NSCA®
NATIONAL STRENGTH AND CONDITIONING ASSOCIATION

2022 NSCA TACTICAL ANNUAL TRAINING

#NSCATactical22

Restoring the Brain-Body Connection to Improve Office Resilience and Critical Decision-Making Under Duress

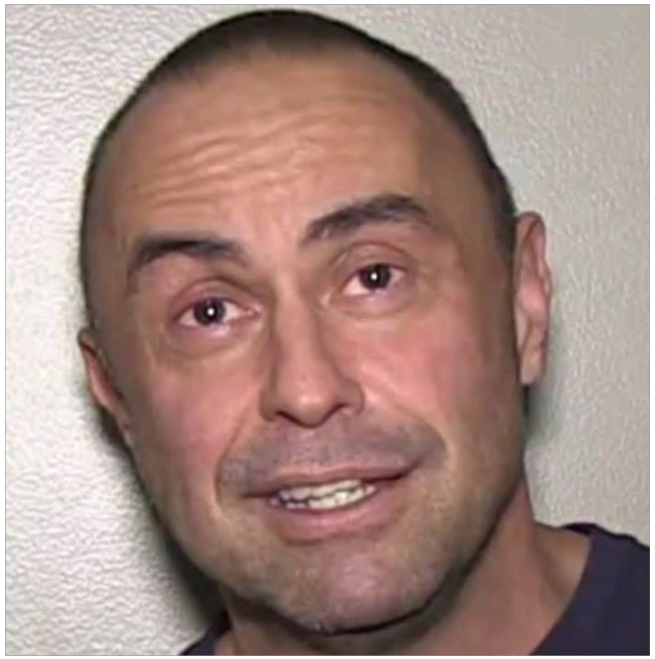
PICP IV Strength Coach under Charles Poliquin working with tactical teams since 2004 – Massachusetts Statewide Health and Wellness Coordinator since 2010

Annette Verpillot - Global expert about the neuro-science of posture since 2004 and investigating the root cause of poor posture and postural imbalances.

Why does rehab work momentarily?

Charles Poliquin aka Strength Sensei

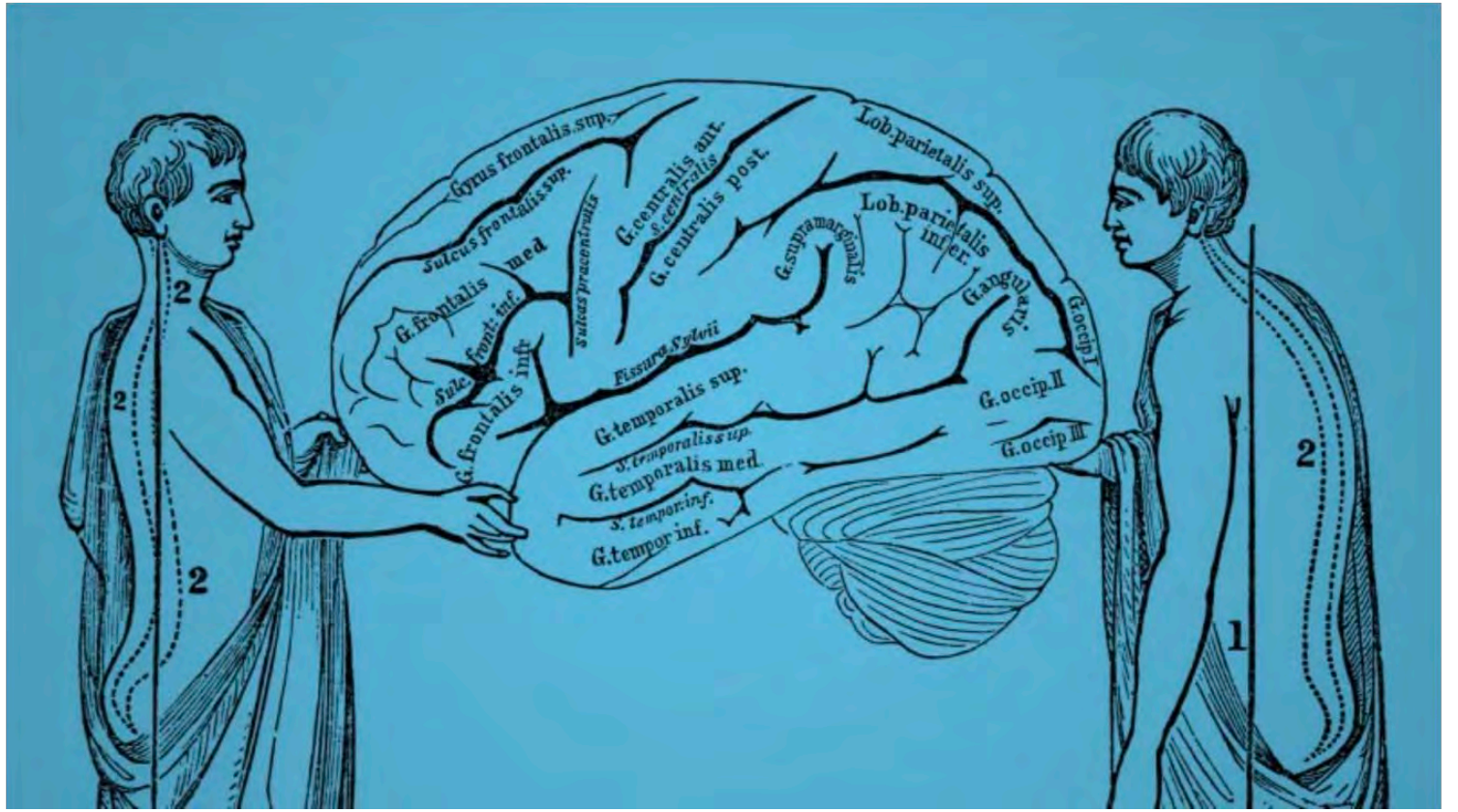
Strength gains of 8 to 15% with aligned posture



Have you ever noticed you are hurt on one side of the body more than the other?

Why?

What does science tell us about posture?



What does your posture tell you about your **health**?

What does your posture tell you about managing **stress**?

How can postural imbalances affect your **life**?

Why should you care about your posture?

What science tells us...

- Police officers have a shorter life expectancy than the average individual. These differences are more prominent within the male population and are attributed to work-related stress, habits, and exposures (Violanti et al., 2013).

- Police officers are more prone to cardiovascular disease and other illnesses that stem from poor metabolic functioning (Hartley et al., 2011).

The Relationship Between Stress, Sleep, and Posture

Studies show that shift work often causes burnout in police officers and disturbs their sleep patterns (Peterson et al., 2019). This leads to fatigue and stress.

Posture correction serves as an **excellent intervention** strategy because it **induces relaxation and reduces strains** and bodily discomforts, making it easier to achieve a restful sleep.

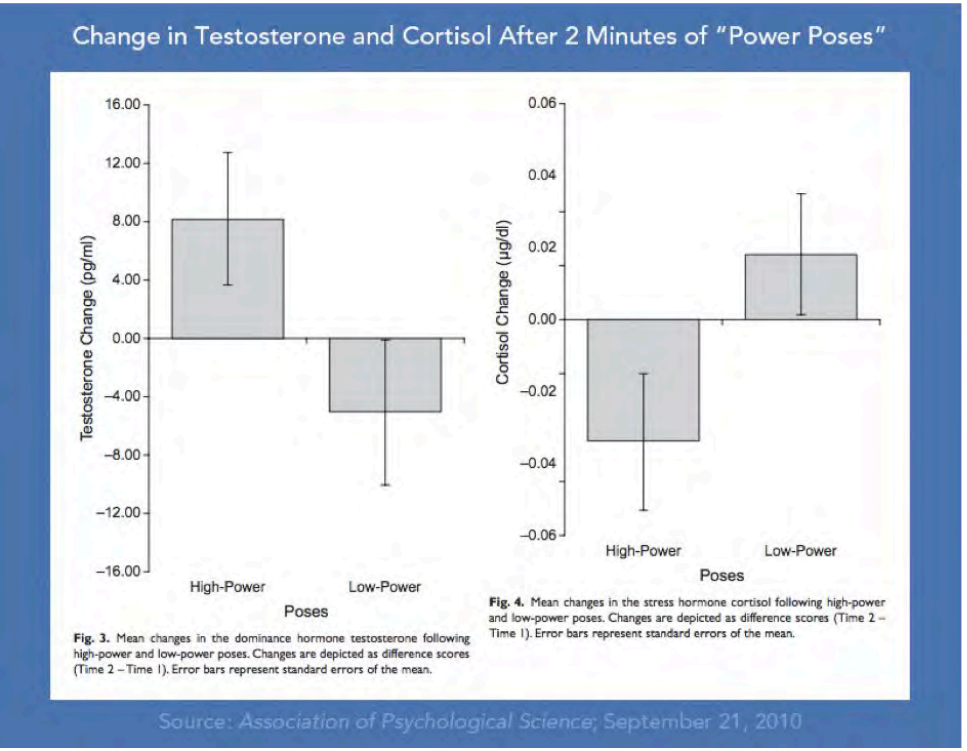
Officers who are sleep deprived, tired, and stressed have:

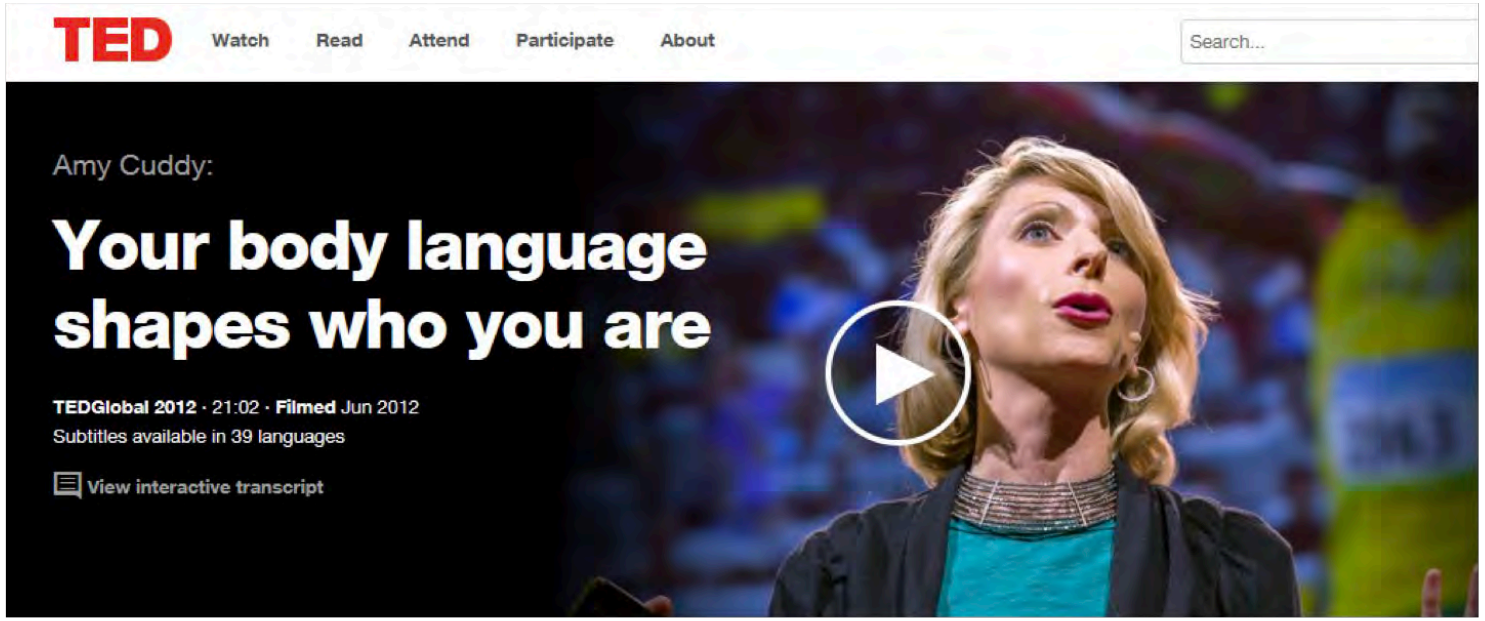
- Decreased task proficiency (Covey et al., 2013)
- Poor decision-making ability
- Impaired judgement (Waggoner et al., 2012, Rajaratnam et al., 2011)
- **Are susceptible to bouts of anger during stressful situations, including decision to shoot and use of excessive force** (Waggoner et al., 2012, Rajaratnam et al., 2011)

- Different postures may have an impact on the endocrine system (Minvaleev et al., 2004)
- Rounded shoulders can lead to an inability of the diaphragm to fully expand, leading to shallow breathing, decreased oxygen to the brain and body, and stress.
- *"An upright body posture is associated **with increased testosterone, decreased cortisol, greater confidence, mood, and strength** when compared to a sustained slouched posture, which is associated with greater chronic neck, shoulder, and back pain as well as lower confidence and energy, depressive memory bias, and failure-related emotions (Peper et al., 2018)"*

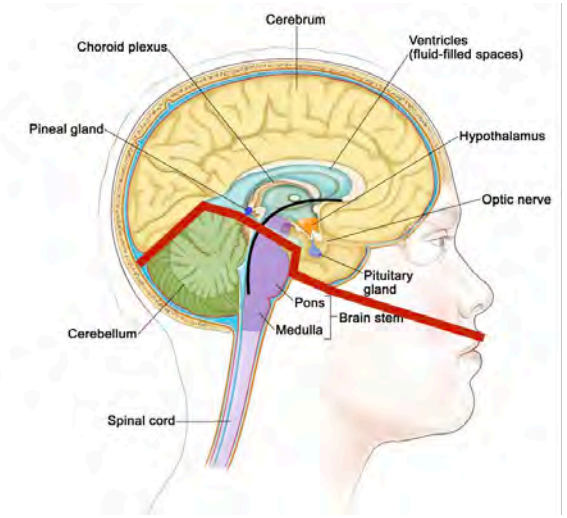
Can our posture influence our hormone production?

High power poses increased testosterone by 20 percent and decreased cortisol levels by 25 percent.



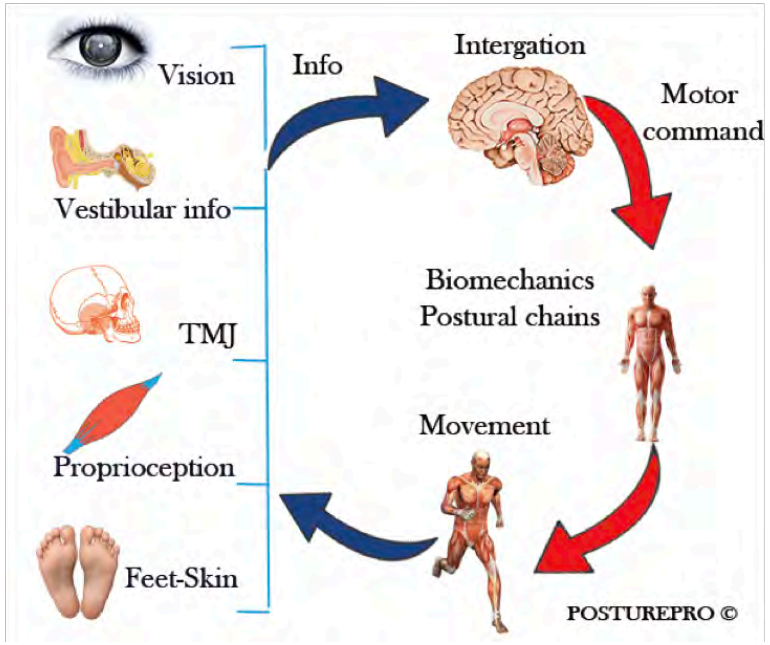


Today we are going to talk about all about how we learn how to move how that ultimately is infringingly linked with our ability to regulate our thoughts and emotion, anxiety and our ability to manage stress.



Postural control refers to our ability to process sensory input.

