Integrated Care Training Program

UW Psychiatry & Behavioral Sciences

Wait, they had a TBI?!: Incorporating Brain Injury into Your Assessment

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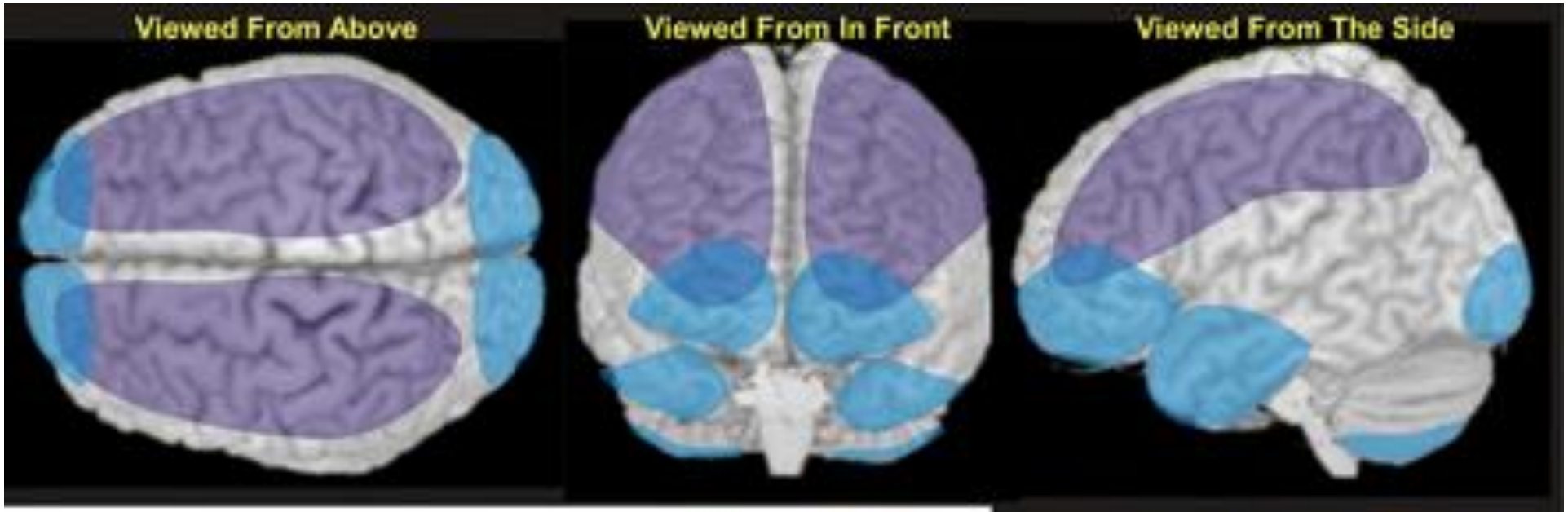
Not all Brain Injuries Are the Same

- Traumatic Brain Injury = origin is some sort of trauma/impact/external event
- Acquired Brain Injury = All brain injuries
  - The cause has rehab/recovery implications
- Severity matters
  - More Severe — More likely other injuries, More likely long term complications
  - Mild - Severe - ALL can have mental health complications



Diffuse Axonal Injury

Contusion

Subdural Hemorrhage

TBI Severity Determination

Criteria	Mild — 80%	Moderate —10%	Severe — 10%
Structural imaging	Normal	Normal or abnormal	Normal or abnormal
Loss of consciousness	0-30 min	>30 min and <24 hours	>24 hours
Alteration of consciousness/mental state	Up to 24 hours	>24 hours; severity based on other criteria	
Post-traumatic amnesia duration	0-1 day	>1 and <7 days	>7 days
Glasgow Coma Scale (best available score in first 24 hours)	13-15	9-12	<9

