



**Susan G. Komen**

**Research Grants – Fiscal Year 2015**

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**Nail salon work and mammographic density in Vietnamese Americans**

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**Lead Organization:** USC/University of Southern California

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**Public Abstract:**

We aim to investigate the impact of nail salon work on breast cancer risk in Vietnamese American women. Nail salon workers are continuously exposed to the toxic fumes and chemicals from nail care products. Nail care products contain a variety of toxic chemicals and certain chemicals could have adverse effects on women's hormonal system such as in the production and/or elimination of various metabolites. Disruption in hormonal systems may have implications in women's breast cancer risk. However, there are no government regulations on pre-marketing safety testing of cosmetics and data are limited on human health effects of these products and ingredients. Human data on breast cancer risk in nail salon workers are almost nonexistent. One recent study conducted in California aimed to address this question, but had limitations in a number of areas including insufficient follow-up time (i.e. period of waiting for cancer outcomes to occur after carcinogenesis) for nail salon workers who have entered this workforce in recent decades. Two other epidemiological studies investigated specific chemical ingredients widely used in nail care products (called phthalates) and found associations with increased breast cancer risk.

We have designed this study to investigate whether nail salon workers are at an elevated risk of breast cancer by assessing mammographic density (MD). MD is a well-established strong predictor and early marker of breast cancer risk and is assessed from mammogram images. Women with denser breast have



a ~4 fold higher breast cancer risk than women with non-denser breasts. In this study, we will focus on an underserved, minority ethnic group that comprises the majority of the nail salon workers: in California, it is estimated that up to 80% of nail salon workers are Vietnamese immigrants.

Our study will be one of the first to investigate the role of nail salon work in relation to breast cancer risk, using MD as our endpoint. Results from this study will inform the magnitude of effect; these results will help in designing larger epidemiological studies of nail salon workers and laboratory studies to identify risk-associated chemicals. Results from this study will be novel and should have relevance to a large underserved female workforce.

