



Will There Be A Chiropractic Tomorrow?

By Donald K. Moon, D.C.

Strange title for a chiropractic article you say? Particularly strange when our profession is gaining acceptance by leaps and bounds? Certainly chiropractic has in purely legalistic terms become a recognized entity in the health care field. With that recognition has come a form of acceptance by both the medical and public communities.

The question is, will chiropractic be accepted as a separate health profession with a sound scientific foundation or will it be accepted as a system of therapeutics with no sound proven principles upon which to base its claim of individuality? If there is no basis for our premise that we offer an innovative, preventive and corrective approach to health

care, then the prospect of absorption into the medical community will be very real.

Perhaps there are those in our profession who see this possibility as a plus in order to gain so-called "acceptance." It appears some chiropractors and yes, even those in our educational community would blur the lines between medicine and chiropractic.

In talking to recent graduates of chiropractic colleges, I frequently ask them the questions: What is the role of chiropractic in the scientific community and what is it that allows chiropractic to exist as a separate profession? Dis-

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More On The Triceps Pull

By Daniel C. Seemann and Ralph Gregory

At the November seminar, considerable instruction time was devoted to analyzing the steps necessary to accomplish a successful adjustment. In another article in this *Monograph*, a step by step check list is provided to assist the adjuster. It was found that by consciously taking each major phase of the adjustment and breaking it down into smaller components a better understanding of adjustment was accomplished.

But the feedback from the seminar indicated that several misconceptions remain regarding the triceps pull. Perhaps the worst misconception is that the energy generated by the triceps is some sort of spiritual force that can only be completed by a few chosen gurus who have extra-proprioceptive powers. There is nothing mystical about the pull and it answers to lawful physical principles, just as the other segments of the NUCCA work. If a few basic concepts can be mastered about the triceps pull, the adjuster should be able to move the misaligned vertebrae as easily as the more experienced adjusters.

THE MECHANICS OF THE TRICEPS PULL

In the June 1984 *Monograph*, Gregory discussed overcoming the resistance of the C-1 subluxation when using the triceps pull. This article will expand some of the concepts that were expressed then and offer a new idea with regard to the lever arrangement and the triceps pull.

Figure 1 illustrates the mechanics of the triceps pull. The adjuster's hands are locked together in the roll-in phase with the pisaform contacting the transverse process. The long head of the triceps muscle group pulls medialward toward

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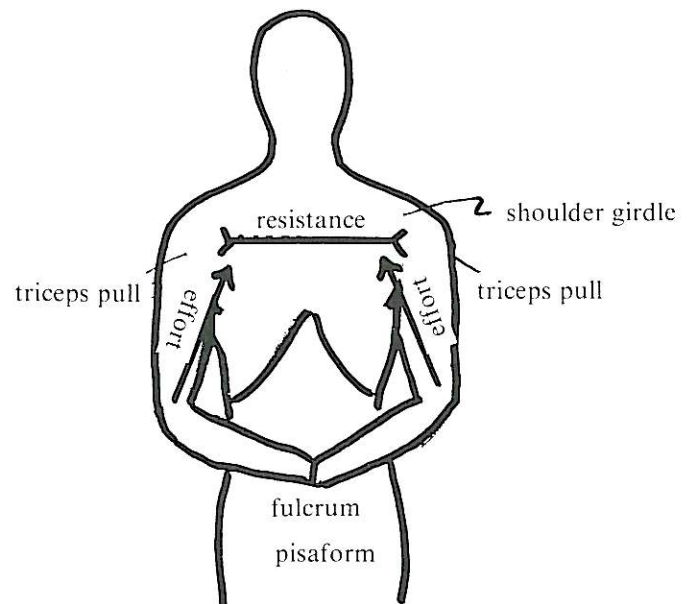


FIGURE 1

The mechanics of the triceps pull.

Will There Be A Chiropractic Tomorrow?

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turbingly, a great percentage never mention the vertebral subluxation or the subluxation complex. They appeared unsure of where they truly fit into the health care field. The emphasis of their education appears to have been on the subject of diagnosis; so much concentration in fact on diagnosis that little time has been spent on the misalignment factor and its scientific reduction. If this trend continues one cannot help but wonder about the future role of the chiropractic profession.