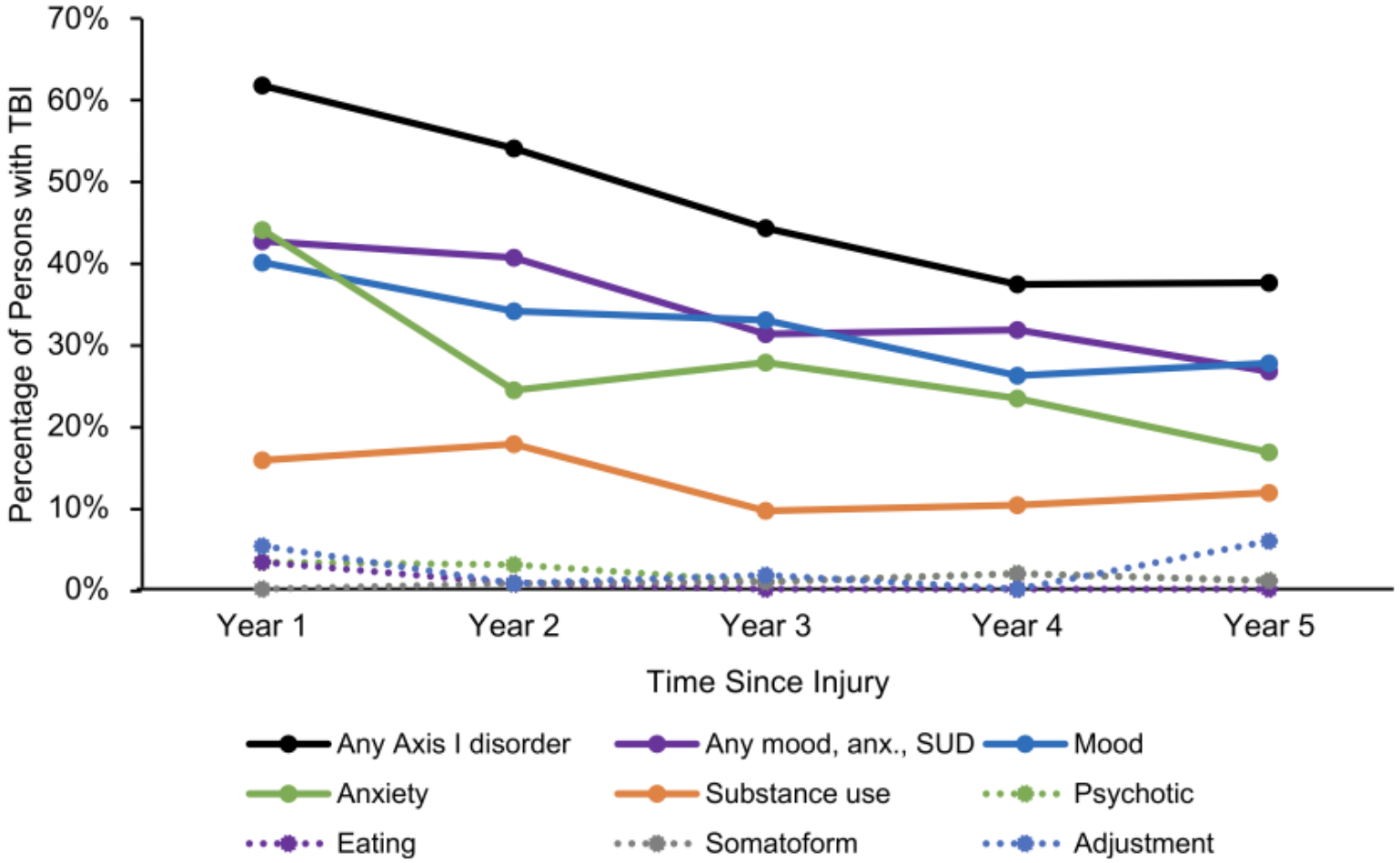
