Gonstead Clinical Studies Society
Chiropractic Research, Education & Fellowship

The 'G' Note

Gonstead Clinical Studies Society Quarterly Clinical Update

JUNE 2011
IN THIS ISSUE

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Meeting of the Minds

NOVEMBER 5-6, 2011
Southern California Health Sciences University (LACC)
Whittier, Calfornia
(details, p.6)

Gonstead Disc Model Update: Elastic Fibers, Elastin, & Microfibrils

by Steven T. Tanaka, D.C.

This is part of an on-going series of articles to update the Gonstead disc concept. Among Gonstead doctors, little has been done to integrate the 1960s Gonstead disc model with the vast amount of disc research that has taken place since that time. If we are going to focus on the structure and function of the disc in normal function and subluxation, it is vital that we have the best and most current information on the disc to better serve our patients.

Elastic properties are required for the proper mechanical function of the disc. Elastic fibers and networks of elastin and microfibril are an important component of the disc with their ability to allow extensibility and restore the disc to its normal state after deformation due to the forces on it. An example of an effect of elastic fibers is when you push your skin in with your finger, it bounces back. This is the elastic property of tissues in action.

Elastic fibers are found in the anular lamellae parallel to the anular fibers. This is particularly true of the immature disc (9). They add extensibility to the disc in order to allow a return to the normal state. They also add stiffness to the lamella collagen perpendicular to the collagen fibers under transverse shear (5). They aid in anchoring the disc to the cartilaginous endplates (9). Elastic fibers are also found in the interlamellar spaces as will be explained later.

Elastic fibers are also found in the nucleus pulposus but with less organization and are not as abundant. In the nucleus pulposus, microfibrils tend to co-localize with disc cells while elastin fibers tend to be disbursed in the ECM (10).

Elastic fibers increase in density up to around age 40 and decrease after that age (7).

— cont. on p.3

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Contact: Dr. Patrick Ryan: *Tel:* (201) 841-0582
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Thank you very much to the following contributors to Gonstead chiropractic research. These visionary doctors, organizations, and lay people know the value of chiropractic research. Chiropractic research is necessary to advance and document the benefits of chiropractic. If you would like to join these future-thinking individuals, contact GCSS.

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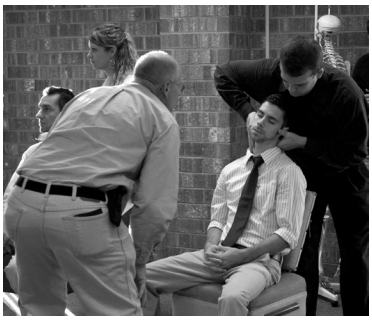

Drs. Gabbert & DeLoe teaching the Gonstead technique

The Gonstead Clinic

When your Gonstead group or you yourself conduct a Gonstead workshop, please consider donating part of your proceeds to the GCSS research fund. Over the years, the Monterey Bay GCSS has donated at least $10,000 to Gonstead research.

Chiropractic is specific or it is nothing. – B.J. Palmer, *As A Man Thinketh*

GCSS

Mission/Purpose

1. *Propagate & advance the Gonstead Technique*
2. *Improve technical & diagnostic skills*
3. *Aid chiropractic colleges & students in the use and teaching of the Gonstead technique*
4. *Promote chiropractic & fellowship among Doctors of Chiropractic*
5. *Fund and/or execute research to establish scientific data*

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Research Update

Roger R. Coleman, D.C.
Director of Research

Mark Lopes, D.C.
Research Commitee-Chair

Once again, it's time to discuss what we're doing on the research front. Well, there's always a lot going on, and this time is no exception. First, we understand that our recent article on the A-P full spine view has been a topic of discussion, and now that the initial thrill of publication has passed, we feel more certain than ever that this is exactly where we needed to start. We're very proud of how it all turned out. So don't forget to read the article and make use of it as needed. It supports what you do, and science was made to be used.

