

PROTECT The Role of Paternal Occupational Data in Pregnancy Cohort Study in Puerto Rico



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INTRODUCTION

The PROTECT Center seeks to understand the mechanisms by which exposure to mixtures of suspect chemicals contributes to adverse pregnancy outcomes. Participants who were previously involved in the PROTECT project are now simultaneously contributing to the Environmental Influences on Child Health Outcomes (ECHO) project. Within the ECHO study, the participants complete the **Caregiver Occupation and Employment questionnaire**, which scrutinizes the context of occupational exposure during pregnancy, **specifically focusing on the occupation and employment of their partner**. Limited research has been conducted on the correlation of environmental exposure on male reproductive health. **Therefore, through a section of the Caregiver Occupation and Employment questionnaire, this project has been developed to identify detailed data on paternal occupation and employment in fields with high exposure risks.**



Legend
♦ Private Practice OB/GYN
♦ UPR Medical Sciences Campus
♦ Affiliated Hospitals
♦ PROTECT ECHO Office
♦ Federally Qualified Health Centers (Local Community Clinics)
■ PROTECT study sites

RESULTS

A total of 327 pregnant participants answered questionnaires about the fetus' biological father's occupation.

- The median age of the fathers was 29 years.
- 58.6% had at least some college education.
- 87% were married or cohabiting.

The father's occupation was classified into **four categories**: manual labor, clerical (66.4%) and support workers (5.5%), managers, and professional technicians (21.4%).

- Most of the fathers worked in **manual labor (66.7%)**.

The literature review indicates that male reproductive health may be adversely affected by the following exposures:

- **Physical exposure:** Heat and sedentary body positions
- **Psychological exposure:** Occupational stress and burnout
- **Chemical exposure:** Pesticides and other environmental substances.

CONCLUSIONS

By knowing the occupation and work environment, preventive measures can be taken to reduce or eliminate potential occupational exposure risks during pregnancy.

To ensure a safe work environment for the pregnant woman, baby, and partner, some preventive measures may include:

- environmental health education
- workplace adjustment recommendations
- possible changes in work tasks
- the use of appropriate personal protective equipment
- other preventive measures

Also, assessing paternal work conditions and hazards enables a more comprehensive evaluation of parental exposures relevant to fertility, pregnancy, and child development in cohort studies. This will lead to a further understanding of the relationship and possible sources of exposure.

Subsequently, **as part of the new phase of the ECHO project, we propose to initiate a study on the male contribution to fetal development.**

REFERENCES

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- Radke, E. G., Braun, J. M., Meeker, J. D., & Cooper, G. S. (2018). Phthalate exposure and male reproductive outcomes: A systematic review of the human epidemiological evidence. *Environment international*, 121(Pt 1), 764-793.
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METHODOLOGY

First contact



Sign informed consent.



Collect samples.



Take measurements.

Second contact



REDCap

Participants are contacted by our Call Center team to follow up and complete the questionnaire using the REDCap data collection platform. This questionnaire was conducted at two different time points, at the time of consent and during the third-trimester visit, to assess whether the father's work exposure environment had changed.



Scan to see the questionnaire!



Northeastern University



UNIVERSITY OF GEORGIA



National Institute of Environmental Health Sciences