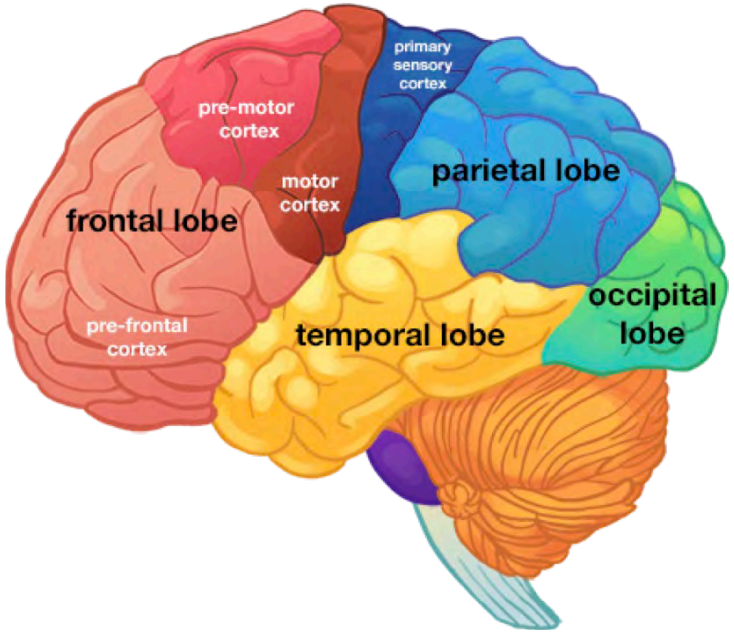
Our sense of body awareness comes from specialized senses.



The brain develops in stages.

Movement activates the brain.

Feedback from our muscles activates our genes.

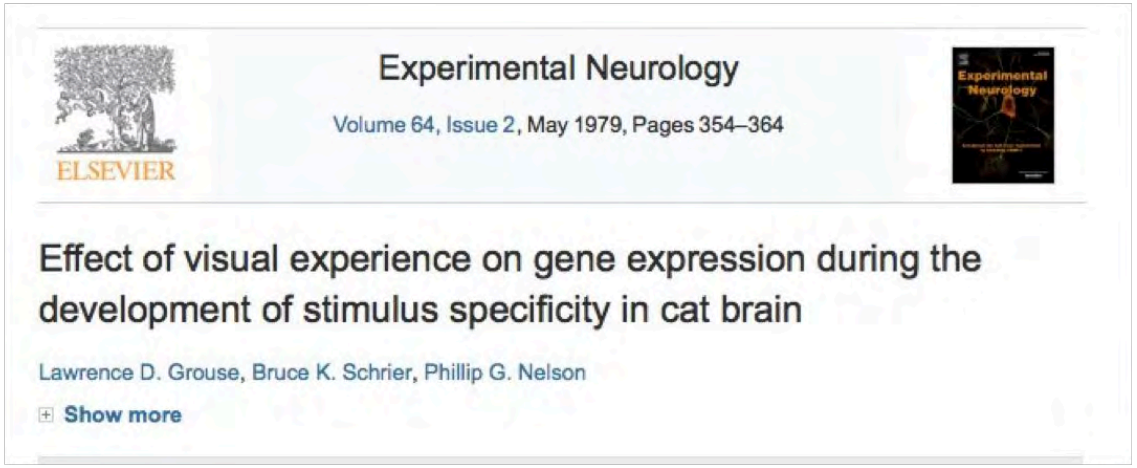


Underdeveloped.

Under-integrated
motor patterns.

Postural adaptations.

If a cat is never allowed to walk, it will eventually go blind.



Experimental Neurology

Volume 64, Issue 2, May 1979, Pages 354–364

ELSEVIER

Effect of visual experience on gene expression during the development of stimulus specificity in cat brain

Lawrence D. Grouse, Bruce K. Schrier, Phillip G. Nelson

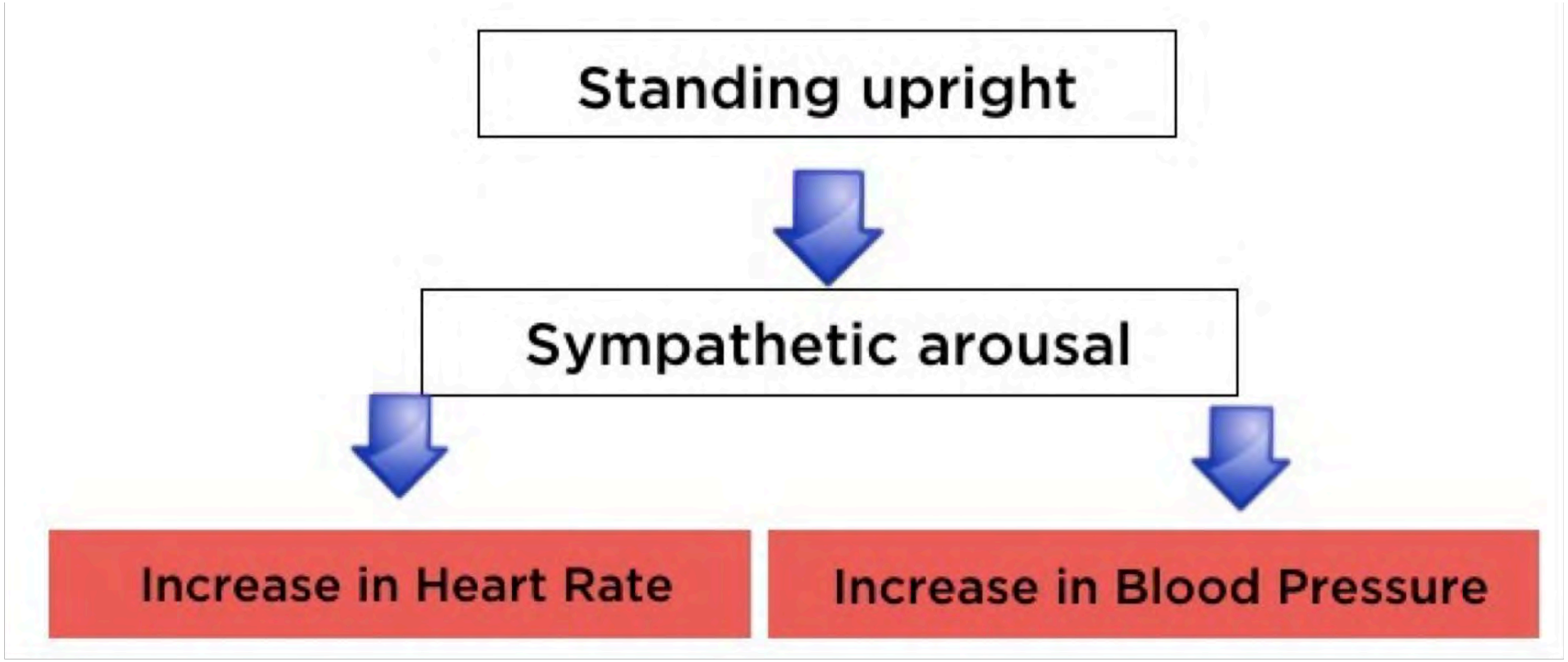
Show more

ASYMMETRY OF FOOT POSITION AND WEIGHT DISTRIBUTION CHANNELS THE INTER-LEG COORDINATION DYNAMICS OF STANDING

Zheng Wang · Karl M. Newell

The OBJECTIVE: The purpose of this study was to examine how the two mechanical factors of foot position and weight distribution interact to influence postural control and inter-leg coordination dynamics.

CONCLUSION: In summary, the asymmetry of foot position plays a primary role and induces qualitative changes in postural control and inter-leg coordination dynamics.

