Neurology

Made Easy

presented by

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Today You Will Learn

Some practical, easy-to-use
NEUROLOGY
because Neurology Patients
Walk
Into Chiropractic Offices
FREQUENTLY

Today You Will Learn

The Epidemic of Psychosis
in modern society
Is caused in large part by

Brain Concussions

Today You Will Learn

Doubt is Uncomfortable

but

Certainty is ABSURD

How Your Brain Leads You
To Make Bad Decisions

3 EARLY Predictors of PCS

Anxiety
Noise Sensitivity
Trouble Thinking

These are the 3 most important concussion symptoms because when all are present, a study showed that you can accurately predict the patient will have a LONG post-concussion recovery time.

Today You Will Learn

That Acceleration-Deceleration Type injuries occur during

Car Accidents

Jet Ski Accidents

Snowmobile Accidents

Motorcycle Accidents

Bungee Jumping… etc.

Today You Will Learn

That YOU can HELP these Patients VERY much by Recognizing Brain Concussions And getting them HELP to PREVENT Psychosis

Crimes & Concussions

Concussions lead to arrest and prison

PSTHI (Psychosis Secondary To Head Injury)

Concussion = Psychosis = violent crime

There is medical evidence that concussions lead to lives of crime. You are REALLY helping your patients when you diagnose concussion and refer them to a specialist.

Today You Will Learn

Psychosis INCLUDES:
Schizophrenia, Delusions,
Paranoia, Hallucinations,
DEMENTIA, Bipolar Disorder,
Disorganized Thinking & Speech

These are Dopamine Related

30 year Concussion Study

"Major" depression 26.7%

Alcohol abuse or dependence 11.7%

Panic Disorder 8.3%

Specific Phobia 8.3%

Psychotic Disorders 6.7%

Personality Disorder 23.7%

Avoidant Personality Disorder 15%

Paranoid Personality Disorder 8.3%

Schizoid Personality Disorder 6.7%

Am J Psychiatry 2002 Aug; 159(8):1315-21

Today You Will Learn

Dopamine and many other
Chemicals and hormones
Are affected by

Brain Concussion
The MASTER Gland
(Pituitary) is in the Brain.

Today You Will Learn

That patients that are not 100% better within 4 months following whiplash Have a diagnosable TORN LIGAMENT or Torn Disk that YOU can recognize, diagnose & help

Today You Will Learn

When and WHY to order MRI

When & WHY to look for and order STRESS X-RAYS to find the TORN SPINE LIGAMENTS

Today You Will Learn

Where to refer some neurology stricken patients

and how to CO-TREAT some neurology patients

Research RE: Concussions

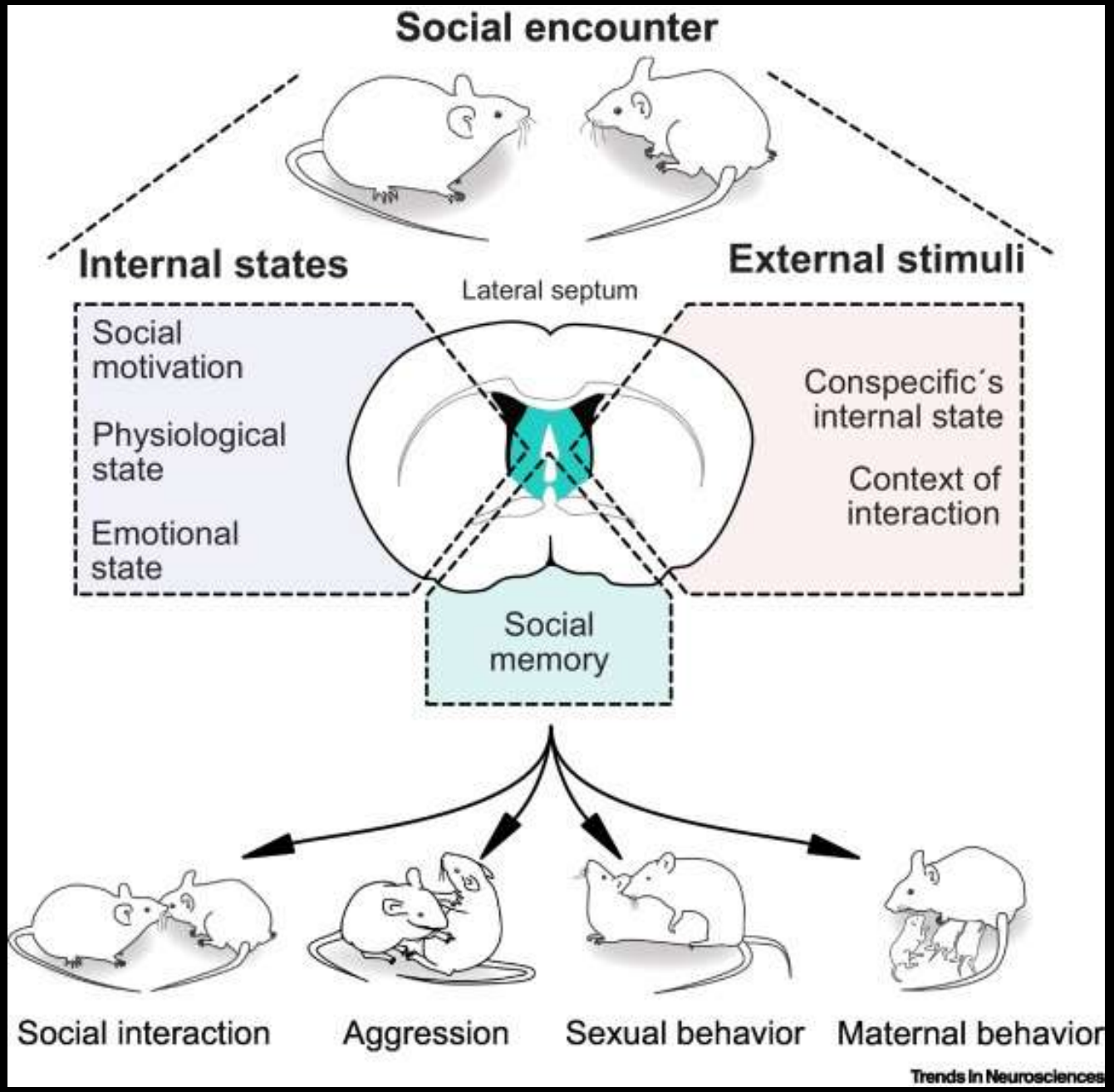
Dissecting the FUNCTUAL NEUROANATOMY of rodents has taught us:

The LATERAL SEPTUM area of the brain has a specific role in regulating social and emotional behaviors.

Research RE: Concussions

The lateral septum (LS) is neurochemically diverse and ideally positioned to serve as a RELAY CENTER, which integrates incoming cortical information about the SOCIAL environment with the internal state and prior social experiences, and then transmits this information to downstream executive regions.

Lateral Septum



What Do We Learn From Rats?

Why Brain Concussions mess up the SOCIAL functioning of your patients.

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What Do We Learn From Rats?

Why Brain Concussions mess up the SOCIAL functioning of your patients.

There are receptors for various neuropeptides and hormones within the Lateral Septum area that modulate social behaviors: aggression sexual and parental behavior have so far been identified.

Combine With Other Data

80% of concussion patients have LOW TESTOSTERONE within 12 months after a concussion.

Lessons Learned

Patients are walking into your Chiropractic office who have had Whiplash and about 40% of them have BRAIN CONCUSSIONS.

You MUST address their concussion or you are committing malpractice.

Title of the Research Article

Neurobiology of the lateral septum: regulation of social behavior

Find it at www.cell.com

https://www.cell.com/trends/neurosciences/fulltext/S0166-2236(21)00210-1?dgcid=raven_jbs_etoc_email

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How Does Our Brain Make Decisions?

1. **We THINK we make decisions that we believe are grounded in reason, logic and intellect.**

2. **REALITY is there are things going on in our brains that we are not even aware of that affect our decisions about our patients.**

Mark Twain

It ain't what you don't know that gets you in trouble.

It's what you know for sure that just ain't so.

Brains Decide Without Info

What you DON'T know
Affects your decisions.

Which Answer is Higher?

A) 9 x 8 x 7 x 6 x 5 x 4 x 3 x 2 x 1

B) 1 x 2 x 3 x 4 x 5 x 6 x 7 x 8 x 9

Which Answer is Higher?

Was your answer A or B?

Which Answer is Higher?

Correct Answer: 362,880

The are both the same…

The sequence that starts With a higher number biases you toward answer A.

Types of Implicit Bias

1)Representativeness Bias
2)Availability Bias
3)Anchoring Bias
4)Confirmation Bias
5)Your Brain has 2 Systems
    1)System 1
    2)System 2

Representativeness Bias

Does what we see in front of us fit the patterns or experiences that are embedded in our brains and our memories?

Representativeness Bias

We tend to OVERGENERALIZE an outcome based on a FEW CHARACTERISTICS or observations that are similar to known outcomes.

Representativeness Bias

Peoples brains generally…

Jump to conclusions.

Representativeness Bias

This area is where discrimination comes from.

1) Age
2) Gender
3) Sexual Orientation
4) Ethnicity

Studies Have Shown

We like people that are like us.

We don't like people that aren't like us.

We don't know whether it is:

- Developmental
- Learned
- You're born with this
- Evolutionary

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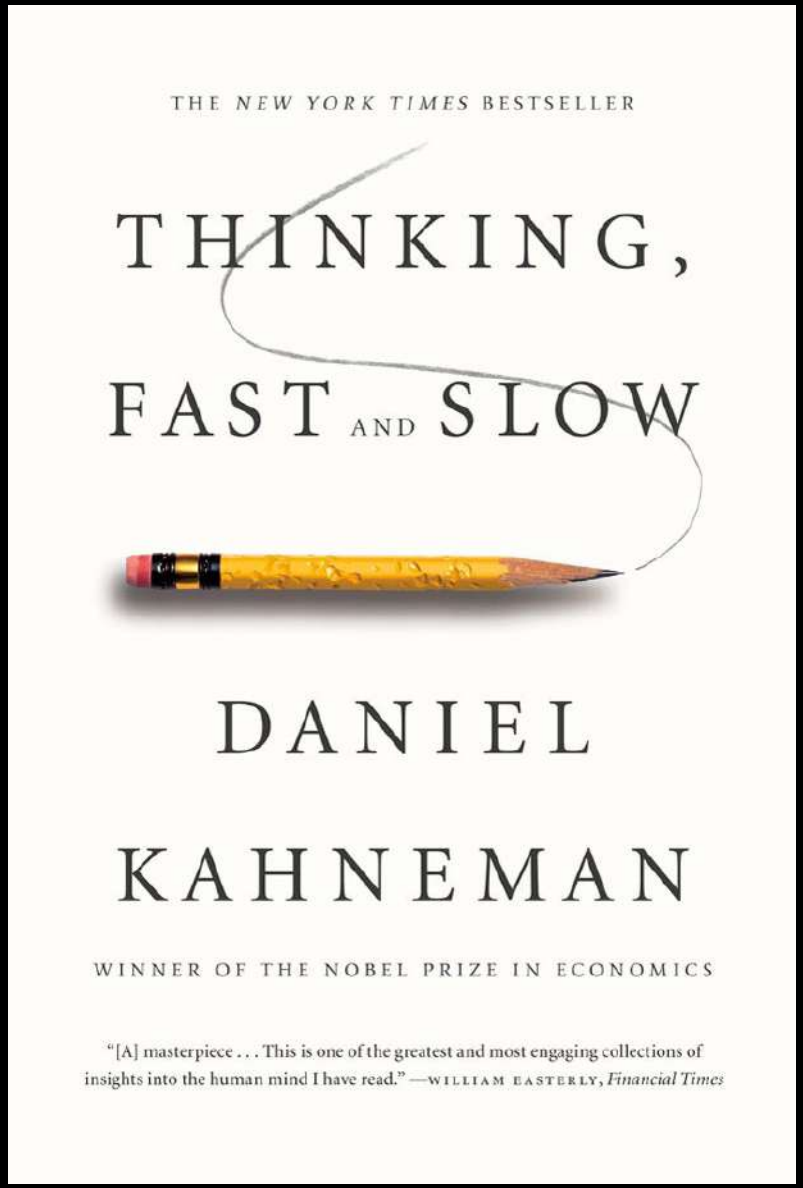
Representativeness Bias

We jump to conclusions QUICKLY

WHY?

Representativeness Bias



Representativeness Bias

When the brain is presented with NEW information, rather than trying to PROCESS that new information (because it takes too long), our brains quickly try to fit that information into something that has occurred in the past.

NOT Consciously (Gee, does this remind me of something?)

Brain immediately compares the new information to what it already knows and tells you, "This new information looks like this…" "This fits into that…" "This is similar to (something I saw in the past.)"

Representativeness Bias in Chiropractic

This patient has headaches…

It must be like all those other patients with headaches that I adjusted and the headaches went away.

What if it is a BRAIN CONCUSSION?
In Malpractice this is called an ERROR of OMISSION.

Representativeness Bias in Chiropractic

As Chiropractors (and humans), we tend to discount or ignore all the information that doesn't fit into the pattern in our brains that disagrees with the pattern that we are familiar with.

Representativeness Bias in Chiropractic

Before fully consulting or examining the patient we think…

"I know what this is. Sciatica. I've seen this a thousand times."

Good RULE: At every re-exam, ask the patient, "Are you getting better, worse or have you stayed the same in the last month?"

Representativeness Bias in Chiropractic

We are OVER-confident in the opinions we have and the conclusions we reach.

How To Not be Victims of Bias

1. **Did I really think this thing through?**
2. **Have I considered all angles?**
3. **Have I thought about the other person's point of view?**
4. **Have I done any research on this subject?**
5. **Could I be WRONG? (the answer is always "Yes") if you are unbiased.**

Availability Bias

All you see is all there is.

Whatever you think you see gives you the answer to the question you are trying to solve or decision that you're trying to make.

All You See is All There Is

You make a decision based on the MOST RECENT information you have in your head.

If Only…

Richard Jones is a executive who lives downtown in a high-rise. Every day he arrived at work at the same time, parked in the same place, left work at precisely 6:00 pm, drove home the same way and arrived home at 6:20 pm. One day his wife had the flu so he decided to go home early and fix dinner for his wife. Realizing he had extra time, he took the scenic route home. He pulls up to an intersection, sees a yellow light and, being a defensive driver, Richard comes to a complete stop. When the light turns back to green, he starts through the intersection and a drunk teen ran the red light, crashed into him and kills him. If only?

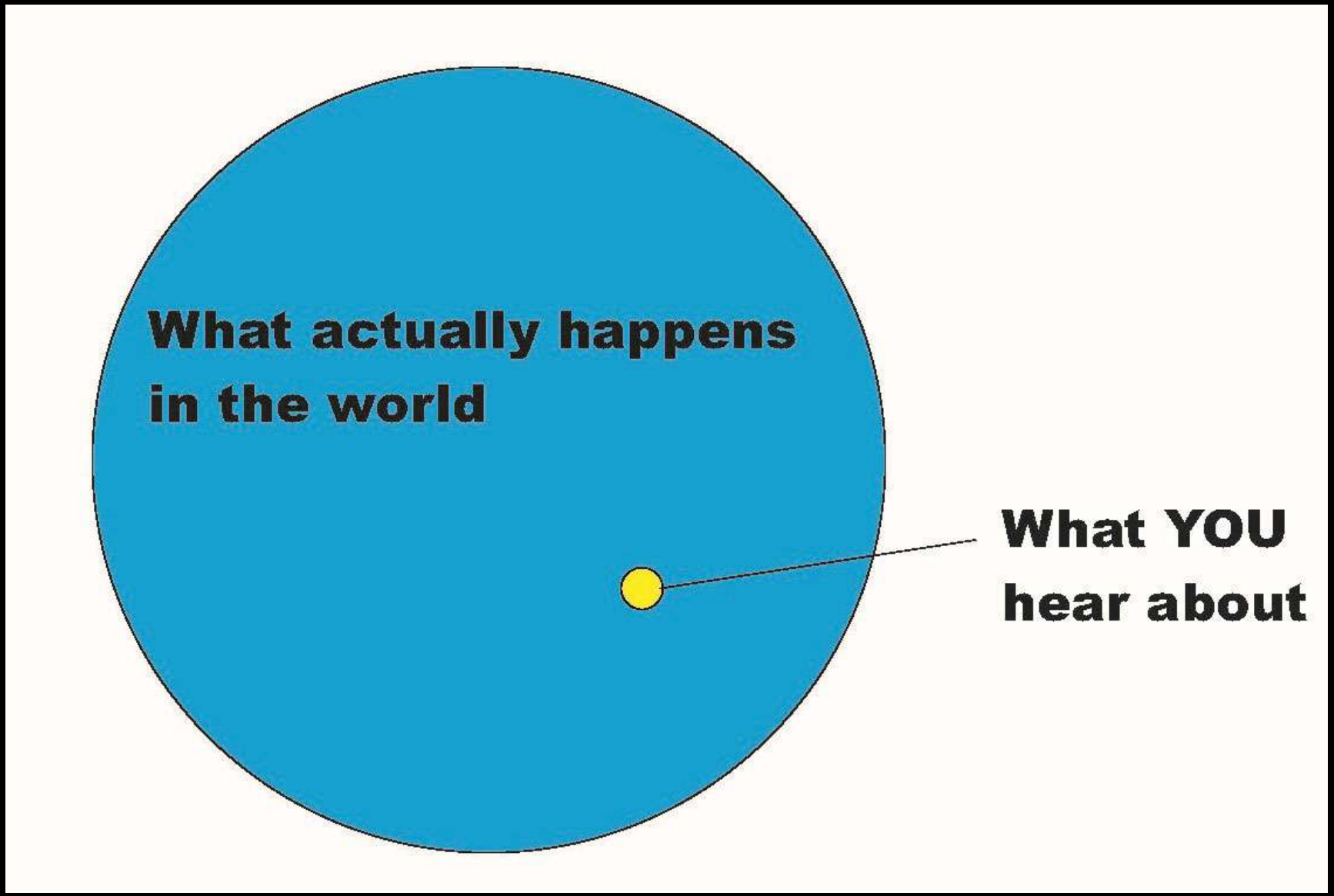
If Only…

He had walked…
He didn't change his routine…
His wife wasn't sick…
He had left at 6:00 pm as usual…

This is availability bias. The information available to you makes you OVERESTIMATE the importance of the available information, while DISREGARDING the information that is not as readily available.

You focus on Richard's actions because that is how I told you the story…

Availability Bias



Availability Bias

Advertising preys upon this:

They bombard you with ads on radio, TV & Internet so when you go to the store you still have Coca-Cola in your brain, not Pepsi.

Availability Bias

Few people do research on their own.

Despite information being more valuable than at any time in history, humans tend to NOT seek out any of that information. You base your decisions not on ALL the information but rather on what stuck in your head.

Availability Bias

You hear about tornados in the home town of your relative. The devastation is complete, the homes are gone, there is nothing left standing.

You call your relative and hear, "We're fine, that's on the other side of town."

Don't decide only based on available info.

The Real Story of Richard

If only…

The teenager wasn't drunk.

You focused on Richard's actions because that's the way I told the story.

That's Availability Bias.

The Real Story of Richard

If stopped to think about it…

-A minor
-At his friends home in the afternoon
-Without any parental supervision
-Drank alcohol from parent's cabinet that wasn't even locked

I didn't tell you the story about the teen so you focused on Richard's actions.

Availability Bias

- A dangerous implicit bias
- A mental shortcut
- It relies on immediate examples that come to a person's mind when evaluating a specific topic

Your brain operates on the idea that "If you can remember it, it must be important."

Survey RE Availability Bias

What % of the household chores do you do?

Men say 50%

Women say 80%

Because they ONLY focus on the chores that THEY do, NOT those that their spouse does. (Availability)

Availability Bias in Chiropractic

Your brain makes decisions based on the LIMITED information the patient tells you.

Ask MORE questions.

I have medical records that don't mention the car accident because the doctor stopped gathering information and made a decision BEFORE asking, "How did you get hurt?"

Anchoring Bias

You allow yourself to be OVERLY influenced by the FIRST piece of information that you hear.

Anchoring Bias

The first person to mention a number ANCHORS and STEERS the conversation to THAT NUMBER.

Anchoring Bias

Was Mahatma Ghandi older or younger than 122 when he died?

How old was he when he died?

Anchoring Bias

Was Mahatma Ghandi older or younger than 13 when he died?

How old was he when he died?

Anchoring Bias

The answers are HIGHER when I mentioned 122 years old and LOWER when I mentioned 13 years old.

He was actually 78

Do some RESEARCH

Mohandas Karamchand Ghandi was an Indian attorney and political ethicist who used nonviolent resistance to lead the successful campaign for India's independence from British Colonial Rule.

The honorific **Mahātmā** (Sanskrit: "great-souled", "venerable"), first applied to him in 1914 in South Africa, is now used throughout the world. He was assassinated in 1948 when he was 78 years old.

Which Answer is Higher?

A) 9 x 8 x 7 x 6 x 5 x 4 x 3 x 2 x 1

B) 1 x 2 x 3 x 4 x 5 x 6 x 7 x 8 x 9

You looked at the first few numbers and since (A) started with a higher number, your brain assumed that the answer to (A) would be higher.

Confirmation Bias

People tend to LISTEN TO AND ACCEPT only information that confirms their own beliefs and PRECONCEPTIONS.

Confirmation Bias

Everything going on in America politically is Confirmation Bias.

We only listen to things that confirm what we ALREADY believe (whether it is objectively right or wrong)

Confirmation Bias in Chiropractic

If you believe vaccinations are great and are good…

You only listen to sources of information that CONFIRM what you already believe.

You IGNORE the rest.

Confirmation Bias in Chiropractic

If you believe vaccinations are bad and dangerous…

You only listen to sources of information that CONFIRM what you already believe.

You IGNORE the rest.

Confirmation Bias in Chiropractic

BOTH SIDES DO THIS

In Chiropractic…
In marriage arguments…
In politics…
In religion…
All the "Hot button" issues in the world are founded on
---Confirmation Bias---

How to Stop Bias

Listen to the other side

Acknowledge what is said (even if you disagree)

Take that information into consideration so you can make an INFORMED and often COMPROMISED decision.

How to Stop Bias

Compromise is gone in American society

It's our way or the highway

Tribalism is everywhere

All we hear are people preaching to the choir.

Bias DESTROYS

Marriages

Families

Professions like Chiropractic

Countries

Resources for You

HARVARD IMPLICIT ASSOCIATION TEST (IAT)

It is likely to reveal an implicit
attitude that you have that
you did not know about.

https://implicit.harvard.edu/implicit/takeatest.html

The Science of Biased Decision Making

We have 2 Brain Systems

System 1: Involuntary
System 2: Concentration

The Science of Biased Decision Making

System 1:

Involuntary Side of Brain
Unconscious
Automatic
Stereotypical
Fast
Instinctive
Reflexive
Effortless
Emotional
System 1 is ERROR PRONE

The Science of Biased Decision Making

System 2:

- Requires Conscious Thought
- Slower
- More Deliberative
- More Logical
- More Analytical
- Requires Patience and Reason
- Requires Concentration
- Takes MORE EFFORT
- System 2 is more RELIABLE
- You use if for complex decisions

Why You Need: The Power of The Pause

Article by Richard Huver

Pause before you:

1) React with your System 1 Brain
2) Take a moment before you make a decision based on bias:
    a) Somebody cuts you off on the road
    b) Your spouse yells at you
    c) You respond to an email that made you mad
3) Consider the other person's situation before you react angrily.

Neuro-Endocrine Dysfunction

There are five major hormones that come from and/or are controlled by the Pituitary gland:

(1) TSH;

(2) ACTH;

(3) LH;

(4) FSH; and

(5) ADH.

The function of these five hormones that have their origin and/or control inside the human brain and they appear to link together these seemingly unrelated concussion symptoms.

Nina Kraus, Ph.D.

Nina Kraus, Ph.D., is a scientist, inventor, and amateur musician who studies the biology of auditory learning.

Through a series of innovative studies involving thousands of research participants from birth to age 90, her research has found that our lives in sound, for better (musicians, bilinguals) or worse (language disorders, concussion, aging, hearing loss), shape auditory processing.

Nina Kraus, Ph.D.

Her work shows:

1. Concussions mess up the brain's ability to filter out background noise
2. Concussions make people extremely sensitive to LOUD noises
3. Concussions slow down the processing of auditory signals between the ears and brain

Mark Pavelich, a member of the 1980 Gold Medal "Miracle on Ice" USA Hockey team, was found dead Thursday morning (3/4/21) at a mental health treatment center

Long Term Effects of TBI

Research on Canadian hockey players shows that the brain damage lasts for decades AFTER the symptoms appear to have resolved.

Moral of the story: It might not be good to return young athletes to competition after their concussion symptoms go away.

Research by Maryse Lassonde, Ph.D. on Montreal Canadians hockey team.

Washington State University quarterback Tyler Hilinski died from a self-inflicted gunshot wound in January, 2018, at age 21. Police found him in his apartment next to a rifle and a suicide note.

Terry Long, a former offensive lineman for the Pittsburgh Steelers, committed suicide by drinking antifreeze in 2006 at the age of 45 and after previous suicide attempts.

•Former Pittsburgh Steelers offensive lineman Justin Strzelczyk had been acting a "little weird" before the tragic morning of Sept. 30, 2004. Erratic behavior. Calling old friends and apologizing to them for issues that took place a while back. Strzelczyk killed himself the next day by driving 100 miles per hour and crashing into a truck. He played nine years in the National Football League. He was 36 years old.

NFL players Dave Duerson and Junior Seau shot themselves in the chest. Kansas City Chiefs linebacker Jovan Belcher murdered his girlfriend and then drove to the Chiefs practice facility where he shot himself in the head. The latest former NFL player to commit suicide was Adrian Robinson, who died by hanging. Robinson, like the others above, was found to have chronic traumatic encephalopathy (CTE).

CTE – Chronic Traumatic Encephalopathy

See the movie “Concussion” to see how Dr. Bennett Omalu discovered Tao deposits in the brains of 4 former Pittsburgh Steelers who committed suicide in the 40s.

Why you should pay attention today

1) You need CE hours
2) You will be a better chiropractor
3) You will help your patients get well
4) You will recognize and co-treat concussions
5) You will learn things that will make you $$$

But… This is NOT Practice Building

Ironically, being a better doctor does 2 things for you

1. Gives you more things/codes to bill
2. Gets you more referrals from existing patients

Frequently Asked Question

Steve, you're a P.I. attorney. How do I get more referrals from P.I. attorneys?

OR: How do I get more referrals from my existing patients?

Does the P.I. Attorney Matter?

I took over a case from another Attorney. Offer at time was $408,000 because the P.I. Attorney did not know how to handle the concussion parto of the patient's claim. I settled it in 3 weeks for $950,000.

(The patient was happy.)

So How Do You TREAT Concussions?

1) After you REFER them to an endocrinologist and a neuropsychologist (or psychiatrist)
2) YOU can co-treat, co-manage & HELP heal the patient

So How Do You TREAT Concussions?

1) Transcranial LASER
2) Supplemental O2
3) Hyperbaric O2 (HBOT)
4) In-Office treatments for which you can BILL the code 97127
5) Do the FOLLOW UP questionnaires previously taught today to MONITOR PROGRESS

Transcranial Low Level Laser

NIH says transcranial laser treatments (the kind chiropractor can do with the lasers they already own) DEFINITELY help concussion patients.

Also helps stroke patients.

Moral of the story: If you already own a laser, find out the settings for transcranial laser and help your patients get well.

Transcranial Laser

If you already own a LASER… Use it on concussion patients.

Ask whoever sold it to you the SETTINGS to use for concussion treatments.

Under ARTICLES & RESEARCH at hbtinstitute.com, read the article

Low Level Laser is Effective Concussion Treatment (NIH)

Transcranial Laser

In recent years, LLLT (Low Level Laser Therapy) has become an increasingly mainstream modality, especially in the areas of physical medicine and rehabilitation. At first used mainly for wound healing and pain relief, the medical applications of LLLT have broadened to include diseases such as stroke, myocardial infarction, and degenerative or traumatic brain disorders.

