

THE AAO
JOURNAL

 A Publication of the American Academy of Osteopathy

VOLUME 1 NUMBER 4 Winter 1991

TREATING THE OB PATIENT

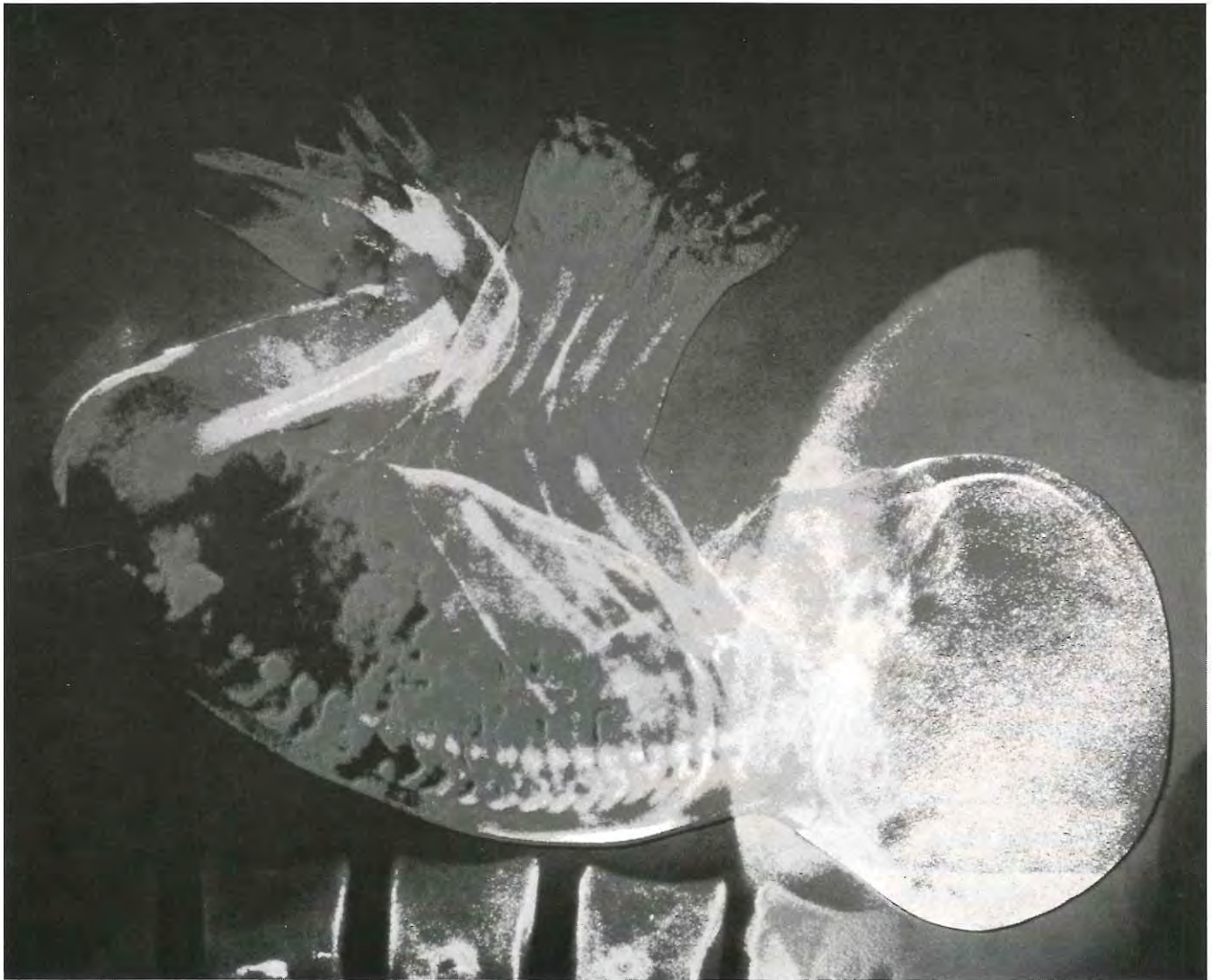


Photo: X-ray of fetus in the womb

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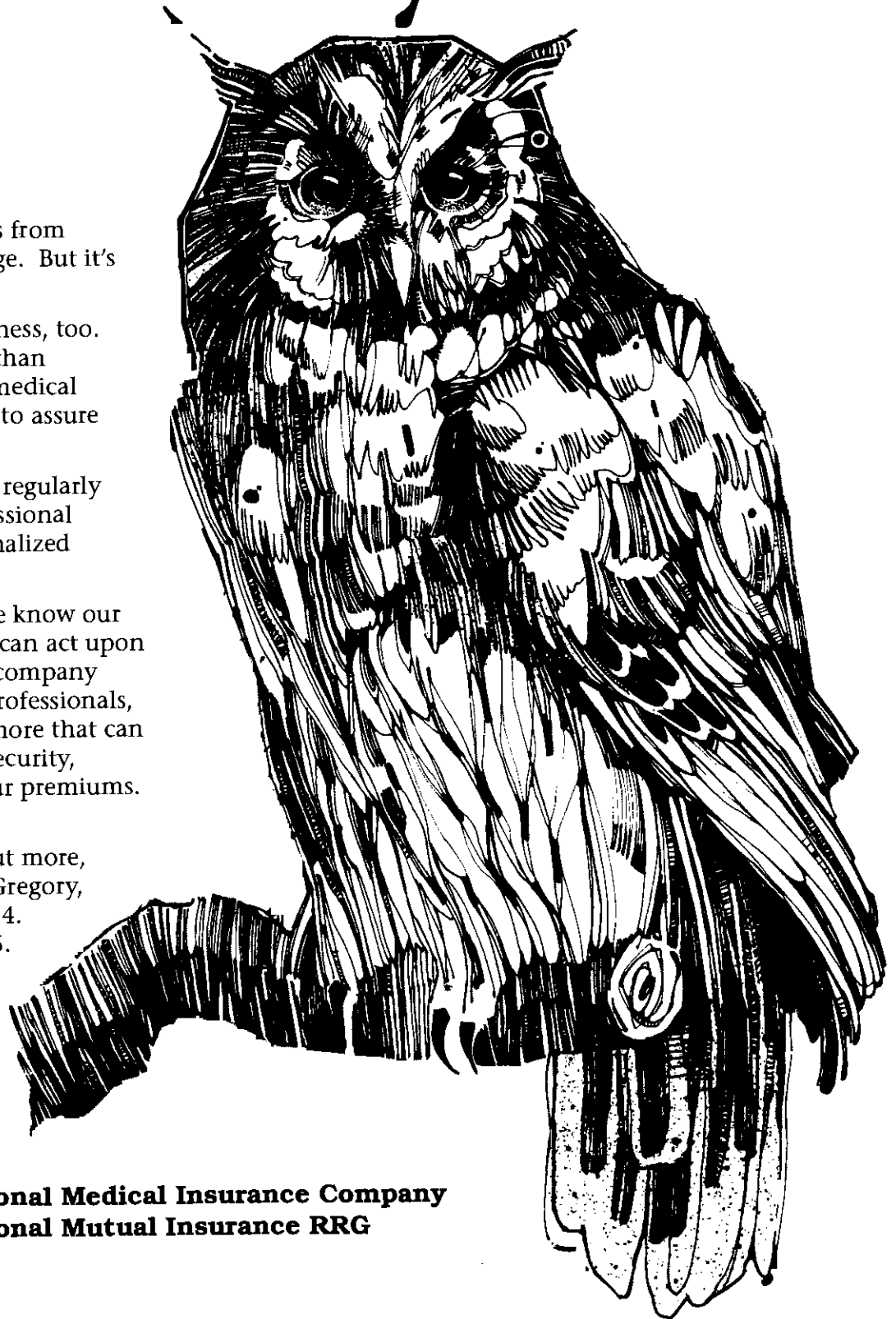
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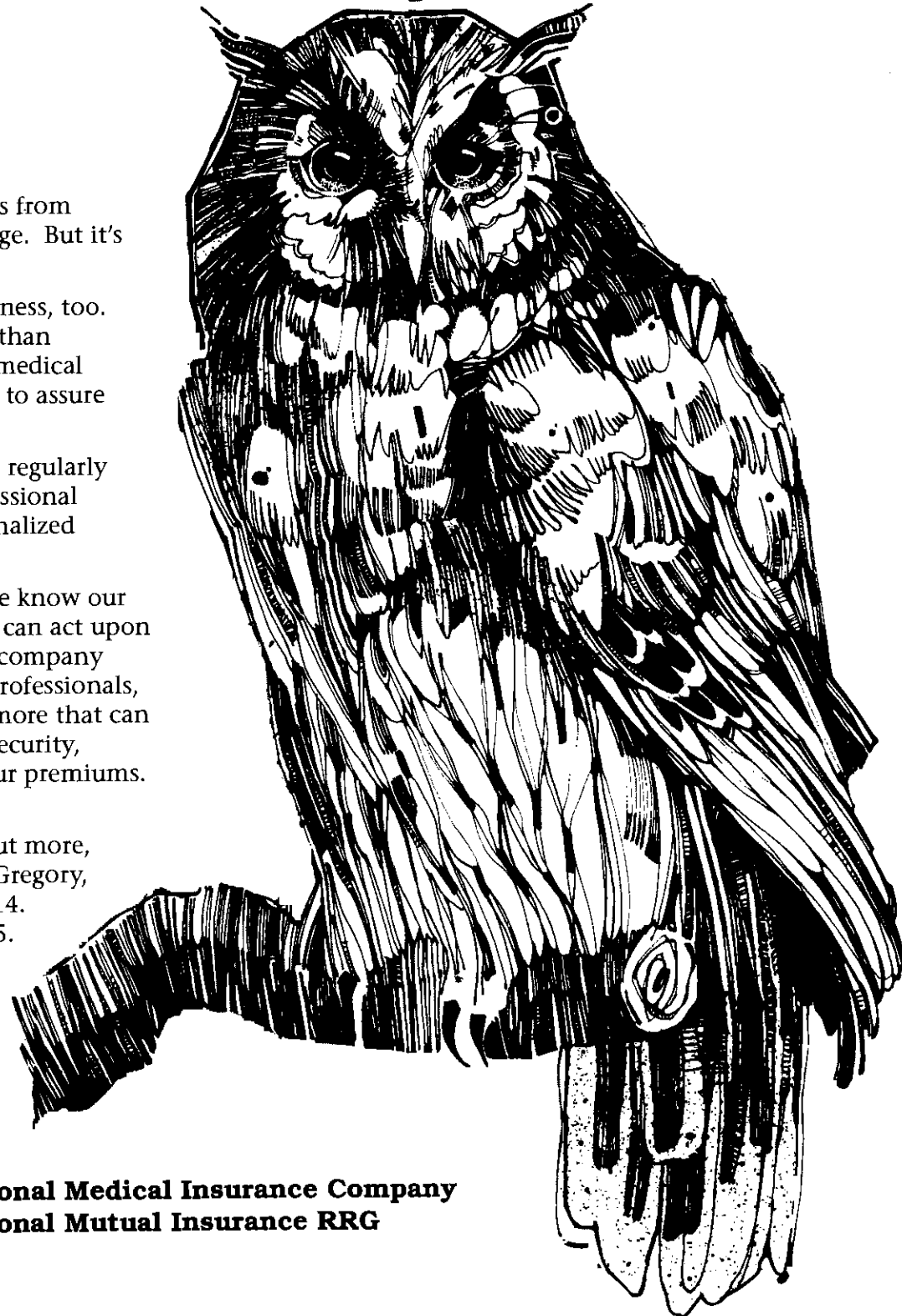
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The AAO Journal is the official quarterly publication of the American Academy of Osteopathy (1127 Mt. Vernon Rd., P.O. Box 750, Newark, Ohio 43058-0750). Third-class postage paid at Newark, Ohio. Postmaster: Send address changes to American Academy of Osteopathy, 1127 Mt. Vernon Rd., P.O. Box 750, Newark, Ohio 43058-0750.

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Famous People

For a time I lived in Southern California. Periodically I would telephone to talk to my family in Pennsylvania and my mother would occasionally ask if I had met any "famous people." She was referring, of course, to movie stars, professional athletes and other such celebrities. My answer was always no, since I had never had that kind of experience in California.

Some time later, though, I reflected on these conversations, and it occurred to me that "famous people" aren't always celebrities. In fact, I found that there were "famous people" all around me, and perhaps you'll indulge me while I attempt to explain.

Most of us have role models in life — people who demonstrate wealth, success, or some quality or characteristic that we admire and would like to have in ourselves. I'd dare say that most of these role models are "famous people" such as the celebrities alluded to above. There is nothing wrong with this and I too have had these kinds of role models at one time or another. But many of my role models come from people I see every day. And some role models come in the form of other living creatures or things that exist in Nature.

Now, I do not have a desire to be an animal, but I learned a lot from my recently departed pet Elkhound. His gentle nature was such that he never once in his 14 year life span did harm to another living creature. His ability to remain kind and gentle in a sometimes vicious world was most impressive to me.

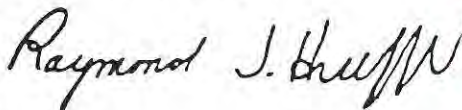
Nor do I wish to be a tree, but I sometimes wish I had the flexibility of a birch tree. These amazing cre-

ations bend a great deal but rarely break, in spite of the harsh elements that sometimes harass them.

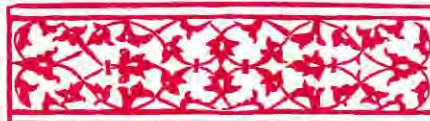
But my best role models come from my students and my patients. In my current position, I come in contact each day with students of osteopathic medicine. These brave souls have taken on the long, hard road to becoming osteopathic physicians. Their enthusiasm, dedication and perseverance continuously stimulate me to stay as sharp as I can both academically and clinically.

