Association for the Advancement of Restorative Medicine Quarterly Newsletter

RESTORATIVE MEDICINE DIGEST

Summer 2016

Cardiovascular Disease and the Gender Gap

Regina Druz, MD, FACC, FASNC, a nationally recognized cardiac imaging expert, discusses why metabolic syndrome might be to blame and what clinicians can do about it.

Other article topics in this issue:

- Safety and efficacy of progesterone in menopause
- Alternative perspectives in hypothyroidism
- Phthalates and chronic disease

Welcome to the Inaugural Issue of the Restorative Medicine Digest!

AARM designed this digest to complement the education offered in the *Journal of Restorative Medicine* (JRM) and our popular Restorative Medicine conferences. JRM is open access and publishes both original research and review articles related to Restorative Medicine. The conference is a unique integrative medicine symposium with a consistent focus on thyroid dysfunction and endocrine disorders. Knowing you are a busy, forward-thinking physician, the articles in this digest are intended to provide a quick read on innovative medical topics. If you would like more detailed information, you can do so by accessing *JRM* online or attending a conference.

In recognition of our upcoming 14th Annual International Restorative Medicine Conference, being held September 15-18, in Hilton Head, S.C., each article in this issue is related to a 2016 conference speaker.

We highlight two articles from thyroid experts Dr. Denis Wilson and Dr. Kent Holtorf which were published in JRM. As the foundation of Restorative Medicine recognizes the unique interconnectedness of systems, these doctors start by balancing the endocrine system. They recognize that lab tests don't always reflect a patient's true state of health, so they offer alternative methods for clinicians to identify and treat hypothyroidism and chronic illnesses.

Our feature article is an interview with Dr. Regina Druz, a traditionally-trained cardiologist. She shares her evolution as a physician and how she came to embrace preventative medicine as a key strategy for protecting women from cardiovascular disease.

Also on the topic of women's health, we present original research from endocrinologist Jerilynn Prior, MD about the relationship between progesterone and cardiovascular risk factors.

Integrative practitioners recognize that environmental medicine is a key consideration for treating chronic illness, so we highlight work by Dr. Joseph Pizzorno, who is offering a seven-hour workshop at the annual conference to expose the impact of persistent organic pollutants (POP) on chronic disease. He will share detoxification protocols, which he explains have become a medical necessity.

Botanical medicine is an additional route to explore when treating for toxin exposure. We have summarized a JRM article in which authors Dr. Jillian Stansbury, Dr. Eugene Zampieron and Dr. Paul Saunders collaborated on a review of hepatoprotective herbs, based on published science and their extensive clinical experience.

If you're new to Restorative Medicine, I hope you enjoy this glimpse into our philosophy and approach to integrative medicine. Our mission is to maintain a true cross-disciplinary collaboration. Restorative Medicine conferences embrace a mix of practitioners who enjoy sharing their different approaches to health in a friendly, casual environment. Thank you for joining us!

Yours in health and wellness,

Jen Palmer, ND

Jen Palmer, ND
Editor

Restorative Medicine Digest
(ISSN 2472-7709) is published quarterly by the Association for the Advancement of Restorative Medicine, Inc., 93 Barre Street, Suite 1, Montpelier, VT 05602. Phone 866-962-2276. Email conferences@restorativemedicine.org.

AARM
Association for the Advancement of Restorative Medicine

Publisher: Michael Friedman, ND
Editor: Jen Palmer, ND
Finance and Operations Director: Paula M. Woods

For advertising inquiries, please contact Steve Larose at 802-522-7224 or email steve@restorativemedicine.com

AARM
Association for the Advancement of Restorative Medicine

14th Annual International
RESTORATIVE MEDICINE CONFERENCE

Sept. 15-18, 2016
Sonesta Resort, Hilton Head Island South Carolina

Become Certified in T3 Therapy

Learn How to Optimize Body Temperature and Thyroid Function with Hormones, Botanicals and Nutrition

Your patient has felt exhausted for years. Blood tests and thyroid hormone levels are "normal." Where do you go from here? Knowing how to treat Low Temperature Syndrome with T3 hormone, nutrition and botanicals will change the way you look at lab tests and diagnose your patients. Offer new treatment to patients with chronic fatigue syndrome and fibromyalgia — Certification in T3 Therapy is an excellent means to build your practice.

Once certified, practitioners who are AARM members will be listed on a practitioner search function that identifies certified practitioners. This offers the opportunity to share contact information, clinic description and website links to potential patients.

Certification Requirements

To qualify for Certification in T3 Therapy you must meet the following requirements:

- Attend required lectures at the annual conference.
- Complete and pass the online examination within 4 weeks after the conference.
- Maintain certification by keeping current with updated lectures at pre-conference intensives at our annual conference at least once every three years.

Certification Faculty

Denis Wilson, MD
Pioneering clinician in thyroid management, developer of sustained release T3.

Kent Holtorf, MD
Author and founder of the National Academy of Hypothyroidism

Certification Day Topics

Sub Laboratory Hypothyroidism & Its Empirical Use of T3
Dosing of T3
Etiology of Thyroid Dysfunction & Health Implications
Treatment of Hypothyroid and Hyperthyroid
Assessing Thyroid and HPA Dysfunction

Save $200
Use promo code RMD200 when registering

For the complete conference schedule and to register, visit
http://restorativemedicine.org/aarm2016/

Cardiovascular Disease and the Gender Gap

How Metabolic Syndrome Might be to Blame, and What to do About It

By Jen Palmer, ND

Recently, I had the pleasure of speaking with Regina Druz, MD, FACC, FASNC about the gender gap in cardiovascular disease — the differences in pathophysiology, presentation, and prognosis between men and women — and why so many clinicians struggle to adequately address it.

Dr. Druz is keenly interested in personalized prevention strategies that combine traditional medicine with functional and integrative therapies. She is a nationally recognized cardiac imaging expert with board certifications in cardiovascular disease and internal medicine. She also has subspecialty certifications in nuclear cardiology, adult echocardiography, and cardiac computed tomography.

Founder of the cutting-edge program known as Fit in Your GENES — which grounds cardiovascular care on a patient's particular genome and environment, and includes nutrition, exercise, and supplements as interventions — she is committed to reducing the burden of heart disease, hypertension, hyperlipidemia, diabetes, metabolic syndrome, obesity, and inflammation.

Dr. Druz currently practices at the Integrative Cardiology Center of Long Island, and is a featured presenter at the 14th Annual Restorative Medicine Conference this September in Hilton Head, South Carolina. Here's what she had to say about the topic:

JP: Dr. Druz, do you feel that there's a gender gap in the diagnosis and care of cardiovascular diseases?

RD: Absolutely. Early trials in cardiology excluded women of childbearing age. As a practicing cardiologist, I learned that some of the very critical assumptions that shaped our clinical thinking had been developed in the absence of data on women. In 1979, Diamond and Forrester published a classic paper on risk estimates of obstructive coronary disease based on age, gender, and presenting symptoms. They relied on published studies, only to find that those had a bias toward women.

Ultimately, in order to make a gender comparison, they had to resort to autopsy studies to amass a larger volume of data.

In 2003, the National Institutes of Health (NIH) and the American Heart Association (AHA) embarked on a national campaign to educate women about heart disease. We are still struggling to understand gender- specific differences, and the pathophysiology, presentation of and prognosis for heart disease in women. But we have come a long way by raising awareness and openly acknowledging the fact that women indeed represent a different patient group, have different disease patterns and disease drivers. Based on my functional medicine experience, women are more prone to the effects of inflammation and hormonal imbalances and those are the drivers for their vascular disease.