Transcranial Laser

Works at the Mitochondrial Level

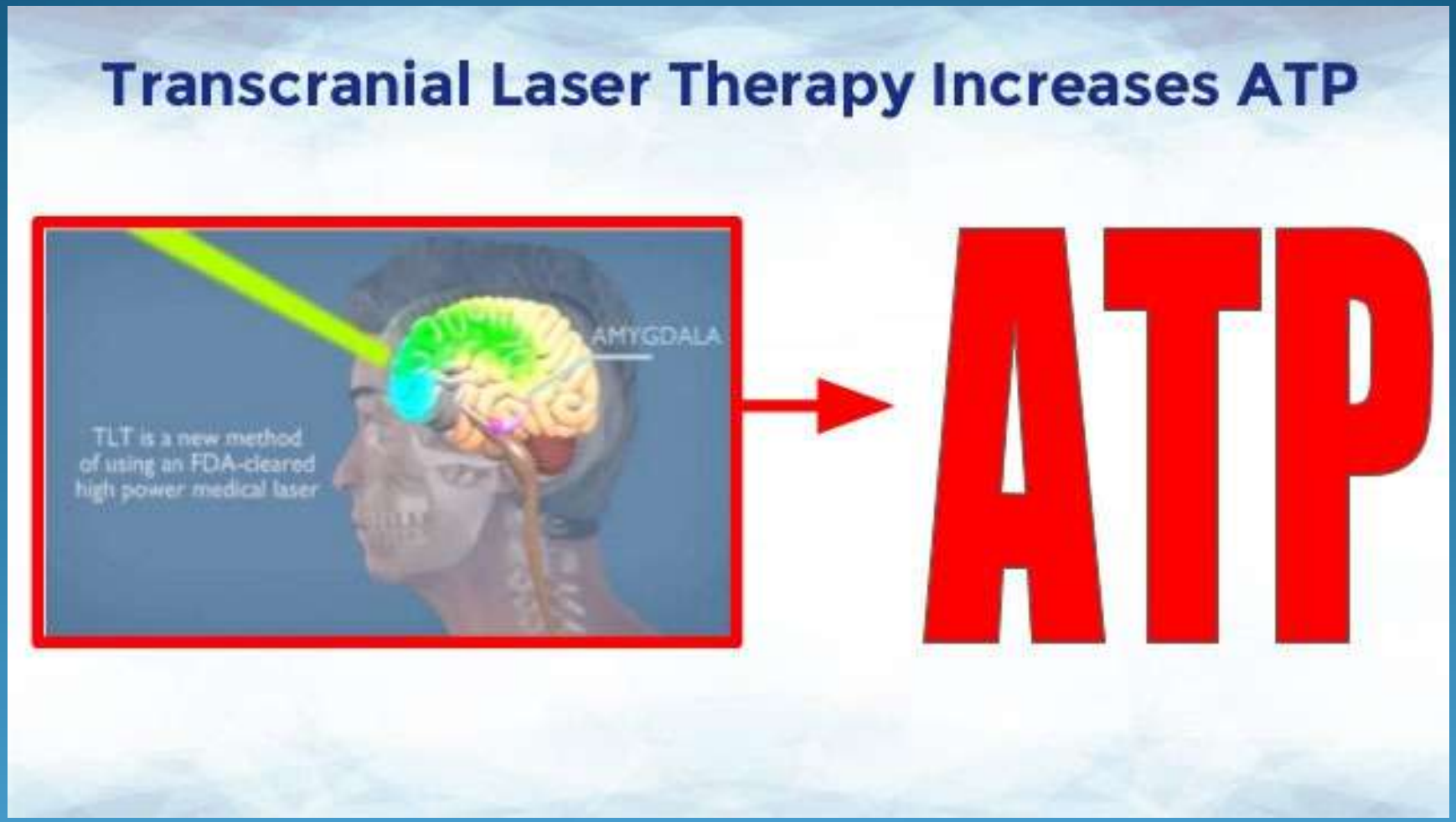
Transcranial Laser

Mitochondrial dysfunction has long been linked to programmed axon death, with several mechanistic studies indicating roles for mitochondrial dysfunction in the initiation and execution of this axon death pathway.

Transcranial stimulates brain cells at the mitochondrial level.

https://doi.org/10.1016/j.tins.2021.10.014

Transcranial Laser



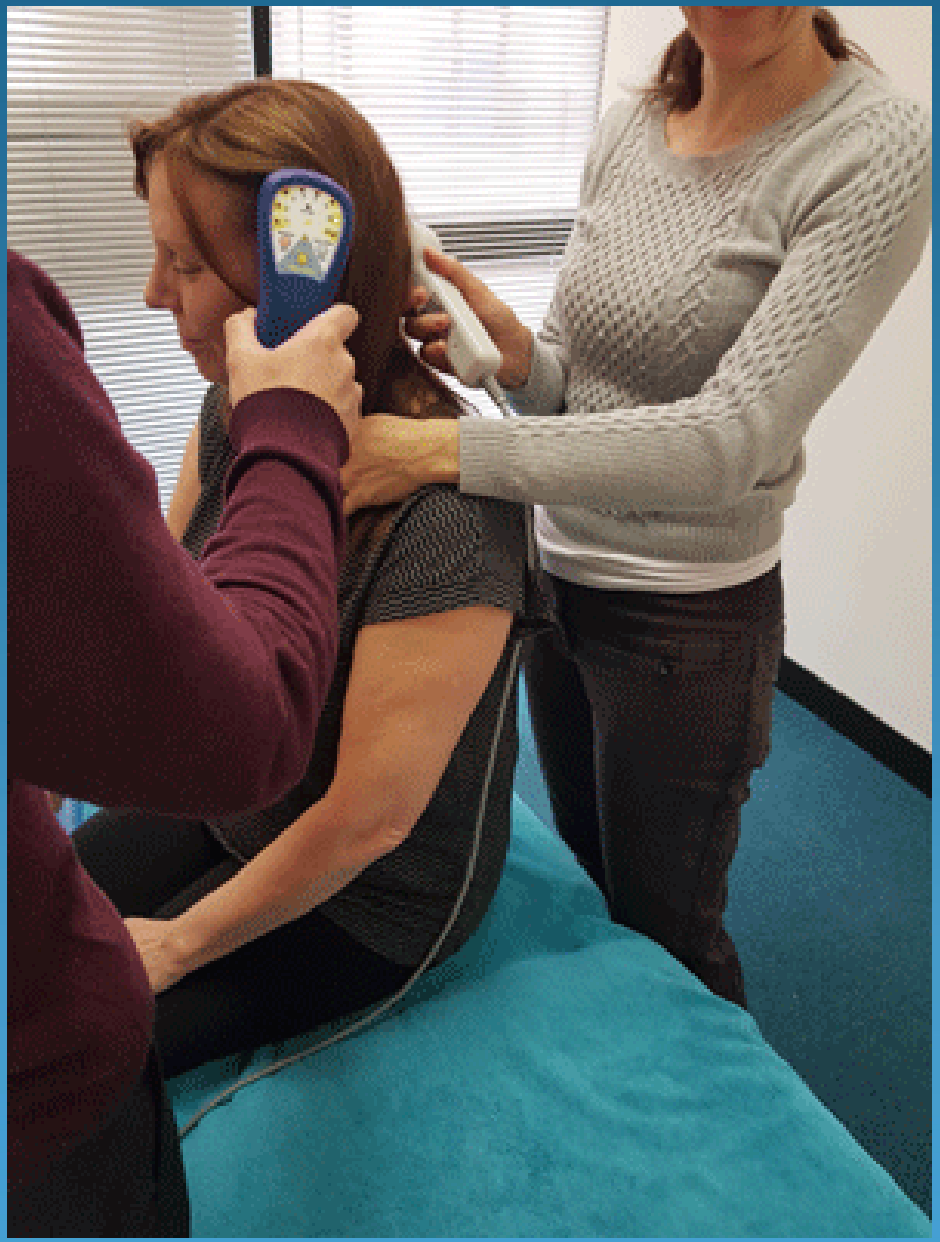
Transcranial Laser

In a recent scientific report
of 4 patients
with PTSD and TBI
and 6 patients
with TBI without PTSD,
TLT was remarkably effective

Transcranial Laser

Transcranial Laser

Transcranial Laser



Transcranial Laser

1) Become proficient in its use

2) Use it on Concussion patients

3) Use it on PTSD patients

4) Use it on stroke patients

5) Insurance won't reimburse for it???
   Then this is a cash business for you.

So How Do You TREAT Concussions?

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Supplemental Oxygen

1) 100% O2 is NOT in CA Chiro Scope
2) “AIR” is absolutely in CA Chiro Scope
3) Oxygen concentrators deliver about 93% concentration of Oxygen
4) You can use it in your office
5) You can recommend patients buy a machine and sleep with it

Supplemental Oxygen

This is an
Invacare
10 liter machine

These $2000 machines are used in hospitals, run 24 hours a day and replaced frequently. Many companies “refurbish” them and sell them for $300-$500

Supplemental Oxygen

5 liters per minute and 10 liters per minute models. Run them at 80% capacity (4 and 8).

Google “Refurbished Oxygen Concentrators”

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Hyperbaric Oxygen Therapy (HBOT)

HBOT is just like machines used to treat “The Bends” in scuba divers

Read article on my website titled:

Hyperbaric Oxygen Can Improve Post Concussion Syndrome

For CA Chiros, only buy a machine that uses an Oxygen concentrator (not 100% pure O2.)

Hyperbaric Oxygen Therapy (HBOT)

Title: Hyperbaric Oxygen Therapy Can Improve Post Concussion Syndrome Years after Mild Traumatic Brain Injury - Randomized Prospective Trial

Link is on my website

www.hbtinstitute.com

Go to Doctor Forms

User Name = great

Password = doctor

Hyperbaric Oxygen Therapy (HBOT)

"Traumatic brain injury (TBI) is the leading cause of death and disability in the US. Approximately 70-90% of the TBI cases are classified as mild, and up to **25% of them will not recover and suffer chronic neurocognitive impairments**. The main pathology in these cases involves diffuse brain injuries. The current study tested the effectiveness of Hyperbaric Oxygen Therapy (HBOT) in improving brain function and quality of life in mTBI patients suffering chronic neurocognitive impairments."

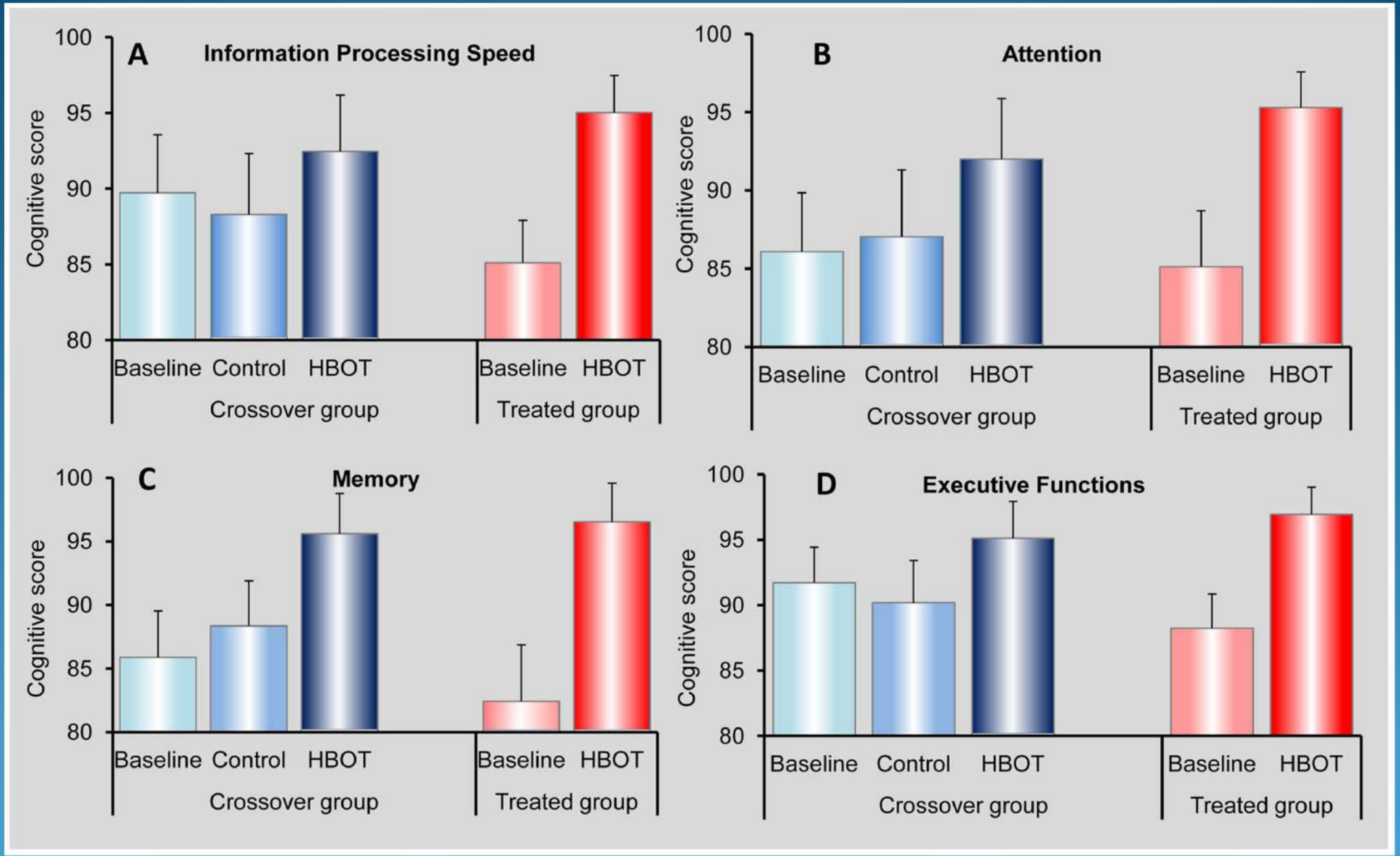
Hyperbaric Oxygen Therapy (HBOT)

'Scary' pericytes: the fibrotic scar in brain and spinal cord lesions

Scar tissue presents a barrier to regeneration in the central nervous system (CNS). Although the glial scar has been extensively studied, recent evidence suggests that non-glial components are also involved.
Published:November 10, 2021

https://doi.org/10.1016/j.tins.2021.10.013

Hyperbaric Oxygen Therapy (HBOT)



Hyperbaric Oxygen Therapy (HBOT)

Conclusion of Study: “We presented a prospective, randomized and controlled cross over study of the effect of HBOT with 100% oxygen at 1.5Atm on mTBI patients at late chronic stage. The results clearly demonstrate that HBOT can induce neuroplasticity and significant brain function improvement in mild TBI patients with prolonged Post-Concussion-Syndrome at late chronic stage, years after brain injury.”

Hyperbaric Oxygen Therapy (HBOT)

WARNING: Do NOT buy these SOFT side machines.

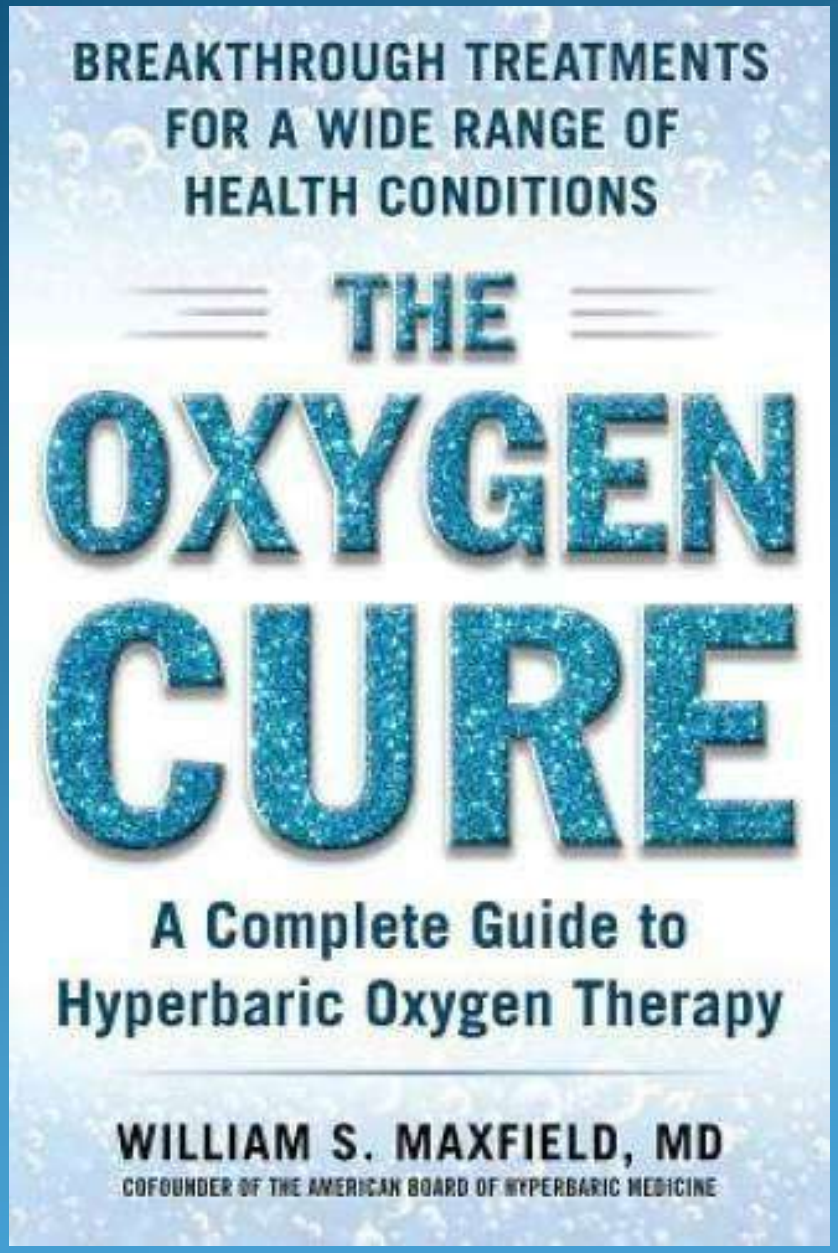
They only go up to 4 psi (pounds per square inch)
aka 1.3 ATM (atmospheres) and are NOT sufficient to treat strokes or concussions)

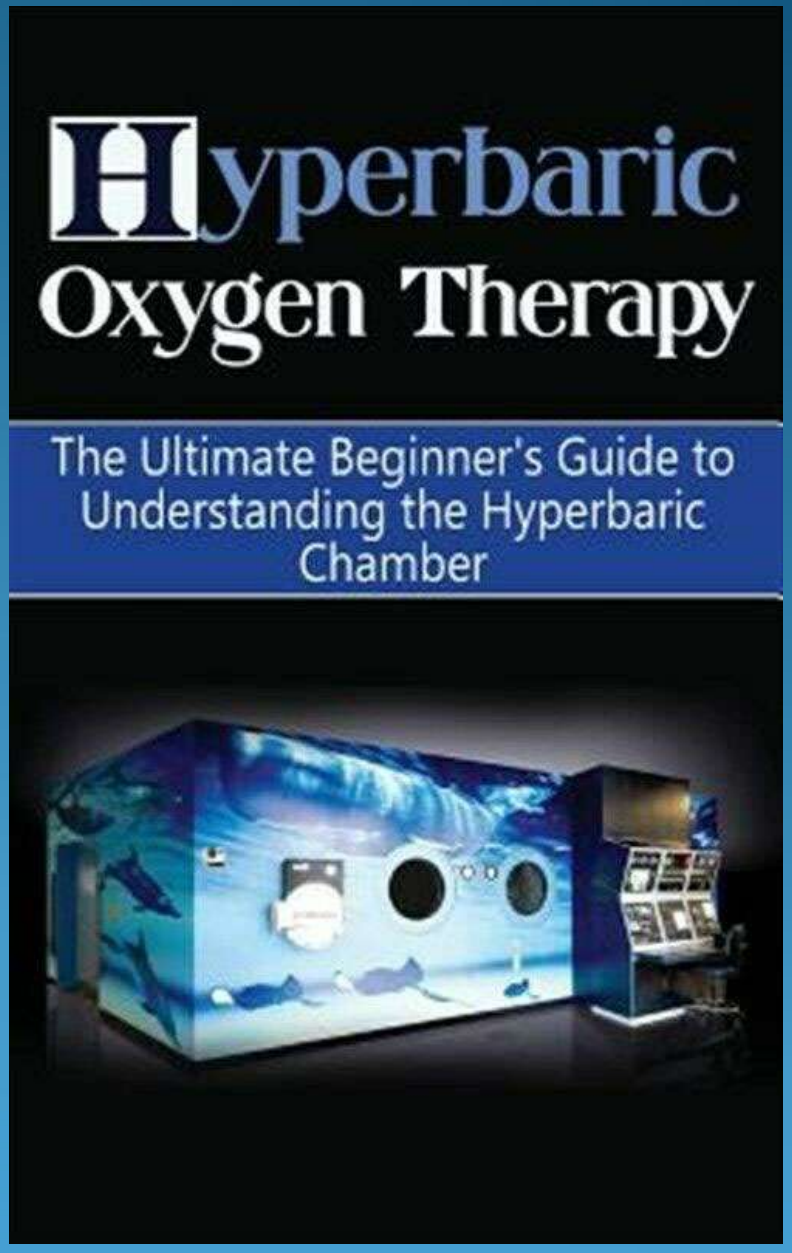
Hyperbaric Oxygen Therapy (HBOT)

You need 7 psi or 1.5 atm to treat concussion and stroke patients

Used machines cost $15,000 - $50,000

HBOT – Educate Yourself





So How Do You TREAT Concussions?

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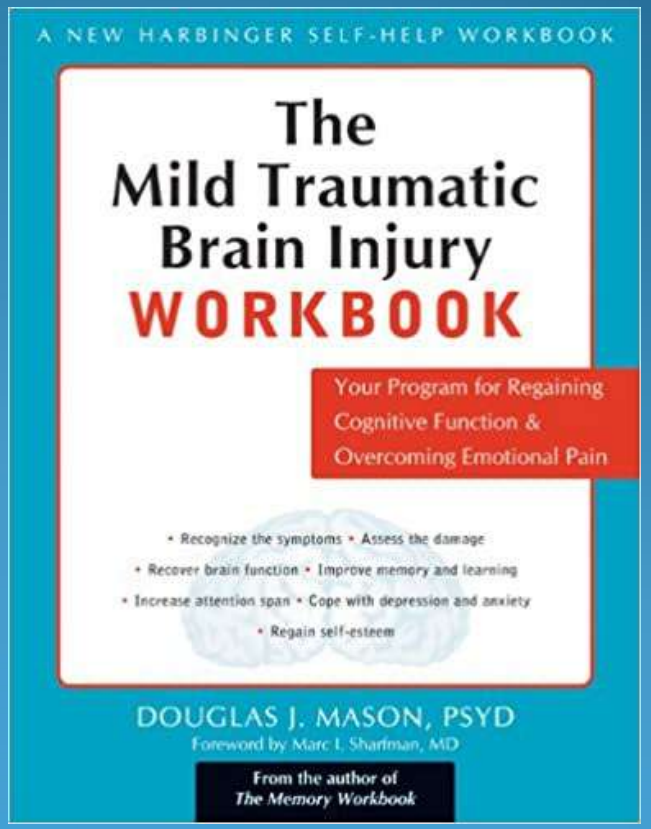
So How Do You TREAT Concussions?

The new **CPT code** that has entered the scene in 2018 is: **97127**, "Therapeutic interventions that focus on cognitive function (e.g., attention, memory, reasoning, executive function, problem solving, and/or pragmatic functioning) and compensatory strategies to manage the performance of an activity (e.g., managing time or schedules, initiating, organizing and sequencing tasks), direct (one-on-one) patient contact."

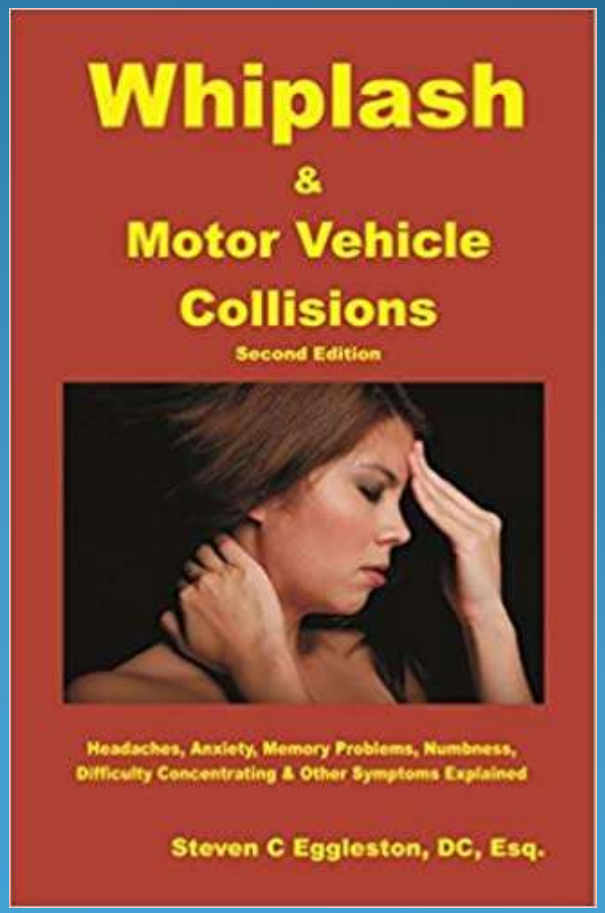
97127 – In Office Treatments

1) You bill in increments of 15 minutes
2) Patients complete jigsaw puzzles, crossword puzzles, color in coloring books or complete the worksheets in books like "The Mild Traumatic Brain Injury Workbook"
3) Available on Amazon for $22



97127 – In Office Treatments

1) Detailed list and descriptions of memory, cognitive, executive function, sleep, attention function, and others in this book.



USED copies are currently selling on Amazon for $40-$50

New copies available at www.hbinstitute.com for $24.95

97127 – In Office Treatments

1) Counsel the patient to GET HELP to SLEEP better
2) Sleep and Short Term Memory are tightly intertwined
3) Your in-office treatments and home care instructions help the patient improve memory, executive function, attention span, focus, language & communication ability.

97127 – In Office Treatments

1) Sensory & Motor Functions are damaged by concussions.
2) Play Wii games with kids
3) Play catch with kids
4) Color in coloring books with kids
5) Play CHILDREN games to recover spacial-visual-motor coordination (like catching a ball)

So How Do You TREAT Concussions?

1) Transcranial LASER
2) Supplemental O2
3) Hyperbaric O2 (HBOT)
4) In-Office treatments for which you can BILL the code 97127
5) Do the FOLLOW UP questionnaires previously taught today to MONITOR PROGRESS

Look SMART on PAPER

All the forms for this lecture are available to you for FREE

www.hbtinstitute.com

User Name – great
Password - doctor

What Specialists to Use?

Pain Management (for most radiculopathies)
Psychologist (for PTSD & concussions)
Psychiatrist (for PTSD & concussions)
Neuropsychologist (for concussions)
Orthopedic Surgeon (for extremity surgery)
Neurosurgeon (for spine surgery)
Neurologist (as a last resort if you don't know any of the ones above OR that neuro is REALLY good)

Where is the Life-changing Injury?

This patient has a torn anterior longitudinal ligament. You cannot see it on a neutral flexion film

This same patient has “intermittent” upper extremity numbness & tingling because of a torn ligament in the neck.

Neurological? Absolutely

Nothing Much On Flexion Film

.

George's Line does not show any significant stair-stepping.

But the patient still has tingling in the fingers.

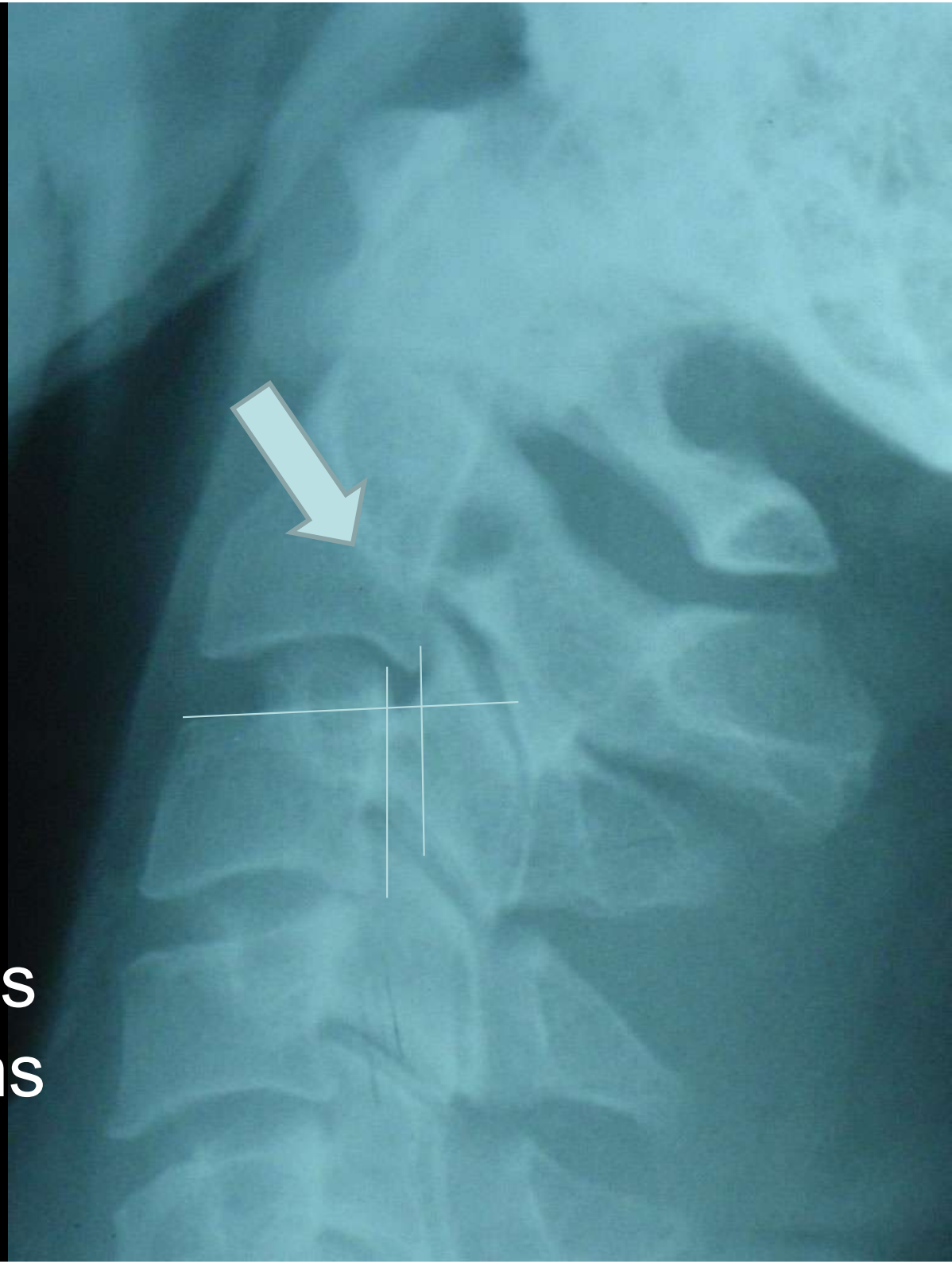
Do you see it
the Life-changing
injury on the
Extension Film?

