

The French Dioxin and Incinerators Study: presentation of the participation and examination of the non response

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Introduction

The objective of French Dioxin and Incinerators Study was to determine whether the emissions of the waste incinerators contribute to the body-burden of PCDDs, PCDFs, and PCBs in the surrounding population. The body burden was estimated through an analysis of PCDDs, PCDFs and DL-PCBs levels in serum.

The study involved 8 areas surrounding 8 incinerators and included 1030 adults (30-65 years old).

Subjects were recruited in two steps and data were collected through phone-call and face-to-face questionnaires.

One of the challenges of the project was to convince the population to participate in the study.

In this poster:

- Participation is presented,
- Non-response is examined, through the comparison of participants and non-participants on socio-demographic and local food consumption characteristics.

Methods

POPULATION

The study population is composed of 1030 adults selected through a stratified two stage random sampling. In each of the 8 study areas about 130 people were involved.

Exposed people were defined as living in the impact area of the incinerator's plume and **not exposed people** as living beyond 20 km of the incinerator and not exposed to known dioxins sources (referents).

SAMPLING AND INCLUSION

In order to be eligible for participation in the survey, people were first contacted by phone to check the inclusion criteria.

Inclusion criteria:

- aged from 30 to 65 years old,
- living for at least 10 years around the incinerator or in the referent zone,
- **not** occupationally exposed to dioxins and furans,
- for women, no **breastfeeding** in the past 15 years..

First step results:

- about 11 200 households were contacted by phone,
- about 6 500 households have answered to the phone call,
- about 5 200 households were eligible,
- 2460 households randomly sampled.

People from each of the 8 sites were then sampled using a two-stage probability sample design, stratified by:

- area: exposed or not,
- eating locally-produced food or not.

Stratification allowed over-representation of samples of certain consumer profiles in order to study them with a sufficient power. This over-representation is compensated in analyses using survey design weights.

Households were sampled using probabilities proportional to the size of the household and one eligible adult in each household was selected.

RECRUITMENT

Each subject who was sampled was asked to participate in a 60 to 90 minutes long face-to-face interview including socio-demographics environmental and nutritional questionnaires. After a medical interview, a blood sample collection of 200 ml was obtained by the staff of the French National Blood Agency (EFS).

Definition of a participant:

- fulfilled inclusion criteria,
- provided a blood sample for dioxin analysis,
- answered to each questionnaire.

Efforts were made to promote the study at the local level and to enhance participation. Regional units of the French Institute for Public Health Surveillance were in charge of the organization of local communication campaigns. (See poster Schmidt M. et al for more details)

EXAMINATION OF THE NON RESPONSE

Socio-demographics and local food consumption data (supposed to be linked to dioxin intake) were available to compare participants and non participants in the second step.

Non participants are divided in four different groups:

- The refusal group composed of people that definitely refused to participate,
- The unreachable group composed of households not reachable after 10 phone calls (different days and times),
- The non-eligible group with people that didn't respect our eligibility criteria
- The non eligible for medical reasons group composed of subjects who have medical contraindication to a 200 ml blood test.

Results and discussion

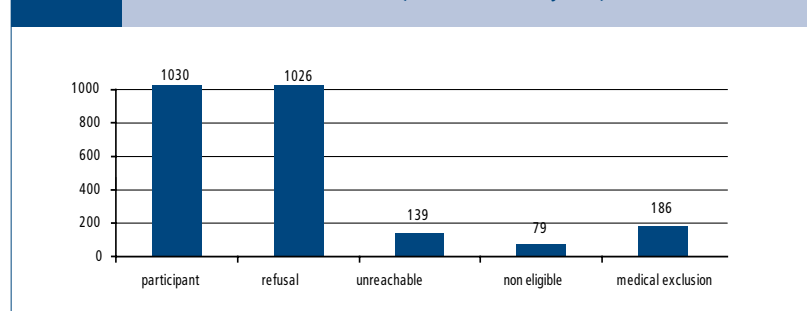
PARTICIPATION

The participation rate was 50.1%.

Exposed areas: 55% (from 44% to 63% in the 8 area).

Non exposed areas: 42% (from 36% to 51% in the 8 areas).

FIGURE 1 PARTICIPATION IN THE STUDY (NUMBER OF SUBJECTS)



The 'medical exclusion' group included:

- medical contraindication (68%),
- vein trouble (20%),
- recent blood donation (11%).

The 'Non-eligible group' included:

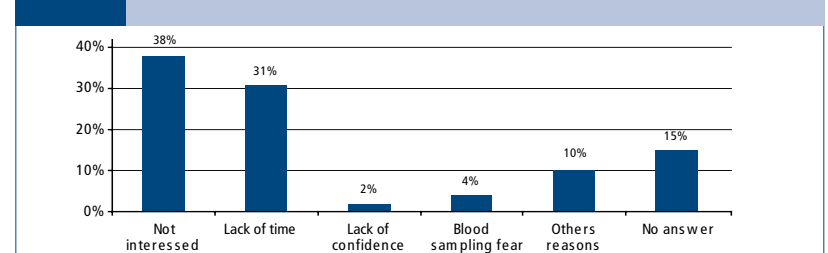
- people occupationally exposed to dioxin (61%),
- outside of the exposed area (16%),
- recent weight variation (6%).

