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Our Unit project, which aims to study the determinants of aging and chronic diseases and the consequences of aging on medical and social care, relies on a conceptual framework that provides a global approach of aging, as illustrated below.

Conceptual Framework of VIMA

Health-related behaviors and lifestyle factors

*Determinants of health-related behaviors in elderly populations
(marie.zins@inserm.fr)

Occupational exposures and working conditions

*Impact of occupational exposure to disinfectant or cleaning agents on asthma (nicole.lemoual@inserm.fr)
*Difficult working conditions, physical performance, well-being, and musculoskeletal disorders
(alexis.descatha@uvsq.fr)

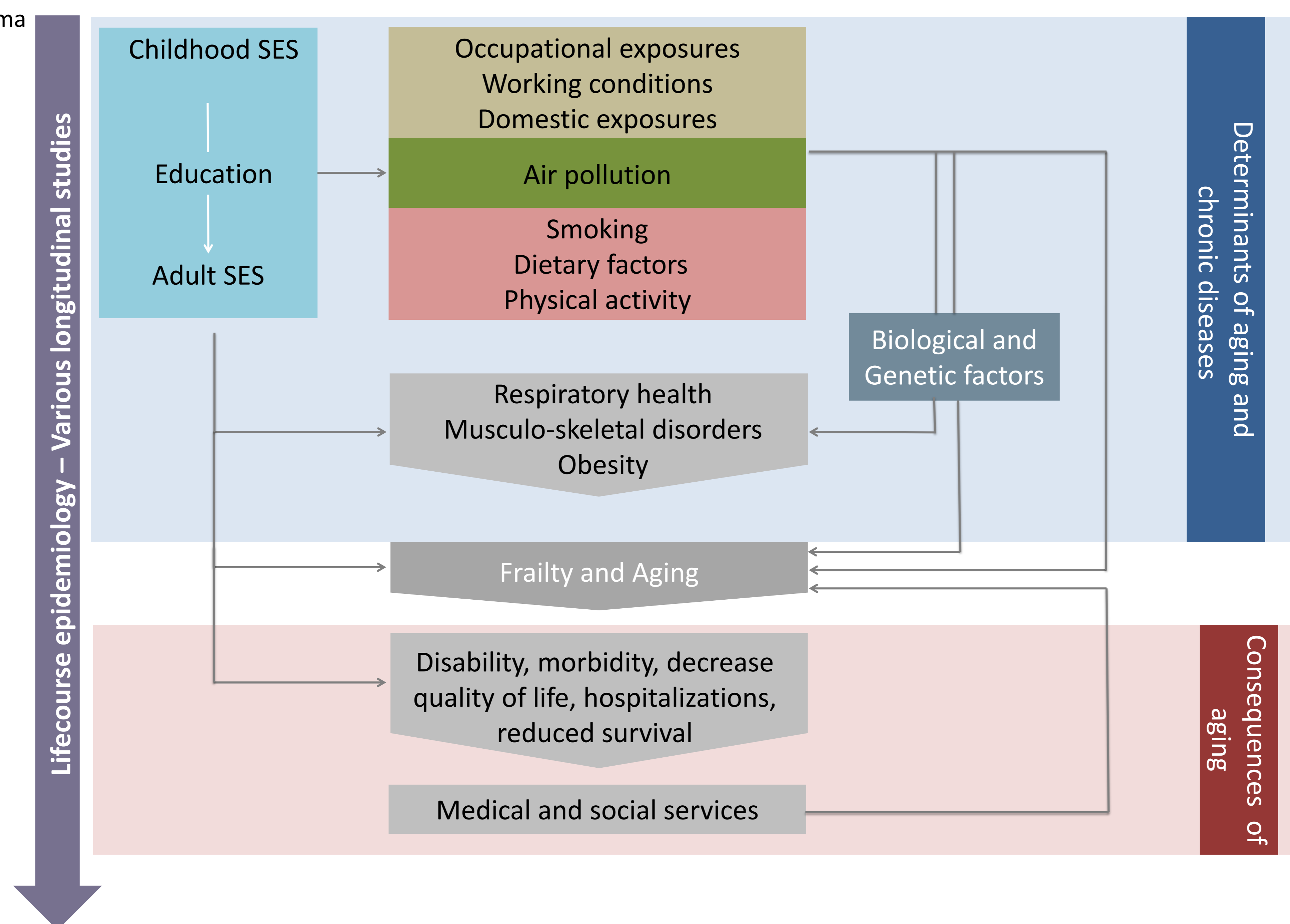
Social Factors

*Social and geographic determinants of asthma
(nicole.lemoual@inserm.fr)
*Social determinants of health inequalities in the elderly
(marcel.goldberg@inserm.fr)

