Back To Chiropractic CE Seminars

Exam Only ~ 2 Hours

Welcome to Back To Chiropractic Online CE exams:

This course counts toward your California Board of Chiropractic Examiners CE.
(also accepted in other states, check our website or with your Chiropractic State Board)

The California Board requires that you complete all of your CE hours BEFORE the end of your Birthday month. We recommend that you send your chiropractic license renewal form and fee in early to avoid any issues.

Exam Process: Please read all instructions before starting!

1. You must register/pay first. If you haven't, please return to: backtochiropractic.net

2. Open a new window or a new internet tab & drag it so it's side-by-side next to this page.

3. On the new window or new tab you just opened, go to: backtochiropractic.net website.

4. Go directly to the Online section. DON'T register again.

5. Click on the Exam for the course you want to take. No passwords needed.

6. Follow the Exam instructions.

7. Upon passing the exam you'll be able to immediately download your certificate, and it'll also be emailed to you. If you don't pass, you can repeat the exam at no charge.

Please retain the certificate for 4 years.
If you get audited and lose your records, I'll have a copy.

I'm always a phone call away... 707.972.0047 or email: marcusstrutzdc@gmail.com

Marcus Strutz, DC
Back To Chiropractic CE Seminars

Exam Only 2 Hours of CE

About the author:

Marcus Strutz, DC

Life Chiropractic College West Graduate
June 1996, Summa Cum Laude

Professor Life Chiropractic College West, 1997-2002

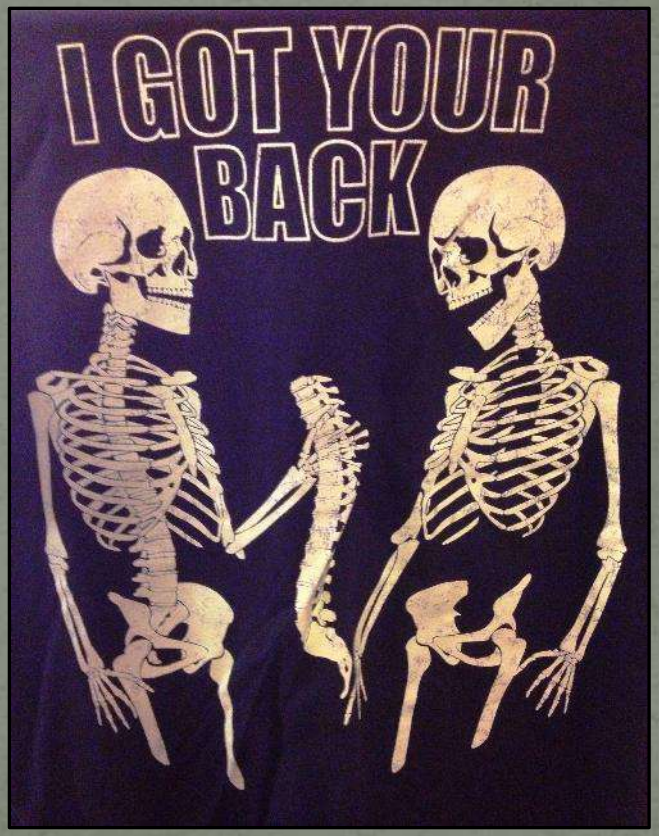
- **Physiotherapy Rehab** (authored course manual)
- **Physiotherapy Modalities** (authored course manual)
- **X-Ray Physics** (authored course manual)
- **Philosophy I**
- **Philosophy V - Practice Management**
- **Microbiology Lab**
- **Spinal Biomechanics**
- **Systemic Physiology Lab**

- **Private Practice, 2000-present Mendocino/Ft Bragg, CA**
- **CE Seminars, 2002-present:**
  Technique, Wellness (Pt Ed), Physiotherapy,
  History Taking & Physical Examination Procedures
- **Ghost Writer Practice Management, 2007-present**
- **National Board Review Instructor, 1999-2000**
  Dr. Irene Gold & Dr. John Donofrio
- **Middle School Teacher Math & Science, 1989-1993**
- **Racquetball Club Pro & Weight Trainer**
  Walnut Creek, 1982-1987
- **Father: Amuel Strutz DC Palmer Grad 1961**

The Goal

The basic goal of the history and exam is to identify abnormal findings.

1. The symptoms revealed by the patient during the history and the exam.
2. The signs observed by the chiropractor during the history and exam.



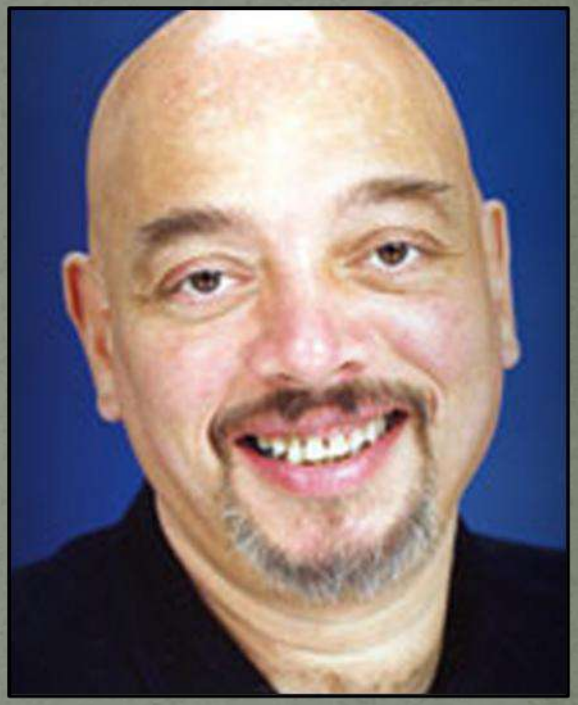
Activity ~ What Do You See?

List the common pain conditions that you see in the head & neck region.

Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"

Exceed Standard of Care

When taking a history and exam be sure you are at a minimum with-in the standard of care or exceed that! Always think: "take one more step", thank you Dr. Donofrio!!



No Short Cuts

As we become more experienced it is easy to skip the history or the exam or have it "overly" focused or minimized. This is when DCs miss critical bits of information. Perform a complete history & exam as dictated by each individual patient.

Cash DCs or Subluxation Based DCs

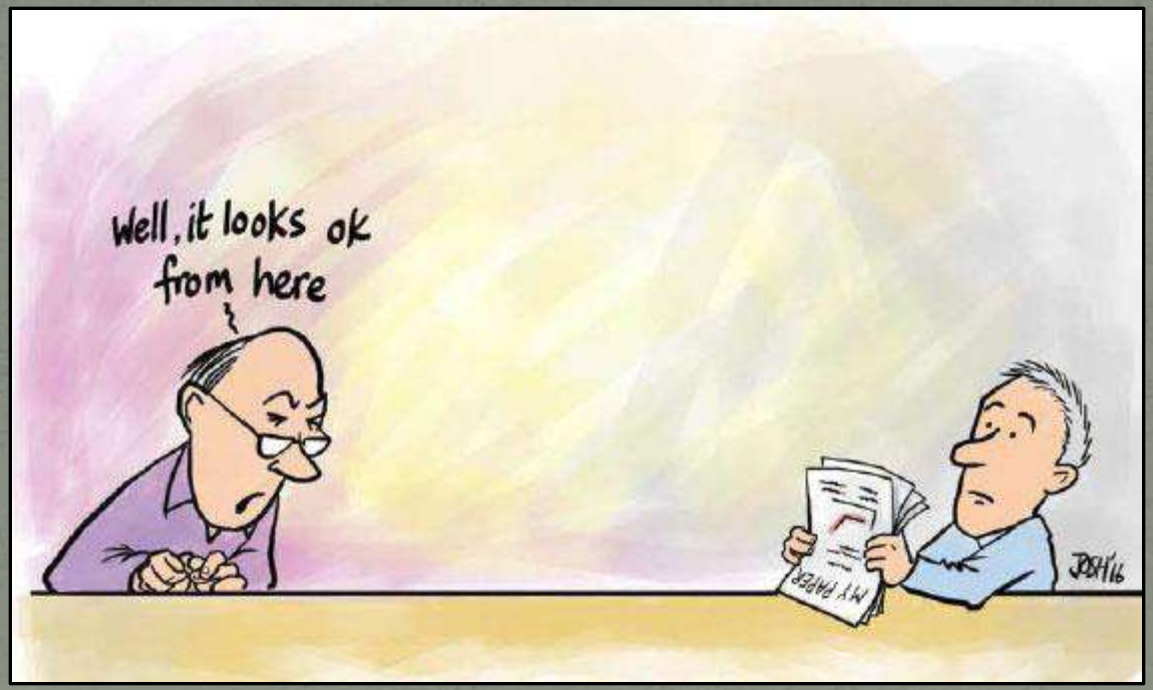
Make sure you have taken a proper history exam and document it in the patient's file. There is a minimum standard of care that you must provide.

Don’t Jump to Conclusions

The whole idea of performing the history and exam is to take that information and then come up with a diagnosis and prognosis. All too often a chiropractor skips much of the history and exam and assumes they know what’s wrong with out gathering all the necessary information to make the correct decisions.

Peer Review

Visit with another chiropractor and share your history and exam procedures.



Activity ~ What Do You See?

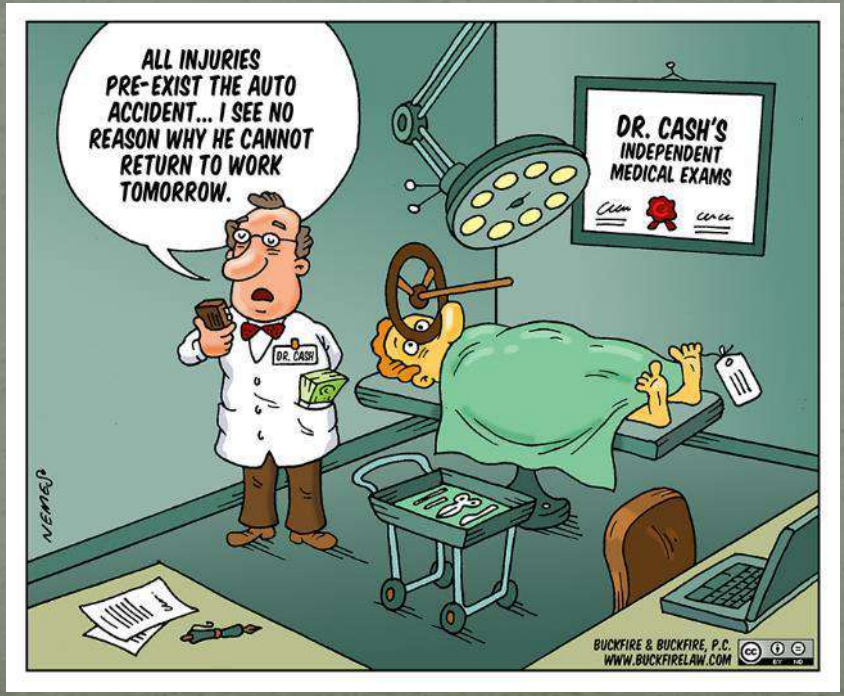
List the common pain conditions that you see in the shoulder region.

Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"

Why The History & Exam?

There are SO MANY REASONS for an excellent, well documented comprehensive or focused Hx & Exam.

The following slides will serve as a review.



Look for a Reason NOT to Adjust?

It's easy to find a reason to adjust, but the real goal should be to find a reason NOT to adjust the patient. Once the patient is cleared of any and all contraindications then the DC can be confident that an adjustment is safe and beneficial.

Activity

List Reasons NOT to Adjust

Activity

List Reasons NOT to Adjust

- Damaged tissue, break or tear
- Patient scared
- Excessive inflammation
- Excessive pain

Adjusting at Seminars

To adjust a DC always needs to properly:

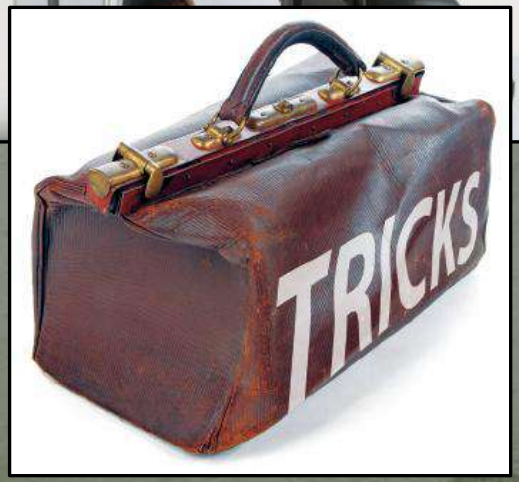
*document patient information
*take a history
*perform an exam
*acquire written & verbal consent

In light of the fact that an instructor for another company just injured an attending DC during a demonstration, and based on the legal advice from NCMIC, all technique will be demonstration of set-up only, with no dynamic thrust.

For DCs attending the seminar our legal advice is to also follow the above guidelines.

Determine What Technique

Not every patient responds well to the same technique. Have multiple techniques in your chiropractic "bag of tricks".



Hx on their adjusting experience?

Have they been adjusted before?
If so do they have a preference for a certain style of adjusting?
Do they have any questions or concerns about a chiropractic adjustment?
Ask the patient if they're interested in and or OK with a different style of adjusting.

Hx on their adjusting experience

If they have not been adjusted before, ask them if they have any questions and/or concerns.

Always invite them to watch you adjust another patient before they get their first adjustment.

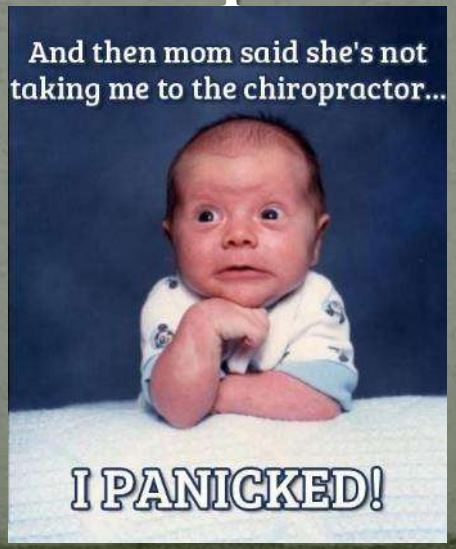
The Adjustment As An Ongoing Exam Procedure

Once you start adjusting track the patient's response to the adjustment, ie how much pain relief is experienced right after the adjustment and the next few days after.

The Adjustment As An Ongoing Exam Procedure

As you start care think of the chiropractic adjustment as an ongoing exam procedure.

Ask yourself, how are they responding to an osseus adjustment or drop table adjustment or activator adjustment? If they are not responding as you would expect, then we need to consider changing to a different technique or referral.

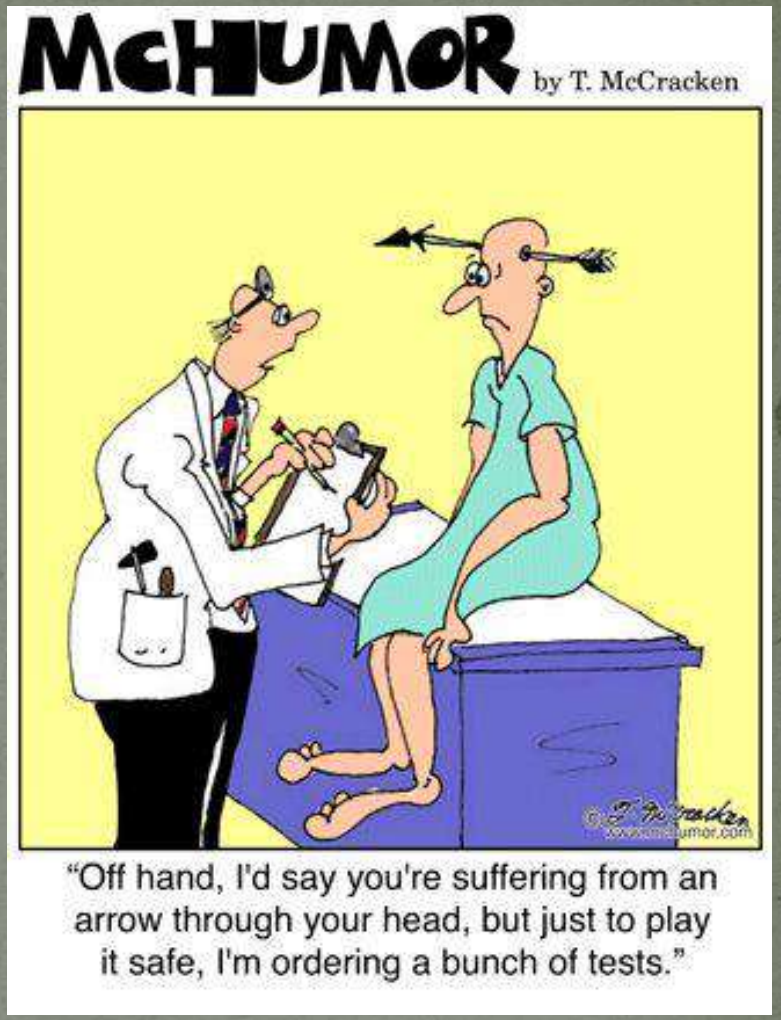


Adjusting As An Ongoing Exam

Example: immediately after a thoracic adjustment did the feel tugging or pain in the low back, use this as an "exam procedure" to determine the involvement away form the primary injury. If you cannot adjust the thoracic spine without pain in the lumbars, then it's likely that a lumbar adjustment is contraindicated or at least be considering that fact.

Special Studies

The history and exam are important as the practitioner needs to figure out if they need to order any special studies. Does the chiropractor need to take X-rays, yes or no, request any special studies, ie labs, MRI, bone scan etc.?



Referral or Co-manage

The history and exam will tell you if a referral is necessary or if this is a case that will require co-management with another health care practitioner.

Activity

List Reasons When To Refer

How many visits until you refer?

Activity

List Reasons When To Refer

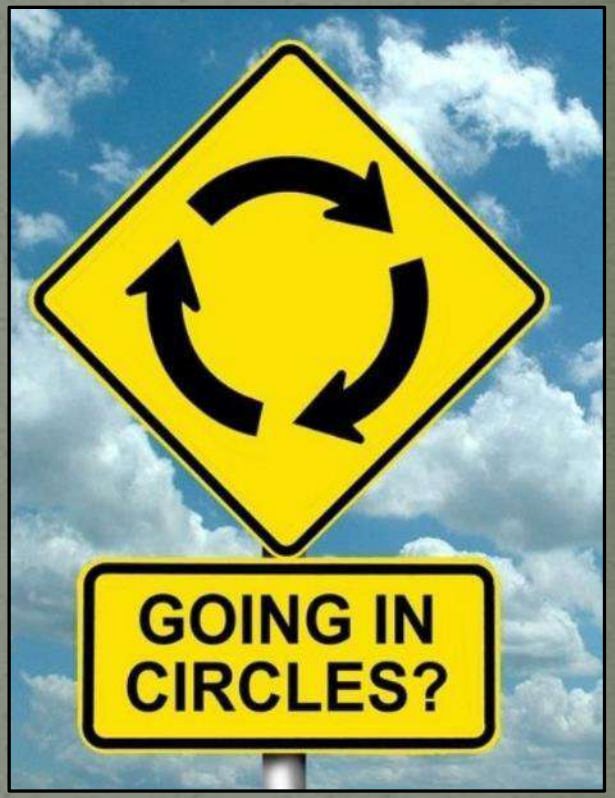
- DC: different technique
- PT: rehab for post surgery
- MD: prescription needs
- Orthopedist: surgery
- Neurologist
- Oncologist
- General Practitioner
- Nutritionist
- Labs
- Special studies: X-ray, bone scan, MRI

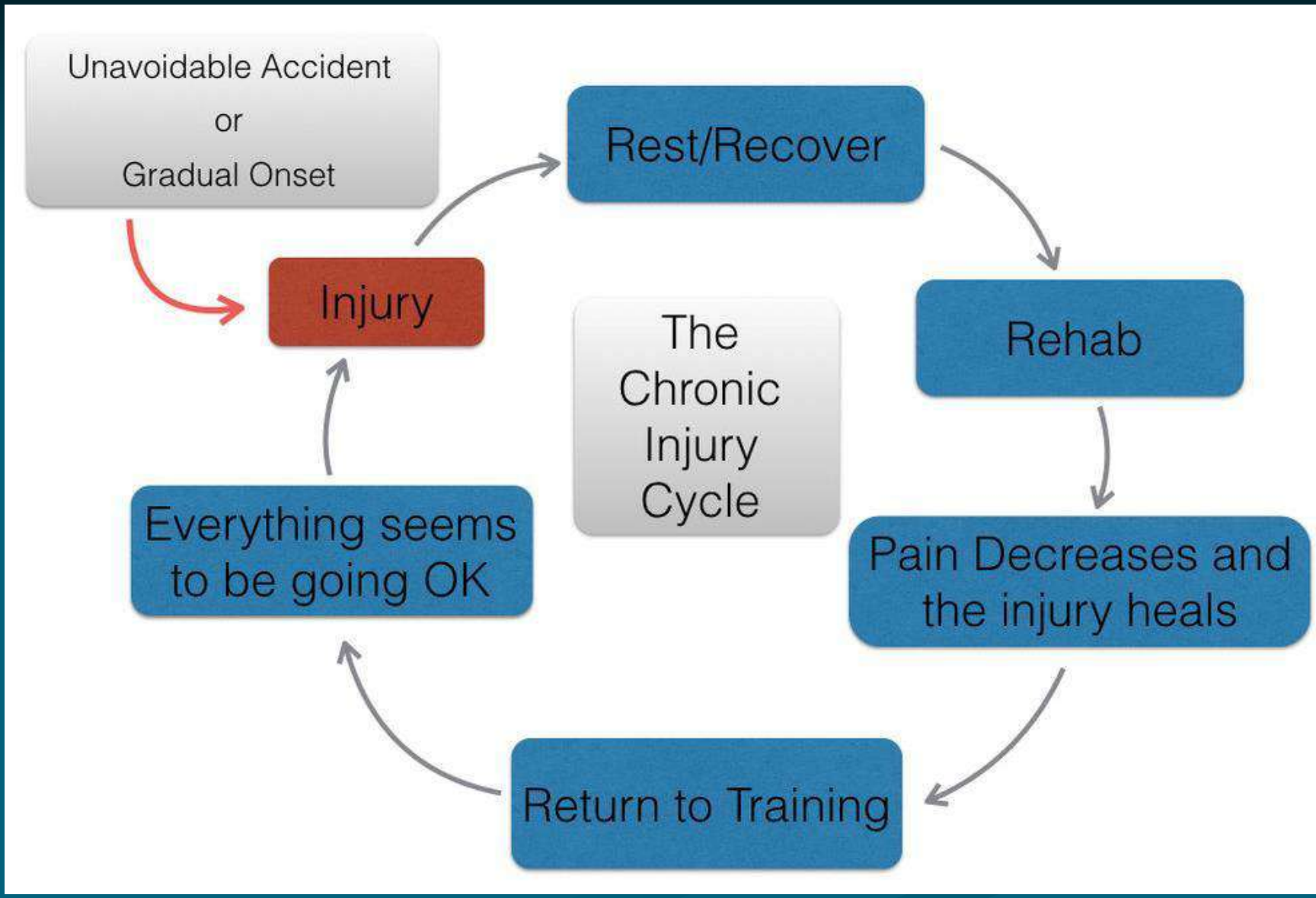
Document a Starting Point

The history & exam provides as a guide for a starting point for the case. From there it is important to document improvements and or decline in the patient's status. If the patient is showing decline, then a reassessment and re-eval are needed and a possible referral.