And my patients present a never ending source of role models. These are people from all walks of life who demonstrate numerous qualities that I appreciate and admire. I think about these people in many ways. For example when I treat a child, I often wonder: who is this person? Is this the next president of the United States? Or will he or she grow up to be an osteopathic physician? How will our interaction today influence the both of us? I hope that I can always have half the good qualities some of these people have.

Who are your role models? The next time you look, you could go to the movies or to the ball park. But as for me, I'm going to the office to find some "famous people."



Raymond J. Hruby DO, FAAO



"I always knew I wanted to be somebody. I just should have been more specific."

— Lily Tomlin

Deadline For Articles

- July 20 Fall Issue
- October 20 Winter Issue
- January 20 Spring Issue
- April 20 Summer Issue

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Instructions for Authors

The American Academy of Osteopathy (AAO) Journal is intended as a forum for disseminating information on the science and art of osteopathic manipulative medicine. It is directed toward osteopathic physicians, students, interns and residents, and particularly toward those physicians with a special interest in osteopathic manipulative treatment.

The AAO Journal welcomes contributions in the following categories:

Original Contributions
Clinical or applied research, or basic science research related to clinical practice.

Case Reports
Unusual clinical presentations, newly recognized situations, or rarely reported features.

Clinical Practice
Articles about practical applications for general practitioners or specialists.

Special Communications
Items related to the art of practice, such as poems, essays and stories.

Letters to the Editor
Comments on articles published in The AAO Journal or new information on clinical topics.

Professional News
News of promotions, awards, appointments and other similar professional activities.

Book Reviews
Reviews of publications related to osteopathic manipulative medicine and to manipulative medicine in general.

Note: Contributions are accepted from members of the AOA, faculty members in osteopathic medical colleges, osteopathic residents and interns and students of osteopathic colleges.

Contributions by others are accepted on an individual basis.

Submission
Submit all papers to Raymond J. Hruby, DO, FAAO, Editor-in-Chief, University of New England, 11 Hills Beach Road, Biddeford, ME 04005.

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Papers submitted to The AAO Journal may be submitted for review by the Editorial Board. Notification of acceptance or rejection usually is given within three months after receipt of the paper; publication follows as soon as possible thereafter, depending upon the backlog of papers. Some papers may be rejected because of duplication of subject matter or the need to establish priorities on the use of limited space.

Requirements for manuscript submission:

- Manuscript**
1. Type all text, references and tabular material using upper and lower case, double-spaced with one-inch margins. Number all pages consecutively.
 2. Submit original plus one copy. Please retain one copy for your files.
 3. Check that all references, tables and figures are cited in the text and in numerical order.
 4. Include a cover letter that gives the author's full name and address, telephone number, institution from which work initiated, and academic title or position.

Computer Disks
We encourage and welcome computer disks containing the material submitted in hard copy form. Though we prefer MacIntosh 3-1/2" disks, MS-DOS formats using either 3-1/2" or 5-1/4" discs are equally acceptable.

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1. Be sure that illustrations submit-

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2. Photos should be submitted as 5" x 7" glossy black and white prints with high contrast. On the back of each, clearly indicate the top of the photo. Use a photocopy to indicate the placement of arrows and other markers on the photos. If color is necessary, submit clearly labeled 35 mm slides with the tops marked on the frames. All illustrations will be returned to the authors of published manuscripts.
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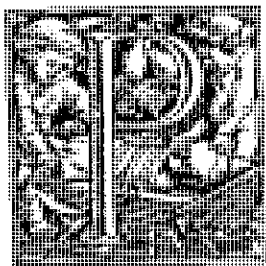
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 2. For journals, include the names of all authors, complete title of the article, name of the journal, volume number, date and inclusive page numbers. For books, include the name(s) of the editor(s), name and location of publisher and year of publication. Give page numbers for exact quotations.

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An Integrated Approach for Treating the OB Patient: Treating the Five Diaphragms of the Body, Part I

by Ken Johnson, DO

Introduction



regnant women are a joy to treat. They seem to be tied directly into the primary life force of the universe. Pregnancy is a time of change; anatomically, physically, mentally and emotionally. Part 1 of this paper will discuss the physiological as well as anatomical changes that occur during pregnancy. Part 2 will discuss diagnosis and use treating the five diaphragms of the body (the foot arches, the pelvis, the respiratory diaphragm, Sibson's fascia covering the thoracic inlet and the tentorium cerebelli) as a model for treatment.

PHYSIOLOGY

Cardiovascular System

The blood volume increases by approximately 40-55%. There are increases in stroke volume by 30%, heart rate by 10-20% and possibly an increase in the cardiac volume by 10%. The changes in the cardiovascular system indicate that there is more blood for the cardiovascular system to circulate.

There are numerous vascular changes that occur as well. The uterine blood flow changes from approximately 30-50 ml up to 500-1000 ml per minute. There is also an increase in the breast blood flow.

Respiratory System

It has been proposed that the respi-

ratory rate is unchanged. The tidal volume increases by 40% and the residual volume (which is the volume after maximum exhalation) decreases by 20%. The expiratory reserve volume (the amount that can be expired at the end of normal exhalation) increases by 20% and the functional residual capacity decreases. The thoracic cage also flares, increasing the subcostal angle from 68° to 103°. The diaphragm, due to the changes of pregnancy, must increase in its excursion to oxygenate the increased blood volume.

A common complaint of pregnancy is a subjective feeling of dyspnea. Dyspnea is possibly due to the increase in blood volume to be oxygenated, and the anatomic changes which lead to altered respiratory function.

Renal System

Because there is more blood to be circulated by the cardiovascular system, there is more blood to purify. Therefore, the glomerular filtration rate increases by approximately 50% with a corresponding increase in sodium retention.

Endocrine System

The corpus luteum of pregnancy produces a polypeptide hormone called "relaxin". Also, there is an increase in the production of estrogen. These hormonal changes cause relaxation of the pelvic ligaments and also a general relaxation of many ligaments throughout the body.

These endocrine changes are

helpful and detrimental from a structural point of view. Women who have pre-existing somatic dysfunction before pregnancy may be helped greatly during pregnancy. The relaxation of the ligaments allows for a greater, as well as easier, mobilization of a restricted joint. There is also a negative effect in that the relaxation of the ligaments can promote somatic dysfunction occurring at a joint; a common example is an acute pubic symphysis shear. This can be an excruciatingly painful somatic dysfunction.

ANATOMY

There are many anatomical changes that occur during pregnancy. The growing fetus within the uterus causes an overall anterior shift in the center of gravity of the pregnant woman with a compensatory posterior shift in the shoulders - the so-called "pride of pregnancy stance". There is an increase in the lumbar lordosis. These shifts cause changes in the thoracoabdominal pelvic cavities which impede function and will be discussed in the following sections.

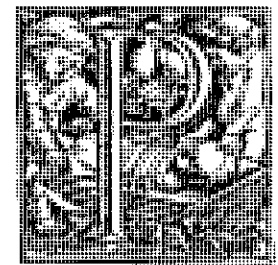
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to the tibia and fibula, which will change the orientation of the knee joint and, in return, will be reflected into the pelvis.

The tibialis anterior attaches to the medial cuneiform and base of the first metatarsal. The tibialis posterior attaches to the navicular, cuneiforms, cuboids and bases of 2-4 metatarsals. Together these muscles form a sling for the longitudinal arch. As the arch drops, there is an increased tone and tension noticed in the tibialis muscles.

The tibialis anterior attaches to the lateral anterior portion of the tibia and the approximate region where the iliotibial band attaches. When the arch drops, there is a change in the tensions of the tibialis anterior, reflecting into the iliotibial band which, in turn, will affect the pelvis. As the arch drops, the talus changes the relationship with the tibia and the fibula; the fibula being an attachment for the long and short head of the biceps. Therefore, the change in orientation of the fibula and tibia will have an effect on the long and short head of the biceps. The biceps femoris attaches from the fibula head to the ischial tuberosity as well as the sacrotuberous ligaments.

These changes in the anatomical relationships of the arches (first diaphragm) to the second diaphragm (the pelvic diaphragm) of the body can be enough to impede both the postural as well as respiratory motion of the pelvis and lower extremity.

Second Diaphragm - Pelvic Diaphragm

The pelvis is made up of the two innominate and the sacrum. It is heavily invested with muscle and neurovascular structures, as well as fascial structures. The endopelvic fascia attaches anterior to posterior, as well as medial lateral, forming what could be thought of as support bridges for the pelvic organs; namely

the uterus, bladder and rectum. The bladder is suspended in the pelvis by the median umbilical ligament (embryonic remnant of the urachus) as well as its lateral and posterior attachments of endopelvic fascia. The cardinal ligaments containing the uterine artery forms a lateral suspension for the uterus. There is a direct connection between the bladder and the uterus, running anterior to posterior, forming the vesicouterine pouch. The bladder is also suspended by the lateral pubovesicular ligaments. The rectum is suspended by the presacral fascia as well as the vaginal rectal fascia.

The fascia of the pelvis and the endopelvic fascia basically suspends these three organs - the bladder, uterus and rectum within the pelvic cavity, allowing them to float within the content of the pelvic cavity. The names of the fascial ligaments are somewhat misleading, creating the idea that there are a number of separate ligaments within the pelvis. In reality, the ligaments are thickenings of fascia, which are continuous with each other and with the fascias of the rest of the body.

Any kind of twist in the pelvis, any restriction in the pubic symphysis or either sacroiliac joint can have a large effect on the endopelvic organs. A twist within the pelvis will impede the organs and the vessels leading to a stasis of fluid in the pelvic organs as well as the lower extremity. One proposed mechanism of swelling in the lower extremities is that the fetus will impinge on the inferior vena cava somewhat and cause a back pressure within the venous system, leading to venous stasis. Another possible mechanism is somatic dysfunction of the pelvis, impairing the ability of the pelvic diaphragm to move in conjunction with the respiratory diaphragm leading to stasis of lymphatic and venous fluid.

Third Diaphragm - Respiratory Diaphragm

The pelvic and the respiratory diaphragms are connected anteriorly, posteriorly, radially and laterally. Posteriorly, the quadratus lumborum is attached to the lumbar vertebrae and the iliac crest. Superiorly, the quadratus lumborum is attached to the twelfth rib. The quadratus lumborum could be viewed as a functional extension of the diaphragm. The quadratus lumborum has, as its action, both postural as well as respiratory motion. The quadratus lumborum acts as an anchor for the twelfth rib during respiration. Restriction in either hemidiaphragm can be seen reflected in the quadratus lumborum and through the tensor fascia lata into the iliotibial band all the way to the peroneal muscles of the lower extremity.

POSTERIOR

The diaphragm is attached to the twelfth rib posteriorly via the lateral and medial arcuate ligaments. The lateral arcuate ligament attaches from the twelfth rib to the transverse process of T12. The medial arcuate ligament attaches from the transverse process of T12 to the body and the anterior longitudinal ligament at T12. The medial and lateral arcuate ligaments form what could be thought of as caves for the quadratus lumborum and the psoas. These ligaments are basically thickenings of the fascia, covering the muscles in this region.

Medially, the crura of the diaphragm attaches to L1, 2 and 3 on the right and L1 and 2 on the left. This is how it is described in most anatomy books. In reality the crura attaches to the anterior longitudinal ligament and blends to this ligament. It is impossible to separate the crura from the anterior longitudinal ligament at their attachments. Looking at specimens in the anatomy lab, the crura basically blend into the anterior longitudinal ligament

and functionally become a portion of it. The anterior longitudinal ligament continues down through the lumbar vertebrae and can be shown to continue into the anterior sacral coccygeal ligaments and then directly into the pelvic musculature, thus forming the posterior connection between the pelvic and respiratory diaphragms. The lateral connection between the pelvic and respiratory diaphragm are through the muscles of the abdominal wall.

ANTERIOR

The organs and muscles of the pelvic cavity connect with the endopelvic fascia. The endopelvic fascia is connected to the median umbilical ligament and to the medial umbilical ligaments which go to the umbilicus and linea alba of the rectus sheath. Continuing superiorly from the umbilicus, the falciform ligament and ligamentum teres (round ligament) attach to the liver as well as the inferior surface of the diaphragm. Therefore, there is a direct anterior connection from the pelvic diaphragm to the respiratory diaphragm. The falciform ligament basically cuts the liver in half anterior to posterior.

The combination of the falciform ligament with the ligamentum teres (round ligament) embedded within it and the ligamentum venosum form an anterior to posterior fascial connection. So there is not only an inferior to superior connection from the pelvic diaphragm to the respiratory diaphragm, but there is also an anterior to posterior connection of the anterior abdominal wall to the posterior abdominal wall under the diaphragm.

The diaphragm interdigitates with the transversus abdominus at a 90° angle. This relationship with the transversus abdominus blending into the linea alba medially can be useful in treatment.

Reciprocal Function of the Respiratory and Pelvic Diaphragm

(There is a functional relationship between the pelvic diaphragm through the median umbilical ligament to the umbilicus and then the falciform ligament through to the diaphragm.) The pelvic diaphragm works in a reciprocal relationship with the respiratory diaphragm. As the respiratory diaphragm contracts, the pelvic diaphragm must relax to allow the abdominal and pelvic contents to shift inferiorly. If there is any restriction in the respiratory or pelvic diaphragms, this physiological phenomenon will not occur. It may be that there are neuronal pathways which reflexively relax the pelvic diaphragm when the respiratory diaphragm contracts and vice versa.

With each inspiration, the diaphragm acts on the lumbar vertebrae. There is a general flattening of all spinal A-P curves. The diaphragm, acting through the crura moves the anterior longitudinal ligament and has a far reaching effect throughout the cardiovascular system. Blood is pumped from the heart out to the extremities throughout the cardiovascular system. Blood is returned through the venous and lymphatic channels by the action of the pumping of the peripheral muscles. The return system (venous and lymphatic) is highly pressure-gradient dependent. When the return of blood enters the pelvic cavity and abdominal cavities, it is solely dependent on the pressure differentials between the thorax, abdominal and pelvic cavities. The lymphatic system returns 10% of the circulatory fluid from the periphery with each cycle. It has been estimated that in a 24-hour period, we turn over 100% of the circulating serum blood volume through the lymphatic system. The peripheral muscles act to pump the lymphatic fluid into the lymphatic channels and back centrally. Any disturbance in the thora-

coabdominopelvic cylinder will impede the return of fluid centrally.