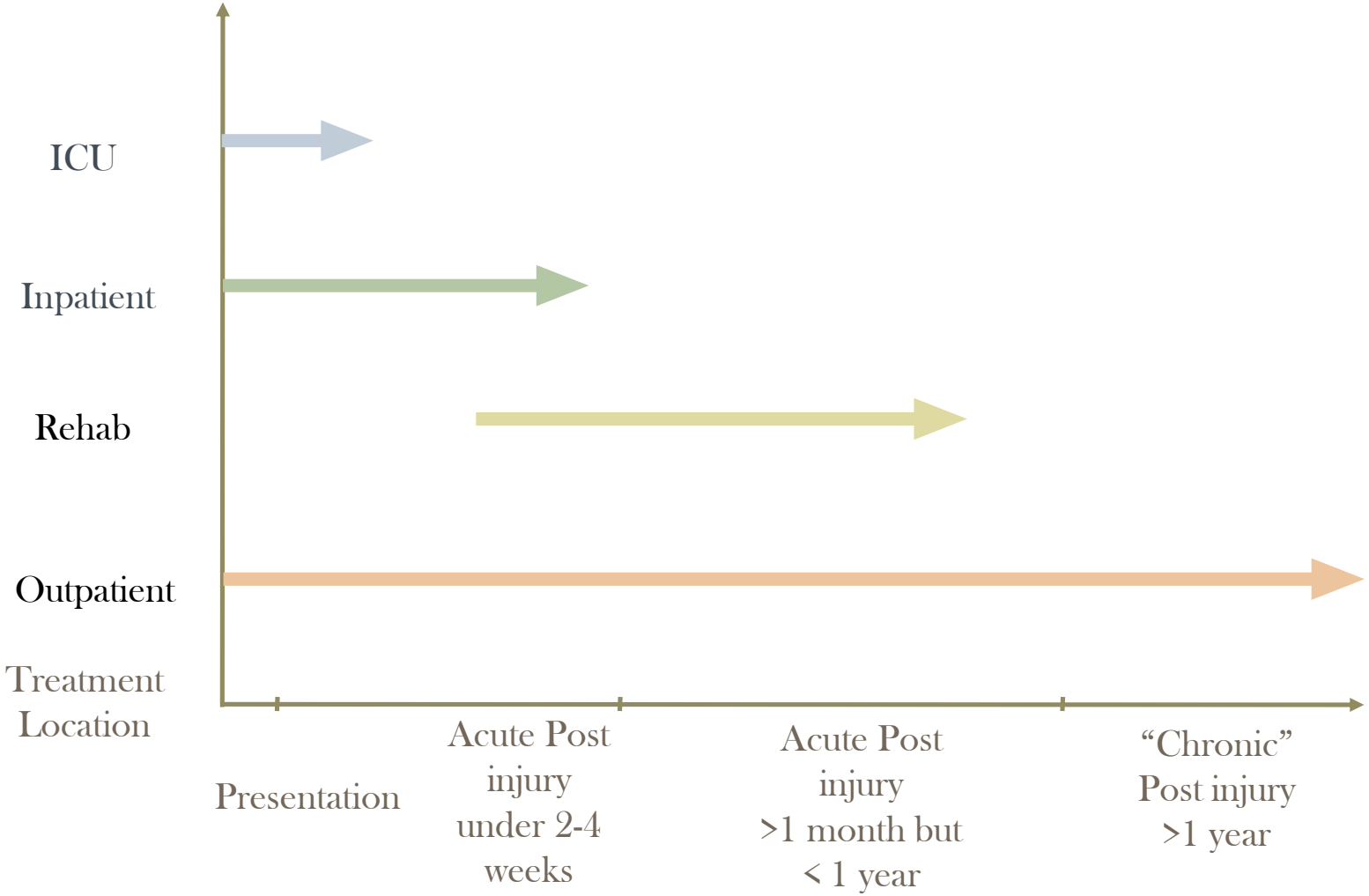