Injury Cycle

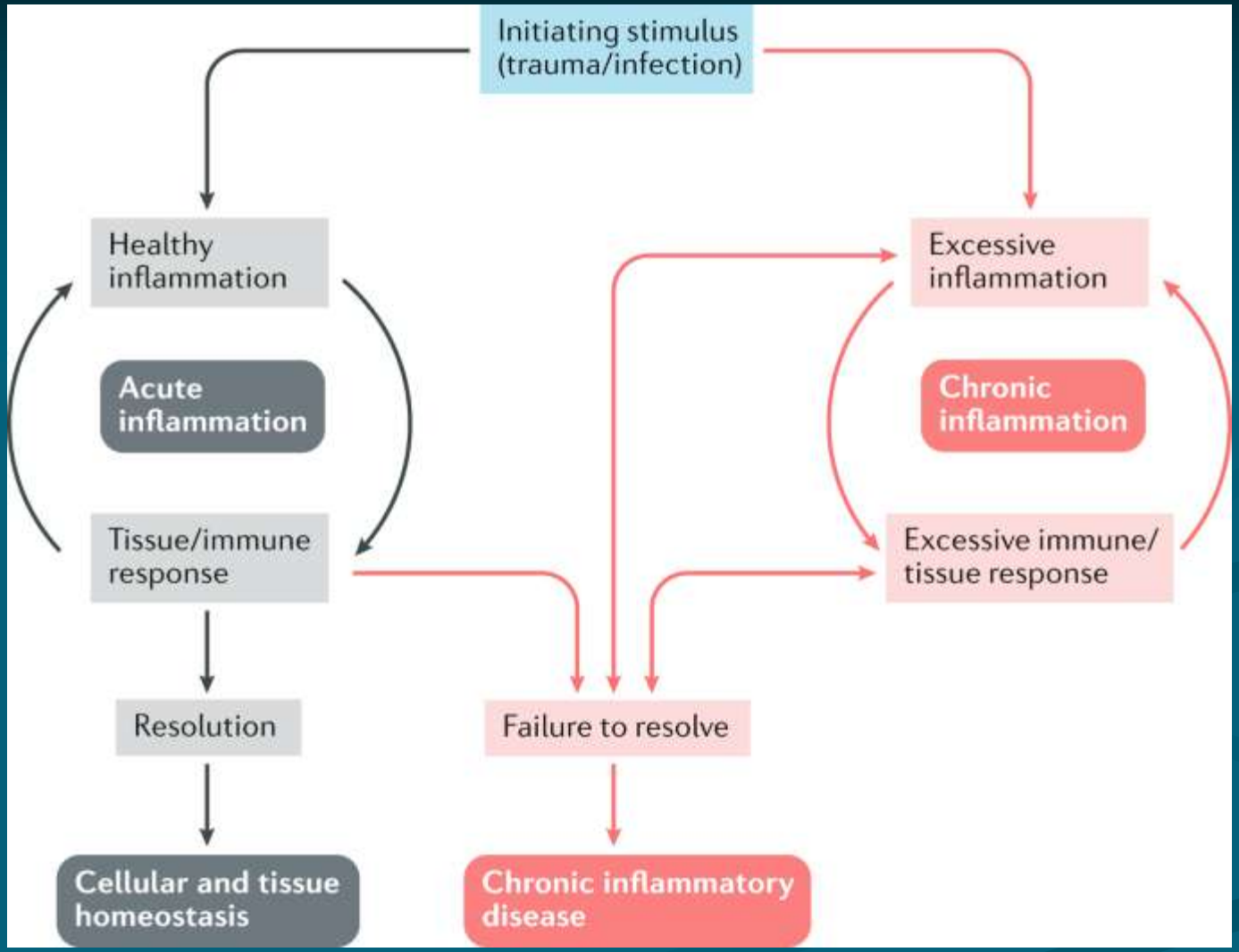
After completing the history and exam,
we should have a good idea of where the patient is in the injury cycle.
This is an important thing to discuss with the patient to help them understand the healing process their body will be going through.




Unavoidable Accident
or
Gradual Onset
Injury
Rest/Recover
Rehab
Pain Decreases and the injury heals
Return to Training
Everything seems to be going OK
The Chronic Injury Cycle

Stages of Healing

An important part of a proper history and exam is to determine where they are in the stages of healing. We can then point out to the patient their starting point and the stages we have to go through to recover from the injury. This helps the patient understand that chiropractic care is not a one visit phenomenon, rather it is a specialized form of rehab that includes chiropractic adjustments.


Initiating stimulus (trauma/infection)
Healthy inflammation
Acute inflammation
Tissue/immune response
Resolution
Cellular and tissue homeostasis
Excessive inflammation
Chronic inflammation
Excessive immune/ tissue response
Failure to resolve
Chronic inflammatory disease

Stages of Tissue Healing

Inflammation:
Swelling, Pain, Muscle spasm, ⇓ motion, ⇓ function

Stage 1: Acute 0-72 hours:

*Inflammation; chemical mediators released
*Edema: restricts motion, ⇑ pain, fibrosis
*Motion restricted due to: pain, spasm, edema
*Muscle spasms due to: pain
*Causes of pain: ischemia, chemical mediators, mechanical deformation
*Ice: vasoconstriction, ⇓ pain, muscle relaxer, slows cellular metabolism

Stage 1 Goals:

⇓ pain, slow & control swelling

Care:

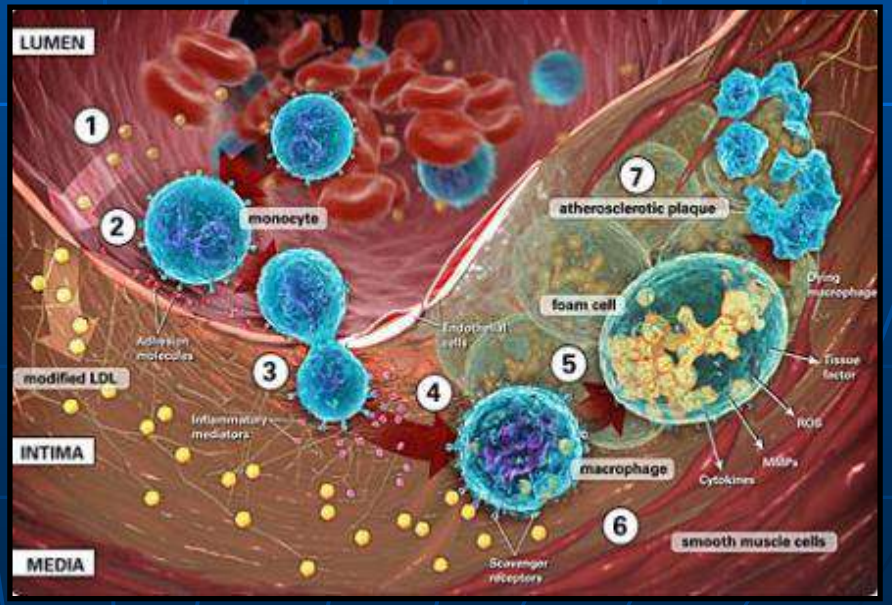
- Rest & support
- Ice to ⇓ swelling, pain & muscle spasm
- Adjust when safe

Inflammation & Pain:

Does the patient think these are good or bad things?

Remember the acute inflammatory process is what helps heal the tissue. If we could remove all the inflammatory chemicals the tissue would NOT heal. Have pt pinch themselves then release. Severity of pain does not always correlate with severity of injury.

Ex. Calf cramp, paper cut, bumping your elbow.



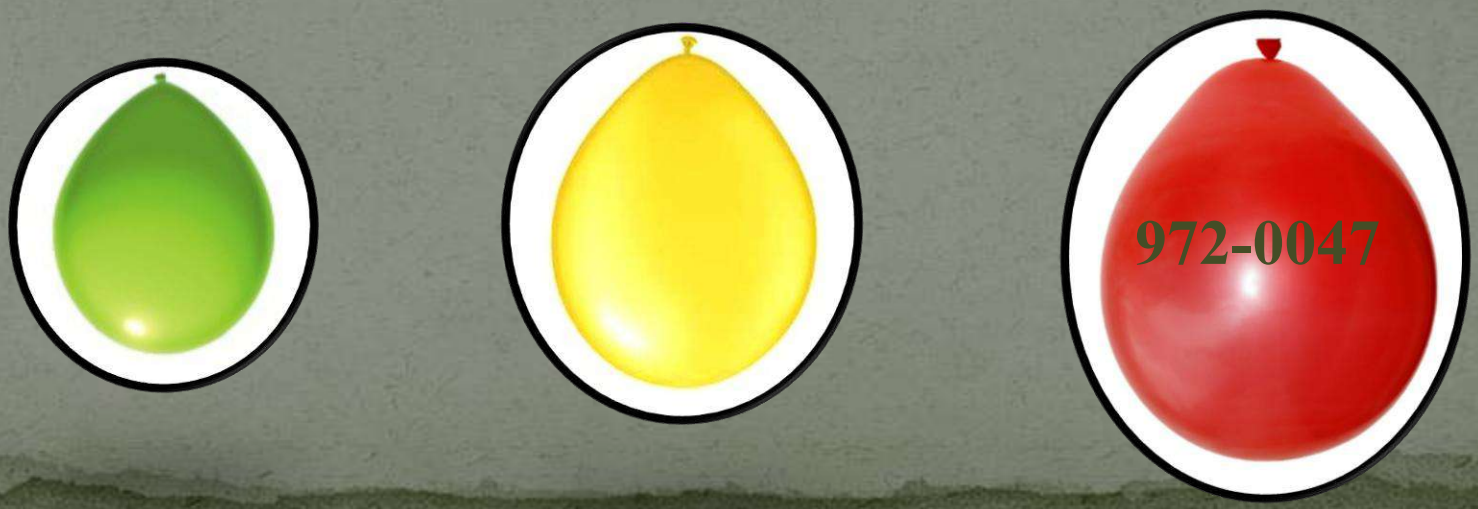
Pt Ed: Water Balloons & Chemical Build-up

Explain to the pt that cells are mostly water and that it is chemical build-up that ultimately causes the pain.

Green: Tissue is normal, relaxed & no swelling.

Yellow: Inflammation has gathered gradually due to constant overuse, but not enough to cause pain. This is where maintenance care comes in, to prevent excess chemical build-up.

Red: Excess build-up of chemicals. Inflammation is so bad that it causes pain. Put your phone number on the balloon, because that is when they call.



In The Back Of My Mind

Patient Education: Sprained Ankle & Inflammation

Patients often have a hard time understanding a sprained low back or neck, so use a sprained ankle as an example.

In The Back Of My Mind

Anti-inflammatories?

Typically a patient will say that the drugs helped at first and then did not , after about 3 days. No coincidence that this experience coincides with the stages of healing. Remember these drugs will decrease inflammation and decrease fluid flow/circulation to the injury site. During the acute stage these would actually help as it would slow fluid flow. Into the passive stage (72 hours to 3 weeks) we want to increase fluid flow and these drugs will actually impede the flow. Taking these long term will slow the healing process as we want inflammatory exudate to exit the tissue and have new fluids enter.

In The Back Of My Mind

Of course I did not forget about the side effects of anti-inflammatories and gut bleeding:

50% of pts taking NSAIDs have sustained damage to their small intestine. Journal of Gastroenterology, 2009

"The routine use of aspirin for the primary prevention of vascular events in people with asymptomatic disease cannot be supported." JAMA, 2010

"There are no side effects of pharmaceutical drugs, only unwanted direct effects."

In The Back Of My Mind

Inflammation Protocols

Protect Rest Ice Compress Elevate

Exercise: Limited, motion within limits of pain (unless leads to further inflammation).

Lifestyle/Ergonomics: Rest, maintain comfortable position, do not "freeze" rest of body.

Diet/Nutrition:
Vitamin B-Complex- Tissue repair (3x daily).

Vitamin C with bioflavonoids- Tissue repair & ⇓ inflammation (3000-6000 mg daily).

Essential Fatty Acids- Evening primrose oil, flaxseed oil & fish oils ⇓ inflammation.

Grape seed extract- Antioxidant.

Zinc- Tissue repair & ⇓ inflammation (50 mg daily).

Superoxide dismutase (SOD)- Free radical scavenger, ⇓ infection & inflammation.

Alfalfa- source of minerals.
Bilberry- contains flavonoids that ⇓ inflammation.
Aloe vera, Arnica, Boswellia, Bromelain, Cat's Claw, Curcumin (turmeric), Echinacea, Ginger Root Extract, Goldenseal, Pau d'arco, Red Clover, White Willow Bark Extract & Yucca- all help ⇓ inflammation.

Stage 2: Passive congestion 3 days-3 weeks:

Goals:

Remove fluid, ⇑ motion, ⇓ pain

* ⇑ vascular flow; exudate tends to remain in soft tissue.

*Facet cartilage & disc nutrition: Improve motion

⇑ circulation of synovial fluid and nutrients,

fluid flows into the disc and waste products can flow out.

Care:

- Adjust & soft tissue work
- Motion exercises
- Ergonomic advice

Stage 3: Repair Day 5 to 3-6 weeks:

*Scar Tissue Formation

*⇓ motion leads to: ⇑ scar tissue, chronic shortening and stiffening of soft tissue, ⇑ risk for degeneration of bone

*⇑ motion: improves alignment of connective tissue to support joint mechanics and function

Stage 3 Goals:

Restore normal motion, speed healing & ⇓ pain

Care:

- Adjust & soft tissue work
- Motion exercises
- Ergonomic advice

Stage 4: Remodel:

starts in 3-6 wks, takes 3-52 wks to never depending on the severity of the injury.

Goals:

Motion: Maintain & improve
Flexibility: Maintain & improve
Functionality: Maintain & improve
Chronic pain: ⇓ & ⇓ risk of exacerbation
Degeneration: ⇓ risk

Care:

- Adjust & soft tissue work
- Motion exercises
- Ergonomic advice

Goals of Care:

1. Pain relief
2. Restore function
3. Reduce risk of exacerbation
4. Reduce risk of degeneration

Again a disconnect with the pt may occur!

- How long does it take for pain relief?
- How long does it take for tissues to heal?
- How long does it take to restore function?

If the pt does not understand the questions above then they will be confused and not understand a care plan that goes beyond pain relief.

Activity ~ What Do You See?

List the common pain conditions that you see in the elbow region.

Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"

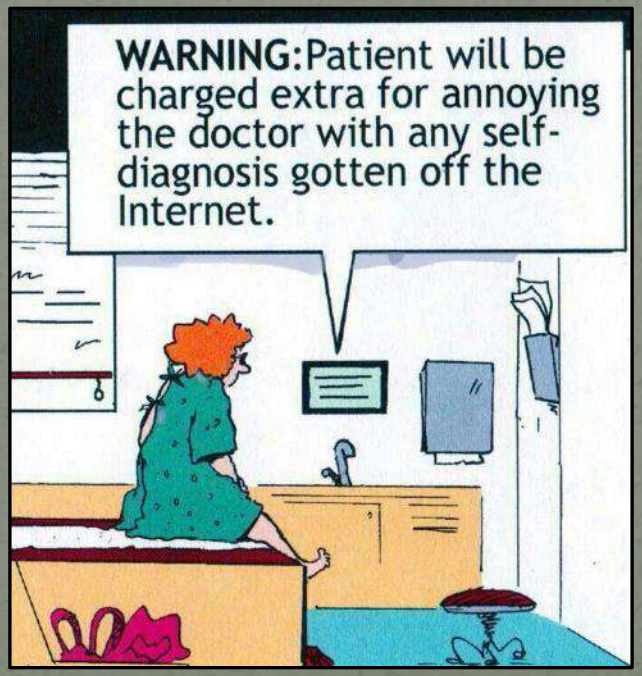
Establish a Diagnosis

One of the primary reasons for a history and exam is to establish a working diagnosis. This of course is important when you're billing insurance so you can submit the proper codes and also important to establish a starting point in the patient's records.

"Hmmmm. Looks like you've got everything but insurance."

Diagnosis? Be Careful

Once the DC has a diagnosis, often they will focus only on the diagnosis & not treat all the secondary issues.



Determine a Prognosis

The history and exam will allow you to establish a proper prognosis.

It is important for the patient to know that the chiropractor has established a goal in terms of duration of care.

If at any point during care it appears as if the prognosis was inaccurate, then a reassessment, reevaluation and maybe a referral would all be potentially necessary.

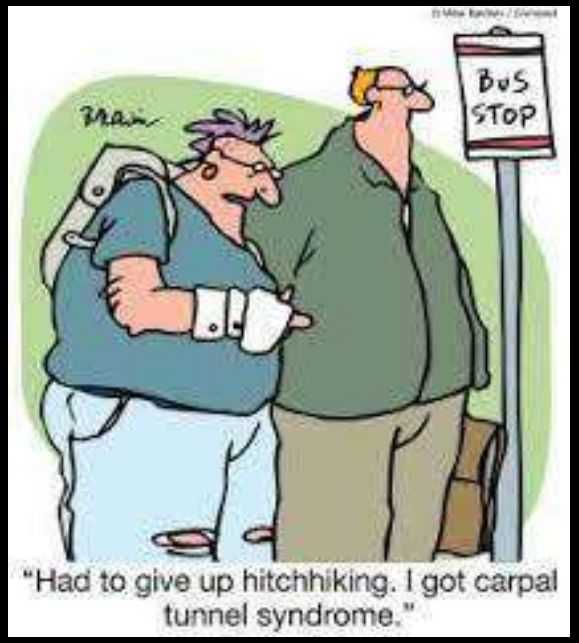
Determine Specific Care Plan

If the chiropractor takes an excellent history and exam, they can then write a customized specific care plan for each individual patient.

Activity ~ What Do You See?

List the common pain conditions that you see in the wrist & hand.

Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"



Adjunctive Procedures

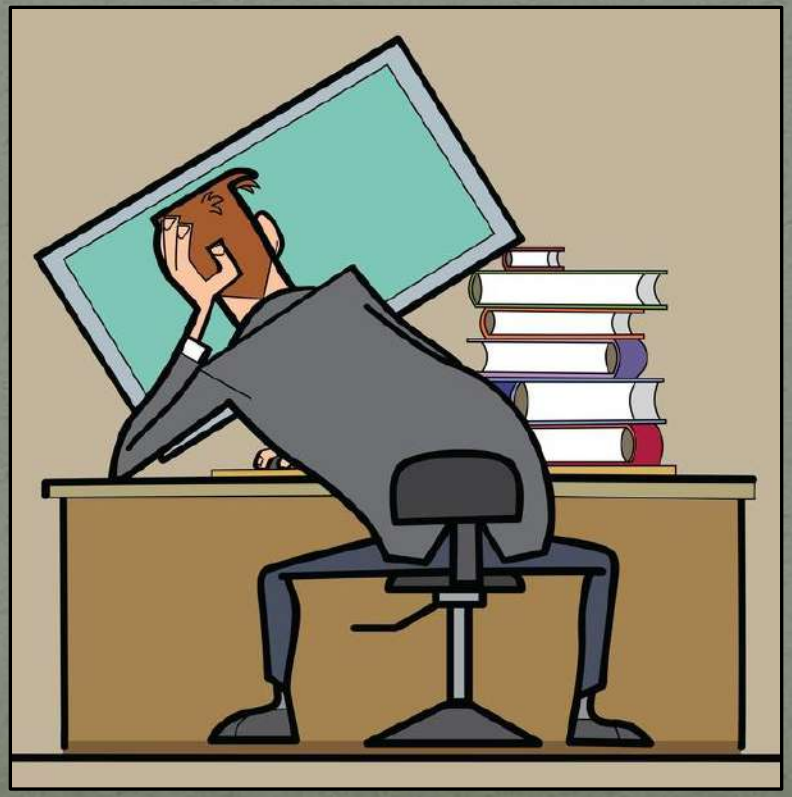
The history & exam is important to determine what adjunctive procedures you may want to use, ie ice, heat, soft tissue work, electric stimulation, stretches, strengthening, etc.