The growing fetus will displace the abdominal contents superiorly, pushing the diaphragm into the thoracic cavity. Affectively, there is a decrease in the superior to inferior length of the thoracic cavity. Therefore, the diaphragm must work at an increased rate of contraction against a stronger resistance to maintain oxygenation of the circulating blood volume.

Not only is there an effect on the superior to inferior length of the thoracic cavity, the growing fetus shifting the center of gravity anteriorly will increase the lumbar lordosis. This creates a larger tension on the crura of the diaphragm posteriorly, impeding diaphragmatic function. The pelvis is tilted anteriorly, greater tension is placed on the anterior abdominal wall and the thorax A-P diameter is decreased.

Fourth Diaphragm - Sibson's Fascia

The thoracic inlet, which is comprised of T1, the first ribs and manubrium, work as a functional unit. Any rotation of T1 will be reflected through the first ribs and the manubrium, changing the diameter of the superior thoracic aperture. Sibson's fascia is attached to the inferior border of the first ribs and the posterior border of the manubrium and going posteriorly to the region of the seventh cervical and the first thoracic vertebrae. It has imbedded within it the scalenus minimus which when contracted, tenses Sibson's fascia. This fascia acts as a diaphragm covering the cupula of the lung. Sibson's fascia is also responsible for maintaining a pressure gradient between the neck and the thorax. Without this gradient, the neck viscera would be sucked into the thorax with each inspiration.

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and functionally become a portion of it. The anterior longitudinal ligament continues down through the lumbar vertebrae and can be shown to continue into the anterior sacral coccygeal ligaments and then directly into the pelvic musculature, thus forming the posterior connection between the pelvic and respiratory diaphragms. The lateral connection between the pelvic and respiratory diaphragm are through the muscles of the abdominal wall.

ANTERIOR

The organs and muscles of the pelvic cavity connect with the endopelvic fascia. The endopelvic fascia is connected to the median umbilical ligament and to the medial umbilical ligaments which go to the umbilicus and linea alba of the rectus sheath. Continuing superiorly from the umbilicus, the falciform ligament and ligamentum teres (round ligament) attach to the liver as well as the inferior surface of the diaphragm. Therefore, there is a direct anterior connection from the pelvic diaphragm to the respiratory diaphragm. The falciform ligament basically cuts the liver in half anterior to posterior.

The combination of the falciform ligament with the ligamentum teres (round ligament) embedded within it and the ligamentum venosum form an anterior to posterior fascial connection. So there is not only an inferior to superior connection from the pelvic diaphragm to the respiratory diaphragm, but there is also an anterior to posterior connection of the anterior abdominal wall to the posterior abdominal wall under the diaphragm.

The diaphragm interdigitates with the transversus abdominus at a 90° angle. This relationship with the transversus abdominus blending into the linea alba medially can be useful in treatment.

Reciprocal Function of the Respiratory and Pelvic Diaphragm

(There is a functional relationship between the pelvic diaphragm through the median umbilical ligament to the umbilicus and then the falciform ligament through to the diaphragm.) The pelvic diaphragm works in a reciprocal relationship with the respiratory diaphragm. As the respiratory diaphragm contracts, the pelvic diaphragm must relax to allow the abdominal and pelvic contents to shift inferiorly. If there is any restriction in the respiratory or pelvic diaphragms, this physiological phenomenon will not occur. It may be that there are neuronal pathways which reflexively relax the pelvic diaphragm when the respiratory diaphragm contracts and vice versa.

With each inspiration, the diaphragm acts on the lumbar vertebrae. There is a general flattening of all spinal A-P curves. The diaphragm, acting through the crura moves the anterior longitudinal ligament and has a far reaching effect throughout the cardiovascular system. Blood is pumped from the heart out to the extremities throughout the cardiovascular system. Blood is returned through the venous and lymphatic channels by the action of the pumping of the peripheral muscles. The return system (venous and lymphatic) is highly pressure-gradient dependent. When the return of blood enters the pelvic cavity and abdominal cavities, it is solely dependent on the pressure differentials between the thorax, abdominal and pelvic cavities. The lymphatic system returns 10% of the circulatory fluid from the periphery with each cycle. It has been estimated that in a 24-hour period, we turn over 100% of the circulating serum blood volume through the lymphatic system. The peripheral muscles act to pump the lymphatic fluid into the lymphatic channels and back centrally. Any disturbance in the thora-

coabdominopelvic cylinder will impede the return of fluid centrally.

The growing fetus will displace the abdominal contents superiorly, pushing the diaphragm into the thoracic cavity. Affectively, there is a decrease in the superior to inferior length of the thoracic cavity. Therefore, the diaphragm must work at an increased rate of contraction against a stronger resistance to maintain oxygenation of the circulating blood volume.

Not only is there an effect on the superior to inferior length of the thoracic cavity, the growing fetus shifting the center of gravity anteriorly will increase the lumbar lordosis. This creates a larger tension on the crura of the diaphragm posteriorly, impeding diaphragmatic function. The pelvis is tilted anteriorly, greater tension is placed on the anterior abdominal wall and the thorax A-P diameter is decreased.

Fourth Diaphragm - Sibson's Fascia

The thoracic inlet, which is comprised of T1, the first ribs and manubrium, work as a functional unit. Any rotation of T1 will be reflected through the first ribs and the manubrium, changing the diameter of the superior thoracic aperture. Sibson's fascia is attached to the inferior border of the first ribs and the posterior border of the manubrium and going posteriorly to the region of the seventh cervical and the first thoracic vertebrae. It has imbedded within it the scalenus minimus which when contracted, tenses Sibson's fascia. This fascia acts as a diaphragm covering the cupula of the lung. Sibson's fascia is also responsible for maintaining a pressure gradient between the neck and the thorax. Without this gradient, the neck viscera would be sucked into the thorax with each inspiration.

The fascial connection of the peri-

cardium to the sternum is called the "pericardial ligament". The pericardium is basically pretracheal fascia, which has extended down from the neck and embedded itself into the diaphragm. This pretracheal fascia continues from the diaphragm being the covering of the heart, connecting to the sternum and into the neck. The ribs are covered by the prevertebral fascia, which travels superiorly to the base of the skull.

Just as there is a relationship between the thoracic and pelvic diaphragms with respiration, Sibson's fascia acts as a diaphragm in a reciprocal relationship with the thoracic diaphragm. Any distortion of the thoracic inlet will lead to passive congestion of venous and lymphatic fluids throughout the whole body. The thoracic inlet is approximately 4-1/2" wide by about 2-1/2" long. Within this space is a great number of vital structures. The thoracic duct empties into the left subclavian vein in the region of the thoracic inlet as well as the right thoracic duct. The thoracic duct drains most of the lymphatic fluids of the body minus the right portion of the thorax, the right head and the right upper extremity. Any distortion of the thoracic inlet will lead to passive congestion of venous and lymphatic fluids throughout the whole body.

There are a great number of structures that traverse the thoracic inlet besides the thoracic duct. These structures include the trachea, the esophagus, the vagus nerve, the sympathetic chain ganglion, carotid arteries, subclavian arteries, and subclavian veins. The brachial plexus rests on the superior border of the first ribs. Based on these anatomical relationships, this becomes a very important area to examine.

Fifth Diaphragm - Tentorium Cerebelli

The tentorium cerebelli is con-

nected to the Sibson's fascia through the prevertebral as well as pretracheal fascias. The pretracheal and prevertebral fascias as cylinders extending from the thorax into the neck region. The prevertebral fascia invests the ribs. It continues from 1st ribs superiorly to cover the bodies of the vertebrae as well as the anterior and posterior cervical vertebral muscles. This column of fascia is a direct connection between the first ribs, the manubrium and T1, to the base of the skull. The insertion of the muscles of the neck onto the skull, effectively connecting Sibson's fascia to the skull.

The tentorium cerebelli, being reflections of dura, is directly connected through the foramen magnum to the spinal dura to C2 and C3 and then to the second sacral segment, forming a continuous connection to the sacrum (cranial to pelvic diaphragm). There is evidence that the dura has firm attachments to most vertebrae throughout the column as well.

The tentorium cerebelli has embedded within it the venous sinuses. (The root of venous drainage from the skull is through the venous sinuses.) The tentorium cerebelli is attached to the petrous ridges of the temporal bone (enclosing the superior petrosal sinus) and the internal surface of the occiput. As the sphenobasilar junction goes into flexion, the tentorium is brought inferior and spreads out. In extension, the opposite occurs. The tentorium cerebelli aids in the circulation of venous as well as cerebrospinal fluid. The tentorium cerebelli is part of the dural structures that form the "core link" connecting the sphenobasilar junction to the sacrum. The reciprocal function of both areas is important in maintaining health.

Function of The Five Diaphragms Together

There is a synchronous motion of the five diaphragms of the body. As the respiratory diaphragm contracts,

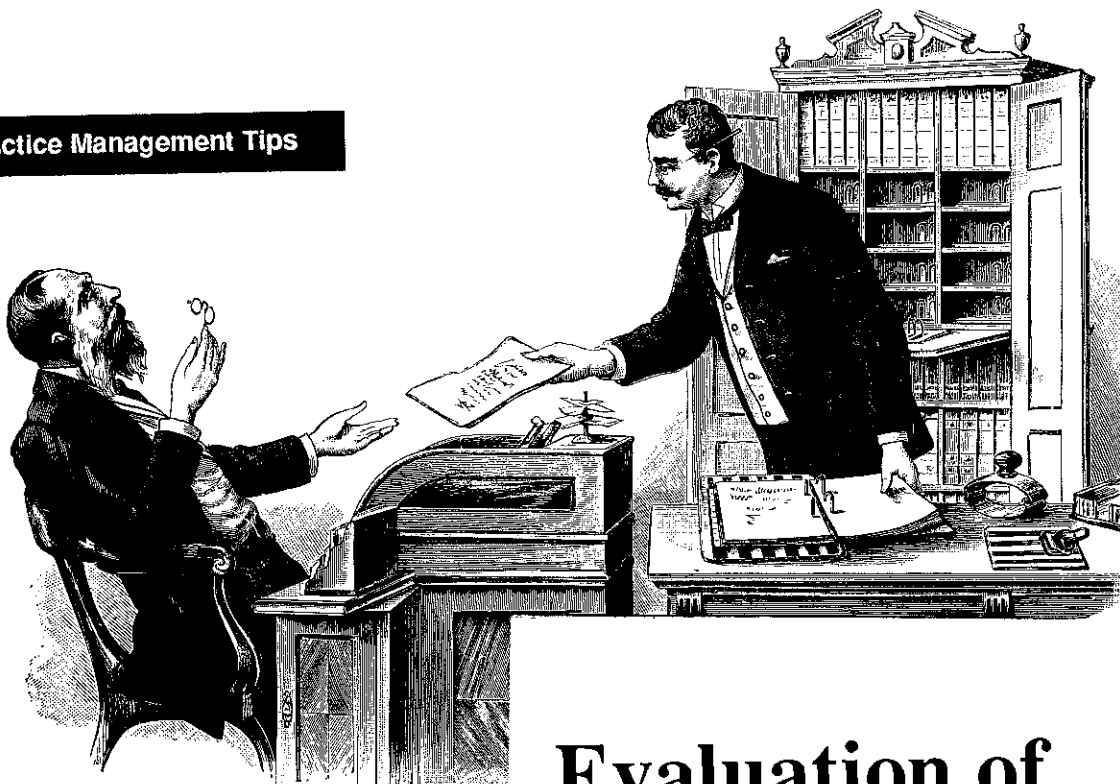
the pelvic diaphragm and Sibson's fascia work together to create pressure differentials which promote circulation of venous and lymphatic fluid. As the respiratory diaphragm contracts, the pelvic diaphragm relaxes, allowing the contents to drop into the pelvic cavity. A relative negative pressure is established in the thorax with positive pressure in the abdomen and pelvis. On exhalation, the respiratory diaphragm rises by elastic recoil and pressure gradients reverse.

The tentorium cerebelli and pelvic diaphragm work in synchrony as well. As the primary respiratory mechanism goes into its flexion phase, the tentorium moves inferiorly, the sacral base moves posterior with the apex moving anterior. The innominate move into external rotation. The reverse occurs in extension. There is a relationship of the primary respiratory mechanism (cranial rhythmic impulse) to the secondary respiratory mechanism (breathing) in which they tend to augment each other.

The arches have an effect on the other diaphragms through their role in posture. A functional pes planus (dropped arch) will restrict motion of the pelvis during respiratory and postural motion, thus affecting the four remaining diaphragms. How this is seen clinically will be discussed in Part 2.

The full functioning of the five diaphragms must be maintained to prevent symptoms of pain, passive congestion of fluid, dyspnea and others. As described, the five diaphragms are related to each other anatomically and therefore, functionally.

The diagnosis and treatment of the obstetrical patient using these principles will be discussed in Part 2 of this series, which will be published in the Spring issue of this journal, along with the complete reference list for both articles.



Evaluation of Managed Care Contracting

by Tom H. Schnack, CPA

Rapidly rising health care costs stimulated the development of alternative healthcare delivery systems. Managed care contracts were developed in the large urban areas and are now spreading into the lesser populated areas. Healthcare practices will need to consider the impact of participating in these plans. This article will outline factors that figure in this decision.