For once let's put to rest the destructive argument over diagnosis because it blurs the real issue. The issue is not whether we should diagnose (which by the way I feel is necessary for primary health care providers) but whether we should provide a scientific approach to treatment in the form of accurate, provable subluxation reduction. I think we all agree that the medical physician does a pretty fair job of diagnosis. Chiropractic colleges are preparing their graduates in this area but certainly no better than their medical counterparts. Our practitioners must be prepared not only in diagnosis but also in the accurate location and effective reduction of the vertebral misalignment factor. This means the modern day chiropractor must understand basic mechanics and physics. He must determine from accurate measurement the necessary information to reduce the misalignment factor. He must accurately x-ray the patient not only to determine the presence of pathology but to remove the guesswork that is inimical to inadequate palpation procedures.

The emphasis in any chiropractic doctor's office should be directed toward the basic goal of subluxation reduction. If this is done properly there should be no reason for those who do not use adjunctive procedures to try to deny that privilege to others. However if the rehabilitative procedures become primary in the chiropractor's office at the expense of inadequate subluxation reduction there is a major cause for concern. For a patient to enter a chiropractic office and receive every treatment but a spinal adjustment is tantamount to entering a dentist's office and never getting your teeth checked. Yet this is happening in some of our offices today.

The reason this situation exists lies not only with the colleges and with the lack of adequate research, but with apathetic field practitioners who seem satisfied as long as their wallets are full.

Is it any wonder that the scientific community has trouble accepting our theories when our own practitioners put up roadblocks to prove the scope of the subluxation complex? An example of this is a statement made recently by a prominent chiropractic radiologist at a seminar where this writer was in attendance. The statement was made that "post x-rays are criminal." That concept flies in the face of bonafide credible research by NUCCRA. How can this radiologist defend an approach which introduces guesswork in the place of relevant mechanical principles? Interestingly, this prominent chiropractic x-ray specialist advocated several theories regarding some crude forms of film measure-

ment that are accepted by the medical community. It appears that measurement is only valid when done by a medical physician. This is the same approach advocated by the so-called insurance consultant when he rejects chiropractic criteria but unabashedly embraces anything medical. If we don't insist on the development and use of our own criteria we will be a profession without a foundation.

The October 1982 issue of the *NUCCA Monograph* contained an article by Ralph R. Gregory, D.C. regarding the mechanics of the C-1 adjustment. It dealt with the application of physical energy or force to correct an atlas subluxation. Dr. Gregory wrote: "To move a vertebra from one misaligned position to another misaligned position does not constitute a vertebral adjustment." The direction of force in a spinal adjustment is critical to misalignment reduction particularly in the cervical spine. Without accurate comparative post x-rays the practitioner has no frame of reference with which to accurately judge the effectiveness of the adjustment. Post x-rays films taken after the first adjustment will tell the degree of vertebral reduction and verify the correctness of the analysis.

They will tell the doctor whether any changes are necessary for complete correction. Otherwise he has only symptoms upon which to base his conclusions. This certainly is not a method acceptable to the scientific community.

I used the statement of the radiologist to give only one example of a serious lack of understanding of priorities within chiropractic. Just reading our journals one can see that very little emphasis has been given to improving the mechanics of subluxation reduction or to methods to improve misalignment identification. NUCCRA represents a small but effective nucleus around which to build the proof of our concepts and provide a solid basis for the chiropractic profession. Had the radiologist known of a NUCCRA study concerning the analysis of x-rays, his position might have been different. The thrust of the research was to prove that x-rays can be marked with precision using rotatory measurement and an x-ray that is properly aligned. The results indicated that five different NUCCA doctors read the same ten sets of x-rays with a reliability coefficient of .93 for the rotation vector and .96 for the height vector.

This type of research is only a beginning but it is a valid beginning. Any thinking chiropractor knows that the application to today's physical sciences is the only road to the proof of our concepts.

We need not travel the road of the osteopaths. The so-called prestige of immediate acceptance is not worth the price. Only you can answer this question: Will there be a chiropractic tomorrow or will we be merely a transparent copy of the allopathic physician with no real foundation upon which to base our claim of individuality?

