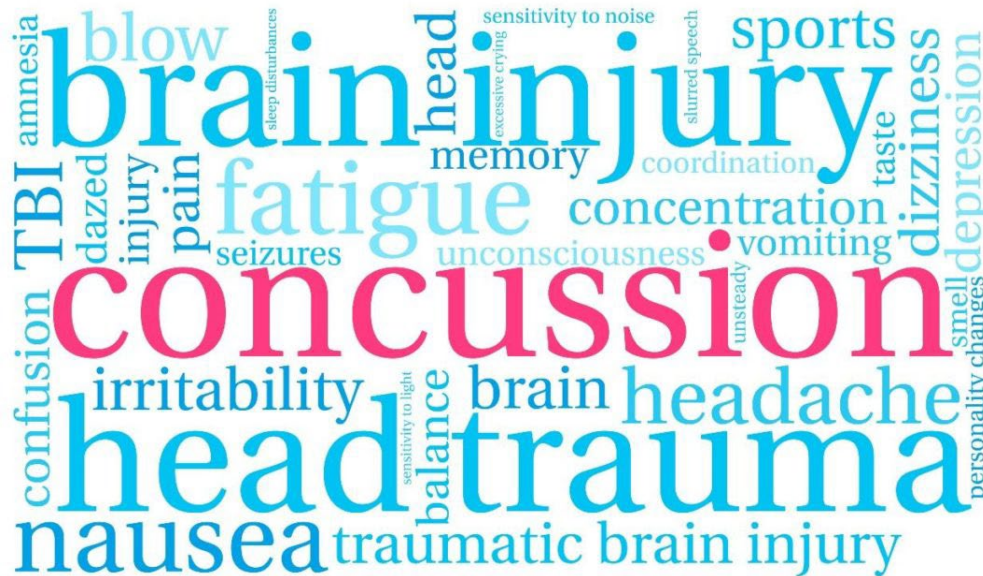


# “But my speech is fine!”

## The Role of Speech Language Pathology in Concussion Rehabilitation



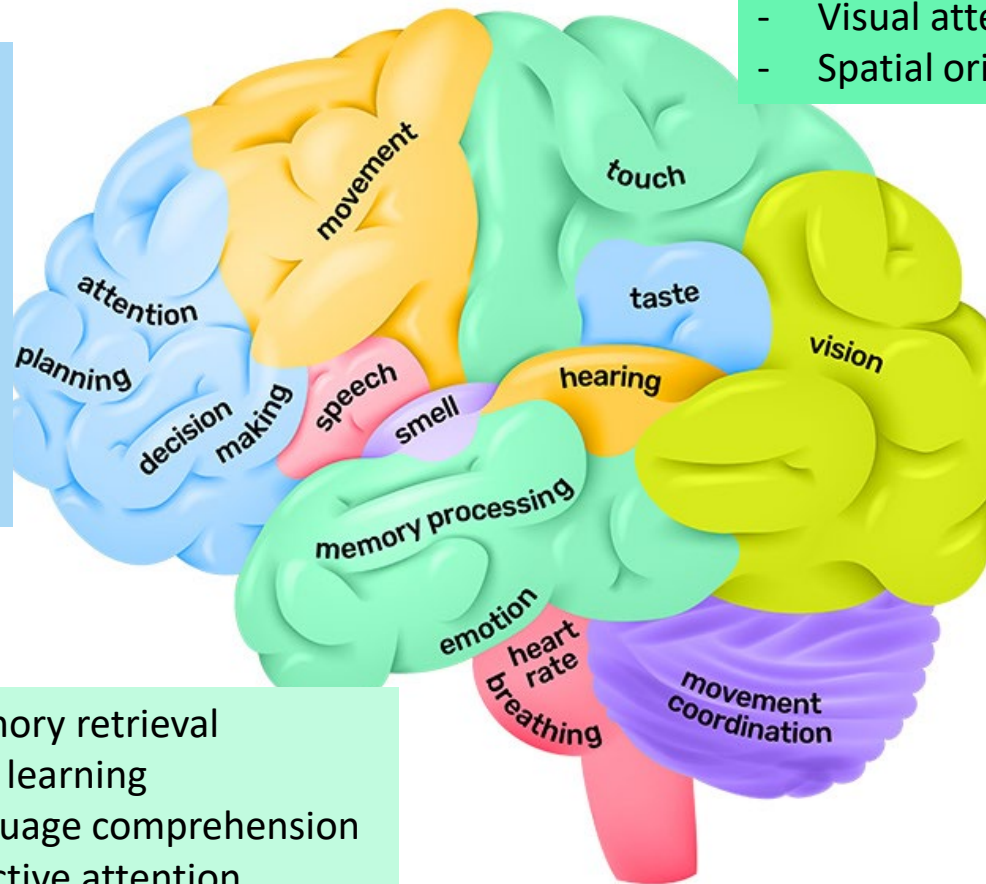
Emily Millar, MA, CCC-SLP, CBIS  
Allegheny Health Network

# Talking points

- Cog-linguistic deficits with concussion
- Attention
- Approaches to therapy
- Who and when to refer
- Fatigue and energy conservation
- Data retrospective
- Provider modifications

# Brain Lobes and Cognitive Correlates

- Mediating attention
- Initiation
- Purposeful action/motivation
- Verbal expression
- Self-regulation and monitoring
- Emotional control
- Behavioral control

