# Preferences for Prevention Programs to Promote Healthy Aging in France:

# Evidence from a Discrete Choice Experiment


**Authors and affiliation:**

**Aimée Kingsada**
1. Université de Lille, Lille Economie Management – LEM (UMR 9221), Villeneuve D'Ascq, France
2. Université Paris Cité, LIRAES (URP 4470), Chaire AgingUP!, Paris, France
ORCID: 0000-0002-1587-5614

**Isabel Cavalli**
1. Université Paris Cité, LIRAES (URP 4470), Chaire AgingUP!, Paris, France

**Jonathan Sicsic**
1. Université Paris Cité, LIRAES (URP 4470), Chaire AgingUP!, Paris, France
2. Sciences Po Paris, LIEPP, Paris, France
ORCID: 0000-0002-5509-4791

**Thomas Rapp**
1. Université Paris Cité, LIRAES (URP 4470), Chaire AgingUP!, Paris, France
2. Sciences Po Paris, LIEPP, Paris, France
ORCID: 0000-0003-0837-9302

**Corresponding author**
**Aimée Kingsada, PhD**
LEM (UMR 9221)
Université de Lille
1 Pl. Déliot, 59000, Lille, France
Email : aimee.kingsada@univ-lille.fr



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**Abstract (up to 250 words)**

**Background**

Promoting healthy ageing requires prevention programmes that support sustained lifestyle changes. However, participation remains limited, partly because programme design may not reflect individuals' preferences and perceived costs of behavioural change.

**Methods**

A discrete choice experiment was conducted among a nationally representative sample of 1,526 French adults aged 40–59 years to elicit preferences for lifestyle-oriented prevention programmes. Respondents completed ten choice tasks comparing hypothetical programmes varying in duration, delivery modality, follow-up, required effort in physical activity and diet, and monthly cost. Random-effects logit models were used to analyse opt-in decisions, while mixed multinomial logit models were estimated to examine programme choice and preference heterogeneity.

**Results**

Four of the six programme attributes significantly influenced participation. Longer duration and higher behavioural effort reduced uptake, whereas individual (rather than group-based) delivery and remote follow-up options (digital monitoring or teleconsultation) increased participation. Monthly cost exerted the largest and most consistent negative effect on programme choice. Socioeconomic characteristics, particularly age, income, and occupational status, also predicted participation. Marginal willingness-to-pay estimates indicate that respondents would pay approximately €6.50 per month for an individual programme rather than group-based workshops and would require cost reductions to accept longer programme duration or higher behavioural effort.

**Conclusion**

Prevention programmes promoting healthy ageing are more likely to attract participation when they are affordable, personalised, and impose manageable behavioural adjustments. These findings provide policy-relevant evidence on how prevention programmes can be designed to better align with population preferences and improve the economic efficiency of prevention strategies.

**Keywords:** Preferences, Prevention, Discrete Choice experiments, Physical activity, eHealth, France

**JEL code:**

## 1. Introduction

Population ageing is one of the most significant demographic transitions affecting health systems in Europe. In France, the proportion of individuals aged 65 years and older has increased from 16% in 2000 to more than 21% in 2023 and is projected to reach nearly 27% by 2050 (OECD & European Commission, 2024). While life expectancy continues to rise, gains in longevity are not fully matched by improvements in healthy life expectancy. At age 65, individuals in France can expect to live approximately ten additional years with some form of disability, and the prevalence of chronic diseases increases substantially from midlife onwards (OECD, 2025). These trends raise important challenges for both population health and the sustainability of healthcare systems, emphasising the growing importance of preventive strategies that can delay the onset of chronic conditions and support healthy ageing. In particular, lifestyle-related risk factors play a central role in shaping health trajectories throughout midlife and older age.

Among the most important modifiable determinants of health in later life are lifestyle behaviours such as physical inactivity, unhealthy diets, and excess weight. These risk factors contribute substantially to the burden of non-communicable diseases, including cardiovascular diseases, diabetes, and certain cancers. Consequently, promoting regular physical activity and balanced diets has become a central component of public health strategies aimed at increasing healthy life expectancy (World Health Organization, 2018). In France, several national initiatives have been implemented to promote healthier lifestyles, including the Nutri-Score front-of-pack nutrition labelling system and prevention initiatives such as free preventive consultations with healthcare professionals aimed at encouraging health assessments at key stages of the life course (Direction générale de la Santé, 2024; Julia et al., 2018). Despite these efforts, prevention remains relatively underfunded: in 2023, preventive care represented only 2.3% of total health expenditures in France, compared with an OECD average of 3.4%, suggesting substantial scope to improve the effectiveness and attractiveness of preventive interventions (OECD, 2025).

From an economic perspective, the persistence of unhealthy behaviours despite well-established health benefits can be explained through the framework of the health capital model developed by Grossman (1972). In this model, individuals invest in health through both medical care and health-enhancing behaviours such as exercise or healthy diets. However, preventive investments are often characterized by immediate costs (in terms of time, effort, or financial resources) while the benefits materialize only in the long term. Behavioural economic theories further suggest that present bias, time preferences, and perceived opportunity costs may lead individuals to underinvest in preventive health behaviours (Fuchs, 1982; Story et al., 2014; van der Pol et al., 2017). In this setting, interventions that reduce the perceived cost of preventive behaviours, or that are better aligned with individuals' preferences and constraints, may help to mitigate underinvestment in health. As a result, even when individuals are aware of the health benefits of prevention, they may still fail to adopt or maintain healthier lifestyles (Kamerow, 2015).

