argues:

"psychiatric treatment, such as reparative or conversion therapy which is based upon the assumption that homosexuality per se is a mental disorder or based upon the *a priori* assumption that the patient should change his/her sexual homosexual orientation...Ethical practitioners refrain from attempts to change individuals' sexual orientation."¹¹

What else can a Naturopathic doctor do?

As naturopaths, we are well equipped to treat depression and anxiety in our patients, which is why we have not focused on those strategies in this article. Briefly, we recommend that clinicians focus on good naturopathic therapeutics such as sleep hygiene, herbal support, dietary, exercise and/or stress management modifications to support physical well-being in adolescent patients. The most important thing to do, we believe (other than ensuring individual safety), is to ensure a welcoming and affirming environment for the patient to express their identity.

The marginalization and discrimination of LGBTQ youth (and the population as a whole) has contributed to barriers to access of health and support services.¹² These barriers are compounded by health care providers lacking the appropriate knowledge, skills, and sensitivity around LGBTQ health.¹³ In a national study, when asked about the level of knowledge of health care professionals, LGBTQ participants rated their knowledge "to be inadequate, the amount of homophobic reactions to their lives to be unethical, and the willingness of the health care system to adapt to their needs to be minimal."¹⁴ Many people in this population avoid and fear conventional health care settings in order to protect themselves from potentially homophobic health care providers. Disclosing orientation has resulted in negative experiences such as "being told their sexuality was pathological, experiencing 'rough' internal exams and actually being refused care".¹⁵ NDs, with appropriate knowledge and training in LGBTQ aware clinical communication, can do much, much better.

It is the authors' joint-opinion that the ND schools need to support more extensive clinical education on LGBTQ-aware communication, and health issues. Additionally, naturopathic doctors need to be better trained in how to explore the perceptions of LGBTQ patients on their sexual orientation, gender identity, and expression using questions that are LGBTQ inclusive and language that is gender-neutral. It is also the authors' opinion that our profession needs more post-graduate and continuing education on the diverse nature of the LGBTQ population, and about specific health issues that need to be addressed when working with a patient from these communities.

As naturopathic clinicians, we are well equipped with the treatment of depression in the general population. However, in an LGBTQ population, particularly in youth (in some cases even young adults), it requires an awareness and deeper understanding of the issues and struggles that they endure. This enables an ND to better identify a potential cause of the patient's mental health challenges. Therefore, create a space where the patient can feel safe and accepted. Learn the warning signs of suicide (i.e., expressing feelings of hopelessness, loneliness, etc.) and help connect them to support if they need it.¹⁶ 🍌

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Note: the authors wish to acknowledge the invaluable contributions and support for this article of Dr. Les Witherspoon, ND, who has been a longstanding mentor, instructor, and friend to many NDs learning about LGBTQ healthcare at Bastyr University, and on many Naturopathic social media platforms across North America.

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References

1. Lesbian, Gay, Bisexual, Trans & Queer identified People and Mental Health. Canadian Mental Health Association. <https://ontario.cmha.ca/documents/lesbian-gay-bisexual-trans-queer-identified-people-and-mental-health/>. Accessed January 13, 2019
2. Lesbian, Gay, Bisexual, Trans & Queer identified People and Mental Health. Canadian Mental Health Association. <https://ontario.cmha.ca/documents/lesbian-gay-bisexual-trans-queer-identified-people-and-mental-health/>. Accessed January 13, 2019.
3. Taylor, C. & Peter, T., with McMinn, T.L., Elliott, T., Beldom, S., Ferry, A., Gross, Z., Paquin, S., & Schachter, K. (2011). Every class in every school: The first national climate survey on homophobia, biphobia, and transphobia in Canadian schools. Final report. Toronto, ON: Egale Canada Human Rights Trust.
4. Eckstrand K, Ehrenfeld JM. *Lesbian, Gay, Bisexual, and Transgender Healthcare A Clinical Guide to Preventive, Primary, and Specialist Care*. Cham: Springer International Publishing; 2018.
5. Ryan C, Russell ST, Huebner D, Diaz R, Sanchez J. Family Acceptance in Adolescence and the Health of LGBT Youth Adults. *J Child Adol Psy Nurs*. 2010;23(4):205-213. doi:10.1111/j.1744-6171.2010.00246.x.
6. Doty ND, Willoughby BLB, Lindahl KM, Malik NM. Sexuality Related Social Support Among Lesbian, Gay, and Bisexual Youth. *J Youth Adolescence*. 2010;39(10):1134-1147. doi:10.1007/s10964-010-9566-x.
7. Travers R, Bauer G, Pyne J. *Impacts of Strong Parental Support for Trans Youth: A Report prepared for Children's Aid Society of Toronto and Delisle Youth Services*. October 2012. <http://transpulseproject.ca/wp-content/uploads/2012/10/Impacts-Of-Strong-Parental-Support-for-Trans-Youth-vFINAL.pdf>.
8. PHQ-9: Modified for Teens. American Association of Child & Adolescent Psychiatry Political Action Committee. https://www.aacap.org/App_Themes/AACAP/docs/member_resources/toolbox_for_clinical_practice_and_outcomes/symptoms/GLAD-PC_PHQ-9.pdf. Published 2010. Accessed January 13, 2019.
9. Daylo A, Rebecca P, Girard S, et al. Suicide Prevention Online CME. *Kaiser Permanente*.
10. Veltman A, Chaimowitz G. Mental Health Care for People Who Identify as Lesbian, Gay, Bisexual, Transgender, and (or) Queer. *Can J Psychiatry*. 2014;59(11).
11. CPA. Commission on Psychotherapy by Psychiatrists. Position statement on therapies focused on attempts to change sexual orientation (reparative or conversion therapies). The American journal of psychiatry. <https://www.ncbi.nlm.nih.gov/pubmed/11183192>. Published October 2000. Accessed March 12, 2019.
12. McNair R, Anderson S, Mitchell A. Addressing health inequalities in Victorian lesbian, gay, bisexual and transgender communities. *Health Promot J Austr*. 2003;11(1):32-38.
13. Leonard W. What's the difference? Health issues of major concern to gay, lesbian, bisexual, transgender and intersex (GLBTI) Victorians: research paper. Melbourne (AU): Ministerial Advisory Committee on Gay and Lesbian Health, Victorian Government Department of Health Services; 2002.
14. Ryan B. A New Look at Homophobia and Heterosexism in Canada. Canadian AIDS Society. [http://www.cdnaids.ca/files.nsf/pages/homophobiareport_eng/\\$file/homophobia_report_eng.pdf](http://www.cdnaids.ca/files.nsf/pages/homophobiareport_eng/$file/homophobia_report_eng.pdf). Published 2003. Accessed March 12, 2019.
15. Mathieson CM, Bailey N, Gurevich M. Health Care Services For Lesbian And Bisexual Women: Some Canadian Data. *Health Care Women Int*. 2002;23(2):185-196. doi:10.1080/073993302753429059.
16. Preventing Suicide - Warning Signs of Suicide. The Trevor Project. <https://www.thetrevorproject.org/resources/preventing-suicide/warning-signs-of-suicide/#sm.00002vaky1v9pejsir2nu8z5cgya>. Accessed February 22, 2019.