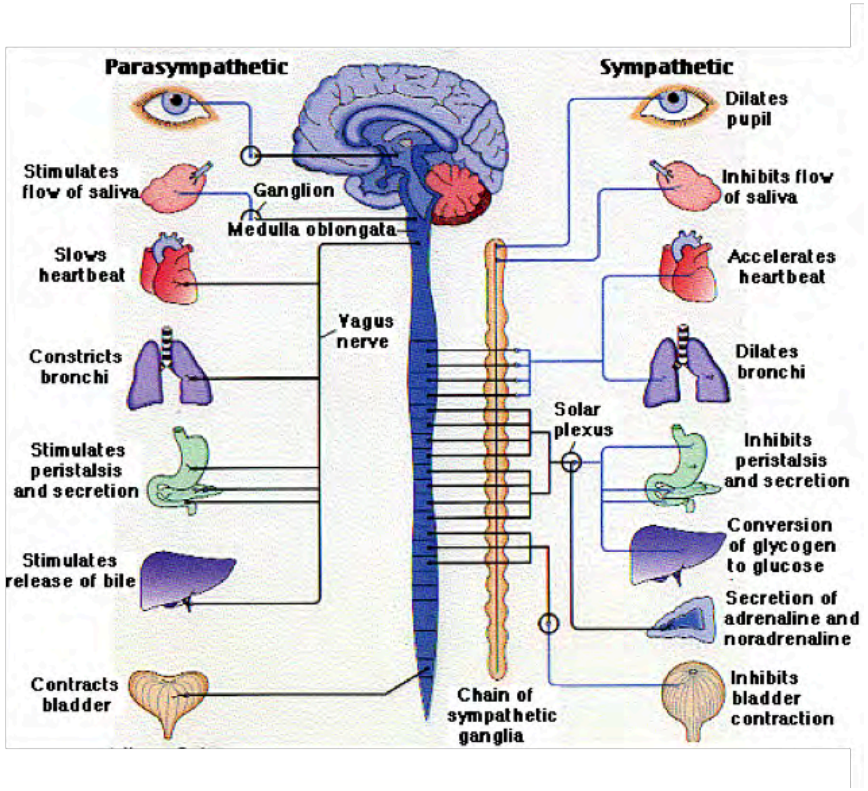


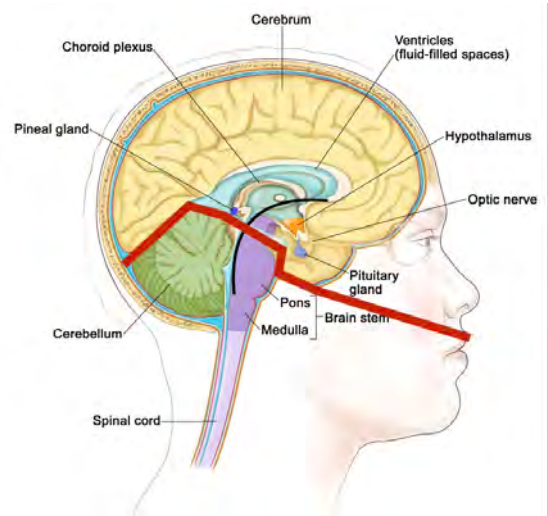
The influence of body position on autonomic nervous system function.

McLaughlin LJ, Goldman H, Kleinman KM, Korbol B.

x

The brain gives us balance of between our sympathetic and parasympathetic system. Our ability to manage stress.





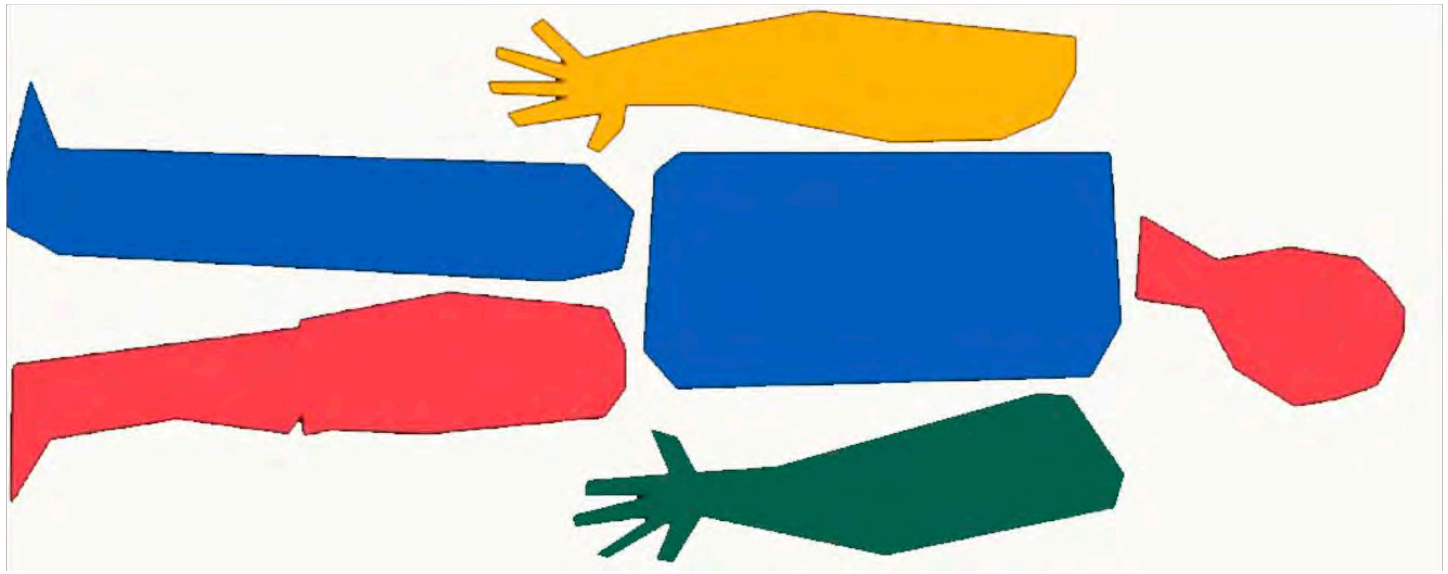
Muscle memory stores as patterns of electricity in neurons. This is why imbalances in body alignment promote dysfunctions in the nervous system and those dysfunctions further imbalances in body alignment.

Postural Imbalances

↑Cortisol
↑Blood sugars
↓Digestive enzymes DPP4
↓Hydrochloric acid (can't absorb B12+folic acid)
↓Lower PH balance (leads to parasites yeast, candida)
Reduced blood flow to stomach (breakdown of tight junctions with lead to leaky gut)
No normal enzymes (can't break down gluten and dairy, casines)
Hyper active immune system (left brain +) chronic inflammation
***Breakdown of blood brain barrier cause inflammation of the brain.

Each part of the body is studied and treated locally.

The missing link... is making links!

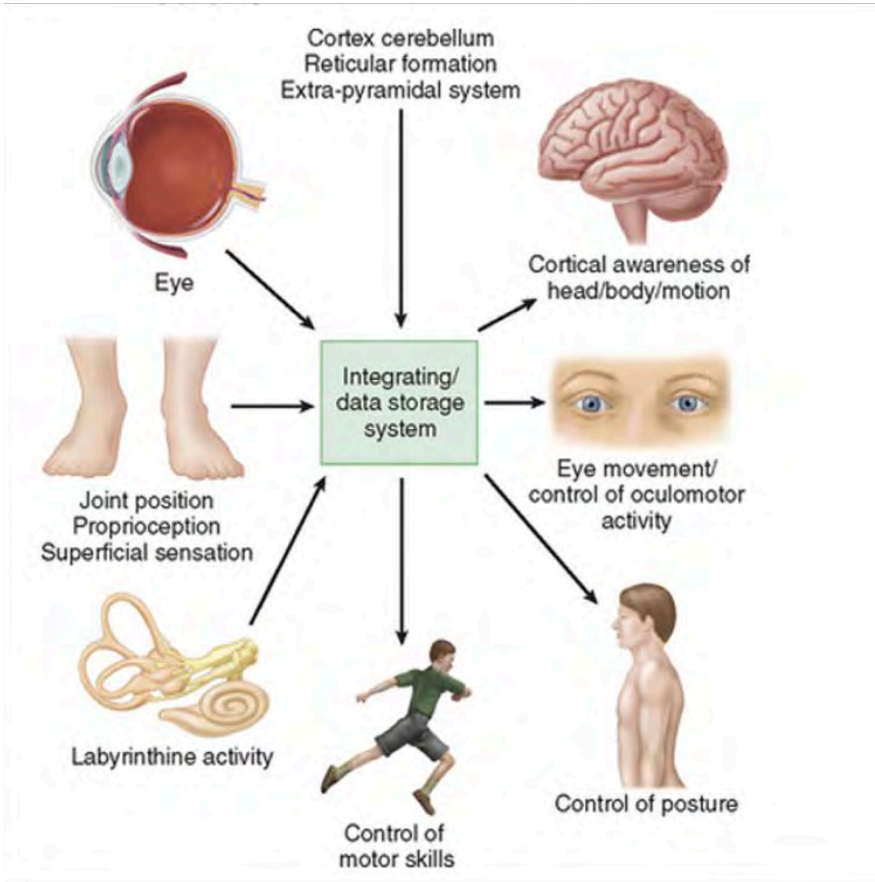


Posture is an unconscious process.