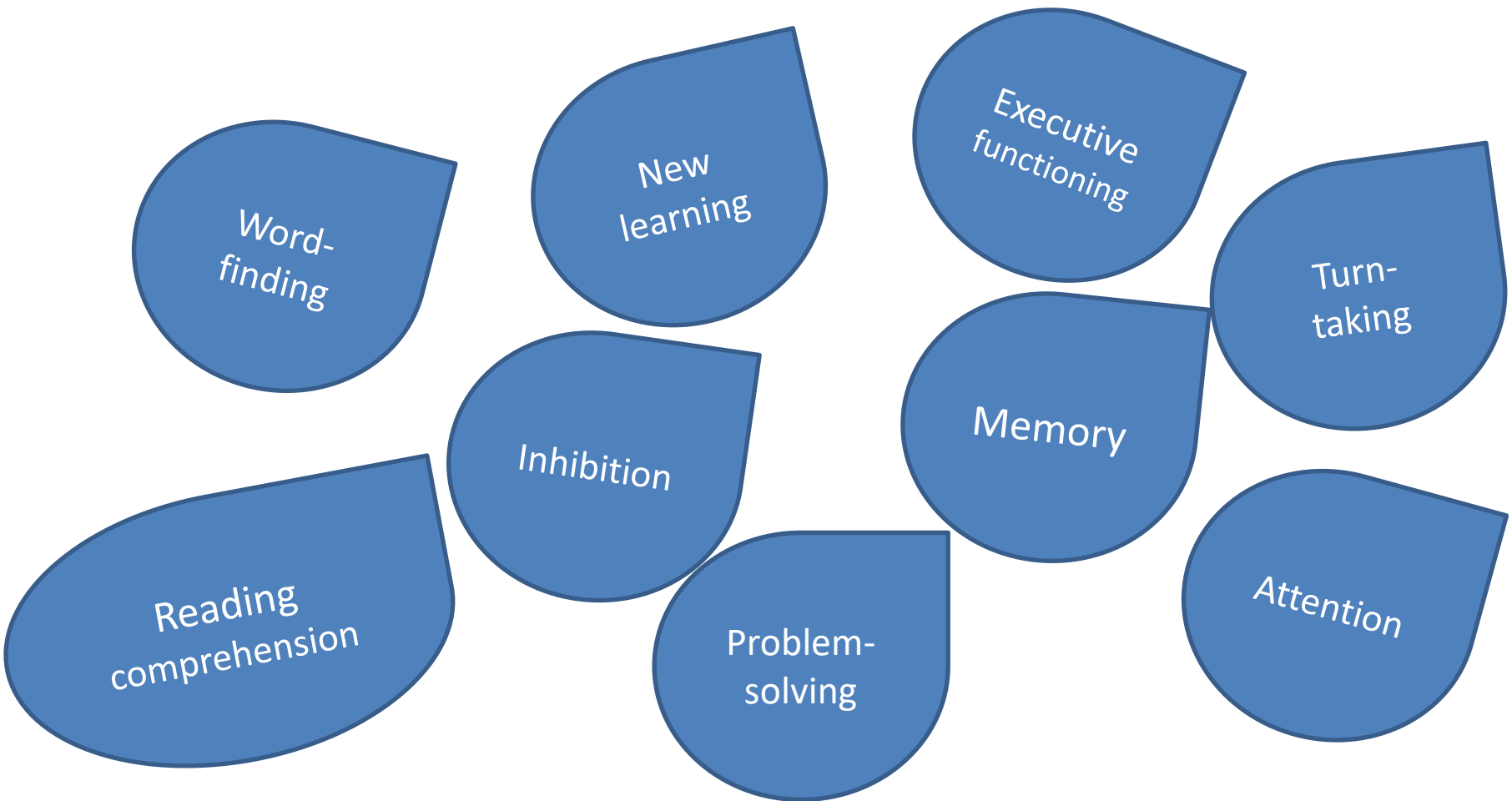


- Academic skills
- Visual attention
- Spatial orientation

- Visual stimuli processing
- Depth
  - Distance

- Memory retrieval
- New learning
- Language comprehension
- Selective attention
- Emotional responses
- Face recognition

# Cognitive Deficits with Concussion

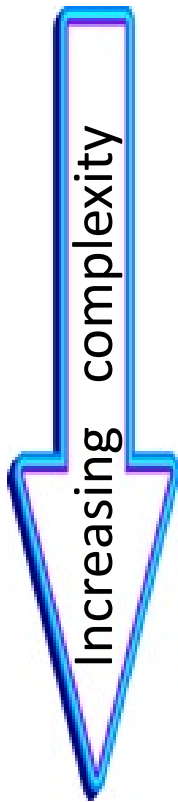


as a result of changes in these areas, cognitively demanding tasks may **feel more effortful**

