

## **TITLE OF THE PROJECT: Frailty in the elderly: determinants, associated factors and dynamic evolution**

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### **SUMMARY**

#### **Background**

Frailty is a geriatric concept that refers to the increased vulnerability to stressors. There is a consensus to say that frailty is a predictor of adverse health outcomes and mortality, that it is age-related, and that it is the result of a decrease in physiological reserves of multiple systems. Nevertheless, there is still no single accepted definition of frailty as frailty encompasses multiple dimensions: biological, physiological, and psychosocial. As a consequence, several definitions of frailty have been proposed as well as a range of instruments to measure it.

Frailty is an ageing-related syndrome, hence mainly described in aged populations. Nevertheless, studies have suggested the existence of frailty before the age of 65. Based on the data of the Study of Health, Ageing and Retirement in Europe (SHARE), it was estimated that 13% of people aged 50 to 59 years had two markers of frailty or more.

In addition to an increase in individual risk of adverse health outcomes, frailty may have a significant impact in terms of public health. Indeed, previous studies indicated that frailty influences the use of health care resources, in terms of medical visits, hospitalizations and drug use.

Elsewhere, numerous studies document that the health of older individuals may be greatly influenced by their neighbourhood as a result of their decreased mobility, but only few cross sectional studies had examined the impact of environment on frailty, suggesting an inverse relationship between neighbourhood environment quality and frailty.

Understanding frailty is a key challenge from both a clinical and a public health perspective, since it may identify a population likely to take advantage of preventive actions aiming to reduce the risk of alteration of the health status and disability.

#### **Objectives**

- To describe early expressions of frailty and to monitor their evolution during the course of the follow-up;
- To describe the impact of frailty on the use of health care resources;
- To investigate the relationship between social and environmental factors and frailty.

#### **Methods**

This study will be based on the measurement of the main components of frailty (physical activity, weight loss, exhaustion, walking speed, grip strength, mood, and cognition) in the subgroup of people aged 45 to 69 included in the CONSTANCES cohort. Pairing the data of the cohort with those from the national health insurance (SNIIR-AM) will enable to study the health care use in frail people and to monitor the occurrence of health events. The geocoding of postal addresses will be used to assess the physical environment, socio-economic level of areas with variable size around residence, social environment, and levels of pollution.

## **Perspectives**

There is a paucity of data regarding the onset of frailty. The longitudinal data from the CONSTANCES cohort will allow for the study of the first expressions of frailty and should help define and assess the consequences of frailty. The numerous data about health and environment will help understand the risk factors for frailty. In particular, the prospective follow-up of the onset of frailty will resolve the problems of reverse causality encountered in most studies.

Note: this project is part of the research consortium 'PRESAGE – PREparing Successful AGEing'