

### The ELFE Team

- Director:** Marie-Aline Charles
- Co-Directors:** Patricia Dargent and Bertrand Geay
- Project coordinator:** Pascal Arduin
- International relations:** Henri Leridon
- Partnerships with Institutes and Associations:** Xavier Thierry
- Program managers:**
  - **Social sciences:** Jean-Louis Lanoë
  - **Health:** Corinne Bois and Marie-Noëlle Dufourg;
  - **Environmental health:** Ilias Kavouras
- National coordinator:** Patrick de Colomby
- Biological sampling:** Cécile Zaros
- Data managers:** Marie Cheminat and Karine Lautrédoux
- Secretary:** Mathieu Boivin
- Information systems:** Ando Rakotonirina, Sophie de Visme, Rainer Kugel
- Communication:** Nathalia Baltzinger
- Surveys:** Ruxandra Breda-Popa
- Service Editions:** Isabelle Milan
- Service de Méthodes Statistiques:** Elisabeth Morand

### Objectives

The primary objective of the ELFE study is to examine the impacts of the social and economic status of the family, exposures to environmental stressors and nutrition from birth until adulthood on the growth, development, academic achievements, health and quality of life of children in France.

The specific objectives of the environmental health research area focus on:

- Estimate the exposures to outdoor atmospheric pollutants and assess their impacts on the growth of the fetus during pregnancy and the respiratory health of the children until adulthood
- Estimate the exposures to natural and medical radiation and assess their impacts on the health of the children with emphasis on cancer
- Estimate the exposures to chemicals present in the household and emerging contaminants and assess their impacts on the health of the children with emphasis on their development, neurotoxic and reproductive disorders.

### Recruitment

- Recruitment will take place after birth in about 350 birthplaces (2/3 of all birthplaces) in metropolitan France
- 20,000 infants born in the first week of April, July, October and December of 2011

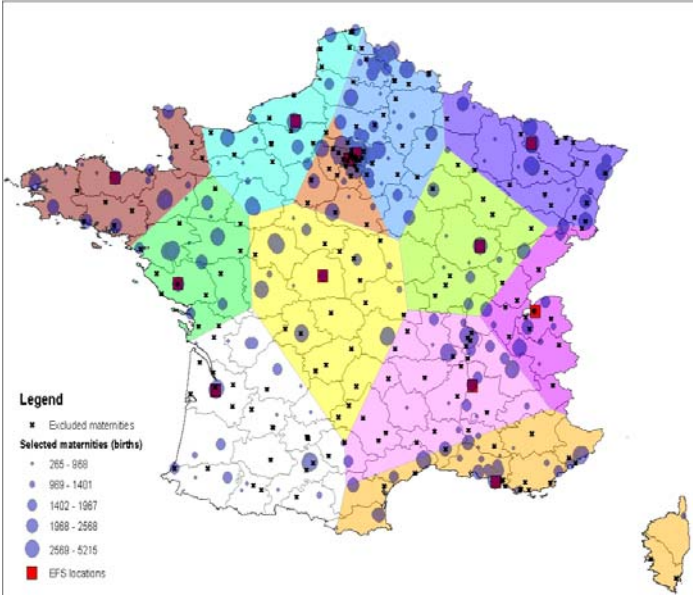


Figure showing the number of births per birthplace

### Data Collection

| Activity                                                                                  | Pregnancy | Birth | 6-8 wks | 1 yr | 2 yrs | 3 yrs | 4 yrs | 6 yrs | 8 yrs | 10 yrs | 11 yrs | 14 yrs |
|-------------------------------------------------------------------------------------------|-----------|-------|---------|------|-------|-------|-------|-------|-------|--------|--------|--------|
| In-person and phone interviews                                                            |           | ✓     | ☎       | ✓    | ☎     | ✓     | ☎     | ✓     | ☎     | ✓      | ☎      | ✓      |
| Environmental measurements (house dust)                                                   |           |       | ✓       |      |       | ✓     |       |       |       |        |        |        |
| Biological samples (urine, blood, hair, umbilical cord, venus blood, meconium, colostrum) |           | ✓     | ✓       | ✓    |       | ✓     |       | ✓     |       |        |        |        |
| Medical records, examination and tests                                                    |           | ✓     |         |      | ✓     | ✓     | ✓     |       |       | ✓      |        | ✓      |