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Stop and Smell the Roses: Avoiding Burnout

- *Ecopsychology in Clinical Practice*

Dr. Denis Marier, ND, MA

NHS Shetland, the health authority in the Scottish archipelago, has authorized doctors to prescribe interactions with nature as a supplement to traditional health care. The hope is the practice will demonstrate to the traditional medical community the value of such non-traditional and subtle treatments to the health of the human body and mind.¹

This article will discuss the importance of establishing a connection to Nature in relation to the healing, and maintenance of good health, of the mind and body.

Lending credence to the theoretical connection between the human body and the natural environment is a recent development in Scotland. At the behest of a local health authority, doctors there recently have begun prescribing time in nature for the treatment of mental and physical ailments, including: anxiety, depression, diabetes, and arthritis. This should be of great interest to naturopathic doctors (NDs) because NDs are trained to work with the *vis medicatrix naturae* (healing power of nature) yet, how many NDs actually incorporate nature into their practice?

At its essential core, burnout is defined by a lack of connection to oneself and one's environment. Burnout is insidious, and can affect patients and practitioners alike without their having a full awareness of its potentially crippling effects. These effects can often manifest years after an initiating trauma as is evidenced with post-traumatic stress disorder and generalized anxiety disorder both of which can be resistant to a strictly pharmaceutical treatment approach.

In the 1990s Lawrence Calhoun, PhD, and Richard Tedeschi, PhD coined the term *Post Traumatic Growth* which is a construct of positive psychological change that occurs as the result of one's struggle with a highly challenging, stressful, and traumatic event.² Rather than being life-ruining incidents, positive psychologists see how a wide range of traumatic events can be catalysts to one's leading a better life, with more resilience to future adversity.

How can NDs as physicians, assist our patients who may be struggling with a lack of connection with themselves and the world around them? What are some easy-to-incorporate practices for working

with patients struggling through difficult life transitions, such as: the death of loved one, a lost career, or a life-limiting diagnosis? How can we encourage a shift through post-traumatic stress into a field of healing and *post-traumatic growth*?

Ecopsychology, a developing branch of transpersonal psychology, offers a profound path for navigating traumatic life events that can lead to burnout. It explores forming healthy relationships with ourselves and the world in which we live. It is psychology in the context of the Earth; a blending of psychology, spirituality, and deep ecology. The natural world provides a beautiful context for healing, where examples of interconnection and healing exist everywhere, and ecopsychology considers the concept of spirituality and interconnectedness within this realm. It draws upon the observation that as humans have evolved industrially, our connection to nature has gradually been lost.

Psychology of Separation

Sigmund Freud delivered a series of lectures in 1901 titled "The Psychopathology of Everyday Life" which established psychology as a province of medical science. The modern philosopher Theodore Roszack who gave voice to the term "ecopsychology" observes that it is "peculiarly the psychiatry of modern Western society that has split the 'inner' life from the 'outer' world – as if what was inside of us was not also inside the universe, something real, consequential, and inseparable from our study of the natural world."³

Carl Jung said, "as scientific understanding has grown, so our world has become dehumanized. Man [*sic*] feels himself isolated in the cosmos, because he is no longer involved in nature and has lost his emotional 'unconscious identity' with natural phenomena...His contact with nature has gone, and with it has gone the profound emotional energy that this symbolic connection supplied."⁴ Ecopsychology stems from a deep understanding of the interconnectedness of all beings and our interconnectedness with our environment. Ecopsychology proposes that people living in the westernized industrialized world have been traumatized through their continual separation from and the destruction of the natural world to which they belong.⁵

Ecotherapy in Clinical Practice

The process of "ecotherapy" is easy for any naturopathic doctor to incorporate into their practice. For example: consider taking a "Natural History" with each patient. This is an account of the time

the patient spends in nature, their connection to the natural world, and favourite memories of nature. Even in a difficult case-taking scenario, a natural history allows a patient to share memories and peak experiences of the natural world. As a preamble, reiterate the concept of the *vis medicatrix naturae* and the ability of our mind and body to move naturally in an integrated way towards healing and wellness, sometimes despite prognoses and predicted outcomes. Examples of questions to ask for a nature biography are:

“What are some of your favourite memories of Nature?”

“How is Nature an ally for you?”

“What are some lessons you’ve learned from the natural world?”

“Have you ever witnessed the birth of an animal, hatching of an egg, or of a butterfly or moth?”

“How does Nature view you?”

“How do you view Nature; does it vary with season or location?”

With very enthusiastic patients, and with awareness of time constraints, an ND might ask the patient to work on an eco-biography as part of their initial homework. This is a journal-style account of some of their experiences in Nature and how those experiences have informed their lives. Ask the patient to comment on their current health concerns and how they might find tools and lessons from their previous experiences of the natural world. A patient’s eco-biography then forms a blueprint for bringing Nature as a teacher, resource, and guide into the wellness plan.