Financial Factors

Increased patient volume is a major selling point of managed care contracts. Increased volume, even at discounted reimbursement rates can increase compensation. Fixed costs account for a large portion of practice operating costs. Costs such as rent, utilities, real estate taxes and others will not normally vary with changes in patient volume. Consider the following illustration about the cost of providing an office procedure:

Fixed costs (rent, utilities, etc.)	\$10
Variable costs (medical supplies, nursing, etc.)	<u>15</u>
TOTAL	\$25

In this example, reimbursement in excess of \$15 actually generates income to the practice. The practice has to consider whether the managed care patient is taking time that could be used by a more profitable patient.

Bad debts are another consideration. Managed care plans reimburse the physician directly. Patient responsibility is usually limited to a small amount eliminating most bad debts.

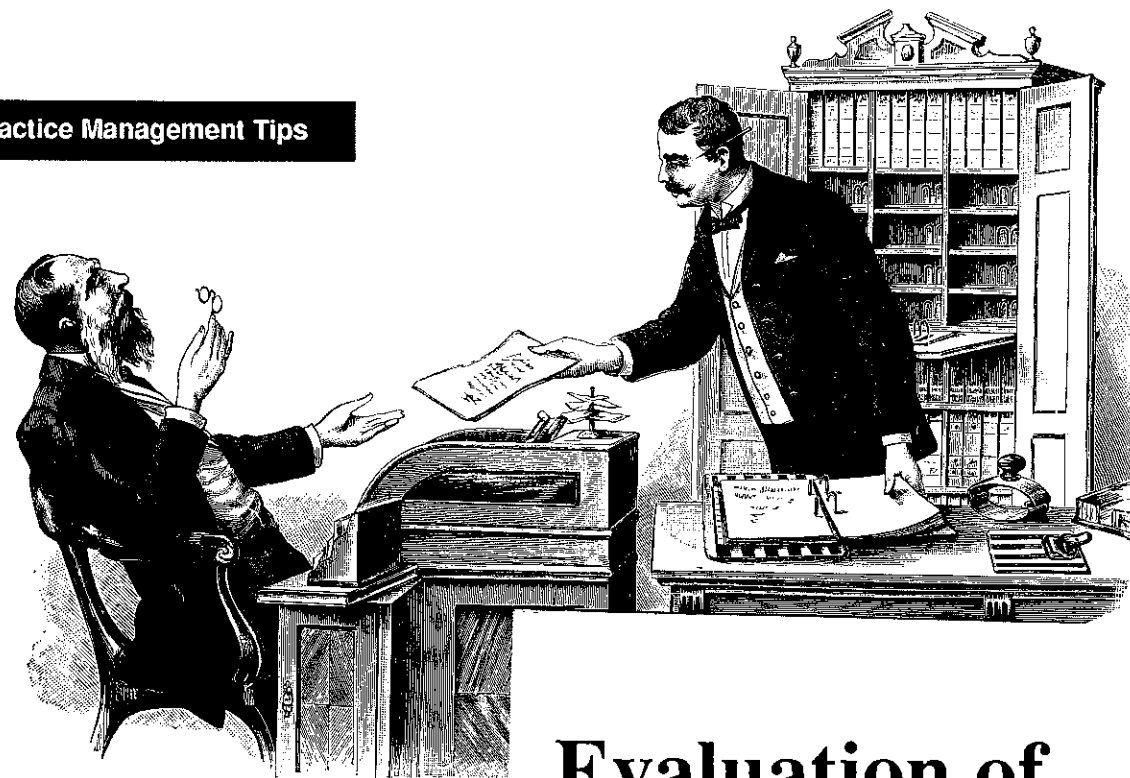
Managed care contracts can reduce administrative cost of billing, collecting and posting charges. Capitation plans do not require the practice to bill the patient. Fee-for-service plans information is received in a batch format allowing the practice to post charges and payments to the patients' accounts quickly reducing administrative time.

Requirements of the plan may generate offsetting, administrative responsibilities. Make careful review of the plan's utilization review requirements. Cost containment provisions may be inconsistent with your standard of care. The plans may require involvement from higher levels of staff including the physicians. This time may more than offset the benefits gained from any reduction in administrative costs.

There may be additional costs from providing service to patients with lapsed benefits or furnishing non-covered services.

Careful consideration should be given to the financial condition of the plan. There are cases where a plan went bankrupt while the physicians were still responsible for care to the patients enrolled under that plan.

Review the termination provisions of the plan. The contractual duties of the physician may extend past the termination date. Evaluate the plan



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provisions for billing and payment. The plans may require additional information not readily available on your billing system. Payment may be conditioned on receipt of "required information."

Low cost sharing plans encourage the patient to see the healthcare professional more often. Increased volume's impact on the practice can be positive or negative depending on the type of plan. Capitation plans would not provide increased benefits while fee-for-service would generate additional revenue.

Payment Methods

Payment methods basically fall under two groups. One group is the discounted fee-for-service plans and the other is capitated payment plans.

Determine the mechanism for calculating the fee-for-service schedule. The two primary types are UCR and relative values. Review plan provisions for the commitment and mechanism for fee updates. Request access to the fee schedule before contracting. Make sure the fees you review represent the codes you will be billing. Compute the effective discount by comparison of the fee schedule to your present reimbursement.

Review the deadlines for claims submission to the plan. Claims review and claims processing vary by plan operation. Request a list of physicians who can be called as references. Review the plan and determine what you are allowed to charge for. Plans may have a higher reimbursement for certain procedures but not allow you to charge for others.

Typical primary care capitation/risk payment plans provide a monthly payment to the practice. Payments are actuarially determined using certain age and sex factors for every member of the plan who designates that physician as their primary care gatekeeper. The capitation payments

cover a defined set of services provided by the primary care physician. The physician may or may not be permitted to provide services outside the capitation on a fee-for-service basis. The plans usually withhold 10-20% of the capitation amounts to serve as a financial risk to the physician.

All or a portion of this holdback is later reimbursed to the physician based on that physician's financial performance. The plan provides a pool for payments to referring physicians, hospitals, ancillary services, etc. These amounts are called the referral and/or hospital risk pools. Payments made for the approved services are attributed to the assigned gatekeeper's pool. The gatekeepers manage and oversee the disbursement of funds from these pools. Except in emergencies and out-of-area coverage, the primary care gatekeeper must give prior approval for referral services.

Financially, the physician is typically at-risk for only the amount of the risk pool. However, the physician remains responsible for treatment after the risk pool is consumed. Additional time spent seeing the patient is loss of potential revenue.

Evaluate the plan method to limit risk. The plan should provide stop-loss provisions so any single patient cannot consume the risk pool.

Consider the possibility of a favorable or adverse selection of plan participants. The plans assume a random selection, however, this may not always occur. Reputation of the physician or expertise in a particular area may alter the selection process. Plan procedures for referring patients who have not selected a gatekeeper also impact the process.

Practice Issues

The plan may restrict the physician referrals to designated physicians and facilities. This alters the practice's usual referral patterns.

Review the list of contracting hospitals and physicians to determine your familiarity with their qualifications. Ascertain whether you have privileges at the contracting hospitals. Also, does the plan provide an adequate network of physicians and facilities.

The plans require the gatekeeper to exert a significant amount of control on the treatment of a patient altering the normal relationship. This includes approval of treatment and tests provided by specialists.

With lower cost sharing, there is a higher likelihood of missed appointments. Consider whether the plan provides for missed appointment charges.

Summary

Physicians need to carefully analyze the advantages and disadvantages of participating in managed care plans. Evaluate whether the potential for increased patient volume offsets the administrative requirements and the disruption of practice routines. The physicians need to consider the total impact of the plan before choosing to participate.

Tom H. Schnack, CPA, is with the firm of Seim, Johnson, Sestak and Quist in Omaha, NE.

Technological Gap Between Apple and IBM

The recent computer summit between IBM and Apple yielded an agreement to share technology and make their systems more compatible. For physicians, this means that software that previously ran only on IBM personal computers, may now be compatible with Apple computers and vice versa. One example is the program DO Plus, a computer program developed for osteopathic physicians which was designed to be run on an Apple personal computer, can now be used on an IBM.

Cranial Osteopathy: A New Perspective

by Andrew Ferguson, DO (Hons) MRO

Summary: The theory of cranial osteopathy has not kept up with improving understanding in related areas. A viewpoint is put forward that begins to provide a remedy for that and also provides a foundation for progress towards a more comprehensive and holistic therapy.

Key Words: Cranium, Bones, Sutures, Muscles, Whole body, Emotions.

Introduction

Cranial (or cranio-sacral osteopathy was developed fifty years ago by William Sutherland;¹ since that time it has made little academic progress. Clinical results have justified a practice based on inaccurate theory and the time has come not just for a step forward, but for a fundamental change of perspective. For osteopathy to develop and continue its role as guiding the way to the next higher stage of medicine,² we need to have an integrated and evolving philosophy and theory based on secure foundations of anatomy and physiology.

Historical Development

Sutherland evolved his view at a time when osteopathy was a combination of the analysis of bone mechanics (thus the prefix 'osteo') and religious fervour: A. T. Still, the founder of osteopathy, was both a methodist minister and engineer as well as a physician. Sutherland observed that the cranium was formed from many individual bones and spent many years analyzing their articular mechanics. This was indeed a great advance. He felt that the bones moved rhythmically and proposed a theory

to explain this which contained five essential elements:

1) The 'inherent' fluctuation of the cerebrospinal fluid (CSF)

2) The motility of the central nervous system (CNS)

3) The 'reciprocal tension membrane' (RTM) - this is formed from the dural meninges folding and joining to form the falx cerebri, tentorium cerebelli and falx cerebelli.

4) The mobility of the cranial bones.

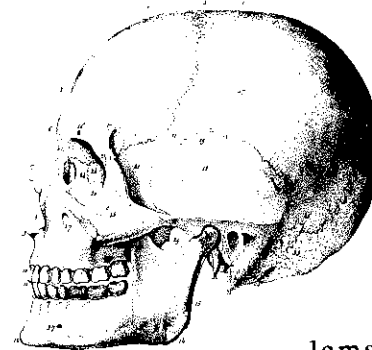
5) The mobility of the sacrum between the iliac bones. He proposed that there was a direct link between the occiput and the sacrum via the spinal meninges. Motion in this system was proposed to be transmitted throughout the body by fascial or fluid continuity.

This was a model for the time and environment in which he lived.

Recent Advances

In more recent years, research and theory have highlighted the roles of muscles, joint and nerves in the function of the neuro-musculoskeletal system (NMS). The NMS has been described as the primary machinery of life⁴ as it is how we move and communicate and is the body's main energy consumer. The visceral and homeostatic systems are seen as supportive to the NMS and the sympathetic part of the autonomic nervous system as the principal mediator between the two.

Thus modern osteopathy is no longer simply bone orientated, rather it includes the assessment of the whole NMS, its compensations and prob-



lems, from a dynamic functional viewpoint. Muscular hypertonia, segmental dysfunction and somato-visceral facilitation are now more frequent diagnoses than a 'bone out of place'.

We can now review cranial osteopathy in a modern light; indeed it is essential to do so for it to make any further progress.

A New Perspective

The first two of Sutherlands 'essential' elements are irrelevant to an understanding of cranial osteopathy. It is finally becoming acknowledged that the amount of CSF produced per minute is too small a quantity to have any mechanical effect, and that the CNS does not have the contractile elements nor tensile strength to move itself - and certainly not the whole cranium nor the rest of the body.⁵ Any movement of the CSF or change in shape of the CNS will be secondary to movement in the NMS or blood circulatory system (cranial blood flow is approximately two thousand times greater than the flow of CSF). All motion in the body is a result of muscular action be it striated, smooth or cardiac.

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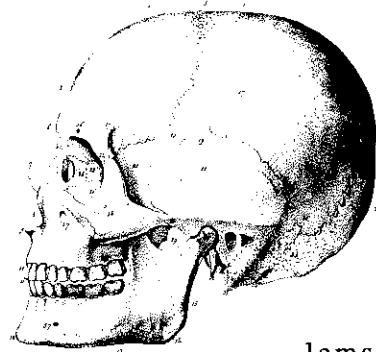
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phragm and peritoneum — perhaps we should start one! Why should the CNS be a special case? The fifth element, the mobility of the sacrum between the iliac bones, is also irrelevant to cranial function (except via muscular tension patterns) as the dural membranous link between the sacrum and occiput must have considerable slack, otherwise we would not be able to move our spines at all.⁶ It could not transmit minute movements from one to the other. The third and fourth elements are important advances in our understanding of physiology, especially if we combine them with a study of the related musculature. The study of a complex bone and membrane mechanism similar to the cranium, such as the elbow/forearm/wrist area, does yield some information in the absence of the muscles, but to understand its dysfunctions, we need to 'flesh out the bones' with muscles. How could 'tennis elbow' be explained without considering the muscles? The cranium should be looked at in the same way, no more mysteriously than the rest of the body.

The Cranial Sutures

Perhaps the main area of contention for this whole area of study is the movement of cranial bones relative to each other at the sutural junctions. It is widely accepted that the cranial bones are separate in childhood and the sutures, which are the sites of most of the growth of the cranium, become more formed as the individual ages. But do they fuse?

Research has been done recently that demonstrates that the sutures have complex connective tissue structures, including blood vessels and nerves⁷ and are clearly designed to allow movement, however small the range. There is agreement on the fusion of some junctions, such as the sphenobasilar synchondrosis by about the age of 25, and some of the vault

sutures in later life.⁸ There is little research published on the large number of complex joints between the many bones of the facial area; the fact that there are so many articulations in this area suggests that it is an area designed for movement. Functionally this would make sense in view of the need for sinus drainage (maxillary, frontal ethmoidal, sphenoidal), eye drainage (lacrimal ducts), middle ear drainage (eustachian tubes), maintaining clear nasal passages and shock absorption during mastication. The face also has the most muscles attached to it. Skeptics of the possibility of sutural motion should answer the question 'Why do they not fuse?' as structure and function have evolved together to an advanced level in human beings.

