

Physical deficits among People Living with HIV: A Critical Review

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Introduction and Methods

Many people living with HIV have physical impairments

- Sarcopenia, decreased aerobic capacity, and frailty

They also have activity limitations such as balance deficits and reduced walking speed

Balance and mobility deficits are associated with an elevated fall risk, even among those with well-controlled viremia¹

Searched Embase, MEDLINE, and CINAHL for terms related to physical function in HIV

Hand-searched reference lists for additional studies



Physical Deficits in HIV

Sarcopenia

43% of females; 9% of males²

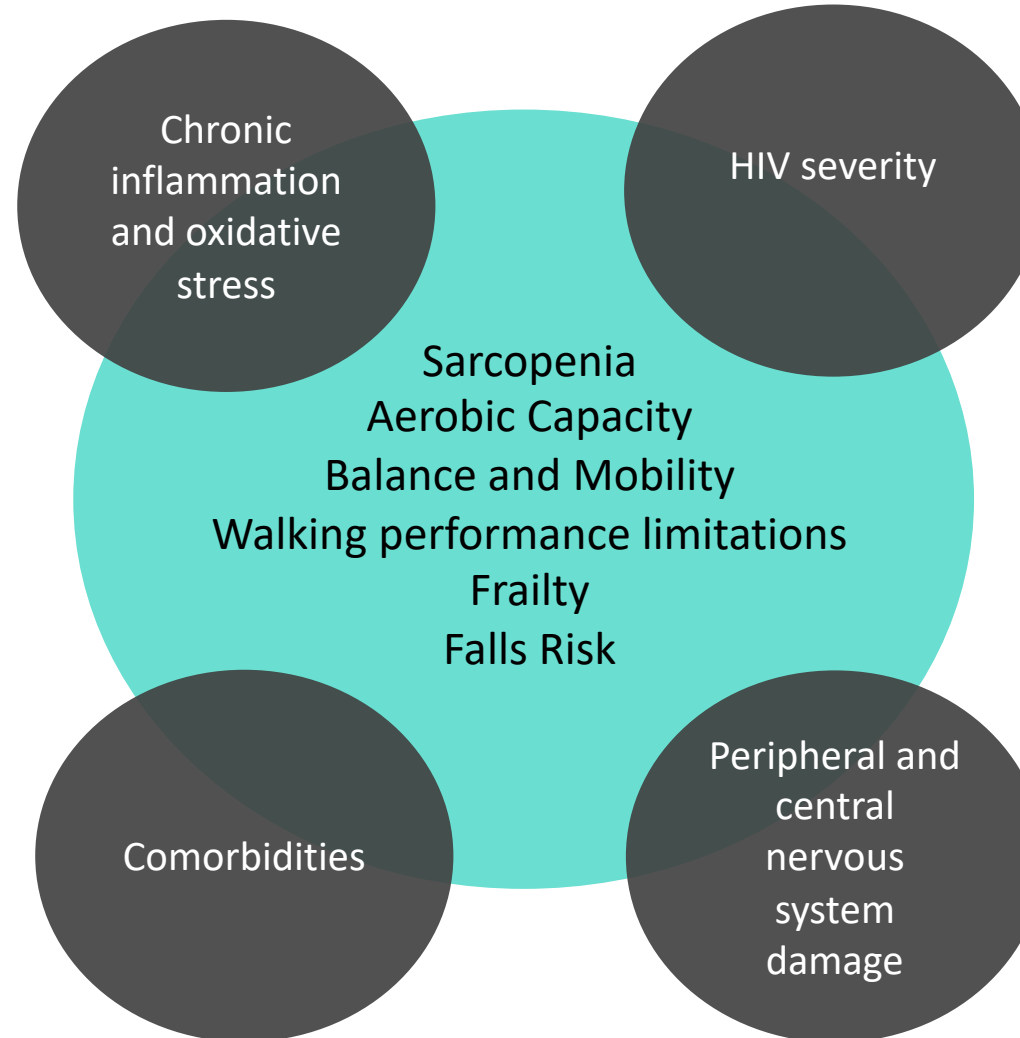
Aerobic Capacity

Peak oxygen uptake among the lowest in clinical populations³

Balance and Mobility

87% have impaired single leg stance performance with eyes closed⁴

53% had impaired 5-repetition sit-to-stand performance⁵



Gait Limitations

Deficits in fast gait speed, but not comfortable gait speed⁶

Frailty

60% of those over 50⁷

Falls Risk

30% of middle-aged people with HIV fell once or more in last year⁸

3x osteoporosis rate of HIV-negative individuals⁹

Adapted from Quigley et al.¹⁰

Contributing Factors

Direct relationship between HIV severity and physical function

- Higher CD4+ count and undetectable viral load associated with better self-reported physical function¹¹

Inflammation and oxidative stress¹²

- Elevated interleukin-6 and tumour necrosis factor receptor-1 and -2^{13, 14}
- Inflammation has been observed even among those who are virologically suppressed
- Oxidative stress and mitochondrial damage

Central nervous system involvement

- Worse balance performance when eyes are closed⁷
- Peripheral and central vestibular dysfunction¹⁵

Comorbidities

Considerations for Clinicians and Researchers

Identify those at high risk of developing physical impairments for additional screening

- Low CD4+, high viral load, older age, and comorbidities

Refer to rehabilitation professionals

The [5-repetition sit-to-stand test \(5STS\)](#) is quick and can identify falls risk in people living with HIV⁵



QR code full-text article



[Link to references](#)

Exercise prescription based on the stage of HIV infection (asymptomatic, symptomatic, and AIDS)¹⁶

Balance training for 30 min, 3 times per week for at least 11 weeks¹⁷

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