Next comes an article on retrolisthesis. That article is in review, and we have received the comments of the reviewers. We have made the indicated changes and are in the process of writing the reply and finishing the changes in preparation for resubmission. Once again, we want to praise the efforts of Edward J. Cremata (Stanford Credo Institute) on this article. He is great to work with and has worked hard answering reviewers and preparing stats. We hope to do many more articles with him in the future. It has been a lot of work, as all articles are, and we are making every effort to secure publication of another article, which like the A-P full spine, is directly related to your every day practice.

We are awaiting receipt of the data that has been collected at Life West regarding the x-ray article. As soon as we receive that, we will start the analysis phase of that project and then proceed to the writing of that article.

Work is still progressing on the leg length inequality and biomechanical changes on a pre-and post films article. We had completed the proposal, but recently, we began adding new information to improve it further. This may eventually be our most important work; we will see.

Finally, we wanted to once again discuss an article that has been taking a lot of our time and which we think will be very important to the GCSS. The article will be submitted for consideration to the *Journal of Chiropractic History*. The GCSS has a proud history, and it is time to tell your story. As you know from previous communications, our co-author on this article is Kenneth Wolf, PhD, who received his degree from Notre Dame and has served as the chair of the history department and a dean at Murray State University, as well as, is the author of several text books. This foray into the field of history has been much different than an article for a science journal. From content to referencing, it is different, and Ken has been invaluable in our efforts. He is donating his time and has really been a strict task master, as he pushes us to produce a better article. We are very grateful for all his efforts on our behalf.

We are constantly thinking of new projects and reworking projects that are in progress, but these are the most active. For those of you who have not yet read the full spine article, please do so, and we look forward to reporting back to you in the next issue of *The G Note*.❖

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cont. from p.1 —

Components of Elastic Fibers

The classic elastic fiber has a core of elastin with microfibril organized around it (1,4). Some elastic fibers have a minute amount of elastin surrounded by microfibrils (elaunin fibers), and some are purely composed of microfibrils (oxytalan fibers) (1,7). Other proteoglycans may be integrated into the fibers as well. The exact composition of elastic fibers is tissue-specific (4,7).

Within the extracellular matrix of many parts, the skin, for instance, is a protein called elastin. Elastin is hydrophobic, and compared to collagen fibers, it has less stiffness but greater extensibility (rubber-like). Unlike the orderly form with strong bonds that characterized collagen, elastin has cross-linked, randomly coiled chains which allow it to extend. They can stretch more than 100% of their resting length and return to their normal length. There is an equal amount in the anulus and nucleus. It is more prevalent in the inner than outer anulus. This is thought to be due to greater tensile deformation in the inner anulus (2). — *cont. on p.4*

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cont from p3 —

There is more elastin in degenerative than in non-degenerative discs (2). This is probably due to the need to accommodate the high levels of tensile deformation after the loss of other materials in the disc. This increase in elastin in the degenerated disc is greatest in the inner anulus and least in the nucleus pulposus (2).

Another component of some elastic fibers is microfibril. Various types of fibrillins form microfibrils depending upon the requirements of the tissue they inhabit. Depending upon the needs of the tissues, other molecules are present, such as, microfibril-associated glycoprotein (MAGP-1) in the outer anulus. Fibrillins are important in the interface between elastin and microfibril and to cell surfaces (2-4). A microfibril mesh has been found in the inner anulus where they are more filamentous, form a spider web-like network intralamellarly, and are less likely to be adjacent to elastin than in the outer anulus (10). The importance of microfibrils can be found in disorders where fibrillins are mutated, such as, Marfan syndrome, where abnormalities are found in the skeletal, cardiovascular, and ocular systems (10).