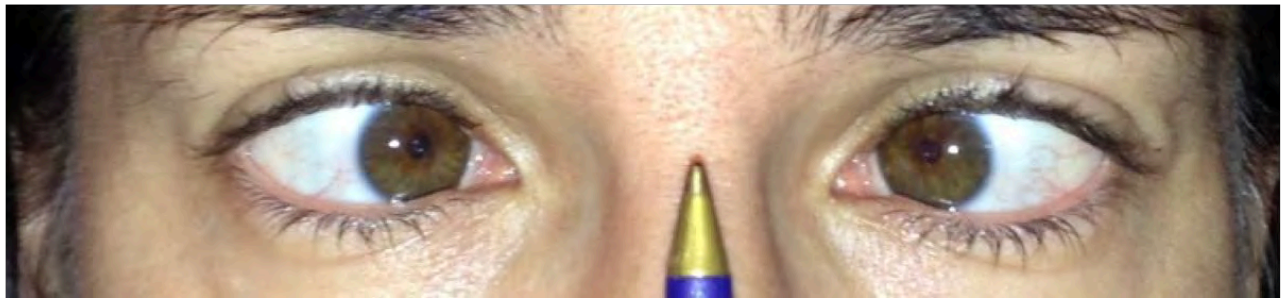
If the **sensorimotor system** is out of balance it will affect our motor system.

And if the **motor system** is out of balance, it will affect our sensorimotor system!

A mismatch!



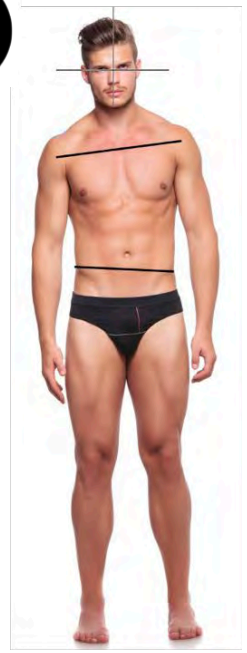
When you have good eye convergence, the communication from your eyes to your brain and spine comes fast and uninterrupted. Your brain stays in constant command of your body, using information gathered from each sensory receptors.



An eye muscle imbalance causes a mismatch in the brain. This leads to postural imbalances, which in turn causes a foot imbalance.

1

3



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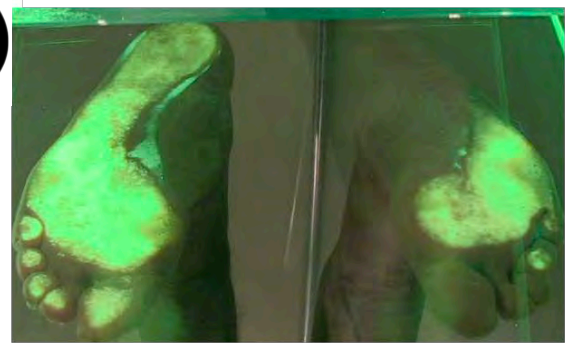
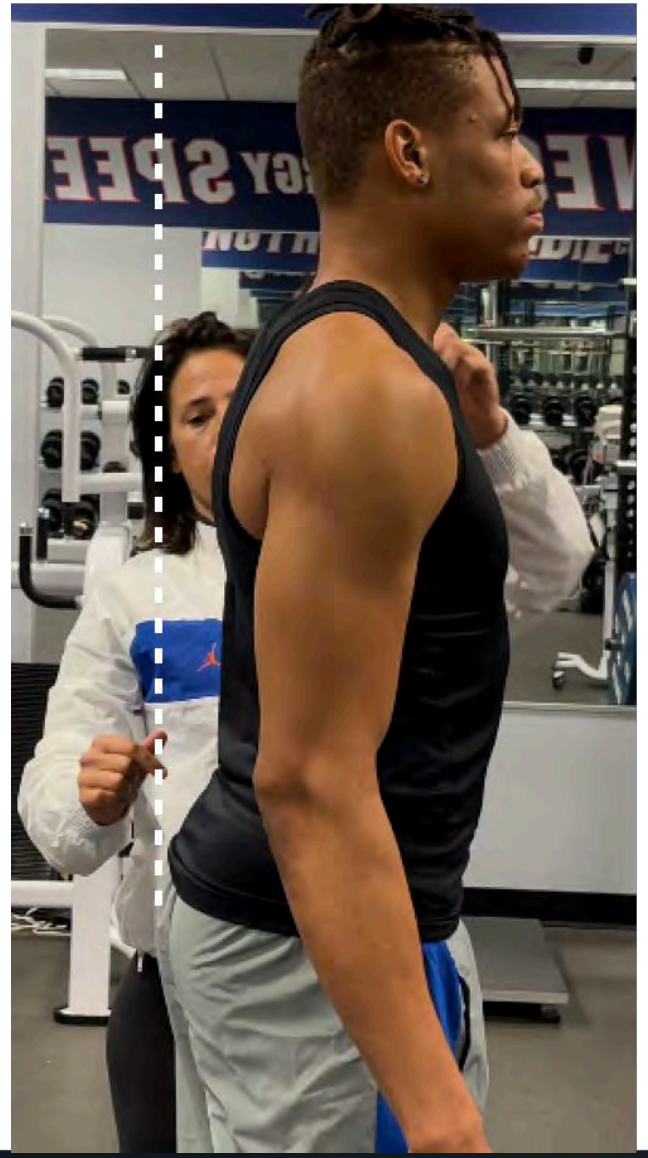


How can we create the most optimal changes in the brain?

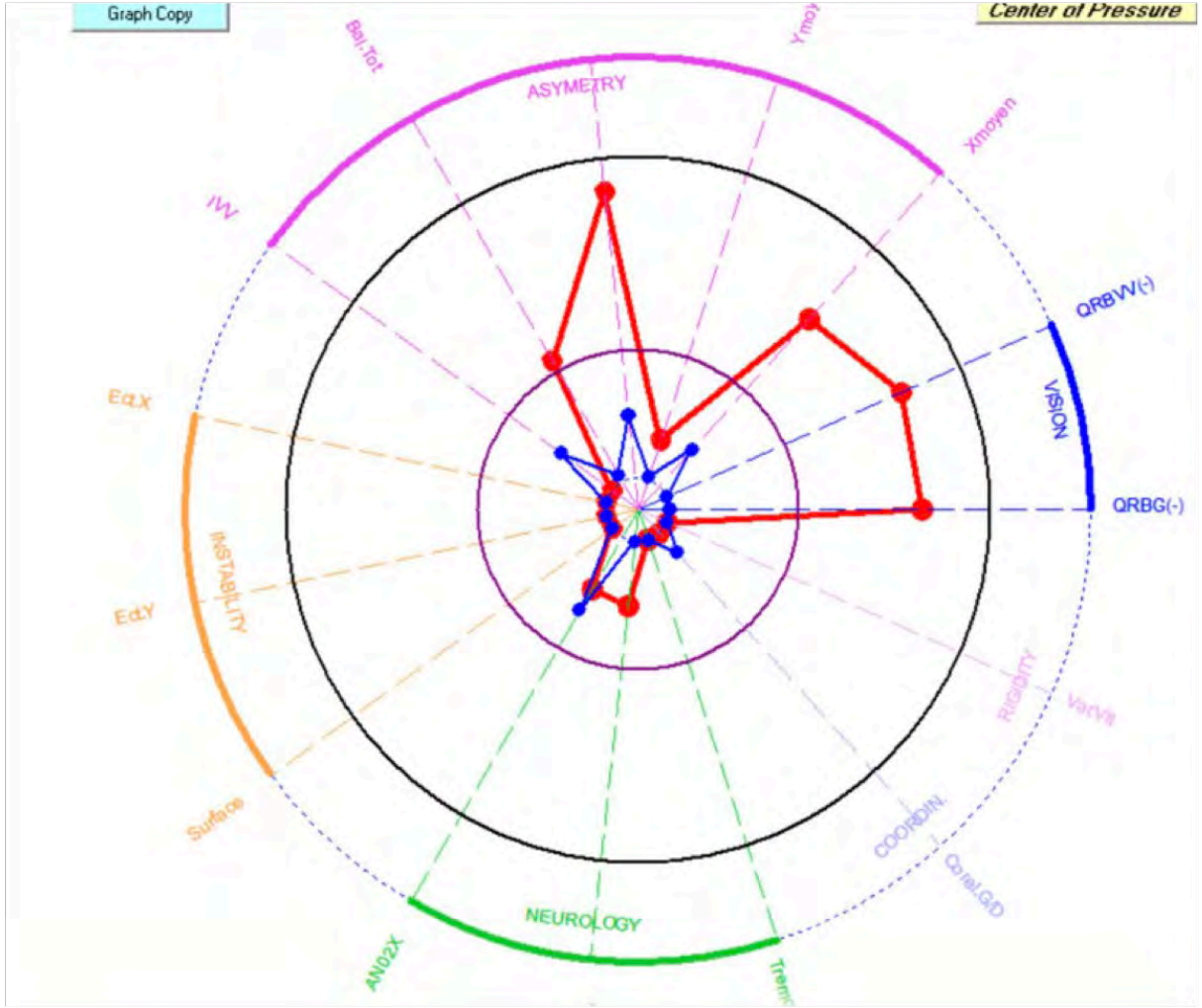
By using both sensory pathways (brain-based approach) to improve motor control.

