**COSMOS Manuscript Proposal Template**

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**For Non-DPM Proposing Investigators:**

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***SAMPLE PROPOSAL***

***PROVIDED TO ASSIST IN THE DEVELOPMENT OF NEW PROPOSALS***

**Correlates of serum lycopene in older women**

**RATIONALE (2-3 paragraphs)**

Over the past decade, increasing interest has been focused on the role of antioxidant nutrients in disease prevention. The carotenoid pigments are well known for their antioxidant properties. Only β-carotene has been studied extensively; the other major carotenoids found in the human body have garnered much less attention. Of this group, lycopene is particularly important because it comprises roughly half the total carotenoid concentration of human serum. Dietary lycopene is primarily derived from tomatoes and tomato products.

Although research conducted over the past 8 years suggests that lycopene may play an important role in disease prevention, there is little information about predictors of serum lycopene. It is the only major carotenoid found to decrease with age and does not appear to be higher in women than men, as are other carotenoids, thus, lycopene status may be particularly important in older women. By investigating the factors associated with serum lycopene in a subset of older women, a better understanding of the relationship between this potentially important nutrient and certain disease processes may be gained.

**OBJECTIVES**

1. To evaluate the relationship of serum lycopene with dietary lycopene intake, foods high in lycopene and other dietary factors as estimated by the baseline COSMOS FFQ.

2. To assess the relationship of serum lycopene with lifestyle, demographic, and biochemical factors of COSMOS participants at baseline.

**KEY EXPOSURE VARIABLES**

age

ethnicity

BMI

smoking

lycopene intake

total caloric intake

etc

**KEY OUTCOME VARIABLES**

serum lycopene

etc

**ANALYSIS PLAN (brief description; include likely sensitivity analyses)**

We propose to analyze baseline data from COSMOS participants among those blood samples that have been analyzed. We will describe the intake and serum concentration of lycopene according to demographic characteristics of the study population. We will examine the relationship between serum lycopene and other factors using Pearson correlation coefficients and multiple linear regression. For factors that are found to be associated with serum lycopene, e.g. lycopene intake, we will test for modification of the effect by age, ethnicity, and smoking status (current, former, or never). If any of the findings differ by these variables, the results will be stratified by these variables.

**TABLES AND/OR FIGURES**

**Table 1. Demographic and physiologic characteristics**

Variable Mean or percentage SD Serum lycopene

Lycopene intake

Total caloric intake

Other variables

**Table 2. Pearson correlations (r) of serum lycopene with dietary estimates, blood measures, and personal characteristics**

Variable Crude Serum Lycopene Adjusted Serum Lycopene

Age

BMI

Dietary lycopene

Other variables

**Table 3. Multivariate regression analysis of serum lycopene on physiologic and personal characteristics**

Independent Variable Regression Coefficient Standard Error Significance

(Intercept)

R2=