#### Environmental Stressors to be Assessed:

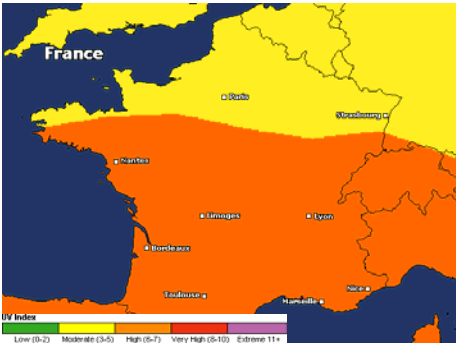
- UV radiation; medical radiation; indoor radon;
- Atmospheric PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub> and benzene;
- Pesticides and Phthalates;
- Lead and Mercury;
- Allergens;
- Bisphenol-A;
- PCBs and;
- PCDD/Fs.

#### Environmental Stressors under evaluation for inclusion:

- Electromagnetic (RF and ELF) radiation
- Noise
- Weather extremes
- PAHs
- Indoor contaminants including mold
- Disinfection by-products in tap water
- Arsenic, manganese and cadmium

### Exposure Assessment (a combination of environmental and biological monitoring)

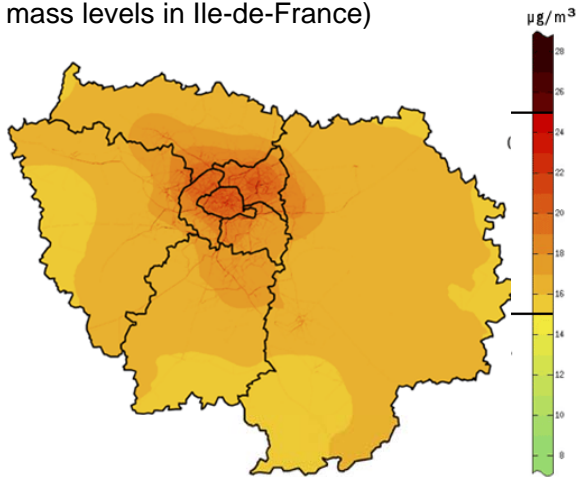
UV radiation: Satellite-borne data and geospatial modeling (UV index max of France on August 31,2010)



Radon: Personal measurements (DOSIRAD dosimeter)



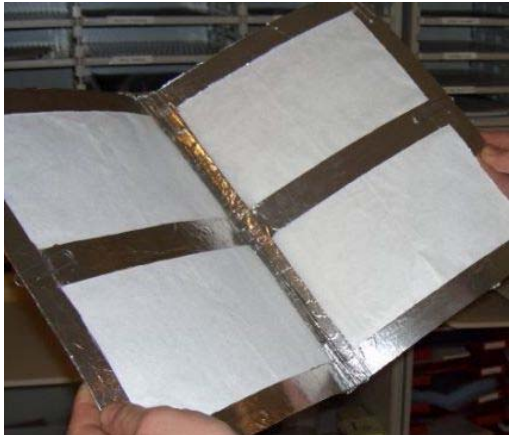
Air pollution: Dispersion modeling, ground-based measurements and geospatial modeling (2009 annual PM<sub>2.5</sub> mass levels in Ile-de-France)



Mercury: Mother's and child's hair at 6-8 weeks and 3 years



Allergens, phthalates and pesticides in house dust: Electrostatic filters exposed for 3 months at 6-8 weeks and 3 years



Lead, PCBs, dioxins, emerging contaminants: Venus blood and colostrum at birth



Phthalates, pesticides, BPA, cotinine: Mother's and child's hair at birth, 6-8 weeks and 3 years



Wish us  
Good luck!