

Phthalate Exposure Assessment

Preliminary Findings

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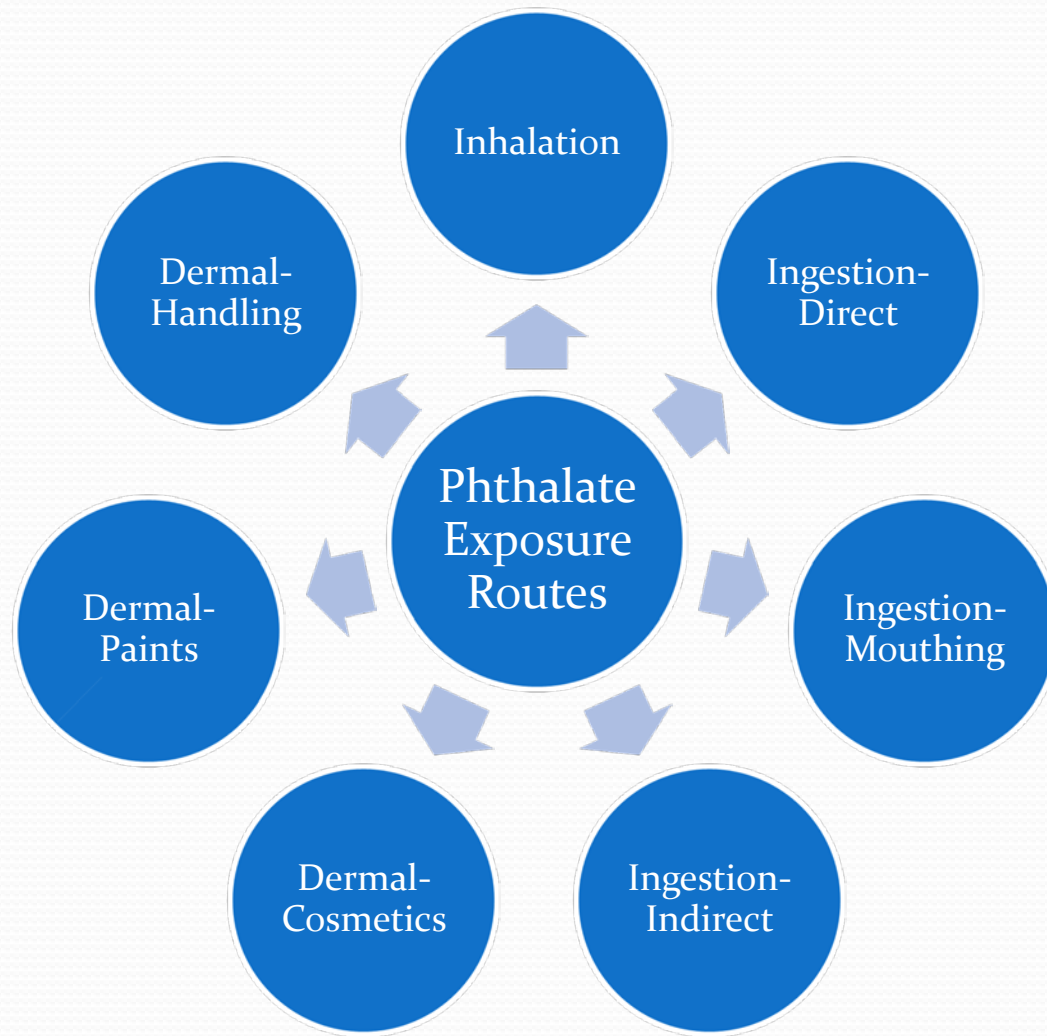
Objective

Estimate aggregate human exposures to eight phthalates by analyzing individual human exposures to specific media