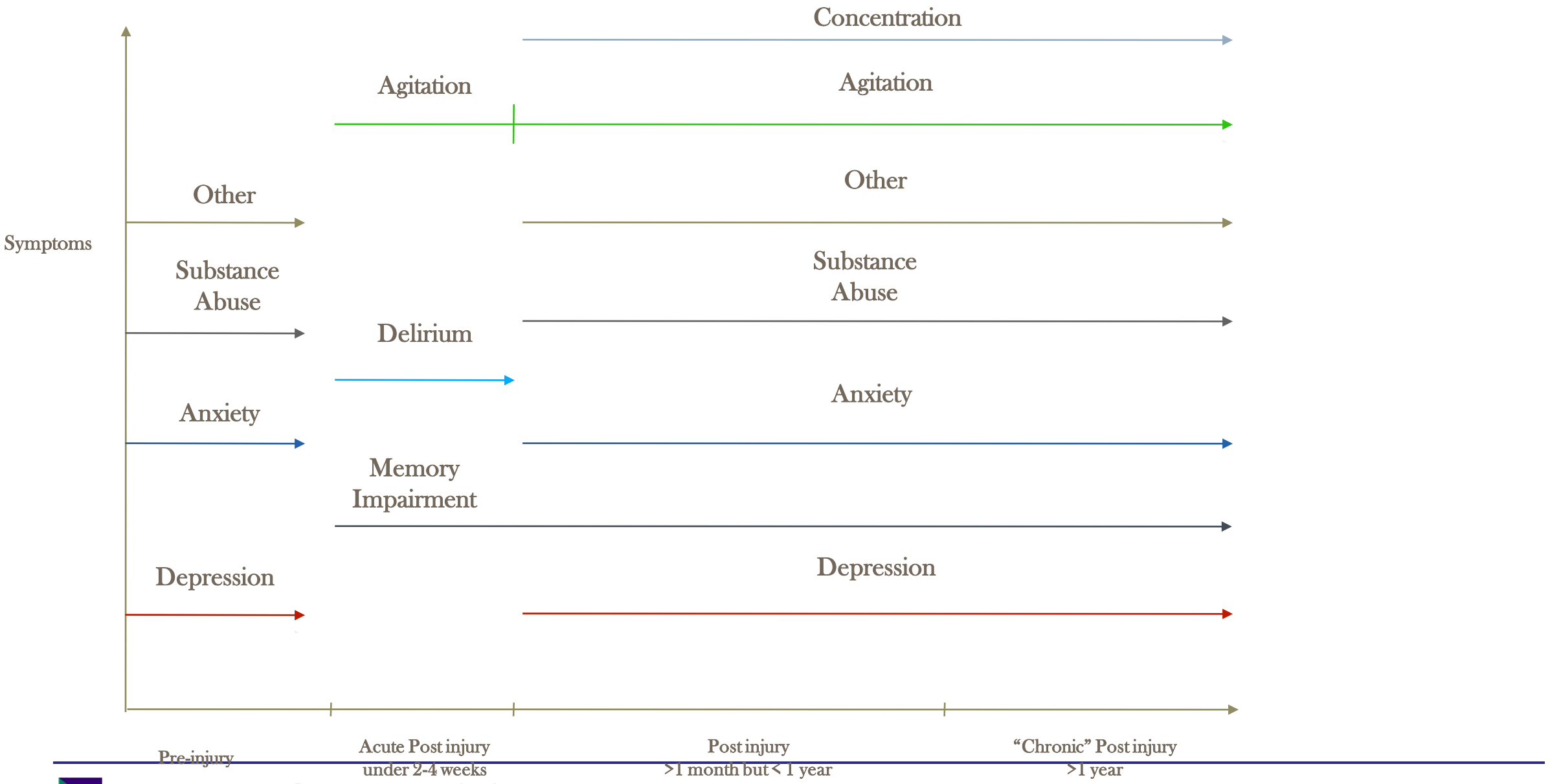


