

The Audible Release

Decrease Your Toxic Burden – Supporting Liver Detox & Elimination



By Jen Gantzer, DC, MS, FACN, DACBN, LAc

Continuing our series on “Keeping Us Healthy” another important topic is preventing and/or reversing toxic body burden, and much of that responsibility falls on the liver’s detox pathways and the 4 routes of elimination.

To appreciate the role the liver has to protect the body from toxins relies on understanding a few concepts. First, excretion. Excretion is the mechanism of eliminating wastes and there are 4 routes of elimination: feces, urine, sweat, and breathe. All routes of elimination need to be properly functioning to support efficient excretion of unwanted wastes. Second, what exactly qualifies as a “waste” or “toxin” that must be excreted through our 4 routes of elimination, and basically that’s either extrinsic (from outside the body) and these are termed Xenobiotics or intrinsic (from inside the body) and these are metabolic wastes such as ammonia, urea, uric and lactic acids for example. Anything that enters the body through oral, nasal, or transdermal routes must be acted on by the liver to “mark it for excretion” which is the physiological role of the Hepatic Detox Pathways, termed conjugations.

Xenobiotics are not just the well-known toxic chemicals such as pesticides and heavy metals; they also include Rx medications or OTC pain meds such as Aleve or Ibuprofen which all must be conjugated and eliminated too. The more that comes in the more that must be dealt with by the liver and eliminated through functioning routes of elimination.

The body is brilliant, and it knows what to do. When we don’t want to keep “something” in circulation, we simply push it into filtrate which is the kidney’s job to make it urine and get rid of it. This is a superb and insanely efficient way to rapidly eliminate xenobiotics and metabolic waste products, because once it enters filtrate at the pass of the kidney, the renal system won’t reabsorb it, and boom...urine excreted toxins and wastes. Since sweat is very similar to renal filtrate, sweating is an excellent source of excretion, however it’s of course much less volume of excretion and is not a primary source, but this is the method behind detox saunas or infrared therapy. Exhaling is most efficient at eliminating xenobiotic volatile acids, the best example of toxins released through exhaling is the good ‘ol police breathalyzer. Lastly, the second largest avenue of managing excretion of xenobiotics and toxins marked for elimination by the liver is fecal defecation which

Continued on page 3

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Details on pg-6

Is This The End(plate)? -Article by Daniel Roode

As doctors of chiropractic, we are all well aware of the myriad of potential pain generators within the spinal column. Conventional wisdom and practice has focused on the zygapophyseal “facet” joints and intervertebral discs as the usual suspects when diagnosing non-myofascial pain in the cervical, thoracic, and lumbar spine. Yet, some cases cannot be explained by pointing to the discs, facets, or myofascial tissues alone; so where do we go from there?

Enter the vertebral endplate. Research is driving more attention to the vertebral endplate as a pain generator through its innervation by the basivertebral nerve. Unfortunately much of the pathophysiology for endplate disorders is cellular and histological in nature, making it difficult to observe directly on imaging. But there are a few common radiographic findings which may indicate the endplate as a pain generator.

Schmorl’s nodes are large defects in the vertebral endplate which involve herniation of the disc nucleus into the vertebral body. Oftentimes small endplate defects and nodes are thought to be developmental during adolescence occurring before bony growth plate closure, especially in the central endplate region of the thoracolumbar spine. Schmorl’s nodes are also known to have traumatic etiology in which case they often occur with correlating findings on MRI during the acute stage of injury. It can be difficult to ascertain the true etiology of a defect, but one can infer a traumatic origin when trauma is involved in the history and especially when the node occurs with corresponding fibrovascular bone marrow changes (observed and described on MRI as Type 1 Modic change).

Modic changes were first described by Dr. Michael Modic and published in the journal Radiology in 1988. His name has remained synonymous with the often-overlooked phenomena ever since. As histological studies continue we are still learning more about the importance of what these Modic changes represent and what they mean for the tissues involved: vertebral bone (cortical and cancellous), endplates, and intervertebral discs. There are three categories of Modic changes, each representing tissue changes at different stages in a pathological process. Interestingly, Type 1 is known to sometimes resolve but often progresses to Type 2, and Type 2 in turn often progresses to Type 3 but has also been known to revert back to Type 1.