Interlamellar Elastic Fibers

Elastic fibers have been found to pass between and tie together the lamellae of the anulus. Some link together adjacent lamellae while others have complex arrangements that interlink multiple lamellae and further divide to form multiple "bridges" between lamellae (6). The density of both microfibril and elastin networks were greater in the interlamellar area than intralamellar (10). The interlamellar bridging is greater in the degenerating disc, particularly in the inner anulus, probably due to the greater strains in the area (2). Overall, there is a greater density of interlamellar and better organized and distinct intralamellar elastic fibers in the inner than outer anulus and better organized elastic fibers as well (8), probably for the aforementioned reason.

The bane of elastic fibers are proteinases, such as, matrix metalloproteinases and serine proteinase. Although elastic fibers can maintain elasticity to tissue for a lifetime, these proteinases will degrade them and cause a loss of elasticity and aging of the affected connective tissues (4).

Scoliotic Discs

Elastic fiber distribution is different in scoliosis, both idiopathic and neuromuscular forms. The disc structure is more disorganized. Intralamellar collagen bundles are not parallel. Elastic fibers are poorly organized and few in number. Elastic fiber tend to traverse the lamellar collagen bundles rather than align parallel to them. These findings are more distinct in neuromuscular compared to the idiopathic type of scoliosis (8).

Overview

As is well known, the orientation of collagen fibers of an anular lamella is at an oblique angle to the adjacent lamellae. Interspersed and parallel to the collagen fibers are elastic fibers, elastin, and microfibrils. Woven into the collagen fibers are elastic fibers and networks of elastin and microfibrils that bridge adjacent lamellae, some bridging multiple lamellae. Some of these bridges split and enter the lamellae at multiple points. The overall picture is full and partial lamellae whose interspace is filled with extracellular fluid. Rubber-like fibers and networks are woven into and between the lamellae. When the disc is deformed by forces, the elastic fiber network appear to "snap" the disc back into its resting state. A similar function seems to occur in the nucleus which is more fibrous and less fluid-like than the model we use, especially after the first few years of life. When the disc returns to a more resting state, the network of elastic fibers, elastin, and microfibrils in the nucleus also helps the nucleus return to its normal state. ❖

In the degenerated disc, the collagen and elastic fiber population and fluid content have diminished. There is more fibrous tissue. There is more elastin to accommodate the changes. The disc is more vulnerable to compressive and shear forces. The loss of elasticity risks tearing and an inability of the disc to return to the normal state after deformation of the disc to forces placed upon it.

References

1 Buckwalter JA, Cooper RR, Maynard JA. Elastic Fibers in Human Intervertebral Discs. *Journal of Bone & Joint Surgery* January 1976, 58-A(8):73-76.

2 Cloyd JM, Elliot DM. Elastin Content Correlates With Human Disc Degeneration in the Annulus Fibrosus and Nucleus Pulposus. *Spine* 2007; 32(17):1826-1831.

3 Hayes AJ, Smith SM, Gibson MA, et al. Comparative Immunolocalisation of the Elastin Fibre Associated Proteins Fibrillin-1, LTBP2 and MAGP-1 With Components of the Collagenous and Proteoglycan Matrix of the Foetal Human IVD. *Spine* 2011 (in press).

4 Kielty CM, Sharratt MJ, Shuttleworth CA. Elastic Fibres. *Journal of Cell Science* 15 July 2002; 115(4):2817-28.

5 Michalek AJ, Buckley MR, Bonassar LJ, et al. Measurement of Local Strains in Intervertebral Disc Anulus Fibrosus Tissue Under Dynamic Shear: Contributions of Matrix Orientation and Elastin Content. *Journal of Biomechanics* 2009; 42(14):2279-85.

6 Schollum ML, Robertson PA, Broom ND. Microstructures and Mechanical Disruption of the Lumbar Disc Annulus. *Spine* 2008; 33(25):2702-10.

7 Smith LJ, Fazzalari NL. Regional Variations in the Density and Arrangement of Elastic Fibres in the Anulus Fibrosus of the Human Lumbar Disc. Journal of Anatomy September 2006; 209(3):259-67.