It is at C2-3.
It is a torn A.L.L.

If you can't see it now…

You just committed MALPRACTICE

Stair stepping on flexion and extension films means torn neck ligaments AND intermittent numbness and tingling symptoms



When to order TESTS

Order “Stress” plain film x-rays when the patient has intermittent radiculopathies because when spine ligaments are torn, the bones move excessively with certain movements and hit the spinal nerve root (hence, intermittent tingling.)

Stress films include:

- Lateral flexion and extension (assess the ALL, PLL and interspinous ligaments)
- APOM in side flexion (both ways assess the alar and accessory ligaments for tears.)

When to order TESTS

When the “Stress” plain film x-rays show vertebral instability (stair stepping on George’s line or excessive movement), the patient has one or more torn neck ligaments.

Order video fluoroscopy to assess all 22 neck ligaments for tears.

You will find the reason for “intermittent” numbness or tingling in the extremities.

Case Study
Whiplash-25 Years Later

Original Rear End Car Accident in 1985

Follow up x-rays in:

1998, 2003, 2006, 2010 and 2012

Torn ligaments CAUSE DJD & “intermittent” radiculopathies.

1994

9 years Post Accident

The injury is at C3-4.

It is a torn A.L.L.

You cannot see it on neutral lateral.

George's Line

Injury… Torn A.L.L.

The injury is visible just one day after the accident…

IF YOU LOOK

1998

13 years post accident

DJD is obvious at anterior bodies of C3 & C4 from the torn A.L.L. (Anterior Longitudinal Ligament)

2003

18 years post accident

Anterior bodies of C3-C4 are already fusing at the site of the torn A.L.L. back in 1985

2010

25 years post accident

C3-4 are almost completely fused from the torn A.L.L. in 1985

1994

The 4mm of stair stepping is obvious on the extension lateral plain film at C3-4.

This causes “intermittent” radiculopathies like numbness & tingling and eventual fusion of the spine

1994

There is also 1.5mm stair stepping at C4-C5 from the same car accident in 1985.

This caused only moderate DJD 25 years later as seen on the next x-ray.

2010

25 years post accident

C3-4 are almost completely fused from the BADLY torn A.L.L. in 1985

C4-5 only have mild to moderate DJD from a slightly torn ligament in 1985

Which 2 vertebrae FUSED in 25 years after a car accident tore the A.L.L.?

C3-C4

Disc Herniations cause “CONSTANT” Numbness

Timing of the nerve symptoms is the key to accurate diagnosis and you know which test to order (MRI)

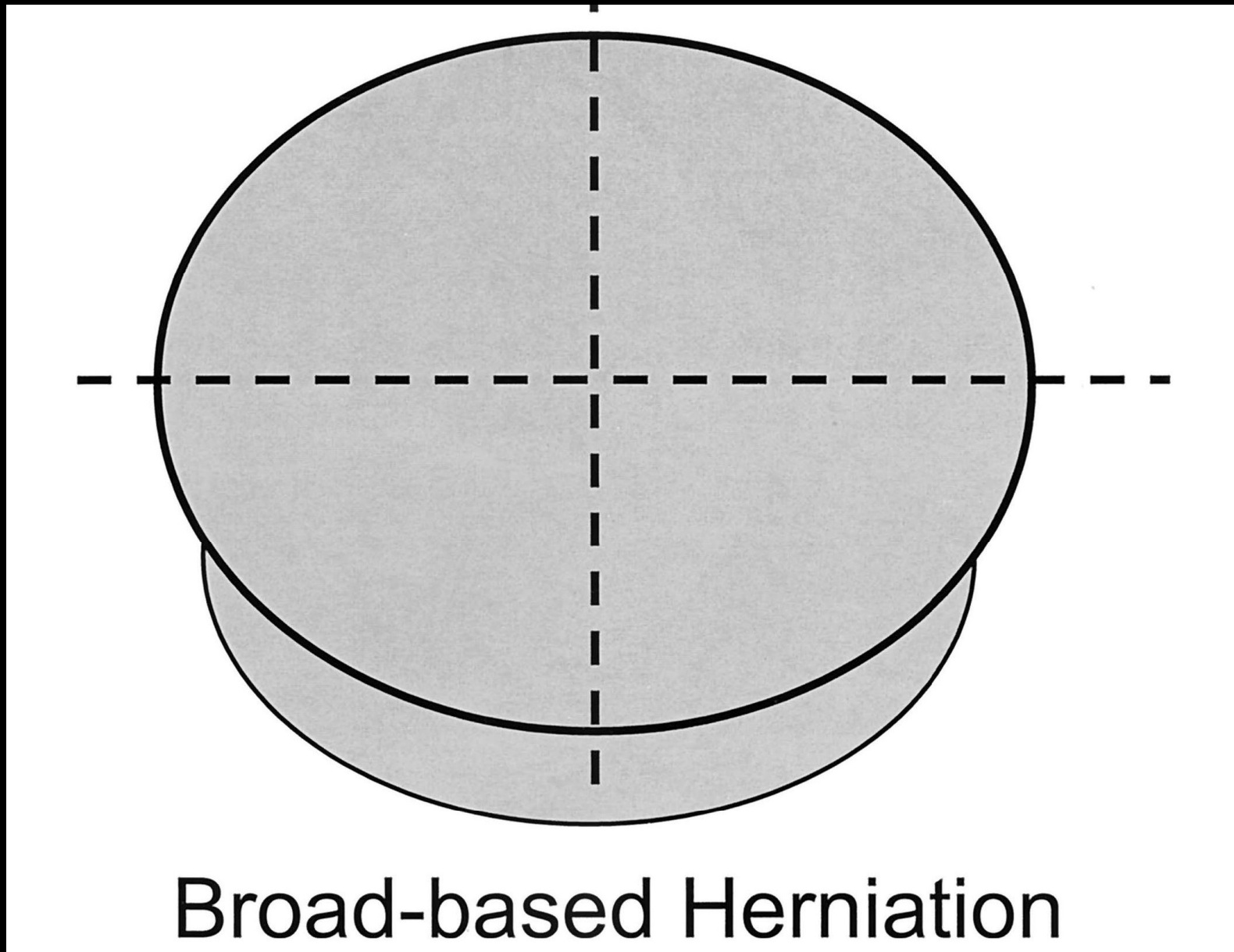


Figure 7. By convention, a “broad-based” herniation involves between 25% and 50% (90–180°) of the disc circumference.

“Focal” Herniations Cause One Sided Numbness

Broad based herniations can cause bilateral numbness/tingling

Focal Herniations usually cause only one sided numbness/tingling

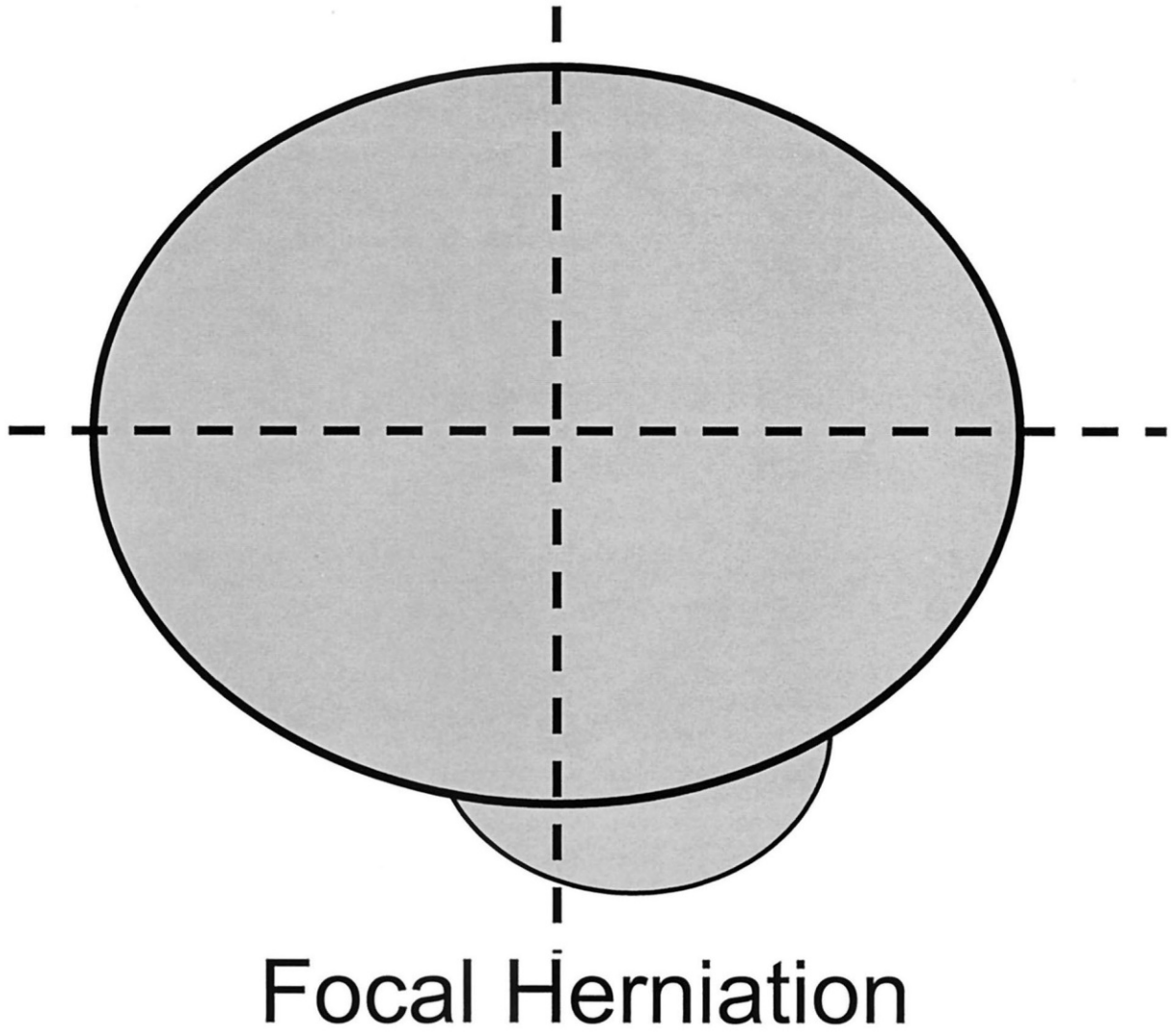
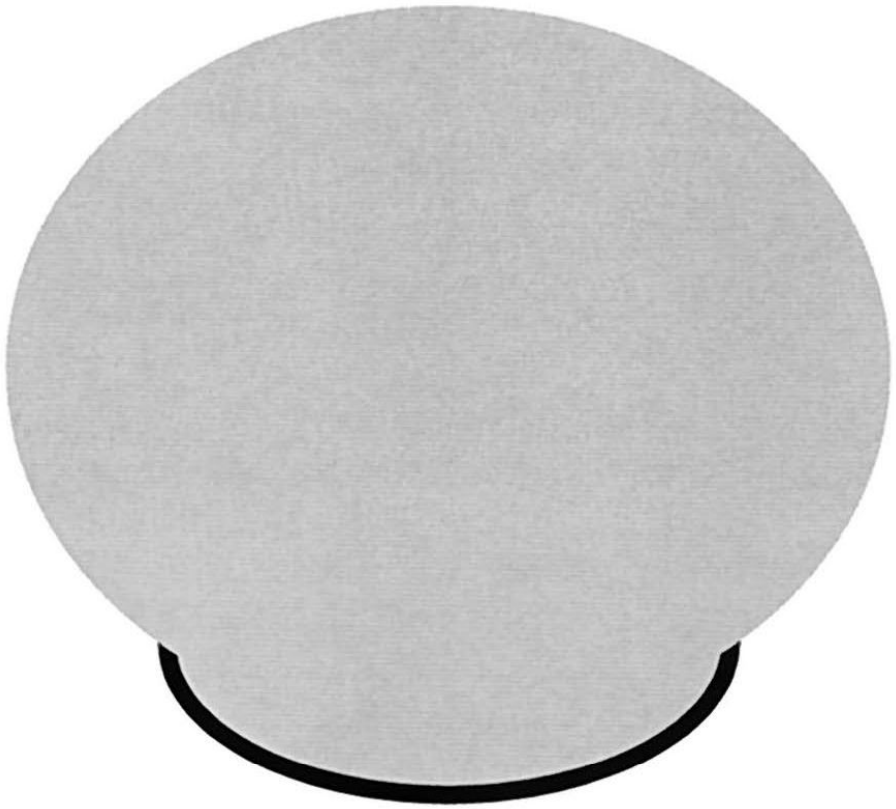
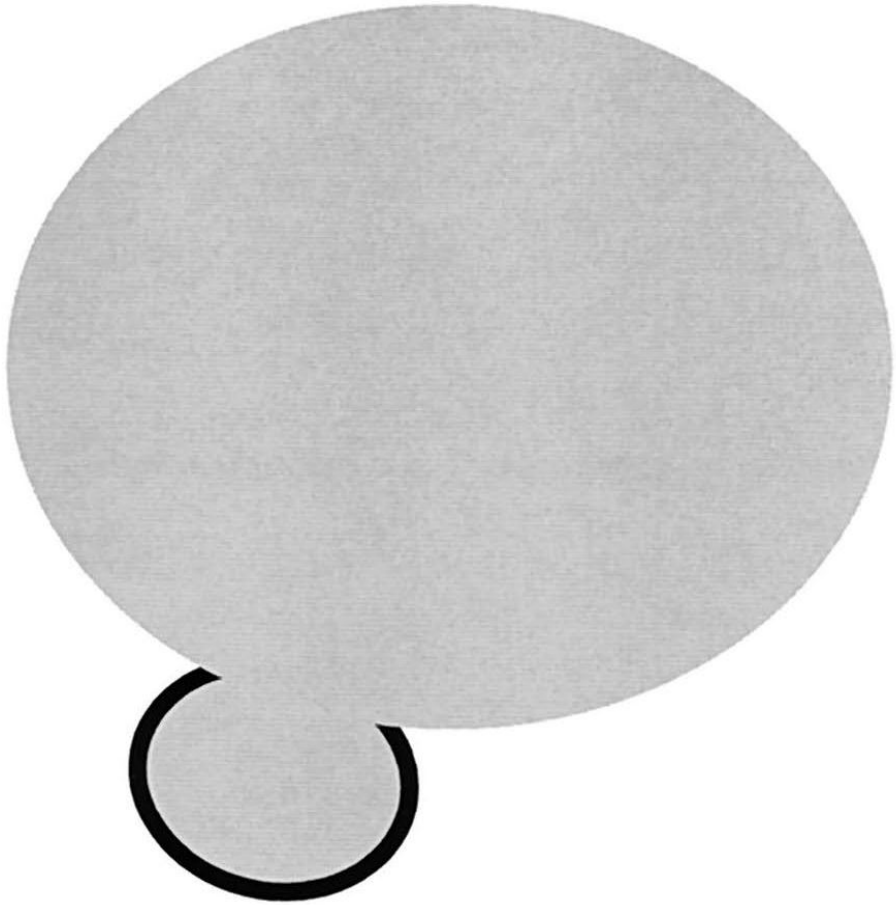


Figure 6. By convention, a “focal herniation” involves less than 25% (90°) of the disc circumference.

A disc “bulge” is age-related and NOT caused by trauma. ALL “bulging” discs are greater than 50% of the circumference of the disc.

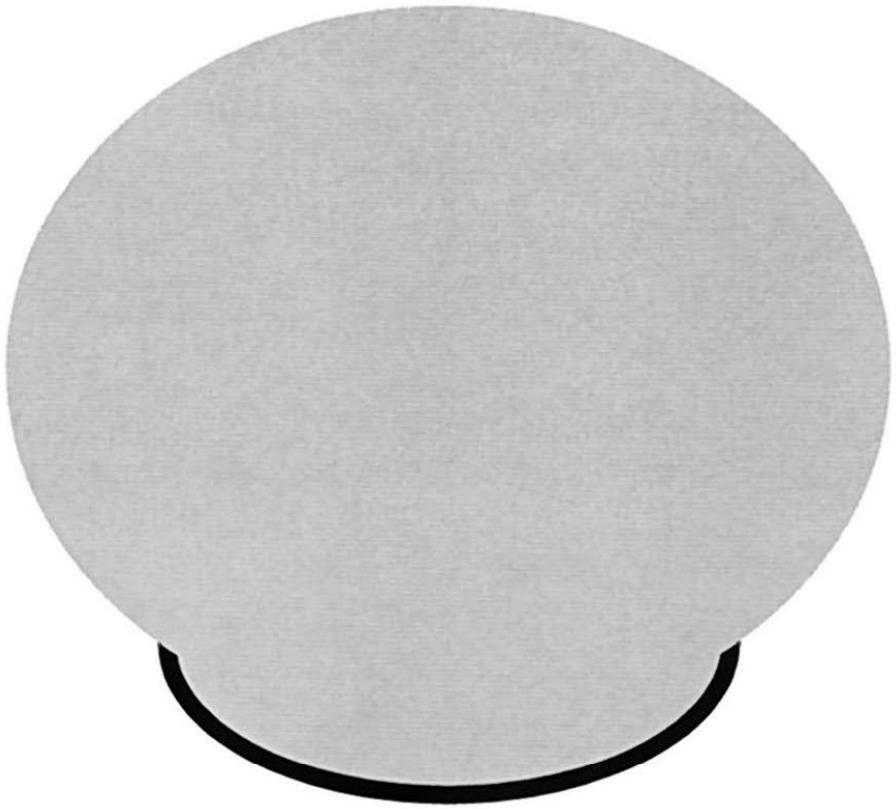


Protrusion

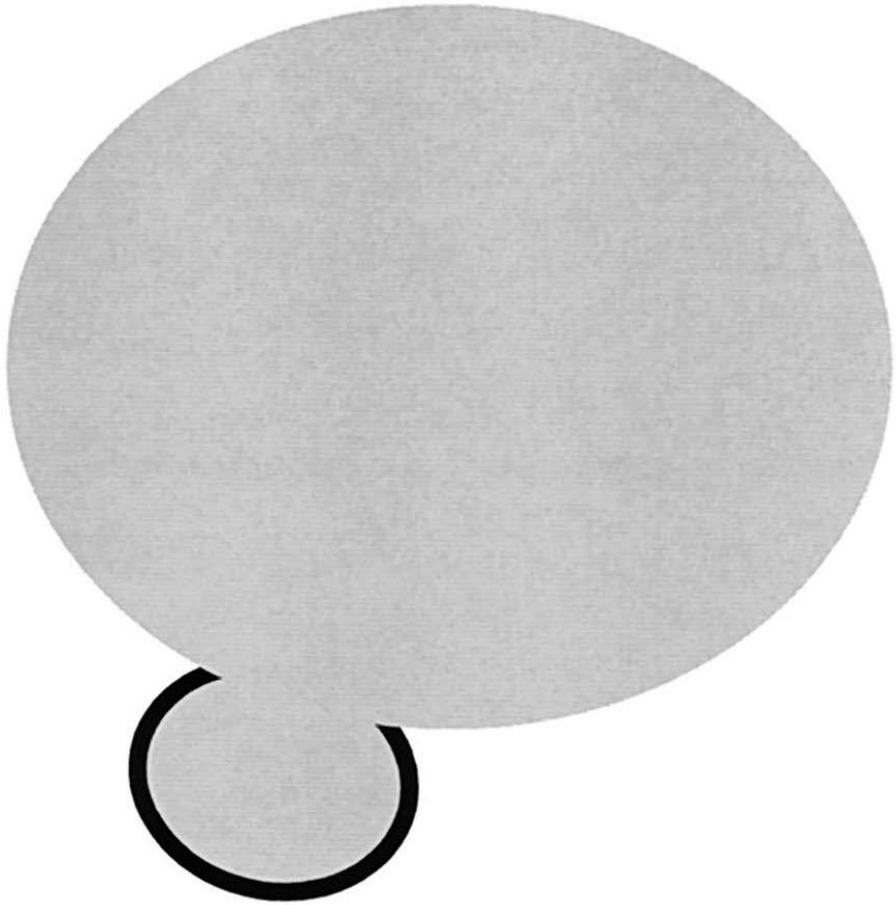


Extrusion

Herniations (2 types are protrusion and extrusion) are caused by trauma. If the radiologist uses the word “bulge” to describe these, he/she is wrong.



Protrusion



Extrusion

When to order TESTS

Since herniated discs (protrusions and extrusions) are trauma related and cause "constant" radiculopathies (such as numbness, tingling, reflex abnormalities and pain), the best test to order for constant neurological symptoms in the extremities (upper or lower) is

MRI

When to order TESTS

If you order an MRI when the patient has “intermittent” radiculopathy, you will not find the cause of the extremity neurological symptoms because MRI studies look for disc herniations and those cause “constant” radiculopathies.

Intermittent radiculopathies are caused by torn spine ligaments and vertebra that move around too much and strike the nerve root in certain positions.

Resources

www.hbtinstitute.com

Go to Doctor Forms
User Name = great
Password = doctor

Resources

Accident Stories
is a new channel
on YouTube

First Episode is me explaining to your patients why they should buy GOOD car insurance BEFORE they come to see you when they have been in an accident.

Accident Stories Channel

Search “Buy Good Insurance to Protect Yourself”

1. Subscribe to the channel
2. Like the video
3. Click on the BELL icon to be notified of new episodes.

Your patients will come in with $100,000 MedPay

Accident Stories Channel

“Buy Good Insurance to Protect Yourself”

Link is

https://www.youtube.com/watch?v=Kxws-qoMNnY&t=1480s

(Want Link in Chat Room?)

Accident Stories Channel

Future Accident Stories

What is Whiplash?

Can Chiropractic Help?

Fingers Tingle After a Car Accident?

Neck Pain After a Car Accident?

Brain Concussion After a Car Accident?

Concussion Treatments

Predicting Arthritis After Car Accidents

Torn Ligament or Disk After a Car Accident?

72 Episodes in Production


Accident Stories
Whiplash
Explained so you
can understand it
Hosted by
Chiropractor
and Attorney
Dr. Steve Eggleston


Accident Stories
Headaches
after a car accident?
Hosted by
Chiropractor and Attorney
Dr. Steve Eggleston


Accident Stories
Torn Ligament or Torn Disk
after a car accident.
Hosted by
Chiropractor
and Attorney
Dr. Steve Eggleston


Accident Stories
Neck Pain
after a car accident?
Hosted by
Chiropractor and Attorney
Dr. Steve Eggleston

Accident Stories Channel

Pro-Chiropractic Videos
Great Patient Education

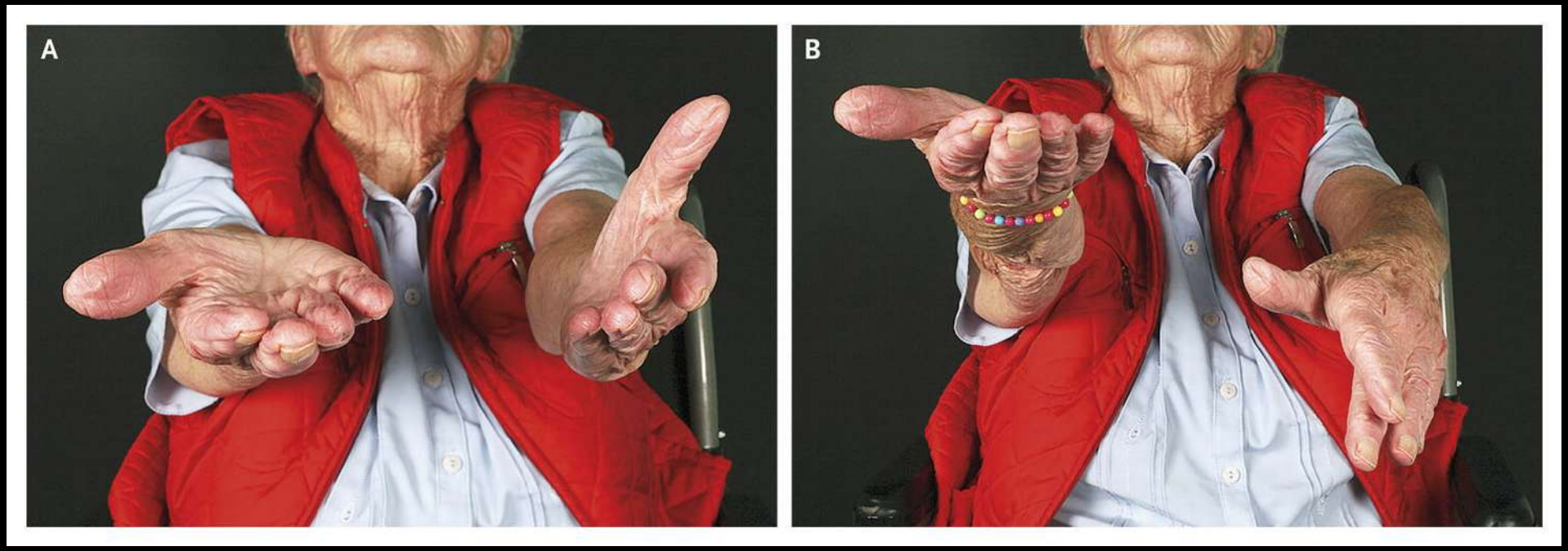
You Subscribe
Send LINKS to all your patients (Share)

Let’s get some GOOD publicity for Chiropractic

What is Neurological “Drift”?

If only one motor test could be done in a patient, the best single test would be to examine the drift.

What is Neurological “Drift”?



Pronator Drift

Patient’s hand pronates & drops down

Drift Components to Watch For

Downward arm movement
Upward arm movement
Outward (lateral) arm movement
Forearm Pronation (or lack of)
Flexion of Wrist & Elbow

Watch Patient for 30 Seconds

Drift happens within about 30 seconds

To speed it up:

1) Tap on the palms and/or
2) have patient turn head back & forth

Interpreting Neurological “Drift”?

Upward & Outward drift with pronation (eyes closed) is a sign of cerebellar lesion.

Upward and/or outward drive WITHOUT pronation = Functional limb motor weakness

Interpreting Neurological “Drift”?

Pronator Drift with eyes CLOSED = SENSORY deficit caused by a problem in the posterior column (UMN)

Pronator Drift with eyes OPEN = MOTOR deficit caused by a problem in the brain.

Downward drift WITHOUT pronation = Functional limb motor weakness

Writing the Findings for Drift

DESCRIBE in your notes exactly what you observed. For example…

With eyes closed, the patient's left hand drifted upward and outward with no pronation
-or-
With eyes closed, the patient's right hand drifted downward with pronation
-or-
No evidence of drift in the upper extremities

Refer to Neurologist if you see Drift

Dear Neuro,

I refer this patient to you because I observed drift in the left hand downward with pronation after the patient was in a motor vehicle accident 14 days ago. Please evaluate and treat.

Sincerely,

A. Gud Chiro

What if there is Drift WITHOUT Pronation?

Drift without pronation is a sign of functional motor weakness in an arm or leg. This diagnosis is made when all the tests are negative.

They used to call these people malingering but modernly we know that after trauma there can be a functional weakness in a limb that is transitory and self-limiting.

DOCUMENT IT. Call it "Post-traumatic functional right/left arm/leg weakness" in the patient's chart

Symptoms/Signs of Functional Limb Weakness

Dropping things

Handwriting or signature looks different

Handwriting feels “weird” to the patient and they struggle (and have to think about) handwriting

Heaviness down one side

Feeling that limb is “not normal” or “doesn’t feel part of me”

Neurological Tests of Functional Limb Weakness

Reflexes are normal

Neurological system is not damaged… it is just not working properly.

Since all neurological tests are “normal”, the insurance company doctor will call the patient “malingering”. Your CAREFUL documentation can overcome this if you use the right words and describe in detail what you see (drift without pronation) and what the patient tells you.