Ergonomics

What does the patient work do for work?

Does the patient sit all day or do they get up and move around, or lift heavy objects.

Do they have any if hobbies or activities that may be leading to their distress.



The Cash Trap!

Many chiropractors that run a cash practice stop taking a proper history and exam. They have minimal documentation, as they feel they no longer need too do all that work.

Cash chiropractors still need to document just as if they were billing insurance, but without billing the insurance company.

A cash patient can easily become a PI or WC patient, and attorneys can request your records.

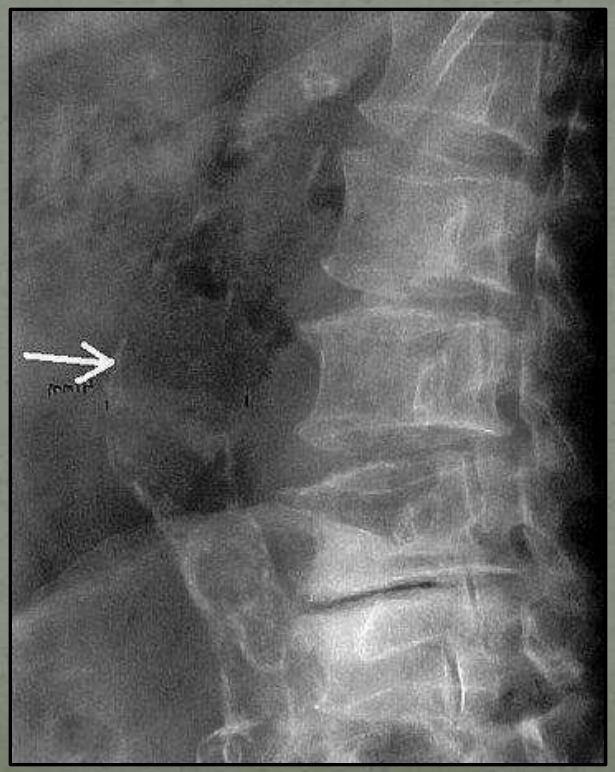
If the files are incomplete this may cause a complaint to The Board or further investigation!

Avoid Legal Action

Proper documentation is the key to your protection

Proper documentation and evidence that you've done your job is so important, as it can ultimately save you from a lawsuit. Even if you miss something, but you've done all the required exams within the scope of your practice you'll be okay.

abdominal aortic aneurysm



Don’t Miss Anything

One of the primary reasons chiropractors have complaints against them to The Board or lawsuits filed against them, is a lack of proper documentation, primarily a poor history & exam.

History Taking

As we review the components of a proper history and exam there are a few things to remember or not forget, what I call: "In The Back Of My Mind"

These are ideas that may help you improve your history and exam skills, as well as improving you ability to explain chiropractic and increase your new patient retention.

In The Back Of My Mind

The beginning (Part I)… Establishing the doctor.

When a new patient has their initial exam always remember they may be unsure of your qualifications or skill set. Most people have NOT been to a DC, so it is paramount to establish yourself as the authority right away.

In The Back Of My Mind

The beginning (Part I)… Establishing the doctor.

Talk Over The Patients Head

Impress the patient on that initial visit.

Let them know you are highly educated & DID NOT just attend a weekend course. Ask yourself how smart do you sound on a routine visit as often we deliver a quick adjustment and have a "friendly visit"? Use the chart on the next slide in you office so your patients can see the level of your education. I don't want to sound negative, but remember most people have no idea of how much the DC knows!

Chiropractic Education Class Hours	Subject	Medical Education Class Hours
520	Anatomy	508
420	Physiology	326
271	Pathology	335
300	Chemistry	325
114	Bacteriology	130
370	Diagnosis	374
320	Neurology	112
217	X-Ray	148
65	Psychiatry	144
65	Obstetrics & Gynecology	198
225	Orthopedics	156
2,887	**TOTAL HOURS**	**2,756**
Adjusting, Manipulation, Kinesiology, and other similar basis subjects related to their specialty.	Other required subjects for doctors of medicine/doctors of chiropractic	Pharmacology, Immunology, general surgery, and other similar basic subjects related to their specialty.
4,485	**GRAND TOTAL CLASS HOURS**	**4,248**

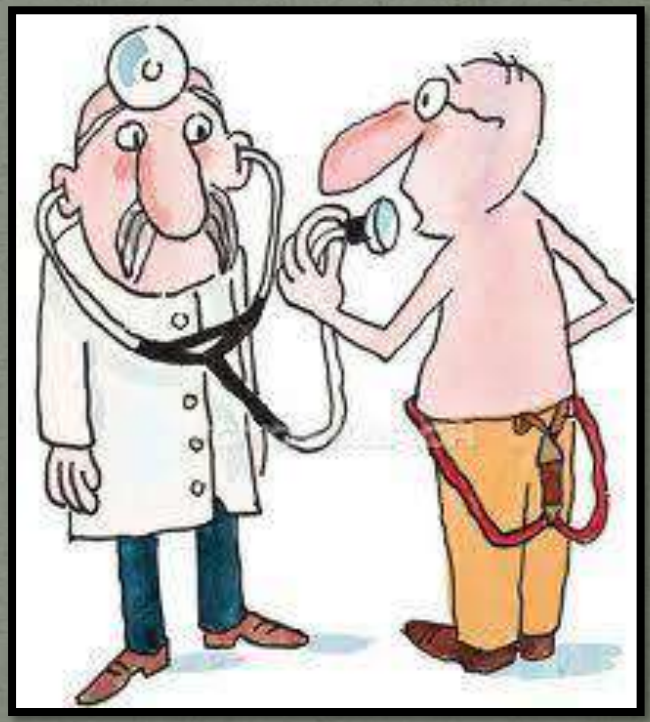
Activity ~ What Do You See?

List the common pain conditions that you see in the thoracic region.

Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"

In The Back Of My Mind

Listen To The Patient First
It is easy to jump to a clinical conclusion too quickly.
Complete the entire history, review it & then complete your exam & THEN
make a clinical decision.



In The Back Of My Mind

The Patient Tells Us What's Wrong

About 70% of the time the patient will simply tell you what is wrong, so listen to them.

Ask them "what do you think it is"?

Patient Tells You Everything?

Patients will only tell you what they think is important for the case.

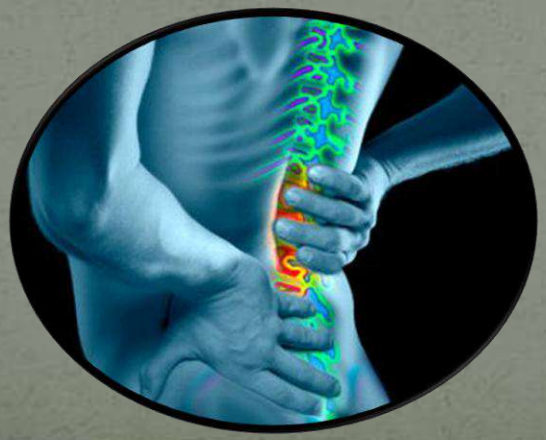
They may leave out relevant information and/or forget events that are relevant.

It's important to let the patient know that any and every detail can be important, so don't leave anything out.

In The Back Of My Mind

Patients In Pain

When a patient is in pain remember they may be hard to understand and communicate with.
The patient can be unclear, distant, seem unstable and distracted.



What Are You Thinking?

Eliminate conditions that don't fit the patient.

Consider the patient's age. Is the patient:

0 to 20 years of age

20 to 40 years of age

40 to 60 years of age

older than 60

For example you would not think bony degeneration in a 10 year old, or immature growth plates in a 40 year old.

Consider the patients sex. There are obviously different pathologies for men and women.

Consider the patients presentation. Is the patient athletic or obese, depressed, introverted, etc.

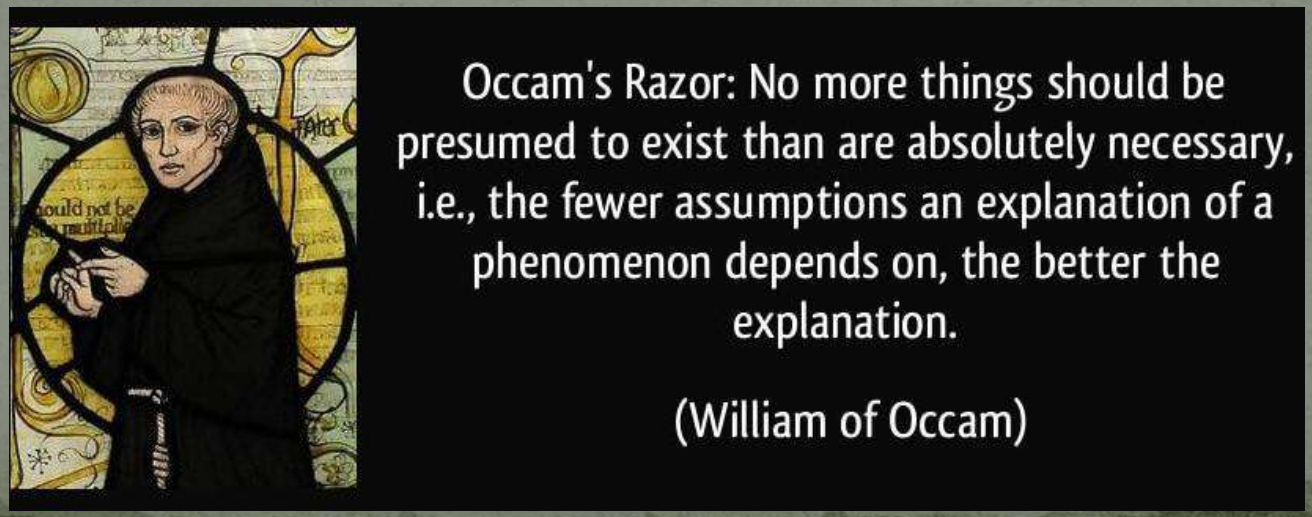
What's wrong? More Than One Thing?

Pts want to know what the problem is, what is wrong or what happened. Their paradigm is that there is a single isolated problem/cause and once we know what it is then we have a recipe for that particular problem.

The body is unfortunately not that simple. Often there is more than one thing wrong! More than one mechanism may be present and more than one type of pain may be detected in a pt. These can and will overlap.

Occam's razor

"entities should not be multiplied beyond necessity"
"the simplest explanation is usually the best one"
The idea is attributed to English friar William of Ockham (c. 1287–1347). This philosophical razor advocates that when presented with competing hypotheses about the same prediction, one should select the solution with the fewest assumptions. The "razor"and its association with him may be due to the frequency and effectiveness with which he used it.



In The Back Of My Mind

Horses vs Zebras

In the US horses are more common than zebras. In a chiropractic office a repetitive micro-trauma is more common than a visceral or systemic pathology. So in your office think horses not zebras, remember the most common thing IS the most common. But don't forget the zebras!

In The Back Of My Mind

Refer, be right?

When you refer to another health care professional or for special tests (X-ray, MRI, blood tests, etc) your goal: be correct 70-80% of the time.

Why? The thought is if you are right 100% of the time you are likely missing some proper referrals.

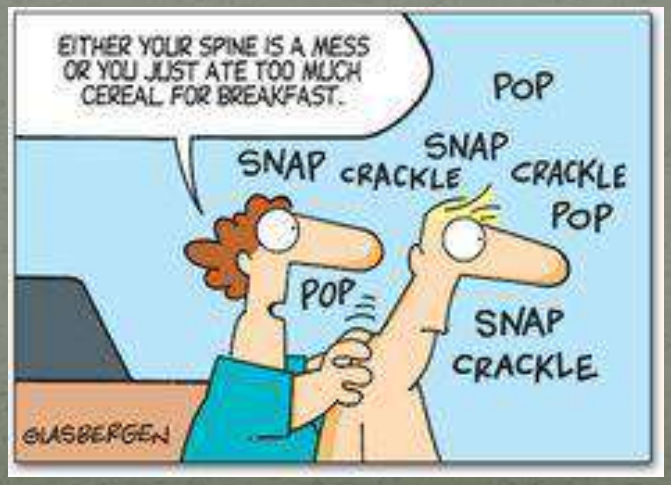
Activity ~ What Do You See?

List the common pain conditions that you see in the low back region.

Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"

Avoid Excessive Treatment

An excellent history and exam is a good tool for providing a starting point in care. Once the patient has reached permanent and stationary status or maximal medical improvement status, we now have a marker for beginning wellness care.



How DCs Get In Trouble

If the patient starts off as WC/PI/Ins/Cash symptomatic patient and the DC continues to treat/bill with no change over time, then it may be deemed as excessive treatment by not following the standard of care by the chiropractic community.

The insurance company or patient then could file a complaint.

Once the patient reaches P&S or MMI status, then the patient must be released or CONVERTED over to wellness,

(which means no longer billing for the initial injury).

Be sure the patient is aware of & agrees to wellness care.

Make sure there is a line in the sand in your notes & a signed acknowledgement is preferable.

A finding of "permanent and stationary" means that, in the treating doctor's opinion, the patient has reached a point where the medical condition probably isn't going to improve.

The term maximal medical improvement means that the condition is stable and isn't likely to change substantially in the next year, with or without additional medical treatment.

Documentation of Wellness Care

This is a common question from DCs

For a wellness practice/patient there should be the exact same documentation/record keeping that you would have with a symptomatic patient:

Initial intake form,

ortho/neuro/chiropractic exam with all findings,

(this includes the negative findings), SOAP notes for each visit and regular re-evals.

We want documentation that you have maintained and/or improved the exam findings and/or other health factors.

Examples: ROM has been maintained/improved, prevention of reoccurrence of LBP, less stress, fewer sick days, better sleep, etc

What else could be on this list?

RAND 12 or RAND 36 are wellness surveys that you could use

Activity ~ What Do You See?

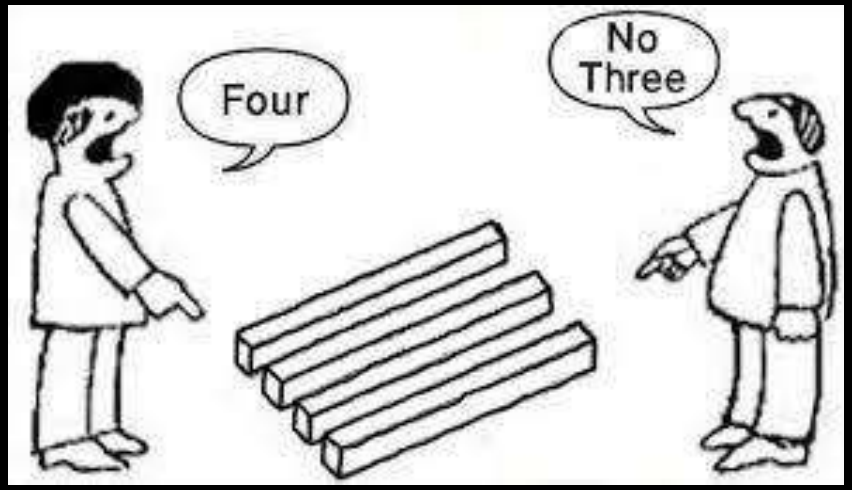
List the common pain conditions that you see in the hip joint region.

Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"

Activity ~ What Do You See?

List the common pain conditions that you see in the pelvic region.

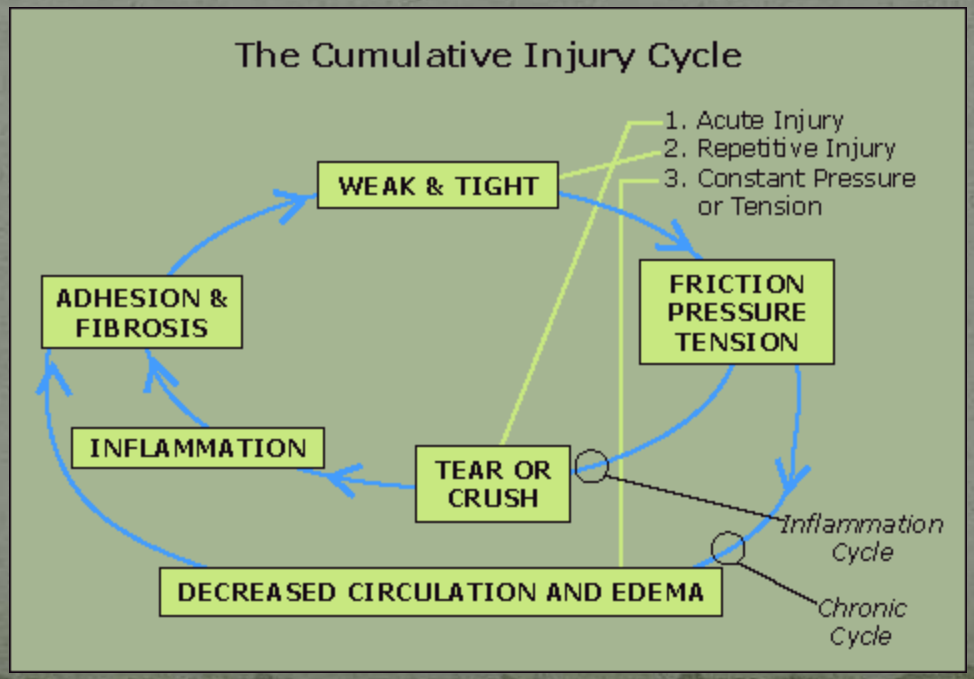
Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"



In The Back Of My Mind

Repetitive Micro-Trauma (RMT)

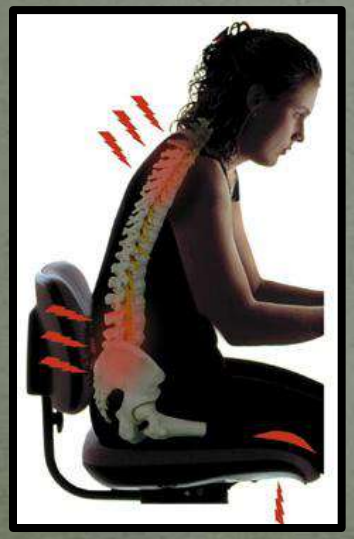
Most new patients have chronic RMT and say: "nothing happened, I didn't do anything wrong". This is confusing for the patient as most are unfamiliar with RMT. Use the demonstration on the next slide to help explain to the patient the mechanism of RMT.



Patient Education: Demonstration

Trapezius Tension

Have your pt palpate your traps first with good posture and then as you pretend to: drive, cook, brush your teeth, use a mouse, read, etc. They will experience the immediate tightness of the traps. Now explain what happens when this occurs for an extended period of time. This may also be done in the low back. Have the patient with their hand splayed out over your low back muscles. Then just repeat the above and they can feel the immediate tightness in the low back muscles.



P = Palliation/Provocation

Palliation: What makes it better?

Provocation: What makes it worse?

These questions help determine whether a body position, body movement, rest, ice, heat, pressure, medications, home remedies, stretching, etc. make the problem feel better or worse.

These questions and responses will help identify the severity, if the problem is acute or chronic, and the possible approach to the care plan, (aggressive or not).

Also ask if they have been to other health care providers including chiropractors for this problem and if that made it better or worse or no change. This will help guide you in you own care plan and avoid repeating things that have not worked, and perhaps trying something different.

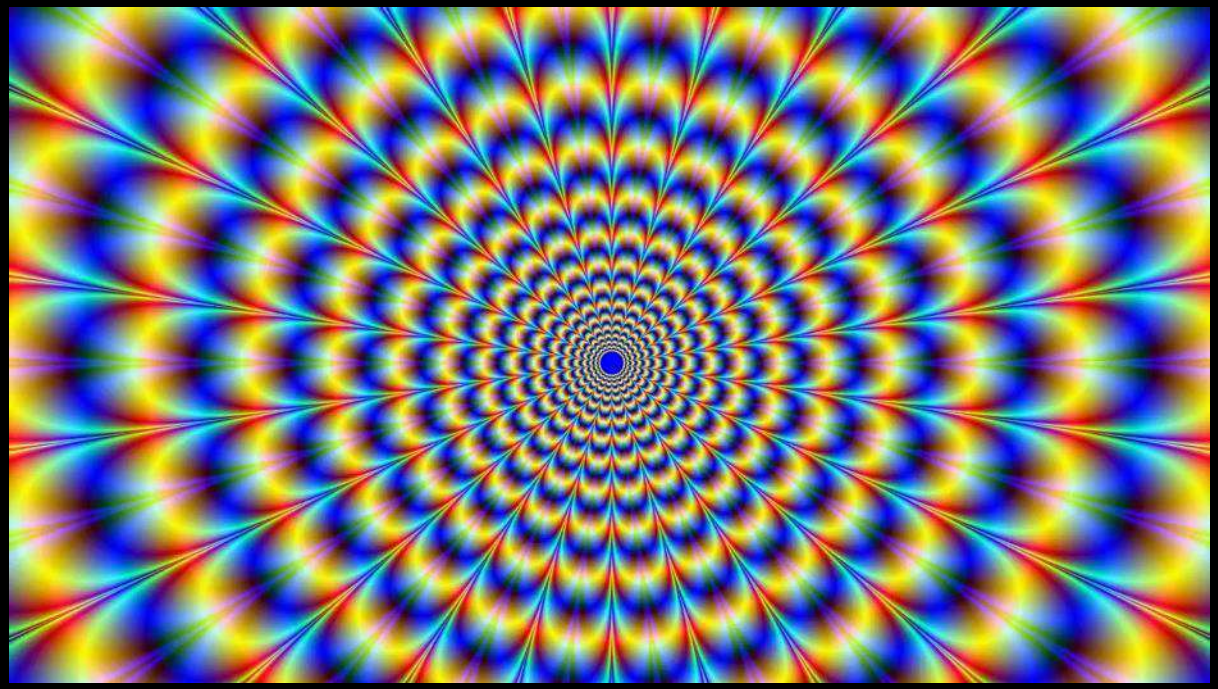
Activity

If the patient has radiating pain what are the most likely causes?