JP: Could you elaborate a little bit more about what those hormone influences are — and what kind of patterns you see — in order to help other clinicians learn how to predict, and accurately diagnose, cardiovascular disease in women?

RD: With respect to coronary artery disease specifically, or cardiovascular disease in general, the use of hormones continue to be very controversial. When the Women's Health Initiative study [an NIH-funded study initiated in 1991] came out, instead of hearing the answers everyone was hoping for — that hormone replacement was beneficial for cardiovascular events — most of the answers were exactly the opposite: hormone replacement from equine sources was not really protective, and was actually harmful.

What I often see in perimenopause is that women develop insulin resistance that progresses over time — not necessarily to frank diabetes, but to obesity, hyperlipidemia, elevated blood pressure and the inability to lose weight. A lot of that insulin resistance is mediated hormonally on a local tissue level. Physically, the estrogen dominance that you see in perimenopause, before estrogen actually starts to decline, predisposes the formation of visceral fat tissue and results in overgrowth of breast tissue. That tissue overgrowth starts to compete with the thyroid for iodine supply, so women may begin to become hyperthyroid — if not by laboratory standards, then simply functionally. Since a lot of people in this country are iodine deficient, this exacerbates the problem.

Insulin resistance, estrogen excess and thyroid imbalance exerts a lot of stress on the body. Additionally, women at this

stage in life may also have increased demands at work and home, as their kids get older and careers are more stressful. Together, all of these stresses cause the body to pump out additional cortisol, which just adds fuel to the fire. So for women, it's a very complicated interplay of factors among insulin resistance, estrogen dominance, hypersecretion of cortisol and increased cholesterol levels. In effect, they land in a Bermuda Triangle where the end result is vascular inflammation, increased oxidative stress and immune vascular response — which, essentially, is the fast-track toward developing coronary artery disease.

Regina Druz, MD, FACC, FASNC

JP: So basically what you're saying is that women going through perimenopause or menopause are at a greater risk for metabolic syndrome — and that clinicians should be looking for those clues to predict if their patients might develop cardiovascular disease?

RD: Absolutely, and that's where I think lifestyle interventions are so promising—because in these early stages, insulin resistance and estrogen dominance aren't considered medical issues that require medication. But they are very significant inflammatory issues that will respond to appropriate nutrition, weight loss, exercise and, of course, appropriate supplementation. So there is a huge opportunity in the early stages of metabolic syndrome to really change the disease trajectory for both men and women—though I feel it's even more important for women, because the problem is more complex.

We know that once these chronic diseases are fully identified, the vascular risk is always higher for women. When these risk factors are present, metabolic syndrome, diabetes or insulin resistance seem always to put women in a less advantageous prognostic category for any cardiovascular outcome. And that's because the impact of the inflammation generated by these metabolic disturbances, and hormonal disturbances, continues to be higher for women than it is for men. In other words, it's not an even playing field between men and women when they cross into chronic disease.

There are actually some specific cardiac issues for women that are hardly ever found in men; for example, the so-called "broken heart syndrome," or takotsubo cardiomyopathy, has an international registry of nearly a thousand people at this point—and about 90 percent of them are women. A recent publication in *The New England Journal of Medicine* showed prognosis for the syndrome is not very good, and that it's comparable to other types of structural heart disease with a poor response to medication. The hypothesis is that takotsubo cardiomyopathy comprises two "parts" — an acute, inflammation-inducing stimulus superimposed on other pre-existing issues, either psychological or physical. This then elicits a very severe structural heart defect; it's a type of a cardiomyopathy that under most circumstances is reversible, but sometimes is not. There is a huge inflammatory component that drives takotsubo cardiomyopathy, and without a doubt, it happens mostly in pre- and post-menopausal women. I believe this is due to the metabolic disturbances that occur at this stage.

JP: Do you believe this poor clinical outcome is due to the fact that many doctors don't understand that the root causes of cardiovascular disease are different for women? And that they either don't know, or don't acknowledge, that it starts with this hormonal imbalance and therefore they aren't treating it properly?

RD: I think so. There was a lot of controversy generated by the Women's Health Initiative, and the medical community focused on the negative outcomes that were specifically related to prescription medications (equine estrogen). So it became easier for physicians to tell women that they couldn't take hormones because the study showed they were harmful. They stopped short of seeking the next step, or looking at other options, because I think they're either ignorant of those options, or they don't wish to pursue the controversial subject of bio-identical hormones. Plus, it takes a lot more time and effort to really address the root causes.

JP: The Women's Health Initiative study looked at synthetic hormones such as Premarin and progestin; do you suspect that bio-identical hormones would be a safer alternative — and could offer a solution to reduce this kind of vascular risk?

RD: You know, I think so. I certainly use bio-identical hormones myself, in a very controlled fashion, for women who present with early coronary artery disease that is not obstructive, and who are without clinical cardiac events. I find that I usually stay away from estrogen unless I'm absolutely certain there are actually good estrogen alternatives that are bio-identical, or that deliver a good amount of medication in a very reasonable and controlled fashion.

I think this is a discussion that a lot of women should be having with their doctors, including their gynecologists, in addition to an assessment of their breast cancer history and any genetic markers. I use bio-identical progesterone with very good results, sometimes with DHEA [dehydroepiandrosterone] topically as well, and I find it very valuable. I know that one can potentially use estrogen, particularly in a topical preparation, but I certainly would not use it in the pill form. It's much harder to use estrogen once a woman has a dual diagnosis of coronary

artery disease; but if she hasn't been diagnosed, and is at risk in addition to developing a lot of inflammation, I would certainly use it to try to balance hormones first.

JP: ***You hinted at the fact that there is some resistance from mainstream medicine — either through ignorance of the alternatives or just being uncomfortable with them — and therefore there is less acceptance that women are at high risk for cardiovascular disease. What about patients' perceptions? Do you find that they are stuck in that old mentality that cardiovascular disease is a man's disease?***

RD: Well, I find that women are becoming more aware — partly because of the efforts on my part, and also because organizations such as the American Heart Association are focused on educating women about how coronary artery disease plays a huge role in their mortality and morbidity.

Although most physicians would at least consider cardiovascular disease in women, the issue that we have is that symptoms tend to be atypical, and our understanding of how it presents has been influenced by older studies. Sometimes, when I give medical presentations about women and heart disease, a physician in the audience will ask in astonishment if he or she should consider coronary disease or a heart attack every time a woman presents with profound fatigue. And the answer to this is yes. But this is not necessarily what doctors want to hear, because it takes them outside of their comfort zone.

JP: ***You mentioned previously how your practice has changed, how you've transformed from being a very traditional cardiologist to now being more of an integrated practitioner — and that you enjoy sharing ideas with other types of practitioners such as nutritionists, naturopaths, and acupuncturists. Can you just talk a little bit more about how you see that integration working best, and how it can benefit patients?***

RD: I find that my traditional medical training is most vivid, even to this day. In the inpatient environment, we are presented with either a very acute, or a late-stage type of medical problem which requires my traditional training to address. But, when I have the opportunity to interact with nutritionists or naturopaths, I find I adopt a more holistic, comprehensive point of view — because they see patients through a different lens. That is very helpful, because this holistic approach and the ability to really personalize care helps me break away from the "one size fits all" acute-care approach, which is primarily influenced by the medical guidelines and test results. The acute medicine model is all about numbers, putting out more procedures, seeing more patients and generating a sustainable revenue stream. Unfortunately, in its current iteration, it's incompatible with having a holistic team effort.