Documenting Functional Limb Weakness

I observed drift of the upper/lower extremity without pronation. I believe this is a subtle motor weakness caused by the recent trauma and falls into the category of functional limb weakness.

Test drift MONTHLY to document how long the functional limb weakness lasts.

“The patient’s post-traumatic right arm functional weakness lasted nine months and then returned to normal.”

Do YOUR Job

- The Chiropractor's job is to
  - Thoroughly CONSULT and know all the patient's SYMPTOMS so you know where to examine
  - Examine ALL body areas with symptoms
  - Diagnose every symptom confirmed by exam
  - TREAT every diagnosis! (or get help)

Cranial Nerve Dysfunction after Trauma

When should a chiropractor test the cranial nerves?

1. When the patient describes a symptom
2. After trauma

Trauma Causes Cranial Nerve Injuries

The brain stem is located at/near the foramen magnum. During Whiplash, the 13-15 pound human head whips around and the bony foramen magnum can bruise or damage the brain stem.

Symptoms of Brain Stem Trauma

1. Abnormal Sleeping Patterns
2. Deficit in verbal working memory (word finding problems) (w/ Cerebellum)
3. Loss of balance / Vertigo (w/ Cerebellum)
4. Muscle weakness (functional limb weakness) (w/ Cerebellum)
5. Cranial nerve dysfunctions

Traumatic Cranial Nerve Dysfunctions

I. Olfactory
   a. Symptoms
      1. Some food or drink tastes weird or funny
      2. Test BOTH nostrils using different things

II. Optic
   a. Symptoms
      1. Blurry Vision after brain concussion is most common
      2. Ask patient about blurry vision
      3. Diagnose concussion
      4. Refer to Optometrist for new glasses

Traumatic Cranial Nerve Dysfunctions

III, IV & VI Oculomotor, Trochlear & Abducens

Symptom – “Bright lights bother me”

Test pupil reflex w/ flashlight because a pupil not contracting will let in too much light and will make the patient sensitive to bright lights

Observe for a drooping eyelid

Observe for Nystagmus

Traumatic Cranial Nerve Dysfunctions

V - Trigeminal Nerve

Trigeminal neuralgia is a rare injury from Whiplash

You will know it if the patient has it… It REALLY hurts

Traumatic Cranial Nerve Dysfunctions

IX and X: Glossopharyngeal and Vagus Nerves

Whiplash can occasionally cause loss of gag reflex so it should be tested (especially if you found loss of smell or blurry vision.)

Traumatic Cranial Nerve Dysfunctions

IX and X: Glossopharyngeal and Vagus Nerves

Whiplash can occasionally cause loss of gag reflex so it should be tested (especially if you found loss of smell or blurry vision.)

NOTE: The other cranial nerves not yet mentioned should be tested if you find deficits in these already taught. Otherwise, if these are all normal, it would be rare to find deficits in others.

Neuro-Otological Signs from Whiplash

- Two tests are early predictors of chronic whiplash:
  - **Auditory brainstem response tests (ABR)**
  - **Oculomotor function tests**, including evaluation of **saccades** (the rapid, step-like voluntary motion of the eyes used when reading or scanning an image).

- *Wenngren BI, Pettersson K, Lowenhielm G, Hildingsson C. Eye motility and auditory brainstem response dysfunction after whiplash injury. Acta Otolaryngologica 2002;122:276-283.*

Neuro-Otological Signs from Whiplash

- This study provides two important pieces of information about chronic whiplash: 1) ABR and saccade tests are an objective way to measure altered neurology in these patients; 2) some patients may have actual brain injury from whiplash collisions.
- *Wenngren BI, Pettersson K, Lowenhielm G, Hildingsson C. Eye motility and auditory brainstem response dysfunction after whiplash injury. Acta Otolaryngologica 2002;122:276-283.*

Documenting Brain Stem Trauma

- I found objective evidence of brain stem trauma. The following cranial nerves (located in the brain stem) are abnormal: I and II. I am making a referral for ABR and Oculomotor function tests (including saccades) to further evaluate this patient's brain stem injury.

How Neck Pain Causes Vertigo/Dizziness

- The cervical spine plays a key role in how the brain maintains balance, and signals from the injured cervical spine travel through the spinal cord to the brainstem—specifically the vestibular and oculomotor nuclei. This is the same part of the brain that receives the signals from the inner ear, via the eighth cranial nerve. A painful neck can cause overexcitation of the nerve pathways, resulting in altered functioning of the brainstem. These alterations in the brainstem can in turn cause dysfunction in eye motility and balance, since these different systems all work together as the Posture Control System.

Neurological Injuries

- Spinal Cord Symptoms-Neurosurgeon STAT
- Blurry Vision (Behavioral optometrist, neuropsychologist, psychiatrist, neurologist because this is a concussion)
- Traumatic HPTN (Internist, Cardiologist or Endocrinologist because this is concussion related)
- Sleep Disorder (Pulmonary Internist, Sleep MD because this is concussion-related or PTSD-related)

Spinal Cord Symptoms-Neurosurgeon STAT

- Loss or altered sensation, including the ability to feel heat, cold and touch
- Loss of bowel or bladder control
- Exaggerated reflex activities or spasms
- Changes in sexual function, sexual sensitivity and fertility
- Pain or an intense stinging sensation caused by damage to the nerve fibers in your spinal cord
- Difficulty breathing, coughing or clearing secretions from your lungs

Neurological Injuries

- Fatigue (Endocrinologist, Neuropsyche, Psychiatrist because this is concussion or PTSD related)

- Endocrine System (Endocrinologist)
  - TSH – Thyroid Stimulating Hormone (Fatigue)
  - ACTH – Adrenocorticotrohpic Hormone (fatigue, excessive pain patterns)
  - LH – Leutenizing Hormone (loss of libido)
  - FSH – Follicle Stimulating Hormone (loss of libido)
  - ADH – Antidiuretic Hormone/Vasopressin (HPTN)

Neurological Injuries

- CNS hearing loss from concussion
- Vestibular System Injury
- Tinnitus (perceived sounds that originate from within a person rather than the outside world
  - –Traumatic
  - –Salicylate ingestion
- Equilibrium
  - –Dizziness (general term)

–ENT for these-

Neurological Injuries

- Concussion (Psychiatrist, Neuropsyche)
  - Central & Obstructive Sleep Apnea
  - Arousal & Sleep Disorders
  - Narcolepsy
  - Mental Status & Cognition
  - Emotional & Behavioral Impairments
  - Upper Extremity CNS Dysfunction
  - Complex Regional Pain Syndrome
  - Craniocephalic Pain (HA)
  - Mental & Behavioral Disorders

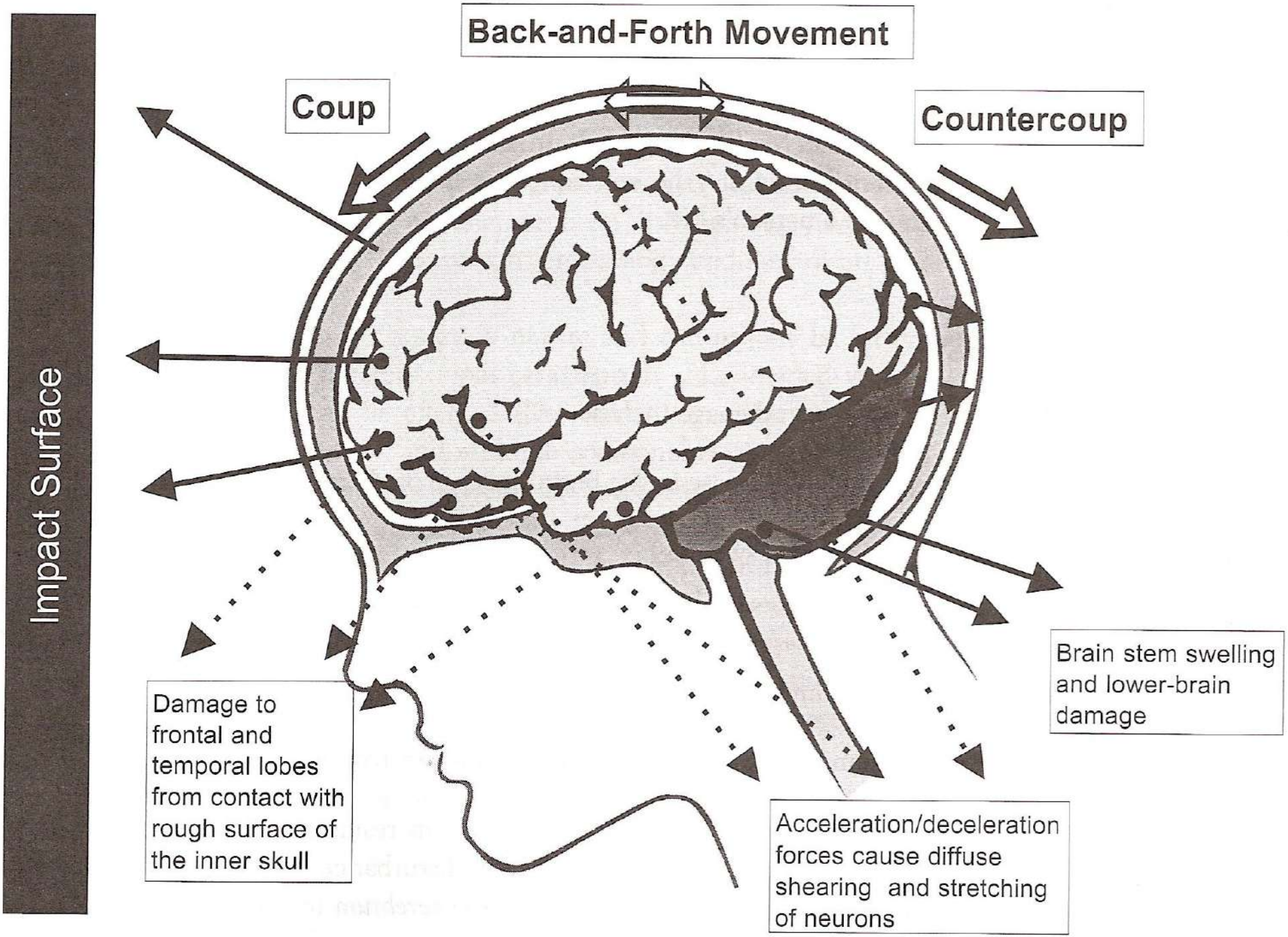
Want to be a Cowboy Chiropractor?

- It is malpractice to misdiagnose a patient.
- 40-50% of car accident patients have a concussion.
- You cannot treat 40-50% of your car accident cases without help from:
  - Psychiatrist/Neuropsychologist
  - Endocrinologist
  - Neurologist

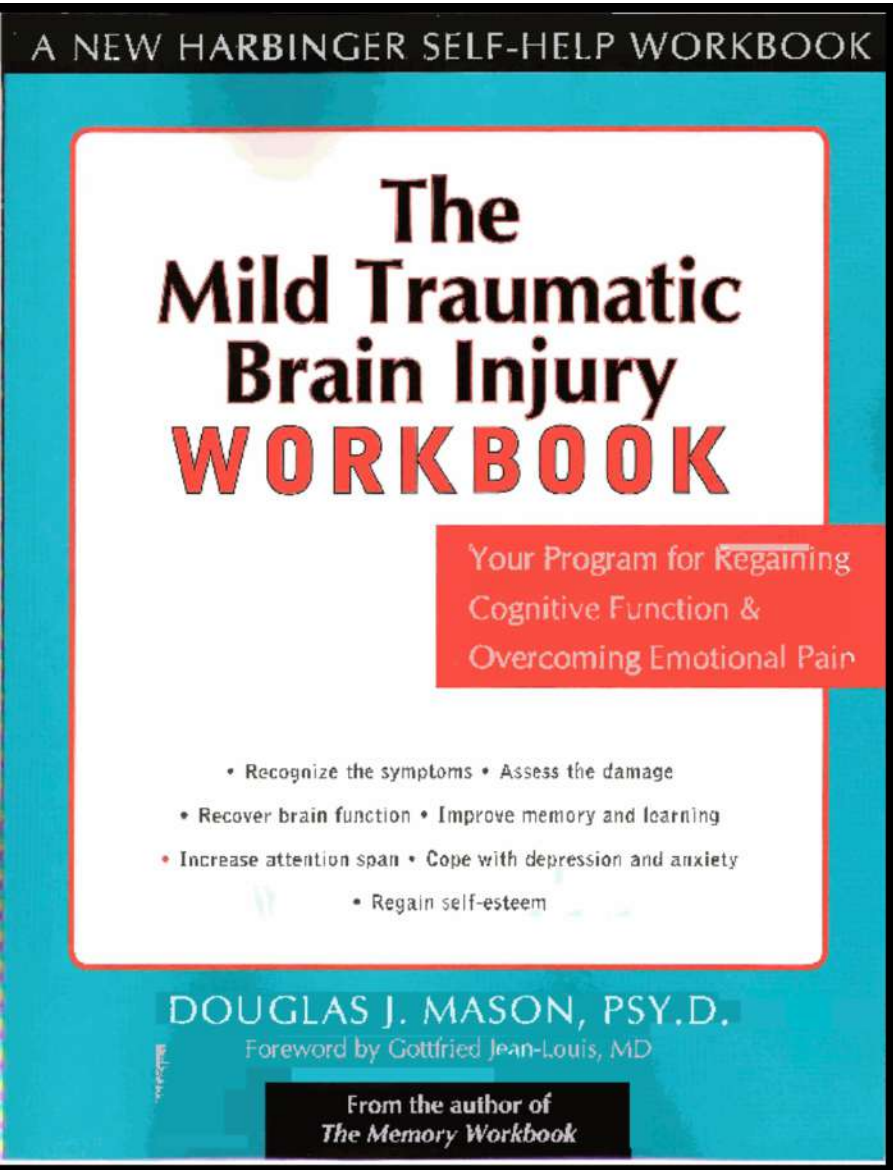
Blurry Vision

- Behavioral optometrists have special training in diagnosing and treating brain concussions.
- Brain concussions cause blurry vision.

- Send these patient to BOTH a behavioral optometrist AND neuropsyche / psychiatrist


Impact Surface
Back-and-Forth Movement
Coup
Countercoup
Damage to frontal and temporal lobes from contact with rough surface of the inner skull
Brain stem swelling and lower-brain damage
Acceleration/deceleration forces cause diffuse shearing and stretching of neurons

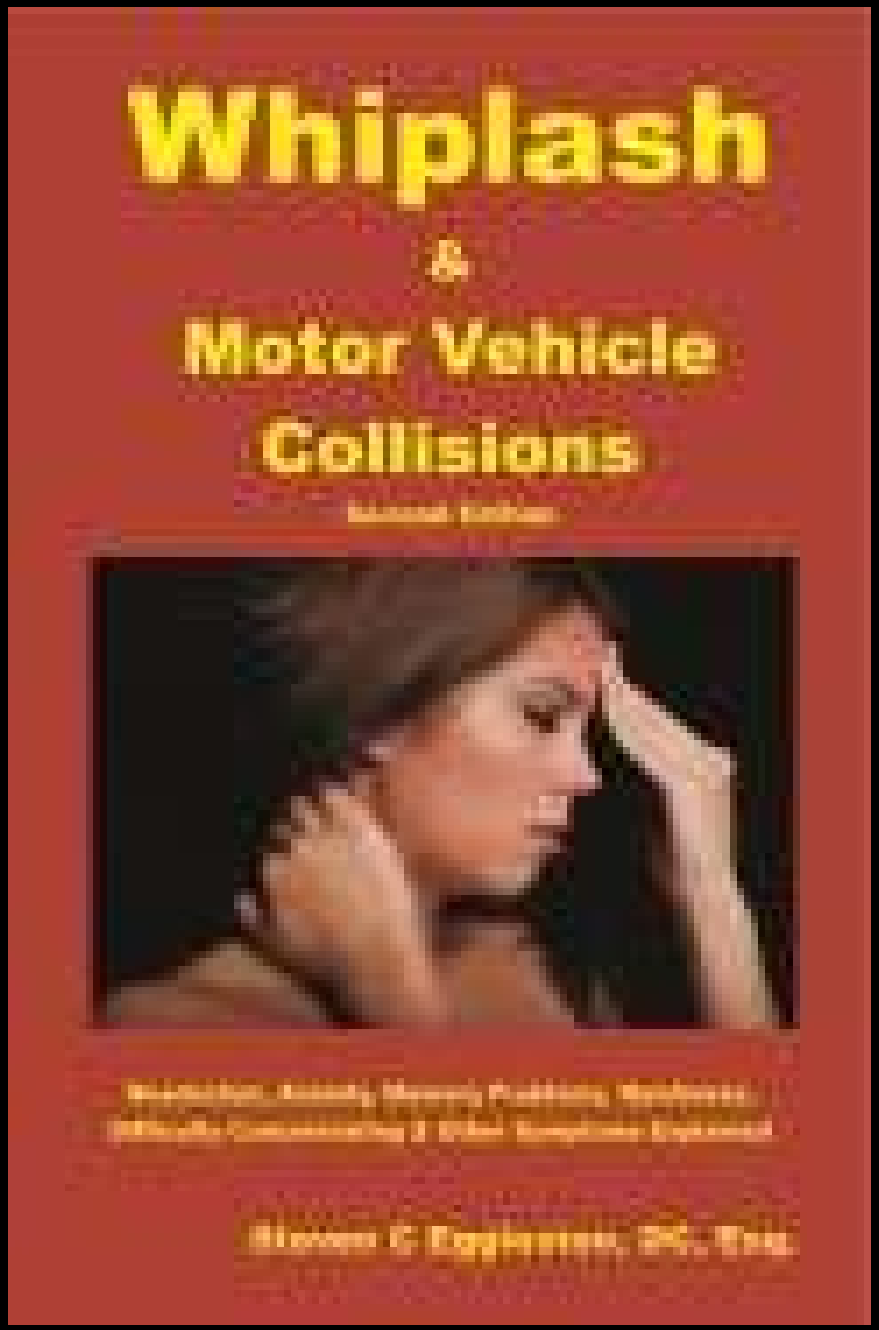
Dizziness
Difficulty Concentrating
Memory Loss
Irritability
Sleep Disturbances
Impaired Comprehension
Impaired Learning
Loss of Coordination
Vertigo
Anxiety
Depression
Personality Changes
Flashbacks to Accident Scene
Social Withdrawal



Treating the MTBI involves Mental Exercises

This book has dozens of Them you can use if you Want to treat or co-treat The patient.

Neuropsychologist is the BEST appropriate referral



Here is another book useful to a chiropractor who wants to know what is wrong with the patient…

5 Areas Affected by MTBI

- Emotional
- Behavioral
- Social
- Cognitive
- Physical

Emotional

- Depression
- Anxiety
- Hopelessness
- Helplessness
- Reduced Confidence
- Apathy
- Irritability
- Intense Fear (PTSD)

Counsel the patient (use -21 modifier or time code 99354 if E & M time exceeded)

Behavioral

- Impatience
- Anger
- Frustration
- Confrontational Behaviors
- Impulsivity
- Anxiety in Car, near scene
- Social withdrawal

Social

- Relationship changes/difficulties
- Changed ability to engage in hobbies and leisure activities (LOEOL form)
- Decreased ability to perform at work or school (DUD form)
- Isolation & increased alienation from others

Counsel the patient's spouse & family

Cognitive

- Poor Attention
- Memory difficulties
- Taking longer to think
- Confusion & disorientation
- Difficulty making decisions
- Difficulty planning or organizing
- Easily Distracted
- Judging distances, spatial relations difficulties
- Language comprehension or speaking problem

Physical

- Chronic Pain
- Fatigue
- Weakness or numbness
- Changes in vision, hearing, t
  smell
- Sleep Disturbances
- Appetite Changes
- Dizziness
- Nausea
- Changes in libido
- Lack of inhibition

Neurological Injuries (Mistakes)

- Physical symptoms of brain concussion are OFTEN misinterpreted by Chiropractors as *actual* physical symptoms.

- Headaches, Dizziness, & Chronic Pain are the three most often misunderstood.

MTBI Primary Brain Damage

- Alteration in cerebral blood flow
- Diffuse axonal injury
- Intracranial lesions
- Vestibular damage
- Slowed information processing

MTBI Secondary Brain Damage

- Neurotransmitter (chemical) dysfunction
- Intracranial hematoma (swelling)
- Cellular degeneration
- Decreased glucose uptake
- Pulmonary complications & hypoxia

ACE

Acute Concussion Evaluation

From the U.S.'s CDC

Acute Concussion Evaluation (ACE)
Physician/Clinician Office Version

Gerard Gioia, PhD[1] & Micky Collins, PhD[2]
[1]Children's National Medical Center
[2]University of Pittsburgh Medical Center

Patient Name:_____
DOB: _____ Age:_____
Date:_____ ID/MR#_____

A. Injury Characteristics Date/Time of Injury_____Reporter: __Patient __Parent __Spouse __Other_____

1. Injury Description _____

1a. Is there evidence of a forcible blow to the head (direct or indirect)? __Yes __No __Unknown
1b. Is there evidence of intracranial injury or skull fracture? __Yes __No __Unknown
1c. Location of Impact: __Frontal __Lft Temporal __Rt Temporal __Lft Parietal __Rt Parietal __Occipital __Neck __Indirect Force
2. **Cause:** __MVC __Pedestrian-MVC __Fall __Assault __Sports (*specify*)_____Other_____
3. **Amnesia Before (Retrograde)** Are there any events just BEFORE the injury that you/ person has no memory of (even brief)? __Yes __No Duration
4. **Amnesia After (Anterograde)** Are there any events just AFTER the injury that you/ person has no memory of (even brief)? __Yes __No Duration
5. **Loss of Consciousness:** Did you/ person lose consciousness? __Yes __No Duration
6. **EARLY SIGNS:** __Appears dazed or stunned __Is confused about events __Answers questions slowly __Repeats Questions __Forgetful (recent info)
7. **Seizures:** Were seizures observed? No__ Yes___ Detail_____

B. Symptom Check List* Since the injury, has the person experienced any of these symptoms any more than usual today or in the past day?
Indicate presence of each symptom (0=No, 1=Yes). ***Lovell & Collins, 1998 JHTR***

PHYSICAL (10)		COGNITIVE (4)		SLEEP (4)	
Headache	0 1	Feeling mentally foggy	0 1	Drowsiness	0 1
Nausea	0 1	Feeling slowed down	0 1	Sleeping less than usual	0 1 N/A
Vomiting	0 1	Difficulty concentrating	0 1	Sleeping more than usual	0 1 N/A
Balance problems	0 1	Difficulty remembering	0 1	Trouble falling asleep	0 1 N/A
Dizziness	0 1	**COGNITIVE Total (0-4)** _____		**SLEEP Total (0-4)** _____	
Visual problems	0 1	**EMOTIONAL (4)**			
Fatigue	0 1	Irritability	0 1		
Sensitivity to light	0 1	Sadness	0 1		
Sensitivity to noise	0 1	More emotional	0 1		
Numbness/Tingling	0 1	Nervousness	0 1		
PHYSICAL Total (0-10) _____		**EMOTIONAL Total (0-4)** _____			
(Add Physical, Cognitive, Emotion, Sleep totals) Total Symptom Score (0-22)		_____			

Exertion: Do these symptoms worsen with:
Physical Activity __Yes __No __N/A
Cognitive Activity __Yes __No __N/A

Overall Rating: How different is the person acting compared to his/her usual self? (circle)
Normal 0 1 2 3 4 5 6 Very Different

C. Risk Factors for Protracted Recovery *(check all that apply)*

Concussion History? Y ___ N___	√	Headache History? Y ___ N___	√	Developmental History	√	Psychiatric History
Previous # 1 2 3 4 5 6+		Prior treatment for headache		Learning disabilities		Anxiety
Longest symptom duration Days__ Weeks__ Months__ Years__		History of migraine headache __ Personal __ Family_____		Attention-Deficit/ Hyperactivity Disorder		Depression
						Sleep disorder
If multiple concussions, less force caused reinjury? Yes__ No__				Other developmental disorder_____		Other psychiatric disorder _____

List other comorbid medical disorders or medication usage (e.g., hypothyroid, seizures)_____

D. RED FLAGS for acute emergency management: Refer to the emergency department with sudden onset of any of the following:

* Headaches that worsen	* Looks very drowsy/ can't be awakened	* Can't recognize people or places	* Neck pain
* Seizures	* Repeated vomiting	* Increasing confusion or irritability	* Unusual behavioral change
* Focal neurologic signs	* Slurred speech	* Weakness or numbness in arms/legs	* Change in state of consciousness

E. Diagnosis (ICD): __Concussion w/o LOC 850.0 __Concussion w/ LOC 850.1 __Concussion (Unspecified) 850.9 ___Other (854) _____
__No diagnosis

F. Follow-Up Action Plan **Complete *ACE Care Plan* and provide copy to patient/family.**
___ **No Follow-Up Needed**
___ **Physician/Clinician Office Monitoring**: Date of next follow-up _____
___ **Referral:**
___ Neuropsychological Testing
___ Physician: Neurosurgery____ Neurology____ Sports Medicine____ Physiatrist____ Psychiatrist____ Other_____
___ Emergency Department

ACE Completed by:_____ MD RN NP PhD ATC

This form is part of the "Heads Up: Brain Injury in Your Practice" tool kit developed by the Centers for Disease Control and Prevention (CDC).

ACE

Home Care Instructions

Acute Concussion Evaluation (ACE)
Care Plan

Gerard Gioia, PhD[1] & Micky Collins, PhD[2]
[1]Children's National Medical Center
[2]University of Pittsburgh Medical Center

Patient Name:_____
DOB: _____ Age:_____
Date:_____ ID/MR#_____
Date of Injury:_____

You have been diagnosed with a concussion (also known as a mild traumatic brain injury). This personal plan is based on your symptoms and is designed to help speed your recovery. Your careful attention to it can also prevent further injury.

Rest is the key. You should not participate in any high risk activities (e.g., sports, physical education (PE), riding a bike, etc.) if you still have any of the symptoms below. It is important to limit activities that require a lot of thinking or concentration (homework, job-related activities), as this can also make your symptoms worse. If you no longer have any symptoms and believe that your concentration and thinking are back to normal, you can slowly and carefully return to your daily activities. Children and teenagers will need help from their parents, teachers, coaches, or athletic trainers to help monitor their recovery and return to activities.

Today the following symptoms are present (circle or check). ____**No reported symptoms**

Physical		Thinking	Emotional	Sleep
Headaches	Sensitivity to light	Feeling mentally foggy	Irritability	Drowsiness
Nausea	Sensitivity to noise	Problems concentrating	Sadness	Sleeping more than usual
Fatigue	Numbness/Tingling	Problems remembering	Feeling more emotional	Sleeping less than usual
Visual problems	Vomiting	Feeling more slowed down	Nervousness	Trouble falling asleep
Balance Problems	Dizziness			

— WORK VERSION —

RED FLAGS: Call your doctor or go to your emergency department if you suddenly experience any of the following			
Headaches that worsen	Look very drowsy, can't be awakened	Can't recognize people or places	Unusual behavior change
Seizures	Repeated vomiting	Increasing confusion	Increasing irritability
Neck pain	Slurred speech	Weakness or numbness in arms or legs	Loss of consciousness

Returning to Daily Activities

1. Get lots of rest. Be sure to get enough sleep at night- no late nights. Keep the same bedtime weekdays and weekends.
2. Take daytime naps or rest breaks when you feel tired or fatigued.
3. **Limit physical activity as well as activities that require a lot of thinking or concentration. These activities can make symptoms worse.**
   - Physical activity includes PE, sports practices, weight-training, running, exercising, heavy lifting, etc.
   - Thinking and concentration activities (e.g., homework, classwork load, job-related activity).
4. Drink lots of fluids and eat carbohydrates or protein to main appropriate blood sugar levels.
5. **As symptoms decrease, you may begin to gradually return to your daily activities. If symptoms worsen or return, lessen your activities, then try again to increase your activities gradually.**
6. During recovery, it is normal to feel frustrated and sad when you do not feel right and you can't be as active as usual.
7. Repeated evaluation of your symptoms is recommended to help guide recovery.

Returning to Work

1. Planning to return to work should be based upon careful attention to symptoms and under the supervision of an appropriate health care professional.
2. Limiting the amount of work you do soon after your injury, may help speed your recovery. It is very important to get a lot of rest. You should also reduce your physical activity as well as activities that require a lot of thinking or concentration.

___Do not return to work. Return on (date)_____.
___Return to work with the following supports. Review on (date)_____.

Schedule Considerations
___Shortened work day _____ hours
___Allow for breaks when symptoms worsen
___Reduced task assignments and responsibilities

Safety Considerations
___No driving
___No heavy lifting or working with machinery
___No heights due to possible dizziness, balance problems

This form is part of the "Heads Up: Brain Injury in Your Practice" tool kit developed by the Centers for Disease Control and Prevention (CDC).

Rivermead Post-Concussion Symptoms Questionnaire

Developed by the Rivermead Head Injury Service, Oxford, England.

Rivermead Post-Concussion Symptoms Questionnaire

After a head injury or accident, some people experience symptoms which can cause worry or nuisance. We would like to know if you now suffer any of the symptoms given below.
As many of these symptoms occur normally, we would like you to compare yourself now with before the accident. For each one, please circle the number closest to your answer.