Science, discipline, dedication and integrity—words that have been synonymous with the title of doctor. Another word must be added to that list—responsibility. Responsibility to our patients, to the scientific community, to our profession and, last but not least; responsibility to ourselves and our own identity.

More On The Triceps Pull

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the infraglenoid tuberosities of the scapulae. The concept of the triceps pulling toward the scapulae rather than away from the scapulae is called functional reversibility.

The shoulder girdle represents the resistance in the lever system. As the triceps are pulled the shoulder girdle compresses medially. This lateral movement causes the shoulder girdle to expand, especially toward the anterior part of the shoulder girdle. An analogy would be a bow (and arrow). As the bow is compressed the mid part of the bow expands. The bow represents the resistance.

The pulling of the triceps represents the effort in the lever system. The triceps must overcome the resistance of the shoulder girdle before the energy from the compressed shoulder girdle can overcome the resistance of the C-1 subluxation.

The third element of the lever is the fulcrum, and is thought to be located at the glenoid cavities. If the fulcrum is located at the glenoid cavities, the system is a first class lever. If on the other hand, the fulcrum is located at the pisaform in the adjuster's hands the mechanical arrangement is a third class lever, because the fulcrum now lies opposite to the resistance with the effort applied between the fulcrum and the resistance. See Figure 2. An example of a third class lever

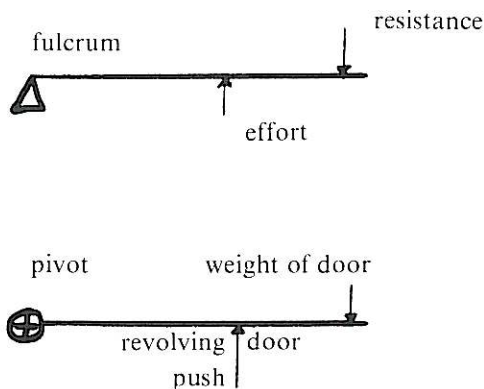


FIGURE 2

Examples of a third class lever.

would be a door which pivots at the hinges (fulcrum), the weight of the door is the resistance and the effort to push the door open is the effort. The third class lever concept better satisfies the physics principle that the fulcrum moves very little and usually only pivots around a point. As a first class lever, neither the effort (the triceps pull) nor the resistance (the shoulder girdle) pivot around the glenoid cavities. What seems to be more accurate is the glenoid cavities move medialward as the triceps are pulled, making the glenoid cavities more a part of the effort system, rather than a point about which the triceps and the shoulder girdle revolve. The difference in whether the triceps pull is a first or third class lever is only important if it will help the adjuster understand the mechanics involved in the triceps pull. The most important idea is to understand how the triceps pull overcomes the resistance of the C-1 subluxation.

As the force of the triceps pull starts to squeeze the shoulder girdle, potential energy builds up within the shoulder girdle. The arms in the locked position, become the important conduit through which the energy will be transmitted. Palmer (1984) confirmed the arms must be rigid in the triceps pull. Using the stationary balls example, if the balls are directly in line and are touching, both the momentum and the kinetic energy are conserved. If the arms are not rigid or the elbow is bent there will be a momentum and energy loss and little chance of overcoming the resistance of the C-1 subluxation.

When the shoulder girdle starts to compress, the humerus, and the shoulder joint move medialward. The episternal notch starts to protrude. The arms, being of constant length and moving along a lateral tract will start to bear downward on the contact through the pisaform. See Figure 3. The

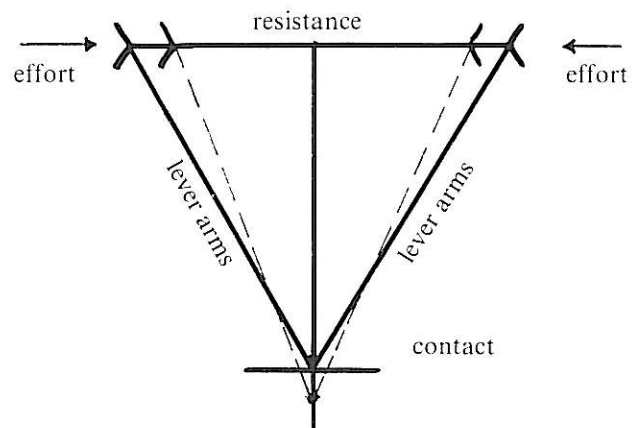


FIGURE 3

As the shoulder girdle compresses, the lever arms displace downward through contact.