The arrangement of the dural meninges to form the 'reciprocal tension membrane' makes more sense when one considers the cranium from birth, when the cranial vault is akin to a membranous bag with some plates or bone separated by fontanelles. A spherical structure inevitably needs a 3-dimensional internal support. As the main directions of motion allowed by the sutures (although their orientation would originally have been directed by motion demands) appears to be a narrowing/lengthening (called 'extension')⁹ alternating with a shortening/broadening (called 'flexion'). The membranes are orientated to limit the movement the falx cerebri limits 'extension' and the tentorium cerebelli limits 'flexion' - and as they are joined together in the middle of the cranium they could reasonably be called a 'reciprocal tension membrane'.^{8,10}

Sutherland and his followers placed great emphasis on motion at the sphenobasilar synchondrosis although, as already noted, this fuses by about the age of 25. Examination of any adult skull will show that it fuses

quite strongly, thus any study of the articular mechanics of an adult skull must assume that the sphenoid-occiput is one strong fused unit forming the base of the cranium. This means that a fundamental change of perspective is necessary from the classical view - that of an 'internally driven' system where sphenoid-occipital motion moves the other bones - to an externally driven system where muscles attached to the cranium move the other bones relative to a solid sphenoid-occipital cranial base. This cranial base is itself mobile and held in a position of dynamic balance on top of the cervical spine by the many muscles and tissues of the neck. Prior to fusion, limited movement between sphenoid and occiput remains a possibility; functionally there is a distinction between muscles attached to the occiput, which are surrounded by the prevertebral fascia, and those attached to the sphenoid, amongst which is the pretracheal fascia.¹⁰

Cranial Musculature

These can broadly be divided into the muscles solely attached to the cranium itself and those attached to the cranium and elsewhere. The first group includes the powerful muscles of mastication (temporalis, masseter and the pterygoids), the muscles of the scalp (occipitofrontalis) and the muscles of the face (orbicularis oris etc.). The second group includes the suprahyoid and pharyngeal muscles as well as the many powerful anterior, lateral and posterior cervical muscles (e.g., trapezius, sternocleidomastoid, longus capitis, semispinalis capitis and the suboccipital muscles).^{8,10}

How the function and dysfunction in vivo of the cranium can be considered without these muscles is hard to conceive. The great proportion of diagnosis and treatment related to the cranium is likely to be almost entirely

directed towards these muscles, even if the practitioner thinks he or she is moving the bones or CSF.

The muscles at the top of the neck, particularly the suboccipital muscles, have a significant sensory input to the vestibular centres in addition to the usual proprioceptive inputs, thus relaxation of these muscles can have widespread effects. This is probably the basis of what Sutherland called the CV4 (compression of the fourth ventricle). As he did not consider the muscles and the importance of their neurological input and reflexes, he had to find some explanation for the effects that he observed. Actually being able to compress the fourth ventricle by finger pressure on the muscles is not very likely!

Whole Body Concepts

The cranium does of course function as a part of the body as a whole. Division of the body into discrete areas is helpful from a functional point of view. In fact, it is actually a hindrance, as it means that links and causes are overlooked and problems incorrectly or only partially diagnosed and treated.

The body as a whole shows patterns of tension/relaxation, strength/weakness, bind/ease and integration/loss of awareness. These are individual, often complex and superimposed, and are reflected throughout the whole body including the cranium. It is also dynamic. There is constant movement or tone in innervated muscles, even when patterns feel fixed or repetitive. The patterns of tension also tend to show different qualities at different depths; the more superficial muscles tend to respond to more transient tensions, the deeper ones to longer standing or deeper rooted postures and attitudes. These are like individual somatic 'personalities'.

The cranium is important in that it

is one of the potential areas for 'transverse bind' (along with the diaphragm, pelvis and possibly the thoracic inlet), thus fixed tightness in this area can have an effect on the dynamics of the body as a whole. We take for granted, yet often overlook in our diagnosis, the deep asymmetries and patterns of tension that everybody has - for example one side of the head being narrower (extended), the same with the thorax and pelvis, the leg longer on the same side, the muscles harder to relax and the side being more vulnerable to trauma and able to recover less easily from it. The body has important levels of functional organization longitudinally as well as segmentally; we should always consider both.

It is also important to remember the complete functional integration of the NMS and visceral systems via the autonomic nervous system. Alterations in blood circulation at a capillary level under the influence of the sympathetic nervous system contributes to some effects of somatic dysfunction, and of its treatment, and may be relevant to some fluctuating fluid changes in the body.

The Cranial Rhythm

A pillar of the classical approach to cranial osteopathy has been the existence of a rhythmic movement of approximately ten cycles per minute. This is felt throughout the body and is independent of heart beat or breathing. This has been thought of as being caused by the movement of the CSF and CNS but, as stated above, this concept now has little credibility. Further the rhythm appears to occur throughout the body at the same time. There is no delay from head to toe as might be expected if it were caused by fluid pressure or fascial drag. Fascial or connective tissue transmission would also be affected by the position of the body or limbs, which is not the

case. The movement must be coordinated by the nervous system and involve muscles, as they are the only structures that cause any movement. Research evidence tends to support this view rather than the classical view (despite claims to the contrary!). If muscles are denervated, the rhythm in the region is said to be approximately 20-30 cycles per minute¹¹ suggesting that it is the innervated muscles that are responsible for the 'normal' rhythm.

The argument against the importance of muscles, i.e., that quadriplegics appear to have a normal rhythm in their cranium,¹¹ overlooks the fact that the most powerful cranial muscles - those of mastication - are innervated by the trigeminal and facial nerves, thus would be unaffected by cervical cord lesions.

But does this rhythm exist? Experiments designed to prove it does seem to do otherwise. In an experiment to measure motion of the parietal bones in the squirrel monkey it was found that the parietal bones did move, but that they did so independently of each other, which is inconsistent with a 'centrally driven' fluid model. Further 'proof' in this experiment (when the parietal movement was found to be altered by flexing and extending the body of the monkey) was claimed to be due to this altering the CSF pressure, overlooking any mechanical effects or neuromuscular reflexes. In all, the evidence points to the conclusion that an independent rhythm does not exist, or if it does, it is more random and related to individual muscles or patterns of function than being totally synchronous throughout the body all the time. When a practitioner tunes into the 'cranial rhythm' of a patient in an empathetic manner, there is an interaction between the two at a subconscious or reflex level so that they both move at the same rate. We could not

directed towards these muscles, even if the practitioner thinks he or she is moving the bones or CSF.

The muscles at the top of the neck, particularly the suboccipital muscles, have a significant sensory input to the vestibular centres in addition to the usual proprioceptive inputs, thus relaxation of these muscles can have widespread effects. This is probably the basis of what Sutherland called the CV4 (compression of the fourth ventricle). As he did not consider the muscles and the importance of their neurological input and reflexes, he had to find some explanation for the effects that he observed. Actually being able to compress the fourth ventricle by finger pressure on the muscles is not very likely!

Whole Body Concepts

The cranium does of course function as a part of the body as a whole. Division of the body into discrete areas is helpful from a functional point of view. In fact, it is actually a hindrance, as it means that links and causes are overlooked and problems incorrectly or only partially diagnosed and treated.

The body as a whole shows patterns of tension/relaxation, strength/weakness, bind/ease and integration/loss of awareness. These are individual, often complex and superimposed, and are reflected throughout the whole body including the cranium. It is also dynamic. There is constant movement or tone in innervated muscles, even when patterns feel fixed or repetitive. The patterns of tension also tend to show different qualities at different depths; the more superficial muscles tend to respond to more transient tensions, the deeper ones to longer standing or deeper rooted postures and attitudes. These are like individual somatic 'personalities'.

The cranium is important in that it

is one of the potential areas for 'transverse bind' (along with the diaphragm, pelvis and possibly the thoracic inlet), thus fixed tightness in this area can have an effect on the dynamics of the body as a whole. We take for granted, yet often overlook in our diagnosis, the deep asymmetries and patterns of tension that everybody has - for example one side of the head being narrower (extended), the same with the thorax and pelvis, the leg longer on the same side, the muscles harder to relax and the side being more vulnerable to trauma and able to recover less easily from it. The body has important levels of functional organization longitudinally as well as segmentally; we should always consider both.

It is also important to remember the complete functional integration of the NMS and visceral systems via the autonomic nervous system. Alterations in blood circulation at a capillary level under the influence of the sympathetic nervous system contributes to some effects of somatic dysfunction, and of its treatment, and may be relevant to some fluctuating fluid changes in the body.

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case. The movement must be coordinated by the nervous system and involve muscles, as they are the only structures that cause any movement. Research evidence tends to support this view rather than the classical view (despite claims to the contrary!). If muscles are denervated, the rhythm in the region is said to be approximately 20-30 cycles per minute¹¹ suggesting that it is the innervated muscles that are responsible for the 'normal' rhythm.

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otherwise make sense of the many and varied movements that do occur.

This explains why two or more people can synchronize their perceived rhythms within seconds and why different practitioners, palpating the same patients a few minutes apart, usually get differing results when they count the rate of the rhythm.

This is not to say that palpating this movement is useless. It does provide information as to the quality, ease, direction and vitality of muscular function. This means that experiments to measure the reproducibility of craniosacral findings¹² will come out better than chance, especially if the experiments work together often and have a similar attitude and approach to the interaction with their subjects. Assessment of this 'rhythm of interaction' between patient and practitioner can provide qualitative information which may be reasonably consistent and useful for any given practitioner, but is not in any way an objective rate that can be used for comparisons between practitioners. 'Still points', where the movement in a local or wide area (sometimes the whole body) is felt to cease or balance temporarily then resume in an altered pattern (which is usually a better one), can be thought of as being a time when the complex choreography of neuronal function, with its billions of synaptic interactions occurring each second, resets the proprioceptive patterning on input and output. A repetitive or fixed pattern, or bind, in muscular-propriceptive functioning needs careful, skilled and empathetic containing or balancing of key variables of tension and distortion in order for the aberrant input to be quieted - the proprioceptive 'noise' to cease for a moment - together with stilling of the output (one of the principal effects of which is on muscular length and tone) before change can occur.

The Importance of Cranial Osteopathy

There are two aspects associated with cranial osteopathy that are separate but tend to be linked together. The first is the treatment of the cranium, the second is the use of slow and gentle techniques in diagnosis and treatment.

When the treatment of the cranium is included within the osteopathic approach many areas of potential benefit are opened up. Children especially are likely to benefit as their cranium is more mobile and has greater potential to change. Problems that are likely to respond well are those associated with mechanical or drainage problems such as chronic otitis media ('glue ear') and the effects of cranial trauma (including birth). Effects on behavior, learning and sleeping are likely through any relaxing and reassuring contact, comfort or massage throughout the body - not just the cranium (though relaxing the cranium muscles does feel particularly good!). In adults problems such as headache, facial pain and sinusitis can be helped by direct treatment to the cranium in addition to the neck. The use of slow and gentle techniques in diagnosis and treatment is not exclusive to the cranial approach, but is a valuable part of it.¹³ Working in an empathetic and functional manner can influence neuro-muscular patterns and reflexes, just as more vigorous techniques such as massaging and high-velocity manipulation can. It is especially useful in treating problems over a wide area, or when the muscles are hard to get at directly such as the diaphragm, psoas, pelvic floor, pharynx and upper and anterior cervical muscles.

Further Development

Having progressed from a bony model to an integrated whole body view of structure and function what is

the next step? The answer is to integrate this with mind and emotions. Only then can we claim to have a holistic perspective.

There is increasing evidence to support many links between psyche and soma at different levels of function. Emotional factors can affect skeletal muscle tension, alimentary function, the immune system,¹⁴ hormonal balance and the heart and many other areas - in fact, every area of human function. Mind and body are inseparable. They are one, a whole which is greater than the sum of its parts. The only possible weak dividing line could be drawn between the conscious intellectual and subconscious emotional levels. The latter is so integrated with the body that we sometimes don't know what we are feeling emotionally until we experience our own body reacting (e.g., flushing with embarrassment/anger). An emotion needs to be felt, not thought. Interestingly, people who suppress or bottle their feelings tend to develop rigid deeper muscular patterns, perhaps so that they can't feel their own reactions.

This opens up new areas for osteopathy which are exciting and potentially of great therapeutic value, yet at the same time the prospect may appear daunting and confusing as we venture into areas that seem less objective. Yet are not a lot of our findings very subject in any case - from the simple assessment of the mobility of and tension around the lumbosacral junction to the motion of the cranium?

Good practitioners or therapists of any school or medical approach have always learned to use the emotional side of their interaction with patients, however unintentionally. In working primarily via the body, osteopaths have many advantages over many types of psychotherapists who have to rely largely on verbal information,

which can be far removed from the patients feelings. How much more potential osteopathy has in the more chronic, complex or severe patients if emotional factors are included in the evolving 'diagnosis' - which at this level cannot be simply a 'labeling' exercise.¹⁵

In time we will evolve a language and understanding that includes both physical and mental meanings at the same time; it is notable that many words or phrases are already ambiguous, one or the other, or - more usefully - both. Examples are tension, release, attitude, posture, relaxation, fatigue, integrated, shock, holding on, etc.

Awareness of emotional factors and the whole person will also help to diminish the depersonalization that is common criticism of many medical practitioners, yet is practiced by many other therapies including cranial osteopathy with its treatment of the 'mechanism' (Sutherland called his view of cranial function the 'primary respiratory mechanism') as opposed to the whole individual.

Conclusion

I trust that osteopaths who adhere to the classical view of cranial osteopathy will have their illusions shattered, but I hope that this paper will stimulate a change of perspective that will prove interesting and rewarding. There are still a lot of unanswered and unasked questions. It is important that the foundations on which we base our ideas are solid so that we can securely build up our understanding before venturing into unexplored areas. With credible ideas, we can have meaningful discussions with practitioners and theoreticians of other disciplines and with fellow osteopaths who disagree with some of Sutherland's concept. Both Still and Sutherland would be pleased with progress; the former considered that he had grasped the

proverbial tail of an osteopathic 'squirrel in the hole of the tree' and the latter, that he had in addition, a breech presentation; perhaps we may now be grasping the lumbar spine! In practical clinical terms, most 'cranial' osteopaths can carry on doing much the same things as they have been doing, just think about and explain them differently.