Rivermead Post-Concussion Symptoms Questionnaire

0 = Not experienced at all
1 = no more of a problem now than before the accident
2 = a mild problem now
3 = a moderate problem now
4 = a severe problem now

Rivermead Post-Concussion Symptoms Questionnaire

Headaches
Feelings of dizziness
Nausea and/or vomiting
Noise sensitivity, or easily upset by loud noise
Sleep disturbance

Rivermead Post-Concussion Symptoms Questionnaire

Fatigue, tiring more easily
Being irritable, easily angered
Feeling depressed or tearful
Feeling frustrated or impatient
Forgetfulness, poor memory
Poor Concentration

Rivermead Post-Concussion Symptoms Questionnaire

Taking longer to think
Blurred vision
Light sensitivity, or easily upset or irritated by bright lights
Double vision
Restlessness

Rivermead Post-Concussion Symptoms Questionnaire

www.HBTinstitute.com

The Rivermead Post-Concussion Symptoms Questionnaire*

Patient _____ DOI: _____ Today's Date _____

After a head injury or accident some people experience symptoms which can cause worry or nuisance. We would like to know if you now suffer any of the symptoms given below. As many of these symptoms occur normally, we would like you to *compare yourself now with before the accident*. For each one please circle the number closest to your answer.

0=Not experienced at all
1=no more of a problem now than before the accident
2=a mild problem now
3=a moderate problem now
4=a severe problem now

Compared with before the accident, do you now (i.e. over the last 24 hours) suffer from:

Headaches	0	1	2	3	4
Feelings of dizziness	0	1	2	3	4
Nausea and/or vomiting	0	1	2	3	4
Noise sensitivity, or easily upset by loud noise	0	1	2	3	4
Sleep disturbance	0	1	2	3	4
Fatigue, tiring more easily	0	1	2	3	4
Being irritable, easily angered	0	1	2	3	4
Feeling depressed or tearful	0	1	2	3	4
Feeling frustrated or impatient	0	1	2	3	4
Forgetfulness, poor memory	0	1	2	3	4
Poor Concentration	0	1	2	3	4
Taking longer to think	0	1	2	3	4
Blurred Vision	0	1	2	3	4
Light sensitivity, or easily upset or irritated by bright light	0	1	2	3	4
Double Vision	0	1	2	3	4
Restlessness	0	1	2	3	4

Are you experiencing any other difficulties?
Please specify, and rate as above.

1_____	0	1	2	3	4
2._____	0	1	2	3	4

*King, N., Crawford S., Wenden F., Moss, N., and Wade, D. (1995) J. Neurology 242: 587-592

Interpreting the Rivermead

There is no “magic” number to add up to like the Epworth test.

This is the patient’s perception of their dysfunction in these areas of the brain.

Rivermead Post-Concussion Symptoms Questionnaire

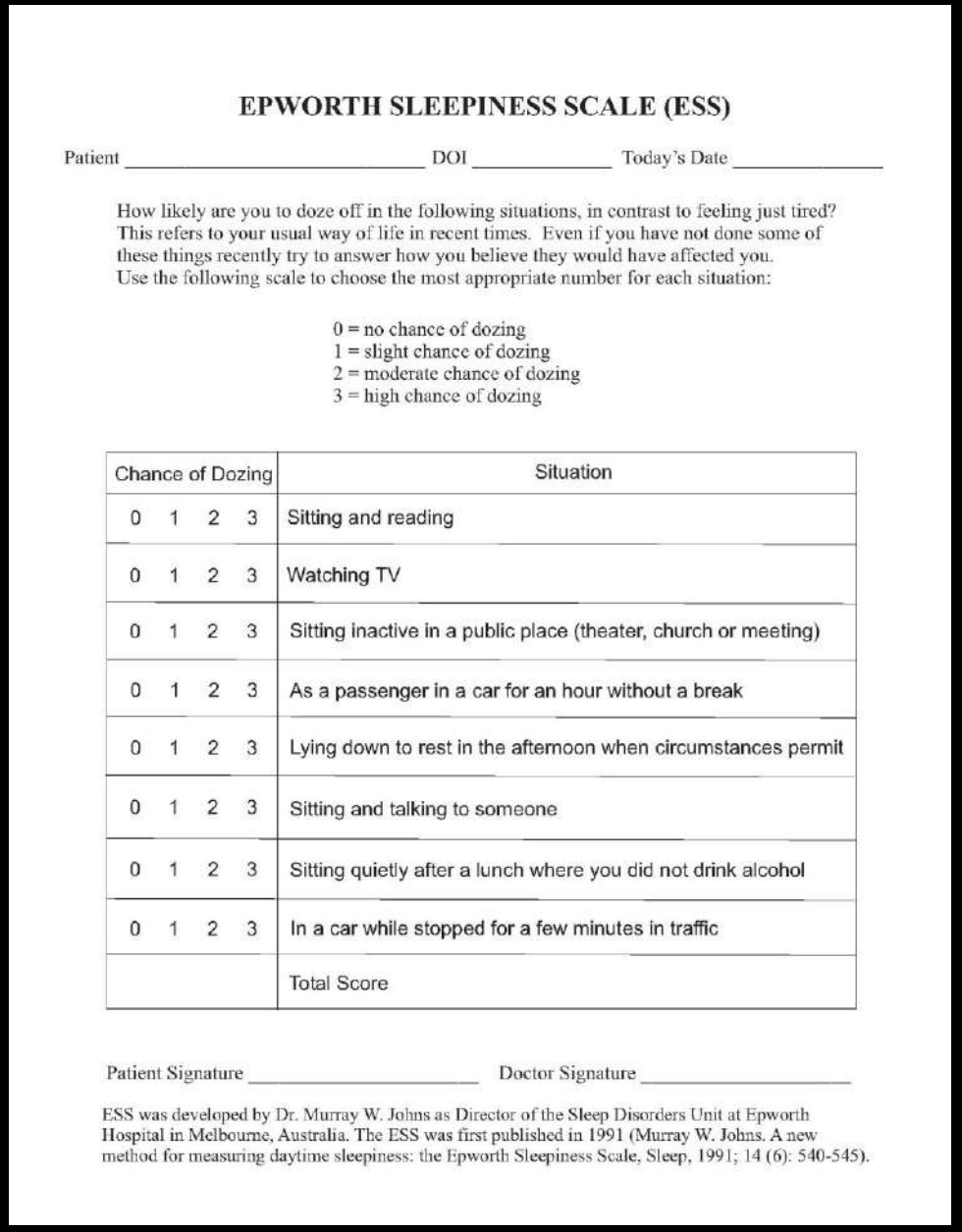
Fight back…

Document brain injuries so your patients get what they deserve…

Epworth Sleepiness Scale (ESS)

ESS was developed by Dr. Murray Johns as director of the Sleep Disorders Unit at Epworth Hospital in Melbourne, Australia.

It was first published in 1991 and has world fame and respect



EPWORTH SLEEPINESS SCALE (ESS)

Patient _____ DOI _____ Today's Date _____

How likely are you to doze off in the following situations, in contrast to feeling just tired? This refers to your usual way of life in recent times. Even if you have not done some of these things recently try to answer how you believe they would have affected you. Use the following scale to choose the most appropriate number for each situation:

0 = no chance of dozing
1 = slight chance of dozing
2 = moderate chance of dozing
3 = high chance of dozing

Chance of Dozing	Situation
0 1 2 3	Sitting and reading
0 1 2 3	Watching TV
0 1 2 3	Sitting inactive in a public place (theater, church or meeting)
0 1 2 3	As a passenger in a car for an hour without a break
0 1 2 3	Lying down to rest in the afternoon when circumstances permit
0 1 2 3	Sitting and talking to someone
0 1 2 3	Sitting quietly after a lunch where you did not drink alcohol
0 1 2 3	In a car while stopped for a few minutes in traffic
	Total Score

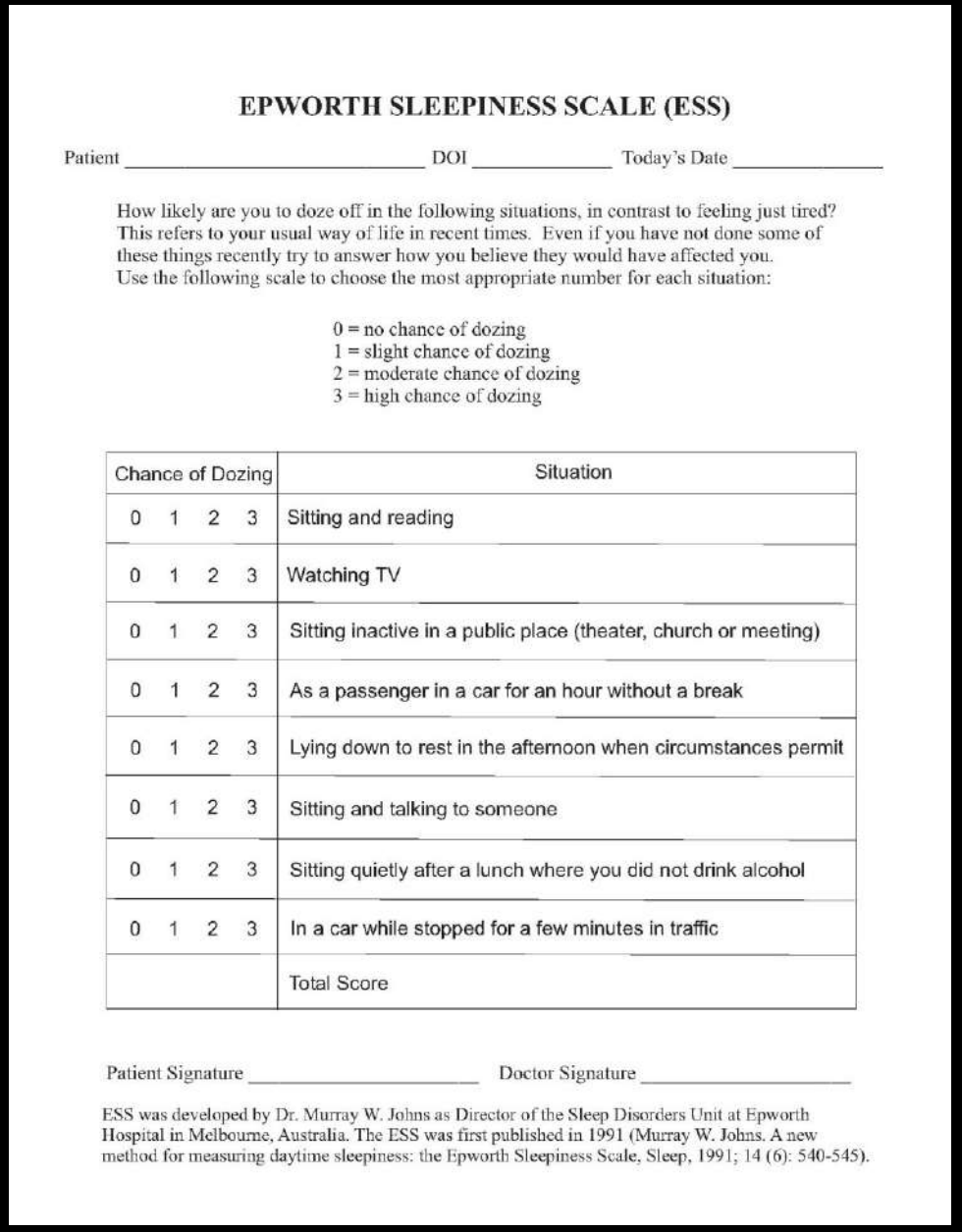
Patient Signature _____ Doctor Signature _____

ESS was developed by Dr. Murray W. Johns as Director of the Sleep Disorders Unit at Epworth Hospital in Melbourne, Australia. The ESS was first published in 1991 (Murray W. Johns. A new method for measuring daytime sleepiness: the Epworth Sleepiness Scale, Sleep, 1991; 14 (6): 540-545).

Epworth Sleepiness Scale (ESS)

"A score of 10/24 on the ESS is a Class 2 sleep impairment equivalent to 10% to 29% WHOLE BODY impairment."

(Quote from the AMA Guides to the Evaluation of Permanent Impairment 5th Edition)



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0 1 2 3	Sitting and talking to someone
0 1 2 3	Sitting quietly after a lunch where you did not drink alcohol
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	Total Score

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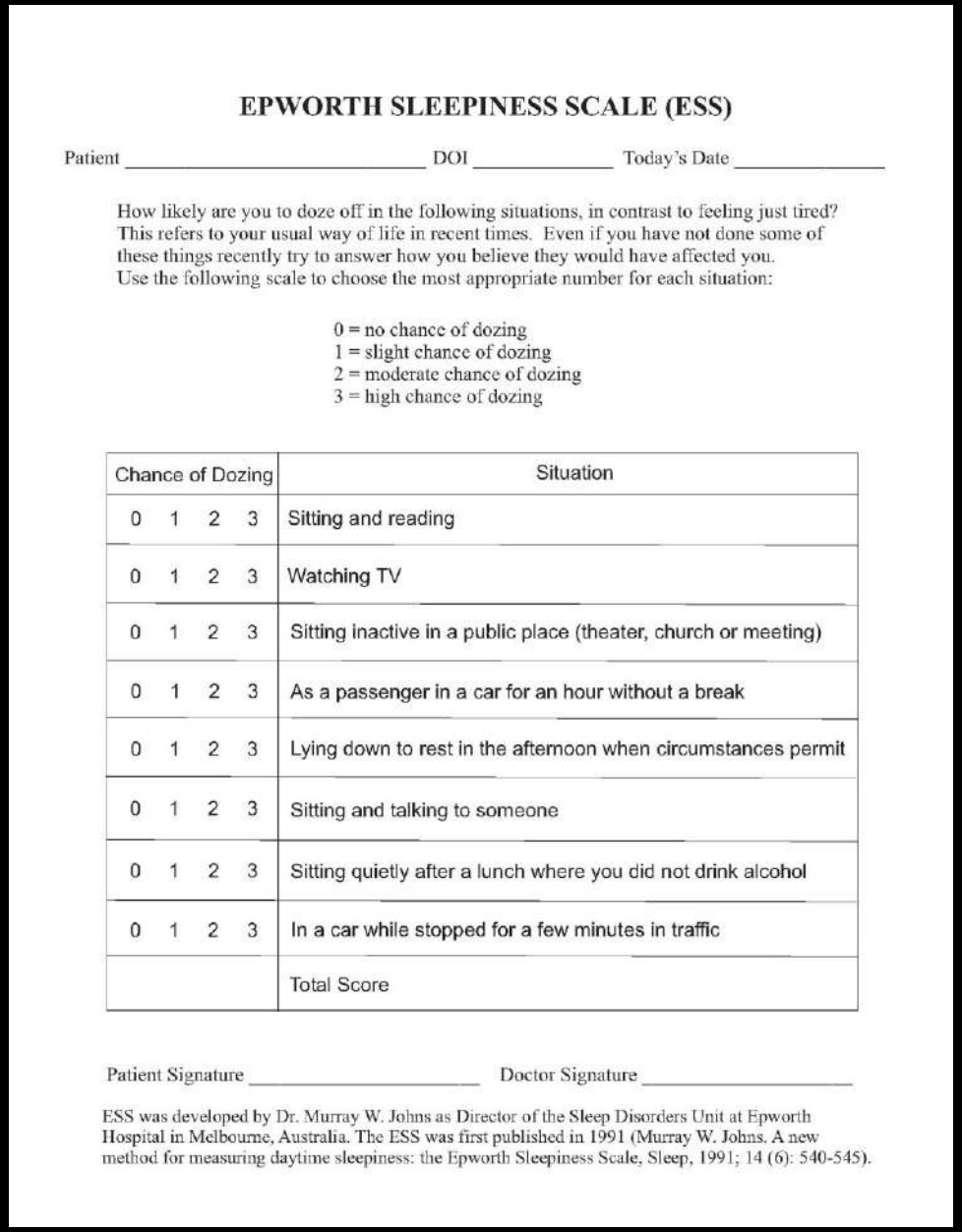
Epworth Sleepiness Scale (ESS)

The patient fills it out.

The doctor reviews it.

Bill for it.



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0 1 2 3	As a passenger in a car for an hour without a break
0 1 2 3	Lying down to rest in the afternoon when circumstances permit
0 1 2 3	Sitting and talking to someone
0 1 2 3	Sitting quietly after a lunch where you did not drink alcohol
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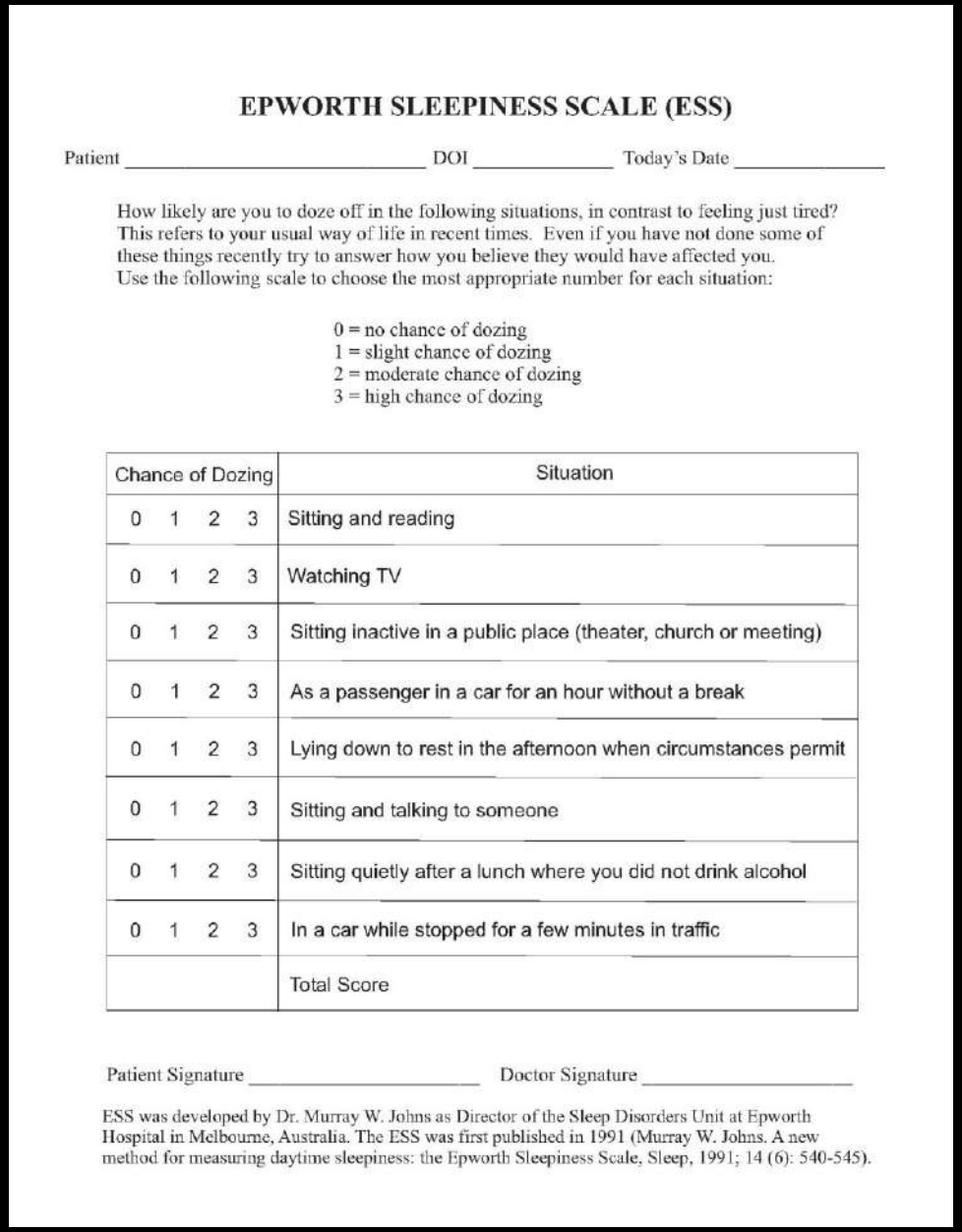
Epworth Sleepiness Scale (ESS)

"How likely are you to doze off in the following situations?

0 – No chance
1 – Slight chance
2 – Moderate chance
3 – High chance



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3 = high chance of dozing

Chance of Dozing	Situation
0 1 2 3	Sitting and reading
0 1 2 3	Watching TV
0 1 2 3	Sitting inactive in a public place (theater, church or meeting)
0 1 2 3	As a passenger in a car for an hour without a break
0 1 2 3	Lying down to rest in the afternoon when circumstances permit
0 1 2 3	Sitting and talking to someone
0 1 2 3	Sitting quietly after a lunch where you did not drink alcohol
0 1 2 3	In a car while stopped for a few minutes in traffic
	Total Score

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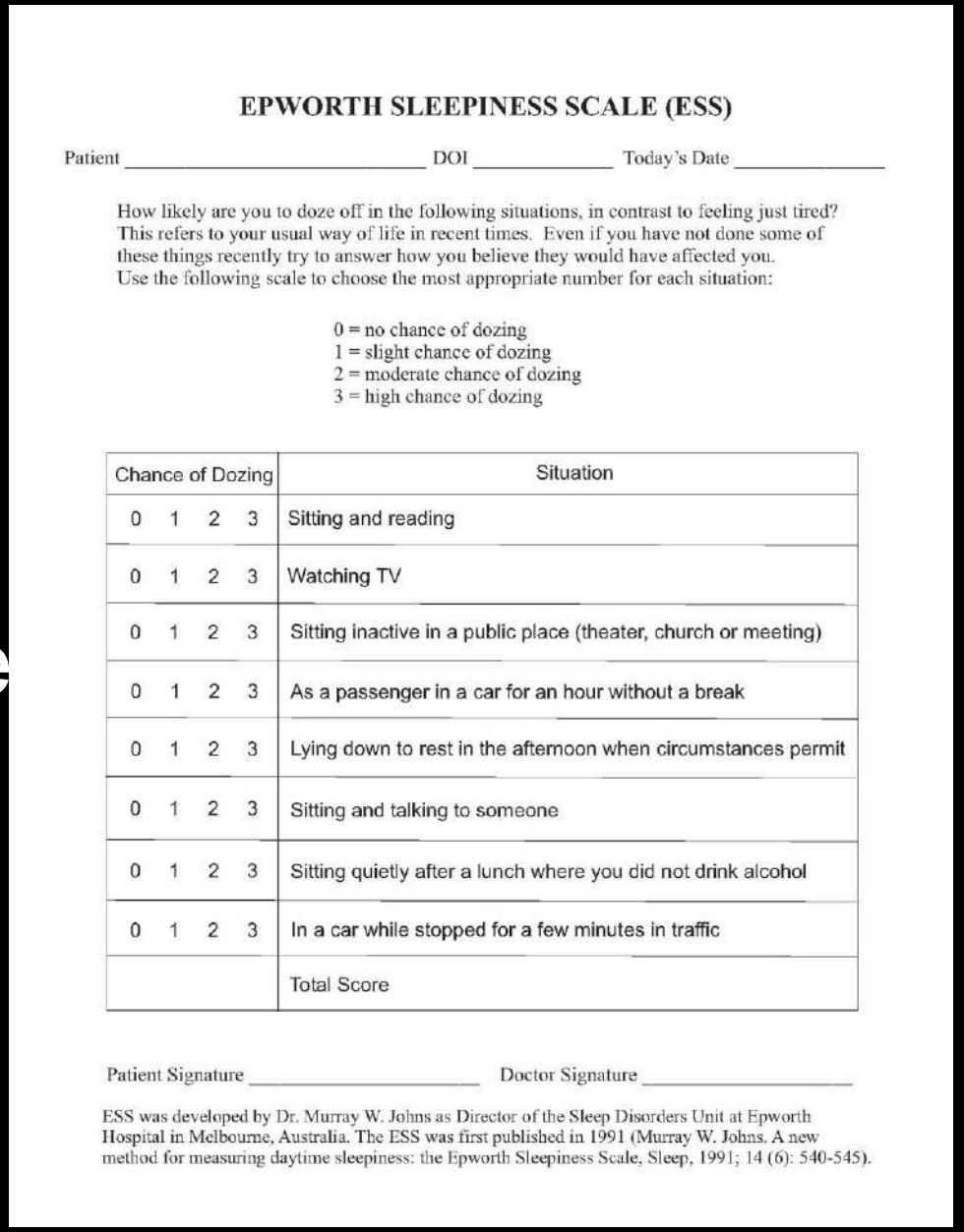
Epworth Sleepiness Scale (ESS)

Sitting & reading
Watching TV
Sitting in public place
As passenger for 1 hour
Lying down to rest
Sitting/talking to someone
Sitting quietly after lunch
In a car stopped in traffic



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0 1 2 3	Sitting quietly after a lunch where you did not drink alcohol
0 1 2 3	In a car while stopped for a few minutes in traffic
	Total Score

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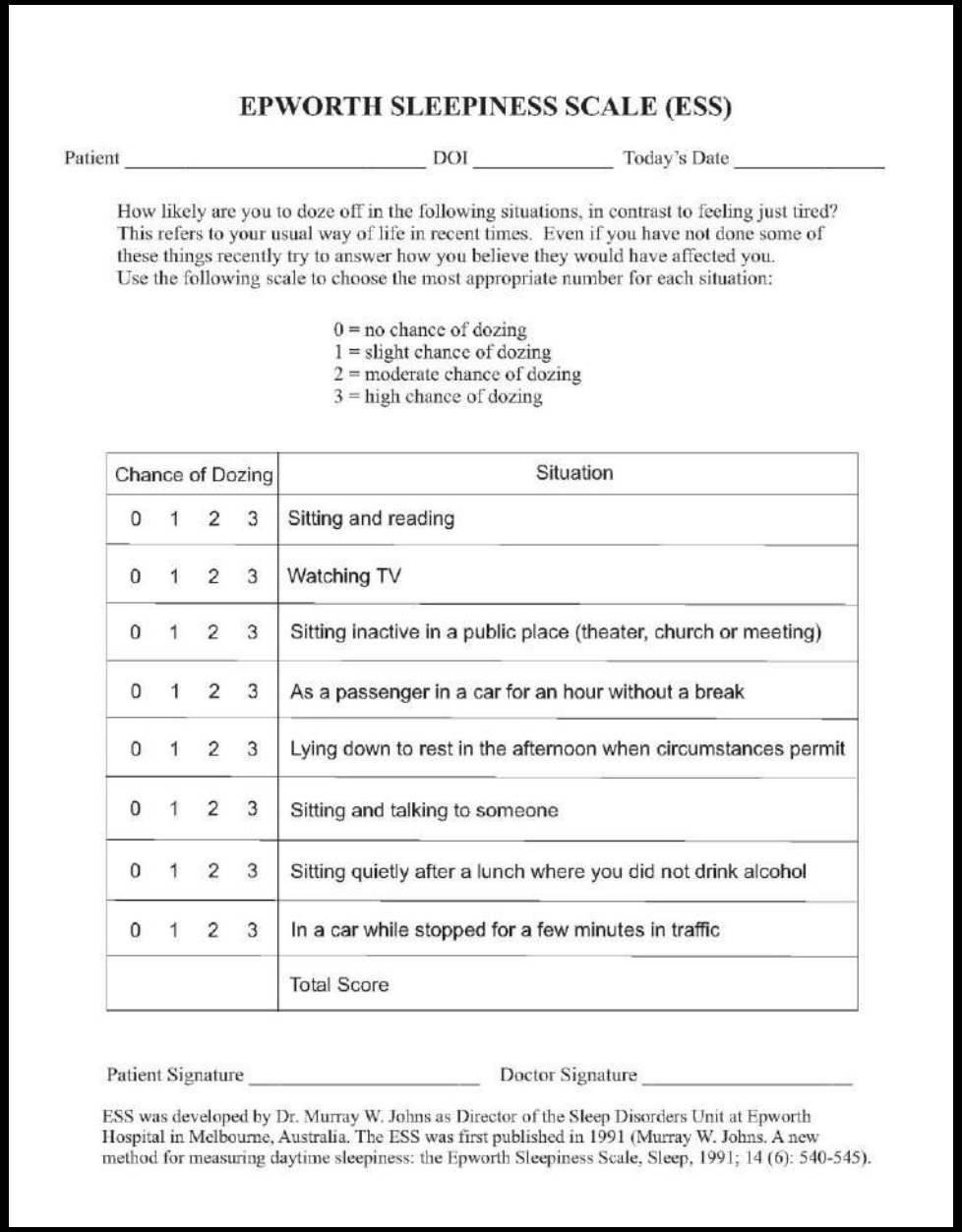
Epworth Sleepiness Scale (ESS)

As soon as you start asking your whiplash patients about sleep disruptions, you will know how incredibly common and debilitating it is.



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Post-Traumatic Stress Disorder (PTSD)

National Institutes of Mental Health stated:

“Car accidents are a common cause of PTSD”

When to test for PTSD?