Another important explanation lies in the mismatch between the design of prevention programs and individuals' preferences. Preventive interventions frequently assume that individuals are willing to comply with standardised recommendations regarding physical activity or diet, without fully accounting for heterogeneity in motivations, constraints, and trade-offs faced by individuals. Understanding these preferences is therefore crucial not only for designing acceptable interventions, but also for ensuring that preventive spending translates into effective and equitable health gains.
In recent years, discrete choice experiments (DCEs) have become an important methodological tool in health economics for eliciting preferences for healthcare interventions and policies. Rooted in random utility theory, DCEs allow researchers to quantify how individuals value different attributes of health interventions and the trade-offs they are willing to make between them (Lancsar et al., 2007; Louviere & Lancsar, 2009). The method has been widely applied in health economics to inform policy design, priority setting, and resource allocation decisions (de Bekker-Grob et al., 2012). Moreover, evidence suggests that DCEs can provide reasonably accurate predictions of health-related behaviours when the

design reflects realistic choice contexts and when preference heterogeneity is properly accounted for (Quaife et al., 2018).

Several studies have applied DCE methods to examine preferences related to lifestyle interventions or health policies. For example, research has explored preferences for financial incentives aimed at increasing physical activity among older adults and shown that both the size and the structure of incentives, as well as the required effort, strongly influence uptake (Farooqui et al., 2014). Other work has investigated determinants of food choices and public support for dietary policies, documenting substantial heterogeneity in preferences, especially with regard to the intrusiveness of regulatory measures and the characteristics of targeted recipients (Dieteren et al., 2023; Kamphuis et al., 2015; Luyten et al., 2015). Taken together, this literature indicates that preferences for lifestyle-related interventions depend not only on health benefits, but also on how programmes are structured in terms of effort, cost, and mode of implementation.

Despite the growing use of DCEs in health economics, relatively little evidence exists on individuals' preferences for structured prevention programs that combine multiple dimensions of lifestyle change, such as physical activity and dietary improvements, within a single experimental framework, particularly in the context of healthy ageing. Moreover, most existing studies focus either on specific behavioural interventions or on public support for health policies rather than on individuals' willingness to participate in comprehensive prevention programs. Evidence on these preferences is particularly scarce for middle-aged populations in European settings, who represent a critical target group for early prevention before the onset of chronic conditions.

This study addresses this gap by investigating preferences for prevention programmes promoting healthy ageing among French adults aged 40 to 59. Using a nationally representative discrete choice experiment, we examine how individuals trade off key prevention programs characteristics, including programme duration, delivery modality, follow-up mechanisms, required lifestyle changes in diet and exercise aligned with WHO recommendations, as well as financial cost. In addition to programme attributes, we explore the role of socio-economic and health-related characteristics, along with stated

preferences, on both the decision to participate and the choice of specific programmes. By quantifying both participation choices and preferences over programme attributes, while accounting for heterogeneity across respondents and individuals' willingness-to-pay, this study provides new evidence on how prevention programmes can be designed to better align with population preferences and needs.

## 2. Methods

### 2.1 Study design

This study employs a discrete choice experiment (DCE) to elicit preferences for prevention programmes designed to promote healthy lifestyles through physical activity and balanced diets. The design, conduct, and reporting of the experiment followed current good practice recommendations for stated-preference studies in health, including the DIRECT checklist, that we reported in Appendix A (Ride et al., 2024). Respondents completed a series of choice tasks in which they selected between two hypothetical unlabelled prevention programmes (Programme A and Programme B), each defined by a set of attributes varying across realistic levels, together with an opt-out option representing non-participation and continuation of current lifestyle habits. Within the random utility framework underlying DCEs, the observed choices reveal respondents' preferences and the trade-offs they are willing to make across programme characteristics.

Prior to the choice tasks, respondents answered three questions assessing their current lifestyle behaviours relative to World Health Organization (WHO) recommendations, which advise engaging in at least five 30-minute sessions of moderate physical activity per week and consuming a minimum of five portions of fruit and vegetables per day (World Health Organization, 2020, 2023). Specifically, respondents reported: (1) the number of 30-minute sessions of moderate physical activity performed per week; (2) the number of portions of fruit and vegetables consumed per day; and (3) the frequency of consumption of fatty, salty, or sugary products.

Because the prevention programmes required behavioural changes towards WHO recommendations, the analysis was restricted to respondents whose current behaviours were not fully compliant with these guidelines. The sample therefore included individuals reporting fewer than four weekly sessions of moderate physical activity, fewer than five daily portions of fruit and vegetables, or consumption of fatty, salty, or sugary products at least once per week.

Participants received detailed information about the study objectives, data storage procedures, and data access conditions before starting the questionnaire, and informed consent was obtained electronically. The study protocol was approved by the Université Paris Cité Research Ethics Committee (IRB: IORG0010120-2025-46) on 25 August 2025.

