US Environmental Protection Agency:
Environmental Risk Factors for Older Adults

EPA researchers have developed the first publically-available database that can be used to model the physiology and metabolism of older adults to determine whether environmental pollutants put them at risk. This peer-reviewed database can be used to produce environmental health risk assessments that help protect older adults from environmental health hazards while still recognizing the need for the use of chemicals and pharmaceuticals in commerce.

Lead Agency:

US Environmental Protection Agency

Agency Mission:

The mission of the U.S. Environmental Protection Agency (EPA) is to protect public health and safeguard the natural environment.

Principal Investigator:

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General Description:

EPA researchers have developed the first publically-available database that can be used to model the physiology and metabolism of older adults to determine whether environmental pollutants put them at risk. This peer-reviewed database can be used to produce environmental health risk assessments that help protect older adults from environmental health hazards while still recognizing the need for the use of chemicals and pharmaceuticals in commerce.

EPA engaged the world's top experts to collect the factors to produce this resource. Before this database was developed and made available to the public, risk assessors had to rely on physiological data that were scattered throughout the scientific literature. In addition, mathematical models that incorporated older adult susceptibilities to environmental health hazards did not exist in the scientific or risk assessment literature. This database allows these critical models to be generated, enhancing the science-based evaluation of risk for older adults. This single, reviewed source standardizes risk assessment models while using the best available data. Importantly, it captures factors determined scientifically rather than using default factors which may underestimate or

overestimate risk. This, in turn, ensures that these environmental health risk assessments provide better protection for older adults.

Although this database was only recently unveiled to the public, it has already attracted attention from the environmental health, occupational health, and pharmaceutical communities because of its general applicability to the concerns of older adults. Combined with information from similar databases providing parameters for young children and adults, this database will be instrumental in enhancing risk assessment across the entire human lifespan.

Excellence: Why is this project exceptional?

EPA engaged the world's top experts to collate factors to produce this peer-reviewed publically-available resource, the first of its kind to address the physiology of older adults.

Significance: How is this research relevant to older persons, populations and/or aging society?

Physiological factors are scattered throughout the scientific literature. This single, reviewed source provides for standardization of models and the use of the best available data. Science-based factors replace default uncertainty factors to produce environmental health risk assessments that provide better protection for older adults from environmental health hazards while recognizing the need for the use of chemicals in commerce.

Effectiveness: What is the impact and/or application of this research to older persons?

This database, only recently unveiled to the public, has already attracted attention from the environmental health, occupational health and pharmaceutical communities because of its general applicability to concerns of older adults. Taken together with information from similar databases providing parameters for young children and adults, risk assessment is enhanced across the entire lifespan.

Innovation: Why is this research exciting or newsworthy?

Mathematical models that incorporate older adult susceptibility to environmental health hazards do not exist in the scientific or risk assessment literature. This database will allow these critical models to be generated, enhancing the science-based evaluation of risk for older adults from environmental contaminants.