# Being Mentally “online”

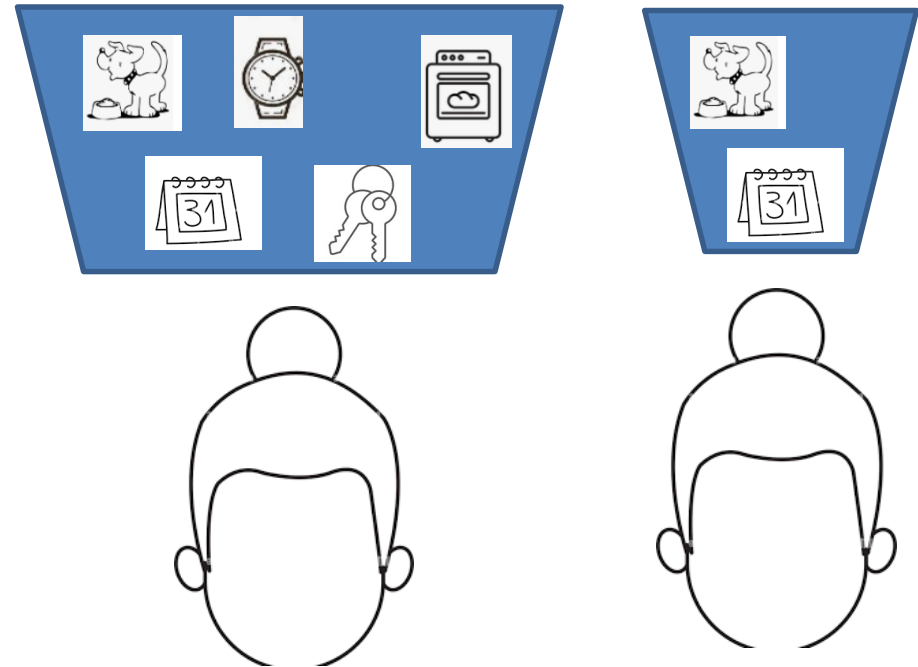
## Attention

- Sustained
  - Focus on a task
- Selective
  - Maintain focus despite distractions
- Alternating
  - Handling interruptions
- Divided
  - Multi-tasking