### 2.2 Attributes and levels

Attributes and levels were identified following the practical guidance for DCE development proposed by Mühlbacher et al. (2025) using a multi-stage exploratory approach (Mühlbacher et al., 2025). First, a scoping review of the literature was conducted to identify relevant DCE studies on prevention programmes and preferences for digital health technologies. Second, national and international prevention initiatives promoting healthy behaviours were reviewed to identify common barriers to engagement and opportunities for programme personalisation. Third, semi-structured interviews were conducted with experts involved in French prevention policy to better understand structural barriers to implementation and potential opportunities for innovation. Finally, the relevance and comprehensibility of the attributes and survey questions were assessed through iterative cognitive interviews with adults aged 50–59 years conducted during spring and summer 2025.

Based on this process, each prevention programme was described using six attributes capturing key dimensions of prevention programmes: programme duration (3, 6, 9, or 12 months), delivery mode (individual sessions, group-based programme, or mobile application), type of follow-up (digital only, teleconsultation, or in-person consultation with a healthcare professional), additional physical activity required (one to three sessions per week beyond current habits), dietary effort (increasing fruit and

vegetable intake and reducing fatty, salty, or sugary products), and monthly cost (€0, €5, €10, €20, or €30). A detailed presentation of attributes and levels is provided in Table B1 in Appendix B.

### 2.3 Choice tasks

Before completing the choice tasks, respondents were randomly assigned to different information conditions. Some participants were exposed to a prevention message emphasising the effectiveness of maintaining a healthy lifestyle (see Figure B1 in Appendix B). The message varied along three dimensions: framing (positive framing emphasising gains in healthy life expectancy or negative framing emphasising the risk of dependency), source (public health authority versus no source attribution), and content (quantified outcomes versus general advice).

To ensure a common reference point across choice tasks, all respondents were reminded of the WHO lifestyle recommendations before each task, allowing them to compare the proposed programmes with their reported habits.

Each respondent completed ten consecutive choice tasks, consisting of nine unique tasks and one repeated task placed at the end of the experiment to assess internal consistency. Each task presented two unlabelled prevention programme alternatives (Programme A and Programme B) together with an opt-out option representing continuation of current lifestyle habits. For the opt-out alternative, respondents were reminded of their previously reported physical activity and dietary behaviours. Including an opt-out option improves behavioural realism and reduces the risk of overestimating attribute effects compared with forced-choice designs (Louviere & Lancsar, 2009; Veldwijk et al., 2014). Participants were asked to select their preferred option and confirm their choice (see Figure B2 in Appendix B for an example choice task).

Following the DCE module, respondents completed additional questions regarding their health status, health behaviours, prevention attitudes, behavioural motivations, and socio-economic and demographic characteristics.

### 2.4 Experimental design

A full factorial design combining all attribute levels would have generated several hundred possible programme alternatives. To ensure feasibility while maintaining statistical efficiency, a fractional factorial design (FRFD) was implemented.

To limit respondents' cognitive burden, the ten choice tasks (nine unique tasks plus one repeated task for reliability testing) were divided into four randomly assigned blocks. In total, the design consisted of 36 unique choice tasks (nine tasks across four versions). The experimental design was generated based on D-efficiency criteria to ensure orthogonality between attributes, minimise multicollinearity, and maximise the precision of parameter estimates (Reed Johnson et al., 2013). No prior parameter values were used in the final design. All choice tasks were subsequently inspected manually to detect potential dominance patterns. Across the 36 choice tasks, three tasks presented a potential risk of dominance, meaning that one alternative performed better on at least one quantitative attribute. These tasks are reported in Appendix B (Figure B3).

### 2.5 Data Collection

The DCE survey was conducted online between 11 September and 9 October 2025. Participants were recruited through the online access panel *Panelabs*. Quotas were applied for sex, age, socio-professional category, and geographic region in order to obtain a sample representative of the French adult population aged 40–59 years according to these criteria. Before participation, respondents received detailed information about the study objectives, confidentiality arrangements, and data protection procedures. Participation was voluntary, and informed consent was obtained electronically prior to starting the questionnaire. The survey was self-administered and took approximately 20 minutes to complete. A total of 1,526 respondents completed the full questionnaire and were included in the analysis.

## 3. Statistical analysis

The DCE data were analysed within McFadden's random utility maximisation framework, which assumes that respondents choose the alternative that provides them with the highest utility. Each choice alternative is assumed to generate a latent utility composed of a observed systematic component and a unobserved random error term (McFadden, 1972). Respondents evaluated hypothetical prevention programmes described by six attributes: programme duration, delivery modality, professional follow-up, exercise intensity, dietary requirements, and programme cost. Preferences were inferred by modelling the probability of choosing each alternative as a function of these attribute levels.

The analysis was conducted in three steps. First, we examined respondents' decision to participate in a prevention programme by analysing the decision between opting into a programme (Programme A or Programme B) and opting out. Second, among respondents who opted in, we analysed choice and preferences heterogeneity between the two alternative programmes. Third, we introduced interaction terms between programme attributes and respondents' individual characteristics.

Two modelling approaches were used: conditional logit and mixed logit. All analyses were performed using STATA 19.0.

