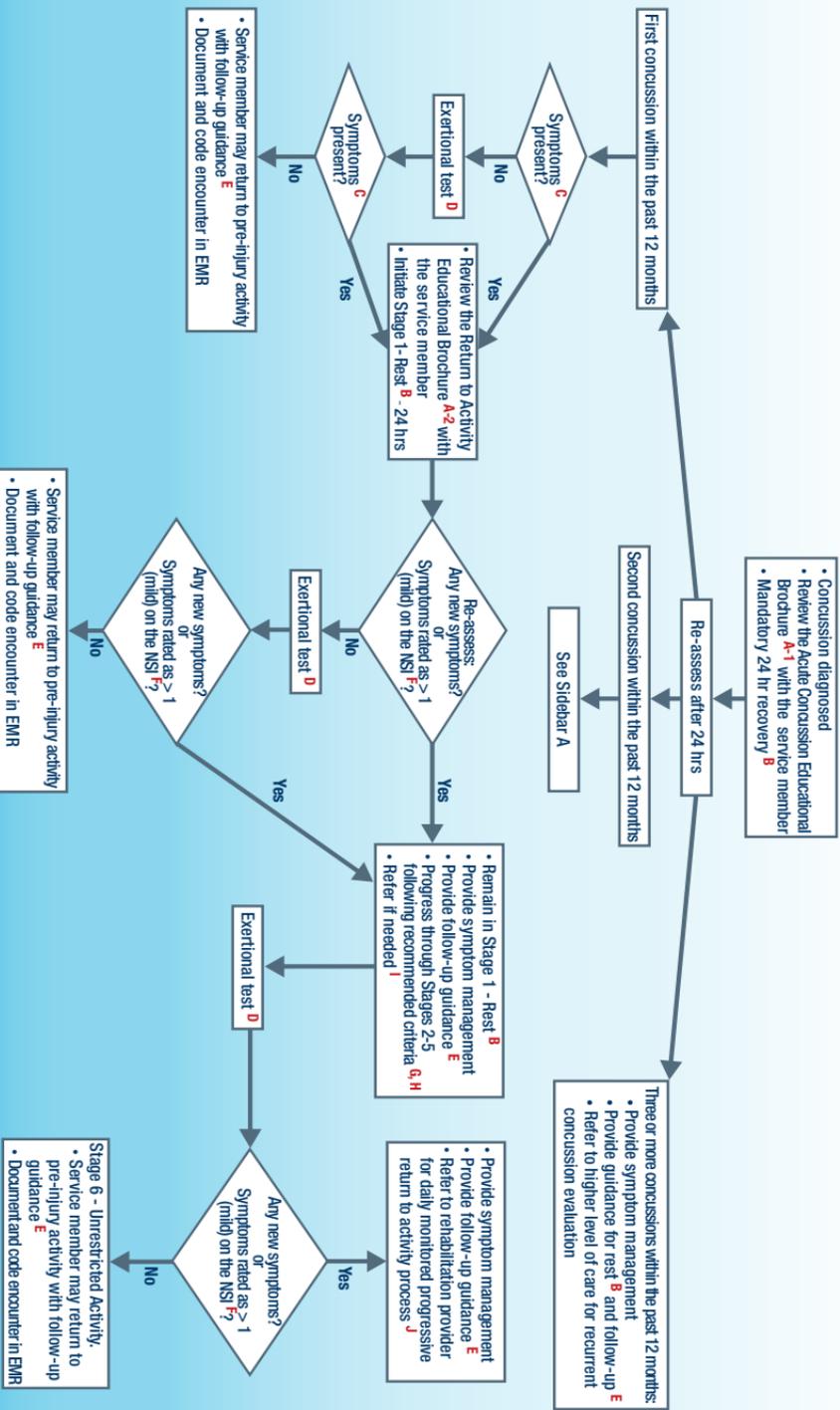


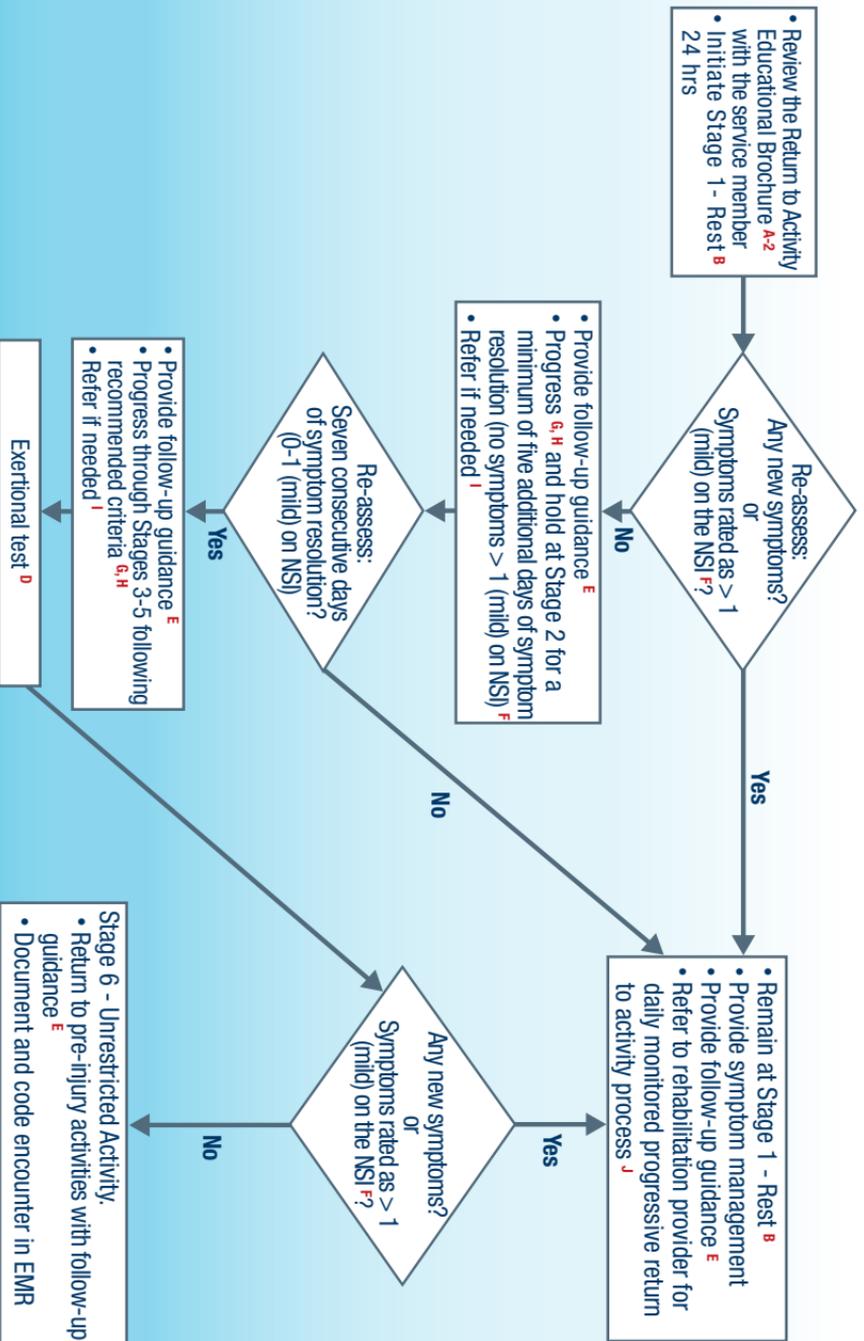
Progressive Return to Activity Following Acute Concussion/Mild Traumatic Brain Injury:

Guidance for the Primary Care Manager in Deployed and Non-deployed Settings



Sidebar A - Progressive Return to Activity Following Acute Concussion/Mild TBI

Second concussion within the past 12 months



General Guidance:

After a mild TBI/concussion there is a 24-hour minimum recovery period.

Provide initial education for recovery using the Acute Concussion Educational Brochure.

After 24-hour recovery, if this is the first concussion in the past 12 months and service member is asymptomatic, exertional testing can be performed.

If the service member is symptomatic after 24 hours, or after exertional testing, or if this is the second concussion in 12 months, provide education using the Return to Activity Educational Brochure.

After the additional 24 hours in Stage 1, if this is the first concussion in the past 12 months and service member is asymptomatic, exertional testing can be performed.

The service member enters into the full progressive return to activity process if:

- they remain symptomatic after 48 hours or after exertional testing
- the current concussion is the **second in 12 months**

The service member completes the Neurobehavioral Symptom Inventory (NSI) daily, after each stage of progression.

Progress through one stage per day if symptoms are 0-1 (mild) on the NSI. Instruct the service member to return to the PCM if symptoms are reported as 2 or higher on the NSI.