episternal notch protruding, indicates to the adjuster that the potential energy is ready to be released. The episternal notch also serves as an aiming device which must be coplanar with the pelvic girdle and the pisaform. The bow and arrow is a good analogy because the center of the bow protrudes as a result of compression and the wings of the bow actually fling the arrow after the bow string is released. The difference in the analogy of course, is that the arms act as two bilateral arrows which converge at the pisaform.

The crucial question of this discussion is when does the potential energy that is built up by the shoulder girdle convert to kinetic energy? Kinetic energy is the force that will move the resistance of the subluxated C-1. It is at the point where the downward pressure from the pisaform caused by the compression of the shoulder girdle slightly exceeds the resistance of the subluxated C-1. This is an important point to know: **that only enough force is released to move the vertebrae.** This is the unique feature of the triceps pull and why it is superior to any other type of adjustment such as the toggle or the gun. The triceps pull system has a built in safety mechanism against excessive force and depth. In most triceps adjustments, the depth is less than 1/8" of an inch and pressure that is no greater than 15-20 pounds.

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A Question Guide for Performing the C1 Adjustment

Prepared by: Ralph R. Gregory, D.C. and Keith E. Denton, D.C.

The following questions are arranged in chronological order as a guide for the adjuster when practicing the C1 or triceps pull adjustment. By self-questioning, based on this guide, the adjuster is alerted to the adjustic steps he/she may have neglected or does not know, and the order in which the steps should be performed.

APPROACH PHASE:

- (1) What are the two reasons for doing the Approach Phase?
- (2) How is the position for the adjuster's base of support located for any given sublaxation?
- (3) Has the neck-lock reflex been initiated?
- (4) Have you stepped slightly forward with the **inside** leg when establishing the base of support. Why?
- (5) Have you placed the inside foot obliquely to the Horizontal Resultant? Why?
- (6) From what point is the inside foot pivoted to a 90 degree angle to the Horizontal Resultant? Why?
- (7) What care must be taken when stepping forward with the **outside** leg to establish the A-P dimension of the base of support?
- (8) What lock insures control of the pelvic lever when establishing the A-P dimension of the base of support?
- (9) What factor determines how far forward the **outside** leg should be advanced when establishing the base of support?
- (10) What relationship obtains between the outside foot and the Horizontal Resultant when the base of support is installed?
- (11) How is the outside foot pivoted in relation to the Horizontal Resultant and for what reason?
- (12) What anatomical structure determines the width of the base of support?
- (13) On which foot should the adjuster's greater weight fall when his/ her base of support is installed?

SETTLEBACK PHASE:

- (1) What are the two reasons for doing the Settleback Phase?
- (2) What elements should the adjuster check before settling back?
- (3) At what angle to the Horizontal Resultant should the adjuster's spinal column be when settling back?
- (4) Which foot determines the plane of the settleback?
- (5) In what position should the plane of the shoulder lever be in re to the pelvic lever?
- (6) What effect does the A-P dimension of the base of support have on the pelvic lever?
- (7) What is the maximum settleback principle and has it been employed?

- (8) In performing the Settleback Phase, the adjuster's weight may gravitate to his/her heels—how is this error corrected?
- (9) If, at the completion of the Settleback Phase, the adjuster's tie or plumb-bob does not fall one inch beyond the settleback point on the Horizontal Resultant, what must he/she do to correct this fault?
- (10) Before doing the next phase, what points should the adjuster check?

TURN-IN PHASE:

- (1) What is the reason for the Turn-In Phase?
- (2) Where are the proper centers of motion located that are used to turn the adjuster's spinal lever and episternal notch over the point of contact?
- (3) What muscles are used to turn the spinal lever?
- (4) Where is the turning point in this phase and how is it controlled?
- (5) What action is performed on extremely long resultants?
- (6) At what point in the turning of the spinal lever is contact taken and roll-in performed?
- (7) Is the adjuster's weight on inside leg or outside leg, or center of base at completion of phase?