### 3.1 Modelling opt-in vs. opt-out behaviours (Step 1)

To estimate the predicted probability of opting into a prevention programme, we employed a conditional logit model with random effects. The dependent variable, opt-in decision, was coded as 1 if the respondent chose either Programme A or B (*opt-in*), and 0 if neither programme was chosen (*opt-out*). Since each respondent evaluated ten unique choice scenarios and indicated their choice ten times, their repeated responses formed a panel dataset. Standard errors were clustered at the respondent level to account for within-individual correlation.

We formulated six hypotheses regarding the effects of program attributes on the likelihood of opting in:

- **H1 (Duration):** Longer program duration reduces the probability of opting in.
- **H2 (Modality):** Programs delivered exclusively in groups or via mobile applications (highest modality level) reduce the likelihood to opting in.
- **H3 (Follow-up):** Absence of in-person follow-up with a professional decreases the probability of opting in.
- **H4 (Exercise intensity):** Programmes requiring a higher number of exercise sessions reduce opt-in likelihood (negative disutility of effort).
- **H5 (Dietary requirements):** Stricter dietary regimens, such as increased fruit and vegetable intake and reduced consumption of fatty/salty foods, lower the probability to opting in (negative disutility of effort).
- **H6 (Cost):** Higher programme costs reduce the probability of participating in any programme.

Independent variables were defined at the choice-set level by summarising the attributes of programme A and B. These included: (i) the average monthly duration of the two programmes; (ii) whether at least one programme included group practice or a mobile application; (iii) a dummy variable indicating the absence of in-person follow-up with a professional in any of the two programmes; (iv) a dummy variable indicating that the minimum additional number of exercise sessions exceeded 2; (v) a dummy variable for high dietary effort, defined as more than two dietary changes and (vi) the average costs across the two programmes.

In addition to the baseline attribute model, we estimated separate sequential models to investigate the impact of respondents' characteristics on opt-in decisions:

- Socio-economic and health characteristics, such as age, gender, income, health status, (Model 2)
- *Stated* preferences, including risk attitudes, health-insurance preferences, prevention attitudes, habit-change intentions, and views on individual versus shared responsibility for health (Model 3)

Additional analyses are presented in Appendix C (Table C1), incorporating:

- Exposure to prevention message (Model 4);
- *Revealed* preferences, namely observed health behaviours such as alcohol and tobacco usage, vegetables fatty food consumption, physical activity, prevention habits (Model 5)
- A combination of Model 3 and revealed preferences (Model 6)

For each model specification, marginal effects were computed to estimate the average change in the probability of opting in for each attribute level and individual characteristic. Coefficients were considered statistically significant at a $p$-value of $\leq 0.05$. In all approaches, we applied Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and log-likelihood value (LL) to identify the best fitting model.

### 3.2 Modelling preference heterogeneity for prevention programmes (Step 2 and Step 3)

For respondents who chose to participate in a prevention programme, we analysed their choice between Programme A and Programme B. To account for preference heterogeneity and within-respondent correlation across repeated choices, we estimated a mixed multinomial logit model (MIXL), allowing preference parameters to be randomly distributed (McFadden & Train, 2000).

In this framework, the utility that a respondent derives from programme A over the alternative B depends on its attribute levels: duration, deliver modality, professional follow-up, exercise requirement, dietary changes and programme costs. An alternative-specific constant was included for option B to capture the propensity to select this option relative to programme A, independently of the observed attributes levels. The cost attribute was first specified as a categorical variable and subsequently modelled as a continuous variable.

This specification is highly flexible as it captures variation in preferences across respondents by estimating both the mean and standard deviation of each attribute coefficient, allows for flexible

substitution patterns, and accommodates *scale heterogeneity*, notably differences in the degrees of choice consistency across respondent (Hess & Rose, 2012; Hess & Train, 2017).

Estimated attribute coefficients in the MIXL models represents the effects of each attribute on utility. Positive coefficients indicate that an attribute increases utility (and thus welfare), whereas negative coefficients indicate disutility. As the utility function is assumed to be linear in all parameters, coefficients are interpreted as *part-worth utilities*.

Because the DCE included a cost attribute, we also estimated the marginal-willingness-to-pay (WTP) for the non-monetary attributes. WTP represents the monetary amount an individual is willing to pay for a one-unit change in a given attribute (Bridges et al., 2011; Clark et al., 2014; Lancsar & Louviere, 2008). It was calculated as the negative ratio of an attribute coefficient relative to the cost coefficient, which corresponds to the *marginal rate of substitution* (MRS) between the attribute of interest and cost.

Finally, we estimated an extended mixed logit specification incorporating interaction terms between programme attributes and selected respondents' characteristics. These interaction terms were introduced to explore observed preference heterogeneity, specifically whether the marginal utility associated with specific attributes varied according to respondents' characteristics, such as income, education level, digital literacy, physical activity effort. Interactions were tested individually and retained based on statistical significance.

## 4. Results

### 4.1 Descriptive statistics

The sociodemographic characteristics of the sample are presented in Table 1. Women account for half of the participants (50%), and the mean age is 49 years. Most respondents live with a partner (67%) and have at least one child (76%). In terms of geographic distribution, the largest share resides in large urban areas outside Paris (37%), while 21% live in small rural municipalities with fewer than 2,000

inhabitants. Regarding education, 36% hold a bachelor's degree, and among those who disclosed their income, the majority reported monthly earnings between €1,200 and €2,199; 18% reported incomes exceeding €3,000.