Figure 1. Annual prevalence of different classes of psychiatric disorder in the prospective study of moderate to severe traumatic brain injury (TBI) from Alway *et al.* (54). DSM-IV Axis I diagnoses were determined via Structured Clinical Interview. Mood, anxiety (anx.), and substance use disorders (SUD) were the most prevalent DSM-IV Axis I disorders across 5 years of follow-up after injury, with a steady decline in prevalence over time.

Howlett et al, 2021

TBI Treatment Timeline



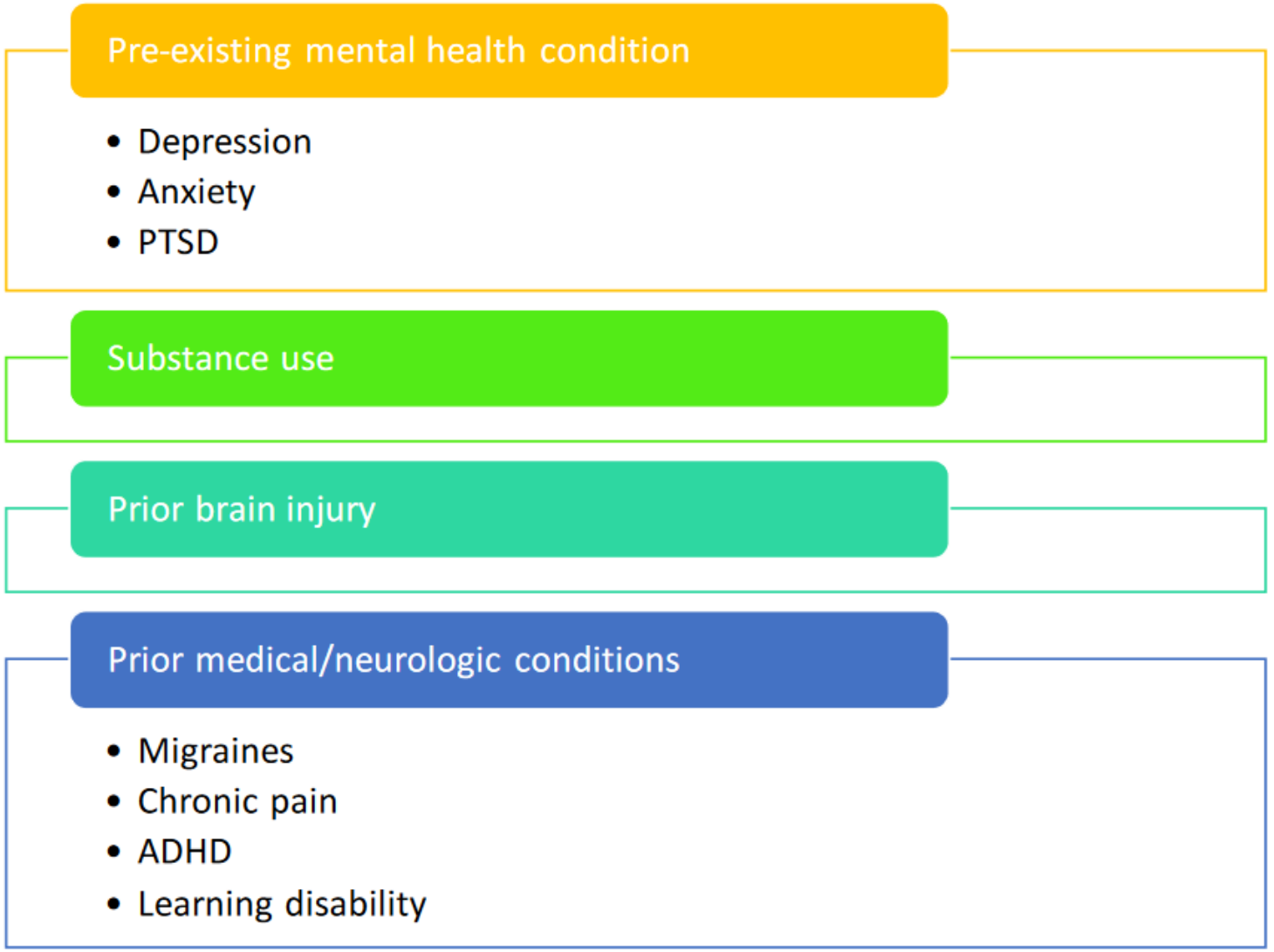


Persistent symptoms:

- Some individuals report persistent symptoms for months or years
- Several prospective studies have noted that symptoms reporting after mTBI is relatively stable from 3 months - 1 year
- Symptoms may wax and wane over time
- Associated with high levels of healthcare utilization
- >3 months post injury should be referred for specialist management if available

Risk factors for persistent symptoms

Pre-injury factors



Risk factors for persistent symptoms

Post-injury fact

Psychological and social factors

- "Good old days" bias
- Lack of social supports
- Misattribution
- Negative expectations for recovery