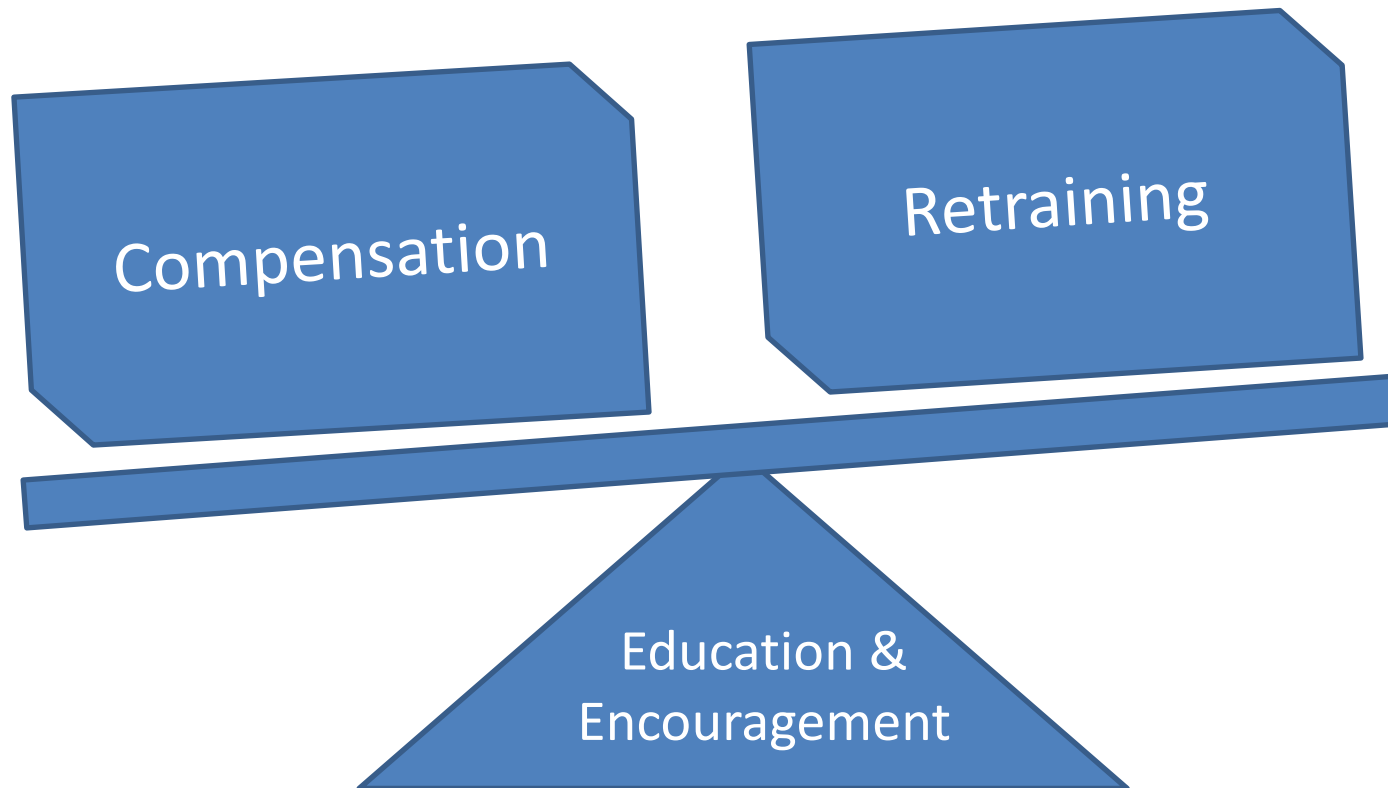


## Working Memory

### The Rule Of 5

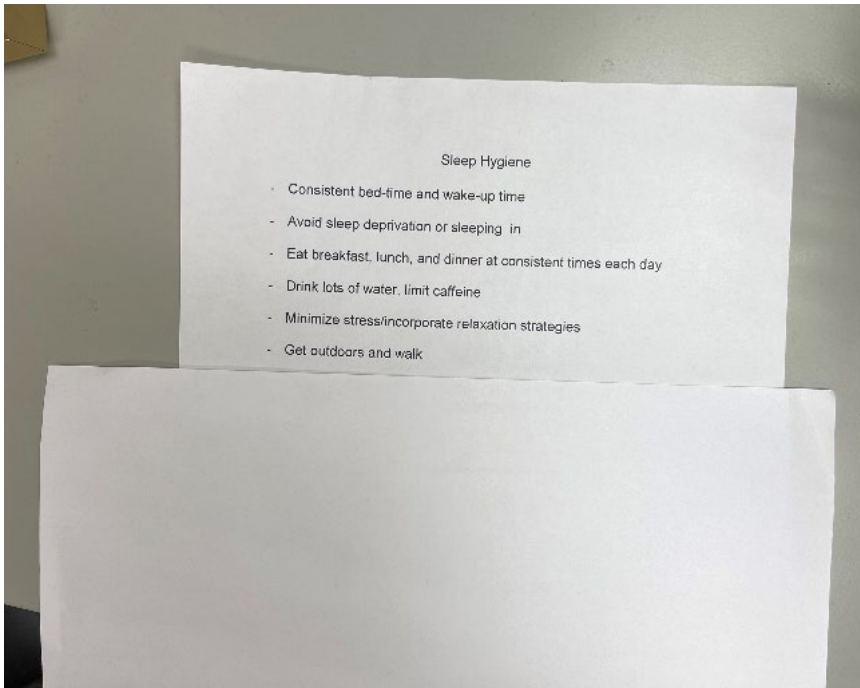


# Cognitive Therapy



# Compensation

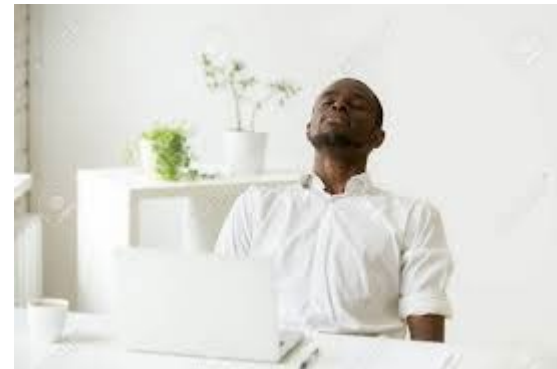
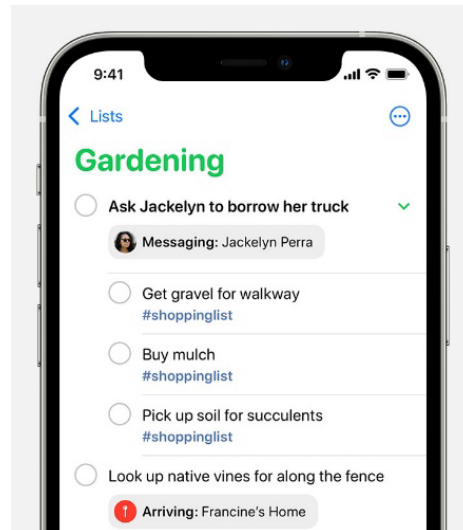
## Blank visual guide



## Reading out loud

- ✓ Improves your attention (since you are more actively involved)
- ✓ Helps to catch if you skip or switch words
- ✓ Allows you to monitor if you understand

# Compensation





# Retraining



"Name 3 animals starting with p"



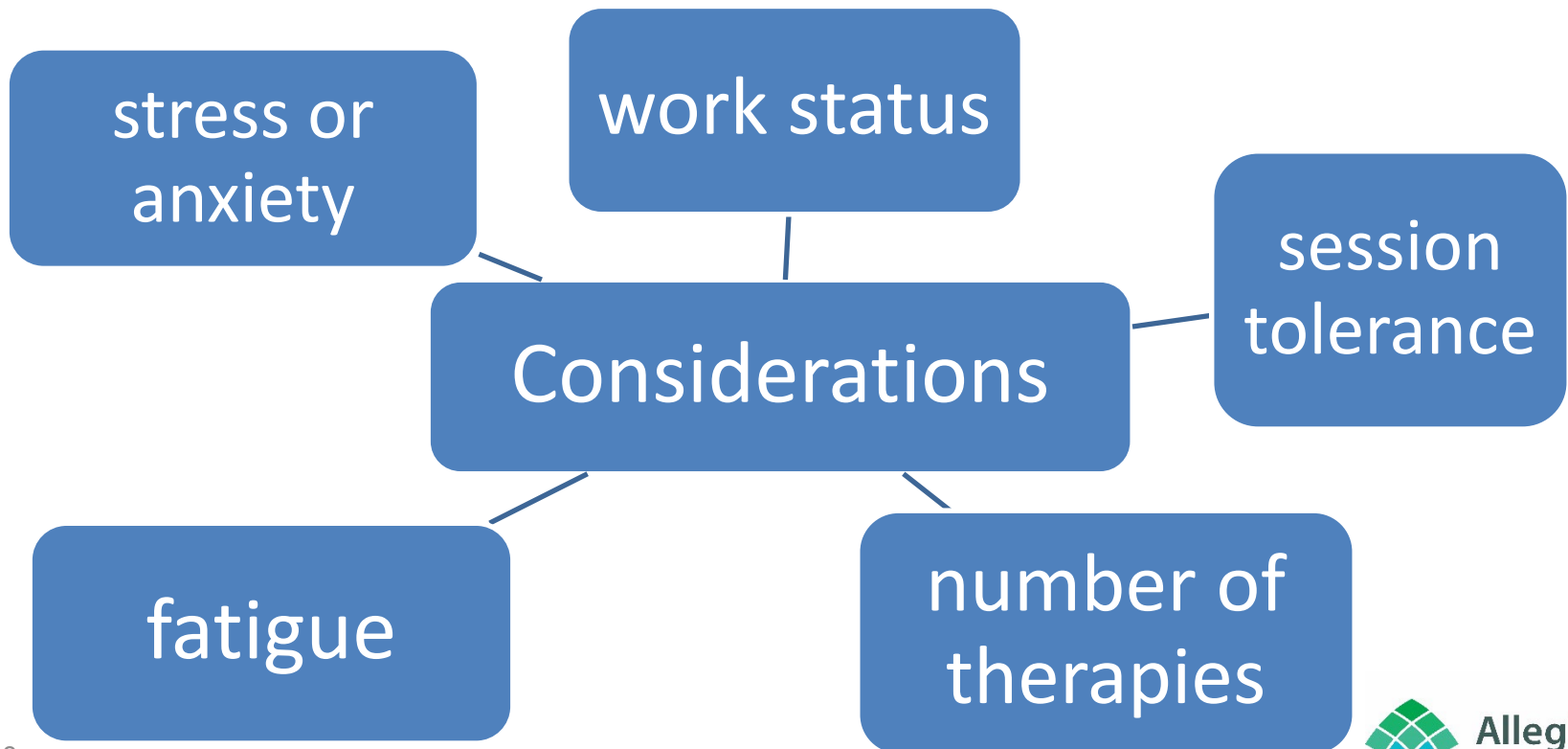
"If the colors match, subtract. If they are different, add"