Activity ~ What Do You See?

List the common pain conditions that you see in the knees.

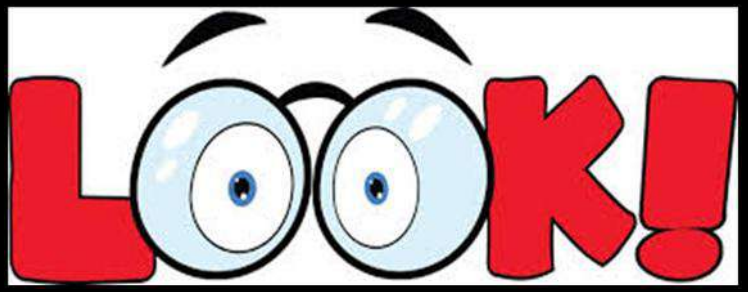
Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"



Activity ~ What Do You See?

List the common pain conditions that you see in the ankle & foot.

Then list the unusual conditions that you have seen that should be in the "Back Of Your Mind"



Physical Examination Procedures

In this section I have developed comprehensive exam forms for each body region:

- **Cervical Spine**
- **TMJ**
- **Shoulder**
- **Elbow**
- **Wrist & Hand**
- **Thoraco/Lumbo/Pelvic Spine**
- **Hip**
- **Knee**
- **Ankle & Foot**
- **Trauma/Neurological**

All forms are available in PDF format on the website:
backtochiropractic.net then click on:
Free Practice & Patient Materials
forms are on lower left side of that page.

In The Back Of My Mind

Why so many exams?

Often DC's will ask why are there so many exam procedures.

The answer is that one or two tests will probably not lead to the correct diagnosis. The more exams preformed the higher the level of certainty and safety for the pt. When a pt is acute often tests can not be performed due to the excessive pain. That is a huge sign of something is wrong and reason to proceed with extra caution.

Each comprehensive exam forms includes (as applicable) sections on:

- **Vital signs**
- **Inspection**
- **Postural Analysis**
- **Passive ROM**
- **Active ROM**
- **Deep Tendon Reflexes**
- **Muscle Strength Tests**
- **Sensory Dermatomes**
- **Spinal Palpation**
- **Ortho/Neuro Exams**

Lets Review!

Inspection

The traditional names for signs of inflammation come from Latin:

- **Dolor (pain)**
- **Calor (heat)**
- **Rubor (redness)**
- **Tumor (swelling)**
- **Functio laesa (loss of function)**

Postural Analysis

Posture affects & moderates:

- spinal pain
- headache
- mood
- blood pressure
- pulse
- respiration
- sympathetic function
- homeostasis
- autonomic regulation
- breathing
- hormone production

American Journal of Pain Management, 1994

In The Back Of My Mind

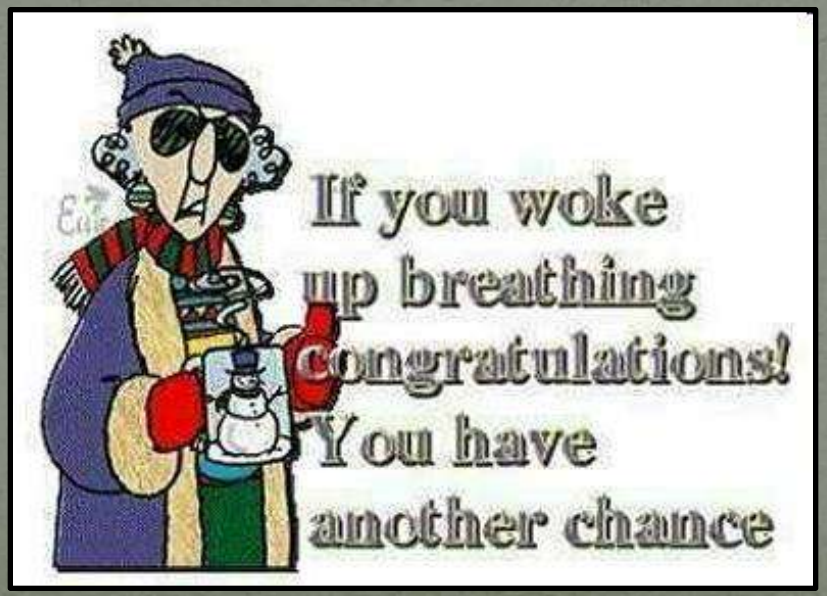
Respiratory System

After age 20 vital capacity

⇓ 5-20% per decade

(maximum volume of air that a person can exhale after maximum inhalation)

Brian K Ross MD, University of Washington

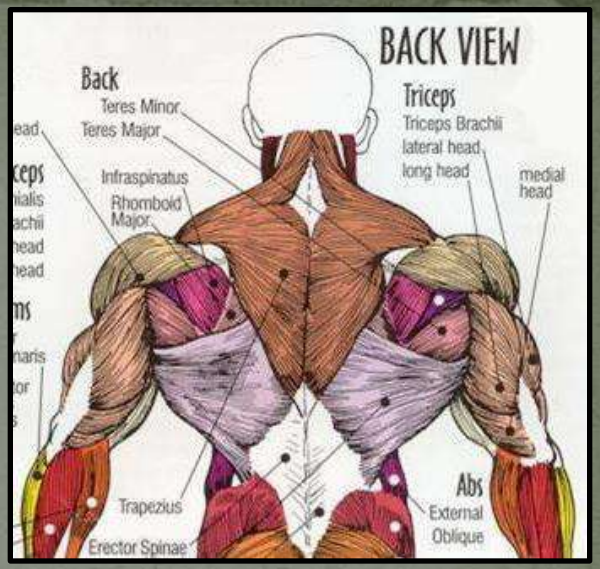


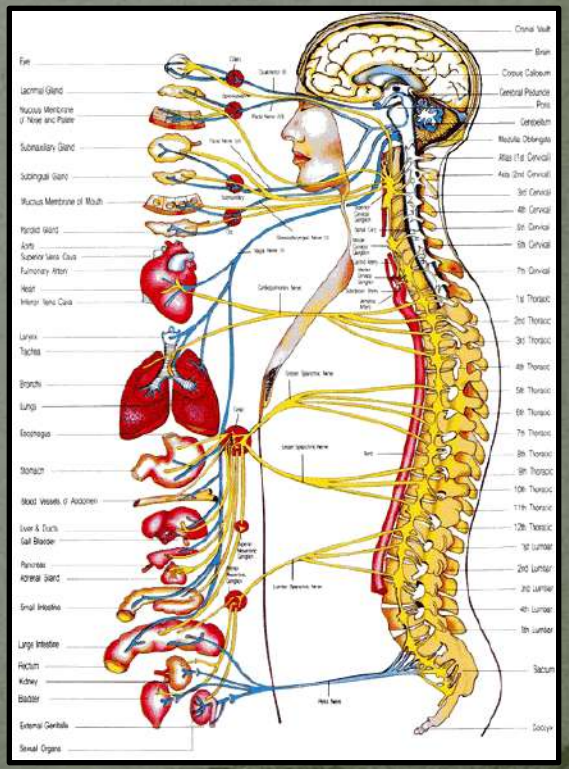
In The Back Of My Mind

AK Posture Check

Simple demonstration for relationship between posture and autonomic nervous system.

Try this: Pt stands up straight & puts arm out at 90° to side, then DC pushes down on arm. It should be strong. Now slump over (anterior head translation & flexion) with bad posture & push down again, the arm should be weak.





Deep Tendon Reflexes

Measured 0-5 (Wexler scale)

0: absent with reinforcement
1: hypoactive with no reinforcement or normal with reinforcement
2: normal
3: hyperactive
4: hyperactive with transient clonus
5: hyperactive with sustained clonus

Westphal's Sign absence of any DTR, especially patellar, lower motor neuron lesion

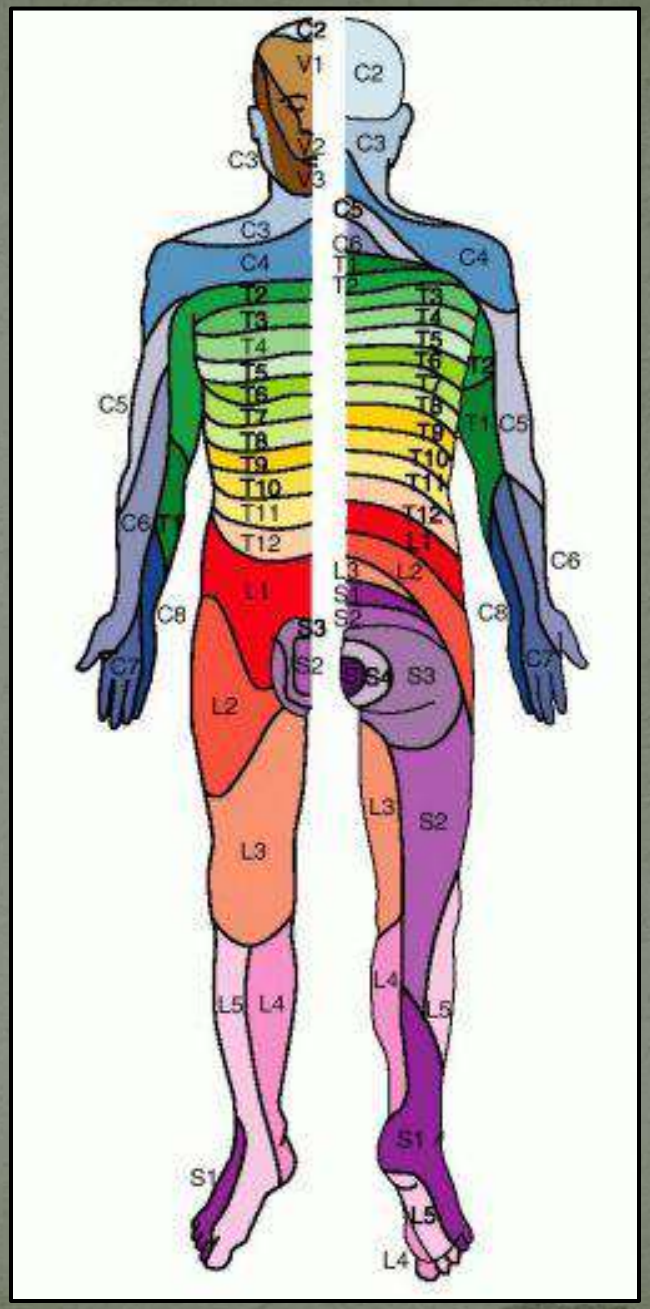
Jendrassik's Maneuver brings our reflex by cortical distraction.
AKA: Reinforcement Test or Cortical Distraction Test

Muscle Strength Tests

Muscle Gradations	Description
5- Normal	Complete range of motion against gravity with full resistance
4 – Good	Complete range of motion against gravity with some resistance
3- Fair	Complete range of motion against gravity
2- Poor	Complete range of motion with gravity eliminated.
1- Trace	Evidence of slight contractility. No joint motion.
0- Zero	No evidence of contractility

Sensory Dermatomes

- Radicular Symptoms
- Hypo/Hyperalgesia
- Hypo/Hyper/Anesthesia
- Temperature perception
- Vibration perception
- Proprioception Alteration
- 2 point Discrimination



Spinal Palpation

codes for spinal palpation:

S = Spasm
E = Edema
F = Fixation
H = Hypertonic
T = Tender
N = Nodule
P = Pain
+Mild
++Moderate
+++Severe

Orthopedic Exams

Now we will look at each exam form and revisit the orthopedic examinations for each section.

Comprehensive exam forms by body region:

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

- Cervical Spine
- TMJ
- Shoulder
- Elbow
- Wrist & Hand
- Thoraco/Lumbo/Pelvic Spine
- Hip
- Knee
- Ankle & Foot
- Trauma/Neurological

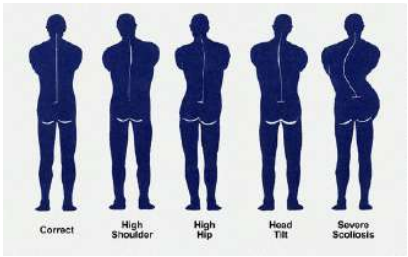
All forms are available in PDF format on the backtochiropractic.net website.

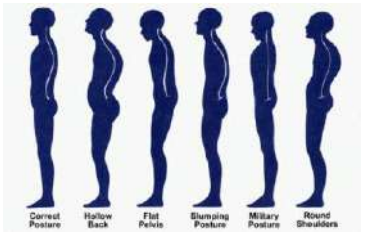
Click on: Free Practice & Patient Materials

Cervical Spine Physical Examination

All exam forms on website click on: Free Practice & Patient Materials

Cervical Spine Physical Examination





Vital Signs

Age	
Height	
Weight	
Pulse /min	
Respiration /min	
BP	
Temp	

Postural Analysis

Region	L	N	R
Head: Lateral Flexion			
Head: Rotation			
Head: Translation			
Cervical Muscle Tension			
Thoracic Muscle Tension			

Range Of Motion

		Passive		Active	
Cervical Spine	Norm	Exam	Pain	Exam	Pain
Flexion	45				
Extension	55				
Left Rotation	70				
Right Rotation	70				
Left Lat Flex	45				
Right Lat Flex	45				

Deep Tendon Reflexes

Reflex	Disc	Root	Left	Right
Biceps	C4-C5	C5		
Brachio	C5-C6	C6		
Triceps	C6-C7	C7		

0 = no response
1 = somewhat diminished
2 = normal
3 = brisk
4 = hyperactive

Thoracic Outlet

Exams	Norm	Ab
Adson's		
Mod Adson's		
Costoclavicular		
Hyperabduction		

Cervical Spine Exam

Test	Pain	Relief
Neutral Comp		
L Lat Comp		
R Lat Comp		
Flexion Comp		
Ext Comp		
L Rot Comp		
R Rot Comp		
L Sh Dep		
R Sh Dep		
Distraction		

Resistive Efforts

Cervical Spine	Pain/Weak
Flexion	
Extension	
Left Rotation	
Right Rotation	
Left Lat Flex	
Right Lat Flex	

Muscle Strength

Test	Root	Left	Right
Deltoid	C5		
Biceps	C6		
Triceps	C7		
Finger Flex	C8		
Finger Abd	T1		

5 = normal; full ROM, full resistance
4 = good; full ROM, some resistance
3 = fair; full ROM, against gravity
2 = poor; full ROM, no gravity
1 = trace; no motion, with contractility
0 = zero; no motion, no contractility

Dynamometer

Trial	Left	Right
1		
2		
3		
4		

Spinal Palpation

Left	Level	Right
	Occp	
	C1	
	C2	
	C3	
	C4	
	C5	
	C6	
	C7	
	T1	
	T2	

S = Spasm E = Edema
F + Fixation H = Hypertonic
T = Tender N = Nodule
P = Pain
+Mild ++Mod +++Severe

Sensory Dermatomes

Nerve	
C5	
C6	
C7	
C8	
T1	

Radicular Symptoms
Hypo/Hyperalgesia
Hypo/Hyper/Anesthesia
Temp/Vibration/Prop Alteration
2 point Discrimination

Cervical Spine Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Thoracic Outlet - cervical rib or scalenus anticus syndrome

Adson's Test Pt seated, DC palpates radial pulse as pt bends head obliquely backward toward side being checked, pt takes a deep breath. This will increase compression of subclavian artery and C8-T1 of brachial plexus against the 1st rib. Compare to opposite side.
Positive: weakening or completely obliterated pulse or increased paresthesias indicates pressure on neurovascular bundle, particularly subclavian artery as it travels through the scalene muscles.

Modified Adson's Test Pt seated, DC palpates radial pulse as pt bends head obliquely backward away from side being checked, pt takes a deep breath. This will increase compression of subclavian artery and C8-T1 of brachial plexus against the 1st rib. Compare to opposite side.
Positive: weakening or completely obliterated pulse or increased paresthesias indicate pressure on neurovascular bundle, particularly subclavian artery as it travels through the scalene muscles

Wright's Test Pt seated, DC helps pt hold their arm up and back (hyperabduction), rotating it outward, while DC checks pt pulse to see if it's diminished. Compare to opposite side.
Positive: weakening or completely obliterated pulse or increased paresthesias indicate pressure on neurovascular bundle, particularly subclavian artery as it travels through the scalene muscles

Costoclavicular Maneuver Draw the pt's shoulders inferiorly and posteriorly.
Positive: weakening or completely obliterated pulse or increased paresthesias indicate pressure on neurovascular bundle, particularly subclavian artery as it travels through the scalene muscles

TMJ Physical Exam

All exam forms on website click on: Free Practice & Patient Materials

TMJ

Inspection

Finding	Positive
Bony Palpation	
Soft Tissue Palpation	
Open 3 Fingers Width	
Clicks: Opening	
Clicks: Closing	
Deviation: Left	
Deviation: Right	
Deviation: W Shaped	

Orth/Neuro Tests

Test	Positive
Jaw Reflex	
Chvostek Test	

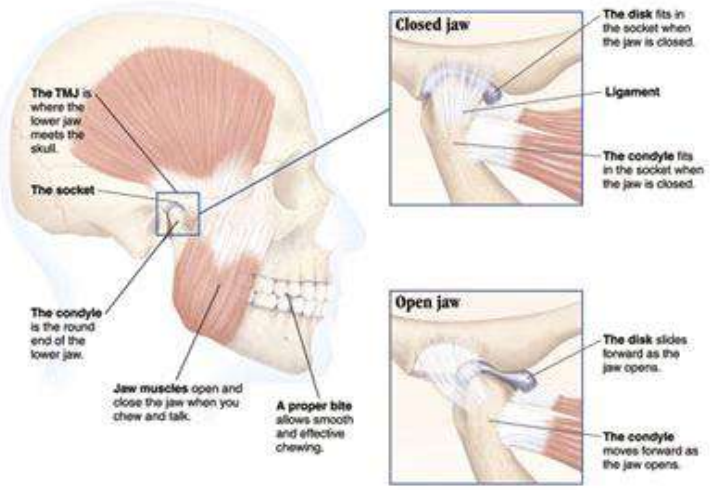
Muscle Strength

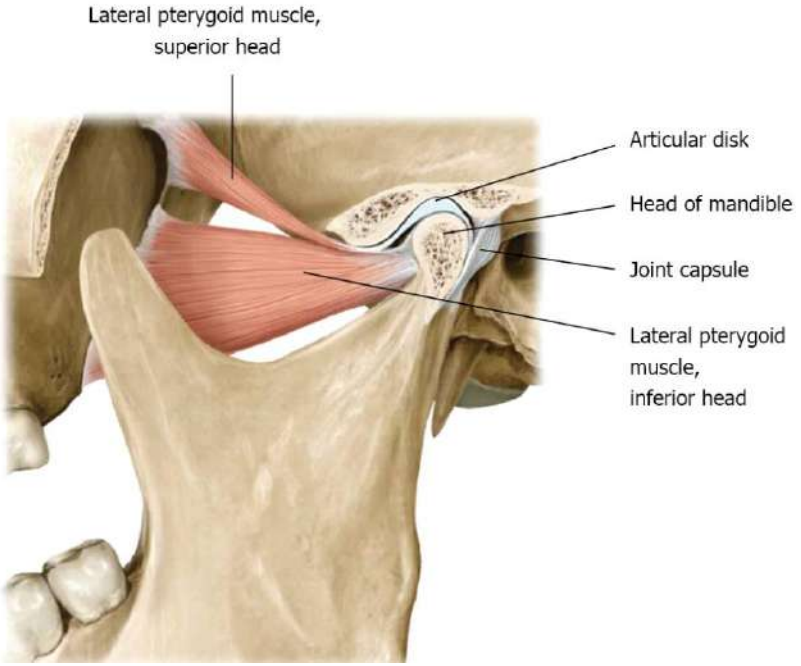
Muscle Group	Rating
Opening Muscles	
Closing Muscles	

5 = normal; full ROM, full resistance
4 = good; full ROM, some resistance
3 = fair; full ROM, against gravity
2 = poor; full ROM, no gravity
1 = trace; no motion, with contractility
0 = zero; no motion, no contractility

Opening Muscles
External Pterygoids
Hyoid Muscles

Closing Muscles
Masseter
Temporalis
Internal Pterygoids





Temporomandibular Joint Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Jaw Reflex Masseter reflex is a stretch reflex used to test the pt's trigeminal nerve (CN V). The mandible or lower jaw is tapped at a downward angle just below the lips at the chin while the mouth is held slightly open. The masseter muscles will jerk the mandible upwards. Normally this reflex is absent or very slight.
Positive: with upper motor neuron lesions the jaw jerk reflex can be hyperactive.

