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Association between an Individual’s Physical Activity Level and Periodontal Health

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INTRODUCTION

- Regular physical activity may offer a behavioral strategy to limit inflammation.
- The inflammatory oral disease, periodontal disease, may be influenced by physical activity.
- Few studies have explored the association between an individual’s physical activity level and their periodontal health.

METHODS

Study design: Cross-sectional. Data source: National Health and Nutrition Examination Survey (NHANES 2011-2014 cycles). N= 6923

Inclusion Criteria: Participants aged 30 years and above, with 1+ tooth remaining (excluding 3rd molars).

Primary exposure: Total and vigorous physical activities from Physical Activity Questionnaire. Intensity rated using METs (<10,10-20, >20 MET hrs/week).

Vigorous activities defined as vigorous-intensity sports, fitness, or recreational activities that cause large increases in breathing or heart rate like running or basketball for at least 10 minutes continuously

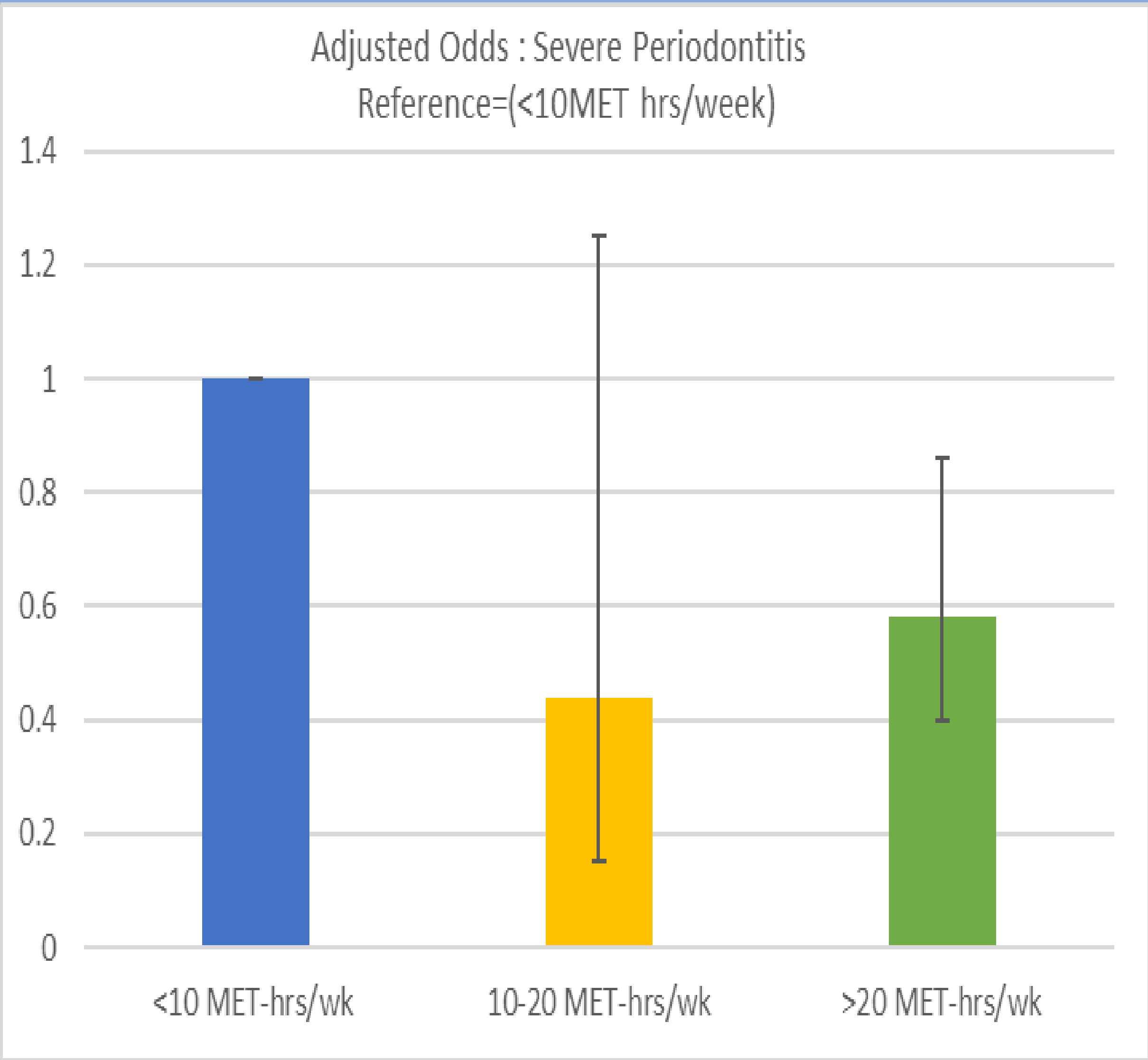
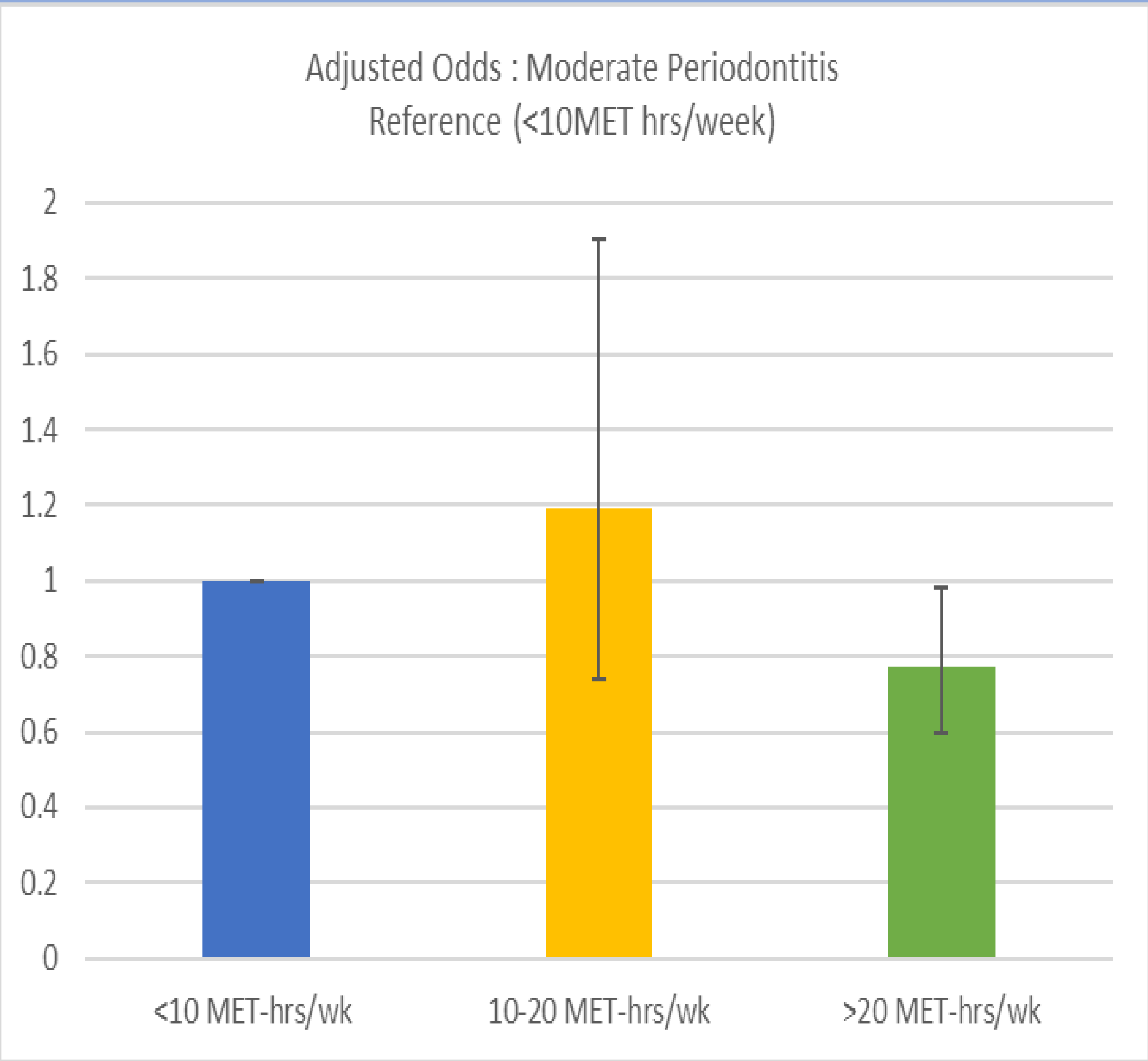
Primary outcome: Moderate or severe periodontal disease based on Eke classification (Reference: None/mild periodontitis).