References

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3. Wyke, B. 'The Neurology of Joints' *Annals of R.C.S.* Vol.41 July 1967
4. Korr, I.M. 'The Physiological Basis of Osteopathic Medicine' *The Postgraduate Institute of Osteopathic Medicine and Surgery.* 1970
5. Dove, C.I. 'The Origin and Development of Cranio-Sacral Therapy'. *Hol. Med.* Vol.3 35-45 (1988)
6. Ferguson, A.J. 'Osteopathic Approaches'. *Brit. Ost. J.* Nov. 1987
7. Retzlaff, E.W. 'The Cranium and Its Sutures' *Spring-Verlag* 1987
8. Gray's Anatomy 35th edn. Longman 1973.
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13. Latey, P. 'An Expansion of Modern Osteopathic Theory of Technique' *Brit. Ost. J.* 1984, 16. 51-56
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Letter to A.T. Still

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We know that there were women as osteopathic students and practitioners from the earliest days of the profession, and we know that you always believed in equality for women and welcomed them to your school and to the osteopathic profession. I thought you might like to know what progress women have made as osteopathic physicians since the earlier days of the profession.

According to statistics recently released by the AOA, there are nearly 5000 women osteopathic physicians. The percentage of women in osteopathic medical schools since 1968 has increased at an annual rate of 17%. Right now there are a little over 2000 women enrolled in osteopathic medical schools, accounting for almost 33% of the total enrollment. This year, the AAO Educational Program at the AOA Convention was dedicated to women's health issues, with a faculty made up entirely of women.

Having women be part of the profession from the very beginning is another example of your wisdom and foresight. I thought you would be pleased to know that women are and always will be an important part of the osteopathic profession.

Your ongoing student,
Raymond J. Hruba, DO, FAAO

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Your ongoing student,
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Marketing

Using OMT: Will the Students Lead the Charge?

by Laurie Beth Jones, The Jones Group

At the SOMA meeting held Sunday, November 4 in New Orleans, over 170 students heard the Jones Group presentation "Marketing the Osteopathic Advantage." Prior to the seminar, Laurie Jones asked the students what topics they wished to brainstorm after the presentation. The two topics they were most interested in were: (1) Getting OMT into 3rd and 4th year rotations and (2) How to find (and get) existing DOs who use and promote OMT in their practices.

Following are excerpts/quotes presented by each table discussion group leader following the brainstorming session. They have been grouped here into categories for easier reading.

• Rotations

- For ten years, evaluations showed students were not using enough OMT.
- UCSF has mandatory OMT in rotations. House of Delegates voted down mandatory OMT.
- Why was OMT in 3rd and 4th year rotations voted down by the Board of Governors?
- Some schools don't have rotations using OMT.

• Time/financial factors

- Physicians are busy seeing 40-50 patients per day - OMT becomes difficult; no time.
- Maybe DOs don't do OMT because we don't get reimbursed for it. Do we?
- 90% of students' effort go towards basic sciences. We don't have enough time to learn OMT.
- Financial - takes more time
- We choose to be DOs. We should make time for treatments.

• Education

- It is human nature to use something that has proven benefit. Our allopathic bosses and colleagues don't understand it.
- We need more education about OMT so we can be more comfortable using it.
- Education starts at home. We should be unafraid to speak about it.

- We mostly learn that the best treatment for everything is drugs.
- Institutions across the country don't even know what to call OMT. What is OMT?
- Are there programs we can get CME credits for to learn about OMT?
- What are the practical aspects of OMT?

Mary Theodorus, DO and member of the Board of Trustees for the AOA, clarified that the AOA cannot make rules for colleges. However, she advised, students need to demand that OMT become a major agenda item for AACOM.

Student: We do not have enough people to teach OMT.

Dr. Theodorus: Contact the physician in the hospital that is using OMT.

• Training

- We don't get enough exposure to OMT in 3rd and 4th years.
- Ask that hospitals allow 3-4 year students to do OMT.
- We need more emphasis on different OMT techniques.
- Attending physicians should demonstrate OMT with theory.
- We need to get specialists to teach us and promote it more.

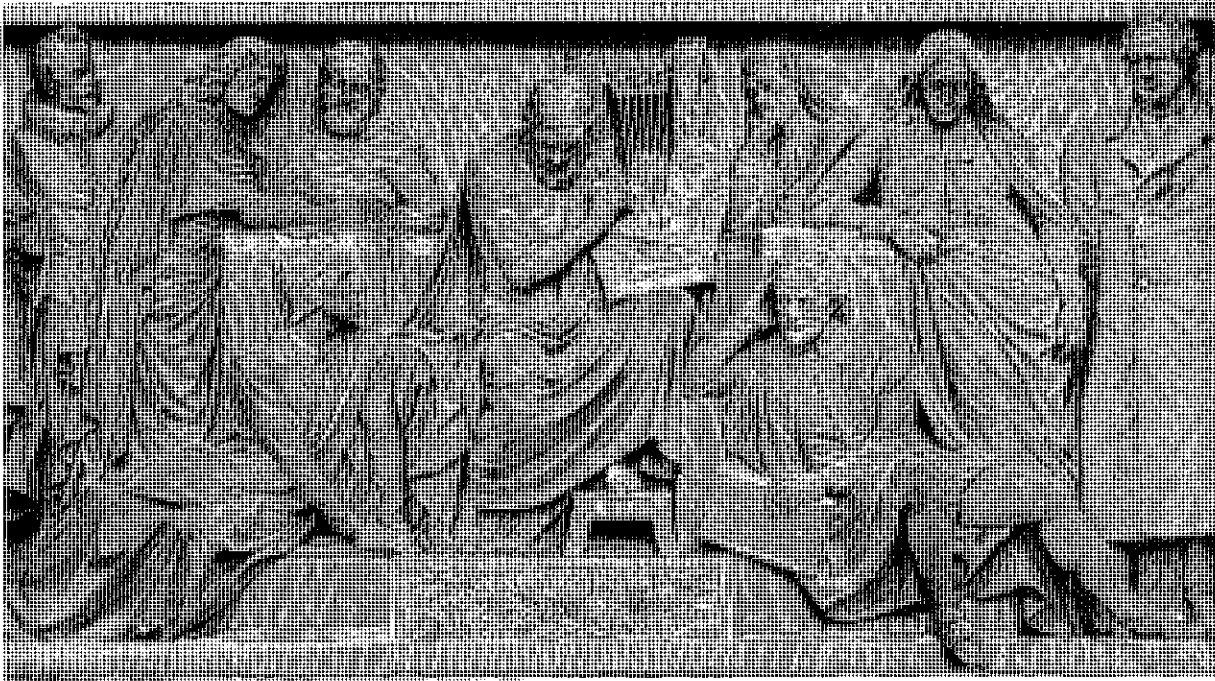
• Problems/Misconceptions

- We don't know how to get the existing DOs to do OMT.
- Touch the patients? Our doctors won't even let us touch their charts!
- We are laughed at if we mention OMT.
- Many DOs don't have confidence in how to use OMT.
- Why should students do structural exams if they are in fear about using OMT.

• Pride/Motivation/Marketing

- Using OMT is our responsibility.
- We should ask for teachers on OMT, practice on our family if we must to see the results and go to Academy convocations.
- We're better trained than MDs. Let's use what we know.
- Patients will return to you once they have had OMT treatments.
- It's great to see this much motivation. We must get and stay self motivated.
- We need speakers on OMT.
- We need to see and hear from more physicians who are using OMT in their practice.
- We need to get more marketing in using OMT.





Let's Return to the Basics

by J. Scott Heatherington, D.O.

Dr. Andrew Taylor Still was very aware of the need for change in the healthcare system of his time. He experienced the loss of three of his children to meningitis and was unsuccessful in his efforts to save them. As a result of that experience he began to develop a new approach to treating disease. His intent was not to start a new profession but to improve the existing one. However, unable to effect change in his M.D. colleagues, he felt compelled to start a new profession. This he did ninety-nine years ago.

I often think of a cartoon that had a positive effect on my attitude toward life. Picture in your minds eye a shabbily dressed bum sitting on a curb with his feet in the gutter. Passing by in a chauffeur driven limousine is an obviously successful man. The caption under the cartoon read, "There but for me, go I."

Question: Are we in the health care professions in that situation today? Are we responsible for our problems?

Nobody needs to be told that our

health care system today is passing through a time of crisis and yet, as much as anything else, that system is suffering from a confusion of words; from the inflamed rhetoric that fans discontent and seeks only to destroy; from bland and inflated rhetoric that excuses without persuading.

The American people today seek new leadership within the health care system. They long to hear a calm voice.

More than anything else, the American people are searching for leaders who can restore the old values of health care while developing new systems for its delivery.

The challenge for new leadership then, is the challenge for a voice that forgoes rhetoric and political slogans and replaces them with wisdom, common sense and understanding. We, the members of the osteopathic profession, can supply that voice. We can provide the American people with the new leadership it so desperately seeks.

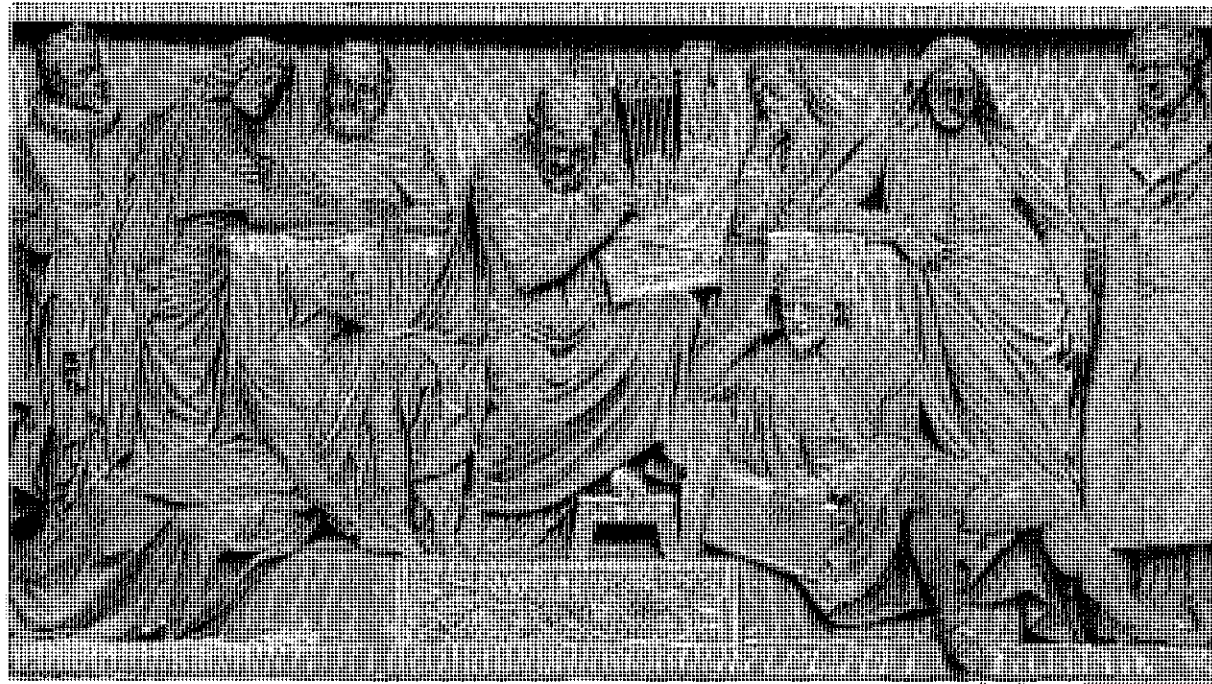
Supplying that voice, providing that new leadership, is our summons

to greatness. How we will respond to that summons is what I want to talk about today.

Our profession, by standing above the political battlefield, has demonstrated to the American people that it seeks only to improve the public health through service. Through its dedication to classical ideals, the profession has shown that healthcare can become more scientific, but it need not lose its humanity. Through its willingness to serve in areas of unmet need, the profession has demonstrated that service, not personal or professional ambition, guides and motivates its programs.

It has been said that most ailing organizations have developed a functional blindness to their own defects. They are not suffering because they cannot solve their problems, but because they will not see their problems. They can look straight at their faults and rationalize them as virtues or necessities.

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shortage of experts who see the problems and are offering solutions. But I believe it is fair to say that many of the experts are guided by a basic and erroneous assumption...the assumption that America's health care crisis is a crisis of material things and that solving that crisis simply requires a greater abundance and more even distribution of material things.

Let us examine that assumption. There is no doubt that our health care system is riddled with shortages, shortages which must be relieved if America is to reach its goal of comprehensive health care for all citizens. We must find ways to recruit and train greater numbers of professional and allied health workers. We must build more outpatient clinics, neighborhood health centers and extended care facilities.

We must make certain that where a person lives, whether in rural Iowa or in the heart of the city ghetto, does not affect his ability to receive health care. We must find ways to reduce the spiraling costs of health care, broaden insurance coverage and prevent unwanted illness from depriving people of the dignity that comes with paying their own way.

All these things and more must be done and we must dedicate ourselves to their accomplishment.

But none of these things, or all of them, will solve the crisis since it is not one of material things alone. There is also a crisis of the spirit, a crisis of forgotten ideals.

The Bible says, "What is a man profited if he gain the whole world and lose his own soul?" And we might ask, "How will America profit from a health care system that worships science, technology and efficiency if it ignores basic humanity?"