ARCH PHASE:

- (1) What is the reason for the arch phase?
- (2) Were the proper actions needed to obtain rigid arches performed?
- (3) Is a flat surface maintained on the dorsal surfaces of wrist and hands?
- (4) Is the arch rigid and the arm relaxed?
- (5) Are the thumbs adducted toward radial bones?
- (6) Are the fingers spread apart?

ROLL-IN PHASE:

- (1) What are the two reasons for the roll-in phase?
- (2) How is contact arch aligned to contact point?
- (3) At what angle to the radial bone of contact arm is the roll-in hand drawn?
- (4) At what area of the anatomic fossa of contact arm does the pisiform bone of roll-in wrist insert?
- (5) How is the pressure of roll-in pisiform maintained in the anatomic fossa of contact wrist?
- (6) How is the pivot action between the pisiform bone of roll-in and the anatomic fossa of contact wrist obtained?
- (7) How is the thumb of roll-in hand forced behind the wrist of contact arm?
- (8) What happens to roll-in shoulder in the roll-in action?
- (9) How is the pisiform bone of roll-in wrist forced more posterior in the anatomic fossa of contact wrist?

- (10) Has the roll-in wrist lever been forced upward and away from the radial bone of contact arm?
- (11) If the fault in question 10 occurs, what effect will it have on the roll-in action?
- (12) Has the wrist break been accomplished by "breaking" the wrist lever over to an approximate 90° angle to the radial bone of contact arm?
- (13) Where is the center of motion for the "breaking" action?
- (14) What action may be performed to aid in the "breaking" action?
- (15) Where is the center of motion for turning the fingers of roll-in hand?
- (16) What sudden action is performed by fingers of roll-in hand around the wrist of contact arm?
- (17) Where should the ring finger of roll-in arm locate in relation to contact wrist?
- (18) What is the position of the radial bone of contact arm in relation to thumb of roll-in hand?
- (19) What is the position of the knuckles of roll-in hand in relation to the radial bone of contact arm?
- (20) Are the levers of contact wrist and roll-in wrist aligned?
- (21) To what degree should roll-in hand be relaxed at the conclusion of this phase?

CONVERSION PHASE:

- (1) What are the two reasons for the Conversion Phase?
- (2) Where is the center of motion in this phase?
- (3) Through what plane does the adjuster move in performing this phase?
- (4) Why is this plane necessary?
- (5) What are the two common errors of this phase?
- (6) How does the adjuster restore his weight distribution to the outside foot while performing conversion of his body?
- (7) If the conversion action (phase) does not return the adjuster's spinal lever to a 90° angle to the Horizontal Resultant at the settleback point, what must he/she do to correct this error?
- (8) Where should the adjuster's greater weight be at the conclusion of the conversion phase?
- (9) In what plane should the adjuster's parallel forces be at the conclusion of the Conversion Phase?
- (10) What type subluxations are essentially responsive to this phase?

PELVIC LEVER PHASE:

- (1) What is the reason for the Pelvic Lever Phase?
- (2) When is this phase used?
- (3) Where is the center of motion in this phase?
- (4) What error commonly occurs in this phase?
- (5) How is this phase performed?

TRICEPS PULL PHASE:

- (1) What is the reason for the Triceps Pull Phase?
- (2) From what point are the triceps brachii pulled?
- (3) What type lever is represented by this phase?
- (4) Where is the greatest body lever to be moved first in this phase?
- (5) What action results from pulling the triceps brachii?
- (6) Where is the resistance to the triceps pull action?
- (7) What are the advantages in pulling back with the contact arm against roll-in wrist pisiform bone?
- (8) Is contact arm relaxed?
- (9) Are the metacarpals of contact hand stretched in this phase?
- (10) Is the torque set properly just prior to triceps pull?

The self-questioning method of teaching adjusting was introduced into the November 1984 NUCCA seminar and was received with considerable enthusiasm. Participants in the experiment gained understanding more quickly and in greater depth, permitting them to perform more efficiently in a shorter length of time. It was, therefore, decided to publish the "Question Guide" in the *Monograph* for the benefit of all NUCCA members. Answers to any questions not understood or known can be obtained by writing NUCCA, 217 West Second Street, Monroe, Michigan 48161.

