

## THE GOLDEN HOUR

*An Educational Computer Game*  
<http://neuron.illinois.edu/goldenhour>

### What is *The Golden Hour*?

*The Golden Hour* is an online computer game that is an engaging and interactive way for students to learn about traumatic brain injury (TBI). Students take on the role of an advanced medical student who works to diagnose and treat a patient with a traumatic brain injury. The player is guided by medical professional characters as he or she works through different phases of the case study. The game begins with collecting the patient from the scene of the accident and checking vitals, moves on to conducting a CT scan to identify damage, and finishes with conducting surgery to treat the injury.

### What do my students need to know before they play?

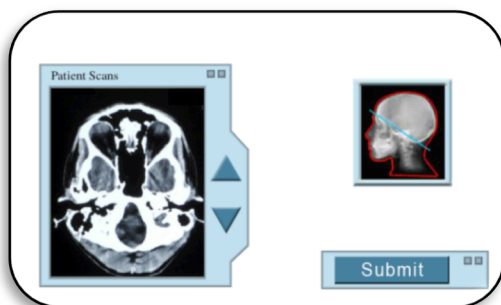
*The Golden Hour* is designed for anyone to play, no matter their knowledge base. The associated curriculum unit *Why dread a bump on the head?*, as well as the game's teacher support materials (found at <http://neuron.illinois.edu>) are designed to provide more in-depth information about the brain, neurons, and different types of traumatic brain injuries. However, the game does not assume any prior knowledge, and instead encourages the player to develop some understanding of and curiosity for the neuroscience of TBI. Therefore, the game can also be played without any additional instruction.

### What happens in *The Golden Hour*?

*The Golden Hour* is comprised of three main "scenes". Through these scenes, the player works through the different phases of response, diagnosis, and treatment of a traumatic brain injury case. At the end of each scene the player completes a report and discusses findings and determines the best course of action with the lead physician.

#### Scene 1: Emergency Medical Services

In the first scene of the Golden Hour, students assist an Emergency Medical Technician with responding to a bike accident in which the biker hit his head. By playing the game, students learn how to determine the patient's vital signs and assess severity of the head injury using the Glasgow Coma Scale.



#### Scene 2: CT Scans

After transporting the patient to the hospital, the player's next challenge is to correctly identify the brain injury type and location using a CT scan. In this scene, the player is introduced to several neuroscience concepts including brain anatomy and function, types of TBIs, and how to interpret CT scans of the brain.

### Scene 3: Surgery

The patient's brain injury has been identified and surgery has been decided as the best next step. The player's task in this scene is to conduct a brain surgery in order to remove the hematoma that is putting pressure on the brain. The player is guided by the neurosurgeon character through the multiple steps of surgery to prepare and disinfect the area, cut through the layers above the hematoma, and remove the pooled blood.



### Assessments

At the end of each scene, the player is required to complete a report of their actions and findings for that phase of the medical case. The player is prompted to synthesize what they have learned by making a recommendation of what the medical team should do next (a claim), provide evidence from their findings to support this claim, and provide their reasoning for how the evidence supports their claims.

### What kind of time and technology are required?

In order for the game to run smoothly, check that the computer has the most updated version of Flash Player and a strong internet connection. The game has been tested most on Google Chrome and Mozilla Firefox internet browsers.

### Quick start instructions for the game:

- 1) Go to: <http://neuron.illinois.edu/goldenhour/>
- 2) The menu screen (shown below) appears first. Select the "NEW GAME" button.
- 3) The game loads and starts an animated introduction to the story, beginning with an emergency phone call.

### What is on the menu screen?

The menu can be accessed anytime during the game by clicking the "Menu" button in the lower right-hand side of the screen (not while an animated video is showing). The options available on the menu allow for the following:

- NEW GAME: Starts the game from the beginning.
- OPTIONS: Turn the music on or off.
- ABOUT: Information about the creators and funding for the game.
- SCENES: Jump to a particular scene (button is active only when game is refreshed in browser).
- MEDICAL TEAM: Read about each of the medical professionals that will be introduced throughout the game.



### **How to navigate within the game:**

Once the game begins, the EMT appears with a dialogue box next to him. Throughout the game, different characters interact with the player with dialogue boxes to explain things and instruct the player on what to do next. Dialogue boxes contain a back arrow and a forward arrow for navigation. At times, if a player hesitates in responding, the next object to be clicked will be highlighted in flashing yellow in order to direct the player on what to do next. Completing the task stated by the dialogue box progresses the game.

Do NOT use the back, forward, or refresh arrows within the browser to navigate through the game. Using these buttons will restart the game from the very beginning. Only use the in-game navigation and menus to progress through the game.

### **How can I use this game in the classroom?**

There are three different ways this game can be used in the classroom. The first option is to use the game imbedded within the curriculum unit “Why dread a bump on the head?: The neuroscience of TBI”. The second option is to use a smaller curriculum unit called The Golden Hour teacher materials that touches on neuroscience concepts but is tailored more specifically to the game. The third option is to simply allow students to play without instruction or fit it into existing curriculum.

#### **1) Using the game within the “Why dread a bump on the head?” curriculum unit**

*The Golden Hour* can be used as part of a complete curriculum unit on TBI that was also developed by Project NEURON. This unit, called “Why dread a bump of the head? The neuroscience of TBI” can be found on the Project NEURON website within the Curriculum Units page ([neuron.illinois.edu/curriculum-units](http://neuron.illinois.edu/curriculum-units)). The unit provides much more in depth information about the brain and TBI through activities that address a number of concepts such as causes and severity of brain injuries, structure and function of brain areas, CT scans and different types of TBI, cell apoptosis and necrosis, and real-life TBI data analysis. In Lessons 1 and 3 of the unit, students have an opportunity to play scenes of *The Golden Hour* while making connections between their experiences in the game and the concepts covered in the lesson activities. This allows students the opportunity to learn the information through an interactive game while working within the context of a larger, detailed unit on Traumatic Brain Injury.

#### **2) Using the game with The Golden Hour teacher materials**

These teacher materials have been developed specifically to support classroom use of *The Golden Hour*. This option supports the concepts presented in the game but is neither as time intensive nor as comprehensive as the “Why dread a bump on the head?” curriculum unit.

#### **3) Using the game without instruction**

The game does not assume a priori knowledge, so students are supported in learning about neuroscience concepts as they work through the game. To further customize the game to particular classes, students can be asked to focus on specific sections of the game or to provide written explanations of various sections.