

# Managing Concussions

In Acute Care  
Adapted from the blog, pdxem.com

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The Zurich guidelines on concussion management previously called for "complete cognitive and physical rest" as the mainstay of concussion management.<sup>1</sup> These recommendations, however, were largely formed on expert opinion and lacked backing by rigorous research.



Unfortunately, *asymptomatic* from a concussion standpoint is not always obvious, which can make the new recommendation difficult to implement as patients may remain symptomatic while adhering to rest. Symptomatology is often multifactorial and they may be instructed to rest despite symptoms from etiologies other than concussion.<sup>3</sup>

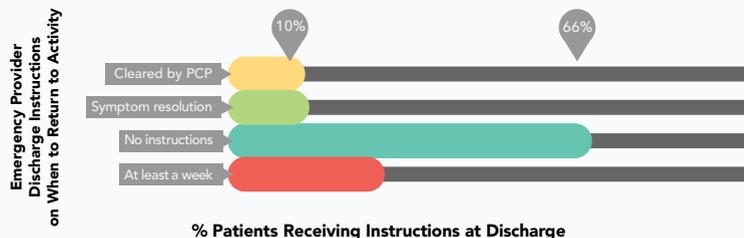
**24-48** hrs

The most recent recommendation from the Concussion in Sport Group calls for 24-48 hours of rest and a graded return to activity (unrestricted once asymptomatic)<sup>2</sup>.

A 2014 study by De Maio et al<sup>4</sup> found discharge instructions to vary widely among ED physicians. Most recommended PCP follow-up but only a slight majority gave any instructions specific to concussion management.



Instructions on concussion follow-up

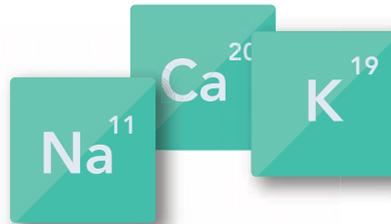


% Patients Receiving Instructions at Discharge

In the same study, recommendations on activity restriction were equally variable. Two-thirds of patient's didn't get any information regarding when to resume activity at discharge!

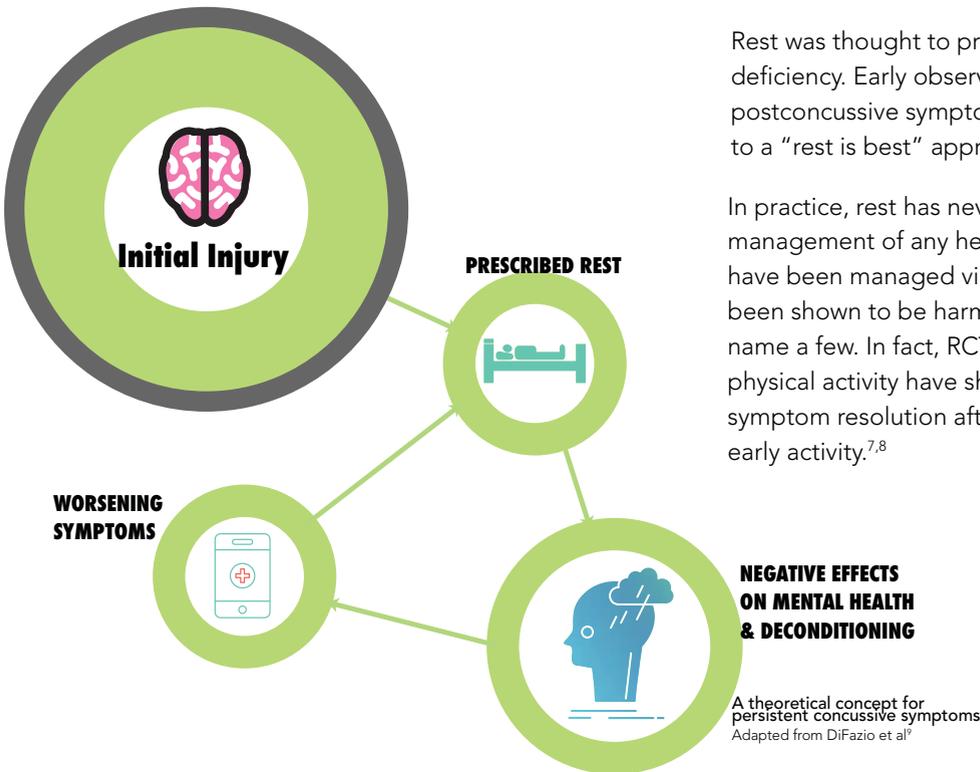
# THE DOWNSIDE OF REST

Animal models have demonstrated loss of ionic gradients in the CNS following concussion and reduced cerebral blood flow.<sup>5</sup> Increased activity of Na/K ATPase leads to a relative insufficiency in ATP.