JP: ***That is the million-dollar problem isn't it — how to integrate all these forms of medicine and also keep it affordable and efficient for the patient.***

RD: I happen to be of the mindset that they probably should not be integrated in all cases. Functional medicine can be helpful to a degree, but not in a very acute or very complicated situation. But in a preventive care setting or in early disease, I think that functional medicine can absolutely be a phenomenal tool, and I think it's time for us to stop allowing the early disease stage from going into an acute end-stage model.

To learn more about Dr. Druz — and how you can use her integrative approach to effectively prevent and treat cardiovascular disease in women utilizing lifestyle changes, nutrition, botanicals, and natural hormones — consider joining us at the 14th Annual Restorative Medicine Conference. You may also read more about her program Fit in Your GENES at www.iccli.com/fit-in-your-genes.html.

Oral Micronized Progesterone Shows Benefits For Healthy Postmenopausal Women

Following a highly-publicized study in 2002, in which the Women's Health Initiative reported increased rates of breast cancer, coronary heart disease, stroke, and venous thromboembolism in postmenopausal women on combination hormone replacement therapy (HRT), the use of HRT for the treatment of menopausal symptoms fell out of favor. Increasingly, women and their physicians opted out of traditional therapy, which left patients more susceptible to hot flashes and night sweats.

This begged the question: would women just have to live with these unpleasant symptoms? Or could a different treatment protocol prove both effective and safe?

Beginning in 2003, researchers at the University of British Columbia in Vancouver, including Jerilynn Prior, MD, sought to answer this question.

Although oral micronized progesterone (OMP) alone had been shown to effectively mitigate menopausal symptoms, its cardiovascular safety was unknown. Observational data suggested that endogenous progesterone conferred cardiovascular system (CVS) protection in younger women with normal ovulation and menstrual cycles. However, no randomized, placebo-controlled trial had been conducted to examine the effects of OMP on specific CVS markers. The researchers, therefore, designed such a study — with the goal of describing the physiological effects of oral progesterone on human endothelial function, lipids, metabolic markers, and inflammation and coagulation status in healthy postmenopausal women.

The study, titled "Progesterone Therapy, Endothelial Function and Cardiac Risk Factors: A 3-month Randomized, Placebo-Controlled Trial in Healthy Early Postmenopausal Women," evaluated 133 women from Vancouver between 2003 and 2009. Participants were between the ages of 49 and 55 years, had last experienced a menstrual period from one to 11 years prior, had not used hormones for six months or more, did not smoke, and did not have diabetes, heart disease or hypertension, nor use medicines to control those conditions. Their baseline CVS risk was therefore low, and similar to that of premenopausal women.

Jerilynn Prior, MD, FRCPC, ABIM, ABEM

There was a trend toward improved endogenous nitric-oxide dependent forearm blood flow, neutral effects on body weight, waist circumference, blood pressure, heart rate, lipids, plasma glucose, inflammation, coagulation and Framingham General Cardiovascular Risk Profile.

Non-placebo participants were administered 300mg of OMP daily (luteal phase equivalent) for the duration of the study.

The results, recently published in PLOS ONE, are encouraging. With the exception of HDL-C levels — which showed a minor but significant decrease — all other markers showed neutral to positive change. There was a trend toward improved endogenous nitric-oxide dependent forearm blood flow, neutral effects on body weight, waist circumference, blood pressure, heart rate, lipids, plasma glucose, inflammation, coagulation and Framingham General Cardiovascular Risk Profile.

In a concurrent study, "Oral Micronized Progesterone for Vasomotor Symptoms: A Placebo-controlled Randomized Trial in Healthy Postmenopausal Women," patients assigned to progesterone reported significantly improved sleep and experienced no safety issues. Together with the above, these results suggest short-term CVS safety in the treatment of hot flashes and night sweats in healthy postmenopausal women.

To learn more about Dr. Prior's research regarding the importance of progesterone for women's health, see her article published in the Journal of Restorative Medicine*, Vol. 3, No. 1, available free online at http://restorativemedicine.org/journal/.*

Dr. Prior is a keynote speaker at the 14th Annual International Restorative Medicine Conference, September 15-18 in Hilton Head, S.C.

Reference:

Prior JC, Elliott TG, Norman E, Stajic V, Hitchcock CL. Progesterone Therapy, Endothelial Function and Cardiovascular Risk Factors: A 3-Month Randomized, Placebo-Controlled Trial in Healthy Early Postmenopausal Women. Hermenegildo C, ed. PLoS ONE. 2014;9(1):e84698. doi:10.1371/journal.pone.0084698.

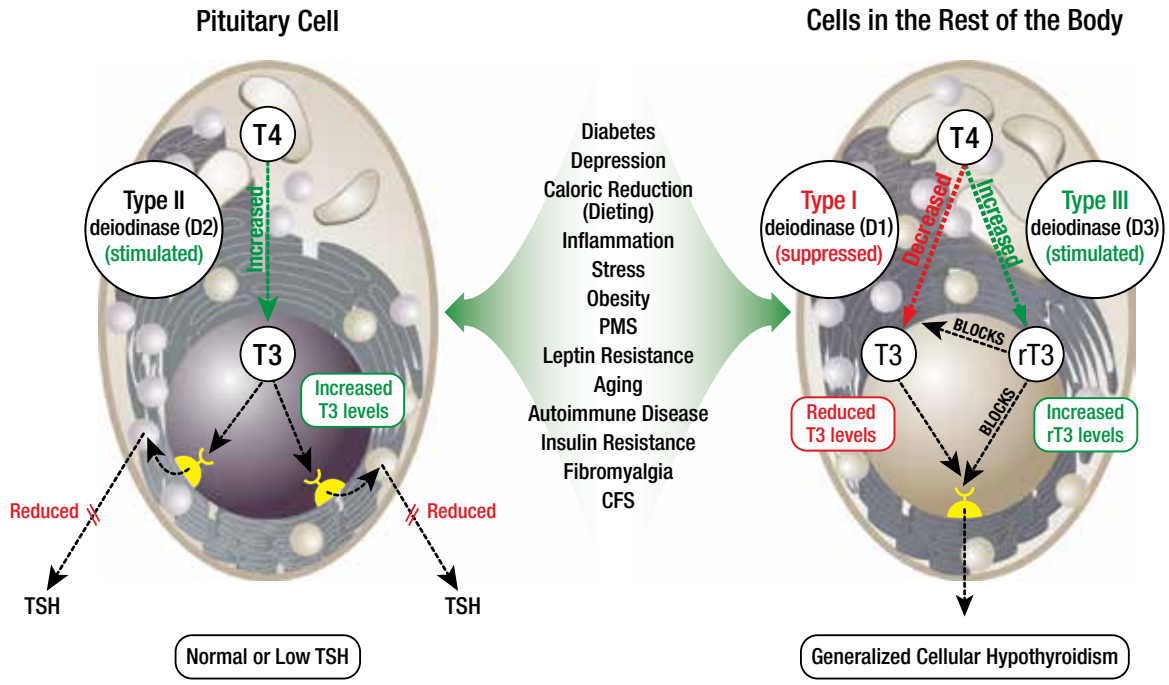
Exceptions to the "TSH Rule:" How Certain Physiologic and Emotional Conditions Thwart the Ability to Detect Cellular Hypothyroidism

According to the American Thyroid Association, "the TSH blood test is the best way to monitor thyroid hormone … [because] TSH is made in the pituitary, and the blood levels reflect how [the] body is responding to the amount of thyroxine."[1] Further, "levothyroxine is recommended as the preparation of choice for the treatment of hypothyroidism due to its efficacy in resolving the symptoms of hypothyroidism."[2] Yet, countless patients still suffer the effects of this condition, even in the presence of normal or low-normal serum thyroid-stimulating hormone (TSH) levels. Further, many of these patients do not respond well to traditional levothyroxine (T4) therapy.