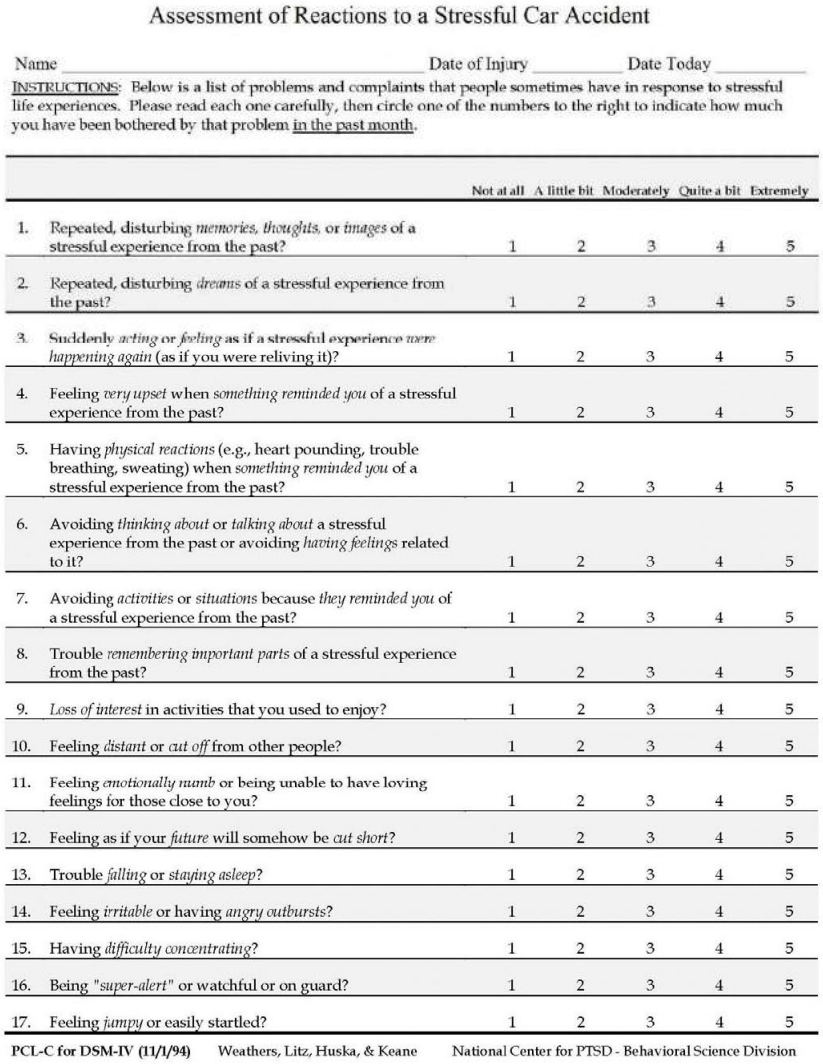
The last 10 questions on the bottom right of my Symptoms form ask about PTSD Symptoms.

When the patient has these, have the patient (or help the patient) fill out the “Assessment of Reactions to a stressful Car Accident.”

Assessment of Reactions (PTSD) Form

Rate the problems 1 to 5:

1. Repeated, disturbing memories, thoughts or images of a stressful experience from the past
2. Repeated, disturbing dreams of a stressful experience from the past



Assessment of Reactions to a Stressful Car Accident

Name _____ Date of Injury _____ Date Today _____

INSTRUCTIONS: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

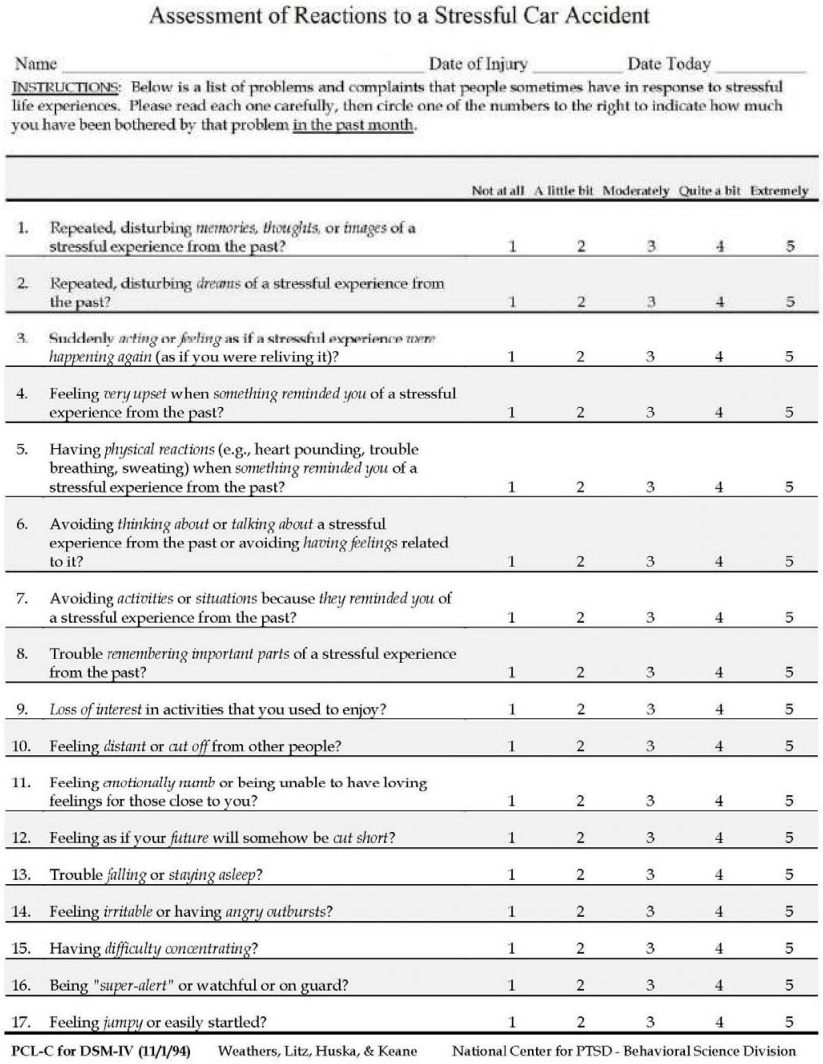
		Not at all	A little bit	Moderately	Quite a bit	Extremely
1.	Repeated, disturbing *memories, thoughts,* or *images* of a stressful experience from the past?	1	2	3	4	5
2.	Repeated, disturbing *dreams* of a stressful experience from the past?	1	2	3	4	5
3.	Suddenly *acting* or *feeling* as if a stressful experience *were happening again* (as if you were reliving it)?	1	2	3	4	5
4.	Feeling *very upset* when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
5.	Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
6.	Avoiding *thinking about* or *talking about* a stressful experience from the past or avoiding *having feelings* related to it?	1	2	3	4	5
7.	Avoiding *activities* or *situations* because *they reminded you* of a stressful experience from the past?	1	2	3	4	5
8.	Trouble *remembering important parts* of a stressful experience from the past?	1	2	3	4	5
9.	*Loss of interest* in activities that you used to enjoy?	1	2	3	4	5
10.	Feeling *distant* or *cut off* from other people?	1	2	3	4	5
11.	Feeling *emotionally numb* or being unable to have loving feelings for those close to you?	1	2	3	4	5
12.	Feeling as if your *future* will somehow be *cut short*?	1	2	3	4	5
13.	Trouble *falling* or *staying asleep*?	1	2	3	4	5
14.	Feeling *irritable* or having *angry outbursts*?	1	2	3	4	5
15.	Having *difficulty concentrating*?	1	2	3	4	5
16.	Being "*super-alert*" or watchful or on guard?	1	2	3	4	5
17.	Feeling *jumpy* or easily startled?	1	2	3	4	5

PCL-C for DSM-IV (11/1/94) Weathers, Litz, Huska, & Keane National Center for PTSD - Behavioral Science Division

Assessment of Reactions (PTSD) Form

Rate the problems 1 to 5:

3. Suddenly acting or feeling as if a stressful experience were happening again (reliving it)
4. Feeling very upset wher something reminded of a stressful past event



Assessment of Reactions to a Stressful Car Accident

Name _____ Date of Injury _____ Date Today _____

INSTRUCTIONS: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

		Not at all	A little bit	Moderately	Quite a bit	Extremely
1.	Repeated, disturbing *memories, thoughts,* or *images* of a stressful experience from the past?	1	2	3	4	5
2.	Repeated, disturbing *dreams* of a stressful experience from the past?	1	2	3	4	5
3.	Suddenly *acting* or *feeling* as if a stressful experience *were happening again* (as if you were reliving it)?	1	2	3	4	5
4.	Feeling *very upset* when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
5.	Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
6.	Avoiding *thinking about* or *talking about* a stressful experience from the past or avoiding *having feelings* related to it?	1	2	3	4	5
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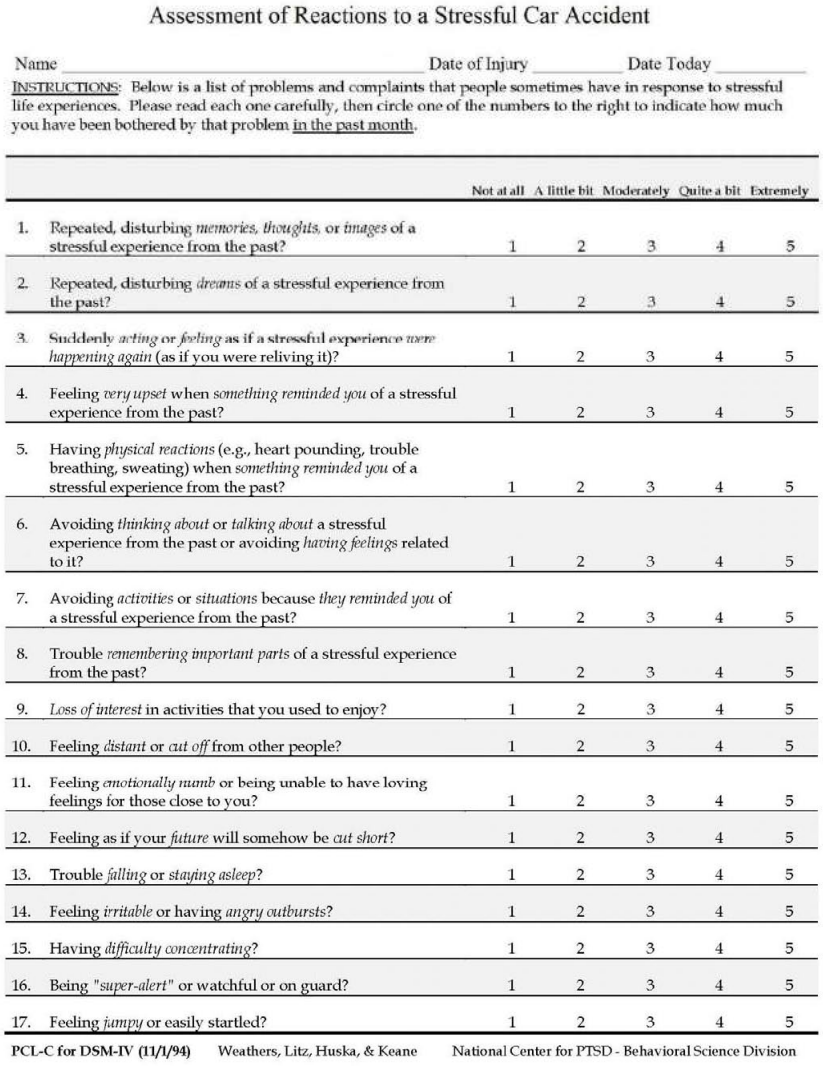
PCL-C for DSM-IV (11/1/94) Weathers, Litz, Huska, & Keane National Center for PTSD - Behavioral Science Division

Assessment of Reactions (PTSD) Form

Rate the problems 1 to 5:

5. Having physical reactions (heart pounding, trouble breathing, sweating) when something reminded you of a stressful experience from the past



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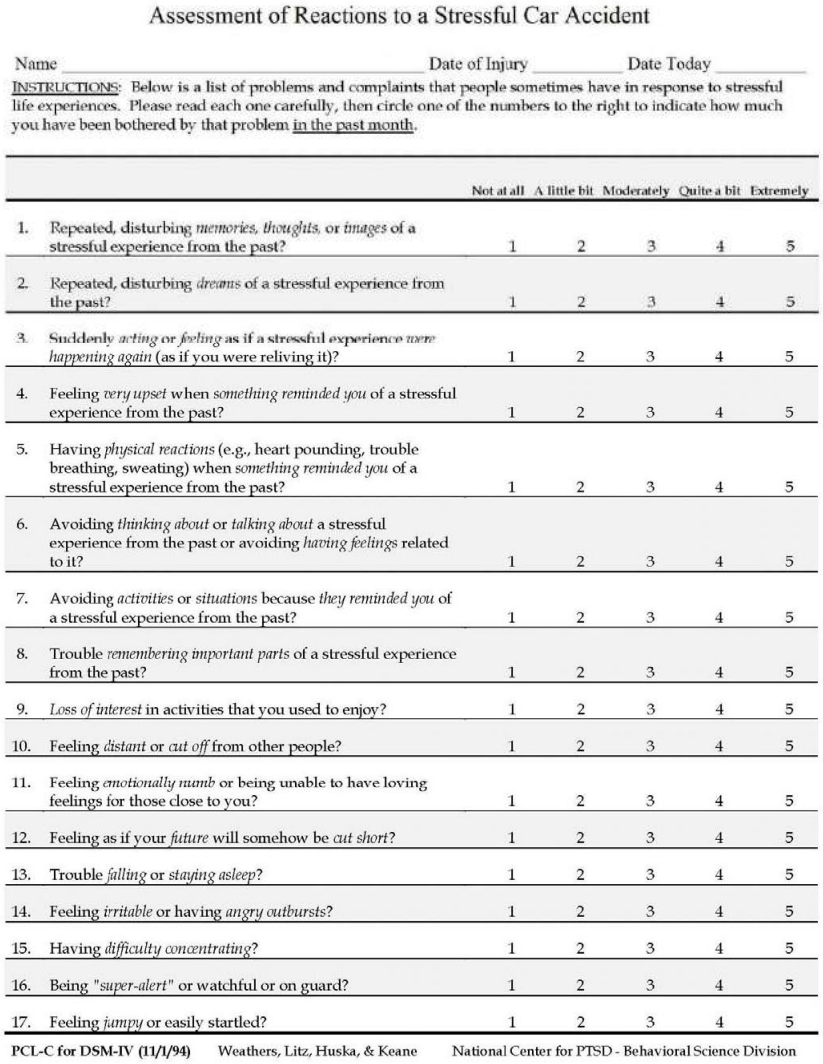
PCL-C for DSM-IV (11/1/94) Weathers, Litz, Huska, & Keane National Center for PTSD - Behavioral Science Division

Assessment of Reactions (PTSD) Form

Rate the problems 1 to 5:

6. Avoiding thinking about or talking about a stressful experience from the past or avoiding having feelings related to it
7. Avoiding activities or situations because they remind you of the event



Assessment of Reactions to a Stressful Car Accident

Name _____ Date of Injury _____ Date Today _____

INSTRUCTIONS: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

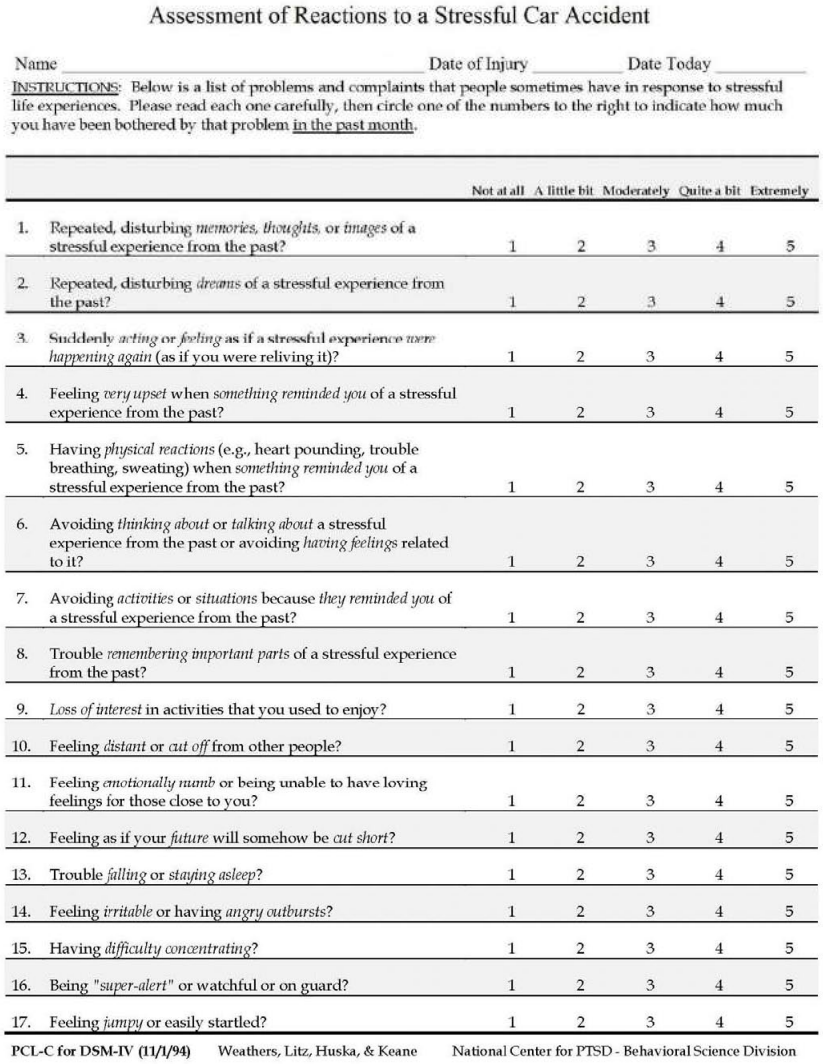
		Not at all	A little bit	Moderately	Quite a bit	Extremely
1.	Repeated, disturbing *memories, thoughts,* or *images* of a stressful experience from the past?	1	2	3	4	5
2.	Repeated, disturbing *dreams* of a stressful experience from the past?	1	2	3	4	5
3.	Suddenly *acting* or *feeling* as if a stressful experience *were happening again* (as if you were reliving it)?	1	2	3	4	5
4.	Feeling *very upset* when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
5.	Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
6.	Avoiding *thinking about* or *talking about* a stressful experience from the past or avoiding *having feelings* related to it?	1	2	3	4	5
7.	Avoiding *activities* or *situations* because *they reminded you* of a stressful experience from the past?	1	2	3	4	5
8.	Trouble *remembering important parts* of a stressful experience from the past?	1	2	3	4	5
9.	*Loss of interest* in activities that you used to enjoy?	1	2	3	4	5
10.	Feeling *distant* or *cut off* from other people?	1	2	3	4	5
11.	Feeling *emotionally numb* or being unable to have loving feelings for those close to you?	1	2	3	4	5
12.	Feeling as if your *future* will somehow be *cut short*?	1	2	3	4	5
13.	Trouble *falling* or *staying asleep*?	1	2	3	4	5
14.	Feeling *irritable* or having *angry outbursts*?	1	2	3	4	5
15.	Having *difficulty concentrating*?	1	2	3	4	5
16.	Being "*super-alert*" or watchful or on guard?	1	2	3	4	5
17.	Feeling *jumpy* or easily startled?	1	2	3	4	5

PCL-C for DSM-IV (11/1/94) Weathers, Litz, Huska, & Keane National Center for PTSD - Behavioral Science Division

Assessment of Reactions (PTSD) Form

Rate the problems 1 to 5:

8. Trouble remembering important parts of the stressful experience
9. Loss of interest in activities that you used to enjoy
10. Feeling distant or cut off from other people



Assessment of Reactions to a Stressful Car Accident

Name _____ Date of Injury _____ Date Today _____

INSTRUCTIONS: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

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2. Repeated, disturbing *dreams* of a stressful experience from the past?	1	2	3	4	5
3. Suddenly *acting* or *feeling* as if a stressful experience *were happening again* (as if you were reliving it)?	1	2	3	4	5
4. Feeling *very upset* when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
5. Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
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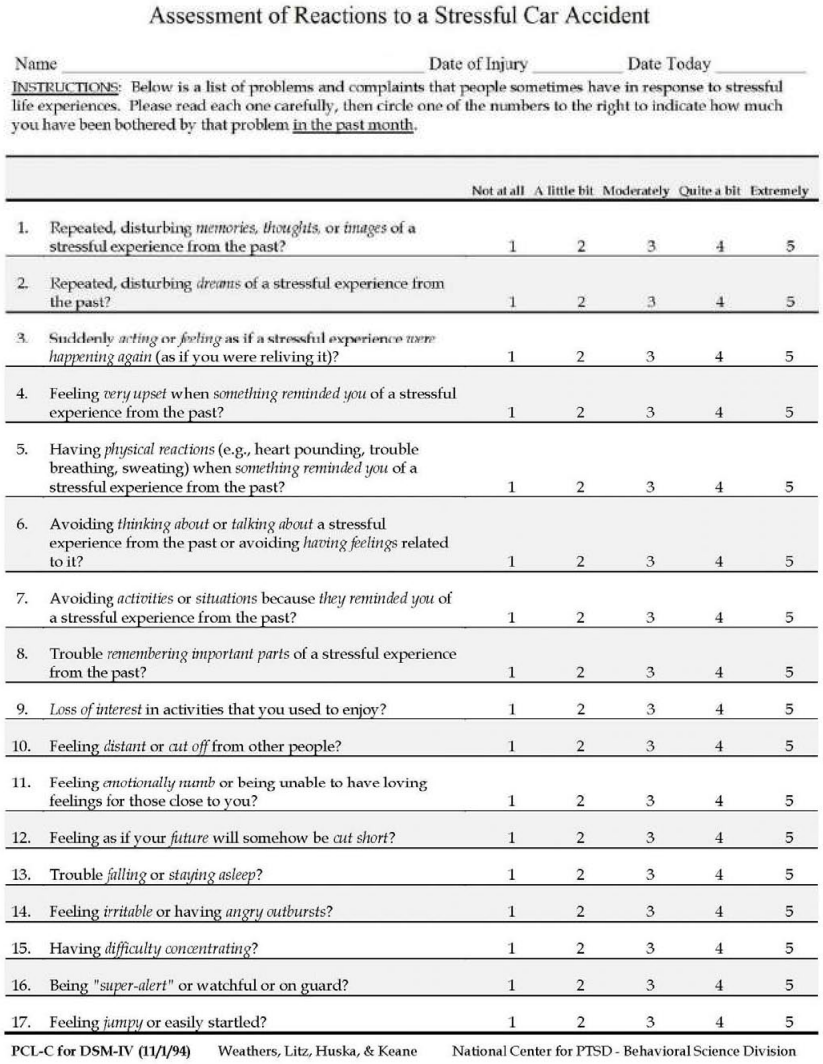
PCL-C for DSM-IV (11/1/94) Weathers, Litz, Huska, & Keane National Center for PTSD - Behavioral Science Division

Assessment of Reactions (PTSD) Form

Rate the problems 1 to 5:

11. Feeling emotional numb or being unable to have loving feelings for those close to you
12. Feeling as if your future will somehow be cut short
13. Trouble falling or staying asleep



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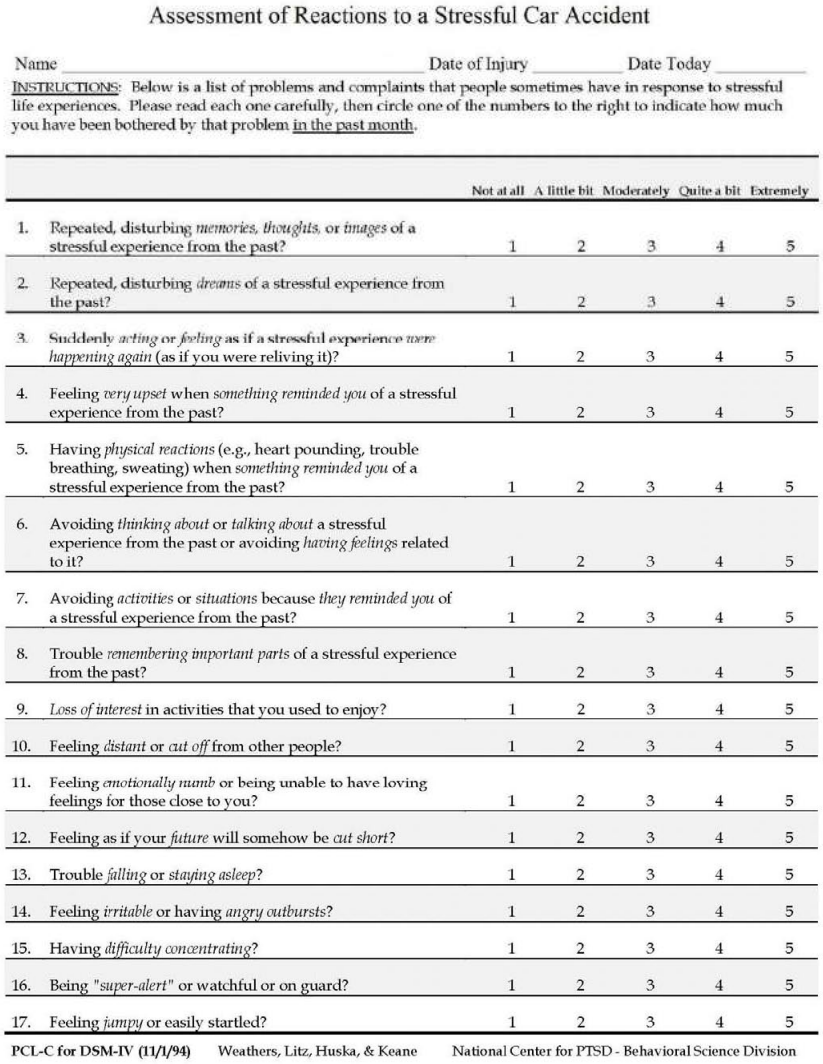
PCL-C for DSM-IV (11/1/94) Weathers, Litz, Huska, & Keane National Center for PTSD - Behavioral Science Division

Assessment of Reactions (PTSD) Form

Rate the problems 1 to 5:

14. Feeling irritable or having angry outbursts
15. Having difficulty concentrating
16. Being “Super-alert” or or guard
17. Feeling jumpy or easily startled



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PCL-C for DSM-IV (11/1/94) Weathers, Litz, Huska, & Keane National Center for PTSD - Behavioral Science Division

Do Your Patients have PTSD?

You will only find out if you ASK…

Statistics show that if you treat car accident patients, you have PTSD patients in your office.

How to Document PTSD in Patient's Chart

There is a 4 hour online course that I teach on the site www.backtochiropractic.net which can teach you a lot more about examining and treating your PTSD patients.

Write, "This patient exhibits numerous symptoms of PTSD. I am referring this patient to a psychologist for further testing of the PTSD that was caused by this car accident."

Make the Referral… Please

PTSD is the weirdest feeling and your patients that have it are suffering more than you could ever know.

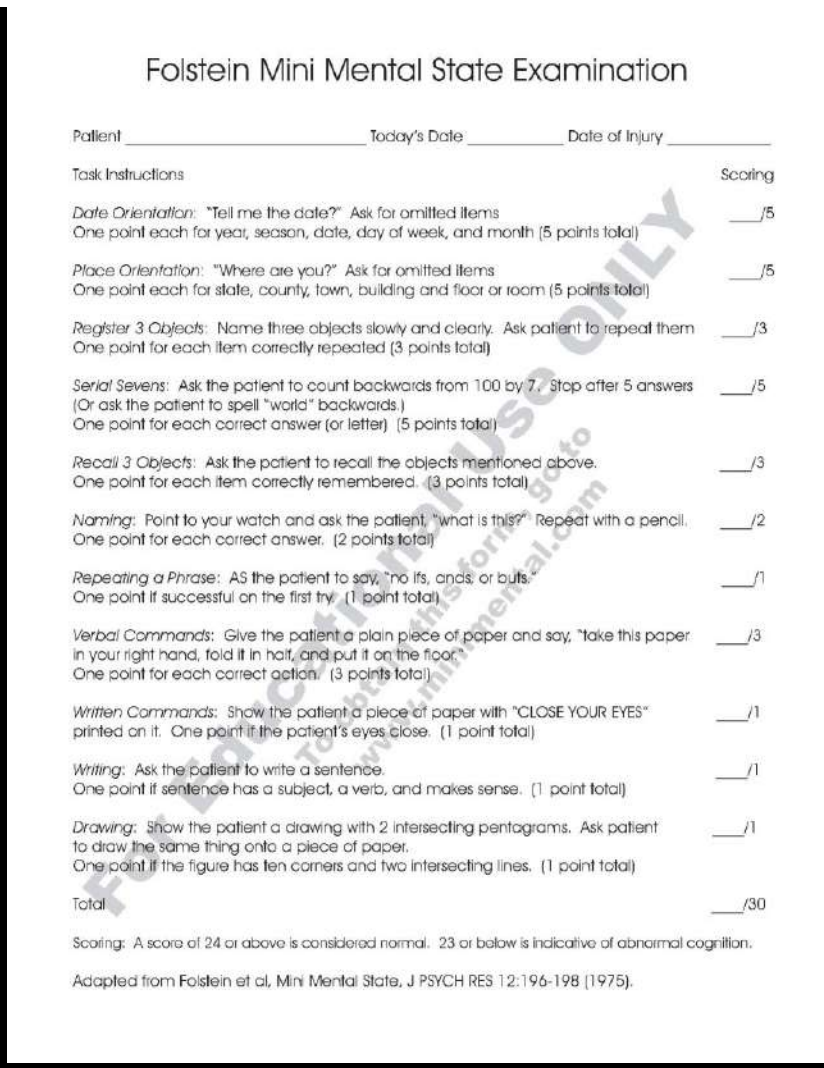
You will do your patients a GREAT service if you identify it, diagnose it and make a referral to someone who can help them.