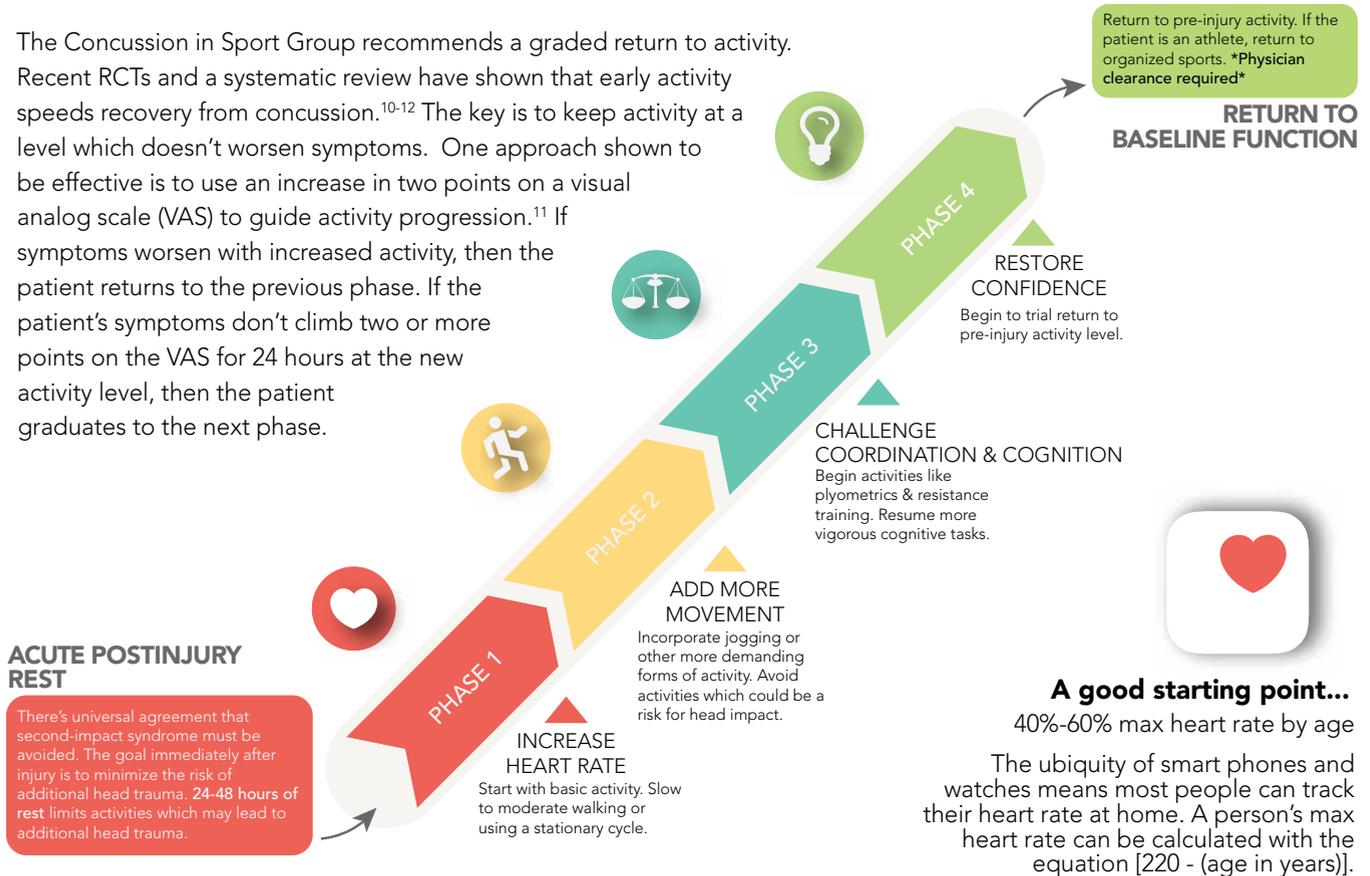
Rest was thought to prevent exacerbating this energy deficiency. Early observational studies showed worsening postconcussive symptoms with early activity, which led to a “rest is best” approach.<sup>6</sup>

In practice, rest has never really proven to be optimal management of any health condition. Many conditions have been managed via strict rest which has ultimately been shown to be harmful—MI, stroke, back pain, to name a few. In fact, RCTs comparing strict rest to early physical activity have shown no improvement in symptom resolution after a concussion compared to early activity.<sup>7,8</sup>



# THE UPSIDE OF EARLY ACTIVITY

The Concussion in Sport Group recommends a graded return to activity. Recent RCTs and a systematic review have shown that early activity speeds recovery from concussion.<sup>10-12</sup> The key is to keep activity at a level which doesn't worsen symptoms. One approach shown to be effective is to use an increase in two points on a visual analog scale (VAS) to guide activity progression.<sup>11</sup> If symptoms worsen with increased activity, then the patient returns to the previous phase. If the patient's symptoms don't climb two or more points on the VAS for 24 hours at the new activity level, then the patient graduates to the next phase.



## ACUTE POSTINJURY REST

There's universal agreement that second-impact syndrome must be avoided. The goal immediately after injury is to minimize the risk of additional head trauma. 24-48 hours of rest limits activities which may lead to additional head trauma.

## A good starting point... 40%-60% max heart rate by age

The ubiquity of smart phones and watches means most people can track their heart rate at home. A person's max heart rate can be calculated with the equation [220 - (age in years)].

# FACTS



Rest immediately after a concussion is to prevent another head injury, not screen time, per se.

Early, graded activity is safe & likely speeds recovery.



Everyone with a concussion should be given concussion-specific instructions and precautions.



Every patient with a concussion should be seen by a PCP after the acute care setting.



## REFERENCES

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