	number	dessert	body part	clothing
S	Six	Sorbet	spleen	sweater
T	twenty	tiramisu	tongue	tutu
F	four	fudge	finger	fedora
N	nine	New York cheese cake	nose	necktie

# Who and When to Refer

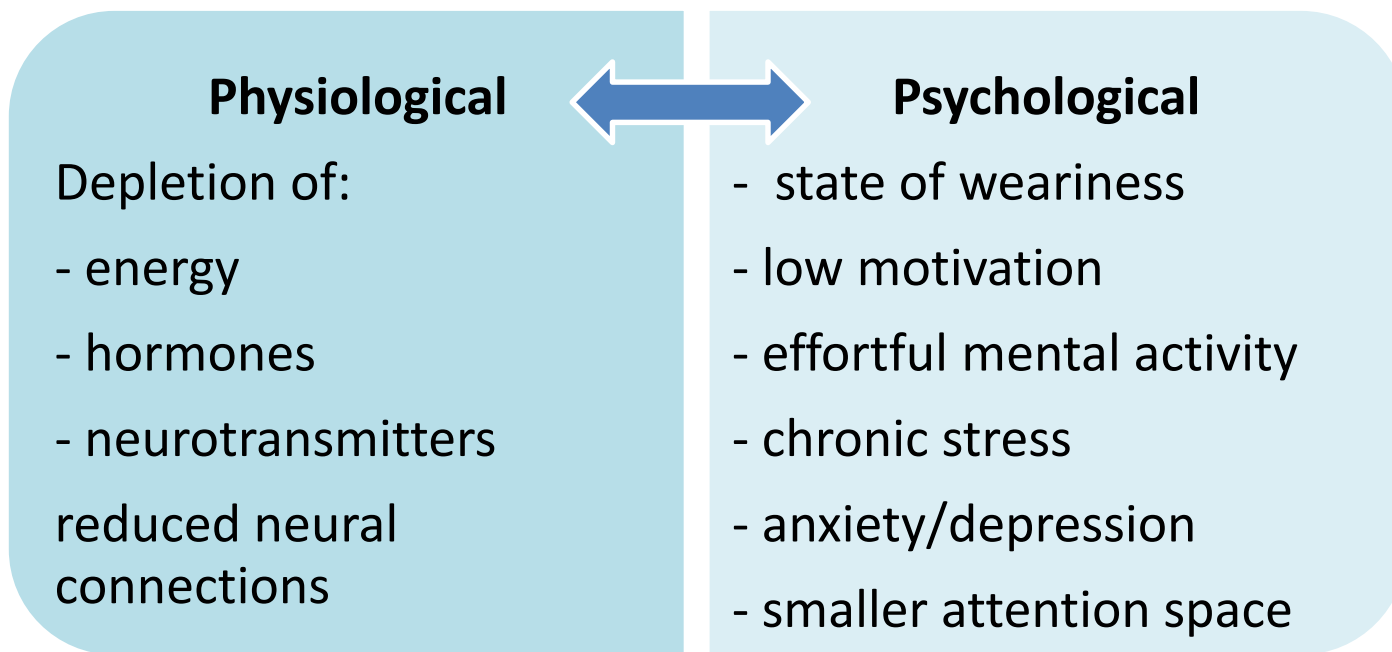
Individuals with cognitive symptoms that have not resolved by *4 weeks* post-injury should be referred for specialized cognitive assessment

(American Speech Hearing Association)



