

# Gait and Functional Mobility Training for a Patient Post-Stroke with a History of Substance Abuse and Psychiatric Disorders: A Case Report

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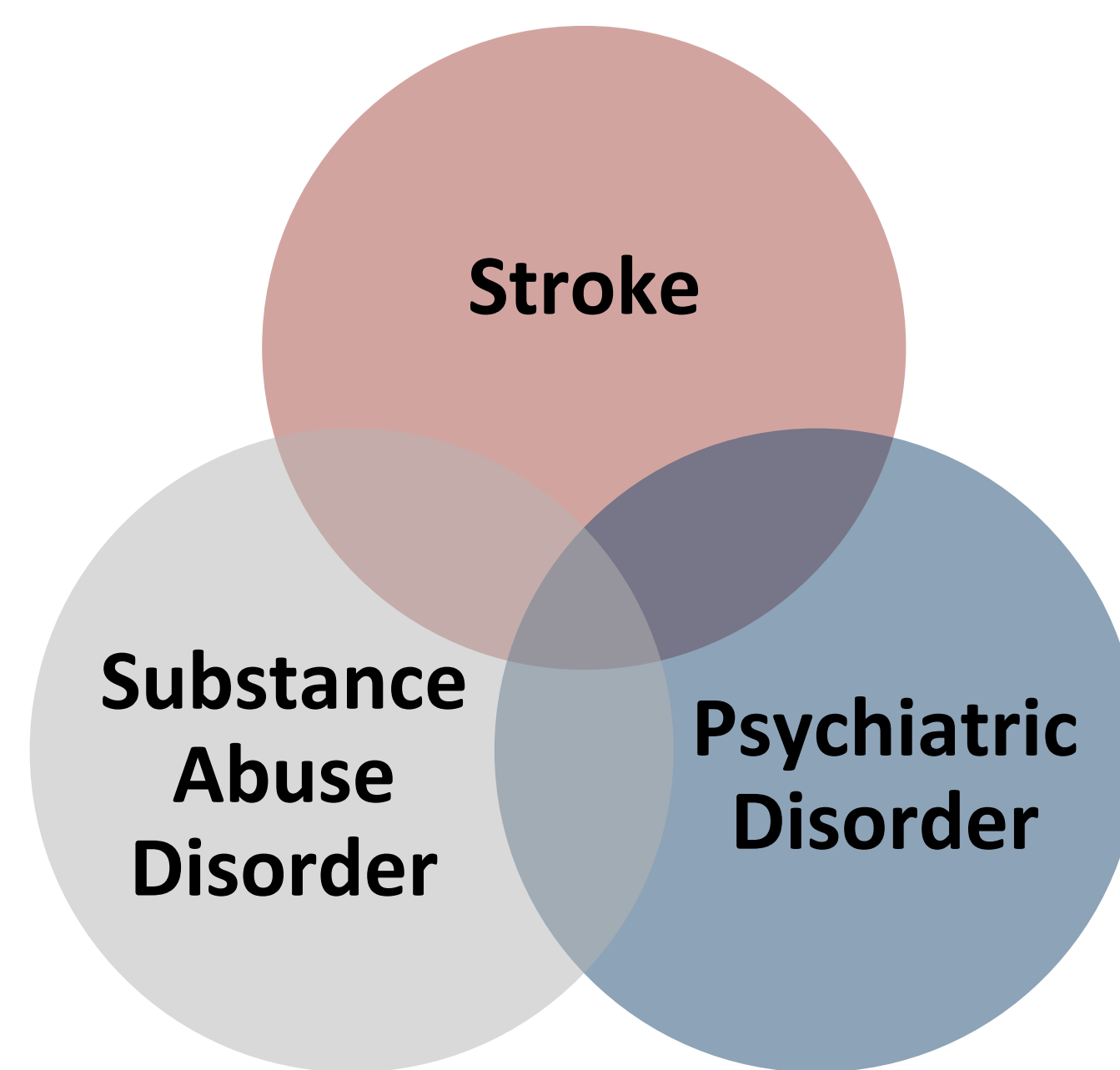


## Unique

- The opioid crisis is the largest drug epidemic in recorded history, resulting in over 500,000 deaths between the years of 2000 and 2015.<sup>1</sup>
- The abuse of and addiction to opioids are serious global health problems that affect the social and economic well-being of all societies.<sup>2</sup>
- Drug abusers have a 6.5 times increased risk of stroke.<sup>3</sup>
- Strokes contribute to the disability and morbidity associated with drug abuse.<sup>3</sup>
- Drug abuse is a frequent cause of stroke in areas with a high prevalence of the problem.<sup>3</sup>
- There is also a high prevalence of comorbidity between drug abuse disorders and mental illnesses.<sup>1</sup>

## Purpose

To outline physical therapy (PT) rehabilitation that utilized task-oriented and gait training in an inpatient rehabilitation facility (IRF) to address gait and functional mobility in a patient following a stroke combined with both substance abuse and psychiatric disorders.