Chvostek's sign Tap the facial nerve at the angle of the jaw (masseter muscle). Normally this reflex is absent or very slight.
Positive: sign of tetany seen in hypocalcemia. Facial muscles on the same side of the face will contract momentarily (twitch of the nose or lips) due to hypocalcemia (from hypoparathyroidism, pseudohypoparathyroidism, hypovitaminosis D) with resultant hyperexcitability of nerves.

Shoulder Physical Exam

All exam forms on website click on: Free Materials

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Shoulder

Inspection

Finding	Positive
Mass	
Swelling	
Discoloration	
Deformity	
Cicatrix	
Joint Play	
Bony Palpation	
Soft Tissue Palpation	
Scapular Rhythm 2:1	

Passive Range Of Motion

Shoulder	Norm	Exam	Pain
Abd (hum int rot)			
Abd (hum ext rot)			
Adduction			
Flexion			
Extension			
Internal Rotation			
External Rotation			

Active Range Of Motion

Shoulder	Norm	Exam	Pain
Abd (hum int rot)			
Abd (hum ext rot)			
Adduction			
Flexion			
Extension			
Internal Rotation			
External Rotation			

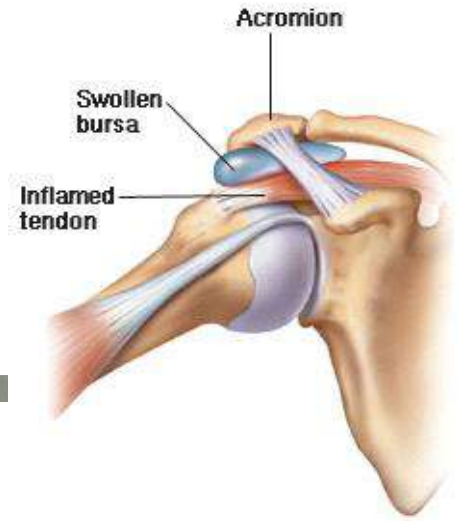
Orth/Neuro Tests

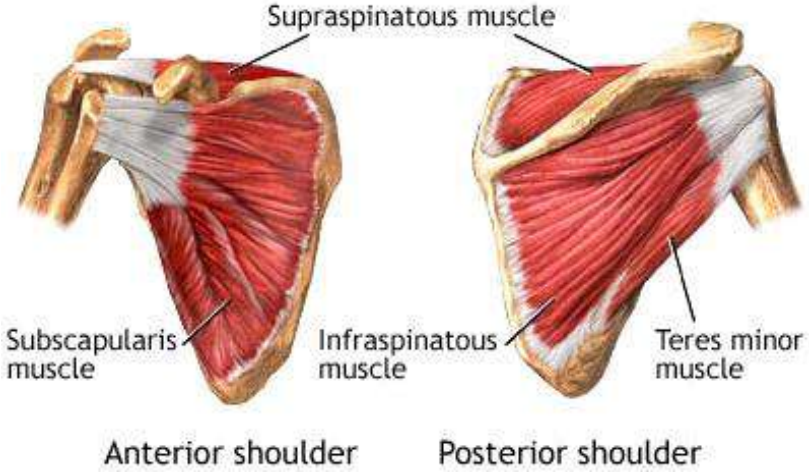
Test	Left	Right
Yergason's		
Drop Arm		
Apprehension		
Apley's		
Dugas'		
Jobe's		
Disappearing Bursa		

Muscle Strength

Test	Left	Right
Pec Major		
Pec Minor		
Ant Deltoid		
Middle Deltoid		
Post Deltoid		
Rhomboids		
Trapezius		
Suoraspinatus		
Infraspinatus		
Teres Minor		
Teres Major		
Suscapularis		
Latissimus Dorsi		

5 = normal; full ROM, full resistance
4 = good; full ROM, some resistance
3 = fair; full ROM, against gravity
2 = poor; full ROM, no gravity
1 = trace; no motion, with contractility
0 = zero; no motion, no contractility





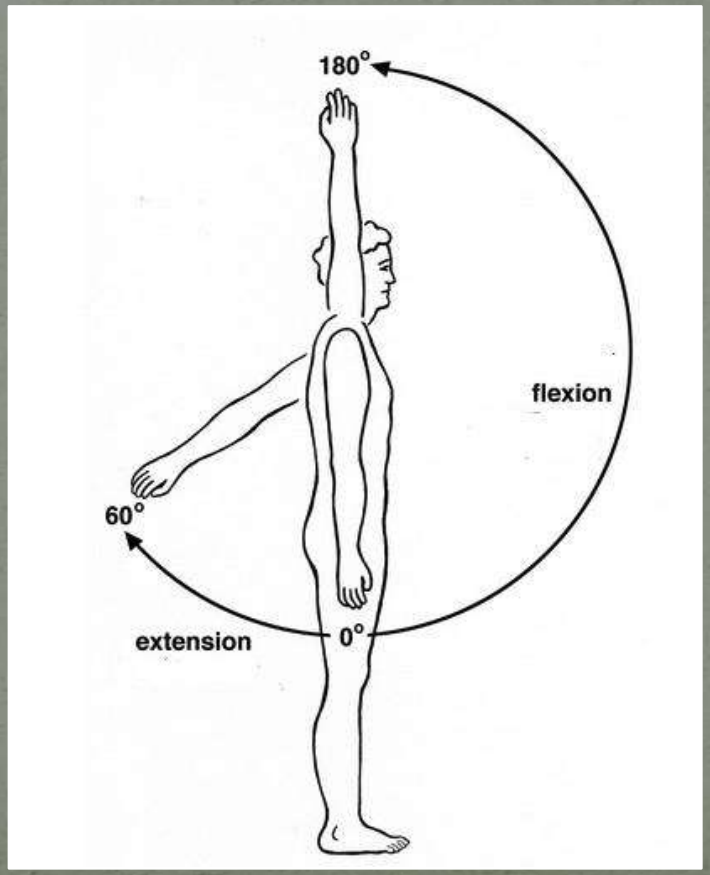
Shoulder Joint Physical Examination
Range of Motion

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Motion	Normal
Flexion	180°
Extension	60°
Adduction	45°
Abduction	180°
Internal Rotation	70°
External Rotation	90°

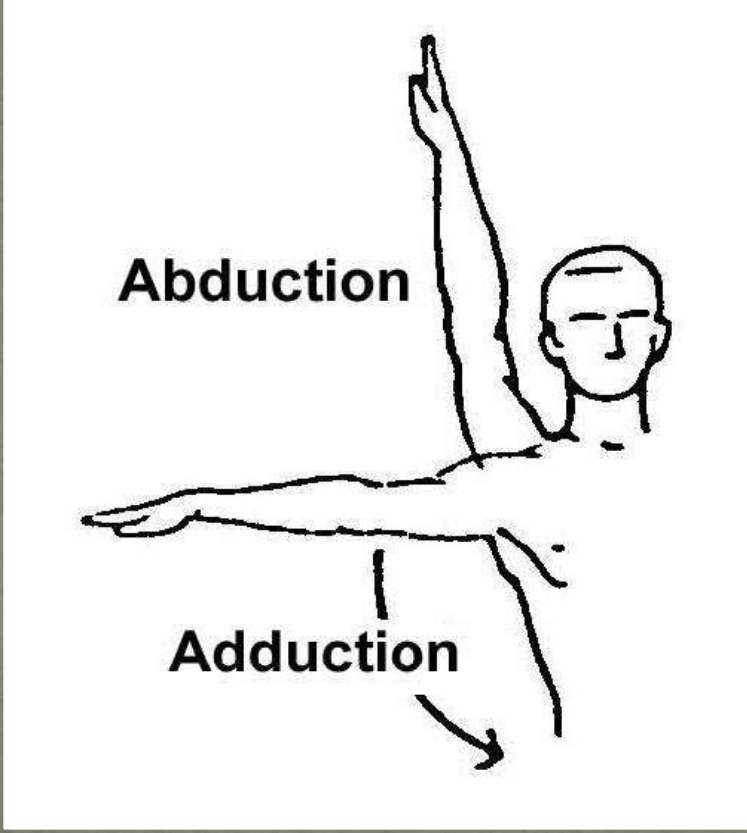
Shoulder Joint Physical Examination
Range of Motion ~ Flexion & Extension

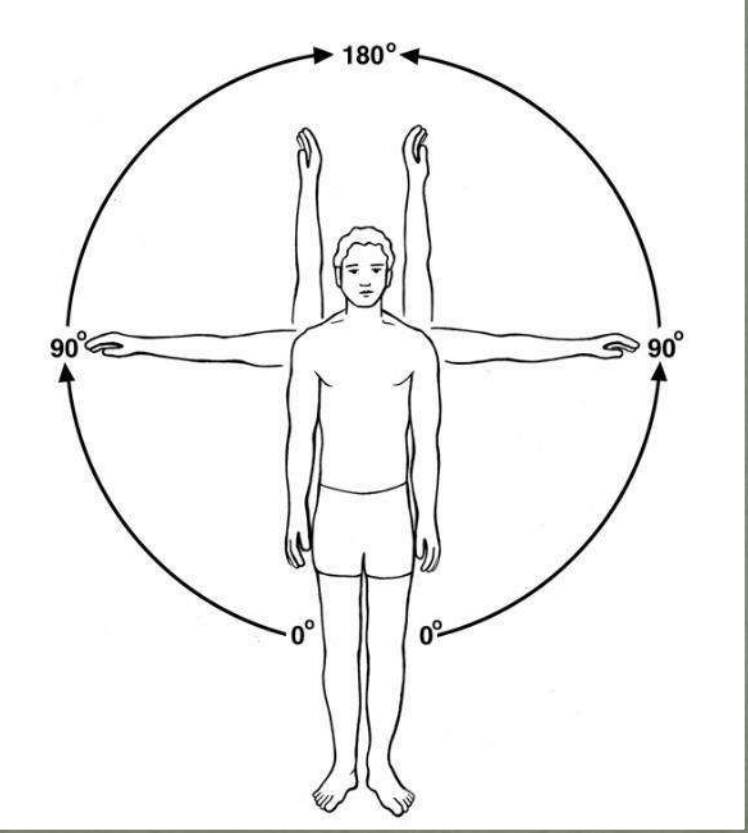
For each exam reviewed please take the time to grab a partner and perform the exam procedure.



Shoulder Joint Physical Examination
Range of Motion ~ Abduction & Adduction

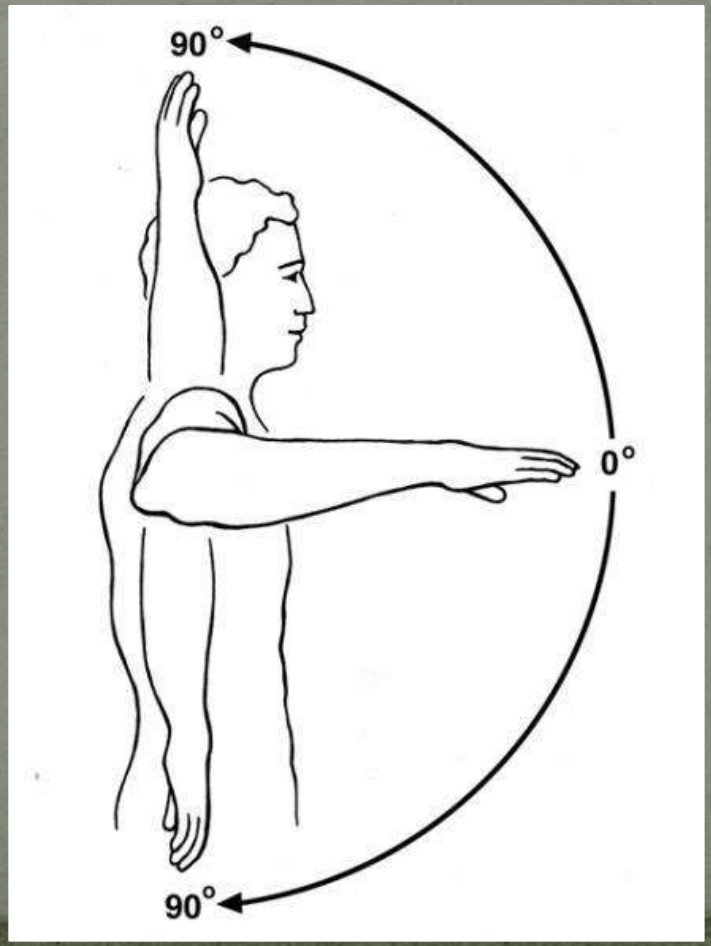
For each exam reviewed please take the time to grab a partner and perform the exam procedure.





Shoulder Joint Physical Examination
Range of Motion ~ Internal & External Rotation

For each exam reviewed please take the time to grab a partner and perform the exam procedure.



Shoulder Joint Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Yergason's Test

Pt's elbow is flexed to 90° and forearm pronated.
DC holds their arm at the wrist.
Pt actively supinates against resistance.

Positive:
Pain in bicipital groove area, indicates bicipital tendonitis.

Shoulder Joint Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

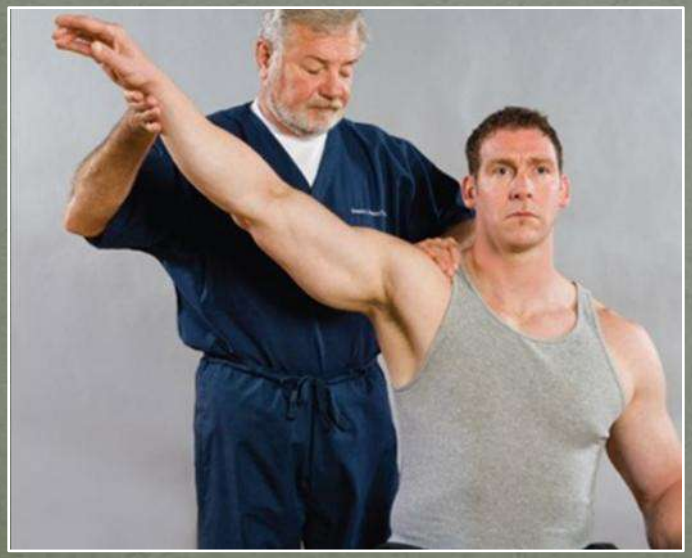
Drop Arm Test (Codman's)

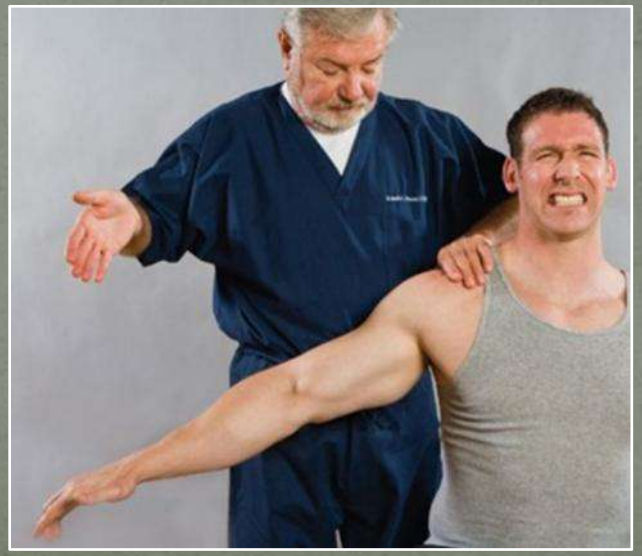
Passively abduct the shoulder to 90-120°, flex shoulder forward to 30°, elbows locked, and point thumbs down. DC drops pt's arms.

Positive:

Pt is unable to keep arm elevated after the DC releases.

Indicates rotator cuff tear: supraspinatus muscle/tendon tear/involvement.





Shoulder Joint Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Apprehension Test

Pt is supine with the scapula supported by the edge of exam table. The arm is positioned in 90° abduction and external rotation. With increasing external rotation the DC watches for pt apprehension.
If pt seated DC exerts an anterior translatory force with their thumb placed posteriorly on the humerus. However, their fingers are anterior to control any sudden instability episode that may occur.

Positive:
Pt apprehension. Pain alone is not a positive test. A positive test indicates a labral lesion and/or bony lesion at the anterior inferior rim of the glenoid.

Shoulder Joint Physical Examination

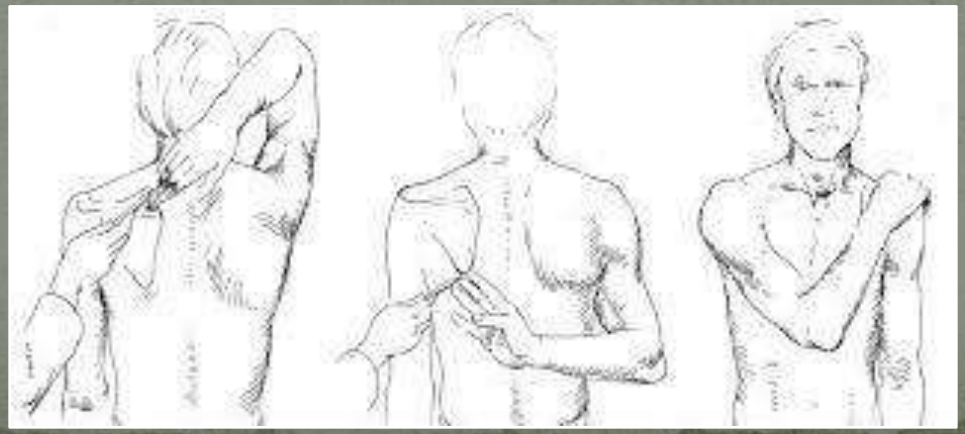
For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Apley's Scratch Test

1. Pt tries to reach behind their neck to touch between scapulae.
Positive: Decreased motion on involved side. Checks glenohumeral abduction, external rotation and scapular upward rotation and elevation.

2. Pt tries to reach up to shoulder blades as far as they can, starting from their lower back.
Positive: Decreased motion on involved side. Checks glenohumeral adduction, internal rotation and scapular retraction with downward rotation

3. Pt tries to touch opposite shoulder. Compare bilaterally.
Positive: Decreased motion on involved side. Checks glenohumeral adduction, internal rotation, horizontal adduction and scapular protraction.



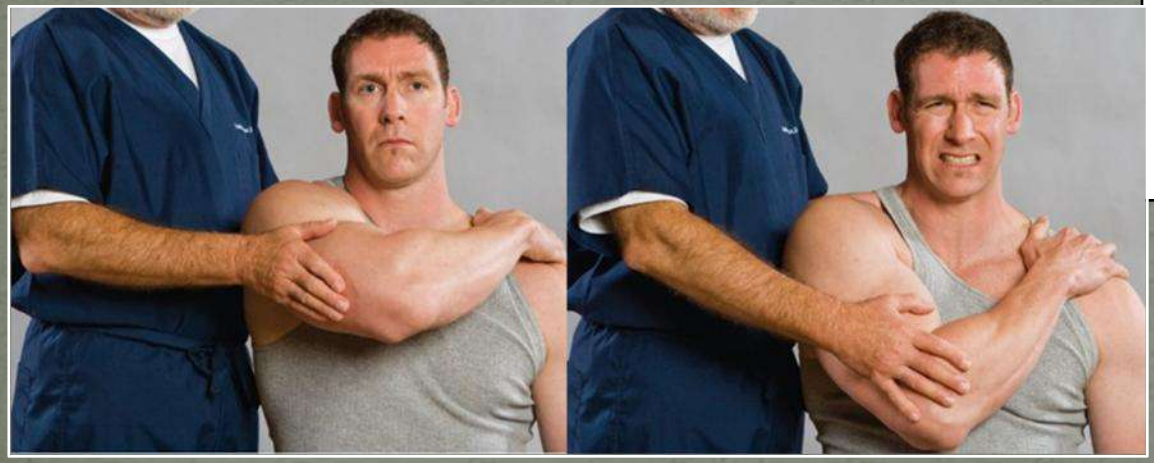
Shoulder Joint
Physical Examination

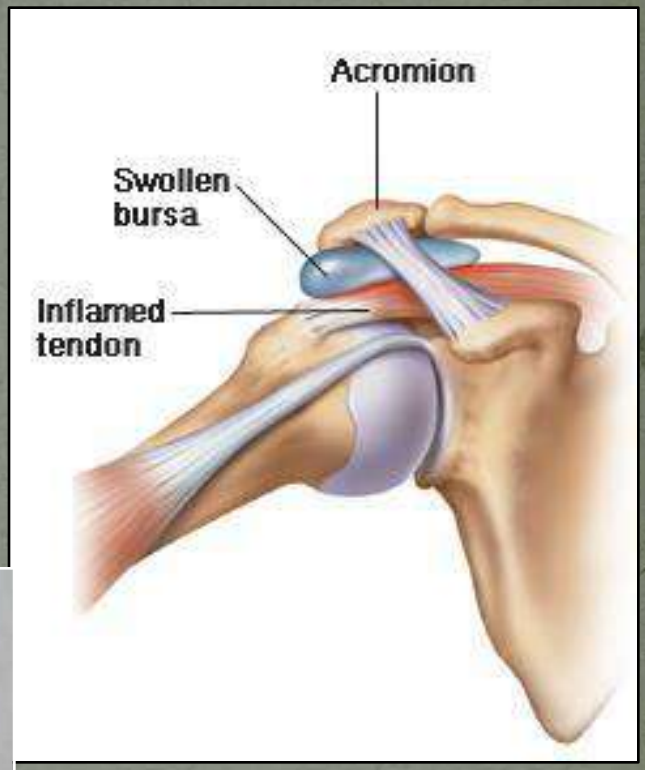
For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Dugas's Test

Pt attempts to place the hand of the involved side on the opposite shoulder and touch their elbow to their chest.

