MULTICENTER AIDS COHORT STUDY

CONSISTENT STATIN USE DOES NOT EFFECT AGE-ASSOCIATED GAIT SPEED AND STRENGTH DECLINES

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BACKGROUND

- **Statin use decreases inflammation and reduces cardiovascular events, and may be useful among persons with HIV, who have increased risk of cardiovascular (CV) events.**
- **Other benefits are unclear; some studies suggest that statin use may benefit physical function despite myalgias as a common side effect.**
- **We compared age-associated changes in physical function among men with or without statin use by their HIV serotatus in the Multicenter AIDS Cohort Study.**

METHODS

- **Men 40-75 years old with ≥2 measures of gait speed or grip strength (baseline=2007) were included.**
- **Consistent statin use was defined as use at ≥80% of visits after statin initiation**
- **Gait speed was measured on a 4-m course; grip strength by dynamometer.**
- **Generalized estimating equations included an interaction term for statin use group and age; models were further adjusted for demographics, HIV status, and CV risk factors (smoking, diabetes, hypertension, lipids).**

RESULTS

- **Among 2021 men,**
  - **51% of *consistent* statin users, 61% of intermittent users, and 49% of never users were men with HIV**
  - **Median baseline gait speed was 1.12 m/sec (IQR 0.99, 1.25)**
  - **Median baseline grip strength was 38 kg (IQR 32, 44)**



	Never Users (n=987)	Intermittent Users (n=398)	Consistent Users (n=636)
Age	48.0 (43, 54)	54.0 (48, 59)	56 (51, 62)
Black	398 (39%)	106 (27%)	104 (16%)
White	582 (59%)	274 (69%)	512 (81%)
BMI			
Normal	448 (45%)	148 (37%)	218 (34%)
Overweight	389 (39%)	164 (41%)	243 (38%)
Obese	150 (15%)	86 (22%)	175 (28%)
Diabetes	42 (6%)	73 (23%)	124 (23%)
Lipid med	164 (17%)	182 (46%)	340 (54%)

* All differences between groups were significantly different (p<0.001)

Among men with and without HIV, consistent statin use had no apparent effect on age-associated declines in gait and grip strength, suggesting *no statin-associated impairments in physical function* in this population.

RESULTS (continued)

- **Duration of follow-up was 8.5 years (IQR 4.4, 10.4).**

Gait Speed

- **After adjusting for baseline, demographics, and CV risk factors, gait speed declined by -0.0028 m/s per year of age among all men.**
  - **Including an interaction between statin use and age, there were no significant difference in gait speed decline among consistent vs never users (-0.0013 [-0.0029, 0.0002], p=0.082).**
  - ***Intermittent statin users had a steeper gait speed decline* vs never users (-0.003 [-0.005, -0.001], p=0.0007).**
  - ***HIV serostatus was not significantly associated* with significant effects on gait speed decline (-0.012 [-0.026, 0.001), p=0.076**

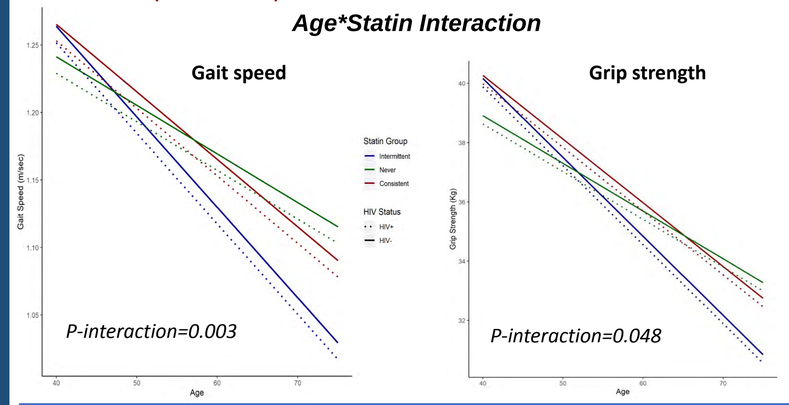
Grip Strength

- **Strength was similar among consistent vs never statin users (-0.054 [-0.122, 0.015], p=0.12), but *declined more among intermittent users* (-0.105 [-0.195, 0.016], p=0.021), compared to never statin users.**
- ***HIV serostatus was not associated* grip strength declines (-0.28 [-1.02, 0.46]; p=0.46).**

Although pain was strongly associated with gait and grip decline, severe baseline pain did not confound the association between statin use and physical function.

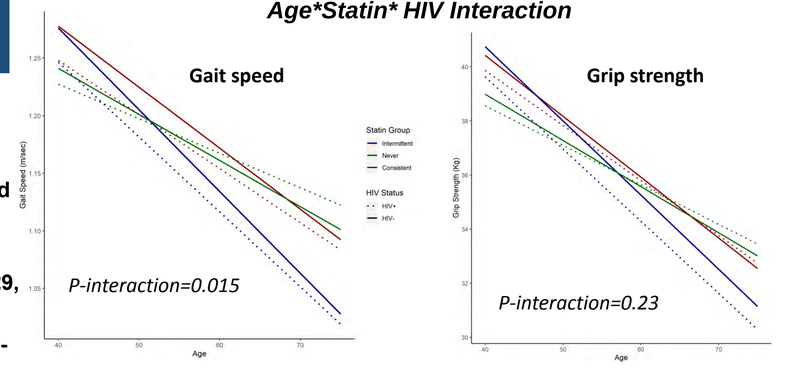
RESULTS (continued)

Age*Statin Interaction



When comparing the effect of statins over time among men with or without HIV, consistent and never users had similar changes, while intermittent users tended to have more rapid decline, regardless of HIV serostatus. Results were similar when HIV interaction was added.

Age*Statin* HIV Interaction



CONCLUSIONS

- **After controlling for differences in cardiovascular risk factors, neither gait speed or grip strength declines over time differed among men with consistent compared to never statin use. Results were similar among men with or without HIV, though differences between groups were attenuated for grip strength.**
- **Intermittent statin use, in contrast, was associated with more pronounced declines, perhaps reflecting non-compliance or statin intolerance.**
- **Randomized controlled trials will provide greater insight into the impact of statins on physical function among PWH (see poster 707)**