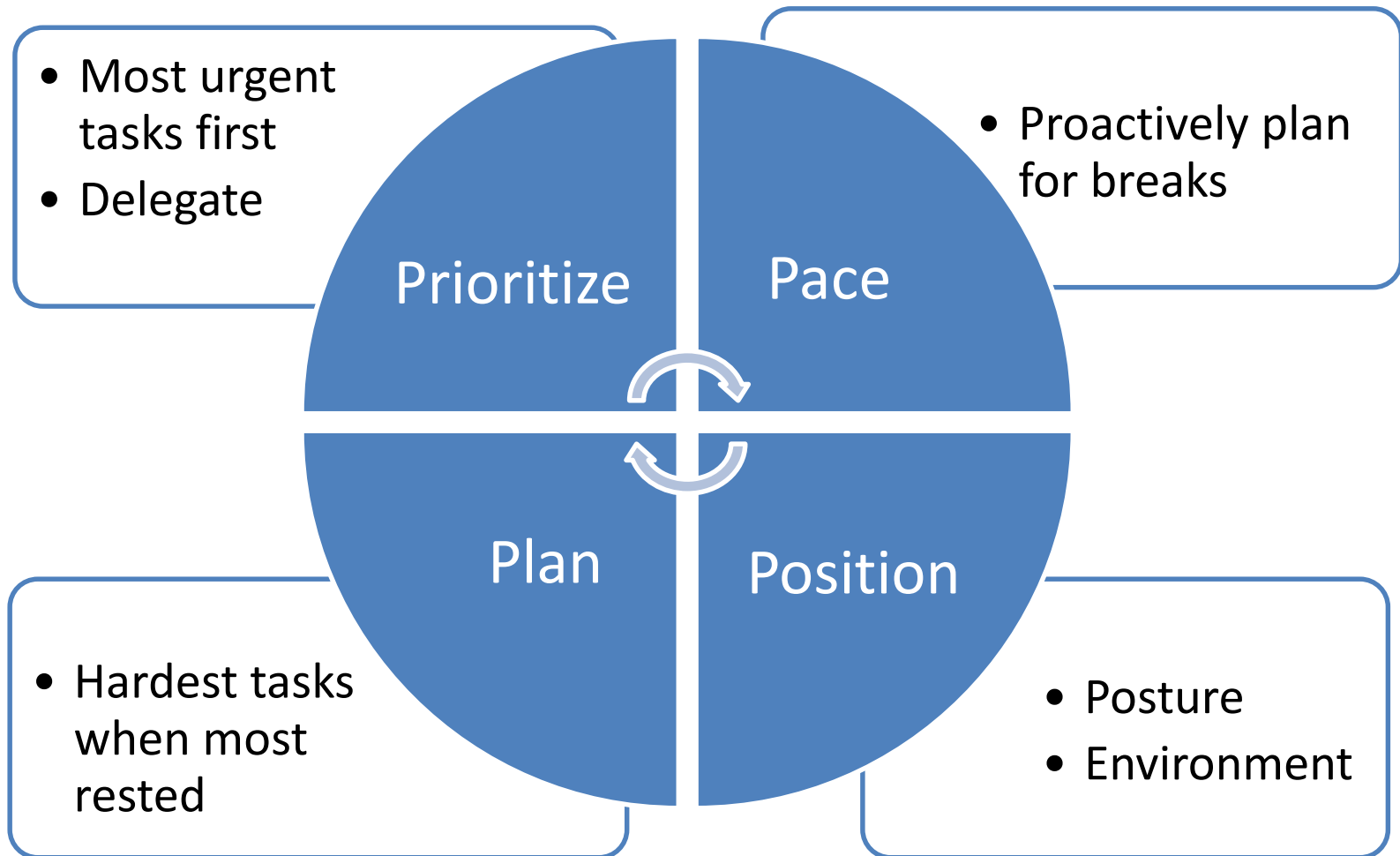
# Fatigue and Sleep Disturbance

32-73% of people with BI report experiencing fatigue after injury



**Coping Hypothesis: fatigue** may result from the **compensatory effort** necessary to meet the demands of every day life, in the presence of cognitive deficits