Positive: Pt can not perform test, indicates a dislocated shoulder.





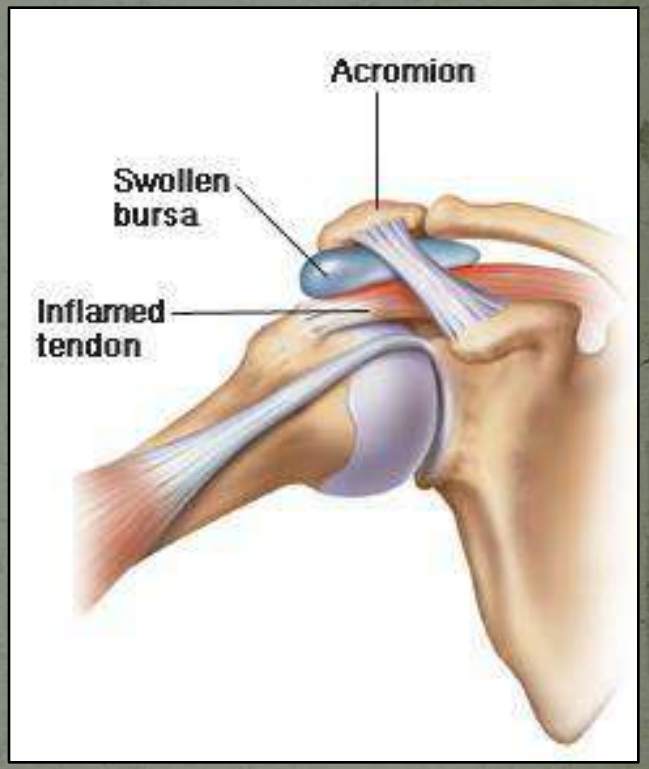
Shoulder Joint
Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Jobe's Test

Passively abduct pt's shoulder to 90°, flex shoulder to 30° and point thumbs down.
In this position, provide resistance as the pt lifts upward.

Positive: Pain or weakness suggests possible supraspinatus involvement or tear.



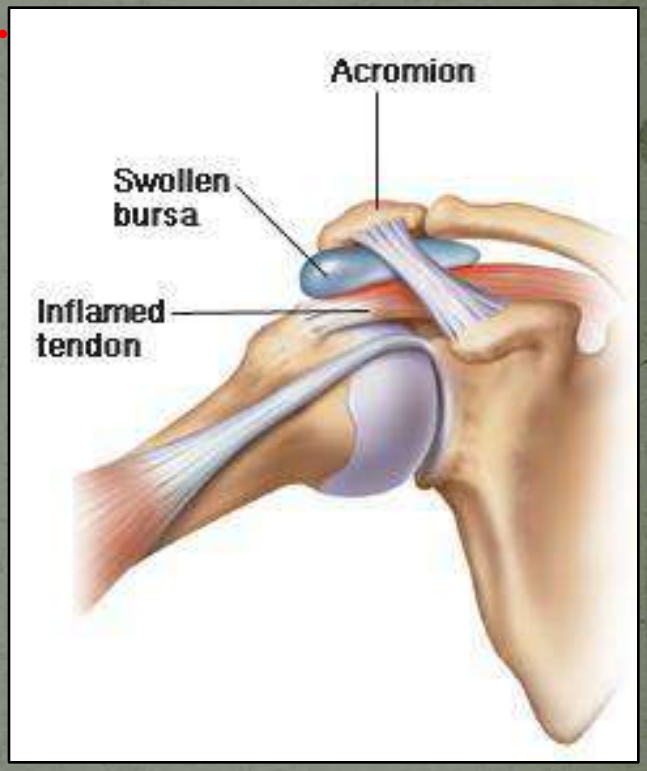
Shoulder Joint
Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Disappearing Bursa

Pt seated. DC palpates painful subacromial bursa and passively abducts arm.

Positive: Pain disappears with increasing abduction indicates subacromial bursitis.



Elbow Physical Examination

All exam forms on website click on: Free Practice & Patient Materials

Elbow

Inspection

Finding	Positive
Mass	
Swelling	
Discoloration	
Deformity	
Cicatrix	
Joint Play	
Bony Palpation	
Soft Tissue Palpation	
Gait Disturbance	
Carrying Angle	

Passive Range Of Motion

Elbow	Norm	Exam	Pain
Flexion	150		
Extension	0		
Pronation	90		
Supination	90		

Active Range Of Motion

Elbow	Norm	Exam	Pain
Flexion	150		
Extension	0		
Pronation	90		
Supination	90		

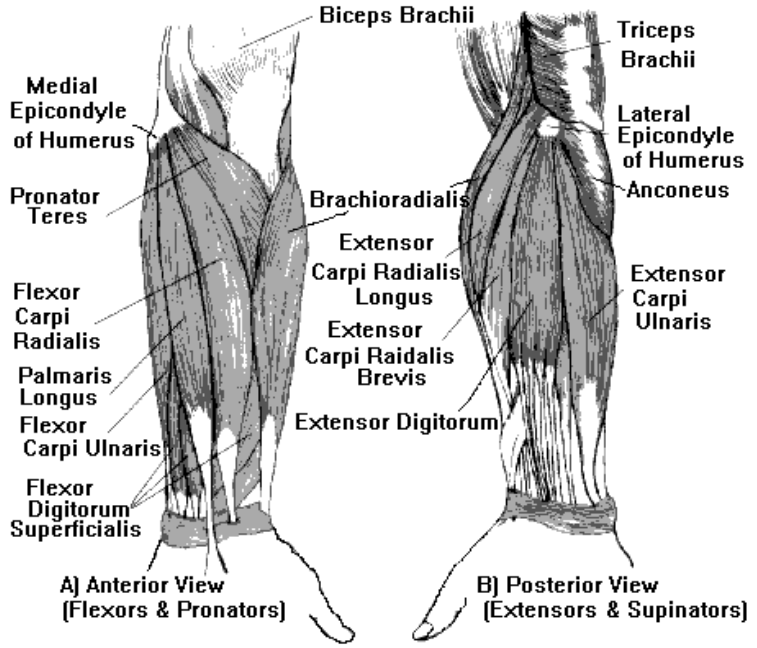
Orth/Neuro Tests

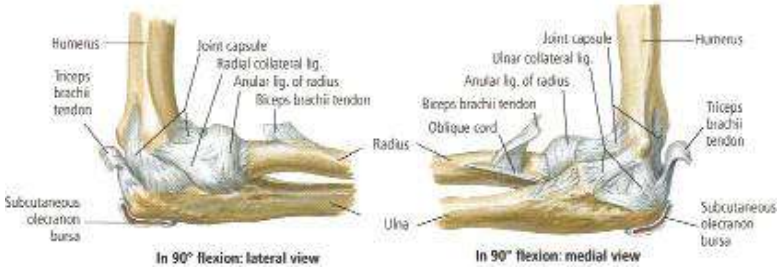
Test	Left	Right
Stability		
Tinel's		
Cozen's		
Apley's		
Mill's		

Muscle Strength

Test	Left	Right
Biceps		
Brachioradialis		
Triceps		
Wrist Flexors		
Wrist Extensors		

5 = normal; full ROM, full resistance
4 = good; full ROM, some resistance
3 = fair; full ROM, against gravity
2 = poor; full ROM, no gravity
1 = trace; no motion, with contractility
0 = zero; no motion, no contractility





Elbow Joint Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Mediolateral Stability: Stability testing is performed with the pt standing, shoulder braced backwards; DC is behind the pt. The elbow is slightly flexed, to bring the apex of the olecranon out of the fossa. Varus stability is checked with the humerus in full internal rotation,
while valgus stability is tested in full external rotation.

Positive: The physiological laxity of the elbow between 10 and 20° of flexion, in varus and in valgus, does not exceed 5°. In rotation (pronation and supination), it does not exceed 3°.

Anteroposterior Stability: Anteroposterior stability is controlled exclusively by the collaterals. The forearm is flexed to 90° and held by the DC with one hand, while the other hand holds the humerus, as anteroposterior stress is applied to the joint.

Positive: Motion in excess of 5°.

Elbow Joint Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Tinel's Test: DC locates ulnar nerve in groove between olecranon process and medial epicondyle. Ulnar nerve is then tapped on repeatedly by index finger of DC.

Positive: Tingling sensation in ulnar distribution of forearm and hand distal to tapping point.

Golfer's Test: Test for medial epicondylitis. Pt should be seated or standing and should have his/her fingers flexed in a fist position. DC palpates the medial epicondyle with one hand and grasps the pt's wrist with the other hand. DC then passively supinates the forearm and extends the elbow and wrist.

Positive: Pain or discomfort along the medial aspect of the elbow in the region of the medial epicondyle.

Cozen's Test: To assess lateral epicondylalgia, or tennis elbow. DC stabilizes pt's elbow with one hand while the pt is asked to pronate the forearm and extend and radially deviate the wrist against manual resistance of the DC.

Positive: Pain or reproduction of symptoms in the area of the lateral epicondyle.

Mill's Test: Pt is seated. DC palpates the pt's lateral epicondyle with one hand, while pronating the pt's forearm, fully flexing the wrist, the elbow extended.

Positive: Pain or reproduction of other symptoms in the area of the lateral epicondyle.

Wrist & Hand Physical Examination

All exam forms on website click on: Free Practice & Patient Materials

Wrist/Hand

Inspection

Finding	Positive
Mass	
Swelling	
Discoloration	
Deformity	
Cicatrix	
Joint Play	
Bony Palpation	
Soft Tissue Palpation	

Passive Range Of Motion

Wrist/Hand	Norm	Exam	Pain
Flexion	80		
Extension	70		
Medial Deviation	20		
Lateral Deviation	45		

Active Range Of Motion

Wrist/Hand	Norm	Exam	Pain
Flexion	80		
Extension	70		
Medial Deviation	20		
Lateral Deviation	45		

Orth/Neuro Tests

Test	Left	Right
Bunnel Littler		
Allen's		
Phalen's		
Reverse Phalen's		
Finkelstein's		
Tinel's		
Froment's		

Muscle Strength

Test	Left	Right
Flexors		
Extensors		
Medial Deviation		
Lateral Deviation		
Finger Abduction		
Finger Adduction		

5 = normal; full ROM, full resistance
4 = good; full ROM, some resistance
3 = fair; full ROM, against gravity
2 = poor; full ROM, no gravity
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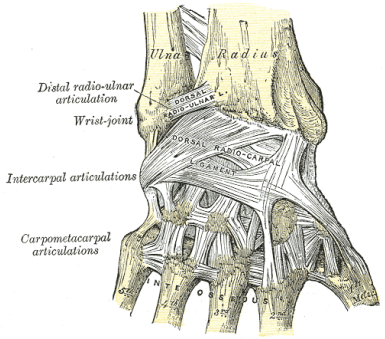
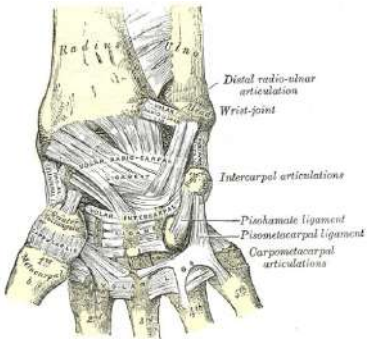
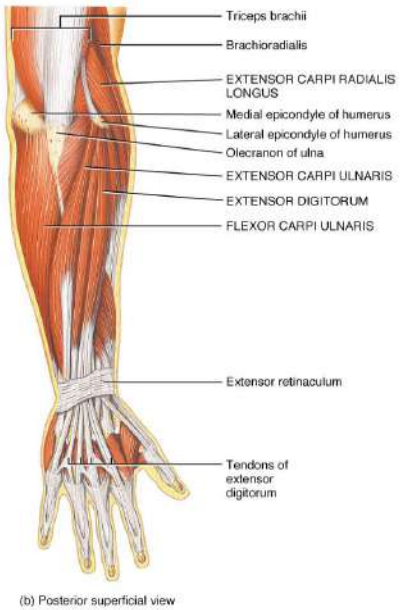




(a) Anterior superficial view



(b) Posterior superficial view

Wrist & Hand Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Bunnel Littler Test: Pt is seated with the metacarpophalangeal joint in slight extension. DC passively flexes the proximal interphalangeal joint of the same ray and assesses the amount of proximal interphalangeal joint flexion. DC then passively flexes the metacarpophalangeal joint slightly and assesses the amount of flexion at the proximal interphalangeal joint.
Positive: Proximal interphalangeal joint does not flex while the metacarpophalangeal joint is in an extended position.
Positive Test Implications: Proximal interphalangeal joint does not fully flex once the metacarpophalangeal joint is slightly flexed, intrinsic muscle tightness can be assumed.
If flexion of the proximal interphalangeal joint remains limited once the metacarpophalangeal joint is slightly flexed, capsular tightness can be assumed.

Allen's Test: Test wrist collateral blood flow. Pt elevates hand and makes a fist for 20 seconds. Firm pressure held against radial and ulnar arteries. Pt opens hand and it should blanche white. DC releases only ulnar compression. Repeat releasing only radial compression.
Normal Result: Hand color flushes within 5 to 7 seconds.
Positive: Inadequate collateral circulation.

Wrist & Hand Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Phalen's Test: Carpal tunnel syndrome or median nerve compression exam. Pt is seated or standing with the dorsal aspect of both hands in full contact so that both wrists are maximally flexed, (hands back-to-back). Pt applies a steady compressive force through the forearms so that the wrists are maximally flexed for 1 minute.
Positive: Numbness and tingling in the median nerve distribution of the fingers.

Reverse Phalen's Test: Carpal tunnel syndrome or median nerve compression exam. Pt is seated or standing with the palmar aspect of both hands in full contact so that both wrists are maximally extended, (praying position). Pt applies a steady compressive force through the forearms so that the wrists are maximally flexed for 1 minute.
Positive: Numbness and tingling in the median nerve distribution of the fingers.

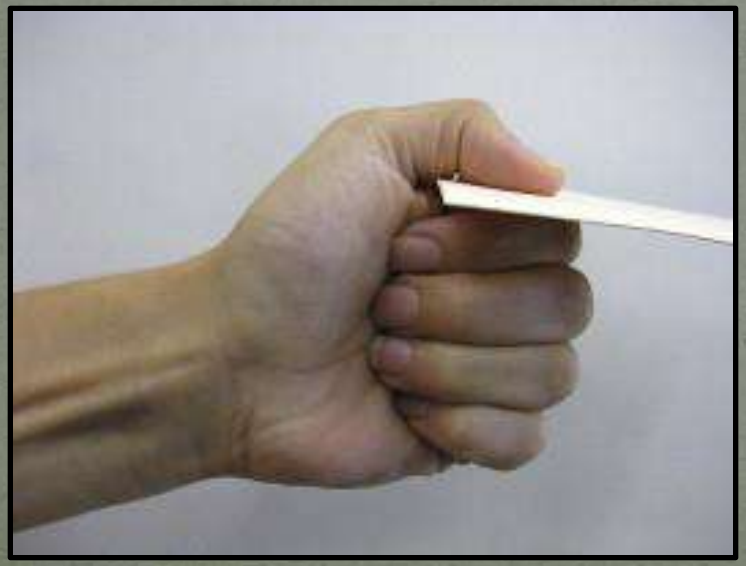
Finkelstein's Test: Pt is seated or standing and forms a fist around the thumb. DC grasps the pt's forearm with the proximal hand and the pt's fist with the distal hand. DC stabilizes pt's forearm with the proximal hand and ulnarly deviates the athlete's wrist and the distal hand.
Positive: Pain over the abductor pollicis longus and extensor pollicis brevis tendons distally. Possible tenosynovitis or pollicis longus and extensor pollicis brevis tendons.

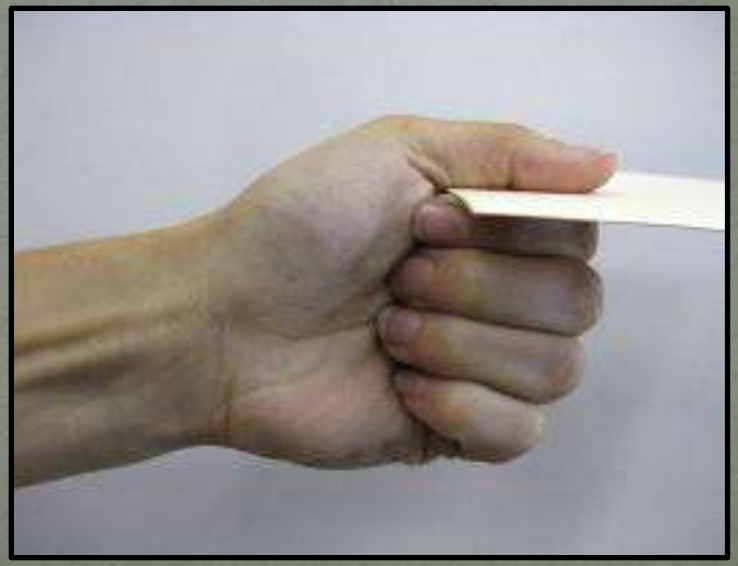
Wrist & Hand Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Tinel's Test: Examiner taps the volar (palm) aspect of the pt's wrist over the area of the carpel tunnel.
Positive: Tingling, paresthesia or pain in the area of the thumb, index finger, middle finger, and radial one–half of the ring finger. Compression of median nerve in carpal tunnel or carpal tunnel syndrome.

Froment's Test: Have pt grasp piece of paper between thumb and index finger. DC tries to pull paper away from pt.
Positive: If pt is forced to flex the tip of the thumb to maintain their grip on the paper, then this is evidence of an ulnar nerve lesion.





Thoraco/ Lumbo/ Pelvic Physical Examination

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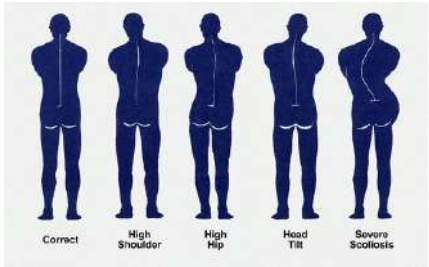
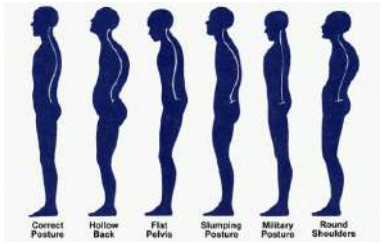
Thoraco/Lumbo/Pelvic Spine Physical Examination





Vital Signs

Age	
Height	
Weight	
Pulse /min	
Respiration /min	
BP	
Temp	

Postural Analysis

Region	L	N	R
Thoracic muscle tension			
Lumbar muscle tension			

Range Of Motion		Passive		Active	
T/L Spine	Norm	Exam	Pain	Exam	Pain
Flexion	90				
Extension	30				
Left Rotation	30				
Right Rotation	30				
Left Lat Flex	20				
Right Lat Flex	20				

Deep Tendon Reflexes

Reflex	Disc	Root	Left	Right
Quads	L3-L4	L4		
Hamstrings	L4-L5	L5		
Gastroc	L5-S1	S1		

0 = no response
1 = somewhat diminished
2 = normal
3 = brisk
4 = hyperactive

Resistive Efforts

T/L Spine	Pain/Weak
Flexion	
Extension	
Left Rotation	
Right Rotation	
Left Lat Flex	
Right Lat Flex	

Lumbo/Pelvic Exam

Ortho Exams	Left		Right	
	N	Ab	N	Ab
Nachlas				
Yeoman's				
Ely's				
Hibb's				
SLR				
WLR				
Braggard's				
Patrick's				
Goldthwaite's				
Soto-Hall's				
Gainslen's				
Brud/Kernig's				
Hoover's				

Lumbo/Pelvic Exam

Exams	N	Ab
Minor's		
Lewin's		
Kemp's		
Gillet's		
Trendelenburg's		
Valsalva's		
Lhermitte's		
Babinski's		

Leg Length Measured

Measurement	Left	Right
ASIS-Lat Mal		
GrTro-Lat Mal		

Derefield Leg Check

Position	Even	L Sh	R Sh
1			
2			

Spinal Palpation

Left	Level	Right
	T1	
	T2	
	T3	
	T4	
	T5	
	T6	
	T7	
	T8	
	T9	
	T10	
	T11	
	T12	
	L1	
	L2	
	L3	
	L4	
	L5	
	S1	

S = Spasm E = Edema
F + Fixation H = Hypertonic
T = Tender N = Nodule
P = Pain
+Mild ++Mod +++Severe

Sensory Dermatomes

Nerve	
L2	
L3	
L4	
L5	
S1	

Radicular Symptoms
Hypo/Hyperalgesia
Hypo/Hyper/Anesthesia
Temp/Vibration
Prop Alteration
2 point Discrimination

Thoraco/Lumbo/Pelvic Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Nachlas: Pt is prone. DC flexes the pt's knee to a right angle; then, with pressure against the anterior surface of the ankle, the heel is slowly directed straight toward the ipsilateral buttock. The contralateral ilium should be stabilized by DC's other hand.
Positive: Sharp pain in ipsilateral gluteal or SI joint region, think SI involvement. If pain is in the low back area or produces radiating nerve symptoms , then think lumbar involvement.