Lifestyle behaviours suggest relatively low levels of physical activity, with 78% engaging in fewer than three weekly sessions of moderate exercise. Dietary habits are similarly modest: 64% consume between one and three portions of fruits and vegetables per day, and 68% eat fatty, sugary, or salty foods at least twice per week.

Health status and related behaviours indicate that 64% of respondents perceive their health as good or very good, while 36% describe it as fair or poor. A majority reported no chronic disease (67%). Frailty was assessed using Fried's phenotype model (Fried et al., 2001) , based on exhaustion, weakness, slow walking speed, unintentional weight loss, and low physical activity. According to this classification, 24% of the sample was robust, 71% pre-frail, and 5% frail. Most participants had some form of complementary health insurance (89% via individual or collective contracts; 7% through the complementary solidarity scheme). Preventive behaviours were moderately common: 78% reported being up to date with routine vaccinations, and 67% had undergone a medical check-up in the past two years. More than two-thirds were non-smokers. Nevertheless, 16% reported regular alcohol consumption consistent with risky drinking, and among those who smoked or drank, 59% had never attempted to join a national cessation programme. Additionally, 39% reported using a connected device to monitor their health.

Participants' attitudes and preferences showed heterogeneous profiles. Risk preferences were evenly distributed (26% cautious, 42% moderate, 32% risk-seeking). A large majority disagreed with the idea that maintaining good health necessarily requires sacrificing pleasure (68%). Fewer than half (47%) expressed trust in health authorities for reliable prevention-related information. Most agreed that adopting a healthy lifestyle is primarily an individual responsibility (91% combining strong and

moderate agreement), though support weakened when responsibility was shared with society (20% disagreed). Over half felt highly confident in their ability to change their habits to age well, but 21% reported low self-efficacy. Although most participants were not strongly motivated to follow national health insurance (NHI) recommendations, 80% believed that age-related diseases can be delayed through preventive behaviours.

The 1526 respondents generated a total of 13,734 choice observations. Overall, 67% of choices involved opting into a prevention programme, while 33% corresponded to selecting the opt-out alternative. The distribution of attribute levels was balanced across tasks. For instance, programme duration, choices were spread across 3- to 12-month options (15.8–17.4%), whereas 32.8% corresponded to the opt-out (0-month) alternative.

**Table 1. Individuals characteristics (n=1,526)**

| Variable | Frequency | Percent |
|---|---|---|
| ***Sociodemographic characteristics*** | | |
| **Sex** | | |
| Male | 753 | 49.34 |
| Female | 773 | 50.66 |
| **Age** (mean,sd: 49.01, 5,72) | | |
| 40-44 | 430 | 28.18 |
| 45-49 | 349 | 22.87 |
| 50-54 | 421 | 27.59 |
| 55-59 | 326 | 21.36 |
| **In couple** | | |
| Yes | 1037 | 67.96 |
| No | 489 | 32.04 |
| **Having children** | | |
| Yes | 1160 | 76.02 |
| No | 366 | 23.98 |
| *If yes, mean (sd):1.52 (1.15)* | | |
| **Size of city residence** | | |
| < 2,000 inhabitants | 321 | 21.04 |
| 2,000 to 49,999 inhabitants | 372 | 24.38 |
| 50,000 to 1,999,999 inhabitants | 575 | 37.68 |
| Urban unit of Paris | 258 | 16.91 |
| **Education** | | |
| No diploma/CAP-BEP level | 317 | 20.77 |
| High school diploma | 389 | 25.49 |
| Bachelor's level | 558 | 36.57 |
| Master's level or higher | 262 | 17.17 |
| **Individual income (€)** | | |
| 0-1200 | 186 | 12.19 |
| 1200-2199 | 538 | 35.26 |
| 2 200-2999 | 411 | 26.93 |
| > 3000 | 283 | 18.55 |
| Don't know/don't want to report | 108 | 7.08 |