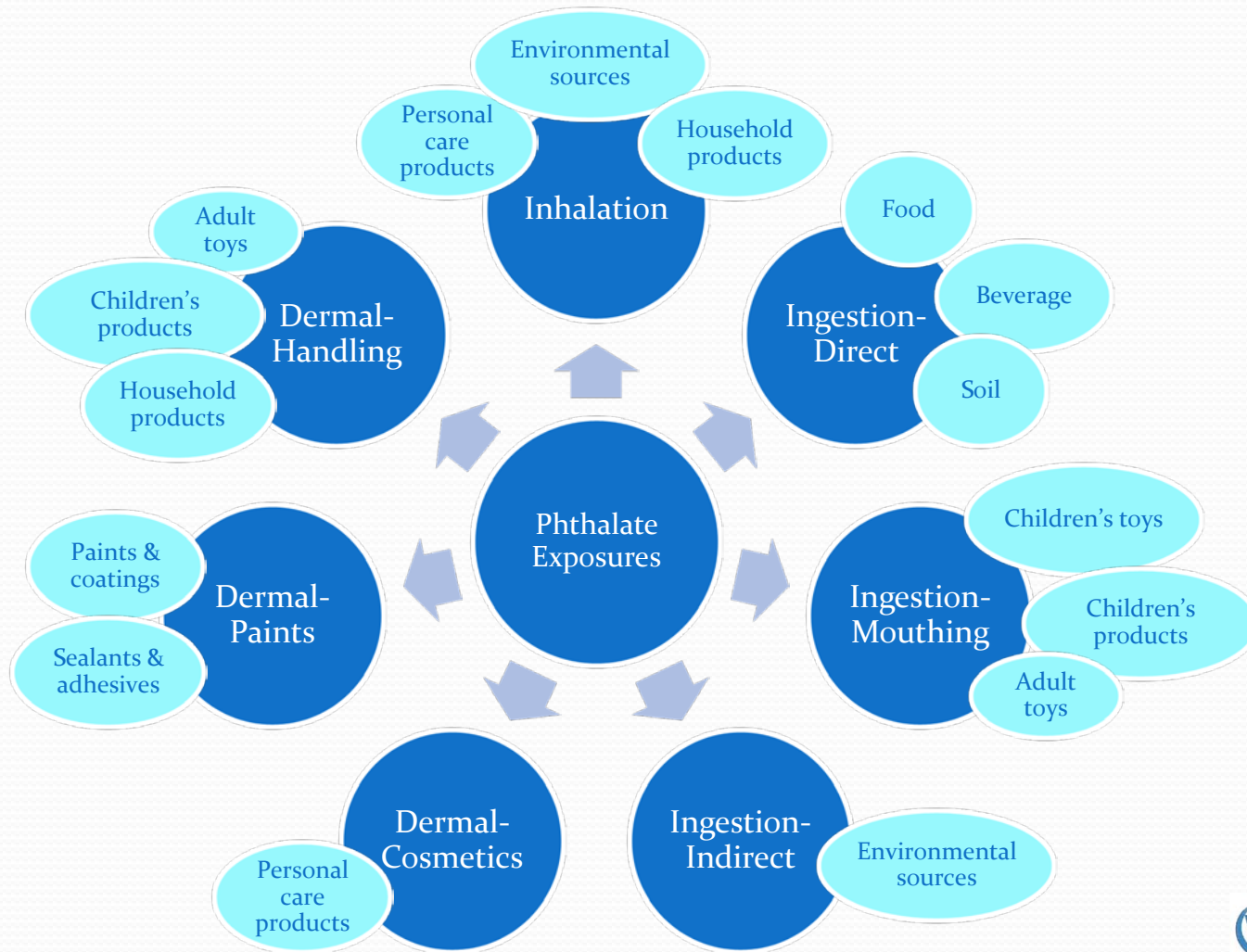
Background

- Phthalate exposure routes
- Exposure route-media combinations
- Phthalates assessed
- Populations
- Data requirements

Phthalate exposure routes



Exposure route-media combinations



Phthalates, populations & data requirements

List of Phthalates

Diethyl phthalate	DEP
Di-n-butyl phthalate	DBP
Diisobutyl phthalate	DIBP
Benzyl butyl phthalate	BBP
Di (2-ethyhexyl phthalate)	DEHP
Di-n-octyl phthalate	DNOP
Diisononyl phthalate	DINP
Diisodecyl phthalate	DIDP

Population groups

Pregnant women/women of child bearing age
Infants (0 to <3)
Children (3 to 12)
Adults

Data quality/confidence

Concentration/residue data	Low, medium, high
Exposure factors	Low, medium, high
Exposure calculations	Low, medium, high

Statistics

Average	Arithmetic mean/median
Upper Bound	90th percentile

Methodology

- Estimate aggregate exposures using “foreword” exposure calculations
- Compilation of phthalate concentrations
 - Data obtained from CPSC
 - References from Phthalates Exposure Data and Assessments Report (*Submitted to CPSC in February 2009 by Versar Inc.*)
 - Additional literature search
- Compilation of exposure factors
 - Data obtained from CPSC (Khalisa’s EXCEL workbook)
 - Exposure Factors Handbook 2009
 - Additional literature search (*Wormuth et al., 2006*)

Methodology (cont'd)