Type 1: *T1 Decreased, T2 Increased* – represents inflammation/neovascularization – *Acute*

Represents active inflammatory process; associated with acute processes, endplate fissuring/disruption, and vascularized granulation tissue within adjacent marrow

Type 2: *T1 Increased, T2 same or slightly increased* – represents fatty infiltration – *Chronic*

Represents fatty degeneration of subchondral marrow, thought to occur after an initial acute stage of pathology (namely Type 1 Modic change)

Type 3: *T1 Decreased, T2 Decreased* – represents bony sclerosis – *Chronic, late-stage*

Histological examination shows densely woven bone has replaced the normally trabecular, marrow-filled bone; hence less signal on MR

The Role of the Vertebral End Plate in Low Back Pain

J. C. Lotz, A. J. Fields, E. C. Liebenberg

Global Spine J. 2013 Jun; 3(3): 153–164. Published online 2013 May 23

occurs through toxin release through bile into the intestinal tract, which is one important reason why daily bowel movements are vital (optimal gut and bowel health will be discussed in detail in a future series article on fibers and supporting the microbiome). *Therefore, hydration and daily bowel movements rank at the top of “ensure your routes of elimination are working” – I hope you ran for a glass of water and a laxative Magnesium if necessary!*

The liver houses the Hepatic Detox Pathways 1 & 2, and an extremely simplified explanation of these pathways is: an iron (heme) dependent enzyme called CYP (cytochrome) reacts with the xenobiotic modifying it into a toxic (potentially) damaging free radical but important step because it makes it water-soluble followed by the 2nd step which takes that toxic intermediate free radical and conjugates it which is the “mark it for elimination” step so that *once xenobiotic converted free radical but now conjugated and harmless molecule* is now ready for 1 of the 4 routes of elimination.

Besides ensuring urination, bowel movements, sweating, and breathing it's important to ALSO support the liver during phase-1 and phase-2, because liver damage and build up of uneliminated toxins and xenobiotics occurs if we don't. Recall from June's article “Chronic Inflammation & Oxidative Stress” that any time free radicals are in a physiological system, they must be balanced with antioxidants to prevent their damaging effect. This same concept holds true for protecting the liver during phase-1 because if there is any back up in that toxic intermediate molecule going directly and

rapidly into phase-2 to be conjugated and safely removed then the free radical intermediate molecule can cause liver damage and oxidative stress; so step-1 to protect phase-1 is ensure sufficient antioxidant protection, which must be done with essential vitamins and minerals, and ensuring eating sufficient sources of plant-based foods and/or supplementing if meals are nutrient poor such as boxed/bagged/frozen or processed. Supporting phase-2 means providing “the conjugators” the “things” that get “attached” to the xenobiotic toxic intermediate to mark it for elimination, and interestingly, the liver loves sulfur, and in many different sulfur forms, such as the sulfur amino acid Cysteine and/or NAC (N-Acetyl Cysteine), the sulfur tripeptide antioxidant Glutathione (Cysteine, Glycine, Glutamate which are amino acids, the building blocks of proteins), and interestingly, there are even botanicals or other food constituents that increase the liver's ability to synthesize Glutathione such as Milk Thistle and Sulfurophane. Broccoli and broccoli sprouts happen to be one of the richest sources of natural occurring sulfurophane (well...its glucosinolates get converted to it at least once in the liver!) and this includes all brassica cruciferous vegetables too. Other excellent sources of sulfur foods include garlic, onions, turmeric. Sulfur additionally has another physiological role in cartilage.

Patient education on a few food items and adding supplements that contain antioxidants, vitamins, minerals, milk thistle, sulfurophane to your office sales can increase income while decreasing your patient's toxic load but supporting joint health too!

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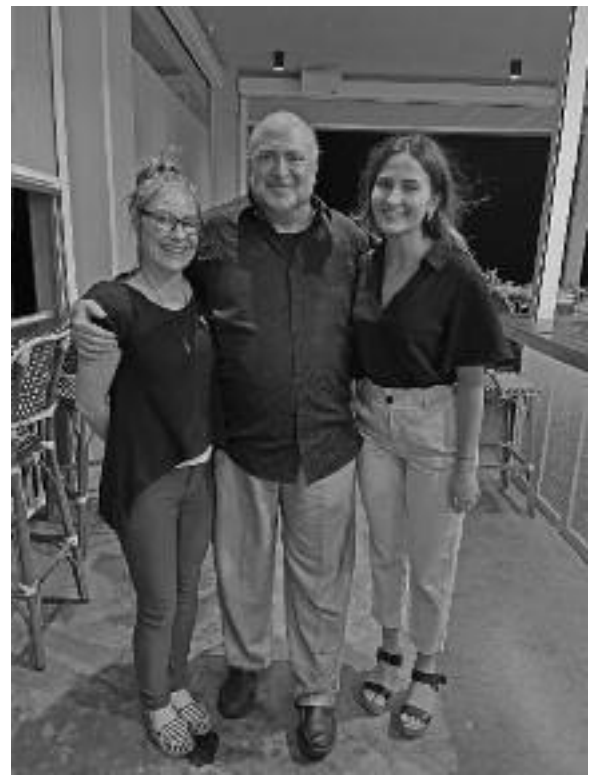
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The Audible Release

is published 10 times per year
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Dr. Jason Miller: Editor

The Audible Release provides news and information that is both educational and informative to the chiropractors and their associates in the Pinellas County area.