Why? This is the question addressed in a comprehensive review conducted by AARM conference presenter Kent Holtorf, M.D. In this review titled "Peripheral Thyroid Hormone Conversion and its Impact on TSH and Metabolic Activity," [*Journal of Restorative Medicine*, Vol. 3, No. 1] Holtorf examines the role of cellular deiodinase activity in relation to its activity in the pituitary and peripheral tissues.[3]

Based on the results of this inquiry, he makes a compelling

Conditions that cause low cellular T3 (hypothyroidism) not detected by TSH levels



Condition: TSH decreased (TSH fails to demonstrate hypothyroidism with normal TSH)

Cause: The conditions listed above activate type II deiodinase in the pituitary (D2), causing an increased T4 to T3 conversion in the pituitary. This causes an increase in pituitary T3 levels and a subsequent decrease in TSH levels (there is no type III deiodinase in the pituitary so no reverse T3 is produced).

Condition: Cellular Hypothyroidism & worsening of symptoms/condition

Cause: The conditions listed above suppress type I deiodinase (D1), which cause a decrease in T4 to T3 conversion in the rest of the body. This results in low intracellular T3 levels with subsequent hypothyroid symptoms. Additionally, the conditions listed above also stimulate type III deiodinase (DIII), which results in an increased conversion of T4 to reverse T3. This increase in reverse T3 further suppresses T4 to T3 conversion and blocks the T3 receptor, worsening hypothyroid symptoms.

case against relying on serum TSH levels as the gold standard for indicating thyroid function. Serum TSH, produced by the pituitary, doesn't necessarily reflect thyroid status in peripheral tissues — especially in patients suffering from a range of specific conditions listed below. He also argues that sustained-release triiodothyronine (T3) therapy is a superior choice for treating hypothyroid symptoms in these patients.

Deiodinase, the pituitary and local control

The mechanisms by which deiodinase enzymes control thyroid hormone expression in the pituitary versus peripheral tissues is key to understanding Holtorf's conclusions.

Both type I deiodinase (D1) and type II deiodinase (D2) convert inactive thyroxine (T4) to active triiodothyronine (T3), thereby increasing cellular thyroid activity. Conversely, type III deiodinase (D3) reduces cellular thyroid activity by converting T4 to reverse T3, an anti-thyroid agent. Deiodinases may act completely different on the pituitary as compared to peripheral tissues, therefore signaling a normal TSH level only as it relates to T3 levels in the pituitary, even if the rest of the body suffers from T3 deficiency.

In the *New England Journal of Medicine,* Larsen et al. confirm with this comment: "Recognition that the intracellular T3 concentration in each tissue may be subject to local regulation and an understanding of the importance of this process to the regulation of TSH production should permit a better appreciation of the limitations of the measurements of serum thyroid hormone and TSH levels."[4]

This pituitary versus peripheral tissue dichotomy especially occurs in the presence of specific, yet broad-ranging conditions — including diabetes, depression, dieting, inflammation, stress, obesity, premenstrual syndrome (PMS), leptin resistance, autoimmune disease, fibromyalgia, chronic fatigue syndrome, and insulin resistance. Clearly, there are many common, chronic conditions related to peripheral tissue hypothyroidism in patients that are shown to have "normal" TSH tests.

Kent Holtorf, MD

There are many common, chronic conditions related to peripheral tissue hypothyroidism in patients that are shown to have "normal" TSH tests.

Noting that both of these phenomena have been thoroughly investigated and confirmed by independent studies conducted by leading thyroid researchers, Holtorf asserts that "[w]ith an improved understanding of thyroid physiology that includes the local control of intracellular activation and deactivation of thyroid hormones by deiodinases, it becomes clear that standard thyroid tests often do not reflect the thyroid status in the tissues of the body, other than in the pituitary … [c]onsequently, it is inappropriate to rely on a normal or low TSH as an adequate or sensitive indicator [of thyroid function]."

Cellular hypothyroidism and T4 versus T3 therapy

Citing several prominent studies of patients suffering from one or more of the above conditions, Holtorf affirms that T4-only therapies often fail to resolve symptoms of cellular hypothyroidism. This is because in many — though not all — of these cases, the physical or emotional insult triggers upregulation of reverse T3. This suppresses T4 to T3 conversion, blocks the T3 receptor, and ultimately worsens symptoms. Introducing T4 perpetuates, not resolves, the cycle — as it will encourage the production of even more reverse T3. On the other hand, T3 therapies can significantly benefit patients by stabilizing thyroid activity.

To learn more about the relevance of TSH testing and other methods to diagnose and treat hypothyroidism, be sure to attend Dr. Holtorf's courses at the upcoming 14th Annual International Restorative Medicine conference, held in Hilton Head Island, South Carolina, from Sept. 15th - 18th, 2016. He will present a research review and will provide protocols for treating hypothyroid cases. Dr. Holtorf, along with Dr. Denis Wilson, will be offering a full day of courses on the preconference day, September 15, and the opportunity to become certified in T3 protocols, which many doctors have found to be life-changing for them personally, their patients, and their practices. For more information about the conference, see the website www.RestorativeMedicine.org/2016.

1 Q and A: TSH (thyroid stimulating hormone). American Thyroid Association Web site. http://www.thyroid.org/patient-thyroid-information/what-are-thyroid-problems/q-and-a-tsh-thyroid-stimulating-hormone/. Publication date unknown. Accessed June 2, 2016.

2 Jonklaas Jacqueline, Bianco Antonio C., Bauer Andrew J., Burman Kenneth D., Cappola Anne R., Celi Francesco S., Cooper David S., Kim Brian W., Peeters Robin P., Rosenthal M. Sara, and Sawka Anna M. Thyroid. December 2014, 24(12): 1670-1751. doi:10.1089/thy.2014.0028.

3 Holtorf, K. Peripheral Thyroid Hormone Conversion and Its Impact on TSH and Metabolic Activity. *Journal of Restorative Medicine,* Volume 3, Issue 1, pages 30-52

4 (Larsen PR. Thyroid-pituitary interaction: feedback regulation of thyrotropin secretion by thyroid hormones., 1982)

Can T3 Play a Therapeutic Role For Patients With Persistent Hypometabolic Symptoms And Normal TSH Levels?

For years, naturopathic medical schools have included the diagnosis and treatment of reversible hypometabolic symptoms in their curricula — and practitioners have accordingly treated their patients for it. Yet, conventional medicine has resisted the concept. This is largely due to the American Thyroid Association's official position that hypometabolism is induced by hypothyroidism and — while treatable with thyroxine (T4) — is therefore irreversible.