I note earlier that the American people are seeking a return to the old values of health care. While they are applauding the advancements of medical science with all their drama and gadgetry, they are becoming more

and more dissatisfied because too many physicians seem to have forgotten some simple things...some basic things...in dealing with people.

The growing public demand for family physicians reflects this feeling. What people are seeking is not the old, kindly doctor who made house calls in the middle of the night and accepted a few ears of corn in payment. They are not seeking that person, but the ideals he reflected, the spirit in which he rendered service.

They seek one person, one fellow human being, to whom they can confide all their health problems. They seek a person who listens and who cares. They seek a person who places dedication to service above monetary gain. They seek a person who understands, with sympathy, the terrible forces that tear at the human spirit. They seek a person that can help put that spirit back together again. They seek a counselor and guide. They seek a friend.

The crisis in American health care is a crisis of the spirit because these ideals are being forgotten. Too often, efficiency replaces kindness, technology replaces sympathy, specialization replaces holistic care, and human decency is sacrificed on the altar of progress.

The task before us, then, is to rekindle those high ideals of dedication and service and humanity into the health care system. We must look within ourselves, listen to those better angels of our nature and once again dedicate ourselves to basic things...goodness, decency, love, kindness and service. We must understand and accept the need for change, in ourselves and in our health care system, and not rant against it with rhetoric or slogans.

As the cartoon caption said, "There but for me, go I." If we will do these things, if we will recognize and find answers to this great crisis of the spirit, we will demonstrate to the American people that the osteopathic profession is the new leader they seek!

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Academy of
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NOCICEPTION AND THE NEUROENDOCRINE-IMMUNE CONNECTION

An International Symposium

June 19-21, 1992

The Omni Netherland Plaza
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Contact: (614) 366-7911

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Michael Patterson, Ph.D.
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Health Care & Education Leaders Call for Major Reform in Health Professional Education

by Pew Health Professions Commission, Duke University Medical Center

Washington, D.C. — A group of prominent health care experts, educators, corporate and government leaders called for major changes in the way health care professionals are educated if they are to meet the nation's health care needs in the years ahead.

In its first report, "Healthy America: Practitioners for 2005", the 27-member Pew Health Professions Commission outlines a two-fold "Agenda for Action" for U.S. health professional schools. The first part defines 17 "competencies" — skills, attitudes and values — that must become part of what future health care providers learn if they are to practice effectively in a drastically changed health care environment. The second is a series of institutional and curricular changes required to take place in health professional schools that will ensure that practitioners possess these competencies to help them meet changing health care needs and practice more effectively.

The need for these changes in health professional education was reinforced by a recent Louis Harris and Associates survey of health care practitioners which indicates large numbers of practitioners rate major elements of their training in these areas as only "fair or poor."

Competencies for 2005

The proposed professional competencies reflect a projected shift in the U.S. health care system from the provision of individual treatment and care to one that puts increased emphasis on overall population health. Health professional schools must as-

sist practitioners for 2005 learn to:

- care for the community's health through an understanding of such health determinants as the environment, socioeconomic conditions, behavior, medical care and genetics;
- ensure cost-effective and appropriate care, balancing cost and quality in the decision making process; assess and use increasingly complex and costly technology when it is appropriate;
- promote healthy lifestyles and help individuals, families and entire communities adopt and maintain healthy behavior;
- participate in coordinated care as team members in organized settings that emphasize high quality, cost-effective integrated services and activities that promote, protect and improve health;
- participate in a racially and culturally diverse society, understanding health status and health care through differing cultural values; and
- continue to learn, anticipate changes in health care and respond by redefining and maintaining professional competency throughout practice life.

"By the year 2005, an estimated 1.3 million health professional students will graduate and enter the health care system. As practitioners, they will require different skills to meet primary health care needs," said Edward H. O'Neil, assistant dean at Duke University Medical Center and executive director of the Pew Commission. "These practitioners are entering the educational system now. The time to initiate these changes is now."

Strategies for Change

The second part of the Pew Commission's action agenda calls for

coordinated, multilevel acts to facilitate change in health professional education. Among the strategies advocated by the Pew Commission:

- schools must assess the competencies demanded of their graduates and redefine their educational core including disciplines taught, educational settings and the teaching learning process;
- schools must restructure themselves to redefine the clinical curriculum core by re-examining their mission, the health of their particular communities, their organizational structure, faculty and reward incentives and the cost of health professional education;
- universities should foster innovation in their health professional schools by selecting leaders capable of forging new visions, providing clear direction, furnishing flexibility in governance and administrative policies so schools can respond to changing needs, recognizing that different types of health professional schools are necessary;
- health professional associations should facilitate professional redefinition through leadership, education and licensure and accreditation;
- government should support change in health professional education through financial incentives, accreditation policies and licensure regulations, innovative health manpower utilization, and increased access to care; and
- individual consumers, community and special interest groups should participate in the redefinition of the professions by demanding responsive providers, participating in debate of health care issues, becoming better informed about choice and purchase of services and supporting the wellness philosophy.

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Harris Survey Results

Findings from a Harris national telephone survey of practicing dentists, nurses, pharmacists, physicians and veterinarians indicate that many practitioners rate their training as "fair or poor" in the following critical areas:

- factoring cost implications of treatment into decision-making;
- responding to increasing levels of public, government and insurers' involvement in and scrutiny of the health care system;
- understanding the social determinants of health in the community;
- evaluating the appropriate use of costly and complex technology;
- understanding and responding to the community's cultural diversity;
- ensuring access to good health care for all segments of the population.

One out of two practitioners surveyed consider it "very important" to receive such training.

"The fact that 44% of physicians in the survey believe that their medical schools did only a fair or a poor job of teaching them how to respond to the needs of diverse cultural or ethnic groups is a disturbing finding in light of this country's demographic reality," said William C. Richardson, president of The Johns Hopkins University and Pew Commission co-chairman. "And more than one half of the physicians felt their schools did only a fair or a poor job in teaching them how to evaluate the appropriateness of complex and costly technology. These data provide a clear indication that society will benefit from physicians and other health care providers receiving additional types of educational experiences beyond those they are now getting in the nation's health professional schools."

Next Steps for the Pew Commission

The Pew Health Professions Commission is now assisting the nation's schools of allied health, den-

tistry, medicine, nursing, pharmacy, public health and veterinary medicine to develop missions and programs that are more responsive to the changing health care needs of the U.S. population.

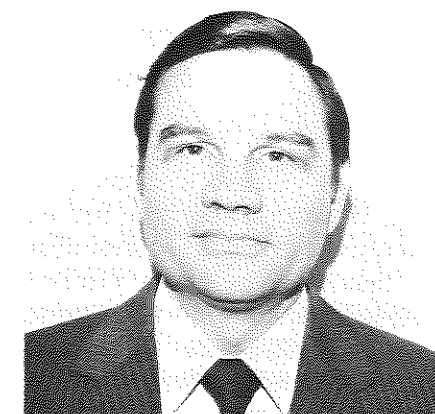
During the next decade, the Commission will:

- develop appropriate policy recommendations for federal, state, professional and institutional agencies that will support the attainment of the Commission's agenda;
- communicate the agenda, recommendations and the need for reform in health professional education to professional schools, universities, professional associations, government and the public;
- create an ongoing forum for the discussion of issues, a clearinghouse for information and a center for advocacy for change within the health professional schools; and
- invest in targeted demonstration projects that reflect the national agenda at the health professional school and college levels.

The Pew Health Professions Commission is an initiative of The Pew Charitable Trusts, administered through the Duke University Medical Center. The Pew Charitable Trusts, a national philanthropy based in Philadelphia, support nonprofit activities in the areas of conservation and the environment, culture, education, health and human services, public policy, and religion. Through their grantmaking, the Trusts seek to encourage individual development and personal achievement, cross-disciplinary problem solving and innovative, practical approaches to meet the changing needs of society.

The Second Annual "Application of Osteopathic Concepts & Clinical Medicine and Board Review" will be held October 1-4, 1992 at Walt Disney World, Orlando, FL

In Memory of Neil A. Pruzzo, DO



After 15-1/2 years of osteopathic medical practice, Neil A. Pruzzo, DO, of Richardson, Texas passed away Monday morning, September 9. He was 49. Services were held September 11 at the Kingdom Hall of Jehovah's Witnesses in Carrollton, Texas with interment in Restland Memorial Park.

Born September 25, 1941 in Marion, Ohio, Dr. Pruzzo attended Salpointe High School in Arizona. He then attended Midwest University and Southwestern State, both in Oklahoma. After receiving his DO degree in 1973 from the Kansas City College of Osteopathic Medicine, he spent an additional year in the fellowship program of Osteopathic Principles and Practice. He was in solo practice of rehabilitative osteopathic medicine in Richardson.

An active member of TOMA since 1973, Dr. Pruzzo was a speaker at numerous TOMA conventions. He was a member of TOMA District V, AOA, The American Academy of Osteopathy, Texas Academy of Osteopathy, past president of the Cranial Academy, founding member of the American College of Sports Medicine and faculty member of TCOM. Dr. Pruzzo was a member of the Carrollton congregation of Jehovah's Witnesses.

Survivors include wife, Judith Pruzzo; two daughters, Maria C. Richards and Lisa M. Pruzzo; two sons, Eric Alan and Brian S. Pruzzo; his father, Samuel F. P. Pruzzo; and one brother, Raymond L. Pruzzo.

The family requests that memorials be made to the Cranial Academy, 1140 West 8th Street, Meridian, ID 83642, c/o Madeline Rathjen.

The AAO Journal extends deepest sympathy to the family members and many friends of Dr. Pruzzo.

A Disease Which No Longer Exists

by Harlan O. L. Wright, DO, Lubbock, Texas

About a year ago, a patient by the name of Mary Smith (not her real name) came to consult with me about her father who was in a Veteran's Hospital in another city suffering severely with 'shingles' which treatment had failed to alleviate. In fact, she said, her father's condition had been getting worse for the past five weeks in spite of the treatment which the specialists had been administering. She was noticeably anxious about his condition and asked if I would see him.

On October 19, 1990 she brought her father to my office. We'll call him Jack Smith. Jack was a 74 year old male weighing 180 pounds, obviously in pain and very depressed. He said that for many months he had been having a lot of fatigue and vague disturbances of the bowels and soreness of the mouth and tongue. About five weeks ago, he started having eruption of skin sores on the neck, upper back, face and in his mouth. His mouth got so sore that he couldn't eat after awhile and he tried to live on soft foods and liquids. He had lost about twenty pounds during the past several weeks. He said that he had been to the VA hospital and had been seen by several doctors who had done extensive laboratory work and other tests he couldn't remember, and finally told him he had 'shingles'. Jack said that the treatment hadn't helped and that the sores on his skin and in his mouth were getting worse and the pain was becoming unbearable.

At the time I saw him he was taking erythromycin 500mg four times a day, prednisone 5 mg daily (the dose had been much higher to start with) and tylenol with codeine to help eliminate the pain.

Examination of this patient revealed the following:

A large framed man, obviously emaciated and wrinkled, in pain and very depressed. BP 110/80. Pulse 108 and regular. Abdomen was generally tender, heart and lungs fairly normal. No edema. Mouth revealed large sores on mucous membrane and gums. (He had not been able to wear his dentures for several weeks.) Gums and mucous membrane of mouth were severely inflamed. Conjunctiva of eyes was injected and inflamed. Tongue was severely fissured and a beefy red color with obvious deterioration of the taste buds. The skin of the neck, face and left ear displayed large weeping sores. Jack was very weak. Structural examination revealed several upper rib lesions and some upper cervical bony lesions (which were of secondary importance at this time).

I felt the diagnosis in this case to be quite obvious. It could hardly be herpes zoster (shingles), as had been diagnosed, because the skin lesions and pain did not follow definite nerve segment patterns. The more logical diagnosis in Jack's case had to be the disease which modern medicine refuses to admit exists—PELLAGRA, accompanied by various other nutritional deficiencies.

The treatment was quite simple and effective. He was immediately given an intravenous infusion of orthomolecular doses of Vitamin B complex, 25,000 mg of ascorbic acid, 1000 mg of calcium gluconate, 400 mg of magnesium chloride and 4 mg of zinc. This was administered in 250 cc of ringers lactate at the rate of approximately one drop per second.

Oral supplementation was given daily as follows: A multiple vitamin

and mineral tablet containing 75 mg of all the "B" factors, niacinamide 1500 mg (the RDA is 40 mg), Vitamin C 3000 mg, and 24 brewer's yeast tablets.

Progress was as follows (taken from clinical records):

10/22 (3 days after first visit) Skin lesions healing rapidly. Scaling skin flaking off. Mouth and mucous membrane much less inflamed. Another intravenous infusion was given.

10/25 Continued rapid improvement. Sores on the neck are 90% gone and mouth pain much less. Taking fewer pain pills. Another IV infusion given.

11/1 Patient feeling much much better. Color of tongue and mouth almost normal now. No mouth sores. Patient is eating well now. Almost pain free. IV push of B complex today. PTR 2 weeks.

11/15 Patient doing "great". Only slight discomfort of facial neuralgia present. Skin lesions all cleared. Continue vitamins at home but reduce Vitamin C to 2000 mg and niacinamide to 500 mg. (Patient was already back to 183 lbs. from a low of 176 lbs.)

After this last visit, Jack went to visit his sister in another state. When he returned the following March he came to see me for some back pains unrelated to his pellagra. We fixed these with osteopathic manipulation. He stated that he had been completely free of any symptoms of his pellagra since his last visit to the office and that he was continuing to take his vitamins and follow his diet free of refined sugar and white flour foods, with plenty of fresh fruits and vegetables.

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Comment

As unusual as this case seems, it is not at all unusual—just a little farther advanced and easier to recognize than the cases of nutritional deficiencies that come into the office daily disguised with a myriad of different diagnoses.

When the Father of Osteopathy, A. T. Still, established the 'rule of the artery' about 125 years ago, our foods were much more complete, unrefined, nutritious and unpolluted than they are today. The blood that reached the diseased tissue with structural correction had more healing power than it does today. I am sure that were he alive today, he would be the first to extol the value of nutritional therapy in connection with corrective manipulation of the body structure.

