I. X-RAY PROTOCOL

The generally accepted X-rays protocol which can determine the objective existence of spinal injuries and the Subluxation for both legal and treatment plans are the following;

2. Thoracic: A/P view.

II. X-RAY TECHNIQUE

We will address each region of the spine for proper placement of the patient. This will greatly assist us in locating the important landmarks and enable us to provide you with an outstanding biomechanical measurement report of your patients’ films.

Cervical AP films: Due to the jawbone, rarely do these films show C7 to the Atlas and Axis clearly, so it is recommended that an AP open mouth be taken.

Cervical Lateral films: Lateral films should clearly show C7 to skull, and must include the sella-tursica. Often there are patients who are quit heavy and a cervical filter would be recommended. Set KVP and time for a lateral thoracic with the filter in place.

Cervical Flex/Ext films: Flexion films are taken as a two-part move. Ask patient to tuck their chin to their neck (this will lock up the facets) and then flex forward. If any ligament damage has occurred, this will allow the vertebra to displace to the posterior to a greater degree.

Extension films are taken by asking the patient to extend their head on to their shoulders.

Thoracic AP films: When performing this X-ray be sure that the upper cervicals are visible on the film so the examiner can identify where C7
and T1 are located to properly mark the films. The use of the cervical filter is prudent.

**Thoracic Lateral films:** Lateral Films are the most difficult to read due to shadows from the ribs. It is important to identify where C7 and T1 are located to properly mark the films. The use of the cervical filter is prudent.

**Lumbar AP films:** These films should have the bottom of the ischial tuberosity to L1 clearly seen. Most Doctors take films that clearly show the sacrum to L1. This is acceptable.

**Lumbar Lateral films:** These films should have the mid sacrum to L1 clearly seen.

**Lumbar Flex/Ext films:** These films should be taken with the patient’s knees in the locked position to stabilize the pelvis. Ask the patient to bend forward for flexion and bend backwards for extension with their upper back and neck straight and ridged. This will force the lumbar spine to move rather than a collective movement of the entire spine.

**PLEASE try not to cut off L1 vertebral body if possible, but do not sacrifice the Sacrum. (It is better to have Sacrum to L4, than L5-L1)**

You should visualize the films in detail to be sure you have ALL the anatomy, if not, re-take the film.

III. **DOCUMENTATION**

Documentation/Support Statement For Computerized Radiographic Mensuration Analysis:

It is imperative that the doctor “note” the ordering of the C.R.M.A. in their SOAP notes, with a clinical justification as to why. (Related or unrelated to the original x-ray report, it doesn’t matter). It is also imperative that the doctor makes another SOAP note on the day he receives the results of the CRMA, noting any change in their clinical procedure. Neither of these notes needs to be complicated, one simple sentence will suffice.

Sample support statements for S.O.A.P. notes:

“Due to clinical symptoms related to patients injuries along with specific Orthopedic/Neurological Tests (site the positive tests), I am recommending films be sent for CRMA to rule out ligament involvement/damage/failure suspected in this case.”

Or:
“Patient’s present symptoms (and/or slow progress) (Not making anticipated recovery), along with objective exam findings (list the specific positive Ortho/Neuro tests) suggest possible ligament failure and I recommend films be sent for CRMA to confirm or rule out suspected ligament damage.”

(Or, anything similar- increased pain on neck motion, increased pain on back motion, positive compression test, etc… just be specific as to why THIS patient needed THIS test)

Also: “…This separate and distinct test is not a ‘read’ but a specific computerized analysis that cannot be performed in the doctor’s office… or Radiologists office…”

After you receive your CRMA report, note it:

“CRMA Report received today confirms ligament involvement/failure in this case. I consulted with patient. See enclosed report.” (Also include here what you will change with the patient care as a result of the test. Ex: DME, Pillow, brace, Rehab, Increase care, decrease care, etc…) OR, IF not changing anything, still Document:

“Report confirms original Diagnosis. Will continue specific Chiropractic spinal care”

Again, it is imperative that the doctor includes both pre- and -post entry notes in S.O.A.P. when ordering ANY outside test, not just Computerized Radiographic Mensuration Analysis.