Contextual factors

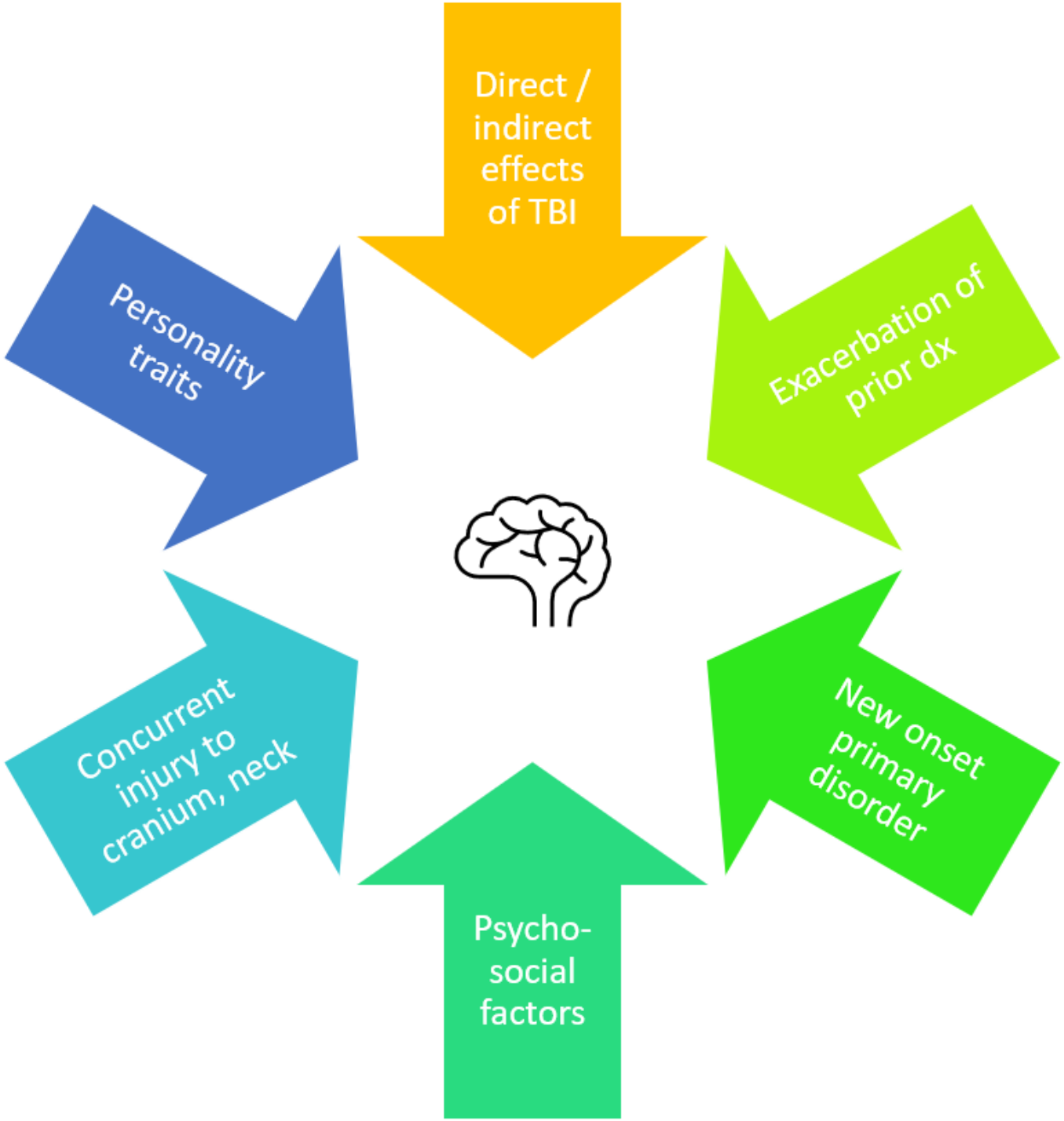
- Litigation
- Lifestyle and family dynamics change
- Trauma/distress of event
- Loss of vocation/avocation

Etiology of persistent symptoms

- When are symptoms "persistent"?
- What about post-concussion syndrome (PCS)?
- It is likely that no single underlying disease mechanism for PCS:
  - terminology attributes symptoms directly to injury itself (single underlying cause), when multiple factors likely at play for most individuals
  - Thus, PCS is being phased out of use
  - Suggested terminology: persistent or prolonged symptoms after TBI
    - Acknowledges that while the TBI can be the inciting event, multiple factors are likely at play

Etiology of persistent symptoms

- Disentangling symptom etiology is challenging
  - These symptoms are non-specific
- Multidimensional cumulative stressor model
- Consider the timeline
  - Temporal relationship between injury and symptom onset
  - New symptoms that develop >30 days after mTBI, DoD suggests symptoms specific evaluation for non-mTBI etiologies



Assessment of persistent symptoms

- Provider role: comprehensive assessment
  - Reassess symptom severity and impact on function
  - Directed physical exam
  - Evaluate for complicating health-related and contextual factors
    - Support system
    - Mental health history: suicide risk
    - Co-occurring conditions: chronic pain, mood disorders, stress disorders, sleep disorders, substance use
    - Unemployment or change in job status
  - Education and reassurance
  - Initiate targeted treatment of specific symptoms

Types of persistent symptoms

Cognitive

- Memory
- Attention
- Processing speed
- Judgment
- Speech and language

Affective

- Depression
- Anxiety
- PTSD
- Irritability
- Aggression

Somatic

- Headache
- Dizziness
- Fatigue
- Sleep disturbance
- Visual disturbance
- Tinnitus