8 Yu J, Fairbanks JCT, Roberts S, et al. The Elastic Fiber Network of the Anulus Fibrosus of the Normal and Scoliotic Human Intervertebral Disc. *Spine* 1 August 2005; 30(16):1815-20.

9 Yu J, Peter C, Roberts S, et al. Elastic Fibre Organization in the Intervertebral Discs of the Bovine Tail. *Journal of Anatomy* 2002; 201:465-475.

10 Yu J, Tilapur U, Fairbank J, et al. Microfibrils, Elastic Fibres and Collagen Fibres in the Human Intervertebral Disc and Bovine Tail Disc. *Journal of Anatomy* 2007; 210:460-71.

Chronic Pain and Loss of Brain Matter

by Steven T. Tanaka, D.C.

In recent years, it has been found that chronic pain can alter the activity of and causes decrease in primarily the gray matter of the brain. The chronic pain can be due to back pain, irritable bowel syndrome, fibromyalgia, phantom pain, among others.

Which areas of the brain have been found to diminish in volume due to chronic pain? Studies have found that the areas affected are the anterior cingulate cortex (3-5), right insular cortex and operculum (4), dorsolateral prefrontal cortex (1,4-6), amygdala (4), orbitofrontal cortex (6), thalamus (1,6), motor/premotor area (5), and brainstem (3,4,6). White matter reduction might also occur. The cingulate cortex, frontal area, and amygdala are involved in the circuit associated with pain perception, in particular, the unpleasant sensation or affective component of pain (2). The cingulate cortex and some prefrontal areas are associated with cognition (5). The dorsolateral prefrontal cortex is thought to be involved in expectancy-induced analgesia (placebo effect) which seems to be less effective in chronic pain (6). The insula is found to be involved in younger but not older people (5). The blood flow to the periaqueductal gray is impaired with chronic pain. It is part of the antinociception system (6).

In cases of chronic lower back pain, the area representing the lower back in the primary somatosensory cortex shifts medially and enlarges into the area associated with the lower extremities. The chronicity of the pain is related to the amount of expansion. One study found that chronic low back pain patients with distress had greater expansion of the affected area in the primary somatosensory cortex than those without distress which may be due to the emotional toll of pain distress (6).

Cognition appears to be affected. Decision-making, memory, language skills, among others have been found to be impaired in those with chronic low back pain (6).

Both proprioception and body perception have also been found to be impaired (6). Studies have found that when body awareness is impaired, tissue temperature is altered and swelling occurs (6). These may have clinical implications for chiropractors, although these latter findings are preliminary.

Does the decrease in the gray matter of the brain precede the pain or come later. This is somewhat of a "chicken or egg" conundrum. A study found the decrease in brain gray matter occurs following the initiation of pain rather than prior to it. (4).

Many disorders are associated with gray matter loss. Fibromyalgia, migraines, chronic headaches, irritable bowel syndrome, and other conditions were found to affect the numerous regions of the gray matter of the brain (3).

Many opine that chronic pain causes neurochemical changes rather than vice versa (6).

What causes the loss of gray matter? It may to due to chronic nociceptive input, but otherwise, the cause is unknown (3,4). What actual structures atrophy is speculative as the studies it indirectly by the use of imaging studies to detect for brain reduction. In other words, it is not known whether the atrophy or apoptosis occurs to the neuron, glia, or other tissues that compose the brain. The mechanism leading to atrophy or apoptosis may be associated with numerous possibilites: the aforementioned chronic nociceptive input, vascular changes, altered spinal function, etc.

Is the decrease in gray matter reversible? When patients had treatments that diminished the pain, gray matter increased (4). The degree of reversibility is probably not 100%.

Obviously, it is important to have an optimally functioning peripheral nervous system (i.e., subluxation-free) in order to maintain central nervous system structures and function. Reducing the cause of nociceptive signals should prevent the alterations to brain gray matter. In other words, your adjustments are restoring the structure and function of your patient's brain. ❖

References

1 Apkarian AV, Sosa Y, Sonty S, et al. Chronic Back Pain Is Associated With Decreased Prefrontal and Thalamic Gray Matter Density. *Journal of Neuroscience* 17 November 2004; 24(46):10410-15.