EMG Equipment Purchased For Study

The executive committee of NUCCRA recently approved the purchase of electro-myograph equipment for the purpose of comparing muscle stress in the lumbar and cervical areas of the spine before and after an adjustment. If it can be proven that less muscle stress occurs after an adjustment, a significant step will have been made toward showing that a relationship between C-I subluxations and pelvic distortions exists.

A pilot study will attempt to establish baseline norms for the muscle groups in the lumbar and cervical spine both for the pre and post adjustment phases. It is necessary to establish the baseline norms to determine whether the effects of the adjustment have any significant influence on the lumbar and cervical muscle groups. At the same time the EMG measurements are taken additional measurements will be taken. One will be blood pressure and the other pulse rate. It has been found in practice that after a successful adjustment, blood pressure and pulse rate will sometimes lower. This would be an appropriate time to check out this hypothesis.

This research project will be under the supervision of Dan Seemann, research director for NUCCRA, and Keith Denton who will coordinate the patient sample for the study. The tentative timetable for the pilot study is set for the first six months of 1985. The progress of this study will be reported at the May seminar and Convention. Updates will also be reported in the *Monographs*.

The 1984 November NUCCA Seminar

The 1984 November NUCCA seminar was held at the Howard Johnson Motor Lodge, Monroe, Michigan, November 10th through November 14th. The Howard Johnson Conference Room was filled to capacity with doctors from throughout the United States and Canada. Students from several chiropractic colleges also attended. The seminar was approved by the Michigan Board of Chiropractic Examiners, and by several other states.

Dr. Ralph R. Gregory, NUCCA president, opened the seminar with a discussion of the research accomplishments over the past thirteen years by the National Upper Cervical Chiropractic Research Association, Inc. (NUCCRA). He pointed out that the chiropractic profession must not abandon the subluxation and its correction, but develop it through bona fide research. Gregory stated that if the subluxation and its correction is left out of the chiropractic practice equation, chiropractic would be destroyed as a separate and distinct profession. "If our vision of the potential of the subluxation and its correction and the resultant effects on the human body is stunted, our faith in its scientific development weak, then we need to reach out for adjunctive therapy," Gregory said. "NUCCA-NUCCRA," he continued, "believe that scientific research of the vertebral subluxation and its effects are the answer to building a firm foundation for the advancement of the chiropractic profession." Gregory also pointed to the years of scientific research by NUCCRA that was confined to the vertebral subluxation, its correction, and its bodily effects.

The seminar was supervised by Daniel C. Seemann, Ph.D., The University of Toledo, who gave a NUCCRA Update, discussing future projects. James F. Palmer, M.S., a colleague of Dr. Seemann's at The University of Toledo who recently joined the NUCCRA Research team, presented his part in future research, Mr. Palmer comes to NUCCRA with a research background. Both these gentlemen are dedicated to the subluxation-correction concept, and see in it its measurable qualities and its future potential in the field of disease.

Instructors at the 1984 November seminar were: Drs. T.A. Palmer, K.E. Denton, A.A. Berti, Lloyd Pond, Lonnie Pond, Glenn Cripe, L. Schrock, R.R. Gregory, and Daniel C. Seemann, Ph.D. and James F. Palmer, M.S.

Doctors and students were divided into categories corresponding to subjects taught: x-ray analysis, leg-checking exercises, adjusting exercises, adjusting problems, headpiece placement for different type subluxations, and biomechanical problems. It was a "hands on" program.

Previously prepared videotapes on x-ray analysis, advanced adjusting technique, adjusting errors, x-ray machine alignment, and patient placement on x-ray equipment were shown. Adjusting practice was also videotaped so doctors could observe themselves and criticize their own errors.

General discussion of all the exercises was participated in by the registrants, and comparisons made with school solutions.

The 1985 NUCCA Convention and Educational Seminar

The 1985 NUCCA Convention and Educational Conference will be held at the Howard Johnson Motor Lodge, 1440 North Dixie Highway, Monroe, Michigan. It will start Saturday, May 4th and close Tuesday, May 7th. Daniel C. Seemann, Ph.D., from The University of Toledo and consultant to the National Upper Cervical Chiropractic Research Association, Inc. (NUCCRA), will supervise the Educational Conference.