## Foundation

- A stroke occurs when blood is unable to flow adequately to the brain.
- Illicit drug abuse, and the consequences resulting from it, are on the rise.
- Strokes are the fifth leading cause of death and the leading cause of adult disability in the United States, and can result in many impairments that affect the person's ability to perform activities of daily living (ADL's) and functional activities.<sup>4</sup>
- There is strong evidence that organized, interprofessional stroke care in an IRF not only reduces mortality rates and the likelihood of long-term institutional care and disability, but also enhances recovery and increases independence in ADL's.<sup>5</sup>

## Case Description

- 56-year-old male referred to an IRF following a right frontal lobe middle cerebral artery stroke
- Past medical history included bipolar disorder, schizoaffective disorder, and opioid use disorder
- Drug free for one year preceding his stroke, but relapsed one day prior to his stroke
- Admitted to the comprehensive, multidisciplinary IRF to evaluate and treat his impaired strength and functional mobility
- Presented with left hemiparesis, and impaired gait, transfers, bed mobility, and balance
- Received skilled PT five days a week for a minimum of three hours per day along with occupational and speech therapy
- PT sessions were scheduled for one hour in the afternoon to accommodate for the patient's lethargy and altered motor status during the typical 30-minute treatment sessions in the morning

## Patient's Goals for PT

1. To be independent with all functional mobility in order for him to be able to return home to his family
2. To improve the overall strength of his left side in order to be able to walk independently
3. To be able to return to weight lifting at the gym and ride a stationary bike

## Observations

	Initial	Discharge
LE Gross Strength	3-/5 [fair minus]	4/5 [good]
Functional Mobility	Max A	Supervision
Gait Pattern	Decreased cadence and step length	Improved cadence and step length
Dynamic Standing Balance	Poor	Good
FIM Score	1/7 [max A]	5/7 [supervision]

LE= lower extremity, Max A= maximum assistance, FIM= Functional Independence Measure