Nutritional Factors

*Causal effect of nutritional, environmental and social factors on Asthma
(raphaelle.varraso@inserm.fr)
*Association between obesity and cardiometabolic complications
(sebastien.czernichow@apr.aphp.fr)

Social, occupational, environmental and behavioral determinant of aging and chronic diseases



Outdoor and indoor exposures

*Socio-Economic Status and Air Pollution in three European Cohorts
(benedicte.jacquemin@inserm.fr)
*Outdoor air pollution and respiratory health
(benedicte.jacquemin@inserm.fr)
*Role of domestic exposure to cleaning products especially in spray form on respiratory health
(nicole.lemoual@inserm.fr)
*Outdoor air pollution and rhinitis
(benedicte.jacquemin@inserm.fr)

Biological and Genetic factors

*Associations between biological markers and asthma, allergy or rhinitis
(rachel.nadif@inserm.fr)
*Contribution of metabolic signatures in the prediction of metabolic syndrome
(sebastien.czernichow@apr.aphp.fr)
*Studying gene by environment interactions on biological and clinical phenotypes
(rachel.nadif@inserm.fr)

Clinical, biological, psychological and social aspects of frailty

*Understanding the expressions, the determinants and the consequences of frailty
(marie.herr@uvsq.fr, joel.ankri@uvsq.fr)

The evaluation of health and medico-social services for the elderly

*European Innovation Partnership on Active and Healthy Ageing (MACVIA-LR,
jean.bousquet@inserm.fr)
*Impact of caregiving on physical and mental health and quality of life
(joel.ankri@uvsq.fr)

Cohorts

Constances : 200 000, representative of the French population
M. Zins, M. Goldberg, L. Berkman
Contact: Marie.zins@inserm.fr

Determinants : genetic susceptibility, environmental and occupational exposures , behavior and lifestyle , access to health

2012
18- 69 years

2015
18- 72 years

Medical exam, cognitif exam for 45 years and more, biology, geocoded adress
Follow-up : self-reported annual questionnaires, health exam every 5 years, SNIIRAM, CNAV

Biobank : RNA, DNA, plasma, serum

Gazel : 20 625 employees of EDF GDF
M. Goldberg, M. Zins, A. Leclerc
Contact: marcel.goldberg@inserm.fr

Determinants : genetic susceptibility, environmental and occupational exposures , behavior and lifestyle , access to health

1989
35-50 years

2015
61-76 years

Annual self-administered questionnaires , Absenteeism , Matrix Jobs Exhibitions, Health examinations , Biobank , SNIIRAM

Biobank : DNA, plasma, serum

E3N Asthma-E3N: 19 398 women (case-control on asthma)
R. Varraso / F. Clavel-Chapelon (E3N)
Contact: raphaelle.varraso@inserm.fr

Determinants : genetic susceptibility, environmental and occupational exposures behavior and lifestyle , access to health

1990
40-65 years

2015
64 – 89 years

Self-administered questionnaires every 2 to 3 years, Nutrition, MGEN reimbursements, Biobank

2011: Detailed Respiratory Questionnaire 21300 women , response rate 91%

Follow-up at 4 yrs

Case-control study nested on asthma in the cohort
7100 case
14,200 control
Characterization of phenotypes
Etiological studies

EGEA : Case-control on asthma and family study
V. Siroux, F. Demenais, I. Pin, R. Nadif, F. Kauffmann (1991-2012)
Contacts: valerie.siroux@ujf-grenoble.fr, rachel.nadif@inserm.fr

Objectives :

- Determine the genetic factors of asthma
- Identify environmental factors and GxE interactions
- Clarify the heterogeneity of asthma

1991 **1995** **2002** **2006** **2011** **2013**

Egea1 **Egea2** **Egea3**

2 047 adults and children
348 cases and 415 control
Questionnaires
Lung function tests

Following rate (92.2%),
Questionnaires
Examinations (As Egea1)

Following rate(80%),
Self-questionnaires

Biobank

- DNA, RNA, Serum, plasma, RBCS
- Exhaled breath condensate