Convention chairman will be Dr. Larry Schrock of Indiana.

The theme of the convention is BIOMECHANICS OF THE C1 SUBLUXATION COMPLEX.

Participants who intend to apply for license-renewal credits based on the educational conference must attend all educational sessions. Their attendance at each session will be monitored by NUCCA and recorded on NUCCA attendance cards.

Subjects will include basic and advanced film analysis, classifications of the C1 subluxation complex, how to place patients for each basic type subluxation, biomechanical problems, adjusting problems, mechanical levers of the

subluxation, adjusting exercises, and supine leg check exercises.

Videotape presentations will include: Identification of Osseous Structures in Upper Film Analysis, Adjusting Errors; X-ray Machine Alignment Procedures; Patient Placement on the X-ray Machine and others.

Daniel C. Seemann, Ph.D. and James F. Palmer, M.S., will present their Research Updates.

Fees for professionals are \$350.00. For doctors in practice for two years or less, the fee is \$200.00. Students are admitted for \$150.00. The registration fee includes membership in NUCCA for one year.

NUCCA will host a banquet on Monday evening, May 6th at 7:30 p.m.

Income from the convention above expenses will be donated to NUCCRA research of the vertebral subluxation.

The deadline for registering is March 15, 1985.

Further information may be obtained by writing NUCCA, 217 West Second Street, Monroe, Michigan 48161.

More On The Triceps Pull

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It has been the NUCCA experience that the Basic Type 1 subluxations require a longer triceps pull (more compression) than Basic Type's 2 & 3. More energy is required to move the Basic Type 1 subluxation because the mechanical arrangement is a second class lever with the resistance located fairly close to the effort which does not give the adjuster much of a mechanical advantage. It is similar to having the load close to the handles of a wheelbarrow. Additional resistance occurs with Basic Type 1's because there is usually a large lower angle and the vertebrae must move across the axial circle.

In future *Monograph* articles, the importance of keeping the episternal notch and the pelvic coplanar in the adjustment will be discussed.

McLellan Memorial Fund

A Memorial Fund has been established for those doctors who desire to "bestow a tribute on one of the greats of our profession," Dr. Lewis Herbert McLellan of Arizona. Dr. McLellan passed away on April 14, 1984 after over 60 years of active practice and political activity for chiropractic advancement.

Those doctors who wish to donate to the memory of Dr. McLellan should send their checks to NUCCRA, 217 West Second Street, Monroe, Michigan 48161. Checks should be made out to NUCCRA-McLellan Memorial Fund.

NUCCRA thanks Dr. John Wynhausen of Nebraska for his donation to the fund.

NUCCA Scholarship Awards

The NUCCA Board of Directors has authorized a scholarship grant-in-aid award of \$200.00. The award will be paid to chiropractic students currently enrolled in a chartered college of chiropractic who submit to the *Monograph* editor an acceptable article pertaining to the upper cervical spine.

Submitted articles should relate to the Occipital-atlanto-axial spine. They may relate to biomechanics of the cervical spine, analysis of cervical subluxations, corrective techniques for cervical subluxation, detrimental effects of C1 subluxations on the spinal column (distortion), or any other phase of chiropractic in which the upper cervical subluxation is shown to be an etiogenic factor.

Articles must be accurately and properly referenced. All entries will be judged by the NUCCA Board and by Daniel C. Seemann, Ph.D., NUCCA Executive Director. Accepted articles become the property of the National Upper Cervical Chiropractic Association, Inc. (NUCCA). The names of the authors of the accepted manuscripts will be announced at the next NUCCA Convention. Payment of the award will be made upon acceptance of the article.

NUCCA will attempt to return all manuscripts that are accompanied by a self-addressed, stamped envelope. The organization will not be responsible for lost or mislaid submitted material. The judgment of the NUCCA Board of Directors will be final. The writer should retain a carbon copy.

Students are encouraged to submit articles.