Taking a Session Outdoors

Taking a session outdoors is an incredible way to utilize the healing power of nature. Ira Orchin, PhD, author of *Taking therapy outdoors: How to use nature to get tough cases unstuck*, states that “almost any client, except the most impaired, can benefit from a session outdoors.”⁶ Suggest taking a brief walk with your patient outdoors when challenging issues come into the session. You could also take a case while walking in a nearby natural setting with a patient. Even in the most bustling of metropolises in Canada, we are blessed with many parks and green spaces, often within a brief walking distance of our offices. If an outdoor session near the office is not possible, then a pre-arranged meeting time at a mutually convenient public natural setting can be an option.

It is necessary to maintain appropriate privacy policies when having a session outside of the office, and to have a brief conversation with your patient about agreed upon practices. For example, should you run into other people known to either person, if or how would they introduce the other. Having an agreed upon written policy before taking a session outdoors is useful for clarity of boundaries. I always offer to the patient, that if we happen to encounter anyone they know, they may introduce me by name only, or by name and my professional identity.

When working with nature as therapy, ask a patient to experience his/her body as it relates to nature. When case taking becomes

challenging, ask a patient to tell their pain to a tree or other natural object while you observe silently. This practice works remarkably well with teenagers and other patients who have difficulty expressing what is at the root of their angst to another human being.

Naturalizing a part of your clinic grounds is a very convenient way of bringing Nature into your practice; even a balcony in the city can be “spruced” up with potted plants and a little bamboo curtain. When making a home visit ask the patient to show you their backyard or garden and ask questions about their favourite plants or garden decorations. Conversely, there is much information in an untended, wild patch of land as well. *Wabi-sabi* is the Japanese aesthetic of appreciating beauty that is imperfect and impermanent, including asymmetry, simplicity, and wildness.

Identifying With Nature

The natural world is a cornucopia of readily available therapies and treatments that can be incorporated into the patient’s treatment plan at no cost. The use of natural objects as “oracles” can be incorporated into an office setting. Keep a small stock of different rocks, sticks, feathers and other natural objects in your office on a shelf or in a corner, or ask a patient to bring in a natural object they gather from outdoors. Questions to use in this practice include:

“Tell me about this object.”

“Which of these objects is like you?”

“How does this object reflect where you are now in your life?”

“How does this object reflect how you are stuck in your life?”

“Which object reflects the direction in which you are growing?”

Any item can act as a platform for metaphor; butterfly cocoons and snake skins are very powerful in this exercise!

Role-playing with nature is another easily utilized and powerful key to expanding a patient’s behavioural and emotional repertoire. Suggest that a patient role-play by taking on the role of a non-human being. In working with difficult encounters of the patient’s life-journey ask how a deer, bear, mouse or a hawk would have approached this encounter. In some situations, Mouse has the advantage in the “most sane” way, in others it is Bear.⁷ Or consider suggesting other nature elements such as water, fire, wind or rock as emotional backdrops.

Ask your patient, “Which element was most alive for you as you experienced this situation?”

Another ecopsychology-based practice is called “Place Bonding.”⁸ This practice encourages a cultivation of intimacy with a specific natural setting – a place that is consistently relatively undisturbed by human interaction. The patient is encouraged to sit in this space and observe and *be observed* by Nature. Ask the patient to track subtle changes in the landscape and its inhabitants with the passing seasons. Questions such as, “What’s happening in your garden

now?” or “How is your natural place different now?” will encourage patients to pay attention to the subtle changes of the natural world and offers a convenient starting point for follow up appointments that are scheduled quarterly or semi-yearly. Patients are encouraged to track their relationship with nature and to work with nature symbols as well.

“The idea that we live in something called ‘the environment’ is utterly preposterous...”

The world that environs us, that is around us, is also within us.

We are made of it; we eat, drink, and breathe it; it is bone of our bone, and flesh of our flesh.”

- Wendell Berry

The Four Shields of Life

The practice of Place Bonding calls to attention the four temporal seasons as a model for the Four Shields of Life: a) birth/death, b) childhood, c) adolescence/young adulthood, and d) adulthood/eldership. The central idea of the Four Shields theory⁹ is that the four seasons of Nature and their corresponding four directions are reflected in four different personas or “shields” of human nature. The theory offers a language and model as a source of therapeutic exercises and homework for the patient. It is an ancient paradigm, a model for the cyclical nature of life: Spring/East represents birth and the place of spirit, Summer/South represents childhood and the physical aspect, Fall/West represents adolescence and early adulthood with its mirroring in emotion, while Winter/North represents late adulthood and eldership with its emphasis on lessons of a life well-lived.

The thread linking all the applications is the premise that Nature and human nature are one and the same, that human nature *is* Nature, that natural processes are mirrored in our own human psyches. With each season, or shield, come the various gifts, talents and shadow aspects of the associated phases of life. This model takes the form of the North American indigenous medicine wheel, representing the cyclical nature of life as opposed to the Western concept of life as linear and chronological. Working with this model, a patient can map out a medicine wheel of his or her life, looking for the lessons, talents, and obstacles within each season. As an introspective tool, it can help to map a person’s life story, enabling them to see where there is an imbalance in the shields, for example: where Summer or play needs to balance Winter and stillness or where Spring and rebirth can be balanced with Fall and introspection.

Take a Walk on the Wild Side

A “Medicine Walk” or “Contemplative Nature Walk”¹⁰ is a powerful experience that can be assigned as homework. This mini-fast takes the form of a three- to six-hour solo experience in nature without

food, external distractions such as cell phones/gadgets or interaction with other human beings. If working with a particularly challenging life experience or existential dilemma, ask the patient to formulate it in the form of a question that he or she can take to Nature. Ritual is an important aspect of this exercise as it formalizes the exercise with personalized meaning.

Ask the patient to create a simple intention around the question, such as “May I find clues, answers and tools from Nature to help me find understanding/healing around this issue.” Ask the patient to, as they begin the medicine walk, create a threshold to cross and signal to themselves and Nature his or her entry into a sacred space. The threshold could be, for example, a stick placed on the ground, a natural arch or bend of a tree limb to walk under, a scattering of tobacco, white sage, or cedar (three of the sacred herbs in indigenous practices), a sprinkling of water or tea from your thermos, or simply a pause to ask a question aloud before commencing the walk. The patient then focuses on their question, asking it repeatedly in silence or out loud as they walk or sit in Nature and observe messages, signs or natural activity while they reflect upon their question. An important aspect of this exercise is not only to notice what the natural world has to show them, but also to reflect upon how they are being *observed* by Nature.