That's the theory. In practice, of course, naturopaths and mainstream practitioners alike know that many hypothyroid patients continue to exhibit symptoms of metabolic slowdown, including low body temperature, fatigue, depression, anxiety, poor concentration, headaches, low libido and more, even when their thyroid stimulating hormone (TSH) levels have been normalized with T4. Why is this? Some patients are unable to efficiently convert synthetic T4 (synthroid) into active triiodothyronine (T3), a reaction that is required for metabolic regulation. Alternatively, others are resistant to thyroid hormone altogether, which cannot be measured in lab tests, yet exhibit normal TSH levels. And, of course, historical disagreement over what constitutes a "normal" TSH lab value means that still others are under-treated.

Yet another possibility — one examined at length in a published article in the *Journal of Restorative Medicine* by Denis Wilson, M.D. — suggests that a separate condition, called hypometabolic syndrome, may be to blame. This syndrome can occur independently of, or concurrently with, hypothyroidism, making it easy to miss or dismiss.

Wilson posits that, not unlike chronic fatigue syndrome (CFS) or fibromyalgia syndrome (FMS) —two poorly understood but widely accepted conditions — hypometabolic syndrome may be triggered by systemic stress, either from physical injury, acute illness or emotional trauma. And while the correlation has not been fully explored, Wilson argues the well-documented fact that such periods of stress inhibit the conversion of T4 to T3, which can lead to disrupted homeostasis that may linger long after the initial stress has resolved.

This begs the question: could patients with normal TSH levels, but unresolved hypometabolic symptoms, benefit from a T3 treatment protocol?

Wilson asserts they can. Such a protocol is not without parallel. In patients with dysfunctional uterine bleeding, for example, physicians regularly prescribe a short-term course of oral contraceptives — a treatment that often reverses the condition. "Likewise, with the exclusion of other causes of low body temperature and hypometabolic symptoms, patients can be considered for a therapeutic trial of sustained-release T3," Dr. Wilson says.

A private-clinic study supports this notion. In the study — conducted in the practice of Michael Friedman, N.D. — 11 euthyroid patients with persistent fatigue and low body temperatures were treated with sustained-release T3 (synthetic liothyronine compounded in hydroxypropyl-methylcellulose) every 12 hours, until a body temperature of 98.6°F was achieved. Exact dosing depended upon patient response — measured by improvement in symptoms and elevation of temperature — and was adjusted as needed.

Although Wilson himself had previously developed this protocol (called Wilson's T3 Protocol, or WT3) and had successfully treated more than 5,000 patients with it, the protocol had never been tested in a controlled clinical setting. Because he had previously observed a remarkable correlation between a normalized body temperature and improvement in symptoms, one key objective of the study focused on the relationship between T3 dosing according to body temperature, and symptom mitigation.

The results were encouraging. While the length of treatment varied (from three weeks to 12 months) due to individual response, each participant successfully achieved normalization of oral body temperature. Patients reported statistically significant alleviation of five hypometabolic symptoms: fatigue; headaches; anxiety; insomnia; and myalgia. Further, after discontinuation of WT3, the majority of these patients reported continued improvement as many as 30 days later. Three patients reported almost complete reversal of symptoms. And the protocol proved safe: unlike with Cytomel®, which has shown to trigger irregular heartbeat and occasional atrial fibrillation, WT3 appears to offer a predictable, well-tolerated method to normalize body temperature.

The full article is available online in JRM, Vol. 1, No. 1. For free access, visit http://restorativemedicine.org/journal/. Dr. Wilson will be among the speakers at the 14th Annual International Restorative Medicine Conference, being held Sept. 15-18 in Hilton Head, S.C. For more information, visit http://restorativemedicine.org/aarm2016/

Saw Palmetto May Reduce Elevated Androgens and Prolactin in Women with PCOS

By Jillian Stansbury, ND

Indications

Serenoa is indicated for benign prostatic hyperplasia, polycystic ovarian syndrome, and hormone imbalances (estrogen or testosterone). It promotes genitourinary health in both sexes, improves libido and sexual vigor, and chronic nonbacterial prostatitis/chronic pelvic pain syndrome.

Mechanism of Action

Serenoa berries contain fatty acids known collectively as liposterols and named individually as lauric, oleic, myristic, and linoleic acids. All of these fatty acids have been shown to inhibit the 5 alpha-reductase enzyme, found in the adrenal glands (and in men, the prostate as well) that converts testosterone into its most active form, dihydrotestosterone. Women with hirsutism and elevated testosterone may have excessive 5 alpha-reductase enzyme activity. Male pattern baldness, also known as androgenic alopecia in men, and thinning of the hair in women may also be initiated and promoted when 5 alpha-reductase is up regulated. Saw palmetto has been shown to promote hair growth compared to placebo in men with androgenic alopecia, and the herb might benefit women as well.

Elevated androgens is the hallmark of PCOS in women. Serenoa has been shown to reduce the uptake of androgens, including dihydrotestosterone and testosterone, into tissues by 40%. Prolactin is typically elevated in women with PCOS and a leading cause of amenorrhea and infertility.

In women with PCOS, elevated prolactin can suppress follicle maturation, ovulation, and contribute to ovarian cysts. Animal studies show Saw Palmetto to inhibit prolactin receptors on ovarian cells and reduce the basal activity of K(+) channels and of protein kinase C involved with the transduction of prolactin signals.

Evidence Based Research

There has been a great deal of research regarding Saw Palmetto and its ability to treat diseases of the prostate in men, but very little research in women. Environmental toxins can disrupt reproductive development and function by both mimicking and inhibiting endogenous steroids contributing to infertility, polycystic ovarian syndrome, hormonal cancers, thyroid disease, and other ailments.

Saw Palmetto may help reduce elevated androgens and prolactin typically seen in women with PCOS. Animal studies show Saw Palmetto to block prolactin receptors on ovarian cells over-expressing prolactin receptors.

Safety in Pregnancy and Breast Feeding

There is no information on the safety of Saw Palmetto in pregnancy or lactation in the scientific or traditional literature.

General Safety

There has been an anecdotal report of a single incidence of cholestatic hepatitis in a patient using Saw Palmetto, however dosage ranging within normal human dosage (9.14 or 22.86 mg/kg/body weight/day) did not elevate liver enzymes or any other biomarkers of liver toxicity in rats. Another rat study showed no evidence of hepatotoxicity at 150 and 300 mg/kg. A detailed safety assessment on 225 men using 160 mg of Saw Palmetto twice a day found no significant side effects or toxicity compared to placebo. Saw Palmetto may interact with pharmaceuticals via cytochrome p450 effects.

Dosage: 160 to 450 mg twice daily of an extract containing 45-95% fatty acids.

Traditional Uses

Serenoa repens or Saw Palmetto extracts have been used for centuries in the treatment of benign prostatic hyperplasia. Classic herbal books and folkloric traditions report Serenoa to be a genitourinary tonic in both sexes.

Jillian Stansbury, ND, BS, AHG, CMA has practiced in Southwest Washington state for more than 25 years specializing in women's health, mental health, and chronic disease. Dr. Stansbury is the former chair of the Botanical Medicine Program at the National College of Naturopathic Medicine in Portland, Oregon and remains on the faculty teaching natural products chemistry, botanical influences on cell biology, ethnobotany field course, and other miscellaneous topics in herbal medicine. She writes for numerous professional journals plus teaches around the country at a variety of medical and herbal conferences. She will speak about botanical influences on cell biology and optimizing fertility with pure concentrated botanicals at the 14th Annual International Restorative Medicine Conference, Sept. 15-18 at the Sonesta Resort on Hilton Head Island, S.C.