When symptoms increase in number or severity during an activity the service member should stop the activity and rest for the remainder of the day. The following day, if symptoms are 2 or higher on the NSI, the service member should follow up with the PCM. If symptoms remain at 0 or 1 on the NSI, the service member may resume the previous day's stage. When repeating the previous day's activity, if there is an increase in symptom number and severity, the service member should follow up with the PCM.

A service member who sustains a **second concussion in 12 months** must have seven consecutive days of symptom resolution (defined as symptoms of 0-1 on the NSI) at Stage 1 and 2 before completing Stages 3-5.

Refer the patient to a rehabilitation provider or higher level of care per provider judgment or if:

- recovery is not progressing as anticipated
- there is no progression in seven days
- symptoms are worsening
- symptomatic after exertional testing following Stage 5

References

A-1. Acute Concussion Educational Brochure - dvbic.dcoe.mil

A-2. Return to Activity Educational Brochure - dvbic.dcoe.mil

B. Recommended Parameters for Recovery and Stage 1: Rest

<ul style="list-style-type: none">Extremely light basic activities of daily living	<ul style="list-style-type: none">Avoid caffeine and tobacco
<ul style="list-style-type: none">Wear comfortable clothing	<ul style="list-style-type: none">No exercise
<ul style="list-style-type: none">Quiet environment with low lighting	<ul style="list-style-type: none">No alcohol
<ul style="list-style-type: none">Healthy sleep - naps as needed	<ul style="list-style-type: none">No video games
<ul style="list-style-type: none">Slow and limited range of motion	<ul style="list-style-type: none">No studying
<ul style="list-style-type: none">Walk on level surface at easy pace	<ul style="list-style-type: none">No driving