A Medicine Walk is a powerful exercise in helping to shift perspectives so that fresh and novel insights come to mind and heart. As a contemplative exercise it is a potent catalyst for deepening understanding and insight into a person’s challenging life experiences that may have created a need for healing. This is also very effectively done in group settings with “Council Practice” at the beginning and end of the workshop, where participants can share their intentions, questions, and experiences of their Nature Walk. A group setting can facilitate powerful healing experiences especially when focused around central traumatic themes such as sexual/physical abuse, addictions, or life-limiting diagnoses.

Wilderness Rites of Passage

More intensive is the practice of Wilderness Rites of Passage, which involve a facilitated two- to four-day solo wilderness fast. It should only be attempted under skilled supervision with ample preparation time, education, survival instruction and experienced therapeutic direction. Based on the Indigenous practice of the Vision Quest, which marks transition from one life-stage to the next, Wilderness Rites of Passage are a practice of recognizing old identities or patterns of behaviour and allowing them to die with dignity. New ways of being can develop and expand from the experience. The practice involves the careful consideration of *intention* for the Vision Quest, *severance* practices to disconnect from limiting paradigms, entering the *threshold* time in sacred space and enduring the fast with limited protection from the elements, and following rebirthing and *reintegration/reincorporation* practices to cultivate a deepened awareness and sense of self.¹¹ This practice can help with challenging transitions in life such as the ending of a relationship or transitioning from one career to another, healing through layers of trauma, or coming to terms with a life-limiting diagnosis such as cancer.¹²

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Environmental Responsibility

As stewards for natural healing practices that consider the health of the environment equally important as the health of the individual, NDs can also facilitate environmental restoration and sustainability practices within our own communities as therapeutic exercises. Encouraging patients to get involved with a local community eco-project such as a community garden or volunteering for an environmental clean-up project are practices that enable healing on both an individual and the global scale. Even encouraging patients to compost to enrich the soil facilitates a sense of shared healing, environmental responsibility and interconnection with their elemental environment.

Making beauty in a wounded place is healing for both the environment and those that it environs. On June 15, 2019 (the third Saturday of every June), Radical Joy for Hard Times will host its annual Global Earth Exchange. On this day, people from around the world gather in a natural area that has been scarred by human or natural acts (pollution, industrialization, climate change, etc.) and offer gifts of beauty. It is a bold, healing, and beautiful event and people submit their photos on-line from all around the Earth.¹³ www.radicaljoyforhardtimes.org

The process of ecotherapy can take many forms and can be easily incorporated into any therapeutic setting. It is, however, necessary for the naturopathic doctor incorporating ecotherapy within their practice to be able to identify issues of transference, counter-transference, the therapeutic alliance and professional ethics.¹⁴ Naturopathic doctors engaging in ecotherapy practices need to remain objective, and be aware not to respond to patients' disclosures from a point-of-view of personal agenda or preference.

Both the ND and the patient must understand that the shift towards the inclusion of ecopsychological content is a shared responsibility of both the patient and the ND. The inclusion of these practices are one method to align practitioners and our patients with the philosophies that define naturopathic medicine and that do not separate human nature and Nature.

These practices will also help to bridge the practice of medicine itself towards an integrated and truly holistic art and science; an art and science which seeks to heal the entire person on a multiplicity of levels by incorporating the best of science, holistic theory, skill, and compassion, with an enduring respect for the *vis medicatrix naturae*. 🌿

About the Author

Dr. Denis Marier, ND, MA is a graduate of CCONM and taught the "Art and Practice of Naturopathic Medicine" from 2003-2007. He graduated from Naropa University in 2008 with an MA in Transpersonal Psychology (Ecopsychology Concentration). His connection with his Métis ancestry has propelled him further along his journey of healing trauma, both personal and intergenerational through Vision Quest and other nature-based therapies. As an ecopsychologist, Dr. Marier has a focus in bringing nature-based practices into his work. He is an artist and Wilderness Therapy Guide and offers wilderness rites of passage/Vision Quest programs, medicine walks, original totem drawings and other nature-based practices through Tribe Academy (tribeacademy.ca).

References

- Housman, Justin. 2018. *Scottish doctors are now prescribing hikes and time outdoors for their patients*, <https://www.adventure-journal.com/2018/10/scottish-doctors-are-now-issuing-prescriptions-to-go-hiking/> accessed January 6, 2019.
- Steven Joseph, PhD. 2011. *What Doesn't Kill Us*, Philadelphia, PA, Basic Books.
- Rozsak, Theodore. 1992. *The Voice of the Earth: An Exploration of Ecopsychology*, Grand Rapids: Phanes Press, Inc. p. 14.
- Jung, Carl G. 1968. *Man and his Symbols*, Chicago, IL: Ferguson Publishing Company.
- Glendinning, Chellis. 1994. *My Name is Chellis and I'm Recovering From Western Civilization*, Boston: Shambala Publications.
- Orchin, Ira, *Taking Therapy Outdoors: How to use nature to get tough cases unstuck*, *Psychotherapy Networker*, Nov/Dec. 2004.
- Davis, John. 2006. Class notes from *Ecopsychology: ENV565e*, Naropa University.
- Davis John and Canty, Jeanine In Friedman, H. L., & Hartelius, G. (Eds.). (2013). *Handbook of Transpersonal Psychology*. NY: Wiley-Blackwell. Pp 597 – 611.
- Foster, Steven, with Little, Meredith. (1998). *The Four Shields: The Initiatory Seasons of Human Nature*, Big Pine, CA: Lost Borders Press.
- The Contemplative Nature Walk – Adapted from *Soulcraft: Crossing into the Mysteries of Nature and Psyche*, Bill Plotkin (2003) and implemented in Ecopsychology 565e as taught by Jed Scott Swift at Naropa University.
- Foster, Steven with Little, Meredith, 1992. *The Book of the Vision Quest: Personal Transformation in the Wilderness*, Simon and Schuster Inc., New York, NY.
- Eberle, Scott. 2006. *The Final Crossing: Learning to Die in Order to Live*, Big Pine, CA: Lost Borders Press.
- Johnson, Trebbe. 2018. *Radical Joy for Hard Times*, Berkeley, CA: North Atlantic Books.
- Davis, John. 2006. Class notes from *Ecopsychology: ENV565e*, Naropa University.