Environmental Medicine Expert Dr. Joseph Pizzorno to Demystify Detoxification

A recent study published in the *Environmental Health Perspective* journal [April 2016] suggests that persistent organic pollutant (POP) exposure — including pesticides, heavy metals, solvents, plasticizers, and industrial chemicals — may be the most significant factor for developing diabetes. Historically, diet and obesity were believed to be the top factors implicated in triggering diabetes, but this new research indicates that obese people who are low in POPs don't have an increased risk of diabetes, as compared to the rest of the population. Instead, it appears that obesity combined with elevated POP levels are the most significant risk factors for developing diabetes.

Joseph Pizzorno, ND

Integrative physicians would suggest that eliminating stored toxins through a detoxification protocol is key to preventing diabetes and other chronic illnesses. Joseph Pizzorno, ND, is passionate about the topic of environmental medicine and the role of detoxification treatments for counteracting damage caused by excessive exposure to chemicals ubiquitous in modern society. "Toxicity has become the primary driver of disease in the industrial world," he says. "Thousands of studies now exist showing we have high levels of persistent organic pollutants (POPs), arsenic, cadmium, lead, and mercury, and that they cause disease. And we see a much higher correlation of illness when we look at total body load of toxins."

Dr. Pizzorno is considered an expert on the topic and is currently in process of writing, along with environmental medicine expert Dr. Walter Crinnion, the first-ever textbook for environmental medicine and detoxification, a likely future staple in naturopathic medical schools. Detoxification is accepted and utilized in the naturopathic community, but there have been very few standardized guidelines for definitive protocols. "There are a variety of detoxification programs being promoted to the general public, but not all of them are effective and some are even dangerous," Dr. Pizzorno says. "Through endless hours of reading research and clinical experience with thousands of patients and employees in corporate wellness programs, I have identified nutrients, supplements, herbs, foods, and various other therapies that offer real clinical results. Sometimes the simple protocols, like water fasting, have the most powerful outcomes."

Dr. Pizzorno is the founding president of Bastyr University, one of the leading naturopathic medical schools in the US. During his 22-year tenure, Bastyr became the first fully accredited, multidisciplinary university focused on integrative medicine, and the first alternative medicine research center funded with NIH grants. These major milestones accomplished during Dr. Pizzorno's reign served to put the small, specialized field of naturopathic medicine on the map.

In 2000, Dr. Pizzorno was appointed to two prestigious federal policy groups — the White House Commission on Complementary and Alternative Medicine Policy and the Medicare Coverage Advisory Committee — arguably the highest federal government positions occupied by a naturopathic doctor.

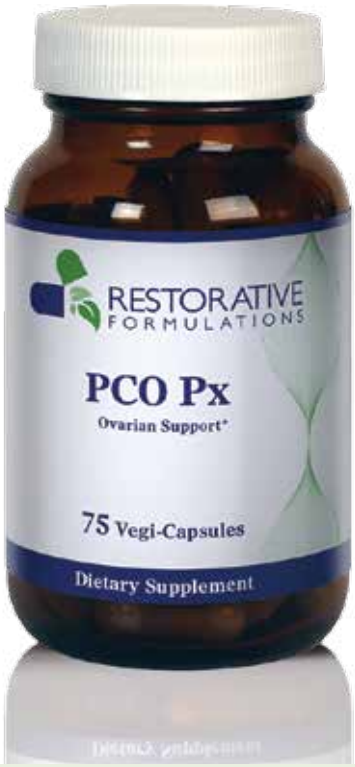
Dr. Pizzorno is editor-in-chief of Integrative Medicine: A Clinicians Journal, a member of the editorial board of the Journal of Restorative Medicine, and is the author or co-author of 10 books, including the internationally-acclaimed Textbook of Natural Medicine, and the best-selling Encyclopedia of Natural Medicine, which has been translated into six languages.

He founded his company SaluGenecists, Inc., which develops decision support tools and services for knowledge delivery systems, combining evidence-based expert understanding of integrative health with advanced technological platforms.

Dr. Pizzorno will be offering a seven-hour detoxification workshop for physicians as part of the 14th Annual International Restorative Medicine Conference, being held Sept. 15-18, at the Sonesta Resort on Hilton Head Island, S.C. There he will share the extensive research documenting the stunning amount of chronic disease due to environmental toxins, and clinical experience that highlights the most effective nutrients, botanicals, and other integrative therapies that help metabolize and detoxify environmental toxins. In addition, he will show how common, basic lab tests can be used to measure and monitor treatment efficacy. Finally, he will present for the first time the research showing that the entire diabetes epidemic is due to environmental toxins and proven methods for restoring normal blood sugar regulation.

For more information about the 14th Annual International Restorative Medicine Conference, sponsored by the Association for the Advancement of Restorative Medicine, visit the website http://restorativemedicine.org/2016/

PCO Px - Ovarian Support



PCO Px contains an exclusive blend of natural herbal compounds to provide balanced female hormonal and ovarian support.

The cornerstone of this formula, Vitex (Chaste Tree), is known to alleviate symptoms of pre-menstrual syndrome (PMS) and menopause. Vitex and Saw Palmetto can also balance prolactin and testosterone metabolism and support normal menstrual cycles and ovulation.

Supplement Facts

Serving Size: 3 vegi-capsules — **Servings Per Container:** 25

	Amount Per Serving	% Daily Value
Vitamin D3 (cholecalciferol)	750 IU	188%
Vanadium (vanadyl sulfate)	0.60 mg	†
Chromium (polynicotinate)	0.45 mg	375%
Inositol (myo-inositol, d-chiro-inositol)	450 mg	†
Vitex Extract (0.5% Agnuside) 6:1	450 mg	†
Saw Palmetto Extract (45% fatty acid)	450 mg	†
Organic Licorice Root	450 mg	†
Minimum Constituent Bio Marker Per Dose		
Vitex Agnusides	1.80 mg	
Saw Palmetto fatty acids	162 mg	

†=Daily Value not established

Other Ingredients: Vegetable Capsule (cellulose)

Other Health Benefits:

- Alleviates the symptoms of PMS and menopause
- Provides menstrual regulation/Fertility support
- Reduces oily skin, acne, and excess body hair growth

Optimizing Fertility with Pure Concentrated Botanicals

Jill Stansbury, ND

14th Annual International Restorative Medicine Conference

Saturday, Sept. 17, 4:30 p.m. to 5:30 p.m.

Dr. Stansbury, ND practiced family medicine in Washington State for more than 25 years and chaired the Botanical Medicine Department at the National College of Naturopathic Medicine for several decades.

RESTORATIVE FORMULATIONS

Visit the Restorative Formulation Booth to receive a 20% savings on your entire order.

800.420.5801 • www.restorative.com

Reducing the Effects of Plasticizers Through Detoxification

By Jen Palmer, ND

Most physicians would advise their patients to avoid "fast food." It's nutrient deplete, high in trans fats and overloads us with excessive calories and sodium. But now there's another major compelling reason - fast food packaging is sneaking in a dangerous unwanted ingredient called phthalates. A recent study shows that phthalate levels in urine are significantly higher in people who eat fast food as compared to those who do not.