Yeoman's Pt is prone. With one hand, pressure is applied by DC over the involved SI joint, pressing the pt's pelvis onto the table. With the other hand the DC flexes the pt's leg on the affected side to the end range of motion, and the thigh is hyperextended by the DC lifting the knee up off the table.
Positive: Pain in the SI joint area, indicates SI or hip joint involvement. Normal is no pain.

Ely's Pt is prone with toes hanging off the table. DC moves heel toward the opposite buttock.
Positive: Hip pain in psoas muscle and the pelvis may rise up on the involved side. Also may indicate a tight rectus femoris or tensor fascia lata, or lumbar spine or hip involvement.

Hibb's Pt is prone and DC stands next to pt on involved side. DC stabilizes pt's contralateral uninvolved hip, flexes pt's knee on involved side toward the buttock, and then slowly adducts the leg, causing external rotation of the femur.
Positive: Pain in hip joint indicates a hip joint lesion; pain in SI joint but not the hip indicates SI joint involvement.

Thoraco/Lumbo/Pelvic Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Straight Leg Raise (SLR) Pt is supine on table. DC lifts leg, with knee locked, into the air.
Positive: Recreate symptoms, pain down leg between 30-70° of hip flexion. Used to help diagnose a lumbar herniated disc. If there is pain *before* the leg is at 30°, then it probably is not a herniated disc pressing on the nerve. Before 30°, the nerve root isn't stretched.

Well Leg Raise (WLR) Pt is supine on table. DC lifts leg (non-test side), with knee locked, into the air.
Positive: Pain in the opposite leg suggests herniated disc involvement.

Braggard's (SLR with foot dorsiflexion)
Positive: Pain in 0-35°(of SLR), suspect extradural sciatic nerve irritation.
Pain in 35-70° (of SLR), suspect disc involvement.

Patrick's (FABERE) FABERE: flexion, abduction, and external rotation . Pt is supine on table. DC takes involved leg and flexes knee and rotates it so inside of knee faces up. DC places foot on opposite knee. DC stabilizes pelvis by placing hand on pelvis on opposite side.
Positive: Pain in the groin, buttocks, pelvis, or back, indicates SI or hip joint involvement.

Goldthwaite's Pt is supine on table. DC places one hand under lumbar spine against the interspinous spaces. DC's other hand does a SLR test.
Positive: Pain or recurring symptoms in range of 0-30º, (before lumbar processes open) indicates SI joint involvement; 30-60º, suggests a lumbosacral lesion; 60-90º, an L1–L4 disc lesion. Repeat on uninvolved side. When the uninvolved side can be raised higher than the involved side, it indicates SI joint involvement on the involved side.

Thoraco/Lumbo/Pelvic Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Soto-Hall's Pt is supine. DC places one hand on pt's sternum, with mild pressure to prevent flexion of the lumbar or thoracic spine. DC's other hand is under the pt's occiput and head is slowly flexed.
Positive: Acute local pain when spinous process of injured vertebra is pulled.
Possible vertebral fracture.

Gainslen's Pt is supine, with knees and hips flexed by pt who grabs knees with both hands and pulls them toward thorax. Lumbar spine firmly contacts table and fixes both pelvis and lumbar spine.
Pt slid to side of table and DC slowly hyperextends thigh as far as you can below level of table.
Maintain pressure on pt's opposite knee. The hyperextension of the hip exerts force on pelvis.
Perform bilaterally.
Positive: Pain is felt in the SI area or referred down the thigh. May indicate SI, hip, or lower lumbar nerve root lesion.

Brudzinski's Pt is supine. DC places one hand on pt's sternum, with mild pressure to prevent flexion of the lumbar or thoracic spine. DC's other hand is under the pt's occiput and head is slowly flexed.
Positive: Hips and knees flex. Indicates meningeal iriation and is associated with meningitis.

Kernig's Pt is supine. Flex thigh so that it is at a right angle to trunk, and then completely extend leg at the knee joint.
Positive: If leg cannot be completely extended due to spinal pain. Possible meningitis.

Thoraco/Lumbo/Pelvic Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Hoover's This should be done if pt says they can not raise their leg and malingering is suspected.
Pt is supine. DC places hand under pt's calcaneus. Have pt try to lift opposite leg. DC feels for pressure on hand from pt pushing down.
Positive: Pt says they are trying and DC feels no downward pressure. Suspect malingering.

Minor's Watch pt get out of a chair.
Positive: Pt does anything to take weight off their back. Body weight supported on uninvolved side by holding on to chair for support or pt places hands on knees or thighs while pushing into an upright position. Sign suggests SI joint lesions, lumbosacral strains and sprains, fractures, disc syndromes, and dystrophies and myotonias.

Lewin's Pt in sidelying position with downside leg flexed at hip and knee. DC stabilizes upper hip with one hand. With the other hand, upper leg is grasped near the knee and the thigh is extended on the hip.
Positive: Recurring pain or symptoms suggests a SI joint involvement.

Kemp's Pt supported by DC in a seated position. Pt is asked to lean forward to one side and then back around to eventually bend obliquely backward by placing their palm on their buttock and sliding it down the back of the thigh and leg as far as possible. This should close the IVF and cause compression of the nerve roots in low back.
Positive: Compression causes or aggravates radicular pain in the thigh and leg, indicative of nerve root compression. Also may indicate a strain/sprain and can occur at any point during the test.

Thoraco/Lumbo/Pelvic Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Gillet's Pt stands while DC palpates PSIS with one thumb and palpates sacrum with the other thumb staying parallel to the first thumb. The pt is asked to stand on one leg while pulling the opposite knee up toward their chest. Repeat on other side and compare bilaterally. PSIS on the side of hip flexion should move slightly anterior.
Positive: When PSIS on ipsilateral side of knee flexion does not move or moves minimally in the inferior direction. Indicates SI joint involvement.

Trendelenburg's Pt stands on one foot lifting the other foot up off the ground.
Positive: Pt's pelvis tilts towards the lifted foot, with added knee flexion needed to prevent the foot from hitting the ground. Note the involvement is on the contralateral side to the fallen hip.
May indicate: abductor weakness, subluxation or dislocation of hip, shortened femoral neck.
Pt's with a positive Trendelenburg's test usually walk with a "dipping gate".

Valsalva's Pt forcibly exhales or pushes downward through their gut while keeping their mouth and nose closed. This increases intraspinal pressure.
Positive: Pain and symptoms recur. Indicates nerve impingement by an intervertebral disc.

Lhermitte's Pt is seated. Pt tips head into flexion.
Positive: Sudden transient electric-like shocks extending down spine. Indications: compression of cervical spine, MS, disc degeneration, herniation of cervical disc, cervical spinal cord tumor.

Thoraco/Lumbo/Pelvic Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Babinski's Firmly stroke the bottom of the pt's foot.
Positive: Big toe moves toward the top surface of the foot and the other toes fan out.
This reflex, or sign, is normal in very young children. It is not normal after age 2.
Indicates damage to nerve paths connecting spinal cord and brain (corticospinal tract).

Possible causes:

Amyotrophic lateral sclerosis (Lou Gehrig's disease)
Brain tumor
Friedreich's ataxia
Head injury
Hepatic encephalopathy
Meningitis
Multiple sclerosis
Pernicious anemia
Poliomyelitis (some forms)
Rabies
Spinal cord injury
Spinal cord tumor
Stroke
Syringomyelia
Tuberculosis (when it affects the spine)

Hip Physical Examination

All exam forms on website click on: Free Practice & Patient Materials

Hip

Inspection

Finding	Positive
Mass	
Swelling	
Discoloration	
Deformity	
Cicatrix	
Joint Play	
Bony Palpation	
Soft Tissue Palpation	
Gait Disturbance	
Antalgia	

Passive Range Of Motion

Hip	Norm	Exam	Pain
Flexion	120		
Extension	30		
Internal Rotation	35		
External Rotation	45		
Abduction	45		
Adduction	25		

Active Range Of Motion

Hip	Norm	Exam	Pain
Flexion	120		
Extension	30		
Internal Rotation	35		
External Rotation	45		
Abduction	45		
Adduction	25		

Orth/Neuro Tests

Test	Left	Right
Hibb's		
Patrick FABERE's		
Thomas		

Muscle Strength

Test	Left	Right
Flexors		
Extensors		
Abductors		
Adductors		
Internal Rotators		
External Rotators		
Quadriceps		
Hamstrings		

5 = normal; full ROM, full resistance
4 = good; full ROM, some resistance
3 = fair; full ROM, against gravity
2 = poor; full ROM, no gravity
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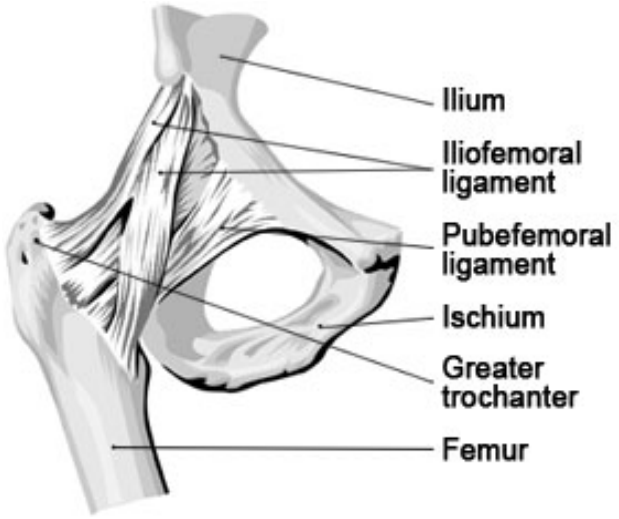
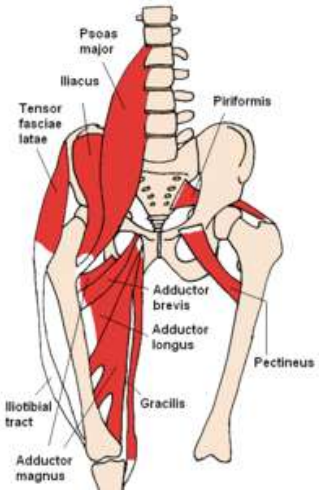
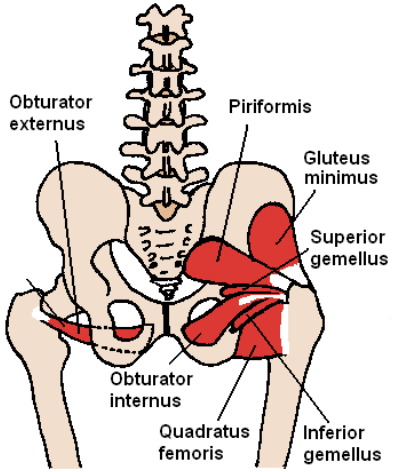






Hip Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Hibb's Pt is prone. DC stands next to pt on involved side. DC stabilizes pt's contralateral uninvolved hip, flexes pt's knee on involved side toward the buttock, and then slowly adducts the leg, which externally rotates the femur.
Positive: Pain initiated in hip joint indicates a hip lesion; pain rising in SI joint but not the hip indicates a SI joint lesion.

Patrick's (FABERE) FABERE: flexion, abduction, and external rotation . Pt is supine on table. DC takes involved leg and flexes knee and rotates it so inside of knee faces up. DC places foot on opposite knee. DC stabilizes pelvis by placing hand on pelvis on opposite side.
Positive: Pain in the groin, buttocks, pelvis, or back, indicates SI or hip joint involvement.

Thomas Pt is supine. DC checks for lordosis which is increased with tight hip flexor. DC then flexes one hip bringing the knee to the chest and asks pt to hold the knee to help stabilize the pelvis and flatten out the lumbar region.
Positive: Leg being tested (leg on table) will raise off of table. If pt does not have a hip flexion contraction it will remain flat on the table.
Alternative: Test can be performed with starting position of both knees fully flexed to the chest and slowly lowering the leg being tested to see if the leg makes it to the table.
Positive: Lack of full hip extension with knee flexion less than 45° indicates iliopsoas tightness.

Knee Physical Examination

All exam forms on website click on: Free Practice & Patient Materials

Knee Physical Examination

Knee

Inspection

Finding	Positive
Mass	
Swelling	
Discoloration	
Deformity	
Cicatrix	
Joint Play	
Bony Palpation	
Soft Tissue Palpation	
Gait Disturbance	
Antalgia	

Muscle Strength

Test	Left	Right
Flexors		
Extensors		
Abductors		
Adductors		

5 = normal; full ROM, full resistance
4 = good; full ROM, some resistance
3 = fair; full ROM, against gravity
2 = poor; full ROM, no gravity
1 = trace; no motion, with contractility
0 = zero; no motion, no contractility

Passive Range Of Motion

Knee	Norm	Exam	Pain
Flexion	130		
Extension	5		
Internal Rotation	10		
External Rotation	10		

Active Range Of Motion

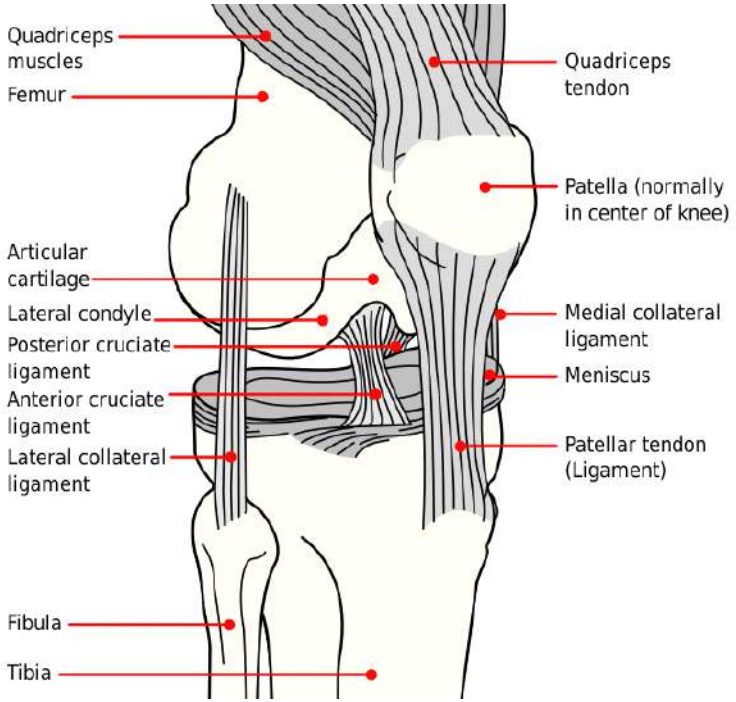
Knee	Norm	Exam	Pain
Flexion	130		
Extension	5		
Internal Rotation	10		
External Rotation	10		

Orth/Neuro Tests

Test	Left	Right
Pat/Femoral Grind		
Effusion		
Apprehension		
Tinel's		
Anterior Drawer		
Ant Drawer w/Rot		
Posterior Drawer		
Post Drawer w/Rot		
Helfet's		
McIntosh's		
Lachman's		
Hyperflexion		
McMurray's		
Steinman's		
Apley's		

Circumference

Knee	Left	Right
Inches		



Knee Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Patellar/Femoral Grind Pt is supine with the involved knee extended. DC places web space of his hand just above the patella while applying pressure. Pt gently and slowly contracts the quadriceps.
Positive: Pain indicates patellofemoral joint involvement.

Effusion: Observe pt's knee. Look for gross asymmetries, such as the obliteration of the normal indentations.
Part 1. Try to create a fluid wave. Have pt supine with leg extended, and place one hand over the supra-patellar pouch and the other hand distal to the patella. Press down with the upper hand.
Positive: If fluid is present, you will feel it against your lower hand (diffuse tissue swelling will NOT create a wave). Indicates fluid in the knee.
Part 2. Gently push down on the patella.
Positive: If you can depress it, then the patella was "floating" in fluid before you pressed.
Indicates fluid in the knee.

Apprehension Pt is supine. Knee flexed to 30° or knee is in full extension.
DC applies pressure from medial patella forcing it laterally. Pt tightens quadriceps muscle.
Positive: Pain. Possibly indicates: patellofemoral syndrome, lateral patellofemoral instability or patellar subluxation (recent acute knee injury)

Tinel's Tap on fibular head to assess common peroneal nerve.
Positive: Numbness or tingling or reproduction of pts symptoms.

Knee Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Anterior/Posterior Drawer Pt is supine. Hips flexed to 45°. Knees flexed to 90°. Feet flat on table. DC can sit on pt's feet to fix in place. Hold lower leg above calf with both hands.
Apply sudden firm pull forward (Anterior Drawer)
Apply sudden firm push back (Posterior Drawer)
Repeat maneuver in 3 positions of tibial rotation:
1. Tibia with no rotation 2. Tibia 30° internally rotated 3. Tibia 30° externally rotated

Positive: Normal is no more than 6-8 mm of laxity.
Anterior Drawer: Endpoint laxity indicates Anterior Cruciate Ligament Rupture.
Posterior Drawer: Endpoint laxity indicates Posterior Cruciate Ligament Rupture.

Helfet's Test (Screw Home Mechanism) - this is a normal knee function and if absent may indicate meniscal pathology, other internal derangement, or patellofemoral dysfunction.
How to: Pt sits with knees flexed over the edge table. A skin pencil is used to mark the midpoints of the tibial tuberosity and patella. These should align vertically. The pt extends the knee slowly to full extension and then DC makes markings again.
Positive: The 2nd mark does not lie lateral to the first mark on the tibia.
Indicates meniscal pathology, internal derangement, patellofemoral pathology

McIntosh's Pt lies on side. Involved knee extended and tibia internally rotated. DC applies valgus stress to knee (push from lateral side). Flex knee.
Positive: Clunk felt at 30° knee flexion, indicates possible ACL rupture.

Knee Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Lachman's Pt is supine with knee in slight external rotation and 15-20° of flexion fully relaxed. DC stabilizes the anterior right femur with the right hand and draws the tibia anteriorly with the left hand at the posterior calf. This is most reliable test of ACL insufficiency
Positive: Pain and lack of firm end feel and increased displacement as compared to opposite side..

Hyperflexion Pt is supine. Hyperflex the knee.
Positive: Pain. Indicates meniscus involvement.

McMurray's Pt is supine. Foot is held in one hand by DC while the other hand palpates the joint line on both sides of the knee. Fully flex and extend the knee.
Positive: A click or grinding may indicate a tear of the meniscus.

Steinman's Pt supine. Knee held flexed at 90° and forced to external rotation, then internal rotation.
Positive: Pain upon external rotation indicates medial meniscal tear,
Pain upon internal rotation indicates lateral meniscal tears.

Apley's Grind Test Pt is prone with knee flexed to 90°. DC stabilizes posterior thigh with one hand while grasping plantar surface of the foot with the other hand. Then DC pushes down while internally and externally rotating the foot.
Positive: Pain on lateral rotation indicates lateral meniscus involvement and medial indicates medial meniscus involvement. For ligamentous injury the opposite side will have pain.

Ankle & Foot Physical Examination

All exam forms on website click on: Free Practice & Patient Materials

Ankle/Foot

Inspection

Finding	Positive
Mass	
Swelling	
Discoloration	
Deformity	
Cicatrix	
Joint Play	
Bony Palpation	
Soft Tissue Palpation	
Gait Disturbance	
Shoe Wear	

Passive Range Of Motion

Ankle/Foot	Norm	Exam	Pain
Plantar Flexion	45		
Dorsi Flexion	25		
Subtalar Inersion	5		
Subtalar Eversion	5		
Forefoot Abd	20		
Forefoot Add	10		

Active Range Of Motion

Ankle/Foot	Norm	Exam	Pain
Plantar Flexion	45		
Dorsi Flexion	25		
Subtalar Inersion	5		
Subtalar Eversion	5		
Forefoot Abd	20		
Forefoot Add	10		

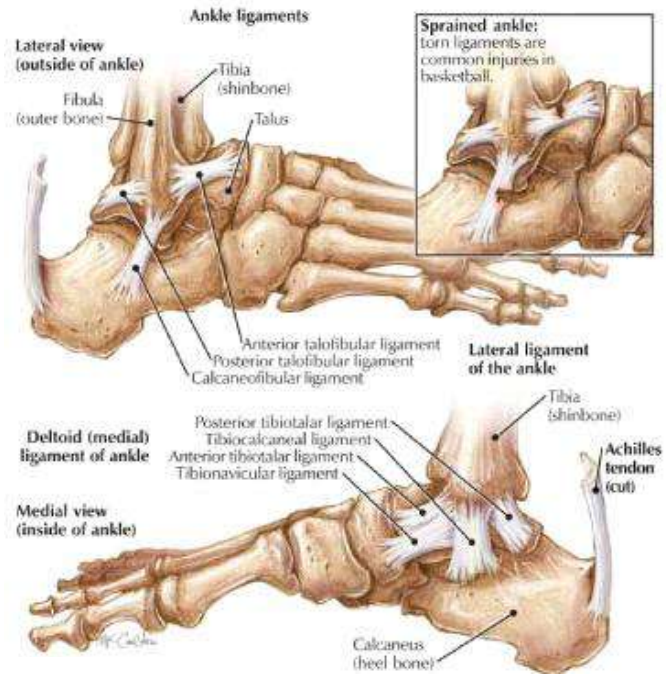
Orth/Neuro Tests

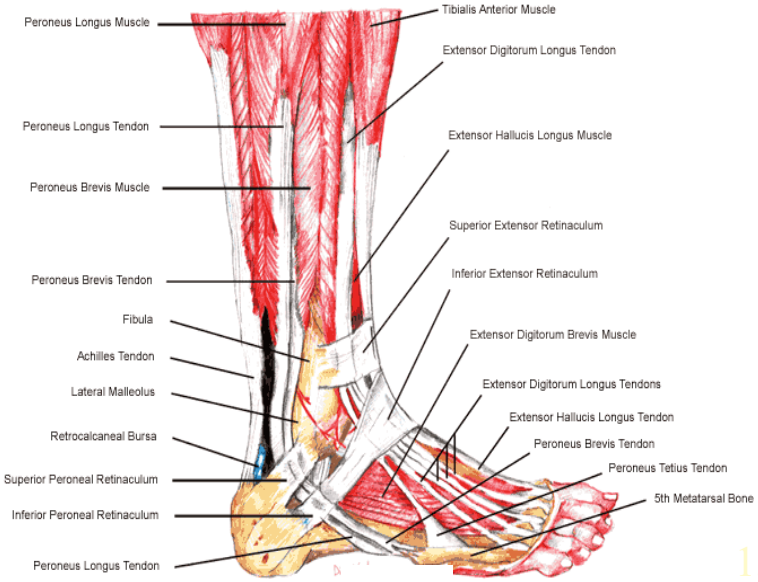
Test	Left	Right
Anterior Drawer		
Lateral Stress		

Muscle Strength

Test	Left	Right
Flexors		
Extensors		
Abductors		
Adductors		

5 = normal; full ROM, full resistance
4 = good; full ROM, some resistance
3 = fair; full ROM, against gravity
2 = poor; full ROM, no gravity
1 = trace; no motion, with contractility
0 = zero; no motion, no contractility





Ankle & Foot Physical Examination

For each exam reviewed please take the time to grab a partner and perform the exam procedure.