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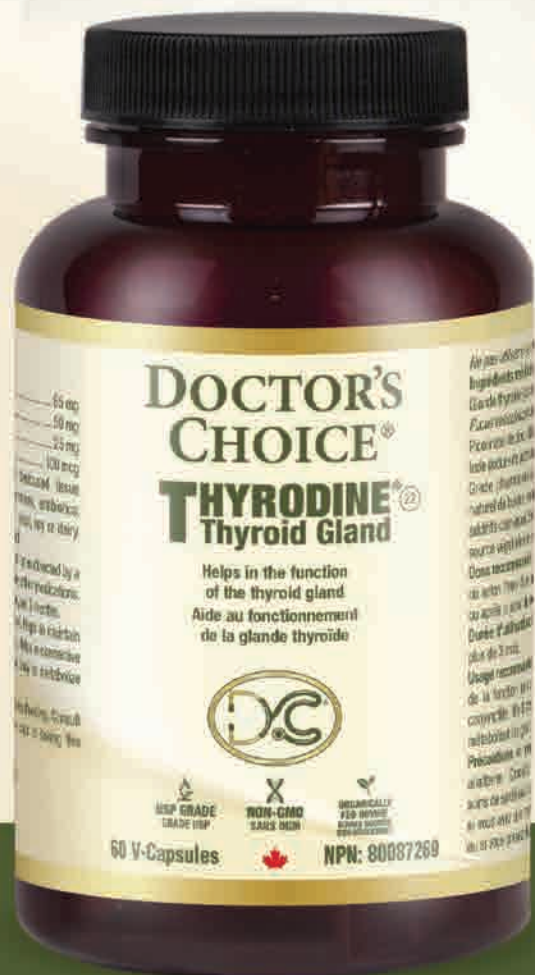
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Foundational Approaches to Concussion Management

Dr. Nikole MacLellan, ND, RD, BSc AHN, CISSN and David H. Nelson, ND (cand.)

Concussions are a form of traumatic brain injury and are widespread in the world of athletics, as well as in everyday life. Knowledge about the physiology and the anatomy of affected brain regions continue to be in flux researchers seek to understand its etiology and evolution.

There are many ideas concerning the treat and management of concussions, but all paradigms agree upon two fundamental tenets: 1) concussion management requires a multidisciplinary approach using a team of knowledgeable practitioners and, 2) in the earlier stages after a concussion a second concussion can lead to secondary impact syndrome, characterized by a chronic inflammatory and an increased risk of additional brain cell death.¹

Naturopathic doctors have a diversity of treatment options that are well supported by current research and remembering the foundations of health, including nutrition, exercise, and sleep, should be in tandem with, or proceed, a supplemental approach to concussion management.

One commonly belief is that a concussion is a bruise to the brain. This is a simplistic view of a complex biological reality. The neurobiological ramifications of a head injury lie in axonal shearing.² The connective tissue of the meninges are torn apart, and this damaged tissue releases reactive oxygen species (ROS). The sudden release of ROS results in cell death including cells forming the Blood-Brain Barrier (BBB). Increased permeability of the BBB allows ions, namely potassium, chloride, and sodium, to leak through causing the brain to swell.³ Normally lactate, during oxygen sufficiency, is used for energy production intermediates, but brain hypoxia, from a concussion leads to rising lactate levels and an increase in cell death.⁴

Usually, cell death triggers a healthy immune response to clean up cellular debris. Following a concussion, depending upon the health of the patient, an inflammatory cascade can help repair the injured tissue. However, the enhanced immune response can, when the patient is not appropriately managed, result in the deposition of beta-amyloid plaque and over time contribute to age-related neurodegeneration. At the neuronal level, there is an influx of calcium into the cells and an outflux of potassium. This results in

blood vessel vasoconstriction and to the reduced oxygen carrying capacity of blood (due to osmotic pull). Reduction of oxygen leaves the brain with an energy crisis. During this phase of hypoxia, the excitatory neurotransmitter glutamate is released leading to neuronal excitotoxicity which continues the proliferation of cell death.⁵

Our brains have a great capacity to heal and are blessed with many pathways that seek to bring back health. Brain-derived neurotrophic factor (BDNF) is paramount to the regeneration of brain tissue post-concussion. BDNF production is enhanced by exercise, sleep, coffee, and some supplements. Low levels of BDNF are pathognomonic for brain injury and will likely become a surrogate measure for concussion severity in the future.⁶

In recent years several tools have been developed to describe the brain's metabolic state.

Diagnostic imaging does not show metabolic damage but is critical to can rule out hemorrhage and skull fracture. Knowledge of metabolic damage helps with diagnosing the stage of injury and the timing of treatments. Unfortunately there is rarely baseline data when working with concussed patients (what was their normal before becoming injured?). And, an unfortunate all-too-common occurrence is the return of athletes and general population to sport or work or other activities of daily living before they have sufficiently healed.^{7, 8}

Thus, a good medical history during initial intake and the presence of a knowledgeable third party are important to developing a more complete medical and personal history. A careful understanding of your patient's lifestyle, habits, sleep hygiene, dietary decisions, and stress tolerance can aid in patient assessment treatment choices. Pay particular attention to the whole person during intake since the brain is a central administrator. Determine the scope of injury, and changes in function, across the life of the patient will highlight features that may have been missed by the patient themselves.

Given our current understanding of concussions one treatment goal is to reduce inflammation and brain function regeneration.

Exercise

Berlin Concussion in Sport Group Consensus statement 2017 outlines acute management recommendations with back to play recommendations for concussions in sport. This is an excellent tool for practitioners to ensure their patients will re-enter their sport/

activity safely.⁹ A brief summary of their major recommendations include: 1) using SCAT5 (Sports Concussion Assessment Tool 5th Edition) and CRT5 (Concussion Recognition Tool 5th Edition) as foundational assessment for concussions in all sports¹⁰⁻¹² at least 10 minutes should be allocated for an off-field evaluation in a distraction-free environment, and 3) make it a priority to educate and the entire allied healthcare team, including nurses, emergency medical technicians, primary care and emergency medicine physicians.