What are phthalates?

Phthalates are ubiquitous industrial chemicals used in plastics, such as packaging and medical devices, to make them more flexible, less breakable and easier to use, thus given the term "plasticizers." They're not limited to plastics though; manufacturers sneak them into household cleaners, cosmetics, health and beauty products, flame retardants, and food packaging without us ever knowing. Because of loopholes in their regulation, these toxins aren't required to be listed as an ingredient in consumer products.

Bisphenol A (BPA) is a similar unannounced chemical that is ever-present in food and beverage packaging. Both chemicals are concerning because they leach into the food supply. For instance, they are present in the PVC materials used in tubing for milk processing, food preparation gloves, plastic cups, and food packaging. Absorption from packaging is most prevalent in higher fat foods such as dairy and meats. Both phthalates and BPA are absorbed into the body through off-gassing and inhalation, ingestion from leaching into foods, and transdermal absorption.

Health risks of plasticizers

Plasticizers and BPA have been implicated in causing birth defects, childhood chronic illnesses such as asthma, fertility issues, and cancer. They are known endocrine disruptors that mimic hormones such as estrogen, thyroid, and testosterone. They bind to hormone receptors and block natural hormones and normal responses, or overstimulate hormone receptors. Endocrine disruptors are known to cause hormone related diseases, such as endometriosis, cancers, infertility, thyroid dysfunction and more.

In this latest research, funded by the National Institute of Environmental Health Sciences, investigators wanted to determine if there was a correlation between eating fast food and having high toxin levels. Data was extracted from 8877 participants in the National Health and Nutrition Examination Survey (NHANES 2003-2010). Phthalate and BPA urinary metabolites were measured in people who consumed fast food in the previous 24 hours and compared it to those who didn't.

The focus of the study was on two specific phthalates, di(2-ethylhexyl) phthalate (DEHP) and diisononyl phthalate (DiNP), plus BPA. Data was collected from almost 9000 people who detailed their diet over the previous 24 hours. They found that in people who ate fast food during that time frame, phthalates were 20 percent to 40 percent higher as compared to people who did not recently eat fast food. They also noted that the more fast food they ate, the higher the level of urinary metabolites of phthalates were measured. There was not a significant correlation between BPA levels and fast food consumption.

What's the solution?

Eliminating the manufacturing and use of phthalates and BPA has proved challenging. Several years ago, BPA and certain types of phthalates were finally recognized by the Environmental Protection Agency as being toxic to humans and were pulled off the market. Newer, presumably safer chemicals replaced the old, yet still our problem persists. Over time, the new chemicals were discovered to be equally toxic. This procession of replacing one dangerous chemical with another has been ongoing for decades and has become a real-life game of whack-a-mole. Inevitably, the "safe" chemical replacements are found to be toxic.

How this translates to your clinical practice

Unfortunately, we are exposed to these types of chemicals from many sources far beyond fast food, but making recommendations to your patients to avoid packaged and fast food is a smart place to start for many obvious reasons. For elimination and treatment, detoxification protocols can be implemented to reduce toxin levels and potentially resolve chronic illnesses.

To learn more about specific testing methods for toxins and detoxification treatment plans, be sure to attend the environmental medicine intensive being offered at the 14th Annual International Restorative Medicine Conference at Hilton Head Island, S.C. September 15- 18, 2016.

Reference:

Susanna D. Mitro, Cassandra A. Phillips, Ami R. Zota. Recent Fast Food Consumption in NHANES, 2003–2010. *Environmental Health Perspectives*, 2016; DOI: 10.1289/ehp.1510803

Drug-Free pain relief in the palm of your hand

Introducing the AVACEN 100, an FDA Class II cleared device utilizing active heat and negative pressure applied non-invasively to the palm of the hand.

Imagine how your patients will feel when you tell them about a soothing, drug-free, 15 minute treatment in your office or in their home, to help reduce pain. They'll tell you they love using it, as a result, compliance becomes easy.

By exposing the hand to gentle negative pressure, the blood vessels are distended. The simultaneous application of superficial heat increases flow of this warmed blood through the hand and through the body.

The patented AVACEN 100 works within physiological range to safely infuse heat into the circulatory system, without inducing hyperthermia. This process is designed to systemically increasemicrovascular circulation as the body works to maintain normothermia by dilating its peripheral heat exchange network to dissipate the infused heat. The flow of this warmed blood helps increase capillary function, allowing muscle and skin tissue to acquire proper oxygenation and nutrition, enabling more waste to be drawn away.

Come try it first hand!

AARM – Booth 19

Watch the 2 minute video and get your trial device

www.trypainfreeriskfree.com/rmd

Or call us toll free 844.740.7246

AVACEN® medical

The AVACEN 100 is a therapeutic device that is a noninvasive FDA cleared class II medical device indicated as a heat therapy system for the temporary relief of minor muscle and joint pain and stiffness; the temporary relief of joint pain associated with arthritis, muscle spasms, minor strains and sprains; and muscular relaxation.

Important Notice: The statements herein have not been evaluated by the FDA.

RM23.2

What to Consider Before Recommending a Herbal Supplement Brand to Your Patients

Every day, health care practitioners like you are bombarded with marketing from physician grade herbal supplement manufacturers. With the proliferation of products on the market — and significant competing information on quality standards, efficacy and more — how do you know who to trust? Until measures are taken to standardize industry testing methods and requirements, it's crucial to "first, do no harm" — by thoroughly familiarizing yourself with the brands you offer. Here are some key considerations for evaluating the brands that you work with and some investigative questions you may want to ask.

Are there unwanted and unlisted ingredients in the supplement?

There is a common misperception that professional supplement brands use only organic herbs and herbal extracts. In reality, the majority of these products comprise herbs that are conventionally grown — which potentially exposes patients both to the chemicals found in pesticides and herbicides, and those found in the solvents used for extraction.

Because there is no legal requirement to include solvents on the label, most herbal manufacturers fail to disclose them. This means patients may unwittingly ingest the residues of Class 2 or Class 3 solvents, including, but not limited to, acetone, ethanol, hexane, chloroform, toluene, xylene and more. Some of these chemicals are used to dry clean clothes. Many have been identified by the state of California as known carcinogens, or as causing reproductive toxicity.

Clearly, you want to avoid recommending such products. But how do you ensure the ones you do recommend pass muster? Look for brands committed to using certified organic or wildcrafted herbs, preferably in majority. Strict certification guidelines prohibit the use of pesticides and herbicides in growing these herbs, which ensures your patients won't be exposed to them. Further, the only permissible solvents for organic extraction include water, certified organic alcohol, and carbon dioxide.

Is the supplement effective?

When it comes to herbs and herbal extracts, potency is key to efficacy. Unfortunately, many brands rely on ingredients whose extract ratio — the amount of raw material required to produce one kilogram of extract — is substantially low. For example, in a supplement with an extract ratio of 2:1 (two kilograms of raw material yields one kilogram of extract), 50 percent of the extractable ingredients have made it into the final product. Higher ratios mean larger quantities of raw material are used—resulting in a more concentrated extract.