Please don't think adjustments will help it… These patients need more help than you can provide as a chiropractor… Co-treat it with someone

Folstein MMSE Exam

The *Doctor* (or assistant) must fill out this form

Ask the questions and the patient answers. Score as it is shown on the form



Folstein Mini Mental State Examination

Patient _____ Today's Date _____ Date of Injury _____

Task Instructions	Scoring
Date Orientation: "Tell me the date?" Ask for omitted items One point each for year, season, date, day of week, and month (5 points total)	___/5
Place Orientation: "Where are you?" Ask for omitted items One point each for state, county, town, building and floor or room (5 points total)	___/5
Register 3 Objects: Name three objects slowly and clearly. Ask patient to repeat them One point for each item correctly repeated (3 points total)	___/3
Serial Sevens: Ask the patient to count backwards from 100 by 7. Stop after 5 answers (Or ask the patient to spell "world" backwards.) One point for each correct answer (or letter) (5 points total)	___/5
Recall 3 Objects: Ask the patient to recall the objects mentioned above. One point for each item correctly remembered. (3 points total)	___/3
Naming: Point to your watch and ask the patient, "what is this?" Repeat with a pencil. One point for each correct answer. (2 points total)	___/2
Repeating a Phrase: AS the patient to say, "no ifs, ands, or buts." One point if successful on the first try. (1 point total)	___/1
Verbal Commands: Give the patient a plain piece of paper and say, "take this paper in your right hand, fold it in half, and put it on the floor." One point for each correct action. (3 points total)	___/3
Written Commands: Show the patient a piece of paper with "CLOSE YOUR EYES" printed on it. One point if the patient's eyes close. (1 point total)	___/1
Writing: Ask the patient to write a sentence. One point if sentence has a subject, a verb, and makes sense. (1 point total)	___/1
Drawing: Show the patient a drawing with 2 intersecting pentagrams. Ask patient to draw the same thing onto a piece of paper. One point if the figure has ten corners and two intersecting lines. (1 point total)	___/1
Total	___/30

Scoring: A score of 24 or above is considered normal. 23 or below is indicative of abnormal cognition.

Adapted from Folstein et al, Mini Mental State, J PSYCH RES 12:196-198 (1975).

Folstein Exam

Be prepared with:

(1)A blank piece of paper
(2)A pen or pencil
(3)The Folstein Form

Folstein Mini Mental State Examination

Patient _____ Today's Date _____ Date of Injury _____

Task Instructions	Scoring
Date Orientation: "Tell me the date?" Ask for omitted items One point each for year, season, date, day of week, and month (5 points total)	___/5
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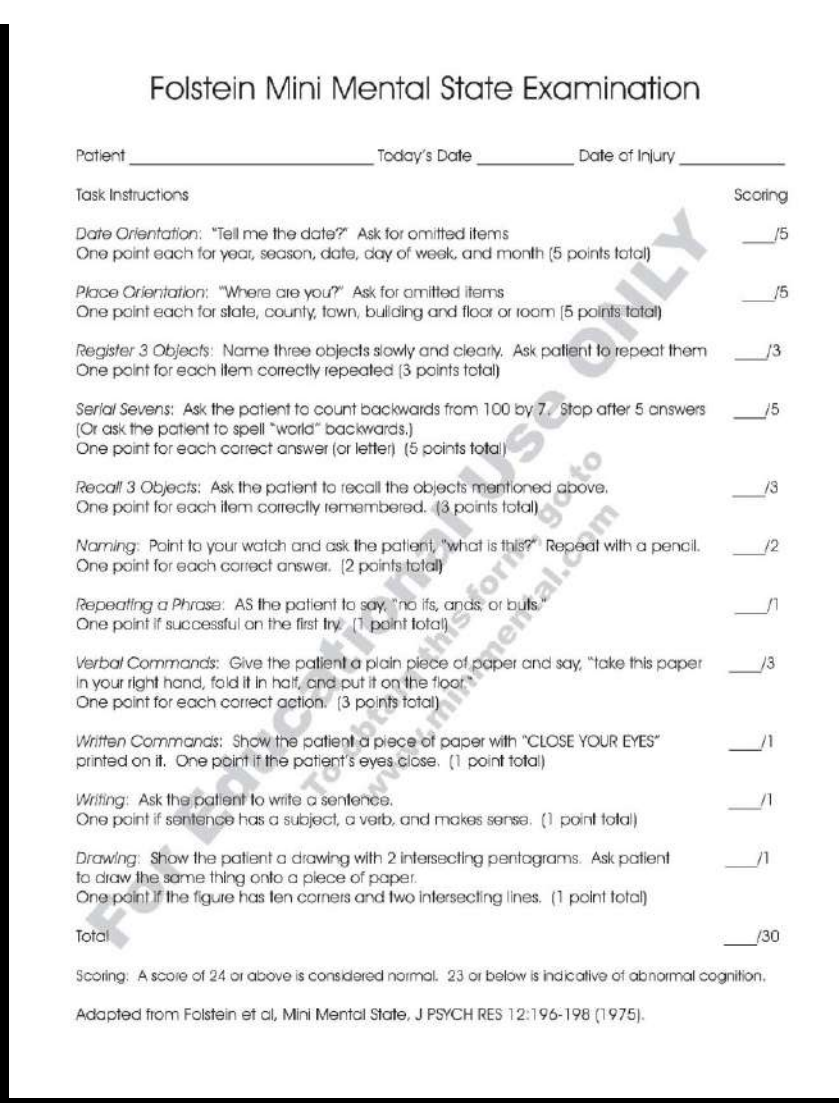
Adapted from Folstein et al, Mini Mental State, J PSYCH RES 12:196-198 (1975).

Folstein Exam

"Tell me the date"

Let the patient answer, then prompt the patient for missing items, like "what season is it?"

Score 1 point for each correct answer.



Folstein Mini Mental State Examination

Patient _____ Today's Date _____ Date of Injury _____

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Adapted from Folstein et al, Mini Mental State, J PSYCH RES 12:196-198 (1975).

Folstein Exam

"Where are you?"

Let the patient answer, then prompt the patient for missing items, like "what county are we in?"

Score 1 point for each correct answer.

Folstein Mini Mental State Examination

Patient _____ Today's Date _____ Date of Injury _____

Task Instructions	Scoring
Date Orientation: "Tell me the date?" Ask for omitted items One point each for year, season, date, day of week, and month (5 points total)	___/5
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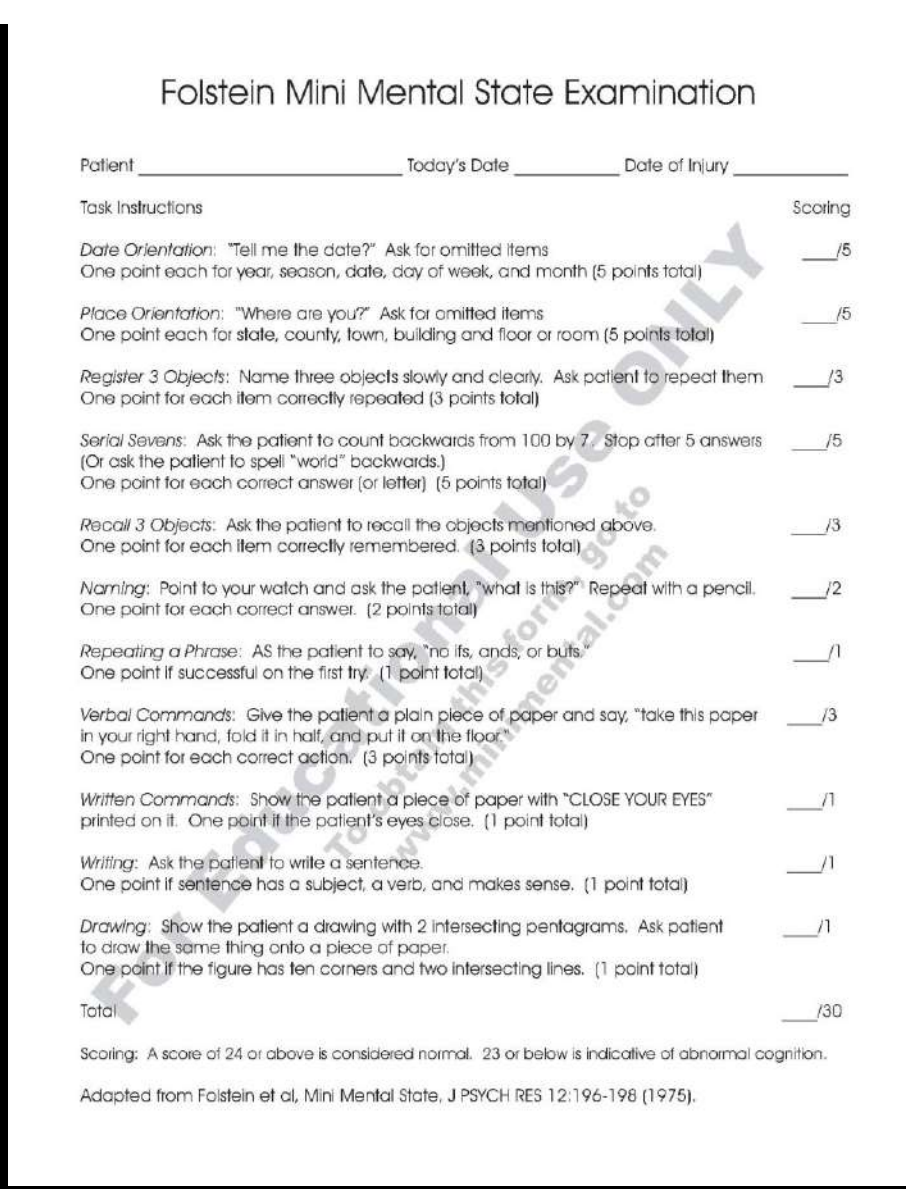
Folstein Exam

Say slowly and clearly, "Dog, tree, car" (or any 3 objects)

Wait 5 seconds, then ask the patient to repeat the 3 objects.

Score 1 point for each correct answer.



Folstein Mini Mental State Examination

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Folstein Exam

Say, “Count backwards from 100 by 7’s.

100, 93, 86, 79, 72

Gets 5 points

BUT… if they miss one, they still get points for correctly subtracting 7 from the last number he/she gave you.

Folstein Mini Mental State Examination

Patient _____ Today’s Date _____ Date of Injury _____

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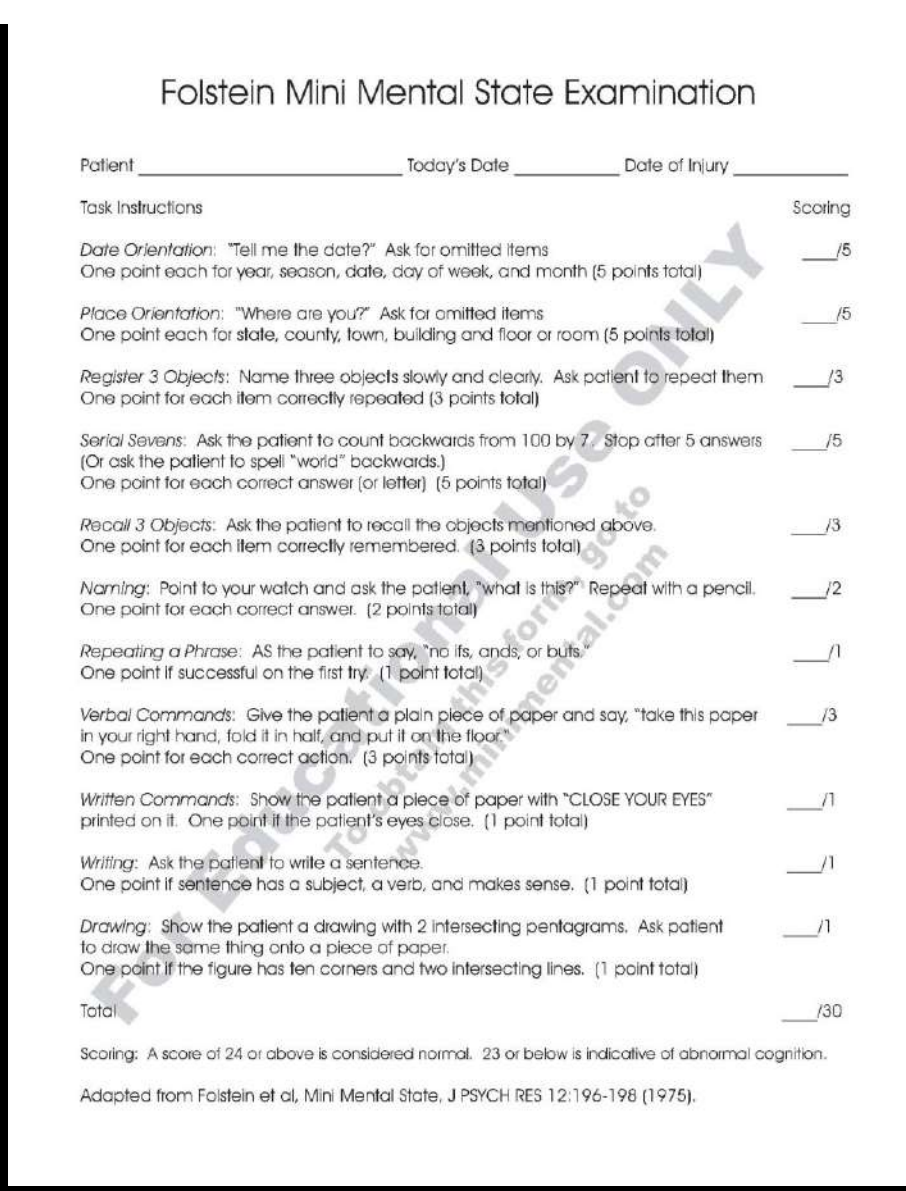
Folstein Exam

An alternative way is to ask the patient to spell “world” backward

5 points for Spelling it backward Correctly. (1 point per letter)



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Naming: Point to your watch and ask the patient, "what is this?" Repeat with a pencil. One point for each correct answer. (2 points total)	___/2
Repeating a Phrase: AS the patient to say, "no ifs, ands, or buts." One point if successful on the first try. (1 point total)	___/1
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Written Commands: Show the patient a piece of paper with "CLOSE YOUR EYES" printed on it. One point if the patient's eyes close. (1 point total)	___/1
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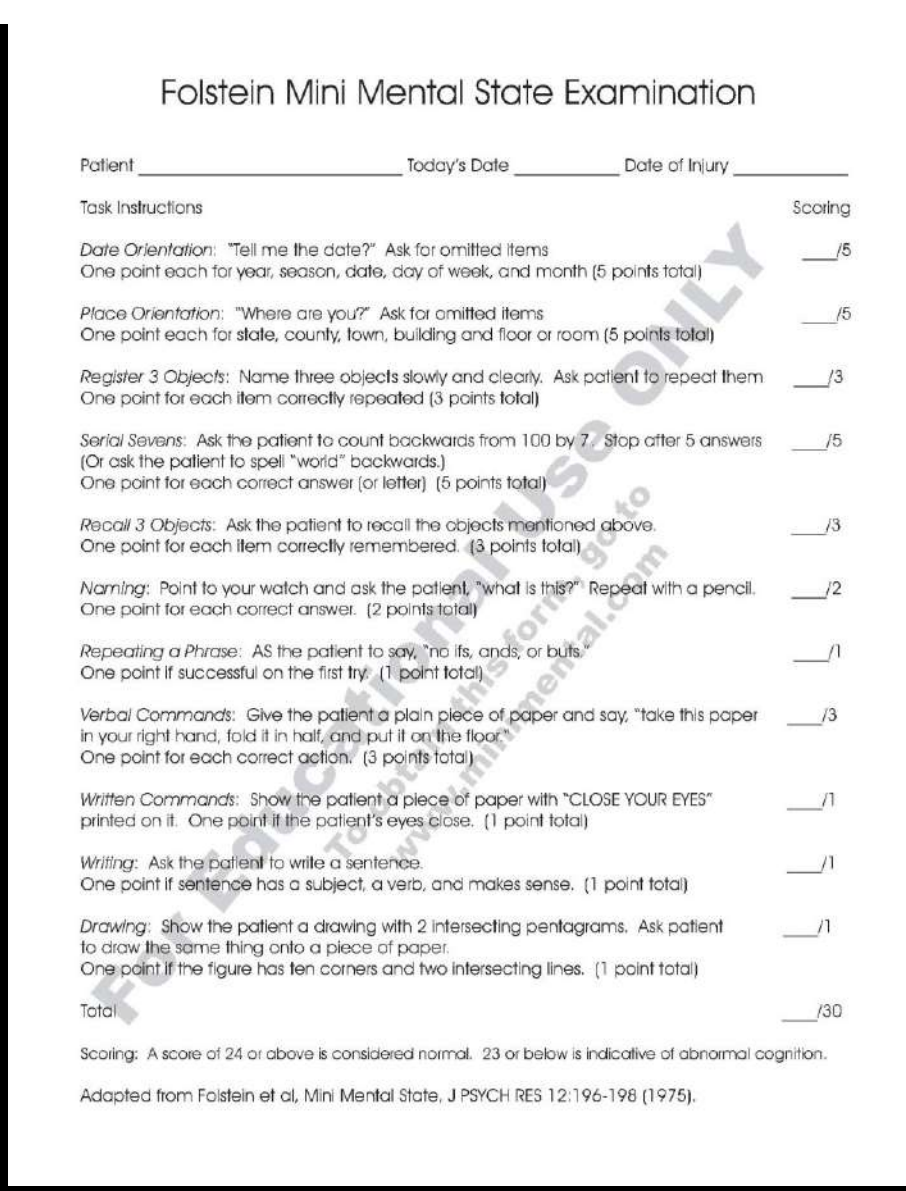
Folstein Exam

In the AMA Guides to the Evaluation of Permanent Impairments, 5th Edition, you'll note that it describes a patient with an impairment and says, "patient can spell world backward."

This is the test used by The AMA Guides.

Colossus uses the AMA Guides so we use this test…



Folstein Mini Mental State Examination

Patient _____ Today's Date _____ Date of Injury _____

Task Instructions	Scoring
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Folstein Exam

Say, “Tell me the 3 objects I mentioned a minute ago.”

1 point for each of the words
They remember (dog, tree, car)

Make sure the examiner
Remembers them…

Folstein Mini Mental State Examination

Patient _____ Today's Date _____ Date of Injury _____

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Folstein Exam

Point to your watch and say, “what is this?”

Repeat with a pencil.

Note: Any common object can be used if you don’t have a watch on. Point to something on the table that everyone would know what it is, or the pen in your hand.

1 point for each of the 2 Items correctly identified.

Folstein Mini Mental State Examination

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Folstein Exam

Say, “repeat after me… no ifs, ands, or buts.”

1 point for repeating it
Accurately on the first try

Folstein Mini Mental State Examination

Patient _____ Today's Date _____ Date of Injury _____

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Folstein Exam

Say, “take this paper in your right hand, fold it in half, and put it on the floor.”

Wait 3 seconds, then hand the patient the blank piece of paper.

You are testing whether the Patient can process 3 commands in a series. One point for each Step followed exactly.

Folstein Mini Mental State Examination

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Folstein Exam

Print on the blank paper, “CLOSE YOUR EYES.”

Hold it up for the patient to read

1 point for closing his/her eyes, which means he/she can visually process information

Folstein Mini Mental State Examination

Patient _____ Today's Date _____ Date of Injury _____

Task Instructions	Scoring
Date Orientation: “Tell me the date?” Ask for omitted items One point each for year, season, date, day of week, and month (5 points total)	____/5
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Folstein Exam

Hand the patient the blank piece of paper and a pen. Say, “write a sentence.”

1 points if the sentence has a subject, a verb, and generally makes sense.

Folstein Mini Mental State Examination

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Folstein Exam

Draw two intersecting pentagrams on the blank paper (that was folded and the patient wrote a sentence on.) Say, “Draw this.”

1 point if the figure has 10 corners (2 pentagrams) and 2 of the sides intersect

Folstein Mini Mental State Examination

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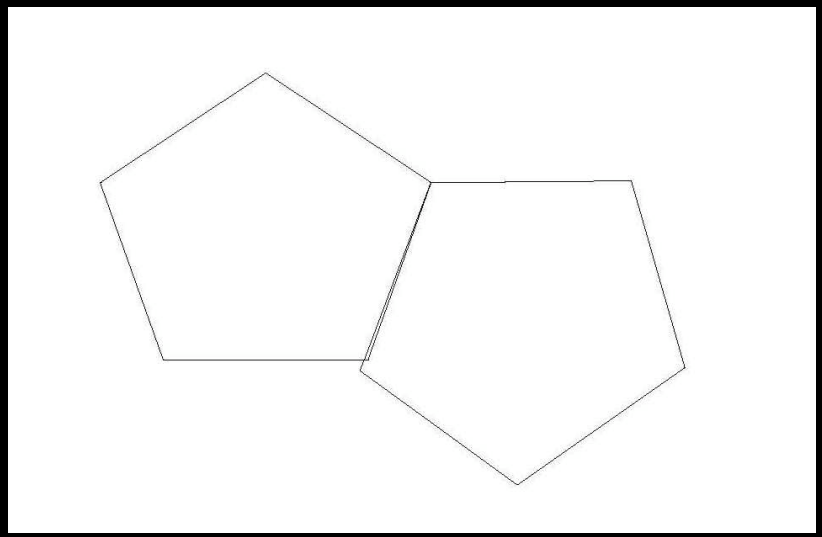
Folstein Exam



You show that patient a drawing like this, then they should be able to copy it.

Folstein Mini Mental State Examination

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Folstein Exam

Add up the patient's score. 23 or below is Abnormal Cognition for a high school graduate

This test is also used for Alzheimer patients.

Interesting that patients in car accidents have the same mental problem as Alzheimer patients…

Folstein Mini Mental State Examination

Patient _____ Today's Date _____ Date of Injury _____

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Here is how you know <u>when</u> to use the ACE, Rivermead, Epworth Scale and MMSE

They are on the Symptoms Form..!!!

Symptoms

Patient Ima Hurt Date 7/26/08 Date of Injury 7/25/08

Please fill in all symptoms you currently have <u>that you did not have</u> before the accident.

<u>Orthopedic & Musculoskeletal Symptoms</u>

- ■ "Clunk" Sound with Neck Movements
- ■ Neck Pain
- ■ Upper Back Pain
- ■ Low Back Pain
- ■ Shoulder Pain ■ Left ☐ Right
- ■ Upper Arm Pain ■ Left ☐ Right
- ☐ Elbow Pain ☐ Left ☐ Right
- ☐ Forearm Pain ☐ Left ☐ Right
- ☐ Wrist Pain ☐ Left ☐ Right
- ☐ Hand Pain ☐ Left ☐ Right
- ■ Hip Pain ☐ Left ■ Right
- ■ Upper Leg Pain ☐ Left ■ Right
- ■ Knee Pain ☐ Left ■ Right
- ☐ Lower Leg Pain ☐ Left ☐ Right
- ☐ Ankle Pain ☐ Left ☐ Right
- ☐ Foot Pain ☐ Left ☐ Right
- ■ Jaw Pain
- ☐ Clicking in Jaw
- ■ Pain when Chewing
- ☐ Face Pain
- ■ Chest Pain
- ☐ Stomach Pain
- ■ Bruise/Contusion to Right knee, chest, neck
- ■ Scrape/Cut to Right knee, neck, chest
- ☐ Other Symptom _____
- ☐ Other Symptom _____

<u>Neurological Symptoms</u>

- ■ Numb/Tingling Arm / (Hand) (L) R
- ■ Numb/Tingling Leg / (Foot) L (R)
- ■ Weakness (Arm) / Hand (L) R
- ☐ Weakness Leg / Foot L R

<u>Symptoms Associated with Injuries</u>

- ■ Range of Motion Problems
- ■ Headaches
- ■ Muscle Spasms
- ■ Dizziness
- ■ Visual Disturbances
- ■ Sleep Disruption
- ■ Radiating Pain
- ■ Anxiety
- ■ Depression
- ■ I am taking over-the-counter pain meds

<u>Brain/Neuropsych/MTBI Symptoms</u>

- ■ Wanting to be Alone
- ■ Sleepiness
- ■ Nausea/vomiting
- ■ Difficulty Concentrating
- ☐ Day Dreaming/Staring Mindless Staring
- ■ Mood Swings
- ☐ Agitation
- ☐ Sadness or tearful
- ■ Blurry Vision
- ☐ Double Vision
- ■ Disoriented
- ☐ Confused
- ☐ Difficulty Speaking
- ☐ Feelings of Isolation from Others
- ☐ Attention Problems
- ☐ Appetite Change
- ☐ Pupils Different Sizes
- ☐ Room Spins/ Woozy Feeling
- ■ Balance Problems
- ■ Difficulty Walking
- ■ Difficulty Focusing/Easily Distracted
- ■ Very Tired
- ■ Dozing During The Day
- ☐ Personality Change
- ■ Can't Remember Numbers
- ☐ Reading Problems
- ☐ Writing Problems
- ☐ Difficulty with Adding/Subtracting
- ■ Poor Attention
- ☐ Difficulty Learning New Things
- ☐ Difficulty Understanding
- ■ Difficulty Remembering Things
- ■ Re-reading Things to Understand It
- ■ Anger
- ■ Difficulty Making Decisions
- ☐ Change in Sexual Functioning
- ☐ Reduced Confidence
- ☐ Helplessness
- ☐ Apathy (Don't Care)
- ☐ Irritable
- ☐ Change in Sense of Taste or Smell
- ■ Flashbacks to Accident
- ☐ Impatience
- ☐ Frustration
- ☐ Hearing Problems
- ■ Difficulty Planning or Organizing

Vestibular System Concussion Testing in your Office

www.medtrakdx.com

(702) 820-5230

Whiplash & Motor Vehicle Collisions

- "Many individuals who sustain an MTBI are not hospitalized or receive no medical care at all. An unknown proportion of those who are not hospitalized may experience long term problems such as persistent headache, pain, fatigue, vision or hearing problems, memory problems, confusion, sleep disturbances, or mood swings. Symptoms of concussion may appear mild, but can lead to lifelong impairment affecting an individual's ability to function physically, cognitively, and psychologically."
  Page 148

Whiplash & Motor Vehicle Collisions

- "Since chiropractors are so frequently consulted after a whiplash, you should ask your chiropractor if he or she has studied brain concussions and knows how to diagnose them. Many of them are quite advanced in their knowledge and understanding of brain concussion. Very often your chiropractor and neurosurgeon will co-treat your various injuries."
  Page 164

Do You Know These Neurological Injuries?

