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**Dr. Tori Hudson Receives Prestigious
“Living Legend” Award from Oregon
Association of Naturopathic Practitioners**
Peter Jones, PhD

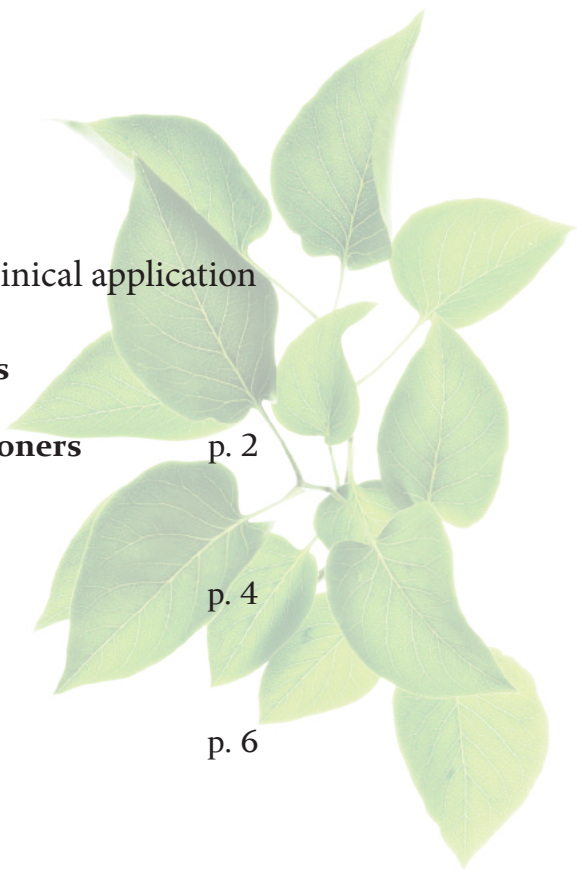
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Dr. Tori Hudson Receives Prestigious “Living Legend” Award from Oregon Association of Naturopathic Practitioners

Peter Jones, PhD

On December 3, 2016, the “Living Legend” award of the Oregon Association of Naturopathic Practitioners (OANP) was bestowed upon Dr. Tori Hudson. The OANP could not have picked a more deserving individual to receive this honour. As a health-care practitioner, as an educator, and as a researcher, Dr. Hudson is the perfect example of an individual whose career has been outstanding in her pursuit of excellence.

In her role as a health-care practitioner, Dr. Hudson is the founding medical director of the highly successful A Woman’s Time clinic. She also cofounded the Institute of Women’s Health and Integrative Medicine. Her successes as a practicing physician

are well-known to those in the Oregon community.

As an educator, her activities have been far-reaching. Dr. Hudson has served the National College (now University) of Naturopathic Medicine in several capacities, including as medical director and academic dean. Currently, she holds teaching positions as clinical professor at National University of Natural Medicine, Southwest College of Naturopathic Medicine, and Bastyr University. She is Founder and Co-Director of the Naturopathic Education and Research Consortium, a nonprofit for accredited naturopathic residencies.

In research, Dr. Hudson has been highly prolific; indeed, she has engaged in numerous research projects stemming back over a few decades, with outputs that include prestigious publications including author of a *Women’s Encyclopedia of Natural Medicine*, second edition (2008). She has contributed to the *Textbook of Natural Medicine*, third edition, as well as *Integrative Women’s Health*. She has published countless peer-

reviewed papers on topics ranging from effectiveness of a menopausal botanical formula to nutritional therapies aimed at cervical carcinoma.

These achievements, along with a considerable history of public-service activities, have naturally culminated in her receiving numerous prior awards over her career. Just a few of the distinctions include President’s Award from the American Association of Naturopathic Physicians for her research in women’s health (1990); Naturopathic Physician of the Year award (1999); NCNM Alumni Pioneer Award (2003); Natural Products Association Pioneer Award (2009); and in 2012, Dr. Hudson was inducted into the NCNM Hall of Fame. Even the Columbia River Girl Scout Council bestowed the “Women of Distinction” award on Dr. Hudson, attesting to how widely her name is recognized across the community.