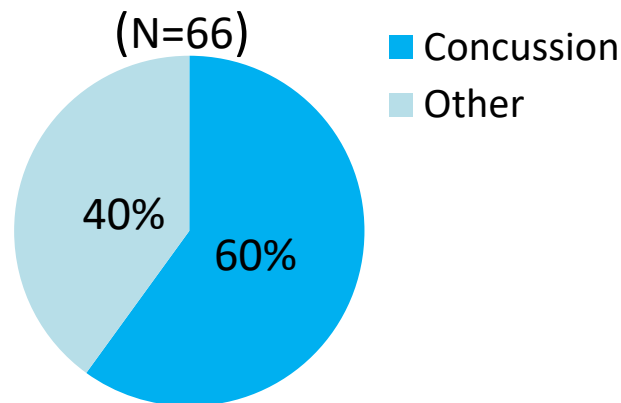
# Four P's for Energy Conservation



# Retrospective- January to March 2022

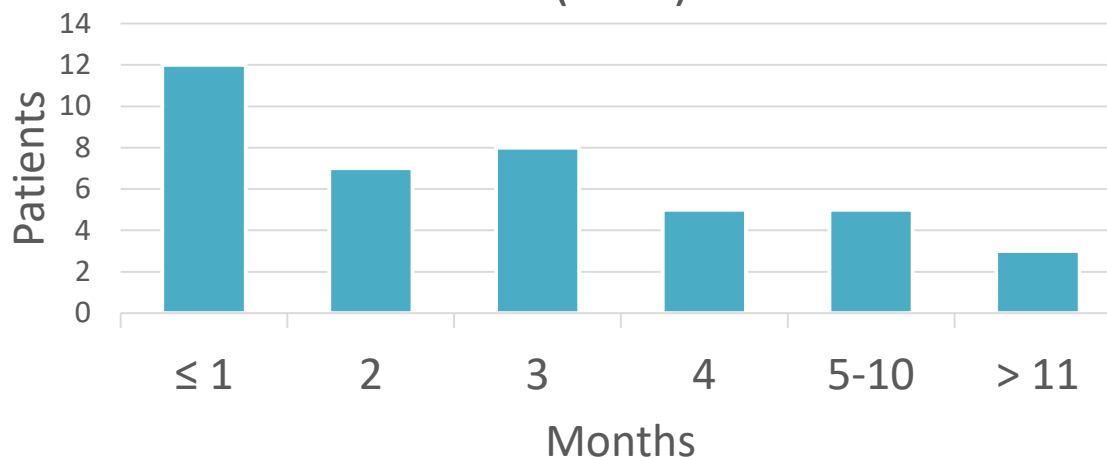
Total patients treated	Total concussion
66	39

Total Patients



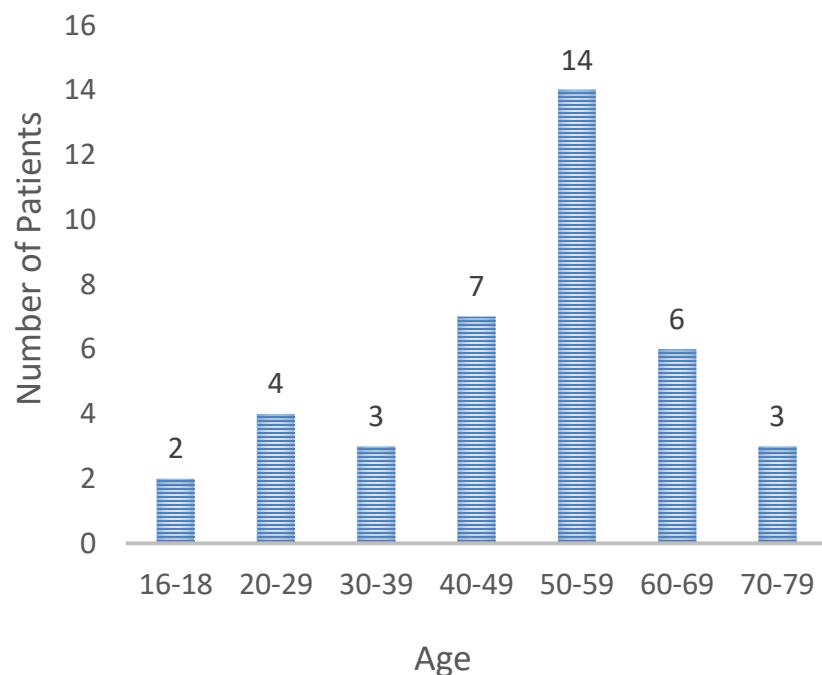
Time Since Injury

(N=39)

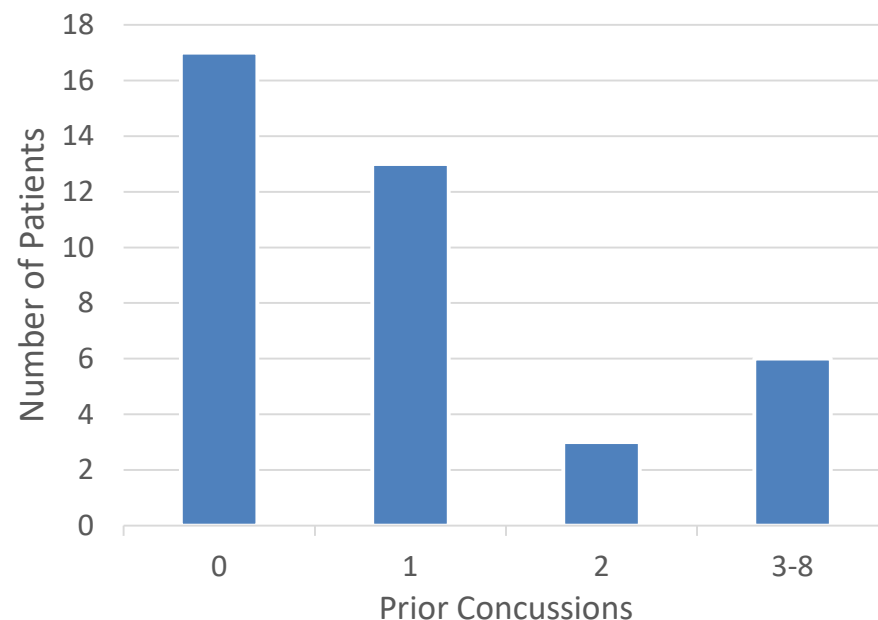


# Retrospective- January to March 2022

AGE AT REFERRAL  
(N=39)

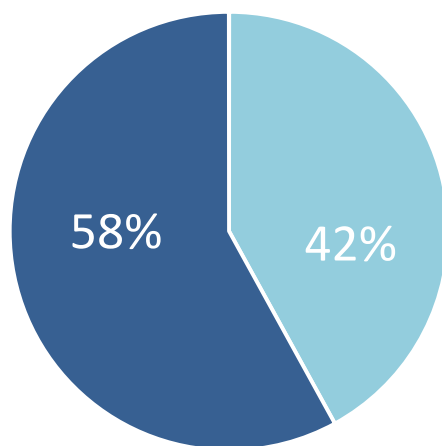


Prior Concussions per Patient  
(N=39)