Further information is available by writing:
NUCCA MONOGRAPH EDITOR
217 West Second Street
Monroe, Michigan 48161

NOTICE

The NUCCA Board of Directors has decided to make the NUCCA collection of video tapes available to members. The price for tapes has been set at \$100.00 per classroom hour. Available titles include:

Osseous Structure Identification (45 min.) \$ 90.00

This tape depicts the various bony structures involved in the NUCCA x-ray analysis. Included are structures that present analytical problems. X-rays of live and dry specimens are used.

NUCCA X-ray Analysis (60 min.) \$100.00

Step by step procedure of the NUCCA analysis using X-rays of live specimen.

Leg Check and Headpiece

Placement (45 min.) \$ 90.00

Leg Check describes the planes of reference and how to align the examiner's body for accurate checking. Models and patient used. Errors are discussed. *Headpiece Placement* briefly describes the biomechanics of the cor-

rection of the four basic types. Center of Gravity of the skull and its placement on the three types of headpieces is shown.

Adjusting the A.S.C. (3½ hrs.) \$300.00

Step by step procedures used to align the adjustor's body in addressing the various A.S.C.s. Includes the most common errors in each phase. Outline of video follows early *Monographs*, Vol. 1 No. 3 through Vol. 2 No. 4. Film includes various steps for posterior rotations and low vector listings.

Errors in Adjusting the A.S.C. (2 hrs.) \$200.00

Compliments *Adjusting the A.S.C.* This tape describes errors in adjusting, what causes them, and how to correct them.

BASF video tapes have been used for reproduction, which carry a lifetime guarantee. Please specify BETA or VHS. Allow 4-6 weeks for delivery. Prices are subject to change with cost of reproduction.

Research News

By Jim Palmer

N.U.C.C.R.A. is purchasing a Cal Comp 9000 Series Digitizer package. This package contains a 24" by 24" digitizer with backlight, a 16-button (function) cursor, and a processing unit.

The digitizer is an electronic grid capable of sensing the position of the cursor to within ± 0.0001 inch (resolution). The backlight will illuminate the x-ray which is placed on the grid. The cursor is placed on the x-ray and moved by the N.U.C.C.A. chiropractor over the desired correlated anatomical features of the x-ray. The precise location of these correlated anatomical features relative to one another is recorded and processed.

Computer software is being developed to take the processed information and duplicate the N.U.C.C.A. analytical procedure of x-ray analysis. To aid in software development the memory of N.U.C.C.R.A.'s Rainbow Series 100 Computer is being expanded to 320K (RAM), with potential for expansion to 832K.

Many benefits of a working system are expected to incur. But the primary importance to N.U.C.C.R.A. is that the system can be used by radiologists or other professionals skilled in anatomy and x-ray analysis. It is the intent of N.U.C.C.R.A. that these professionals who constitute a pool of independent observers will be able to ascertain by a reproducible, analytical method; i.e., the working system, that N.U.C.C.A. chiropractic adjustment results in changes of the relative positions of the anatomical features. The medical profession as a group does not believe that anatomical changes occur as a result of adjustment.

It is the hope of N.U.C.C.R.A. that these independent observers will be able to see the increased anatomical symmetry resulting from appropriate chiropractic technique.

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The Ruth O. Gregory Memorial Fund

To the many and generous contributors to the RUTH O. GREGORY MEMORIAL FUND, NUCCRA extends its heartfelt thanks. Your contributions to the Fund have helped to finance C1 subluxation research, advance your profession, and assist our colleagues to practice subluxation-reduction, thereby helping your profession, your patients, and yourselves.

The NUCCRA Directive Board in November of 1982 unanimously voted to establish a Memorial Fund as a tribute to Ruth O. Gregory in appreciation for the time and effort which she so selflessly gave to the NUCCA-NUCCRA Organizations. The Fund is to exist as long as the Organizations exist. It was her great desire that chiropractic become more scientific, and of greater benefit to mankind. She saw bona fide research as the only way to achieve these goals. To this end, she devoted time, effort, and money.

Since her death in June of 1982, many donations have been received from doctors, students and lay persons who knew her. These donations have been used for the sole purpose of furthering NUCCRA research.

It is the feeling of the NUCCRA Directive Board that, through this Memorial Fund, Ruth O. Gregory's great interest in the development of chiropractic will live on, and the advancement of chiropractic continue to the benefit of all.

Recent donators to the Ruth O. Gregory Memorial Fund are:

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