NON PARTICIPATION

The most common reason for refusing was a lack of interest (38%), see figure 3.

As we expected, a lack of time (31%) was an important factor in refusing that's why it's important to adapt the organization to save participants' time. Results are identical for the 8 different sites and for the exposed and non-exposed areas.

FIGURE 2 REASONS FOR REFUSAL



COMPARISON OF PARTICIPANTS AND NON-PARTICIPANTS FOR AGE AND SEX

No difference between average age of participants (51.4 yrs) and non participants (50.8 yrs). The average age of people with medical exclusions (53.7 yrs old) was slightly higher than the age of the other groups (see figure 3a).

The sample was composed of 54% of women, 56% for participants and 52% for non participants. As usual, the participation rate of women was higher. The percentage of women among non eligible was only 43%, essentially due to exclusions for occupational exposure to dioxins, (e.g. firemen, steelworker, house painter...) more frequent in men (see figure 3a).

FIGURE 3A AVERAGE AGE OF PARTICIPANTS AND NON PARTICIPANTS

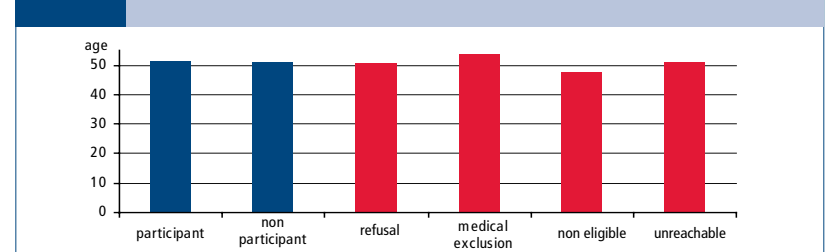
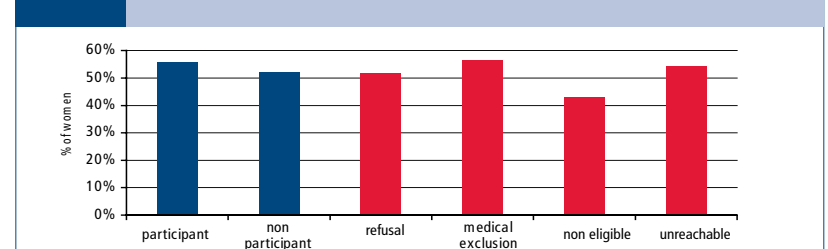


FIGURE 3B PERCENTAGE OF WOMEN IN PARTICIPANTS AND NON-PARTICIPANTS

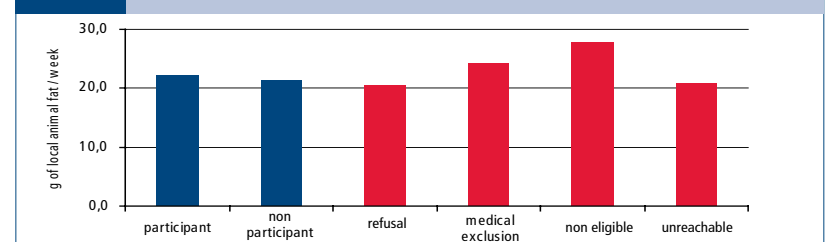


COMPARISON OF PARTICIPANTS AND NON-PARTICIPANTS FOR LOCAL FOOD CONSUMPTION

Local animal fat consumption: no differences between participants and non-participants were found (animal fat from meat, eggs and milk). Local animal fat consumption was slightly higher for 'non-eligible' and 'medical exclusion' (see figure 3a).

Local fruits and vegetables consumption was slightly higher for participants than for non-participants.

FIGURE 4 AVERAGE LOCAL ANIMAL FAT CONSUMPTION (G OF LOCAL ANIMAL FAT / WEEK) FOR PARTICIPANTS AND NON-PARTICIPANTS



Conclusions

The participation rate (50.1%) of the French Dioxin and Incinerators Study was quite satisfactory if we consider that each subject who was sampled was asked to participate in a long face-to-face interview (60 to 90 minutes) and had to give a large blood sample (200ml). In this kind of study the participation rate is dependant on a good local communication campaign and a flexible organization (the interviewers and the medical team have to be able to adapt to people in terms of time and place).

The comparison of participants and non-participants showed:

- no difference for socio-demographic data (age and sex),
- no difference for local animal fat consumption.

References

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Acknowledgments

This study was supported by the French Ministry of Health within the framework of the Cancer Plan. The authors would like to acknowledge the scientific committee for its advice, the population for its participation and all the staff from the regional units of INVS and the French National Agency for Blood.