Multinomial regression analysis performed using SAS V9.4. NHANES complex sampling taken into account.

RESULTS

- Vigorous physical activity (>20 MET hrs/wk):
23% lower risk of moderate periodontitis
42% lower risk of severe periodontitis
- No statistically significant association between total physical activity and periodontal health after adjusting for covariates.

Vigorous physical activity lowers the odds of both moderate and severe periodontitis



*Odds of moderate and severe periodontitis after adjusting for age, sex, smoking, education, income and race

Take a to learn more about the study!

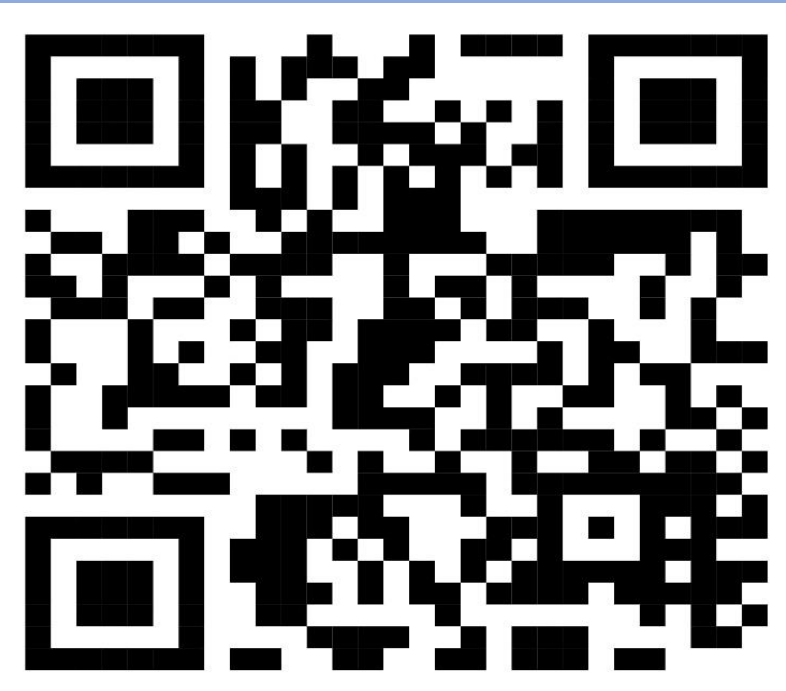


Table 1: Multinomial Logistic Regression Model comparing moderate or severe periodontitis to those with none/mild periodontitis: Vigorous activity only analysis. *P <0.05.

Variables	Mod. Periodontitis		Severe Periodontitis	
	OR	p-Value	OR	P-Value
Smoker				
Former	Reference Category			
Never	0.71	0.001*	0.68	0.03*
Current	1.58	<0.001*	2.25	<0.001*
Age				
Young	Reference Category			
Middle	1.90	<0.001*	3.08	0.001*
Elderly	2.58	<0.001*	2.33	0.001*
Sex				
Male	Reference Category			
Female	0.56	<0.001*	0.27	<0.001*
Education				
High school or less	Reference Category			
Some college	0.88	0.121	0.64	0.013*
College graduate or higher	0.682	0.004*	0.28	<0.001*
Income				
\$0 - \$ 44,999	Reference Category			
\$45k - \$74,999	0.77	0.003	0.97	0.912
\$75k and higher	0.53	<0.001*	0.43	0.037*
Race				
Mexican American	Reference Category			
Other Hispanic	0.64	0.007*	0.57	0.011*
Non-Hispanic White	0.35	<0.001*	0.31	<0.001*
Non-Hispanic Black	0.69	0.007*	1.02	0.883
Non-Hispanic Asian	0.87	0.442	1.07	0.706
Other race	0.41	0.010*	0.23	0.008

Discussion/Public Health Implications:

First study to report that vigorous physical activity shows a protective effect for both moderate and severe periodontitis.

Dental professionals should highlight the importance of staying physically active for overall health and periodontal health. follow HHS recommendations of minimum physical activity (150 minutes of physical activity or more per week.