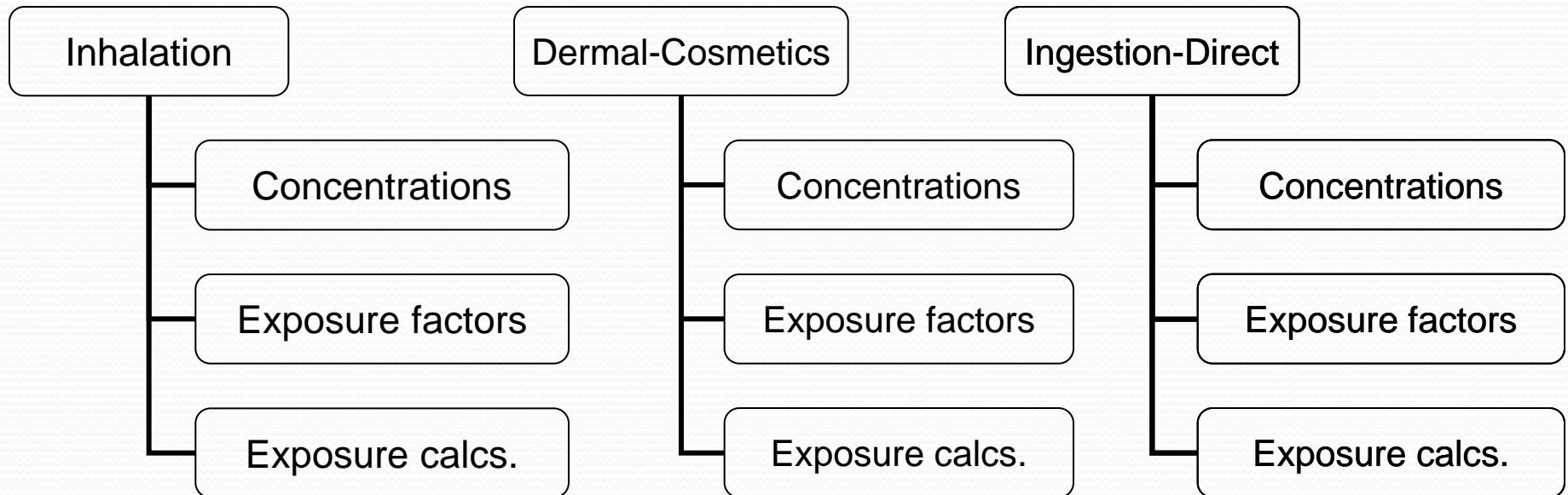
- Data compilation guidelines
 - Focus mainly on US data
 - Use European data when US data are missing or limited
 - Focus on recent data (> 2000)

- Data quality guidelines
 - 'High'– Recent US data; at-least 3 records per phthalate-media combination; data obtained from peer reviewed journals
 - 'Medium'– European or older data; data obtained from web-based articles and other non reviewed technical articles
 - 'Low'– Limited (<3 records per phthalate-media combination)

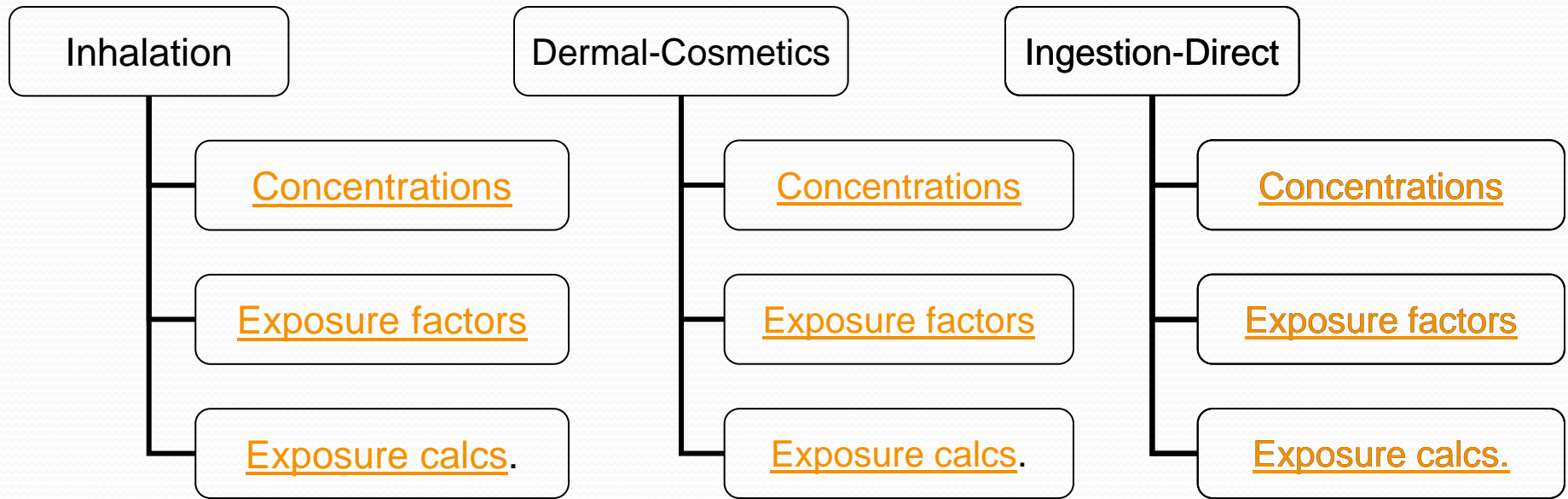
Preliminary Results

Aggregate exposures calculated from a variety of media for eight phthalates for pregnant women/women of child bearing age for the following exposure routes:

- Inhalation
- Dermal-Cosmetics
- Ingestion-Direct



Preliminary Results (cont'd)



Next steps

- Focus on obtaining exposure factors for children
- Continue with literature search for additional concentrations of phthalates
- Continue with QA/QC of all data compiled thus far