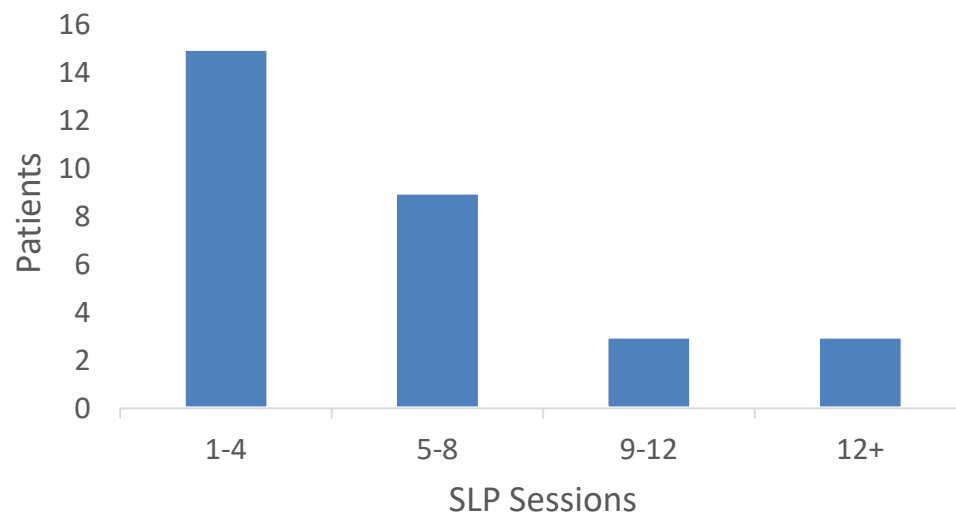
# Retrospective- January to March 2022

Work Status at Referral  
(N=36)



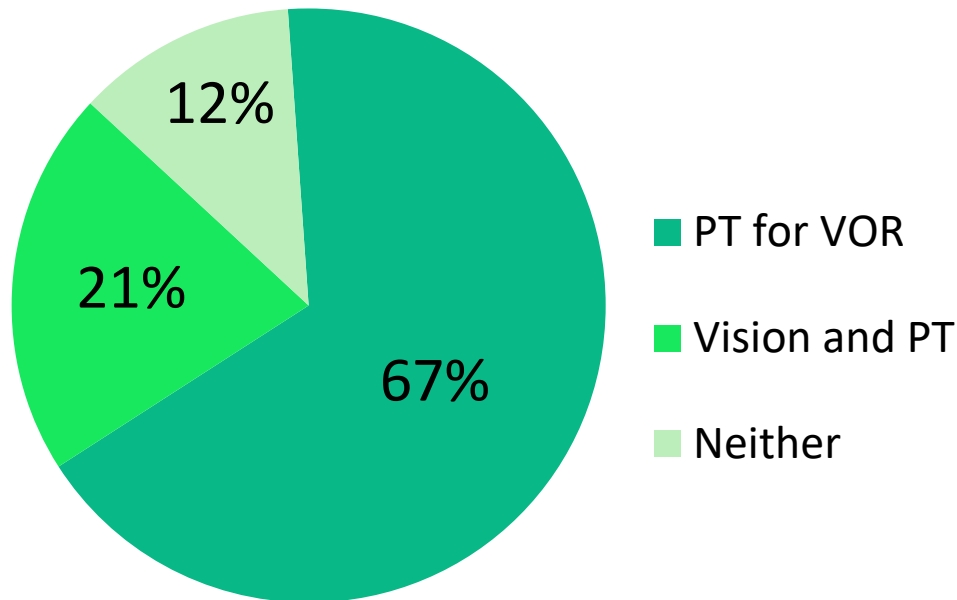
■ still working  
■ unable to return

Number of SLP Sessions  
(N=27)

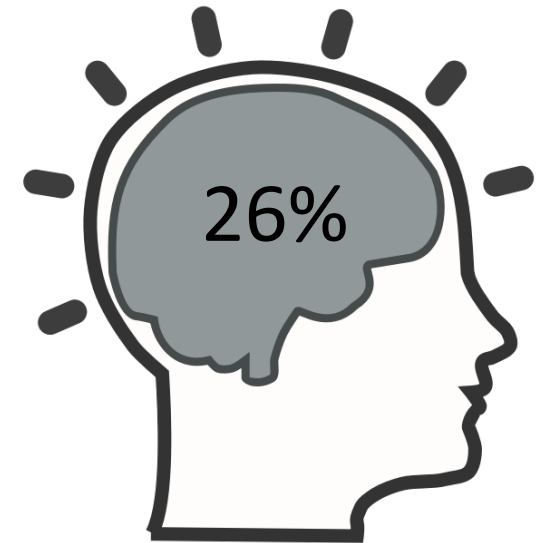


# Retrospective- January to March 2022

Therapy for Visual System  
(N=39)



Headache Center  
(N=39)





# What Providers Can Do

Provide  
visuals

Write  
recs

Body  
positioning

Check-ins  
for  
understanding

Teach/  
Re-teach

Encourage  
self-  
advocacy

# Final Thoughts

“The human brain has **about as many neurons** as are there are **stars in the Milky Way Galaxy**.

This emphasizes that every brain (and therefore every person) is **remarkable and unique**, always developing and with potential.

Regardless of age or time since injury, **neuroplasticity** continues to foster our brain's **ongoing evolution** through our last breath—**until then, none of us has plateaued.**”