BEFORE



AFTER

The Circle of Health



Zoom 1	GRA PH1	GRA PH2
Pat / Nu	4/2	4/4
Yeux	fermés	fermés
Xmoyen	-15.51	-30.87
Ymoyen	38.2	35.38
Surface	5456.	2151.
Longueur	5843.	2558.
Long.X	4052.	1436.
Long.Y	3398.	1817.
Pente	9.672	68.71
AN02X	28.05	15.08
AN02Y	29.17	26.38
LFS	0.188	1.156
QRBG	-1	-1
QRBVV	-1	-1
Var.Vit	4655.	1010.

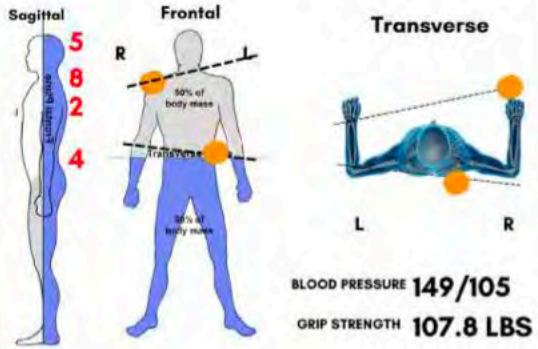
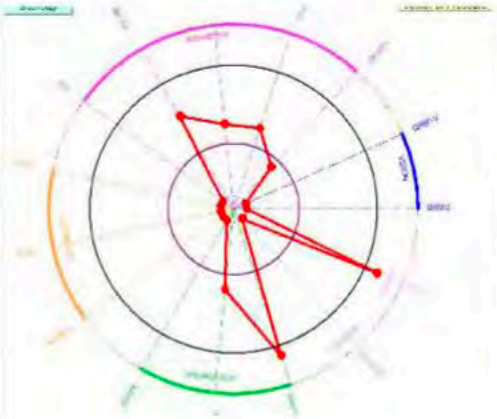
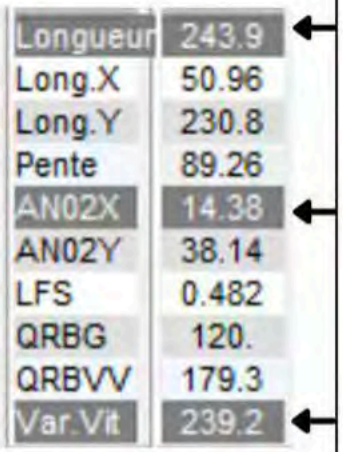
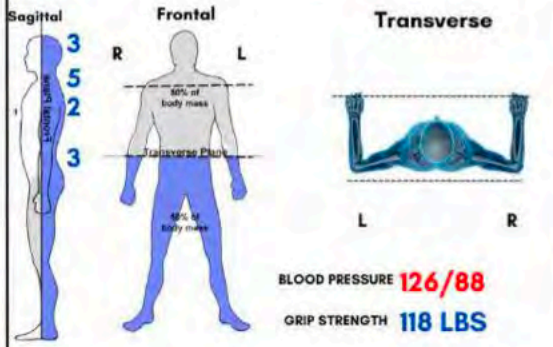
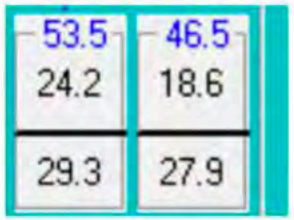
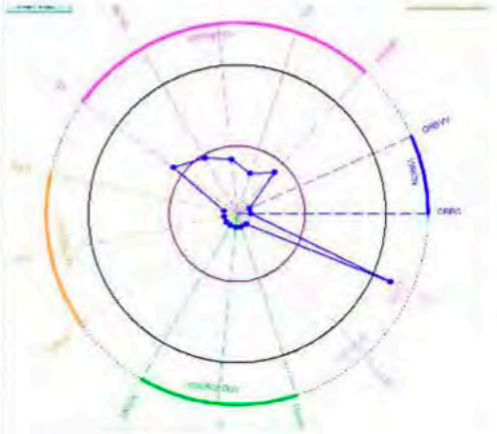
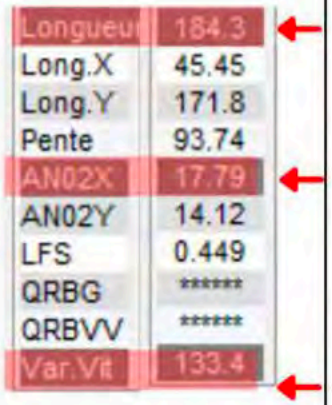
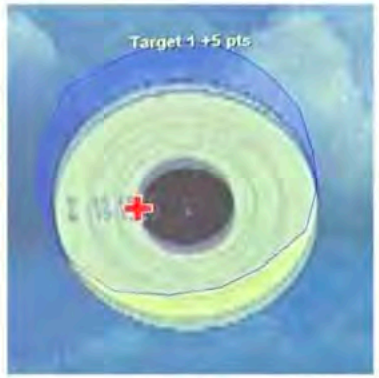
Posturepro/MPTC MILO Simulation Beta Testing Preliminary Results

Annette Verpillot - Posture Specialist and Jason Shea - CSCS,TSAC, PICP IV

Restoring the Brain-Body Connection to Improve Officer Resilience and Critical Decision-Making Under Duress

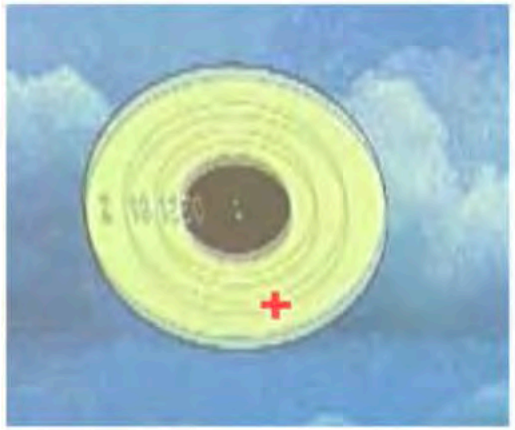
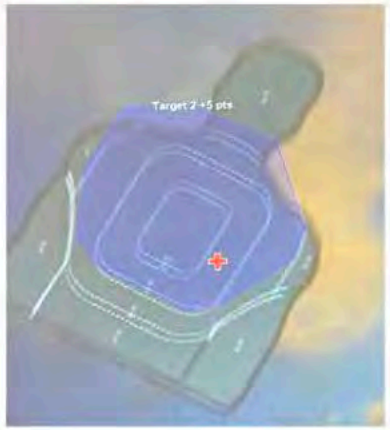
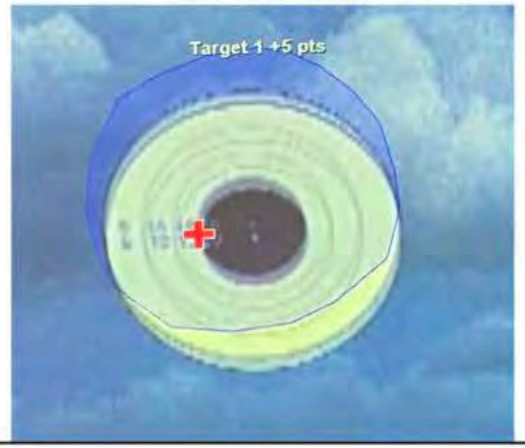
FULL NAME:

DATE: MARCH 9, 2022

	ASSESSEMENT	FOOT POSTURE	CIRCLE OF HEALTH	ENERGY EXPENDITURE	SHOOTING ACCURACY
PRE	 BLOOD PRESSURE 149/105 GRIP STRENGTH 107.8 LBS	 Left Foot Right Foot			
POST	 BLOOD PRESSURE 126/88 GRIP STRENGTH 118 LBS	 Left Foot Right Foot			

FULL NAME:
DATE: MARCH 9, 2022

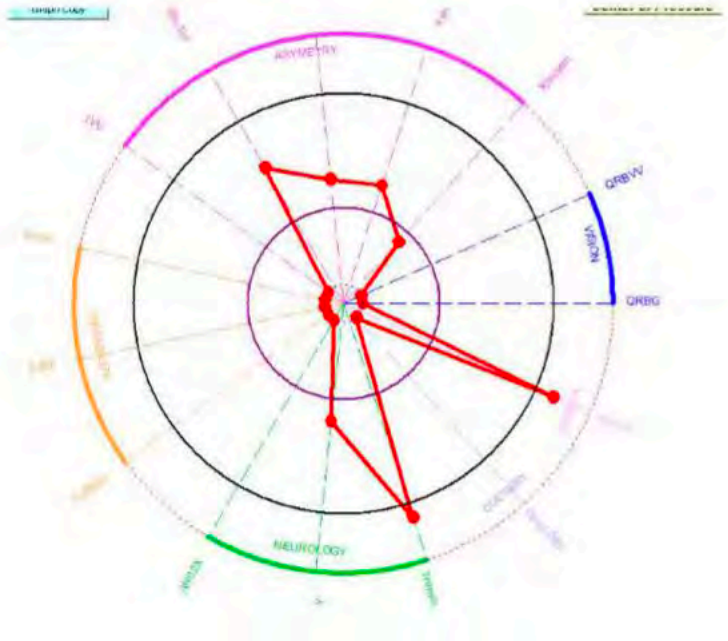
SHOOTING ACCURACY

	TARGET #1	TARGET #2	TARGET #3	TARGET #4
PRE				
POST				

FULL NAME:
DATE: MARCH 9, 2022

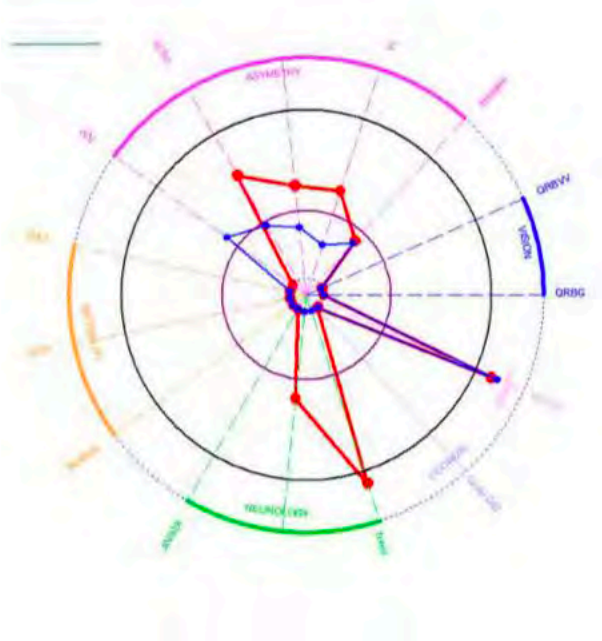
CIRCLE OF HEALTH

PRE



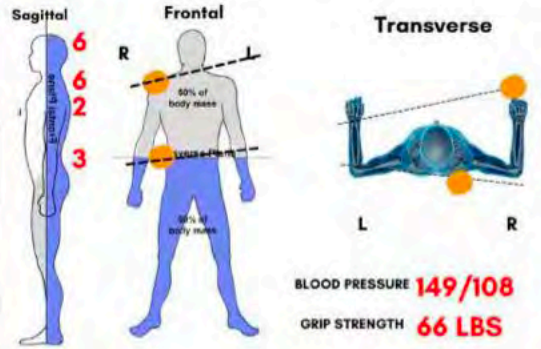
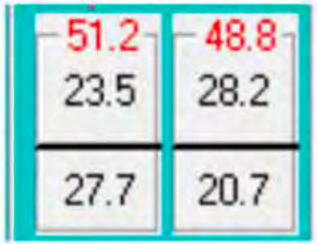
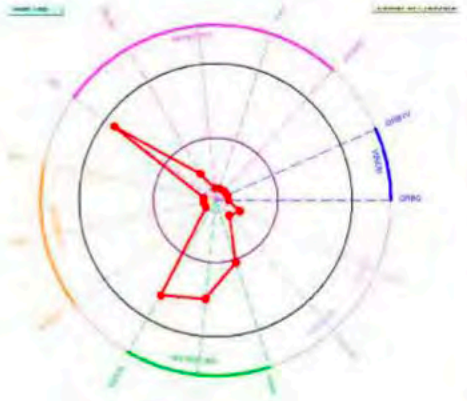
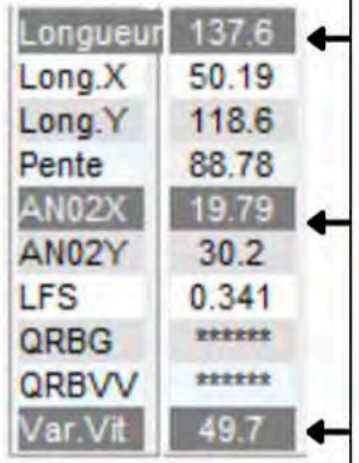
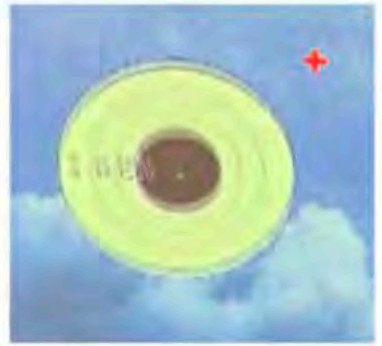
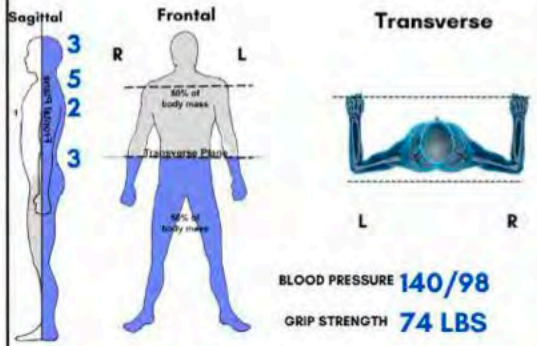
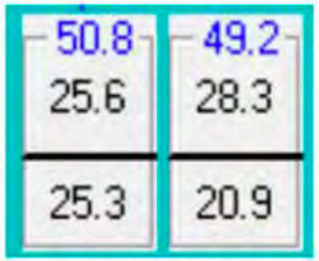
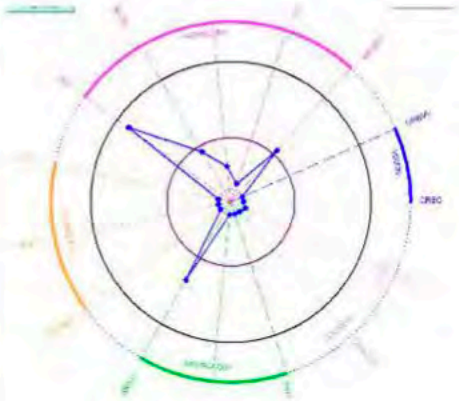
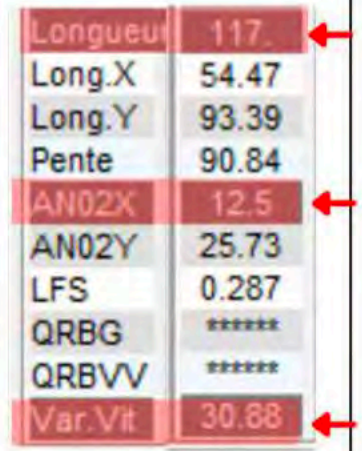
POST