Often the lingering issue of elevated heart rate and low heart rate variability indicate autonomic dysfunction and the need for nervous system retraining.¹⁸ Without retaining this system patients will have elevated levels of cytokines and may experience significant anxiety, depression, and other parasympathetically-mediated symptoms that can persist for weeks, months or even years.¹²

The Buffalo Concussion Treadmill Test (BCTT)¹³ is one method to assess the readiness and to safely return athletes and citizens back to sports and vigorous activity who have been symptomatic with activity. The purpose of the BCTT is to:

- To investigate exercise tolerance in patients with post-concussive symptoms (PCS) lasting more than three weeks.
- To help establish appropriate levels of exercise to aid in return to play for concussed athletes and assist in treatment protocols.
- To aid in differentiating between possible diagnoses for concussive symptoms (cervicogenic injury) and etiology of the concussion.
- To identify physiological variables associated with exacerbation of symptoms, and the patient's level of recovery.

If you do not feel comfortable or have the facilities to conduct these evaluations, patients should be referred to an appropriately trained allied healthcare professional.

Sleep

Brain repair occurs during sleep, thus a sleep diary and sleep history, past and present, can help to diagnose problems. A sleep study can assess and diagnose brain wave pattern changes that affect both the sleep state and the wake state. The input of a sleep partner or parent can also be helpful.

Research shows that melatonin can improve sleep disturbances in some patients.¹⁴

Melatonin is a darkness signal to the suprachiasmatic nucleus, and a sleep regulator, which initially signals readiness for the onset of sleep.¹⁵ Melatonin is also a powerful antioxidant that can help with brain repair.¹⁶ Staying asleep is usually associated with factors other than just melatonin - sleep in an active process and not merely being unconscious.¹⁷

Although some debate surrounds melatonin dosing, a recent research trial with athletes suggests using a moderate dose to mimic the body's natural light/dark response. The study used a dose of 2mg at bedtime.¹⁸

Nutrition

Poor nutrition and the consumption of ultra-processed foods can be one of the factors in systemic inflammation seen in clinical practice. Assessing a concussed patient's diet and suggesting the consumption of whole foods will help to nourish them.¹⁹

One of the better ways to reduce inflammation is an anti-inflammatory diet or a ketogenic diet.^{20, 21} When making nutritional recommendations do not overwhelm the patient with a whole new way of eating without appropriate, complete support. Assess the patient's ability to add and subtract new foods and culinary habits. Starting with an anti-inflammatory diet and teaching the principles of healthy eating, before going to a wholly ketogenic diet, dovetails well with a foundational approach to healing.

It is important when discussing nutrition with your patients, to remember that autonomic dysregulation post-TBI can lead to a predominantly sympathetic state and thus adversely impact on the digestive system. Autonomic dysregulation has been associated with IBS symptoms and having some gastrointestinal issues are widespread in concussion patients.^{22, 23} Botanical bitters are a great tool to support celiac plexus blood flow and improve post-concussion gastrointestinal upset.²⁴

Supplementation

Laying a solid foundation of nutrition, exercise, and sleep hygiene are first-line in treating concussed patients. These lifestyle interventions are whole-body system-level medicine that no supplement can duplicate.

There are many supplements with research for concussion management, and some of that research is detailed here:

Curcumin

Curcumin is a pluripotent antioxidant that affects many body systems especially those that are inflamed or that cause inflammation. Curcumin can protect the blood-brain barrier, brain metabolism and mitochondria, and aid in synaptic plasticity. The critical clinical issue is absorption; delivery systems that will work for a concussed patient. Recommended dose of curcuminoids is 350 to 2,000mg per dose up to 4 times per day depending upon gastrointestinal tolerance.^{25, 26}

Creatine

Creatine is involved in ADP-ATP recycling. Creatine has been shown to boost brain energy, reduce post-traumatic amnesia, and improved recovery outcomes including decrease duration of treatment and an increase in post-concussion cognition.

However, the studies into brain creatine levels show concentration is variable and not constant – it seems that tissue type, amount of activity, degree of vasculature affected, and type of traumatic brain injury can effective levels.²⁷ There is clearly a need for more research, as current findings indicate that brain trauma may affect neural creatine concentration, and that the concentration postinjury is related to cognitive performance. The recommended dose is 5g per day with no loading phase required.²⁸

Fish Oil

Fish oil has multiple brain benefits. It provides raw materials that not only build new brain tissues but also combat inflammation. Both EPA and DHA in fish oil have neuroprotective effects, attenuate neuronal glutamate excitotoxicity, and assist brain metabolism in post-trauma clean-up and repair. The recommended dose is 1.5-3.0 g DHA twice daily for 30 days with additional EPA of 500 to 2000 mg per day as an anti-inflammatory.^{29, 30}

Additional supplemental interventions with research, include: choline,³¹ acetyl-L-carnitine,³² glutathione,³³ vitamin B12,³⁴ and vitamin C.³⁵

Summary

Taking a foundational approach to concussion management by placing emphasis on nutrition, appropriate exercise, and sleep hygiene reflect the vector of current research and clinical guidelines. Incidentally, the foundational approach is one of the fundamental frameworks of naturopathic medicine and is well suited for an alliance with the conventional paradigm. While it is important to supplement when necessary, to give the patient the best chances at cultivating recovery start with whole-body medicine and build a treatment around the individual. 🌱