| Variable | Frequency | Percent |
|---|---|---|
| ***Physical activity and food consumption habits*** | | |
| **Moderate physical activity (nb. of 30 min. session/week)** | | |
| 3 and more | 323 | 21.17 |
| Less than 3 | 1203 | 78.83 |
| **Consumption of vegetables/fruits (portions/day)** | | |
| 3-4 portions | 300 | 19.66 |
| 1-3 portions | 979 | 64.15 |
| Occasionally or rarely | 247 | 16.19 |
| **Consumption of fatty/sugary/salty products per week** | | |
| Once a week | 476 | 31.19 |
| Two or more time | 1050 | 68.81 |
| ***Health status and health behaviours*** | | |
| **Self-reported health** | | |
| Good/very good | 977 | 64.02 |
| Fair/poor/very poor | 549 | 35.98 |
| **Chronic diseases diagnosed** | | |
| No | 1035 | 67.82 |
| Yes | 491 | 32.18 |
| **Frailty status** | | |
| Robust | 359 | 23.53 |
| Pre-frail | 1087 | 71.23 |
| Frail | 80 | 5.24 |
| **Complementary health insurance** | | |
| Solidarity Scheme (CSS) | 103 | 6.75 |
| Individual/collective | 1369 | 89.71 |
| None | 54 | 3.54 |
| **Up-to-date vaccination status** | | |
| No | 330 | 21.63 |
| Yes | 1196 | 78.37 |
| **Health check-up in the last two years with a healthcare provider** | | |
| No | 502 | 32.90 |
| Yes | 1024 | 67.10 |
| **Smoking status (tobacco/vaping)** | | |
| Non-smoker | 592 | 38.79 |
| Smoker | 465 | 30.47 |
| Ex-smoker | 469 | 30.73 |
| **Drinking status** | | |
| Non-drinker | 329 | 21.56 |
| Occasional drinker (moderate drinking) | 943 | 61.80 |
| Regular drinker (risky drinking) | 254 | 16.64 |
| **Participation in national smoking or drinking cessation program** | | |
| No | 902 | 59.10 |
| Yes | 150 | 9.82 |
| Non-concerned | 474 | 31.08 |
| **Use of electronic device for health monitoring** | | |
| No | 921 | 60.35 |
| Yes | 605 | 39.65 |
| ***Economic and behavioural preferences*** | | |
| **Risk preference (score 0-10)** | | |
| Risk-averse (0-3) | 397 | 26.02 |
| Moderate (4-6) | 651 | 42.66 |
| Risk-seeking (7-10) | 478 | 31.32 |
| **Trust in health authorities to provide reliable and appropriate information on prevention** | | |
| Agree | 722 | 47.31 |
| Neither agree nor disagree | 570 | 37.35 |
| Disagree | 234 | 15.33 |
| **Adopting a healthy lifestyle is primarily a matter of personal responsibility** | | |

| Variable | Frequency | Percent |
|---|---|---|
| Strongly agree | 666 | 43.64 |
| Somewhat agree | 731 | 47.90 |
| Disagree | 129 | 8.45 |
| **Preventing age-related diseases is a responsibility that should be shared between individuals and society** | | |
| Strongly agree | 384 | 25.16 |
| Somewhat agree | 841 | 55.11 |
| Disagree | 301 | 19.72 |
| | | |
| **Self-confidence in changing unhealthy lifestyle habits** | | |
| Not confident | 2880 | 20.97 |
| Somewhat confident | 3825 | 27.85 |
| Confident/strongly confident | 7029 | 51.18 |
| | | |
| **Reaction to NHI healthy lifestyle recommendation** | | |
| Positive motivation | 5148 | 37.48 |
| Negative motivation | 8586 | 62.52 |
| | | |
| **Belief that by adopting healthier habits, it is possible to delay age-related diseases** | | |
| Agree | 1247 | 81.72 |
| Disagree | 279 | 18.28 |
| | | |
| **Total number of individuals** | **1,526** | **100** |
| ***Descriptive statistics – discrete choice experiment module*** | | |
| **Prevention programmes: choice to opt-in** | | |
| No | 4,500 | 32.77 |
| Yes | 9,234 | 67.23 |
| ***Attributes*** | | |
| **Programme Duration** | | |
| 0 months (opt-out) | 4500 | 32.77 |
| 3 months | 2392 | 17.42 |
| 6 months | 2351 | 17.12 |
| 9 months | 2319 | 16.89 |
| 12 months | 2172 | 15.81 |
| **Programme modality** | | |
| Not applicable (opt-out) | 4500 | 32.77 |
| Individual | 3730 | 27.16 |
| Group with sports & nutrition workshops | 2807 | 20.44 |
| Group with mobile app to interact with others | 2697 | 19.64 |
| **Type of follow-up** | | |
| Not applicable (opt-out) | 4500 | 32.77 |
| Digital-only (mobile app) | 3088 | 22.48 |
| Teleconsultations | 3130 | 22.79 |
| In-person consultations | 3016 | 21.96 |
| **Physical activity (sessions/week)** | | |
| No change in current habits (opt-out) | 4500 | 32.77 |
| 1 extra session | 3294 | 23.98 |
| 2 extra sessions | 3180 | 23.15 |
| 3 extra sessions | 2760 | 20.10 |
| **Diet change [+] portions/day of fruit/vegetables (FV) [-] time/week of fatty/salty/sugary (FSS) products** | | |
| No change in current habits (opt-out) | 4500 | 32.77 |
| +1 FV, -1 FSS | 3275 | 23.85 |
| + 1 FV, -2 FSS | 2928 | 21.32 |
| + 2 FV, -1 FSS | 3031 | 22.07 |
| **Monthly cost** | | |

| Variable | Frequency | Percent |
|---|---|---|
| Not applicable (opt-out) | 4500 | 32.77 |
| € 0 | 3005 | 21.88 |
| € 5 | 2250 | 16.38 |
| € 10 | 1991 | 14.50 |
| € 20 | 1169 | 8.51 |
| €30 | 819 | 5.96 |
| **Total number of observations** | **13,734** | **100** |

### 4.2 Results of conditional logit model with random effects: Individual characteristic and attributes'

**Table 2** reports the results of the random-effects conditional logit model estimating the probability of opting into a prevention programme. Model fit improves by adding covariates. The log-likelihood increases from −5937.93 for the baseline model including only programme attributes (Model 1) to −5860.08 for the fully specified model (Model 3), indicating a better fit to the data. Similarly, both the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) decrease as sociodemographic characteristics and stated preferences are added, reaching their lowest values in Model 3 (AIC = 11804.15; BIC = 12120.31). This suggests that including additional individual-level covariates improves model performance and goodness of fit, leaving the conclusions about the effect of programme attributes and respondents' characteristics unchanged. As coefficients are highly consistent across model specifications, we report and discuss only the estimates from the fully specified model (Column 3).