2 Burgmer M, Gaubiz M, Konrad C, et al. Decreased Gray Matter Volumes in the Cingulo-Frontal Cortex and the Amygdala in Patients With Fibromyalgia. *Psychosomatic Medicine* 2009; 71:566-73.

3 May A. Chronic Pain May Change the Structure of the Brain. Pain 30 June 2008; 137(1):7-15.

4 Rodriguez-Raecke R, Niemeier A, Ihle K, et al. Brain Gray Matter Decrease in Chronic Pain Is the Consequence and Not the Cause of Pain. *Journal of Neuroscience* 4 November 2009; 29(44):13746-50.

5 Ruscheweyh R, Deppe M, Lohmann H, et al. Pain Is Associated With Regional Grey Matter Reduction in the General Population. *Pain* April 2011; 152(4):904-11.

6 Wand BM, Parkitny L, O'Connell NE, et al. Cortical Changes in Chronic Low Back Pain: Current State of the Art and Implications for Clinical Practice. *Manual Therapy* 2011; 16(1):15-20.

Many in our profession claim to be able to straighten a scoliosis. A congenital scoliosis is the result of mal-shaped vertebrae. Gonstead stated: "A congenital scoliosis will not be straightened by anyone." Never adjust an [unsubluxated] asymptomatic patient to correct this type of scoliosis. If there is no nerve pressure, they are as healthy as anyone else.

Tom Vance DC

Modern technology allow the appearance of health but not the substance. – Sally Fallon (Weston A. Price Foundation)

Meeting of the Minds VIII

NOVEMBER 5-6, 2011

SOUTHERN CALIFORNIA HEALTH SCIENCES UNIVERSITY

Whittier, California

If It's Not Specific – It's Not Chiropractic

SATURDAY, NOVEMBER 5

If It's Not Specific; It's Not Chiropractic—*Steve Rindal DC*

Discussion of the six tests Gonstead chiropractors use to analyze the spine and establish the single level, type, and position of the subluxation

The Dynamic, Functional Model of Chiropractic; Common Denominators; Errors; and Omissions: The Motion Analysis—*Leonard John Faye DC*

Discussion and demonstration of segmental and regional motion analysis in relation to the major kinetic chains of the body

Postural Analysis—*David Rowe DC*

Comparison of patients' postural patterns and findings to their spinal x-rays

The Stories X-Rays Reveal—*Mark Lopes DC*

X-rays can suggest or confirm subluxations and suggest optimal management, patterns of spinal changes, and subsequent subluxations

The Ultimate Pit Class—*Dennis O'Hara DC*

Presentation of special cases

Filming Your Set Ups and Adjustments—*Dennis O'Hara DC*

Dual recording and projection of adjustment set-ups and discussions

Hospitality to honor GCSS founders and supporters

SUNDAY, NOVEMBER 6

Practical Use of Science in the Chiropractic Practice—*Roger Coleman DC*

Today's use, misuse, and abuse of science in health care. How to maintain integrity in our pursuits and better understand science

Four Case Studies Presentation—*David Abblett DC*

Presentation and discussion of unusual cases

Research Goals of GCSS: Past, Present & Future—*Roger Coleman DC*

The Roots of GCSS & My Time with Dr. G—*Drs. Richard Gohl, Richard Thornton & Thomas Sherman*

Friday, November 4, from 5:30 PM: "Get It Geared Up!" FREE hands on adjusting workshop.

During breaks and lunch hour, we will be conducting "ChiroStory" oral history interviews.

PARTICIPATION REQUIREMENTS: You must be a Fellow, Diplomate, Diplomate-candidate who will be taking the test during this MoM, and/or have been in a Gonstead practice for at least 20 years.

