A traumatic brain injury (TBI) is an injury that changes normal brain function temporarily. Mild TBIs are often called concussions.

**How serious is a traumatic brain injury?**

Traumatic brain injuries are classified as very mild, mild, complicated mild, moderate, and severe. Healthcare providers use the Glasgow Coma Scale (GCS) to score your child based on their eye, verbal, and motor responses after a traumatic brain injury. A high score (15) means your child has a very mild TBI. A low score (3–8) means your child has a severe TBI.

A healthcare provider also scores your child based on:

- **Loss of consciousness**: Time your child was unconscious after the injury, if any
- **Alteration of consciousness (AOC)**: Your child’s mental state may have changed temporarily. Signs of AOC include:
  - Looking confused or dazed
  - Confusion about what happened or is happening now
  - Trouble thinking about or responding correctly to questions
- **Post-traumatic amnesia**: Disorientation and forgetfulness after a TBI
- **Radiology**: Detailed images of your child’s brain to look at any changes

Note: If your child meets criteria in more than one category, they’ll be assigned the higher severity level. The scores for each TBI classification are explained in the chart, figure 1.
When can my child return to activity after a very mild or mild TBI?

When your child’s symptoms are gone, they can gradually return to activity by following the return to activity chart, figure 2. If your child develops symptoms in a rehabilitation stage, they should return to a previously tolerated stage.

<table>
<thead>
<tr>
<th>Rehabilitation stage</th>
<th>Exercise</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light aerobic exercise</td>
<td>Walking, swimming, or stationary cycling at 70% of maximum permitted heart rate (no resistance training)</td>
<td>Increase heart rate</td>
</tr>
<tr>
<td>Sport-specific exercise</td>
<td>Examples include hockey skating drills or soccer running drills (but no head-impact activities)</td>
<td>Add movement</td>
</tr>
<tr>
<td>Non-contact training drills</td>
<td>More complex training drills, like football passing drills, and beginning resistance training</td>
<td>Increase exercise, coordination, and cognitive load</td>
</tr>
<tr>
<td>Full-contact practice</td>
<td>Participating in normal training activities ONLY when appropriate healthcare provider says it’s OK</td>
<td>Restore confidence and assess functional skills</td>
</tr>
<tr>
<td>Return to play</td>
<td>Full game play</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1

How are very mild and mild traumatic brain injuries treated?

If your child has a very mild or mild TBI, they should:

• See their healthcare provider or the concussion clinic to make sure they’re safe to begin activities again
• Avoid playing sports until they have resumed a regular school workload
• Return to full activity no faster than 1 week for a very mild TBI or 2 weeks for a mild TBI once they have no symptoms (see figure 2)
How is a complicated mild traumatic brain injury treated?
If your child has a complicated mild TBI, it means the healthcare provider saw bruising or blood in your child’s brain during imaging. This can cause:
- **Subarachnoid hemorrhage (SAH):** Bleeding in the space between the brain and surrounding membrane
- **Subdural hematoma (SDH):** Blood between the brain and the dura (outermost covering)
- **Epidural hematoma (EDH):** Blood between the skull and the dura
- **Linear non-depressed skull fracture**
- **Complex non-depressed skull fracture**
- **Parenchymal contusions:** Bruises in the brain
- **Shear injury:** Tears to the brain’s connecting nerve fibers when the brain shifts in the skull

Figure 4 explains when your child can return to activity, depending on other brain problems. Once their healthcare provider says they’re safe to begin activities again, their symptoms are gone and they can handle a regular school workload, they should follow this and the return to play chart. Your child should also avoid the sports in figure 3 during their rest period and until they’ve resumed a regular school workload.

<table>
<thead>
<tr>
<th>Brain problem</th>
<th>Time to return to activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small subarachnoid hemorrhage (SAH)</td>
<td>2-3 months</td>
</tr>
<tr>
<td>Large SAH</td>
<td>At least 3 months</td>
</tr>
<tr>
<td>Subdural hematoma (SDH)</td>
<td>3 months</td>
</tr>
<tr>
<td>Linear non-depressed skull fracture</td>
<td>2 months</td>
</tr>
<tr>
<td>Complex non-depressed skull fracture</td>
<td>2–3 months</td>
</tr>
<tr>
<td>Linear non-depressed skull fracture with small epidural hematoma (EDH)</td>
<td>2 months</td>
</tr>
<tr>
<td>Linear non-depressed skull fracture with bigger, non-operative EDH</td>
<td>3 months</td>
</tr>
<tr>
<td>Parenchymal contusions</td>
<td>2–3 months, depending on size</td>
</tr>
<tr>
<td>Shear injury</td>
<td>3 months</td>
</tr>
</tbody>
</table>
How are moderate and severe traumatic brain injuries treated?

If your child has a moderate or severe TBI, they should:

• See their healthcare provider or the concussion clinic to make sure they’re safe to begin activities again

• Avoid the sports listed in figure 3 during their rest period and until they’ve resumed a regular school workload

• Wait at least 6 months to return to play for a moderate TBI and a minimum of 12 months for a severe TBI after symptoms are gone

Are there activities my child should never return to after a TBI?

Your child’s doctor may advise your child not to return to certain high-risk sports or activities. This depends on how well your child recovers and whether there are persistent symptoms or problems after their TBI.

The doctor will determine this at future concussion clinic visits.

Questions for my child’s doctor

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