Dr. Hudson has also been a leading advisor in shaping Nutritional Fundamentals for Health (NFH) in this company’s pursuit of excellence. NFH was founded in 2003 as a

company that takes evidence-based research findings and translates that knowledge into development of efficacious natural products. Ivory-tower research often stops short of real useable knowledge translation—actionable outputs. Together with two partners, I founded NFH from the perspective of a professor and department chair at McGill University. That job involved undergraduate and graduate teaching, but focused almost exclusively on research. Indeed, my career at the University of British Columbia, McGill University, and now presently the University of Manitoba has been focused on establishing scientific evidence underpinning the benefits of nutritional and natural health products. After publishing over 350 peer-reviewed papers on nutrition and natural products research, our research team is knowledgeable in this space. NFH indeed originally served as a source of high-quality, evidence-based products for the clinical trials community. These were scientists that required dependable sources of bioactives for human intervention studies. However, rapidly interest arose within other branches of the professional health-care

provider cluster. Particularly, naturopathic practitioners began to look to NFH's growing line of products as a go-to source, and since those early days, we now enjoy a high level of interest in our product line by naturopathic practitioners both in Canada and the US.

As does Dr. Hudson, NFH continually strives to pursue excellence in the quality of its products. Ensuring quality in terms of validity of source material content, as regulated by our strict Health Canada regulations, is one component. Making sure we engage third-party testing to screen for any deleterious materials in our sourced bioactives is another part of meeting this high standard. But probably the greatest factor in NFH's pursuit of excellence is the advisors we have recruited to assist in our path forward. NFH's two senior guidance groups, the Scientific Advisory Panel and the Medical Consultancy Group, are comprised of the very best scientists and active practitioners in the natural health product space internationally. And in this capacity, we are privileged and honoured to have Dr. Hudson as one of our Medical Consultancy Group members,

where her input has been invaluable.

Principally, Dr. Hudson has aided in our rollout of products by keeping NFH up to date on emerging evidence underpinning new developments. Her opinions and judgement have been critical to how NFH invests in new strategies, such as its recently deployed mushroom offerings.

Dr. Hudson delivers presentations at various conferences sponsored by NFH and served as one of the key speakers in the NFH-sponsored annual symposia "Advances in Women's Health."

Just recently, NFH has had the pleasure of sponsoring Dr. Hudson for the 2016 "Women in Balance" conference in Portland, Oregon, where NFH was a lead sponsor of the event.

NFH also benefits from serving as a diamond-level sponsor for Dr. Hudson Institute of Women's Health and Integrative Medicine and the quarterly conferences.

Last but not least, Dr. Hudson is an active

contributor to this series of issues of *Nutramedica*; you can read her excellent articles on latest developments in the natural products space on our website nfh.ca.

In summary, Dr. Hudson's pursuit of excellence across her amazing repertoire of activities makes her the ideal recipient for the Living Legend award. It is an honour and an immense personal privilege as President of NFH to be working alongside such an eminent scientist as Dr. Hudson. NFH takes pride in congratulating Dr. Hudson in her receipt of this distinguished award.

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Update on Medicinal Mushrooms

Michael Traub, ND, FABNO

An article previously published in *Nutramedica* (Summer 2015) briefly discussed the seven mushrooms available

from Nutritional Fundamentals for Health and their use in cancer during surgery, chemotherapy, and radiotherapy to support immune function, as well as following conventional treatments to prevent recurrence. Since then, NFH has released another combination mushroom product, based on preliminary research that the combination of *Trametes* and *Ganoderma* extracts may have synergistic effects in inducing apoptosis of leukemia cells, compared to *Trametes* alone.^[1] The new combination product contains *Trametes*, *Ganoderma*, *Shiitake*, and *Maitake*. This synergy theory begs for further research to confirm that blends are complementary and reinforcing, rather than a dilution of potency.

In addition, the earlier article mentioned research suggesting that mycelial extracts may be more potent and cost-effective than the extracts of mushroom fruiting bodies. This concept has not stood up to further scrutiny.^[2] The active constituents in mushrooms consist principally of β -D-glucans, and secondarily

of triterpenoids and ergosterol. Starch is utilized as an indicator of adulteration. Analytical methods that quantify the active compounds demonstrate that mushrooms fruiting bodies are high in β -D-glucans and very low in starch. Mycelium produced on cereal grains is low in β -D-glucans and high in starch. Ergosterol analysis shows the actual amount of fungal material in the products.