Check the web site (www.gonstead.com) regularly for updates or contact Michele at GCSS: 888-556-4277.

Reposition the vertebra to take pressure off of the nerve and you will get sick people well. —C.S. Gonstead, D.C.

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Gonstead Chiropractor Needed in New Jersey Looking a for a strict Gonstead chiropractor to cover Saturday morning June 25th and possibly other upcoming Saturdays. Please contact us at 732-295-4900.

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It is amazing what one adjustment can do if applied right. —C.S. Gonstead, D.C.

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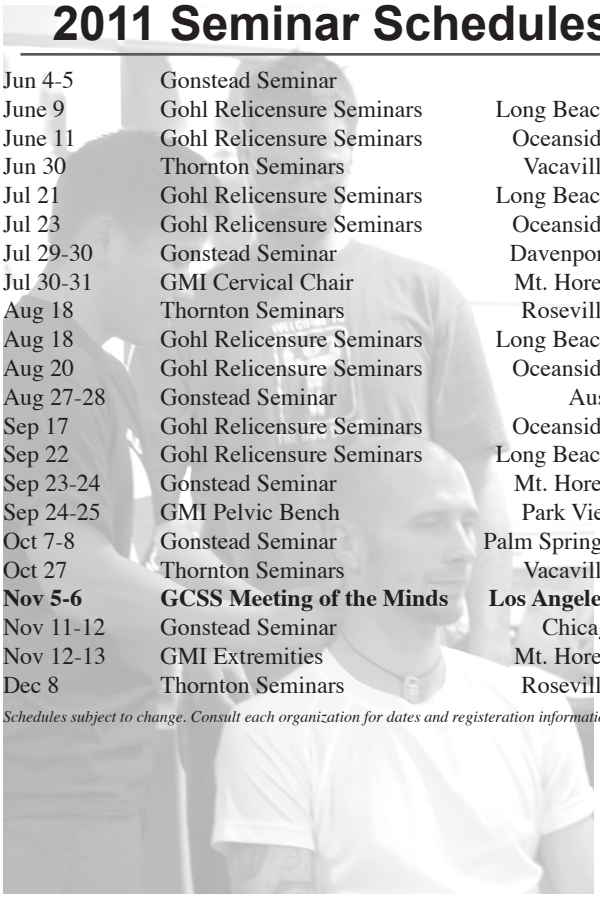
2011 Seminar Schedules

Jun 4-5	Gonstead Seminar	Japan
June 9	Gohl Relicensure Seminars	Long Beach, CA
June 11	Gohl Relicensure Seminars	Oceanside, CA
Jun 30	Thornton Seminars	Vacaville, CA
Jul 21	Gohl Relicensure Seminars	Long Beach, CA
Jul 23	Gohl Relicensure Seminars	Oceanside, CA
Jul 29-30	Gonstead Seminar	Davenport, IA]
Jul 30-31	GMI Cervical Chair	Mt. Horeb, WI
Aug 18	Thornton Seminars	Roseville, CA
Aug 18	Gohl Relicensure Seminars	Long Beach, CA
Aug 20	Gohl Relicensure Seminars	Oceanside, CA
Aug 27-28	Gonstead Seminar	Australia
Sep 17	Gohl Relicensure Seminars	Oceanside, CA
Sep 22	Gohl Relicensure Seminars	Long Beach, CA
Sep 23-24	Gonstead Seminar	Mt. Horeb, WI
Sep 24-25	GMI Pelvic Bench	Park View, IA
Oct 7-8	Gonstead Seminar	Palm Springs, CA
Oct 27	Thornton Seminars	Vacaville, CA
Nov 5-6	**GCSS Meeting of the Minds**	**Los Angeles, CA**
Nov 11-12	Gonstead Seminar	Chicago, IL
Nov 12-13	GMI Extremities	Mt. Horeb, WI
Dec 8	Thornton Seminars	Roseville, CA

Schedules subject to change. Consult each organization for dates and registeration information.



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