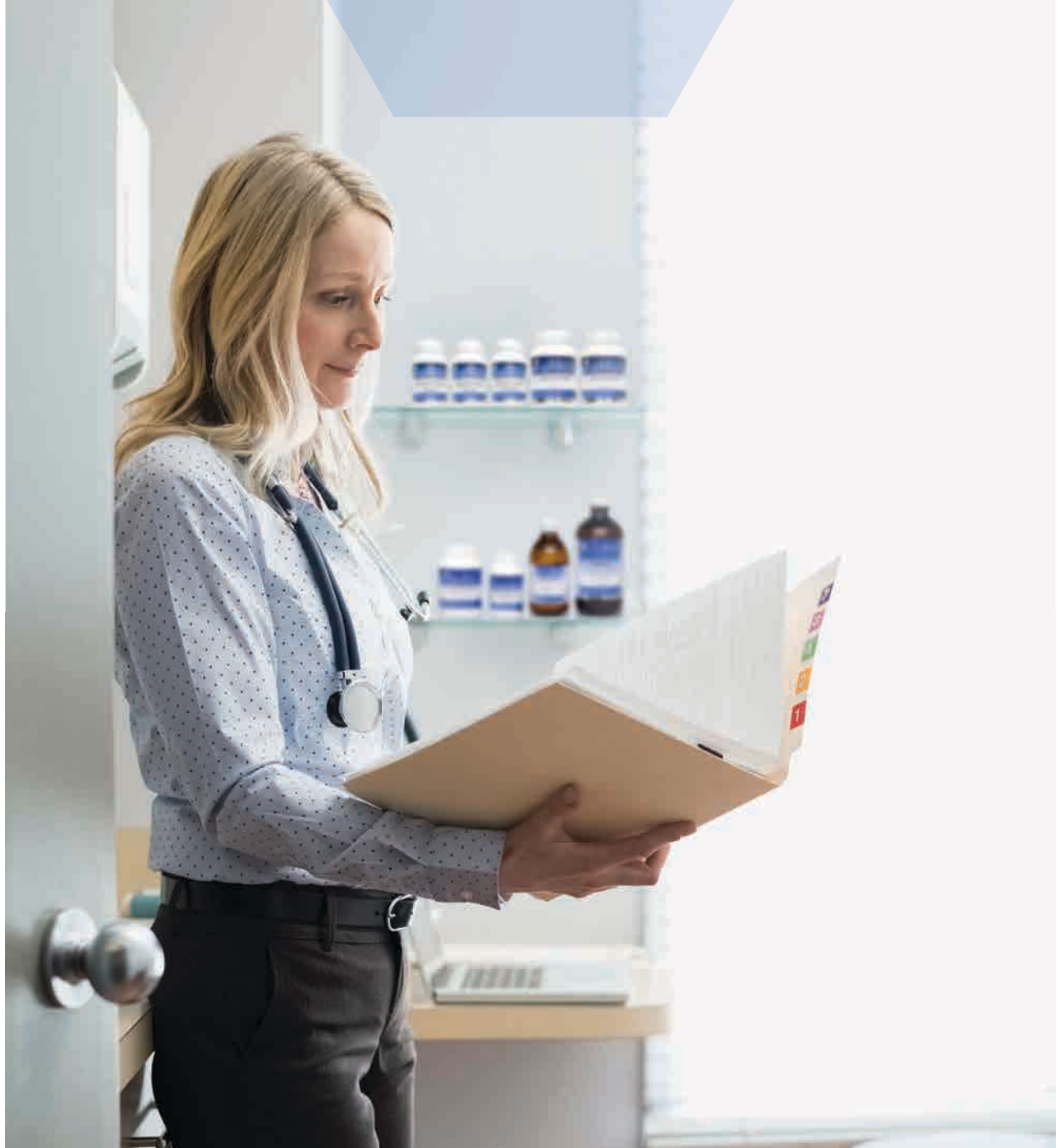
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Dr. Nikole MacLellan, ND, RD, BSc AHN, CISSN graduated from the Canadian College of Naturopathic Medicine in 2017 and is also a Registered Dietitian. She currently works at PROActive Health & Performance Centre in Burnside Nova Scotia. Dr. MacLellan has a strong sports medicine focus and very is passionate about chronic inflammation and regenerative medicine.

