



**Cristina Rabaza, MD;**  
**Cleveland Piggott,**  
**MD, MPH, FFAFP;**  
**Corey Lyon, DO, FFAFP**  
University of Colorado  
Family Medicine Residency,  
Denver

**DEPUTY EDITOR**  
**Jennie B. Jarrett, PharmD,**  
**BCPS, MMedEd, FCCP**  
University of Illinois  
Chicago, Department of  
Pharmacy Practice  
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# Put down the electronics after a concussion?

Yes, patients should do just that. In a randomized clinical trial, symptom duration was reduced when teens and young adults observed a certain screen-time hiatus.

## PRACTICE CHANGER

Advise your teenaged and young adult patients with concussion to avoid electronic screens in the first 48 hours after a concussion to minimize time to symptom resolution.

## STRENGTH OF RECOMMENDATION

**B:** Based on a single randomized clinical trial.<sup>1</sup>

Macnow T, Curran T, Tolliday C, et al. Effect of screen time on recovery from concussion: a randomized clinical trial. *JAMA Pediatr.* 2021;175:1124-1131. doi: 10.1001/jamapediatrics.2021.2782

## ILLUSTRATIVE CASE

A 17-year-old high school football player presents to the emergency department (ED) after a helmet-to-helmet tackle in a game earlier that day. After the tackle, he experienced immediate confusion. Once he returned to his feet, he felt dizzy and nauseated and began to develop a headache. When his symptoms failed to resolve within a few hours, his mother brought him to the hospital for an evaluation. In the ED, he receives a diagnosis of concussion, and his mother asks for recommendations on how he can recover as quickly as possible.

**T**raumatic brain injuries account for an estimated 2.5 million ED visits annually in the United States.<sup>2</sup> Concussions are the most common form of traumatic brain injury, with adolescents contributing to the highest incidence of concussions.<sup>3,4</sup> An estimated 1.6 to 3.8 million people experience a sports-related concussion annually.<sup>5</sup>

Time to recovery is a clinical endpoint that matters greatly to our young, physically active patients, who are often eager to return to their daily activities as soon as possible. Guidelines frequently recommend cognitive and physical rest for 24 to 48 hours immediately following a concussion, but the use of screens during this cognitive rest period remains uncertain.<sup>6,7</sup> International guidelines and the Centers for Disease Control and Prevention recommend symptom-limited activities—including screen time—during the initial period of a concussion.<sup>6,7</sup> Although this gradual approach is standard of care, it has been unclear if abstaining completely from certain activities during the initial days of a concussion has any impact on recovery time.

Recent studies have examined physical activity to clarify the optimal timing of physical rest after a concussion. Among adolescents with concussions, strict rest for 5 days does not appear to improve symptoms compared with rest for 1 to 2 days.<sup>8</sup> Additionally, physical activity within 7 days of acute head injury may help reduce symptoms and prevent postconcussive symptoms.<sup>9,10</sup>

This same level of clarity has been lacking for cognitive rest and screen time. The use of screens is a part of most patients' daily activities, particularly among adolescents and young adults. One report found that students ages 8 to 18 years engage in approximately 7 hours of daily screen time, excluding that related to schoolwork.<sup>11</sup> This trial evaluated

the relationship between screen time abstinence within 48 hours of a concussion and time to symptom resolution.

### STUDY SUMMARY

#### Symptom duration was significantly reduced by cutting screen time

This single-site, parallel-design, randomized clinical trial examined the effectiveness of limiting screen time exposure within the first 48 hours after a concussion in reducing the time to resolution of concussive symptoms in 125 patients.<sup>1</sup> Patients were included if they were 12 to 25 years old (mean age, 17 years) and presented within 24 hours of sustaining a concussion (as defined on the Acute Concussion Evaluation–Emergency Department tool) to the pediatric or adult ED at a US tertiary medical center.

Patients were randomized to either engage in screen time as tolerated or to abstain from screen time for 48 hours following their injury. Screen modalities included television, phones, video games, and computers/tablets. The Post-Concussive Symptom Scale (PCSS; 0-132) was used to characterize 22 symptoms from 0 (absent) to 6 (severe) daily for 10 days. Patients also self-reported the amount of screen time they engaged in during Days 1 to 3 of the study period and completed an activity survey on Days 4 to 10. Among the participants, 76% completed the PCSS form until symptom resolution or until Day 10 (the end of the study period).

The primary outcome was days to resolution of concussive symptoms, defined as a PCSS score  $\leq 3$ . The median baseline PCSS score was 21 in the screen time–permitted group and 24.5 in the screen time–abstinent group. The screen time–permitted group reported a median screen time of 630 minutes during the intervention period, compared with 130 minutes in the screen time–abstinent group, and was less likely to recover during the study period than the screen time–abstinent group (hazard ratio = 0.51; 95% CI, 0.29-0.90). The screen time–permitted group had a significantly longer median recovery time compared with the screen time–abstinent group (8.0 vs 3.5 days;  $P = .03$ ).

### WHAT'S NEW?

#### Exploring the role of screen time during the cognitive rest period

This study provides evidence supporting the recommendation that adolescent and young adult patients abstain from screen time in the first 48 hours following a concussion to decrease time to symptom resolution, thus shortening the timeline to return to their usual daily activities.

### CAVEATS

#### Self-reporting of data may introduce bias

This study used a self-reporting method to collect data, which could have resulted in underreporting or overreporting of screen time and potentially introduced recall and reporting bias. The screen time–abstinent group did not completely abstain from all screen time, with a self-reported average of 5 to 10 minutes of daily screen time to complete the required research surveys, so it is not immediately clear what extent of abstinence vs significant screen time reduction led to the clinical endpoints observed. Furthermore, this study did not ask patients to differentiate between active screen time (eg, texting and gaming) and passive screen time (eg, watching videos), which may differentially impact symptom resolution.

### CHALLENGES TO IMPLEMENTATION

#### Turning off the ever-present screen may present obstacles

This intervention is easy to recommend, with few barriers to implementation. It's worth noting that screens are often used in a patient's school or job, and 48 hours of abstinence from these activities is a difficult ask when much of our society's education, entertainment, and productivity revolve around the use of technology. When appropriate, a shared decision-making discussion between patient and physician should center on the idea that 48 hours of screen time abstinence could be well worth the increased likelihood of total recovery at Day 10, as opposed to the risk for persistent and prolonged symptoms that interfere with the patient's lifestyle. **JFP**

CONTINUED



A shared decision-making discussion should center on the idea that 48 hours of screen time abstinence could be well worth the increased likelihood of total recovery at Day 10.

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