

Nutritional Assessment of the World Trade Center-Health Program Fire Department of New York Cohort

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RATIONALE Metabolic syndrome (MetSyn) is a well-established key contributor to the pathogenesis of lung disease. Nutritional status is a significant modifier of metabolic derangements that lead to MetSyn. The validated survey, Rapid Eating and Activity Assessment for Participants Short Version (REAP-S) provides a succinct and easy method for dietary quality assessment and to assess intake of key food groups and evaluate dietary quality. The objective of this study was to prospectively survey the Fire Department of the City of New York (FDNY) World Trade Center-Health Program (WTC-HP) cohort with the REAP-S dietary assessment tool. **METHODS** The FDNY WTC-HP routinely schedules monitoring exams every 12-18 months for enrolled participants, approximately 10,000 individuals annually. These exams include both a physical health and a mental health questionnaire. REAP-S is a 16-item survey that estimates the typical daily intake of fats, cholesterol, sugar, and meats. It was integrated into the FDNY questionnaire on March 1st, 2018. One item from REAP-S was used as a screening question to gauge interest in REAP-S and additional questions were initially used to screen for those interested in changing their diet and to determine subjects willing to answer the remaining REAP-S questions, Table 1. Subjects who met screening criteria were prompted to complete REAP-S. Participants consisted of currently active, WTC-program enrollees who have signed physical health research consents. Data will be continuously accrued for at least 1 year from the time of deployment. **RESULTS** As of October 24, 2018, N=2,949 members of the FDNY WTC-HP have taken the REAP-S questionnaire, a participation rate of approximately 50%. Reported data will be for WTC-program enrollees who are alive with a physical health research consent. Sum of the REAP-S will be calculated for each enrollee, and grouped into tertiles. Using logistic regression, the association between diet as a tertile of REAP-S and concomitant lung function as determined by FEV₁<LLN will be assessed, adjusting for age, cardiovascular comorbidities, glycemic hypertension, body mass index, smoking, race, and exposure level. **CONCLUSIONS** REAP-S has been successfully implemented into the FDNY WTC-HP monitoring questionnaire. This will also allow for identification of dietary habits associated with not only cardiovascular risk factors, but risk of declining lung function. Continued deployment of the REAP-S questionnaire

will allow us to obtain valuable dietary and nutritional data on the FDNY WTC-HP cohort and eventually track change in dietary habits as it correlates with pulmonary health.

Table 1: Nutrition Questions incorporated into the WTC-Health Program annual questionnaire.

Item	Answer				
1. How willing are you to make changes in your eating habits in order to be healthier?*	1	2	3	4	5
2. Are you interested in participating in a dietary and lung health study?	Yes			No	
3. Are you willing to answer 15 questions about your diet?*	Yes			No	
* This is the 16 th REAP-S question. ** If participant answers "Yes", the participant will be prompted to answer the 15 questions from REAP-S					
Item	Answer				
In an average week, how often do you:	Usually/Often	Sometimes	Rarely/Never	Does not apply to me	
1. Skip breakfast?	0	0	0		
2. Eat 4 or more meals from sit-down or take out restaurants?	0	0	0		
3. Eat less than 2 servings of whole grain products or high fiber starches a day? Serving = 1 slice of 100% whole grain bread; 1 cup whole grain cereal like Shredded Wheat, Wheaties, Grape Nuts, high fiber cereals, oatmeal, 3-4 whole grain crackers, ½ cup brown rice or whole wheat pasta, boiled or baked potatoes, yuca, yams or plantain.	0	0	0		
4. Eat less than 2 servings of fruit a day? Serving = ½ cup or 1 med. fruit or ¼ cup 100% fruit juice.	0	0	0		
5. Eat less than 2 servings of vegetables a day? Serving = ½ cup vegetables, or 1 cup leafy raw vegetables.	0	0	0		
6. Eat or drink less than 2 servings of milk, yogurt, or cheese a day? Serving = 1 cup milk or yogurt; 1½ - 2 ounces cheese.	0	0	0		
7. Eat more than 8 ounces (see sizes below) of meat, chicken, turkey or fish per day? Note: 3 ounces of meat or chicken is the size of a deck of cards or ONE of the following: 1 regular hamburger, 1 chicken breast or leg (thigh and drumstick), or 1 pork chop.	0	0	0	Rarely eat meat, chicken, turkey or fish 0	
8. Use regular processed meats (like bologna, salami, corned beef, hotdogs, sausage or bacon) instead of low fat processed meats (like roast beef, turkey, lean ham; low-fat cold cuts/hotdogs)?	0	0	0	Rarely eat processed meats 0	
9. Eat fried foods such as fried chicken, fried fish, French fries, fried plantains, tostones or fried yuca?	0	0	0		
10. Eat regular potato chips, nacho chips, corn chips, crackers, regular popcorn, nuts instead of pretzels, low-fat chips or lowfat crackers, air-popped popcorn?	0	0	0	Rarely eat these snack foods 0	
11. Add butter, margarine or oil to bread, potatoes, rice or vegetables at the table?	0	0	0		
12. Eat sweets like cake, cookies, pastries, donuts, muffins, chocolate and candies more than 2 times per day.	0	0	0		
13. Drink 16 ounces or more of non-diet soda, fruit drink/punch or Kool-Aid a day? Note: 1 can of soda = 12 ounces	0	0	0		
14. You or a member of your family usually shops and cooks rather than eating sit-down or take-out restaurant food?	Yes			No	
		0		0	
15. Usually feel well enough to shop or cook.		0		0	

This abstract is funded by: NHLBI R01HL119326, CDC/NIOSH U01-OH011300; Clinical Center of Excellence 200-2017-93426, Data Center 200-2017-93326

Am J Respir Crit Care Med 2019;199:A4877
Internet address: www.atsjournals.org

Online Abstracts Issue