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References

- Foris LA, Donnelly III CJ. Second Impact Syndrome. [Updated 2018 Oct 27]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK448119/>
- Meaney DF, Smith DH. Biomechanics of Concussion. *Clin Sport Med*. 2011;30(1):19-31. doi:10.1016/j.csm.2010.08.009
- Unterberg AW, Stover J, Kress B, Kiening KL. Edema and brain trauma. *Neurosci*. 2004;129(4):1019-1027. doi:10.1016/j.neuroscience.2004.06.046
- Glenn TC, Martin NA, Horning MA, et al. Lactate: brain fuel in human traumatic brain injury: a comparison with normal healthy control subjects. *J Neurotrauma*. 2015;32(11):820-32
- Giza CC, Hovda DA. The new neurometabolic cascade of concussion. *Neurosurgery*. 2014;75 Suppl 4(4):S24-33.
- Korley FK, Diaz-Arastia R, Wu AHB, et al. Circulating Brain-Derived Neurotrophic Factor Has Diagnostic and Prognostic Value in Traumatic Brain Injury. *J Neurotraum*. 2016;33(2):215-225. doi:10.1089/neu.2015.3949
- Higgins KL, Denney RL, Maerlender A. Sandbagging on the Immediate Post-Concussion Assessment and Cognitive Testing (ImPACT) in a high school athlete population. *Arch Clin Neuropsych*. December 2016. doi:10.1093/arcn/acw108
- Meaney DF, Smith DH. Biomechanics of Concussion. *Clin Sport Med*. 2011;30(1):19-31. doi:10.1016/j.csm.2010.08.009
- Patricios JS, Ardern CL, Hislop MD, et al Implementation of the 2017 Berlin Concussion in Sport Group Consensus Statement in contact and collision sports: a joint position statement from 11 national and international sports organisations *Br J Sports Med*. 2018;52:635-641
- Echemendia RJ, Meeuwisse W, McCrory P, Davis G, Purukian M, Leddy J, ... Herring S. (2017). The Sport Concussion Assessment Tool 5th Edition (SCAT5). *Brit J Sport Med*. bjsports-2017-097506. <https://doi.org/10.1136/bjsports-2017-097506>
- Echemendia RJ, Meeuwisse W, McCrory P, Davis G, Purukian M, Leddy J, ... Herring S. (2017). The Concussion Recognition Tool 5th Edition (CRT5). *Brit J Sport Med*. bjsports-2017-097508. <https://doi.org/10.1136/bjsports-2017-097508>
- Bodnar CN, Morganti JM, Bachstetter AD. Depression following a traumatic brain injury: uncovering cytokine dysregulation as a pathogenic mechanism. *Neural Regen Res*. 2018;13(10):1693-1704.
- Leddy JJ, Willer B. Use of Graded Exercise Testing in Concussion and Return-to-Activity Management. *Curr Sport Med Rep*. 2013;12(6):370-376. doi:10.1249/jsr.0000000000000008
- Osier N, McGreevy E, Pham L, et al. Melatonin as a Therapy for Traumatic Brain Injury: A Review of Published Evidence. *Int J Mol Sci*. 2018;19(5):1539. Published 2018 May 22. doi:10.3390/ijms19051539
- Srinivasan V, Pandi-Perumal SR, Trahkt I, et al. Melatonin and Melatonergic Drugs on Sleep: Possible Mechanisms of Action. *Int J Neurosci*. 2009;119(6):821-846. doi:10.1080/00207150802328607
- Reiter RJ, Mayo JC, Tan D-X, Sainz RM, Alatorre-Jimenez M, Qin L. Melatonin as an antioxidant: under promises but over delivers. *J Pineal Res*. 2016;61(3):253-278. doi:10.1111/jpi.12360
- Eugene AR, Masiak J. The Neuroprotective Aspects of Sleep. *MEDube Sci*. 2015;3(1):35-40
- Grima NA, Rajaratnam SMW, Mansfield D, Sletten TL, Spitz G, Ponsford JL. Efficacy of melatonin for sleep disturbance following traumatic brain injury: a randomised controlled trial. *BMC Med*. 2018;16(1):8. Published 2018 Jan 19. doi:10.1186/s12916-017-0995-1
- Institute of Medicine (US) Committee on Nutrition, Trauma, and the Brain; Erdman J, Oria M, Pillsbury L, editors. Nutrition and Traumatic Brain Injury: Improving Acute and Subacute Health Outcomes in Military Personnel. Washington (DC): National Academies Press (US); 2011. 11, Ketogenic Diet. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK209323/>
- Ricker MA, Haas WC. Anti-Inflammatory Diet in Clinical Practice: A Review. *Nutr Clin Pract*. 2017;32(3):318-325. doi:10.1177/0884533617700353
- McDougall A, Bayley M, Muncie SE. The ketogenic diet as a treatment for traumatic brain injury: a scoping review. *Brain Injury*. 2018;32(4):416-422. doi:10.1080/02699052.2018.1429025
- Esterov D, Greenwald BD. Autonomic Dysfunction after Mild Traumatic Brain Injury. *Brain Sci*. 2017;7(8):100. Published 2017 Aug 11. doi:10.3390/brainsci7080100
- Salvioli B, Pellegatta G, Malacarne M, Pace F, Malesci A, Pagani M, & Lucini D. (2015). Autonomic nervous system dysregulation in irritable bowel syndrome. *Neurogastroenterol Monit*. 27(3), 423–430. <https://doi.org/10.1111/nmo.12512>
- McMullen MK, Whitehouse JM, Towell A. Bitters: Time for a New Paradigm. *Evid-Based Compl Alt*. 2015;2015:670504.
- Petraglia A, Bailes J, Winkler E. Stuck at the bench: Potential natural neuroprotective compounds for concussion. *Surg Neurol Int*. 2011;2(1):146. doi:10.4103/2152-7806.85987
- Dong W, Yang B, Wang L, et al. Curcumin plays neuroprotective roles against traumatic brain injury partly via Nrf2 signaling. *Toxicol Appl Pharm*. 2018;346:28-36. doi:10.1016/j.taap.2018.03.020
- Ainsley Dean PJ, Arkan G, Opitz B, Sterr A. Potential for use of creatine supplementation following mild traumatic brain injury. *Concussion*. 2017;2(2):CNC34. Published 2017 Mar 21. doi:10.2217/cnc-2016-0016
- Buford TW, Kreider RB, Stout JR, et al. International Society of Sports Nutrition position stand: creatine supplementation and exercise. *J Int Soc Sport Nutr*. 2007;4(1):6. doi:10.1186/1550-2783-4-6
- Pu H, Jiang X, Wei Z, et al. Repetitive and Prolonged Omega-3 Fatty Acid Treatment After Traumatic Brain Injury Enhances Long-Term Tissue Restoration and Cognitive Recovery. *Cell Transplant*. 2017;26(4):555-569.
- Oliver J, Jones M, Kirk K, et al. Effect of Docosahexaenoic Acid on a Biomarker of Head Trauma in American Football. *Med Sci Sport Exerc*. 2016;48(6):974-982. doi:10.1249/mss.0000000000000075
- Institute of Medicine (US) Committee on Nutrition, Trauma, and the Brain; Erdman J, Oria M, Pillsbury L, editors. Nutrition and Traumatic Brain Injury: Improving Acute and Subacute Health Outcomes in Military Personnel. Washington (DC): National Academies Press (US); 2011. 9, Choline. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK209327/>
- Ferreira GC, McKenna MC. L-Carnitine and Acetyl-L-carnitine Roles and Neuroprotection in Developing Brain. *Neurochem Res*. 2017;42(6):1661-1675. doi:10.1007/s11064-017-2288-7
- Dash PK, Hergenroeder GW, Jeter CB, Choi HA, Kobori N, Moore AN. Traumatic Brain Injury Alters Methionine Metabolism: Implications for Pathophysiology. *Frontiers in Systems Neuroscience*. 2016;10. doi:10.3389/fnins.2016.00036
- Vonder Haar C, Peterson TC, Martens KM, Hoane MR. Vitamins and nutrients as primary treatments in experimental brain injury: Clinical implications for nutraceutical therapies. *Brain Res*. 2015;1640(Pt A):114-129.
- Razmkon A, Sadidi A, Sherafat-Kazemzadeh E, Mehrfashan A, Jamali M, Malekpour B, & Saghaforia M. (2011). Administration of Vitamin C and Vitamin E in Severe Head Injury: A Randomized Double-blind Controlled Trial. *Neurosurgery*. 58, 133–137. <https://doi.org/10.1227/NEU.0b013e3182279a8f>



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