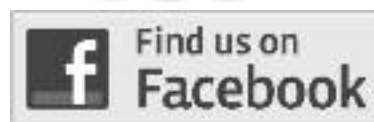
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The deadline for ads and articles is the 7th of every month.

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for the remainder of the Year,
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In-Person & Virtual for 2021

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Last Tuesday of the Month

Join us Virtual via Zoom

www.pccschiro.org/annual-calendar

Marriott Crafted Plate
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St. Petersburg, FL 33716
6:30-8:30 pm

Please RSVP to Evite for dinner attendance

July Speaker

Dr. Scott Munsterman

“Do’s & Dont’s of Telemedicine”

Upcoming Speakers

Joint Meeting with HCCS & NSCS
Thermography Cancer Screens

July Board meeting 13th 12:30pm Zoom

Aug Board meeting 10th 12:30pm

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See page 15 for the 2021 Membership Application if you have not already mailed it in.

Contact Jennifer Comey, Executive Director, with any questions regarding membership at ed@pccschiro.org

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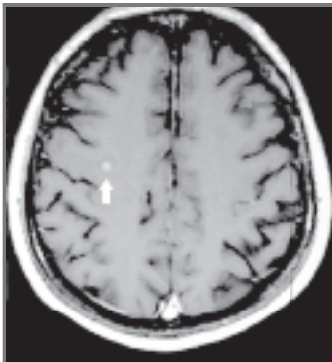
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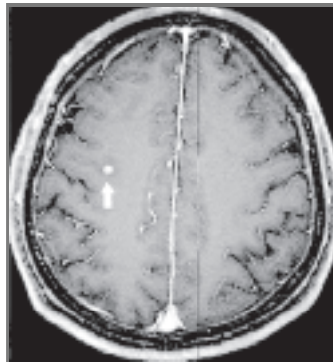
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1. The atlantodens or atlantodental interspace (ADI). Evaluation of this space is critical prior to any form of spinal manipulation including traction. An increase can occur secondary to trauma but equally important, this space must be assessed in patients with known or suspected inflammatory arthropathies.
2. The retropharyngeal and retrotracheal spaces. Increased space may be secondary to trauma, infection, recent surgery and neoplasm.
3. Cervical contours. A smooth line should be formed along both the anterior and the posterior portions of the vertebral bodies and along the spinolamina junctions.
4. Thoracic kyphosis and parallelism of the endplates. Even in non-traumatic cases vertebral body wedging or overall decrease in body height, may indicate pathologic fracture.
5. Abdominal aorta. X-ray imaging without contrast requires sufficient atherosclerotic calcification for

adequate measurement.

6. Proximal femur evaluation includes the angle of inclination of the femoral neck and shaft. Look for coxa varum or valgum. Fractures of the hip are sometimes hidden. Secondary signs are important to recognize. Evaluation of the acetabulum for depth and angle are essential.

7. Patella position. Assess for patella alta and baja. The ratio of the patella tendon and length of the patella are used to evaluate for these conditions. Evaluate for genu varum and valgum.

8. Parallelism of the tibiotalar joint. Assess for instability.

9. Boehler's angle. To measure compression fractures of the calcaneus.

10. Halux varum and valgum.

11. Coracoclavicular distance and the acromioclavicular joint space need to be examined. Also important is evaluation of the humeral head's relationship to the glenoid. An elevated humeral head may indicate rotator cuff tear or degeneration.

12. Cubitus varum and valgum. An important relationship in the pediatric elbow is the anterior humeral line to determine capitellum dislocation. Don't forget the fat pad sign.

13. Ulnar variance helps to evaluate for potential wrist pathology. The scapholunate space needs to be assessed. Carpal instability patterns are required to be recognized. Angular measurement to determine dorsal intercalated segment carpal instability (DISI) or volar intercalated segment carpal instability (VISI) need to be evaluated.

The list above is only a sample of the numerous angles, and spaces that must be assessed when evaluating a plain radiograph. There are many more that are required to be observed in the ordinary course of image interpretation and even more with advanced imaging such as MRI. It takes time to develop a “sense” of normal versus abnormal, but if you know the critical areas in each body area and understand how they are assessed you will find that, eventually, you will not have to measure to recognize abnormal.