IV. TREATMENT/ACTION PLAN

(The following treatment plans are for educational purposes only and are not to be used as medical advice).

RE: Mya Nechurtz

TREATMENT PLAN:

After reviewing the Mensuration and Biomechanical reports from Ultimate Spinal Analysis, the following treatment plan will be implemented based on the findings from the analysis. The Atlas/Skull angle exceeds normal movement in flexion and extension, which is indicative of Alar ligamentous catastrophic sub-failure. The Atlas will not be treated for six weeks, until a lateral cervical radiograph can be retaken and digitized to assure stability. The Occiput is fixed in an anterior/superior position and warrants treatment. With the head in an anterior position, this is a subfailure of the motor unit and is causing sheering forces on the Atlas/Axis and ligament instability of the cervical spine. It was found that the patient has a Motion Segment Integrity Translation and/or a Motion Segment Integrity Angular according to the AMA Guides to Evaluation of Permanent Impairment, 5th Edition, Errata. It was noted there was a ratable translation at C3 on C4 and C5 on C6 and/or a ratable angular motion at C2 and C6. The patient will also begin isotonic and isometric exercises for the cervical spine. The goals of this treatment are to restore proper biomechanics, reduce stress and strain on the muscles and ligaments of the cervical spine, and strengthen the neck musculature. The patient will be seen
3X/week to continue treatment and rehabilitate the cervical spine. After six to eight weeks we will re-X-ray the affected area and submit the X-rays to Ultimate Spinal Analysis for a digital analysis.

RE: Mya Nechurtz

TREATMENT PLAN:

After reviewing the Mensuration and Biomechanical reports from Ultimate Spinal Analysis, the following treatment plan will be implemented based on the findings from the analysis. The Atlas/Skull angle slightly exceeds normal movement in extension, which is increasing the load bearing interiorly with the skull on the Atlas. The Atlas/Axis angle exceeds normal values and is causing extreme sheering forces of the Atlas on the Axis. The Occiput is fixed in an anterior/superior position and warrants treatment. There are anterior lateral offsets (Grade I Spondylolisthesis) at C2, C5, and C6 and will not be treated for six weeks, until a lateral cervical radiograph can be retaken and digitized to assure stability. With the head in an anterior position, this indicates a catastrophic sub-failure of the motor unit and is causing sheering forces on the Atlas/Axis and ligament instability on the cervical spine. The patient will begin isotonic and isometric exercises for the cervical spine. The goals of this treatment are to restore proper biomechanics, reduce stress and strain on the muscles and ligaments of the cervical spine and strengthen the neck musculature. The patient will be seen 3X/week to continue treatment and rehabilitate the cervical spine. After six to eight weeks we will re-X-ray the affected area and submit the X-rays to Ultimate Spinal Analysis for a digital analysis.

RE: Mya Nechurtz

TREATMENT PLAN:

After reviewing the Mensuration and Biomechanical reports from Ultimate Spinal Analysis, the following treatment plan will be implemented based on the findings from the analysis. The Atlas/Skull angle slightly exceeds normal movement in extension, which is increasing load bearing interiorly with the skull on the Atlas. The Atlas/Axis angle exceeds normal values and is causing extreme sheering forces of the Atlas on the Axis. The cervical lordosis is decreased due to an Occiput that is fixed in an anterior/superior position and warrants treatment. There is anterior lateral offset (Grade I Spondylolisthesis) at C4 and will not be treated for six weeks, until a lateral cervical radiograph can be retaken and digitized to assure stability. With the head in an anterior fixed position, this indicates a catastrophic sub-failure of the motor unit and is causing sheering forces on the Atlas/Axis and resultant ligament instability of the cervical spine. The goals of this treatment are to restore proper biomechanics, reduce stress and strain on the muscles and ligaments of the cervical spine and strengthen the neck musculature. The patient will be seen 3X/week to continue treatment and rehabilitate the cervical spine. After six to eight weeks we will re-X-ray the affected area and submit the X-rays to Ultimate Spinal Analysis for a digital analysis.
eight weeks we will re-X-ray the affected area and submit the X-rays to Ultimate Spinal Analysis for a digital analysis.

