

Attachment F

Covid-19 Grant Outcomes and Accomplishments Final Report

To finalize this award, you are required to provide to the Agency with a narrative of the outcomes and accomplishments related to the funds spent for the specific purpose as stated in the grant contract. You can use the secure link provided below to upload images, brochures, and other information to illustrate your outcomes and accomplishments.

<https://ncosbm.sharefile.com/r-rc7f2ca49d574af2a>

1. Organization:

Organization Name:	UNC Greensboro; North Carolina Policy Collaboratory at the University of North Carolina at Chapel Hill
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2. Outcomes and Accomplishments:

We recruited a total of 100 subjects for this study. Recruitment was achieved through mass e-mails at UNCG and through collaboration with medical testing sites/institutions including Cone Health, Triad Adult and Pediatric Medicine, and Old North State Medical Society. Out of the 100, all subjects completed the demographic, dietary and health information questionnaire. Toenail sample were available from 83 subjects and have been analyzed for the zinc and selenium concentrations. Summaries of the data are described below

Background characteristics of subjects

Average age was 27 years, with most subjects (78%) under 30 years and 7 subjects (7%) over the age of 49 years. Forty-eight (48%) of the subjects were normal weight, 4% were underweight, 25% were overweight and 23% were obese. Most subjects were female (70%), non-Hispanic Whites (58%), had no chronic disease (86%) and never smoked (76%). Most subjects (84%) were in the income range of <50,000/year, were single (79%), and have some college education (53%).

COVID 19 severity

COVID 19 severity was assessed using a questionnaire that asked how long subjects experienced 10 different symptoms of COVID 19. These were headache, body ache, cough, loss of smell and taste, fever, vision problems, hemoptysis (coughing up blood), diarrhea, toe and finger problems, and shortness of breath. The most commonly experienced symptoms were headache (79% of subjects), loss of smell and taste (65%), cough (64%) and body ache (62%). No one reported hemoptysis (0 %). Two participants (2%) had experienced hospitalization due to COVID 19 symptoms.

Dietary intakes

We assessed the frequency of intake of foods containing high amounts of zinc and selenium and estimated daily intakes of the two nutrients from these food sources. The high sources of zinc included food such as crabs, oyster, lobster, chicken, pork chop, beef roast, and ground beef, while the high food sources of selenium included shrimp, tuna, halibut, sardine, egg, turkey, ham, steak, beef liver, cottage cheese, enriched pasta, and whole wheat bread. On the average, subjects reported consuming high zinc source foods once a day (range of 0 to 3.3 times per day) and for selenium the frequency was twice a day (range of 0 to 6.3 times per day). The median daily intake of zinc and selenium from these sources were 4.17 mg and 63.7 µg. suggesting that high zinc and selenium source foods contributed about 44% and 116% of their respective Recommended Dietary Allowances (RDAs).

Toenail selenium and zinc concentrations

Out of the 83 toenail samples analyzed, the median zinc and selenium concentrations were 56.5 µg/g and 0.83 µg/g. The toenail zinc concentration ranged from 8.1 to 286.6 µg/g, while the toenail selenium concentration ranged from 0.56 to 1.26 µg/g.

Preliminary findings

Using Bonferroni correction to account for multiple outcome variables ($P \leq 0.008$ for statistical significance), we found that the relationship between dietary minerals intake and duration of COVID-19 symptoms was sex-specific. In males, there was a significant inverse relationship between **headache duration** and **zinc intake**, with participants reporting headache symptoms for 8+ days also reporting the lowest intake of zinc compared to those who reported no headache, or who had a headache for 1-7 days ($P = 0.007$). This relationship was not observed in females. We did not observe any relationships between toenail mineral content and symptom duration in our preliminary analysis.

Conclusion

In a population of young, predominantly non-hospitalized COVID-19 patients, higher intake of dietary zinc was associated with reduced duration of COVID-19 related headache in males. We aim to analyze the results further and publish the outcome in an appropriate peer reviewed journal.