Terry D. Sandman, DC, MPH, DACBR
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Benefits to Join/Renew

Monthly General Meetings

Educate/Eat/Network

In-Person and Virtual for 2021; return is TBD

Learn from industry leaders

Network with Sponsors

Enhanced Member Directory

SEO consumer capture

Website Hyperlinks

Member Discounts/Services

The Audible Release Newsletter

Advertiser's "Show Specials" pricing

Visit www.pccschiro.org

and click "Join Now or Get Involved"

Message from the PCCS President

I am excited to share with our current and potential new members several changes we have implemented for this upcoming 2021 membership year including updated website with enhanced member directory, general meetings hosted both in-person and virtual via Zoom once we can safely return to socially distanced general meetings, and online application and renewals accepting Venmo/Paypal. We are also working to establish member advertisers who offer discounted products/services especially to our PCCS members and look forward to continuing to offer additional opportunities for our community of PCCS chiropractors and valued sponsors.

Dr. Gantzer DC, MS, DACBN, FACN, LAC

ABOUT THE PCCS

The goal of the PCCS is to preserve, promote, protect, and advance the Chiropractic Physician profession. The PCCS was founded in 1952 and is a camaraderie of chiropractors and chiropractic students who are proactive and passionate about our chiropractic profession. Most importantly, your PCCS membership annual dues along with several annual fundraising PAC events support the chiropractic profession and aid to maintain our Florida chiropractic scope of practice.

We understand the current COVID economic stress and sincerely appreciate your 2021 FL chiropractic financial support.

2021 Meetings and Events

We typically host 8 monthly member general meetings, a social mixer, a holiday party, and 3 annual events; the exception is the current cancellation of general meetings under the safety and precautions of COVID. General Meetings will remain postponed until further notice awaiting CDC post-holiday updates; returning as soon as possible. Upon return, hopefully during the first quarter, and new for 2021, our general meetings will be offered both virtual and in-person to increase meeting availability for those who cannot travel or are not comfortable attending in-person.

The 8 general meetings are held the last Tuesday of the month which begin at 7:00 pm with pre-meeting networking at 6:30 pm as members and sponsors begin to arrive. Dinner is followed by a featured speaker on a Chiropractic related topic with the meetings concluding around 8:30pm.

In lieu of the general meetings we cannot host in-person at the onset of 2021, the board of directors are intimately working on other avenues of monthly online education and other member benefits, which we are excited to be offering.



PCCS 2021 Membership Application & Invoice

January 1, 2021 thru December 31, 2021

The following will be displayed in the website member directory

Name: _____

Credentials and Post-doctorate certifications:

Circle all that apply: DC MS LAc DABCI DACBN DACNB DACBSP DACBR DICCP

Select One: New Member / Renewal / New Member 1st Year DC

Renewals Only: complete below IF YOUR CONTACT INFO has changed

Office or Company Name: _____

Office or Company Address: _____

Multiple office locations: _____

Email: _____

Office Phone: _____ Office Fax: _____

Cell phone (for PCCS communications): _____ On directory? Y / N

*Membership is for the chiropractor listed above only & is non-transferable.

New Members and Renewals:

Annual Dues with a \$50 voluntary contribution to the PAC = \$225.00

Annual Dues = \$175.00

1st Year DC: Graduated in 2020

1st Year Licensed D.C. Annual Dues +\$50 contribution to the PAC = \$149.00

1st Year Licensed D.C. Annual Dues = \$99.00

ONLINE APPLICATION AND RENEWALS NOW AVAILABLE

www.pccschiro.org/join-now

Online Pay Options: Venmo/Paypal

Join by Mail: enclose this completed form & check payable to:

PCCS

P.O. Box 7515

Seminole, FL 33775-7515

NEW FOR 2021: General Meetings will be held In-Person and Virtual via Zoom to accommodate travel and social distancing**

****General Meetings will remain postponed until further notice awaiting CDC post-holiday updates; returning as soon as possible**

PCCS membership annual dues support the chiropractic profession and Florida scope of practice;

thank you for your chiropractic financial support

Know someone interested in joining as a DC/Sponsor/Advertiser; www.pccschiro.org click "Join Now or Get Involved"

Email Jen Comey, Executive Director ED@PCCSChiro.org or Dr. Gantzer, President drgantzer@gmail.com with questions.

*Contributions to the PCCS-PAC are not deductible as charitable contributions for federal income tax purposes.



Audible Release

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Philip Friedman and the FL Legal Group team have represented many individuals and medical providers helping them protect their rights against the insurance companies.

RECOVERED MILLIONS OF DOLLARS FOR PCCS MEMBERS, AND PROUD SUPPORTERS OF PCCS FOR A DECADE.

Philip A. Friedman, Esq., MBA

AREAS OF PRACTICE

- HEALTH CARE CLINIC COMPLIANCE
- PERSONAL INJURY (NO-FAULT)
- PIP
- IME
- EUO
- PERSONAL INJURY (BI)
- CIVIL LITIGATION
- INSURANCE LAW
- PIP BILLING COMPLIANCE
- FEE SCHEDULES
- SINKHOLE



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