

HERAG

Health Risk Assessment Guidance for Metals

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**International Copper Association
Health and Environment Program**

***Workshop on Health Risk Assessment of Essential Metals
University of Ottawa - May 6 and 7, 2008***

HERAG - Who? When?

🌐 Launched/sponsored by

ICMM
International Council
on Mining & Metals

EM EuroMetaux
EUROFER
European Confederation of Iron and Steel Industries

🌐 Implemented/carried out by

EBRC







🌐 Need recognized in 2003

🌐 Workshops started in early 2004

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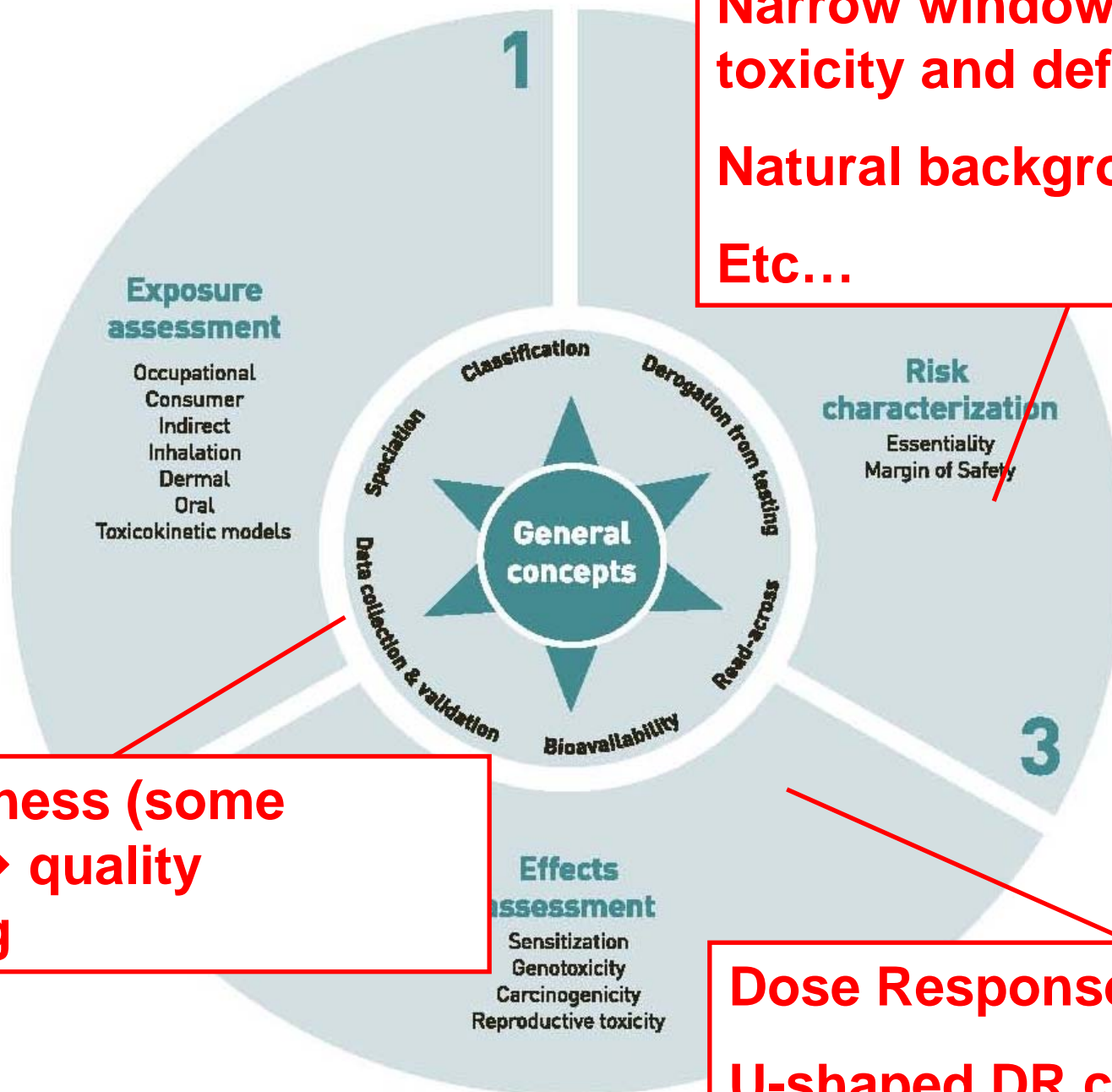
HERAG Aim

-  **Assembly of most advanced and appropriate methods for RA (human health) of metals**
-  **Address specific properties of metals, -compounds, alloys and other naturally occurring inorganic substances**
-  **Apply RA methodology different to that developed for organic industrial chemicals**
-  **Amend, not replace, current RA methodology**

HERAG Intended Use

- **Aid to professionals in the field of human health RA**
 - **Industry**
 - **Regulatory authorities (national/international)**
- **Basic understanding in RA methodology assumed**
- **“Living document”**

Figure 1: Overview of key building blocks



Narrow window between toxicity and deficiency

Natural background

Etc...

Data richness (some metals) → quality screening

Dose Response for metals

U-shaped DR curve

HERAG Documents

Summary Document

- **key guidance elements for metals risk assessment.**
Addresses purpose, intended use, scope and organization of the HERAG Project

8 final fact sheets

- **more elaborated and detailed guidance on specific aspects of risk assessment**
- **include concise summaries of relevant aspects from previous metal risk assessments**

FINAL HERAG FACT SHEETS

Exposure Assessment

- 01 Assessment of occupational dermal exposure + dermal absorption for metals / inorganic metal compounds**
- 02 Assessment of occupational inhalation exposure and systemic inhalation absorption**
- 03 Indirect exposure via the environment and consumer exposure**

Effects Assessment

- 04 Gastrointestinal uptake and absorption, and catalogue of toxicokinetic models**
- 05 Mutagenicity**
- 06 Quality screening procedures for health effects literature**

Risk Characterization

- 07 Essentiality**
- 08 Choice of assessment factors in health risk assessment for metals**

Available upon request:

- 09 Classification, read-across, derogation criteria; 10 Carcinogenicity;**
- 11 Reproductive toxicity; 12 Sensitization**

HERAG Downloads

- 🌐 **HERAG Project Website by EBRC Consulting:**

<http://www.ebrc.de/herag-project/>

<http://www.herag.net/>

- 🌐 **HERAG Project Website by ICMM:**

http://www.icmm.com/library_pub_detail.php?rcd=207

- 🌐 **Print copy of summary document + CD-ROM (8 final fact sheets) from ICMM: info@icmm.com**

HERAG Counterpart

MERAG

- **Metals Environmental Risk Assessment Guidance**

Thank you!

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