Across all three specifications, four out of six programme *attributes* are consistent determinants of participation. *Programme duration* has a small negative but statistically significant effect in all models, indicating that longer programmes marginally reduce the likelihood to opting-in, by 0.3 percentage points (pp) per additional month. *Programme with a group* strongly discourages participation, with a marginal effect of −6.6 pp. across all specifications. By contrast, *not-in-person consultation* positively and significantly increases opt-in probability by about 2.7 pp., indicating a clear preference for remote follow-up. *Monthly cost* has the largest and most consistent negative effect among programme attributes: every 1€ increase in average programme cost reduces opt-in decision by

1.2 pp. Neither additional *physical activity* nor *dietary change* significantly influence participation in any specification.

Sociodemographic characteristics contribute to explaining variation in opt-in decisions (Models 2 and 3). Women are less likely to opt in, with an effect of -3.3 pp, although this effect is not significant at the 5% level. Older respondents, particularly those aged 55-59, show significantly lower opt-in probabilities (-9.2 pp), compared to the younger age groups (40-54). Occupational status also influences the probability of opting-in: *employees* are 8.6 pp less likely to participate, while *inactive* respondents show even stronger negative effects (-14.4).

Income is positively associated with opting-in. Compared with the lowest income group, individuals with higher income are significantly more likely to opt-in. Respondents earning €2,200-2,999 are about 7.3 pp more likely to opt in, and those earning €3,000 or more show even stronger positive effects (11.5 pp).

By contrast, most other sociodemographic do not significantly affect participation. Education, city size, relationship status, having children, and health complementary insurance coverage show no statistically significant effects across specifications. In particular, none of the educational categories (high school diploma, bachelor's degree, and master's degree or higher) influence opt-in decisions. Household composition, whether not having children or not being in a couple, has no effect on opt-in participation, nor does the type of complementary health insurance (individual or collective, the solidarity scheme-CSS) or lack thereof. Overall, income and occupation appear to be the primary socioeconomic drivers of participation.

Health status and chronic disease status do not significantly influence opt-in decisions. However, *pre-frail* respondents are slightly more likely to opt in with a marginal effect of 3.8 pp. This suggests a greater engagement among individuals perceiving early signs of vulnerability. *Frail* individuals do not differ significantly from robust participants.

Finally, several *stated preferences* strongly predict opt-in decision. Individuals reporting motivation crowding-in in response to national health insurance lifestyle recommendations are substantially more likely to opt in, with a marginal effect of 11.6 pp. Similarly, individuals who report being confident or strongly confident in their ability to change unhealthy lifestyle habits are about 5.1 percentage points more likely to opt in. Other beliefs are positively associated with participation but the effects are smaller and not statistically significant at the 5% level. Believing that adopting healthier habits can delay age-related diseases is associated with a 3.9 pp higher probability of opting in, while respondents who strongly agree that preventing age-related diseases should be a shared responsibility between individuals and society are about 3.6 pp more likely to opt in. By contrast, trust in health authorities *to provide reliable and appropriate information on prevention* and views on personal responsibility for adopting a healthy lifestyle, do not appear to significantly influence participation.

Additional analyses incorporating *prevention message framing* and *revealed preferences* are presented in Appendix C (Table C1), which extends the baseline specification by jointly introducing these variables. Overall, the results remain robust and consistent with the main findings. *Prevention message* framing does not significantly affect opt-in probability, with the exception of messages emphasizing statistical content, which slightly decrease participation by −5.2 pp, although the effect is not statistically significant at the 5% level (Model 5). All other message types show very small and non-significant marginal effects, suggesting that the content of health messages generally has little influence on opt-in decisions.

Among revealed behavioural preferences, individuals *using electronic device for health monitoring* (or digital health tracking) are more likely to opt in, with a marginal effect of 3.8 pp. Similarly, having completed a preventive health check-up in the last two years is positively associated with participation, with a marginal effect of 3.6 pp, although this effect is not statistically significant at the 5% level. In contrast, respondents who did not participate (−10.3 pp) or were not concerned (−12.4 pp) in national smoking or drinking cessation programmes are significantly less likely to opt in, compared

with those who participated. Overall, including these additional variables does not alter the main conclusions.