RE: Mya Nechurtz

TREATMENT PLAN:

After reviewing the Mensuration and Biomechanical reports from Ultimate Spinal Analysis, the following treatment plan will be implemented based on the findings from the analysis. The Atlas/Skull angle exceeds normal movement in extension, which is indicative of catastrophic ligamentous sub-failure of the Alar ligament and is increasing anterior load bearing with the Skull on the Atlas. The Atlas/Axis angle exceeds normal values and is causing extreme sheering forces of the Atlas on the Axis. The Occiput is fixed in an anterior/superior position and warrants treatment. With the head in an anterior position this is a catastrophic sub-failure of the motor unit and is causing sheering forces on the Atlas/Axis and ligament instability on the cervical spine. The patient will also begin isotonic and isometric exercises for the cervical spine. The goals of this treatment are to restore proper biomechanics, reduce stress and strain on the muscles and ligaments of the cervical spine, and to strengthen the neck musculature. The patient will be seen 3X/week to continue treatment and rehabilitate the cervical spine. After six to eight weeks we will re-X-ray the affected area and submit the X-rays to Ultimate Spinal Analysis for a digital analysis.

V. HOW TO GET STARTED?

Ultimate Spinal Analysis will handle all aspects of billing for our services, efficiently and accurately. There is obviously no charge to the doctor for our services and we will pay all of your shipping costs. After we receive your first set of films, upon their return, we will make sure to supply your office with paid shipping labels with Federal Express, so there is no cost to you.

There are two ways to submit your films/cd to us. 1. Snail Mail (fast). 2. Internet (faster).

1. **Snail Mail**: (Fast). On average we typically have a 4-5 day turnaround time using our one day express mail pick-up and delivery via Federal Express as mentioned above.
   A. Print, and fill out completely all three “USA forms” listed under “links” found on the bottom of each page on our website [www.UltimateSpinalAnalysis.com](http://www.UltimateSpinalAnalysis.com)
   B. Fax all three pages to **817-887-4543** or include them with the required films/cd in the x-ray jacket/envelope.
   C. Mail the x-ray jacket/envelope with the required films/cd and all three forms to:
      Ultimate Spinal Analysis
      750 S. Main St. Ste. 150 #42
      Keller, TX. 76248
2. **Internet:** (Faster). On average we typically have a 24-48 hour turnaround time using a digital camera to photograph the x-rays in a view box, downloading and emailing the file.

A. On a white piece of paper (8.5 X 11) write the patient’s name, date of birth, date of films, and sex. Using a digital camera place the paper on the view box and take a picture. The films will then follow.

B. Place individually the x-rays on the view box with the concavity of the spine (lateral films) to the right. Tape a transparent metric ruler (one with cm and mm) on each x-ray you’re going to photograph, in an area that does not obstruct the anatomy. Zoom in on the x-ray and eliminate all surrounding exterior light that’s around the film. Take the picture and make sure the flash (if there is one) doesn’t obstruct any anatomy.

C. Once all of the photos are taken of the required x-rays, download the pictures, save in a file and email the file to: Info@UltimateSpinalAnalysis.com

D. Print, and completely fill out all three “USA forms” listed under “links” found on the bottom of our website www.UltimateSpinalAnalysis.com and fax to 817-887-4543.

We are available toll free at 1-855-USA-XRAY (872-9729) should you have any questions.

*Once you fully understand the value and the importance of this test, we believe you will never treat another spine injured patient again without it. All we ask is that you give us a try.*