

1 Prioritised substance group: Lead- NOT UPDATED

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1.1 Policy-related questions

1. What is the concentration of lead in the human blood nowadays (after phasing out leaded petrol) in the countries of Europe?
2. Do blood lead levels of both adults and children still indicate permanent existence of lead exposure?
3. What are the sources of still existing lead exposure in different countries of Europe?
4. What kind of exposure sources are the most important for the children of various age groups and the younger or older adult population?
5. Taking the hazard from transplacental lead exposure of the unborn child into consideration, what are the blood lead levels of pregnant women?
6. Taking the presumably low concentration of lead in blood, is it feasible to measure blood lead levels in children from as small amount of blood as it can be gained from capillary samples? What criteria should be applied in order to avoid contamination from outside sources?

1.2 Research Activities to be undertaken

While completing this table please think of data and gaps concerning toxicology (and exposure [in three dimensions: **location** (differences between the countries), **time** (trends) and **age** (data available for which age group)]. If no HBM method is available or the method has to be harmonised within partner countries, please indicate this too.

Table 1 Research activities research activities to be carried out to answer the policy questions for lead

Policy question	Substance	Available knowledge	Knowledge gaps and activities needed
1, 2	Lead	After phasing out leaded petrol, blood lead levels significantly dropped but not at the same extent and not at the same time in different countries.	Collection of information on the time and extent of phasing out lead from petrol in the various countries. Collection, comparison and evaluation of existing data on current blood lead levels and their integration into IPCheM
3,4,5	Lead	Leaded petrol used to have dominant role in blood lead levels. After its phasing out, several possible lead sources earlier thought to be insignificant (e.g. drinking water from leaded pipes, lead-containing products, etc.) may have become important, because there is no safe level of lead exposure	In order to eliminate still existing lead sources in countries <u>showing interest in participation</u> , we have to identify their importance in the exposure of different population subgroups (e.g. children 1-3 years, 4-6 yrs., 7-14 yrs. and 15-18 yrs., as well as adults (19-40 years; 41-65 years; > 65 years). Special attention should be paid to pregnant women, they should be a separate group in the survey.
6	Lead	It is unquestionable, that blood lead level is the most reliable marker of lead exposure, especially in children. (In adults, bone lead content can also be used to determine lead content accumulated in the organism). Taking venous blood samples from children lacking any clinical symptoms or environment suspicious for lead contamination, only for screening purposes raises ethical concerns. Therefore more practicable way of sampling would be capillary blood collection. In principle it is possible to use not only venous but also capillary blood samples for the determination of blood lead level but there is a risk of contamination which may obscure the very low concentrations.	In order to demonstrate availability of appropriately trained personnel, parallel measurements of blood lead levels should be performed from capillary and venous blood samples <u>in small groups of children</u> . Detailed description of sampling circumstances should be provided.