Potency also depends on constituent synergies. Some herbal supplements rely upon a single, standardized active ingredient extracted in isolation from the plant's other constituents. In nature, however, plants contain multiple bioactive constituents that work together to provide whole-health benefits. Excluding these constituents from herbal products means that the original plant no longer works the way it was intended. And higher concentrations of a single active ingredient may have adverse effects in some patients, especially if they are taking other medications and supplements.

The most effective supplements, therefore, are based on whole herbs and include therapeutic doses (measured by extract ratio) that are high enough for rapid patient response.

What quality control measures are in place to assure both of the above?

Every manufacturer of herbal supplements is required by the Food and Drug Administration (FDA) to meet minimum good manufacturing processes (GMPs). Still, this does not necessarily mean a specific manufacturer is in compliance with the highest, current quality control practices. Processes that were cutting-edge ten years ago may not apply at all today.

This is why, for the sake of your patients, it is imperative to find and recommend products from manufacturers with proven, verifiable GMP status. In addition to those with high CGMP ratings, look for manufacturers that independently verify herbal concentrations and constituent biomarkers, and test for dangerous solvents, using cutting edge methodologies. Far too many manufacturers rely on third-party certificates of analysis from their suppliers, which may or may not be reliable, and which may be based on less accurate testing methods.

Finding a trusted manufacturing partner means you can confidently recommend supplements that work — and that really help your patients.

About Restorative Formulations

Restorative Formulations offers a range of therapeutic formulations with a focus on maximizing thyroid, endocrine, and cardiac function in the clinical setting for physicians. For more information please visit www.restorativeformulations.com, or call (800) 420-5801.

RESTORATIVE FORMULATIONS

Not just organic...

Certified Organic

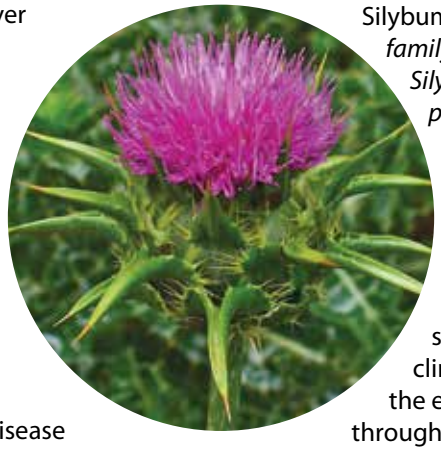
- Processed with NO toxic solvents
- Grown without pesticides; GMO-free

Maximizing Hormone and Cardiac Function

800.420.5801 ♦ www.restorative.com

Eight Botanical Medicines Protect and Restore The Liver

In this modern age of chemical overload, liver protection is more important than ever. This critical organ is assaulted daily by environmental toxins, prescription and non-prescription drugs, alcohol, excess hormones, and synthetic food additives. As one of the largest organs in the body, the liver's chief function is to metabolize the excessive amounts of these unwanted substances. Consequentially, liver disorders have become a major global health challenge.



Silybum marianum *of the thistle tribe of the Aster family. Studies with animal models have shown Silybum and its individual flavonolignans to positively affect liver metabolism.*

Because of the enormity of this problem, a review article titled "The Treatment of Liver Disease with Botanical Agents" was published in the *Journal of Restorative Medicine*, Vol. 2, No. 1. The article highlights eight key botanical medicines that protect and restore the liver.

Authors Jill Stansbury, ND; Paul R. Saunders, PhD, ND, DHANP; Eugene R. Zampieron, ND; and David Winston, RH(AHG) share their combined clinical experience and herbal expertise to elucidate the use, dose, and safety features of hepatoprotective herbs. They show how these herbs offer antioxidant and anti-inflammatory actions which serve to protect the liver from damage and aid regeneration.

One of the plants identified for liver protection is *Curcuma longa*, a popular Indian cooking spice. Its key active constituent is the flavonoid curcumin. Among its extensive and impressive list of biochemical actions are antioxidant, anti-inflammatory, anti-carcinogenic, and hepatoprotective activities.

Practitioners find value in the clinical experiences offered by the authors, whom share herbal indications, contraindications, side effects, and dose requirements. As a clinical pearl, the authors suggest proof for the efficacy of these herbs can be demonstrated through improvement of key liver enzyme tests.

Their review also identifies key biochemical constituents and activities, which are supported by extensive published research citations.

Three of the authors from this article will be featured speakers at the 14th Annual International Restorative Medicine conference, being held in Hilton Head Island, S.C., on Sept. 15-18. Jill Stansbury, ND will be presenting a three-hour intensive titled "Botanical Influences on Cell Biology, from Mechanism to Vitalism." Eugene R. Zampieron, ND will update practitioners on herb, nutrient, and drug interactions, and review the role of herbs and nutrients for aging men. Paul Saunders, PhD, ND, DHANP will cover intravenous therapy protocols using herbs and nutrients.

For free access to the article in the *Journal of Restorative Medicine,* visit http://restorativemedicine.org/journal/

Curcumin is a flavonoid that has been credited with powerful antioxidant and anti-carcinogenic effects. Curcumin reduces the ability of alcohol, iron overload, biliary stasis, carbon tetrachloride, and adriamycin (doxorubicin) to damage the liver.

Advanced Botanical Medicine
at the

AARM
Association for the Advancement of Restorative Medicine

14th Annual International RESTORATIVE MEDICINE CONFERENCE

Save $200
Use promo code RMD200 when registering

Sept. 15-18, 2016
Sonesta Resort, Hilton Head Island, South Carolina

Choose from 8 hours of courses in a Botanical Medicine Intensive.

Topics include:

Medicinal mushroom use in oncology
Botanical medicine protocols for treating infections
Herb, nutrient and drug interactions
Cellular Mechanisms in Botanical Medicine

Botanical Medicine Faculty:

Christopher Hobbs, Ph.D., L. Ac., A.H.G.
Christopher Hobbs is a research scientist, professor, internationally renowned herbalist, licensed acupuncturist, herbal clinician, consultant to the dietary supplement industry, expert witness, botanist, mycologist with over 35 years of experience. He is the author of more than 20 books and has taught at universities and medical schools such as Stanford Medical School, Yale Medical School, Bastyr University, and the National College of Naturopathic Medicine.

Jillian Stansbury, ND, BS, AHG, CMA
Dr. Stansbury has practiced in Southwest Washington state for more than 25 years specializing in women's health, mental health, and chronic disease. Dr. Stansbury is the former chair of the Botanical Medicine Program at the National College of Naturopathic Medicine in Portland, Oregon and remains on the faculty teaching natural products chemistry, botanical influences on cell biology, ethnobotany field course, and other miscellaneous topics in herbal medicine.

Eugene Zampieron, ND, MH, RH(AHG)
Dr. Zampieron is a medical herbalist (MH) and a registered and certified professional member of the American Herbalist Guild. Dr. Zampieron was on the founding presidential advisory board that helped establish the University of Bridgeport College of Naturopathic Medicine (UBCNM). He is currently a senior faculty member at UBCNM. He teaches botanical medicine, phyto-pharmacognosy, botanical pharmacy, urology, geriatrics, rheumatology, and the history of natural medicine.

For the complete conference schedule and to register, visit
http://restorativemedicine.org/aarm2016/

AARM
Association for the Advancement of Restorative Medicine

Association for the Advancement of Restorative Medicine
93 Barre Street, Ste #1
Montpelier, VT 05602

PRSRT STD
US POSTAGE
PAID
MAILING CENTER
05641

Restoring patient wellness. Building physician practices.