Anterior Drawer Pt is seated. Knee flexed over edge of bench or table and the ankle should be allowed to fall into plantarflexion. DC stabilizes distal part of leg with one hand and applies anterior force to the heel with the other hand, allow the talus to rotate slightly medially which relaxes the deltoid ligament (which otherwise might give a false negative test). Test ankle in 10° of plantar flexion as this allows the most translation.
Positive: Pain and/or laxity of joint. Indicates anterior talofibular ligament involvement.

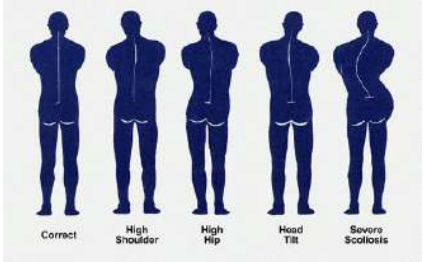
Lateral Stress Knee is flexed 90^0 and gastrocnemius is relaxed. DC holds the heel from below by one hand while the other hand holds the lower leg. The hand on the heel is placed somewhat inferior lateral and is used to push the calcaneus and talus into inversion while the other hand grips the lower leg medially and pushes laterally. Note an end point.
Positive: Pain and/or laxity of joint. Indicates calcaneofibular ligament and/or anterior talofibular ligament involvement.

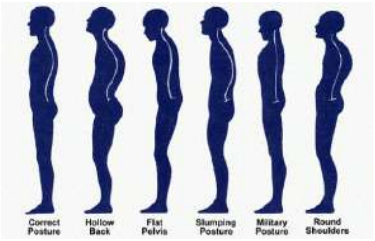
Trauma/Neurological Physical Examination Page 1

All exams on this form have been previously reviewed.
Use this form for a comprehensive exam.

All exam forms on website click on:
Free Practice & Patient Materials

Trauma/Neurological Physical Examination





Vital Signs

Age	
Height	
Weight	
Pulse /min	
Respiration /min	
BP	
Temp	

Resistive Efforts

Cervical Spine	Pain/Weak
Flexion	
Extension	
Left Rotation	
Right Rotation	
Left Lat Flex	
Right Lat Flex	

Range Of Motion

		Passive		Active	
Cervical Spine	Norm	Exam	Pain	Exam	Pain
Flexion	45				
Extension	55				
Left Rotation	70				
Right Rotation	70				
Left Lat Flex	45				
Right Lat Flex	45				

Deep Tendon Reflexes

Reflex	Disc	Root	Left	Right
Biceps	C4-C5	C5		
Brachio	C5-C6	C6		
Triceps	C6-C7	C7		
Quads	L3-L4	L4		
Hamstrings	L4-L5	L5		
Gastroc	L5-S1	S1		

0 = no response
1 = somewhat diminished
2 = normal
3 = brisk
4 = hyperactive

Postural Analysis

Region	L	N	R
Head: Lateral Flexion			
Head: Rotation			
Head: Translation			
Cervical Muscle Tension			
Thoracic Muscle Tension			
Lumbar Muscle Tension			

Cervical Spine Exam

Test	Pain	Relief
Neutral Comp		
L Lat Comp		
R Lat Comp		
Flexion Comp		
Ext Comp		
L Rot Comp		
R Rot Comp		
L Sh Dep		
R Sh Dep		
Distraction		

Muscle Strength

Test	Root	Left	Right
Deltoid	C5		
Biceps	C6		
Triceps	C7		
Finger Flex	C8		
Finger Abd	T1		
Iliopsoas	T12-L3		
Ant Tibialis	L4		
Ext Hal Long	L5		
Peroneals	S1		

5 = normal; full ROM, full resistance
4 = good; full ROM, some resistance
3 = fair; full ROM, against gravity
2 = poor; full ROM, no gravity
1 = trace; no motion, with contractility
0 = zero; no motion, no contractility

Spinal Palpation

Left	Level	Right
	Occp	
	C1	
	C2	
	C3	
	C4	
	C5	
	C6	
	C7	
	T1	
	T2	
	T3	
	T4	
	T5	
	T6	
	T7	
	T8	
	T9	
	T10	
	T11	
	T12	
	L1	
	L2	
	L3	
	L4	
	L5	
	S1	

S = Spasm E = Edema
F + Fixation H = Hypertonic
T = Tender N = Nodule
P = Pain
+Mild
++Mod
+++Severe

Trauma/Neurological Physical Examination Page 2

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Use this form for a comprehensive exam.

All exam forms on website click on:
Free Practice & Patient Materials

Trauma/Neurological Physical Examination

Range Of Motion

		Passive		Active	
T/L Spine	Norm	Exam	Pain	Exam	Pain
Flexion	90				
Extension	30				
Left Rotation	30				
Right Rotation	30				
Left Lat Flex	20				
Right Lat Flex	20				

Lumbo/Pelvic Exam

Ortho	Left		Right	
Exams	N	Ab	N	Ab
Nachlas				
Yeoman's				
Ely's				
Hibb's				
SLR				
WLR				
Braggard's				
Patrick's				
Goldthwaite's				
Soto-Hall's				
Gainslen's				
Brud/Kernig's				
Hoover's				

Lumbo/Pelvic Exam

Exams	N	Ab
Minor's		
Lewin's		
Kemp's		
Gillet's		
Trendelenburg's		
Valsalva's		
Lhermitte's		
Babinski's		

Resistive Efforts

T/L Spine	Pain/Weak
Flexion	
Extension	
Left Rotation	
Right Rotation	
Left Lat Flex	
Right Lat Flex	

Derefield Leg Check

Position	Even	L Sh	R Sh
1			
2			

Extremity Range Of Motion

Hip	Norm	Left	Right	Pain
Flexion	120			
Extension	30			
Abduction	45			
Adduction	20			
Int Rotation	45			
Ext Rotation	45			
Knee	**Norm**	**Left**	**Right**	**Pain**
Flexion	135			
Extension	0-5			
Ankle	**Norm**	**Left**	**Right**	**Pain**
Plantar Flex	50			
Dorsi Flex	20			
Foot	**Norm**	**Left**	**Right**	**Pain**
Inversion	5			
Eversion	5			
Shoulder	**Norm**	**Left**	**Right**	**Pain**
Flexion	90			
Extension	45			
Abduction	180			
Adduction	45			
Int Rotation	55			
Ext Rotation	45			
Elbow	**Norm**	**Left**	**Right**	**Pain**
Flexion	135			
Extension	0-5			
Supination	90			
Pronation	90			
Wrist	**Norm**	**Left**	**Right**	**Pain**
Flexion	80			
Extension	70			
Ulnar Dev	30			
Radial Dev	20			

Girth Measurement

Area	Left	Right
Arm		
Forearm		
Thigh		
Leg		

Dynamometer

Trial	Left	Right
1		
2		
3		
4		

Leg Length Measured

Measurement	Left	Right
ASIS-Lat Mal		
GrTro-Lat Mal		

Cranial Nerves

Nerve	Normal	Ab
I		
II		
III		
IV		
V		
VI		
VII		
VIII		
IX		
X		
XI		
XII		

Cerebellar Exam

Exams	Normal	Ab
Heel/Toe Walk		
CHP Walk		
Rhomberg's		
Past Pointing		
Diadochokinesia		

Sensory Dermatomes

Nerve	
C5	
C6	
C7	
C8	
T1	
L2	
L3	
L4	
L5	
S1	

Radicular Symptoms
Hypo/Hyperalgesia
Hypo/Hyper/Anesthesia
Temp/Vibration/Prop Alteration
2 point Discrimination

Thoracic Outlet

Exams	Normal	Ab
Adson's		
Mod Adson's		
Costoclavicular		
Hyperabduction		

Differential Charts

The next 8 slides have useful charts for all of your necessary differentials

Red flags for possible spinal pathology or nerve root problems

Red flags

- Onset age < 20 or > 55 years
- Non-mechanical pain (unrelated to time or activity)
- Thoracic pain
- Previous history of carcinoma, steroids, HIV
- Feeling unwell
- Weight loss
- Widespread neurological symptoms
- Structural spinal deformity

Indicators for nerve root problems

- Unilateral leg pain > low back pain
- Radiates to foot or toes
- Numbness and paraesthesia in same distribution
- Straight leg raising test induces more leg pain
- Localised neurology (limited to one nerve root)

Differential diagnosis for thoracic back pain

- Uncomplicated musculoskeletal back pain
- Spinal cord and nerve root pathology (e.g., disk herniation, tumor, hematoma)
- Vertebral column disease (e.g., primary or metastatic malignancy, osteomyelitis)
- Disk infection
- Primary neurologic disease
- Degenerative and autoimmune arthropathies
- Herpes zoster
- Vascular disease (e.g., thoracic aortic dissection, acute coronary syndrome, pulmonary embolism)
- Thoracic cavity pathology (e.g., pleuritis, pericarditis, pneumonia, esophageal pathology)
- Intraperitoneal and retroperitoneal abdominal pathology (e.g., peptic ulcer disease, pancreatitis, hepatobiliary disease)

DDX for the thoracics

Evaluation/Intervention Component 4: intervention strategies for patients with neck pain

Neck Pain With Mobility Deficits

Acute
- Thoracic manipulation
- Cervical mobilization or manipulation
- Cervical ROM, stretching, and isometric strengthening exercise
- Advice to stay active plus home cervical ROM and isometric exercise
- Supervised exercise, including cervicoscapulothoracic and upper extremity stretching, strengthening, and endurance training
- General fitness training (stay active)

Subacute
- Cervical mobilization or manipulation
- Thoracic manipulation
- Cervicoscapulothoracic endurance exercise

Chronic
- Thoracic manipulation
- Cervical mobilization
- Combined cervicoscapulothoracic exercise plus mobilization or manipulation
- Mixed exercise for cervicoscapulothoracic regions—neuromuscular exercise: coordination, proprioception, and postural training; stretching; strengthening; endurance training; aerobic conditioning; and cognitive affective elements
- Supervised individualized exercises
- "Stay active" lifestyle approaches
- Dry needling, low-level laser, pulsed or high-power ultrasound, intermittent mechanical traction, repetitive brain stimulation, TENS, electrical muscle stimulation

Neck Pain With Movement Coordination Impairments (WAD)

Acute if prognosis is for a quick and early recovery
- Education: advice to remain active, act as usual
- Home exercise: pain-free cervical ROM and postural element
- Monitor for acceptable progress
- Minimize collar use

Subacute if prognosis is for a prolonged recovery trajectory
- Education: activation and counseling
- Combined exercise: active cervical ROM and isometric low-load strengthening plus manual therapy (cervical mobilization or manipulation) plus physical agents: ice, heat, TENS
- Supervised exercise: active cervical ROM or stretching, strengthening, endurance, neuromuscular exercise including postural, coordination, and stabilization elements

Chronic
- Education: prognosis, encouragement, reassurance, pain management
- Cervical mobilization plus individualized progressive exercise: low-load cervicoscapulothoracic strengthening, endurance, flexibility, functional training using cognitive behavioral therapy principles, vestibular rehabilitation, eye-head-neck coordination, and neuromuscular coordination elements
- TENS

Neck Pain With Headache (Cervicogenic)

Acute
- Exercise: C1-2 self-SNAG

Subacute
- Cervical manipulation and mobilization
- Exercise: C1-2 self-SNAG

Chronic
- Cervical manipulation
- Cervical and thoracic manipulation
- Exercise for cervical and scapulothoracic region: strengthening and endurance exercise with neuromuscular training, including motor control and biofeedback elements
- Combined manual therapy (mobilization or manipulation) plus exercise (stretching, strengthening, and endurance training elements)

Neck Pain With Radiating Pain (Radicular)

Acute
- Exercise: mobilizing and stabilizing elements
- Low-level laser
- Possible short-term collar use

Chronic
- Combined exercise: stretching and strengthening elements plus manual therapy for cervical and thoracic region: mobilization or manipulation
- Education counseling to encourage participation in occupational and exercise activity
- Intermittent traction

Differential Diagnosis of Low Back Pain

- **Mechanical low back pain** (97%)
- Lumbar strain or sprain (≥ 70%) Diffuse pain in lumbar muscles; some radiation to buttocks
- Degenerative disk or facet process (10%) Localized lumbar pain; similar findings to lumbar strain
- Herniated disk (4%) Leg pain often worse than back pain; pain radiating below knee
- Osteoporotic compression fracture (4%) Spine tenderness; often history of trauma
- Spinal stenosis (3%) Pain better when spine is flexed or when seated, aggravated by walking downhill more than uphill; symptoms often bilateral
- Spondylolisthesis (2%) Pain with activity, usually better with rest; usually detected with imaging; controversial as cause of significant pain

Differential Dx of Chronic Low Back Pain

Nonspecific or idiopathic (70 percent)

Lumbar sprain or strain

Mechanical (27 percent)

Degenerative processes of disks and facets

Herniated disk

Osteoporotic fracture*

Spinal stenosis

Traumatic fracture*

Congenital disease

- Severe kyphosis
- Severe scoliosis
- Transitional vertebrae

Spondylosis

Internal disk disruption or discogenic pain

Presumed instability

Referred pain (2 percent)

Aortic aneurysm

Diseases of the pelvic organs

- Prostatitis
- Endometriosis
- Chronic pelvic inflammatory disease

Gastrointestinal disease

- Pancreatitis
- Cholecystitis
- Penetrating ulcer

Renal disease

- Nephrolithiasis
- Pyelonephritis*
- Perinephric abscess*

Nonmechanical (1 percent)

Neoplasia

- Multiple myeloma
- Metastatic carcinoma
- Lymphoma and leukemia
- Spinal cord tumors
- Retroperitoneal tumors
- Primary vertebral tumors

Inflammatory arthritis, often associated with human leukocyte antigen-B27

- Ankylosing spondylitis
- Psoriatic spondylitis
- Reiter syndrome
- Inflammatory bowel disease

Infection*

- Osteomyelitis
- Septic diskitis
- Paraspinous abscess
- Epidural abscess
- Shingles

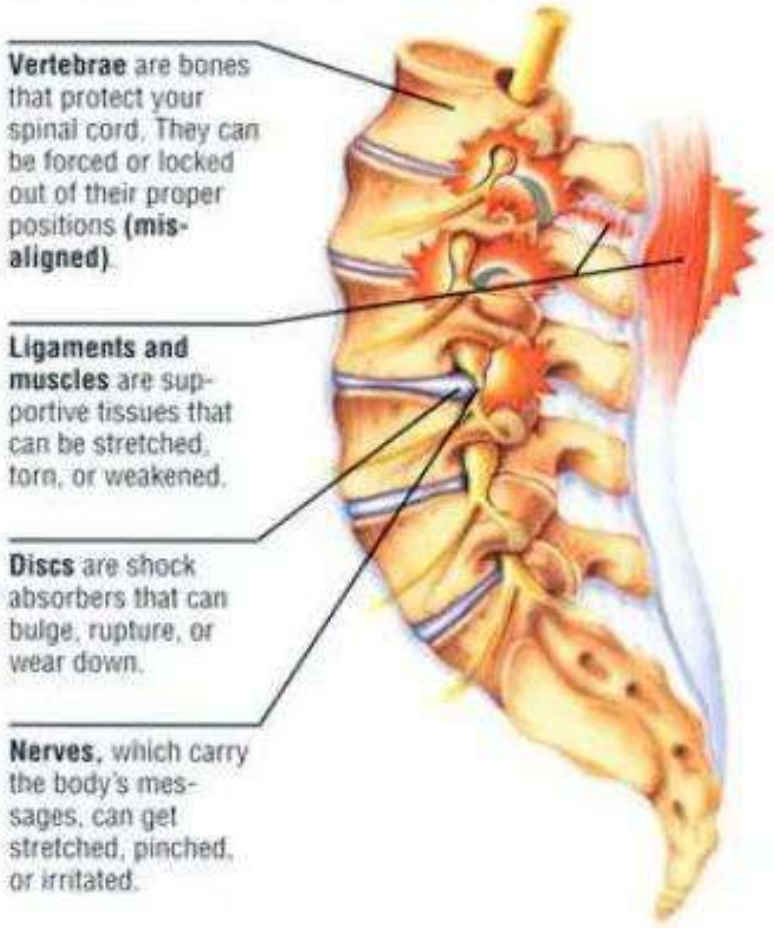
Scheuermann disease (osteochondrosis)

Paget disease of bone

	PATTERN 1 Commonly called Disc Pain	PATTERN 2 Commonly called Facet Joint Pain	PATTERN 3 Commonly called Pinched Nerve	PATTERN 4 Commonly called Spinal Stenosis
				
STEP 1 Where is your pain located?	Pain is worst in the back. May spread to the buttocks or legs	Pain is worst in the back. May spread to the buttocks or legs.	Pain is worst in the leg, although back pain may be present.	Pain is worst in the leg(s), described as heaviness or aching.
STEP 2 How often are you in pain?	Pain is usually intermittent but may be constant with varying intensity throughout the day.	Pain is always intermittent.	Pain is usually constant.	Pain is intermittent and occurs with activity.
STEP 3 What makes your pain worse?	Pain is made worse by sitting and by bending forward.	Pain is made worse by bending backwards and standing or walking for long periods of time.	Pain is often made worse by sitting and bending, but can also be made worse by backward movement in the acute stage.	Symptoms are made worse by activity. Walking for more than a few minutes makes the legs feel achy and weak.
STEP 4 What makes your pain better?	Pain is eased by performing a sloppy pushup. It is better to walk than to stand, and stand than to sit.	Pain is eased by bending forward or sitting.	Pain is eased by laying face down or on the back with a pillow under your knees.	Symptoms are relieved by a change in position, such as bending forward or sitting.

MECHANICAL BACK PAIN

- ***Muscle, ligament, tendon strain***
- Discogenic disorders including herniated disc
- Apophyseal joint arthritis
- Spinal stenosis
- Spondylolysis, spondylolisthesis
- Scoliosis



Characteristics of Different Pain Types

	Nociceptive Pain		Neuropathic Pain
	Somatic Pain	Visceral Pain	
Location	Localized	Generalized	Radiating or specific
Patient Description	Pinprick, stabbing, or sharp	Ache, pressure, or sharp	Burning, prickling, tingling, electric shock-like, or lancinating
Mechanism of Pain	A-delta fiber activity Located in the periphery	C Fiber activity Involved deeper innervation	Dermatomal (periphery), or non-dermatomal (central)
Clinical Examples	•Periosteum, joints, muscles •Sickle cell •Superficial laceration •Superficial burns •Intramuscular injections, venous access •Otitis media •Stomatitis •Extensive abrasion	•Colic spasm pain •Appendicitis •Kidney stone •Chronic pancreatitis •IBS •Angina •Menstrual cramps	•Trigeminal neuralgia •Avulsion neuralgia •Posttraumatic neuralgia •Peripheral neuropathy (diabetes, HIV) •Limb amputation •Herpetic neuralgia

ACUTE VS CHRONIC PAIN

	Acute pain	Chronic pain
Onset & timing	Sudden, short duration Resolves /disappears when tissue heals	Insidious onset Pain persists despite tissue healing
Signal	Warning sign of actual or potential tissue damage	Not a warning signal of damage False alarm
Severity	Correlates with amount of damage	Severity not correlated with damage
CNS involvement	CNS intact- acute pain is a symptoms	CNS may be dysfunctional-chronic pain is a disease
Psychological effects	Less, but unrelieved pain → anxiety and sleeplessness (improves when pain is relieved)	Often associate with depression, anger, fear, social withdrawal etc.

Exam Complete!

Thanks for taking 2 Hrs of Exam!

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Marcus Strutz DC
Back To Chiropractic CE Seminars
marcusstrutzdc@gmail.com
707.972.0047