Types of persistent symptoms

Cognitive

- MOCA
- Neurpsych testing > 3 months
- Speech therapy
- Pacing strategies
- Compensation strategies

Affective

- PHQ-9
- GAD-7
- Suicide screening
- Meds
- CBT/ BA
- Family Counseling

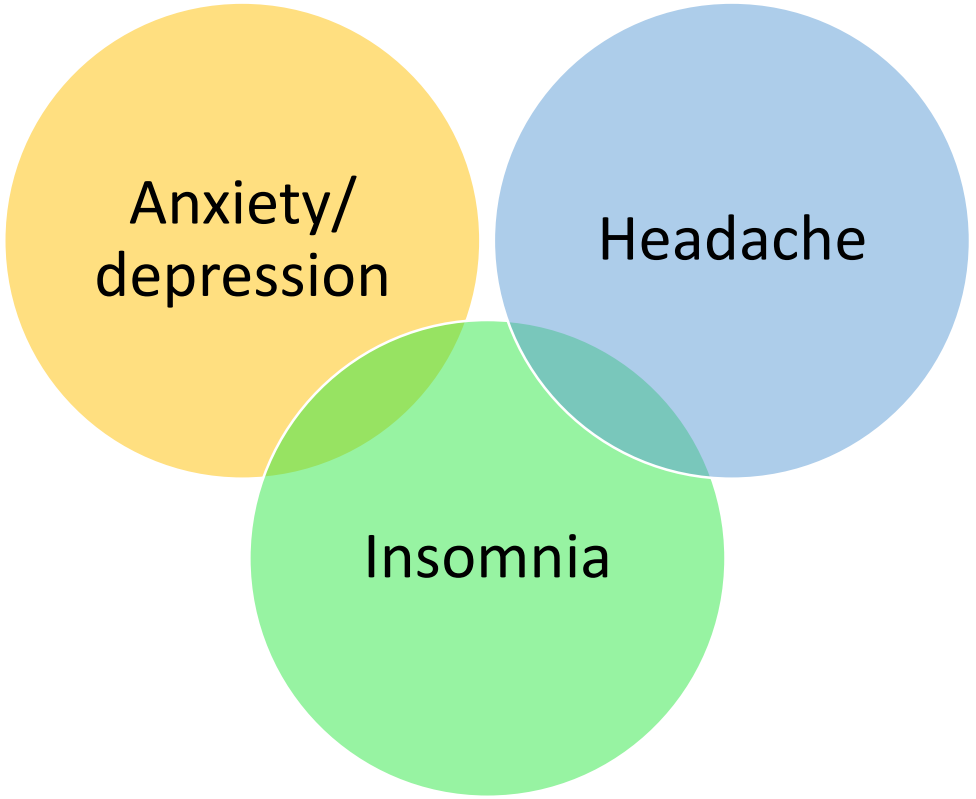
Somatic

- Headache - most common
- Sleep disturbance
- Vestibular Dsy
- Independent QOF impacting factor

Management of persistent symptoms:

- Multimodal and multidisciplinary, depending on symptoms
- Early education:
  - Normalization of symptoms
  - Expectation of further recovery
  - Guidance on return to activity
- Return to activity:
  - Prolonged rest (>48 hrs) is NOT shown to be helpful and is potentially harmful
- Symptom based management:
  - Relies on extrapolated evidence involving other clinical populations
  - Where to being, when many symptoms are present?

- Ontario Neurotrauma Foundation (ONF) recommends prioritizing:
  - If these are treated, can bring about improvement in other symptoms (fatigue, difficulty concentrating, irritability)



Summary

Initial management	Risk factors for persistent symptoms	Evaluation of persistent symptoms	Most common persistent symptoms	Management of persistent symptoms
• Education, counseling is key • Complete rest >48 hours is not recommended • Gradual resumption of cognitive and physical activity is recommended	• Pre-injury factors • Post-injury factors	• Etiology is generally multifactorial • Co-occurring conditions are common	• Cognitive symptoms • Affective symptoms • Somatic symptoms	• Targeted, symptom based treatment • Prioritize mood disorder, headache, sleep • Aerobic exercise is recommended • Psychological intervention can be helpful • Continued counseling and education

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