Update

Medicare/Medicaid News

by Don Self, Medical Consultants

CPTs ARE NOT GOING AWAY

At conventions, we had numerous people comment that CPT codes will not be here in 1992, or they would change all of the descriptions. The CPT codes will probably be with us until around 1996 or 1997, when they will probably be replaced by ICD-9 Procedure Codes (to conform to hospital procedure coding). In 1992, we expect the CPT descriptions for visits to change to conform to the new five level system, as part of PPR and Data Standardization. We do not expect major changes in procedures, tests or surgeries.

EVALUATING OUTSIDE X-RAYS

Occasionally, patients may bring you x-rays taken by another physician to evaluate. CPT code 76140-26 (consult on x-ray exam made elsewhere, written report) covers this evaluation and report for private carriers. The charge is not based on the number of x-rays examined and should be a flat rate. Noting your findings on the medical record will meet the "written report" requirement. Fees nationally average \$50 to \$72 for this procedure code. Medicare carriers expect you to bill for the appropriate x-ray code (chest, spine, etc.), using the 26 modifier. If the claim is denied due to duplication (which may happen), you should request a review, per Medicare.

ROUTINE CHOLESTEROL TESTING

Many patients are starting to request cholesterol testing routinely, without the physician ordering the test. This is considered preventative medicine and is not approved by Medicare. Therefore if a patient requests (or sometimes demands) a cholesterol test, you should notify the patient the test will not be covered by Medicare and the patient should sign a statement acknowledging that you informed them of the non-covered status and the reason it is non-covered. The reason this signed statement is needed, is because the test is sometimes covered by Medicare (when medically necessary, prescribed by the physician and indicated) and therefore Medicare requires the statement to be signed.

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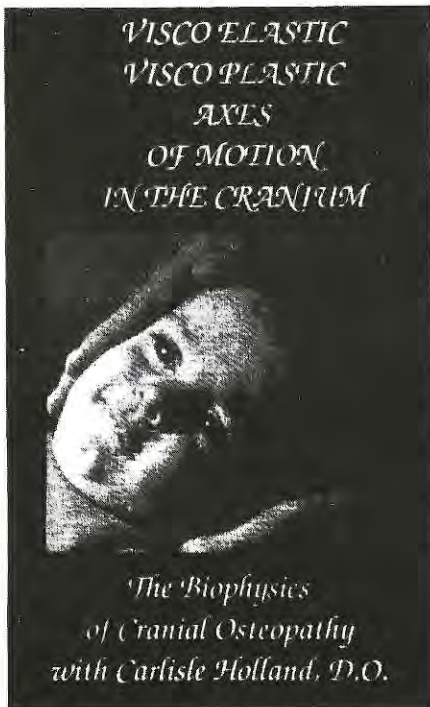
Excerpt from the UAAO Environmental Centennial Campaign Proposal

The osteopathic approach to any problem seeks to apply the following rationale:

- the body is a unit
- the body has self-healing, self-regulating mechanisms
- structure and function are inter-related.

An osteopathic approach to environmental issues would therefore consider the following elements:

- the earth is a self-contained unit; factors which affect one part affect all parts; each family unit, indeed each individual is important to the whole; all sub-units must have adequate waste removal and function responsibly within the surrounding environment
- the earth is capable of cleansing itself within limits; biologic mechanisms have evolved to handle many natural waste products; care must be taken not to overwhelm self-healing, self-regulating mechanisms; and
- choices concerning the way we live and the products that we use are important in the waste products that we accumulate; the structure of materials we choose to use in daily living is as important in the ability of the earth to process waste products as the manner in which we dispose of these wastes.



VISCOELASTIC VISCOPLASTIC AXES OF MOTION IN THE CRANIUM

This outstanding video presentation with Carlisle Holland, D.O. explains the physics and biochemistry underlying the gentle and effective technique of Cranio-sacral Osteopathy. State-of-the-art computer animations enhance this fascinating and thought-provoking sixty minute tape, making a complex subject understandable for anyone using this technique in the treatment of children and adults.

To order, send your check for \$125.00 (PAL format \$140.00) with your name and address to:

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Brochure of other video presentations
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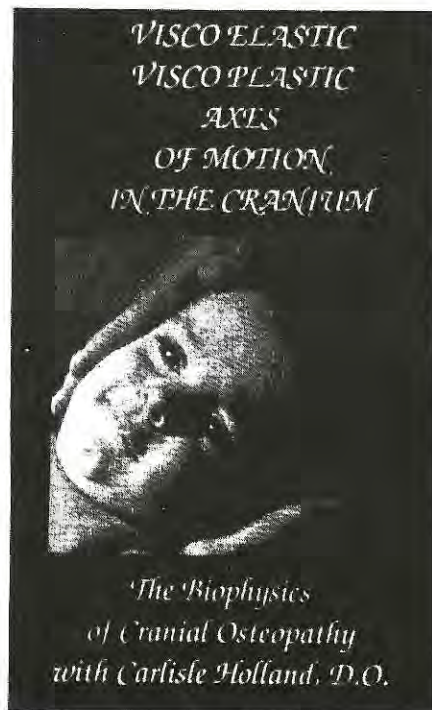
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Osteopathic Medicine Encounters A Decade of Growth

Asian and female students led the surge of enrollments in osteopathic medical colleges—a rise of 37%, during the past 10 years, reports the American Association of Colleges of Osteopathic Medicine (AACOM). Overall enrollments at the nation's 15 colleges of osteopathic medicine have swelled to an all time high of 6,792 students in 1990-91, according to AACOM's 1991 Annual Statistical Report. Moreover, applicants for the entering class of 1991 increased by an estimated 22% over 1990.

The number of Asian freshmen rose 35% in 1990 and under-represented minority freshmen (Blacks, Native Americans and Hispanics) increased by more than 5%. Female freshmen students now account for more than 34% of first year enrollment. "These numbers are gratifying to all of us in the osteopathic medical profession," said Philip Pumerantz, PhD, AACOM board chairman and president of the College of Osteopathic Medicine of the Pacific in Pomona, California. "Behind the numbers," he said, "lies the unspoken dedication of many competent and caring future osteopathic physicians."

The report also reflects the changing nature of medical education showing that some newer curriculum areas are receiving increasing attention. The study of doctor/patient relationships is by far the winner, clocking up a 400% increase in the number of classroom hours over the decade. Geriatrics ranked second. The study of alcohol/drug abuse prevention and treatment claimed the highest number of students in training, while hours devoted to cost containment and occupational/environmental health are on the rise as well.

The AACOM report also outlines sources of scholarships and grants, as well as average student debt loans. Additionally it highlights college expenditures, revenues and research grants, plus faculty and student characteristics.

AACOM's 1991 Annual Statistical Report is available for \$12 from AACOM, an organization founded in 1897 to foster the advancement of osteopathic medical colleges. Its offices are located at 6110 Executive Boulevard, Suite 405, Rockville, Maryland 20852. Copies of the related report "Debts and Career Plans of Osteopathic Medical Students" are also available at \$9.



J. Scott Heatherington, D.O., president of the American Academy of Osteopathy presents the 1991 T.L. Northup Lecturer Award to Robert Kappler, D.O.

Thank You!!!

We wish to thank those doctors who helped with the Structural Consultation and Treatment Service during the 1991 Annual American Osteopathic Association Convention in New Orleans.

Thirty-nine (39) doctors offered their services and **168 registered treatments** were given.

Thanks to the following doctors: John E. Balmer, Jr., DO; Mason B. Barney, DO; Alan R. Becker, DO, FFAO; Andrew H. Berry, DO; Stephen D. Blood, DO, FFAO; Boyd R. Buser, DO; James A. Carlson, DO; Anthony G. Chila, DO, FFAO; Guy AA. DeFeo, DO; Brian Degenhardt, DO; Nate DeLisi, DO; Donald D. Downing, DO FFAO; Kenneth E. Dye, DO; Robert WW. England, DO, FFAO; Patricia Enzman, DO; Louis Hasbrouck, DO; David Heilig, DO, FFAO; Jan T. Hendryx, DO; Victor C. Hoefner, Jr., DO, FFAO; Lon A. Hoover, DO; Robert E. Irvin, DO; William L. Johnston, DO, FFAO; John M. Jones, III, DO; Robert E. Kappler, DO, FFAO; Ken Klak, DO; Brian Knight, DO; William A. Kuchera, DO, FFAO; Johanna Leuchter, DO; David Little, DO; Paul S. Miller, DO; Lloyd W. Morey, Jr., DO, FFAO; David A. Patriquin, DO, FFAO; Reginald Platt, DO; Ross E. Pope, DO; Karen Steele, DO; Cecil C. Thorpe, DO; J. Michael Wieting, DO; William E. Wyatt, DO; and Herbert A. Yates, DO, FFAO. Your efforts are greatly appreciated.

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WANTED Osteopathic physician to join a well-established practice located in mid-Manhattan, which specializes in musculoskeletal medicine. This is an excellent opportunity to join a growing practice that has been well established for 12 years. Please forward resume and C.V. to: Gary L. Ostrow, D.O., 115 East 61st. Street, New York, N.Y. 10021

Locum tenens needed for OMT practice. N. Dallas. Judith Pruzzo 214-231-7482 or 931-8760

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American Academy of Osteopathy

Annual Convocation

**“One Hundred Years of Osteopathic Education:
‘Still’ The Best Kept Secret”**

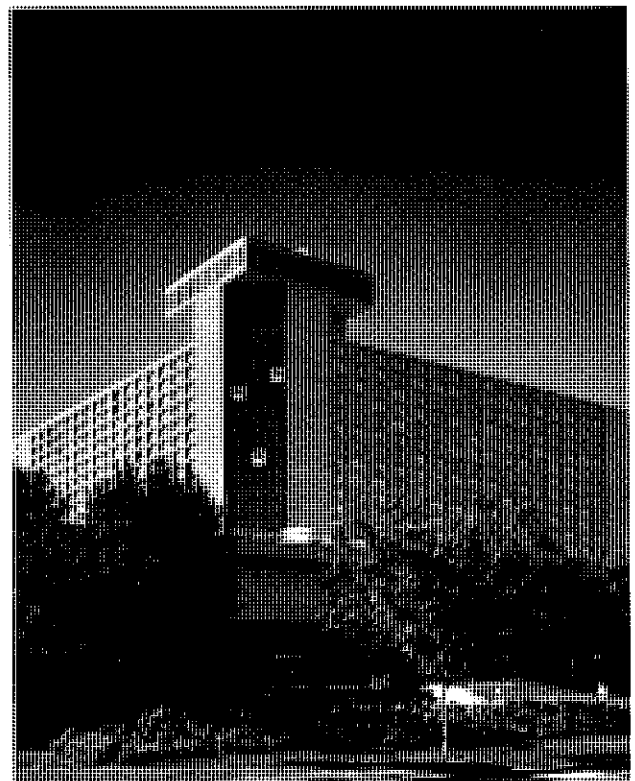
Richard W. Koss, DO
Program Chairman

Alexander S. Nicholas, DO, FAAO
Conclave Chairman

March 24-27, 1992

The Westin Crown Center
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Call The Academy Office at (614) 366-7911
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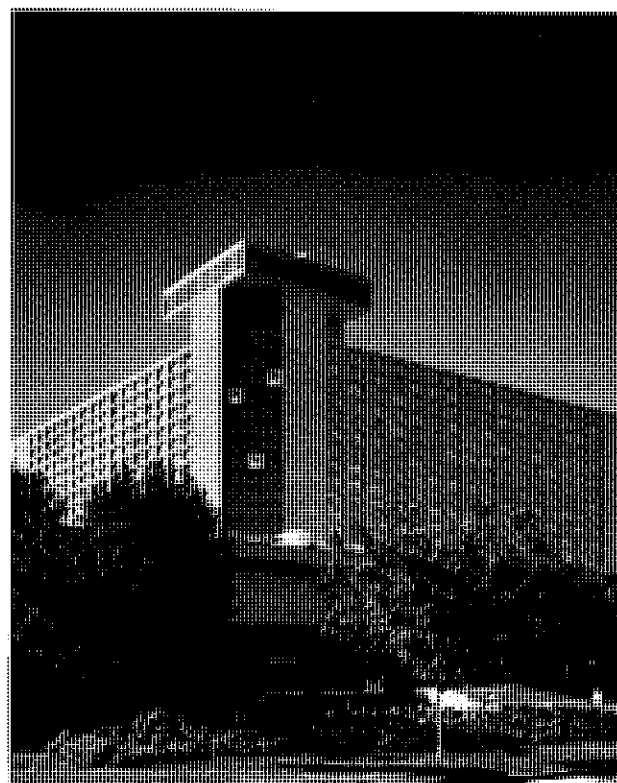
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Let's Get Back To Our Roots:

Come With Us to Kirksville



Saturday, March 28, 1992

- “Join us as we return to our roots”
- Learn little known facts about A.T. Still; relive early medical practice & developments to the modern day.
- Mix fellowship with education
- Visit the A.T. Still museum
- See the 1st Osteopathic School house
- See the Birth Cabin of A.T. Still
- Explore the new campus of The Kirksville College of Osteopathic Medicine

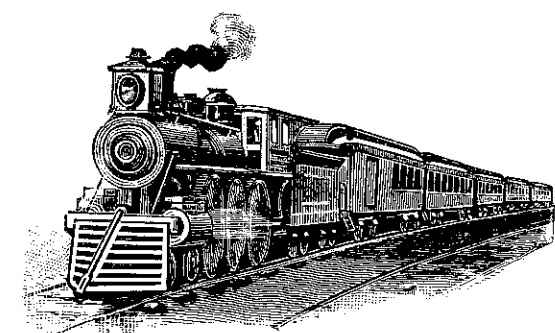
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