Ergosterol also has antitumour and antioxidant properties,^[3] and is a precursor to vitamin D₂. When exposed to sunlight (UVB), mushrooms as well as human skin convert ergosterol to ergocalciferol (provitamin D₂).^[4]

Mushrooms grown on natural substrates contain precursors that yield secondary metabolites such as triterpenoids, whereas mycelium produced on cereal grains lack such precursors. In addition to playing a complementary role with β -glucans in immune-system activation, triterpenoid actions are also hepatoprotective, lipid-lowering, antioxidant, inhibiting of

histamine release, and anti-inflammatory.^[5] The triterpenoids are lipids, e.g. ganoderic acids, responsible for the bitter taste of reishi, and this bitterness can be used as a quick method of determining the quality of a reishi product.

β -D-Glucans are a polysaccharide structural component of the cell walls of mushrooms, mycelium, yeast, certain bacteria, and cereal grains. The unique structural differences of β -D-glucans determine medicinal activity and explain why fungal β -glucans are more active than cereal β -glucans.^[6]

β -D-Glucans activate or potentiate both innate and adaptive immune responses and have been described as “biological response modifiers” and “host defense” potentiators. β -Glucans increase the number and functional activity of macrophages, natural killer cells, and other subclasses of T cells. β -Glucans are not degraded by digestive enzymes, and pass intact into the small intestine where they activate specific β -glucan receptor sites.^[7] The immunological potentiation is not only

anticancer, but also increases protection against viral, bacterial, fungal, and parasitic infections.^[8]

β -Glucans and protein-bound β -glucans are responsible for the medicinal properties of mushrooms and mycelia. Lentinan, a pure (1 \rightarrow 3)- β -D-glucan [e], extracted from shiitake mushroom *Lentinus edodes*. PSK and PSP are protein-bound β -glucans derived from the fermentation of *Trametes* mycelium.

Medicinal mushrooms are a popular category of dietary supplements that actually have few quality-control standards. NFH is currently researching and developing methods to validate the β -glucans from specific mushroom sources.

The natural-product market contains many fraudulent mushroom products, particularly spiked polysaccharides that manufacturers blend in. DNA identification is not an accurate or appropriate method for finished products. NFH therefore works with suppliers to test the raw liquid

material to determine what the excipient/ carrier content will be at the spray-powder stage. Unfortunately, excipient starches test the same as polysaccharides. Most of the industry does not realize this and purchases inferior raw materials.

Because of the need to develop specific mushroom-polysaccharide profile standards for the purpose of identifying each exact source, a team of scientists from NFH and its conglomeration of companies is currently collaborating with the National Research Council of Canada on developing such methods to validate the identity of polysaccharide and β -glucan sources for each specific mushrooms species offered by NFH. You can count on NFH to hold the upper hand for quality mushrooms for clinical practice.

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Dry Eye Syndrome

Tori Hudson, ND

One of the most common consequences of hormonal changes associated with perimenopause and menopause is dry eyes. In fact, the majority of those who suffer dry eye are midlife women and older. In one study, presented at the annual meeting of the North American Menopause Society, 96% of 582 women with dry-eye symptoms were perimenopausal or menopausal. Unfortunately, only 27% of these women

had actually been diagnosed with dry eye syndrome by a practitioner, and most did not know that there was any relationship with menopause. In this same study, 95% of gynecologists and primary-care providers never asked about dry eyes during a medical history. Clearly, health-care providers need more information about this common and problematic health-care problem.

Dry eye is a condition in which there are either insufficient tears to lubricate the eyes or the tears are poor-quality, or there is an imbalance between tear production and drainage. Tears are essential for lubrication, to reduce the risk of eye infections, to wash away foreign bodies in the eye, and to keep the eye surface smooth and clear. Symptoms of dry eyes include irritation, gritty/scratchy or burning eyes, a sensation of something in the eyes, tearing, and blurred vision. In advanced dry eyes, damage to the cornea can occur and even impaired vision.

There are some simple self-care habits one can acquire to prevent and manage dry eyes:

- Blink regularly with prolonged reading

and computer screen work, to spread the tears evenly over the eyes.

- Take eye breaks: close eyes for a few minutes with reading or computer work that requires visual concentration.
- Position computer screen below eye level so that the eyes don't open overly wide as they would if the screen was higher. A lower screen may help to slow the evaporation of tears between blinks.
- Increase level of humidity indoors.
- Sunglasses worn outdoors helps to prevent exposure to wind and sun.
- Avoid dehydration.
- Avoid air blowing in the eyes.
- Warm wet compresses: apply over the eyes for five minutes, then gently rub the washcloth over the eyelids to loosen any particulate debris.
- Mild soap wash with baby shampoo or another soap intended to wash the eyes. Apply soap to clean fingertips, and gently massage into closed eyes near the base of the eyelashes followed by rinsing.