PRE/POST



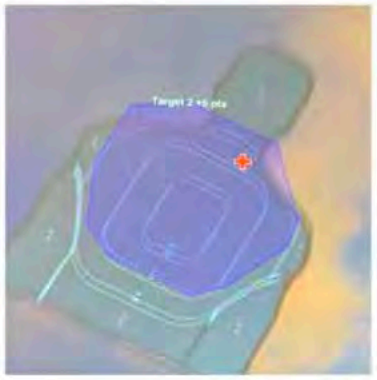
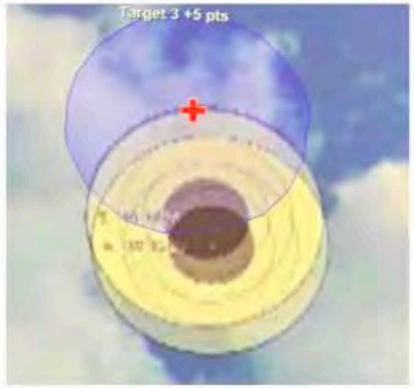
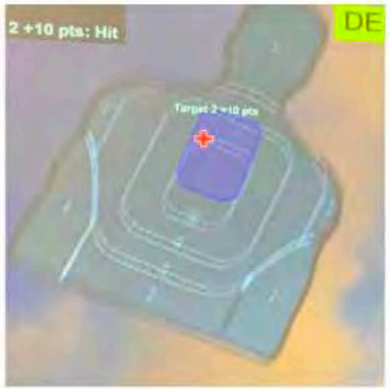
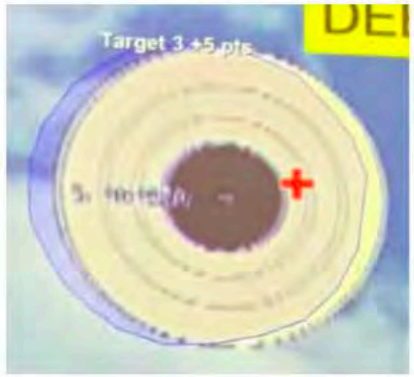
FULL NAME: REBECCA MAILEA

DATE: MARCH 10, 2022

	ASSESSEMENT	FOOT POSTURE	CIRCLE OF HEALTH	ENERGY EXPENDITURE	SHOOTING ACCURACY
PRE	 BLOOD PRESSURE 149/108 GRIP STRENGTH 66 LBS	 Left Foot Right Foot			
POST	 BLOOD PRESSURE 140/98 GRIP STRENGTH 74 LBS	 Left Foot Right Foot			

FULL NAME: REBECCA MAILEA
DATE: MARCH 10, 2022

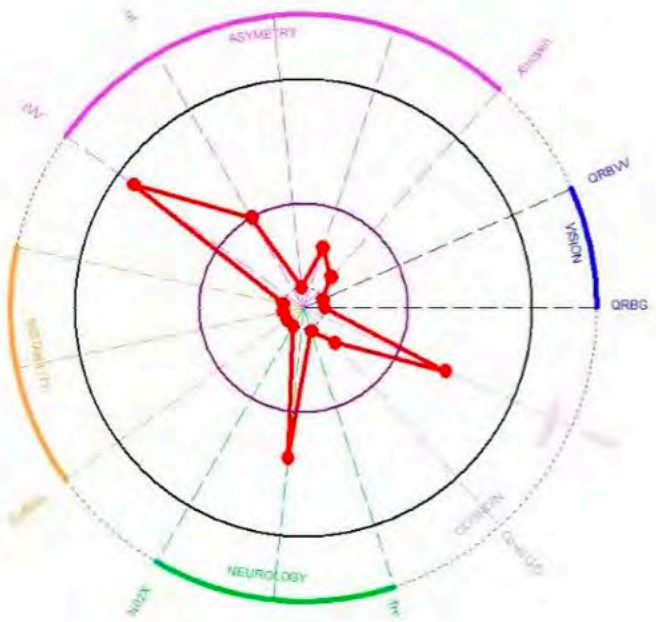
SHOOTING ACCURACY

	TARGET #1	TARGET #2	TARGET #3	TARGET #4
PRE				
POST				

FULL NAME: JOSH TOCC
DATE: MARCH 10, 2022

CIRCLE OF HEALTH

PRE



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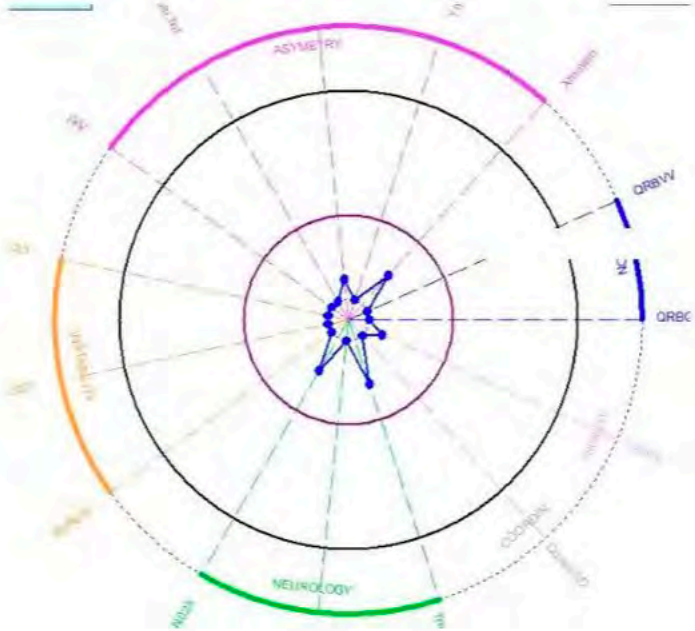
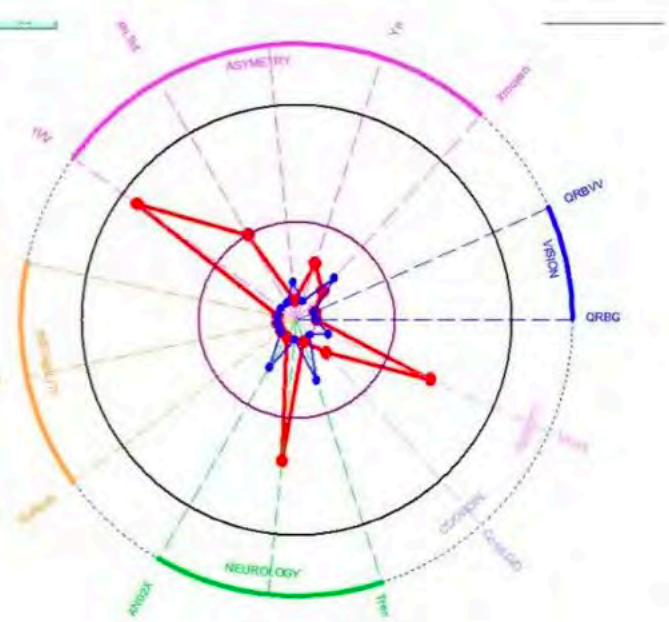


PRE/POST



A brain-based approach supplies intense amounts of sensory information into the brain to help organize it - the return is an inherent improvement in motor output and stress management.

In less than 10 minutes per day 3x/day officers will be performing these sensory drills for an incredible impact. It's that simple!

Thank you!

Annette Verpillot education@posturepro.co

Jason Shea – jason.p.shea@mass.gov