MTBI – Mild Traumatic Brain Injury (Concussion)

ABI – Acquired Brain Injury (Concussion)

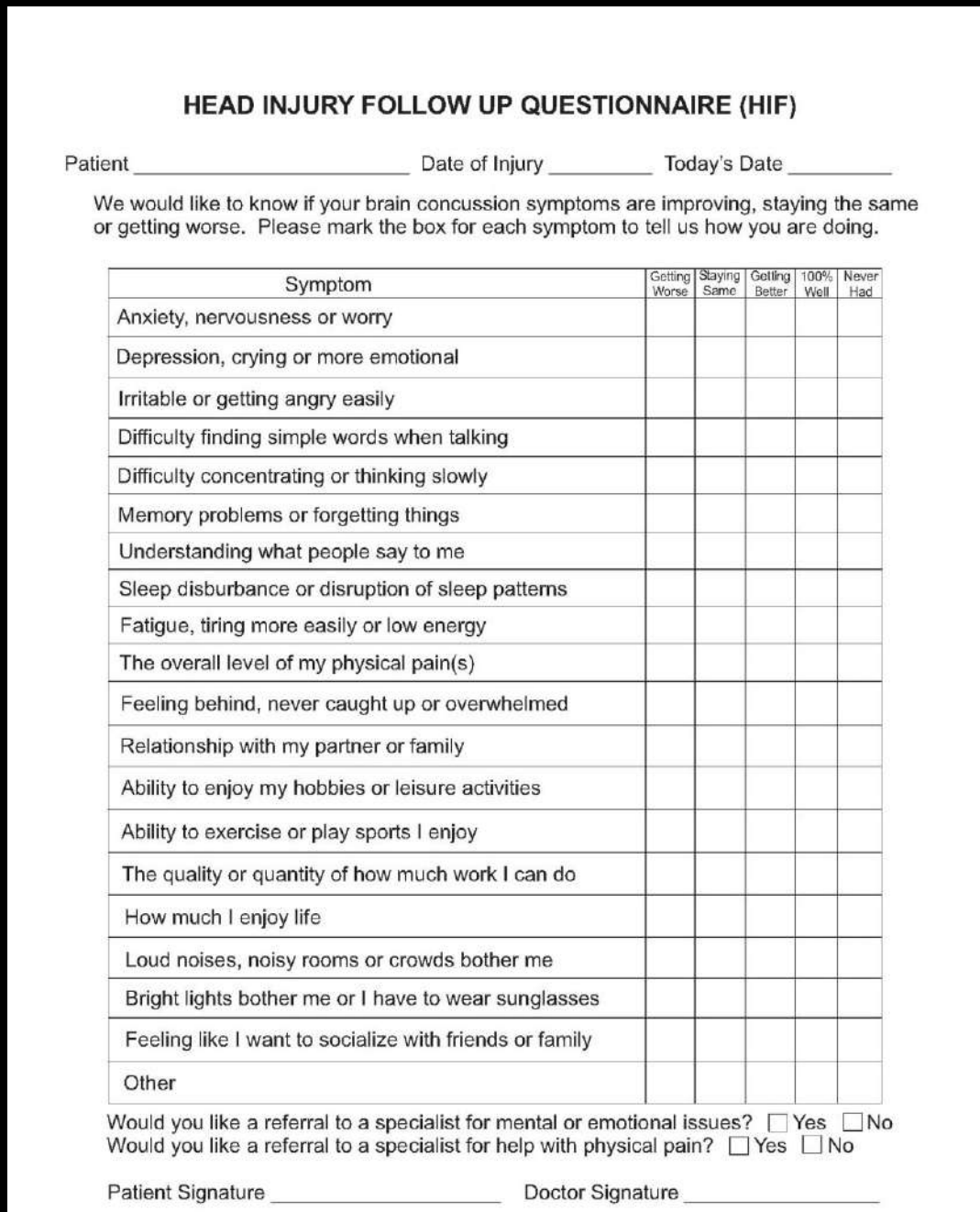
PSTHI – Psychosis Secondary to Head Injury

SCIWORA – Spinal Cord Injury Without Radiographic Abnormality.

Head Injury Follow Up Questionnaire

Have concussion patients fill this out every 30 days

Bill for it, too.



HEAD INJURY FOLLOW UP QUESTIONNAIRE (HIF)

Patient _____ Date of Injury _____ Today's Date _____

We would like to know if your brain concussion symptoms are improving, staying the same or getting worse. Please mark the box for each symptom to tell us how you are doing.

Symptom	Getting Worse	Staying Same	Getting Better	100% Well	Never Had
Anxiety, nervousness or worry					
Depression, crying or more emotional					
Irritable or getting angry easily					
Difficulty finding simple words when talking					
Difficulty concentrating or thinking slowly					
Memory problems or forgetting things					
Understanding what people say to me					
Sleep disburbance or disruption of sleep patterns					
Fatigue, tiring more easily or low energy					
The overall level of my physical pain(s)					
Feeling behind, never caught up or overwhelmed					
Relationship with my partner or family					
Ability to enjoy my hobbies or leisure activities					
Ability to exercise or play sports I enjoy					
The quality or quantity of how much work I can do					
How much I enjoy life					
Loud noises, noisy rooms or crowds bother me					
Bright lights bother me or I have to wear sunglasses					
Feeling like I want to socialize with friends or family					
Other					

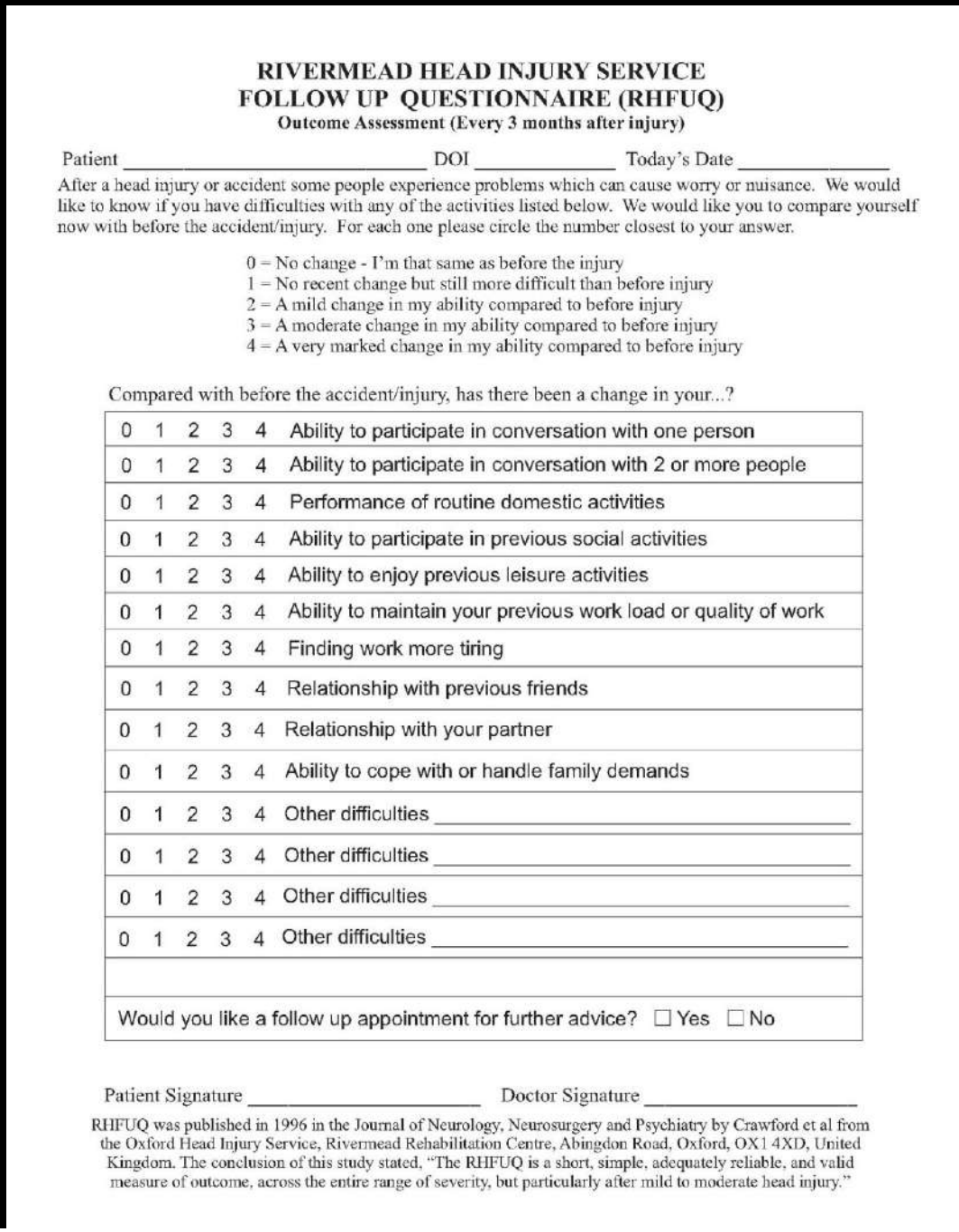
Would you like a referral to a specialist for mental or emotional issues? ☐ Yes ☐ No
Would you like a referral to a specialist for help with physical pain? ☐ Yes ☐ No

Patient Signature _____ Doctor Signature _____

Rivermead Follow Up Questionnaire

Have concussion patients fill this out every 90 days

Bill for it, too.



RIVERMEAD HEAD INJURY SERVICE
FOLLOW UP QUESTIONNAIRE (RHFUQ)
Outcome Assessment (Every 3 months after injury)

Patient _____ DOI _____ Today's Date _____

After a head injury or accident some people experience problems which can cause worry or nuisance. We would like to know if you have difficulties with any of the activities listed below. We would like you to compare yourself now with before the accident/injury. For each one please circle the number closest to your answer.

0 = No change - I'm that same as before the injury
1 = No recent change but still more difficult than before injury
2 = A mild change in my ability compared to before injury
3 = A moderate change in my ability compared to before injury
4 = A very marked change in my ability compared to before injury

Compared with before the accident/injury, has there been a change in your...?

0 1 2 3 4	Ability to participate in conversation with one person
0 1 2 3 4	Ability to participate in conversation with 2 or more people
0 1 2 3 4	Performance of routine domestic activities
0 1 2 3 4	Ability to participate in previous social activities
0 1 2 3 4	Ability to enjoy previous leisure activities
0 1 2 3 4	Ability to maintain your previous work load or quality of work
0 1 2 3 4	Finding work more tiring
0 1 2 3 4	Relationship with previous friends
0 1 2 3 4	Relationship with your partner
0 1 2 3 4	Ability to cope with or handle family demands
0 1 2 3 4	Other difficulties _____
0 1 2 3 4	Other difficulties _____
0 1 2 3 4	Other difficulties _____
0 1 2 3 4	Other difficulties _____
Would you like a follow up appointment for further advice? ☐ Yes ☐ No	

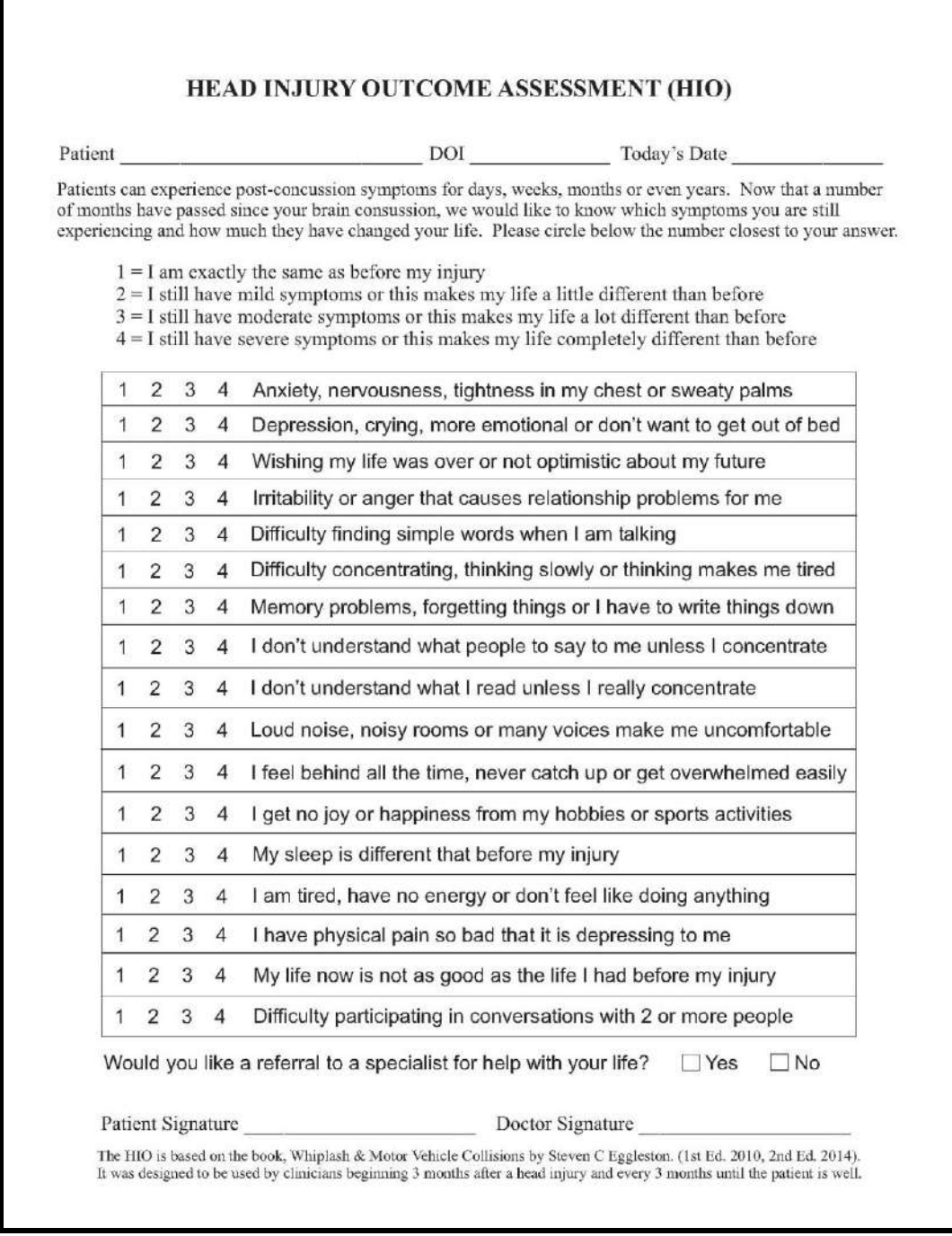
Patient Signature _____ Doctor Signature _____

RHFUQ was published in 1996 in the Journal of Neurology, Neurosurgery and Psychiatry by Crawford et al from the Oxford Head Injury Service, Rivermead Rehabilitation Centre, Abingdon Road, Oxford, OX1 4XD, United Kingdom. The conclusion of this study stated, "The RHFUQ is a short, simple, adequately reliable, and valid measure of outcome, across the entire range of severity, but particularly after mild to moderate head injury."

Head Injury Outcome Assessment (HIO)

Have concussion patients fill this out every 90 days

Bill for it, too.



HEAD INJURY OUTCOME ASSESSMENT (HIO)

Patient _____ DOI _____ Today's Date _____

Patients can experience post-concussion symptoms for days, weeks, months or even years. Now that a number of months have passed since your brain consussion, we would like to know which symptoms you are still experiencing and how much they have changed your life. Please circle below the number closest to your answer.

1 = I am exactly the same as before my injury
2 = I still have mild symptoms or this makes my life a little different than before
3 = I still have moderate symptoms or this makes my life a lot different than before
4 = I still have severe symptoms or this makes my life completely different than before

1 2 3 4	Anxiety, nervousness, tightness in my chest or sweaty palms
1 2 3 4	Depression, crying, more emotional or don't want to get out of bed
1 2 3 4	Wishing my life was over or not optimistic about my future
1 2 3 4	Irritability or anger that causes relationship problems for me
1 2 3 4	Difficulty finding simple words when I am talking
1 2 3 4	Difficulty concentrating, thinking slowly or thinking makes me tired
1 2 3 4	Memory problems, forgetting things or I have to write things down
1 2 3 4	I don't understand what people to say to me unless I concentrate
1 2 3 4	I don't understand what I read unless I really concentrate
1 2 3 4	Loud noise, noisy rooms or many voices make me uncomfortable
1 2 3 4	I feel behind all the time, never catch up or get overwhelmed easily
1 2 3 4	I get no joy or happiness from my hobbies or sports activities
1 2 3 4	My sleep is different that before my injury
1 2 3 4	I am tired, have no energy or don't feel like doing anything
1 2 3 4	I have physical pain so bad that it is depressing to me
1 2 3 4	My life now is not as good as the life I had before my injury
1 2 3 4	Difficulty participating in conversations with 2 or more people

Would you like a referral to a specialist for help with your life? ☐ Yes ☐ No

Patient Signature _____ Doctor Signature _____

The HIO is based on the book, Whiplash & Motor Vehicle Collisions by Steven C Eggleston. (1st Ed. 2010, 2nd Ed. 2014). It was designed to be used by clinicians beginning 3 months after a head injury and every 3 months until the patient is well.

Neuro-Endocrine Dysfunction

There are five major hormones that come from and/or are controlled by the Pituitary gland:

(1) TSH;

(2) ACTH;

(3) LH;

(4) FSH; and

(5) ADH.

The function of these five hormones that have their origin and/or control inside the human brain and they appear to link together these seemingly unrelated concussion symptoms.

Thyroid Stimulating Hormone (TSH)

Concussion can cause the Pituitary gland to not secrete the right amount of TSH which can lead to:

Hypothyroidism

Hyperthyroidism

Hypothyroidism from Concussion

Too little thyroid hormone causes:

weight gain

dry skin

Constipation

cold intolerance

puffy skin

hair loss

menstrual irregularity in women

fatigue.

Moral of the story: Since excessive fatigue and drowsiness during the day are very common symptoms of brain concussion, REFER these patients to an endocrinologist.

Hyperthyroidism from Concussion

Too much thyroid causes:

rapid heart rate

anxiety

weight loss

difficulty sleeping

tremors in the hands

weakness

diarrhea

sensitivity to light

visual disturbances.

REFER these patients to an endocrinologist.

AdrenoCorticoTrophic Hormone (ACTH)

Corticosteroid chemicals are important in controlling **inflammation** in your body, helping you handle **stress**, and controlling your **behavior.**

Cortisol is produced by your adrenal glands (where adrenalin comes from.) When it is secreted, it increases your blood sugar level, suppresses your immune system and helps your body metabolize carbohydrates, fat and protein that you eat.

Luteinizing Hormone (LH)

LH affects the production of testosterone produced by the Leydig cells in your body.

Studies showed that 80% of concussion patients have low testosterone within one (1) year

Testosterone is crucial for the repair and regeneration of tissue (healing)

(Refer concussion patients to Endocrinologist)

Follicle Stimulating Hormone (FSH)

FSH regulates the development, growth and reproductive processes of the body. It is a companion to LH in the reproductive system. It also causes the secretion of Inhibin which, together with Activin, affects your body's ability to **repair wounds (healing the physical injuries from the trauma)**.

(Refer concussion patients to Endocrinologist)

Anti-Diuretic Hormone (ADH)

ADH affects how much water is reabsorbed by your kidneys so it has an important effect on the regulation of water, glucose and salts in your blood.

(Refer concussion patients to Endocrinologist)

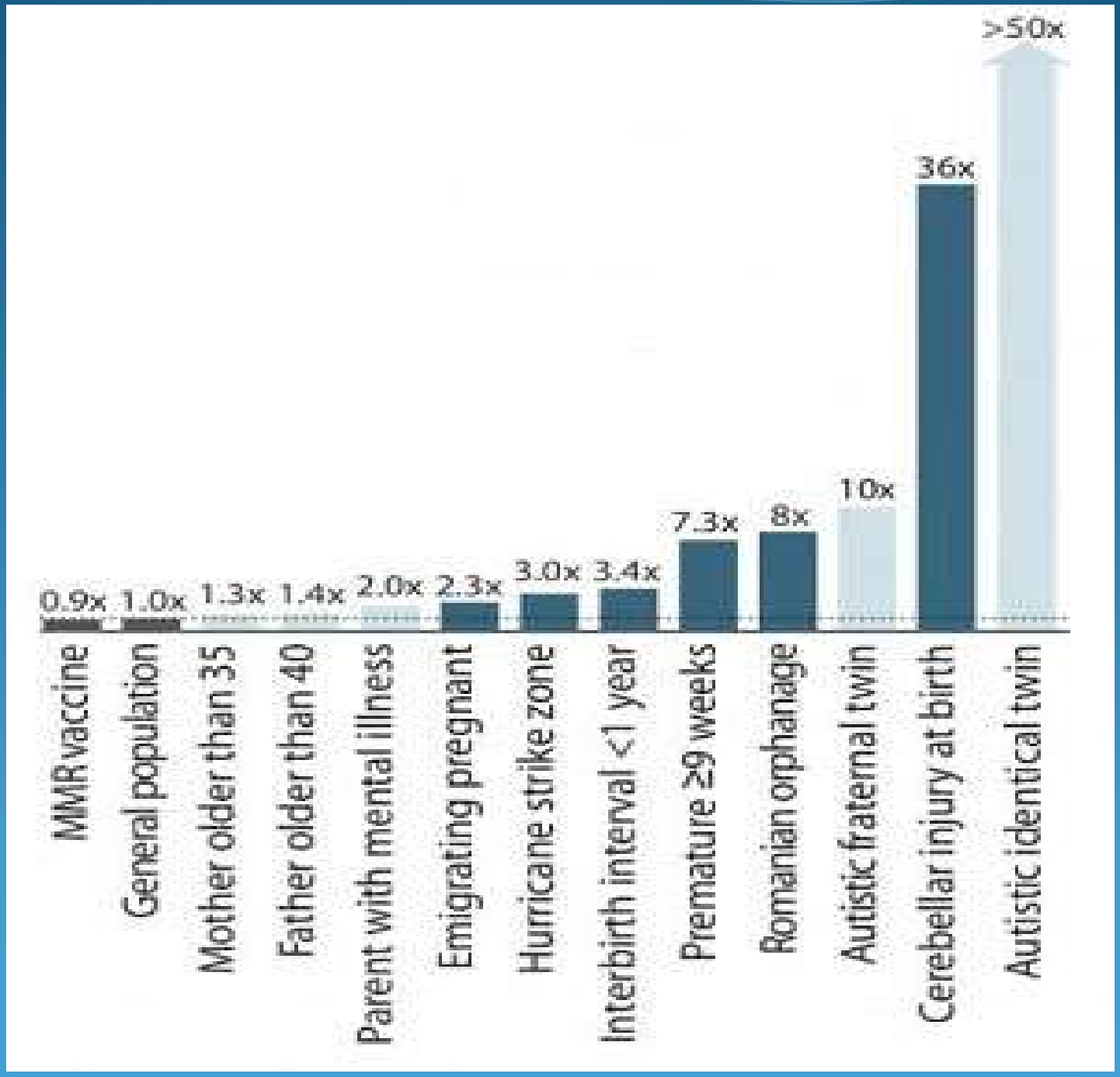
Princeton Studied Causes of Autism

A team of Princeton neuroscientists present their idea – based on a new interpretation of extensive autism research – in the journal *Neuron*.

Princeton Studied Causes of Autism

Studies Implicate Brain Injuries and GENETICS as Major Causes of Autism

Princeton Studied Causes of Autism



Princeton Studied Causes of Autism

If having an identical twin with autism means you are 50 TIMES more like to be autistic

AND

having a fraternal twin makes you 10 TIMES more likely to be autistic, autism may have a GENETIC component.

Princeton Studied Causes of Autism

Brain injuries may cause higher risk for autism:

1) **Cerebellar injury at birth**
2) **Growing up in a Romanian orphanage**
3) **Mother emigrating during pregnancy**
4) **Hurricane when you are a baby**

Neurological Studies Show

The rest of these notes/slides show first the title page of various recent neurological studies followed by the most important finding of that study on the next slide/page.

ALL of these studies can be downloaded at www.HBTinstitute.com in the Doctor Forms section. (User name = great, PW = doctor)

Click HERE to go to this page.

Look for Bibliography of Studies and Articles at the bottom of the page

Sleep Disorders & MTBI Results

"Treatable sleep disorders seem to be common in the sleepy TBI population, but may be largely undiagnosed and untreated."

Arch Phys Med Rehab Vol. 82 Oct 2001

Moral of the story: You should diagnose sleep disorders and get help for your patients.

Head Injury is Psychiatric Risk Factor

Head injury is associated with a higher risk of:

Schizophrenia

Depression

Bipolar Disorder

"The authors demonstrated a higher risk of ALL psychiatric outcomes following head trauma… greater than for skull fracture."

PSTHI is the new term that means Psychosis Secondary To Head Injury

Am J Psychiatry 2014; 171:463-369

DTI MRI & White Matter Changes

Diffuse Tensor Imaging (DTI) MRI can demonstrate changes/abnormalities in white matter tracts within 6 months after a brain concussion.

Journal of Neurotrauma in July 2015 stated DTI imaging results correlate with full neuropsychological testing results AND the more damaged the white matter is visually, the worse the patient performs in neuropsyche testing

Moral of the story: We are now able to objectively demonstrate brain concussions.

Post-Traumatic Vertigo

Head injuries occur in 5% of population annually.

Head and neck trauma causes tinnitus lasting from 3 to 9 months.

Post-traumatic Meniere's causes imbalance

Benign Paroxysmal Positional Vertigo (BPPV) is common after trauma & all of these symptoms need an ENT referral..!!!

Post-Traumatic Vertigo by Timothy C. Hain, MD

Acute Peripheral Vestibular Injuries

Whiplash is a dynamic inertial event.

25% to 50% of whiplash patients have vertigo.

5% to 14% of whiplash patients have tinnitus.

24% to 34% have memory, cognitive and changes in vision.

Acute Peripheral Vestibular Deficits After Whiplash Injuries by Vibert & Hausler

Vestibular Deficits after Whiplash

by Vibert & Hausler

Lesions of the Vestibular Organs after whiplash are underestimated because chiropractors erroneously blame the vertigo and dizziness on cervical damage and CNS injury.

Ann Otol Rhinol Laryngol 112:2003

Sleep Disorders & Concussion

by Castriotta et. Al.

Concussion patients had 39% abnormal sleep studies.

23% had OSA (Obstructive Sleep Apnea)

3% had posttraumatic hypersomnia

5% had narcolepsy

7% had PLMS (limb movement in sleep)

21% had significant daytime sleepiness

J Clin Sleep Med Dec 2008

Post-trauma Sleep Apnea

Patients treated with CPAP reduced from 31 apneas/night to only 3/night

However… concussion patients STILL had daytime sleepiness

Conclusion: Concussion causes daytime sleepiness independent from sleep disorder.

Refer patient to BOTH psychiatrist AND sleep medicine doctor.

J Clin Sleep Med April 15, 2009

TBI & Sleep Disorders

by Verma & Jayakar

TBI is a “silent epidemic”

Sleep disorders make concussion healing time longer

Recognize and treat BOTH conditions & make referrals to both psychiatrist and sleep medicine doctor

SPECT Imaging

Single Photon Emission Tomography gives dynamic information about concussed brain.

Detects blood flow in brain.

Decreased blood flow (and oxygen) from damaged small vessels gives more accurate information than MRI or CT of the brain.

MRI & CT show structure damage, not MTBI

Concussion and Sleep Apnea

"Persons who have sustained a traumatic brain injury are at a significantly increased risk for sleep disorders."

"The effects of untreated sleep apnea on a patient's cognitive decline and the development of behavioral deficits have only recently been identified."

by Mollayeva et. al. Univ. Toronto, Canada

Concussion and Sleep Apnea

Patients with Sleep Apnea make snoring and gasping noises in their sleep. Each gasp sound indicates breathing had stopped. Each time breathing stops, blood oxygen levels drop (damaging cells in the body).

This leads to high blood pressure, stroke, heart failure, diabetes, depression & more.

Moral of the story: Find the concussions and make referrals so your patients get well.

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Published: 2014.12.08

Authors' Contribution:
A Study Design
B Data Collection
C Statistical Analysis
D Data Interpretation
E Manuscript Preparation
F Literature Search
G Funds Collection

Spinal Cord Injury without Radiographic Abnormality (SCIWORA) – Clinical and Radiological Aspects

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Summary

The acronym SCIWORA (Spinal Cord Injury Without Radiographic Abnormality) was first developed and introduced by Pang and Wilberger who used it to define "clinical symptoms of traumatic myelopathy with no radiographic or computed tomographic features of spinal fracture or instability". SCIWORA is a clinical-radiological condition that mostly affects children. SCIWORA lesions are found mainly in the cervical spine but can also be seen, although much less frequently, in the thoracic or lumbar spine. Based on reports from different authors, SCIWORA is responsible for 6 to 19% and 9% to 14% of spinal injuries in children and adults, respectively. Underlying degenerative changes, including spondylosis or spinal canal stenosis, are typically present in adult patients. The level of spinal cord injury corresponds to the location of these changes. With recent advances in neuroimaging techniques, especially in magnetic resonance imaging, and with increasing availability of MRI as a diagnostic tool, the overall detection rate of SCIWORA has significantly improved.

MeSH Keywords: Central Cord Syndrome • Magnetic Resonance Imaging • Spinal Cord Injuries

PDF file: http://www.polradiol.com/abstract/index/idArt/890944

Background

SCIWORA

Spinal Cord Injury Without Radiologic Abnormality.

Describes “Clinical symptoms of traumatic myelopathy with no radiologic or computed tomographic features of spinal fracture or instability.”

Most common area is in the Cervical Spine

by Szwedowski & Walecki, Dept of Radiology & Trauma, Torun, Poland

SCIWORA

Underlying degenerative changes are "typically present" such as spondylosis or spinal canal stenosis.

SCIWORA occurs after trauma to the level of the cervical spine where the degenerative changes are seen.

Special MRI studies increase chance to diagnose the cord injury… pay attention to DJD

QEEG

Quantative Electro Encephalography is an inexpensive and detailed test for concussion (and other brain defects like ADHD, etc.)

Find a neuropsychologist who does QEEG and also biofeedback

Concussion and Sleep Apnea

New research shows traumatic brain injury (TBI) and obstructive sleep apnea (OSA) go hand in hand and that a causal relationship is stronger than ever.

“Blunt” head trauma is a higher risk for OSA than invasive head trauma.

by Christopher J. Lettieri, MD

Bright Light Therapy for MBTI

Bright light therapy (which chiropractors can do) helps patients recover from concussion.

Read this study to find out how you can do this treatment.

J Clin Sleep Med May 30, 2013

TBI in Older patients

Older patients with concussion fare worse than younger patients.

Older patients need aggressive rehabilitation following concussion.

Moral of the story: Make the referral

Curr Psychiatry Rep. 2002 Oct; 4(5):354-62

Children with Concussions

Children with concussions are at risk for development of psychiatric illnesses in the "2nd year" following the concussion.

Early signs are resuming bedwetting and "acting out" behaviors

Questions?

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