C. Symptoms

<ul style="list-style-type: none">Confusion (24 hrs)	<ul style="list-style-type: none">Irritability
<ul style="list-style-type: none">Unsteady on feet	<ul style="list-style-type: none">Vertigo/dizziness
<ul style="list-style-type: none">Headaches	<ul style="list-style-type: none">Photophobia
<ul style="list-style-type: none">Phonophobia	<ul style="list-style-type: none">Sleep issues

D. Exertional Testing

<ul style="list-style-type: none">Exert to 65-85% of target heart rate (THR=220-age) using push-ups, sit-ups, running in place, step aerobics, stationary bike, treadmill and/or hand crank
<ul style="list-style-type: none">Maintain this level of exertion for approximately two minutes
<ul style="list-style-type: none">Assess for symptoms (headache, vertigo, photophobia, balance, dizziness, nausea, visual changes, etc.)
<ul style="list-style-type: none">If symptoms/red flags exist with exertional testing, stop testing, and consult with provider

E. Follow-up Guidance

Instruct patient to follow up with provider if: <ul style="list-style-type: none">symptoms returnsymptoms increase in number and/or severitynot able to progress for two consecutive days for first concussion
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F. Neurobehavioral Symptom Inventory (NSI)

Rate 0-4

• Feeling dizzy	① ① ② ③ ④	• Loss of balance	① ① ② ③ ④
• Poor coordination, clumsy	① ① ② ③ ④	• Headaches	① ① ② ③ ④
• Nausea	① ① ② ③ ④	• Vision problems, blurring, trouble seeing	① ① ② ③ ④
• Sensitivity to light	① ① ② ③ ④	• Hearing difficulty	① ① ② ③ ④
• Sensitivity to noise	① ① ② ③ ④	• Numbness or tingling on parts of body	① ① ② ③ ④
• Changes in taste and/or smell	① ① ② ③ ④	• Loss of appetite or increased appetite	① ① ② ③ ④
• Poor concentration, can't pay attention, easily distracted	① ① ② ③ ④	• Forgetfulness, can't remember things	① ① ② ③ ④
• Difficulty making decisions	① ① ② ③ ④	• Slowed thinking, difficulty getting organized, can't finish things	① ① ② ③ ④
• Fatigue, loss of energy, getting tired easily	① ① ② ③ ④	• Difficulty falling or staying asleep	① ① ② ③ ④
• Feeling anxious or tense	① ① ② ③ ④	• Feeling depressed or sad	① ① ② ③ ④
• Irritability, easily annoyed	① ① ② ③ ④	• Poor frustration tolerance, feeling easily overwhelmed	① ① ② ③ ④

Key for Interpreting the NSI

0 = Rarely or never present. (None)
1 = Occasionally present but doesn't disrupt my activities. (Mild)
2 = Often present and occasionally disrupts my activities. I feel somewhat concerned. (Moderate)
3 = More frequently present and disrupts my activities. I can only do fairly easy, simple things. I feel I need help. (Severe)
4 = Almost always present. I can't perform at work, school or home because of it and I need help. (Very Severe)

Used with permission. Cicerone, K., Kalmar, K. (1995). Persistent post-concussion syndrome: The structure of subjective complaints after mild traumatic brain injury. *The Journal of Head Trauma Rehabilitation*, 10(3), 1-17.

G. Criteria for Progression

• Minimum of one day in each stage (24 hrs)
• No new symptoms
• Daily NSI symptoms reported as 0-1 (mild)
• If all criteria for progression are not met, return to previous stage for 24 hrs

H. What to do When Symptoms Occur

1. If symptoms increase in number or severity during an activity, the service member should stop the activity and rest for the remainder of the day.
2. The following day, if symptoms are 2 or higher on the NSI, the service member should follow up with the PCM. If symptoms remain at 0 or 1 on the NSI, the service member may resume the previous day's stage.
3. When repeating the previous day's activity, if there is an increase in symptom number and severity, the service member should follow up with the PCM.

I. When to Refer

Refer to rehabilitation provider or higher level of care per provider judgment, or if:

- recovery is not progressing as anticipated
- there is no progression in seven days
- symptoms are worsening
- symptomatic following exertional testing after Stage 5

J. Stages of Progressive Activity Following Acute Concussion/mTBI

Stages	Description	Objective
1.	Rest	Symptom resolution
2.	Light Routine Activity	Introduce and promote limited effort
3.	Light Occupation-oriented Activity	Increase light activities that require a combined use of physical, cognitive and/or balance skills
4.	Moderate Activity	Increase the intensity and complexity of physical, cognitive and balance activities
5.	Intensive Activity	Introduce activity of duration and intensity that parallels the service member's typical role, function and tempo
6.	Unrestricted Activity	Return to pre-injury activities

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