Flax Oil and Fish Oil

Both flaxseed oil and fish oil have demonstrated some positive benefits in dry eye disease, by decreasing inflammation, increasing tear production, and/or decreasing the evaporation of the tears. Several studies have determined an association between the intake of omega-3 supplements and meibomian gland oils and the implication for dry eye disease. Meibomian gland oils have been positively influenced by dietary omega-3 intake in individuals with Sjogren syndrome.^[1] In the Women's Health Study, data from 32,470 women found that a low dietary intake of omega-3s and/or a high omega-6-to-omega-3 ratio increased the risk of dry eye syndrome.^[2] In another study involving patients with Sjogren's syndrome, researchers found that the severity of dry eye and dry mouth disease was inversely proportional to membrane and serum levels of docosahexaenoic acid (DHA).^[3] There have also been two published anecdotal reports of flaxseed oil improving dry eye symptoms and thinning meibomian gland secretions.^{[4][5]} In a randomized clinical

trial, oral flaxseed oil intake improved ocular surface inflammation and tear tests in patients with rheumatoid arthritis or systemic lupus associated with Sjogren's syndrome and dry eye.^[6] An omega-3 supplement combination of 450 mg EPA, 300 mg DHA, 1,000 mg flax oil, and 183 IU of vitamin E oil improved dry-eye symptoms and increased salivary-gland secretion in patients with dry eye and dry mouth associated with Sjogren's syndrome.^[7] In a pilot, prospective, randomized, double-masked study conducted in 36 patients with dry eye, patients received either a daily dose of fish oil (450 mg EPA, 300 mg of DHA) and 1,000 mg of flaxseed oil, or placebo, for 90 days.^[8] By the end of the study, 90% had become asymptomatic in the treatment group, and only 7% in the placebo group. While there was no effect of fish oil / flax oil on meibum lipid composition or aqueous tear evaporation rate, the average tear production and tear volume were increased in the fish oil / flax oil group.

In a considerably larger study, 264 patients with dry eye were randomized to receive

1,000 mg EPA+DHA (650 mg EPA and 350 mg DHA) daily, or a placebo, for three months.^[9] Visits occurred at baseline and after one, two, and three months. At each visit, various measures of tear function and signs of inflammation in the eyes were recorded after a detailed examination and questionnaire. In 65% of patients in the EPA+DHA group and 33% of patients in placebo group, significant improvement in symptoms occurred at three months. Symptom improvement was largely a result of reduced tear evaporation, indicating that the fish oils helped to retain the water content of the lining of the eyes. The best results were in those individuals with blepharitis and disorders of the meibomian glands. More than 90% of the patients with chronic blepharitis showed improvements in tear function scores, compared to less than 20% of patients in the placebo group.

Sea-Buckthorn Oil

The effect of oral sea-buckthorn oil intake was studied in 100 individuals ages 20-75 in a double-blind, placebo-controlled study.^[10] Participants took 2 g/day of sea-buckthorn

oil or placebo oil for three months. Eighty-six participants completed the study. While the sea-buckthorn oil taken for three months by people with dry eye did not result in any changes in the fatty acid composition of the tears, it did have a positive effect on osmolarity and symptoms of dry eye including burning and redness.

In an earlier double-blind, randomized, parallel trial, 20- to 75-year-old women and men who had dry-eye symptoms consumed 2 g of sea-buckthorn oil or placebo oil daily for three months.^[1] One hundred participants were recruited, and 86 completed the study. Clinical dry-eye tests and symptom follow-ups were performed. The results of the study suggested that sea-buckthorn oil consumption attenuated the increase in tear-film osmolarity occurring during the cold season. It also decreased the maximum intensity of redness and burning symptoms in participants with dry eye. In addition, those who wore contact lenses reported fewer overall eye symptom days in the sea-buckthorn group.

Over-the-counter, preservative-free, single-vial eye drops are the mainstay of dry eyes, whether mild, moderate, or severe. Other medications and/or procedures from eye specialists are also available when symptoms are not adequately addressed with self-care, artificial tears, and nutritional supplementation.

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