Genetic Effects on Environmental Vulnerability to Disease (Novartis Foundation Symposium 293)

This book, part of the Novartis Foundation Symposia series, brings together contributions from experts from multiple disciplines.

Much research has attempted to show direct linear relations between genes and disorder. However, scientists have been discouraged by inconsistent findings based on this simple gene-phenotype approach. The alternative approach is to incorporate information about the environment. A gene-environment interaction approach assumes that environmental pathogens cause disorder, whereas genes influence susceptibility to environmental pathogens.

The experts in this text discuss:
- How epidemiological cohort studies can better integrate physiological (mechanistic) measures;
- How best to characterise subjects’ vulnerability versus resilience by moving beyond single genetic polymorphisms;
- How gene hunters can benefit from recruiting samples selected for known exposures;
- How environmental pathogens can be used as tools for gene hunting;
- How to deal with potential spurious (statistical) interactions, and
- How genes can help explain fundamental demographic properties of disorders (e.g. sex distribution, age effects).

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