## Interventions

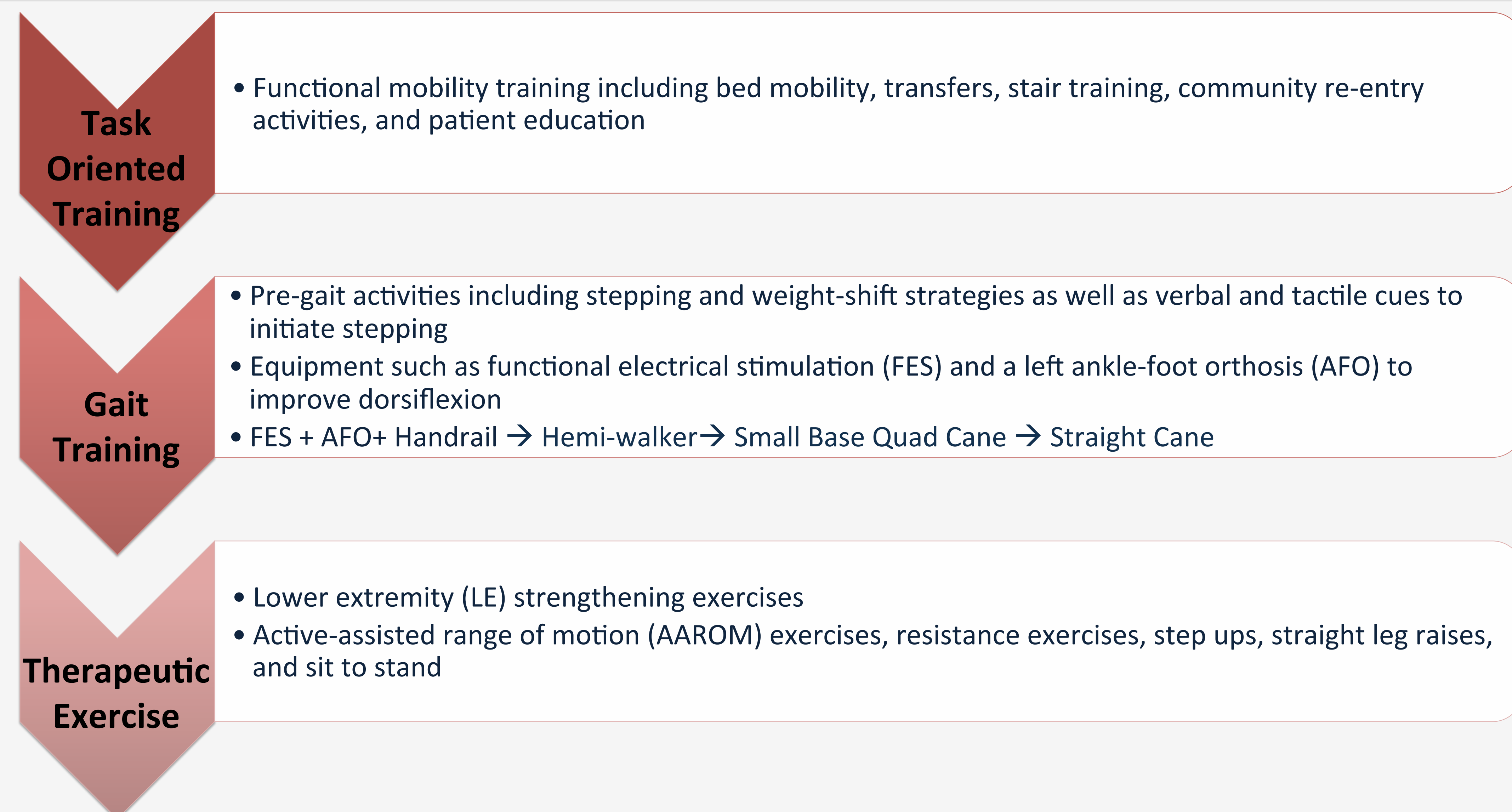


Figure 1. PT Interventions A: Single leg step ups B: Medial view of Allard Toe-OFF® left Ankle Foot Orthosis C: Stepping exercise

## Conclusion

- Following three weeks of PT in an IRF with an emphasis on task-oriented training and gait training, the patient demonstrated improved functional mobility, gait, and LE strength.
- Initiatives geared towards adequate pain management and support of individuals with substance abuse disorders may help change the landscape for this challenging patient population.
- The American Physical Therapy Association (APTA) has launched a national public awareness campaign about the safety and effectiveness of PT for pain management.
- APTA's #ChoosePT campaign raises awareness and encourages consumers and prescribers to follow guidelines by the Centers for Disease Control (CDC).<sup>7</sup>
- Future research is also needed to address the PT management of this patient population.

## Acknowledgements

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## References

1. Centers for Disease Control and Prevention. Understanding the epidemic. Centers for Disease Control and Prevention website. <https://www.cdc.gov/drugoverdose/epidemic/index.html>. Accessed July 13, 2017.
2. National Institute on Drug Abuse. Nationwide trends, America's addiction to opioids, Comorbidity. National Institute on Drug Abuse website. [www.drugabuse.gov](http://www.drugabuse.gov). Accessed July 13, 2017.
3. Fonseca AC. Drug abuse and stroke. *Curr Neurol Rep*. 2013; 13(2): 325. doi: 10.1007/s11910-012-0325-0.
4. National Stroke Association. What is stroke?. National Stroke Association website. <http://www.stroke.org/understand-stroke/what-stroke>. Accessed July 13, 2017.
5. Winstein CJ et al. Guidelines for adult stroke rehabilitation and recovery: a guideline for healthcare professionals from the American heart association/American stroke association. *Stroke*. 2016; 47(6): e98-e169. doi: 10.1161/STR.0000000000000098.
6. Kim K, Jung S, Lee DK. Effects of task-oriented circuit training on balance and gait ability in subacute stroke patients: a randomized control trial. *J Phys Ther Sci*. 2017; 29(6): 989-992. doi: 10.1589/jpts.29.989.
7. Move Forward PT. Avoid addictive opioids. Choose physical therapy for safe pain management. #ChoosePT. American Physical Therapy Association website. <http://www.moveforwardpt.com/choose-physical-therapy-over-opioids-for-pain-management-choosept>. Accessed September 27, 2017.

#ChoosePT