**Table 2. Random-effect logit model of opt-in vs. opt-out behaviours (marginal effects)**

| Variables | **Model 1 (1)** | **Model 2 (2)** | **Model 3 (3)** |
|---|---|---|---|
| Programme duration (mean) | -0.003** | -0.003** | -0.003** |
| | (0.002) | (0.002) | (0.002) |
| *Ref.: individual programme* | | | |
| Programme with a group | -0.066*** | -0.066*** | -0.066*** |
| | (0.007) | (0.007) | (0.007) |
| *Ref. digital Technology–Based Follow-Up (application/teleconsultation)* | | | |
| *Not In-person consultation* | 0.027*** | 0.027*** | 0.027*** |
| | (0.006) | (0.006) | (0.006) |
| *Ref. less than 3 more sessions/week of moderate physical activity* | | | |
| 3 more sessions/week | -0.002 | -0.002 | -0.002 |
| | (0.006) | (0.006) | (0.006) |
| *Ref. moderate dietary change* | | | |
| High dietary change | -0.009 | -0.009 | -0.009 |
| | (0.007) | (0.007) | (0.007) |
| Monthly cost (mean) | -0.012*** | -0.012*** | -0.012*** |
| | (0.001) | (0.001) | (0.001) |
| *Ref. sex: male* | | | |
| Femme | | -0.033* | -0.033* |
| | | (0.017) | (0.017) |
| *Ref. age: 40-44 years old* | | | |
| 45-49 years old | | -0.025 | -0.024 |
| | | (0.022) | (0.022) |
| 50-54 years old | | -0.031 | -0.030 |
| | | (0.022) | (0.021) |
| 55-59 years old | | -0.090*** | -0.092*** |
| | | (0.025) | (0.024) |
| *Ref. profession: self-employed* | | | |
| Employees | | -0.081*** | -0.086*** |
| | | (0.031) | (0.029) |
| Inactive | | -0.152*** | -0.144*** |
| | | (0.040) | (0.038) |
| *Ref. individual income: <1200€* | | | |
| 1 200 € - 2 199 € | | 0.053 | 0.039 |
| | | (0.034) | (0.033) |
| 2 200 € - 2999 € | | 0.086** | 0.073** |
| | | (0.036) | (0.035) |
| ≥ 3 000 € | | 0.130*** | 0.115*** |
| | | (0.038) | (0.037) |
| Don’t know/Don’t want to answer | | 0.069 | 0.046 |
| | | (0.046) | (0.044) |
| *Ref. education: No diploma/CAP-BEP level* | | | |
| High school diploma (*baccalauréat*) | | -0.021 | -0.026 |
| | | (0.024) | (0.024) |

| | | |
|---|---|---|
| Bachelor's level | -0.032 | -0.034 |
| | (0.023) | (0.023) |
| Master's level or higher | -0.040 | -0.043 |
| | (0.030) | (0.029) |
| *Ref. size of city residence: 2,000 to 49,999 inhabitants* | | |
| < 2,000 inhabitants | -0.002 | 0.007 |
| | (0.025) | (0.025) |
| 50,000 to 1,999,999 inhabitants | -0.001 | -0.004 |
| | (0.022) | (0.021) |
| Urban unit of Paris | 0.033 | 0.032 |
| | (0.026) | (0.025) |
| *Ref. in a couple: yes* | | |
| No | 0.011 | 0.015 |
| | (0.019) | (0.019) |
| *Ref. having children: yes* | | |
| No | -0.034 | -0.024 |
| | (0.021) | (0.020) |
| *Ref. complementary health insurance: individual or collective* | | |
| Solidarity Scheme (CSS) | -0.043 | -0.044 |
| | (0.037) | (0.036) |
| None | -0.025 | -0.001 |
| | (0.043) | (0.040) |
| *Ref. self-reported health: good/very good* | | |
| Fair/poor/very poor | 0.001 | 0.008 |
| | (0.020) | (0.020) |
| *Ref. Chronic disease reported: no* | | |
| Yes | 0.006 | 0.005 |
| | (0.020) | (0.019) |
| *Ref. Frailty status: robust* | | |
| Pre-frail | 0.031 | 0.038* |
| | (0.021) | (0.021) |
| Frail | 0.017 | 0.038 |
| | (0.044) | (0.042) |
| *Ref. trust in health authorities to provide reliable and appropriate information on prevention: disagree* | | |
| Neither disagree nor agree | | -0.017 |
| | | (0.024) |
| Agree | | -0.021 |
| | | (0.024) |
| *Ref. reaction to NHI healthy lifestyle recommendation: motivation crowding-out* | | |
| Motivation crowding-in | | 0.116*** |
| | | (0.017) |
| *Ref. belief that by adopting healthier habits, it is possible to delay age-related diseases: disagree* | | |
| Agree | | 0.039* |
| | | (0.023) |
| *Ref. Self-confidence in changing unhealthy lifestyle habits: somewhat confident* | | |
| Not confident | | -0.009 |
| | | (0.024) |
| Confident/ strongly confident | | 0.051*** |
| | | (0.019) |
| *Ref. adopting a healthy lifestyle is primarily a matter of personal responsibility: somewhat agree* | | |
| Disagree | | -0.028 |
| | | (0.032) |

| | | | |
|---|---|---|---|
| Strongly agree | | | -0.009<br>(0.018) |
| *Ref. preventing age-related diseases is a responsibility that should be shared between individuals and society: somewhat agree* | | | |
| Disagree | | | -0.037<br>(0.023) |
| Strongly agree | | | 0.036*<br>(0.020) |
| ICC | 0.732 | 0.720 | 0.704 |
| Log-likelihood | -5937.93 | -5905.37 | -5860.08 |
| AIC | 11891.85 | 11874.74 | 11804.15 |
| BIC | 11952.07 | 12115.62 | 12120.31 |
| Observations | 13,734 | 13,734 | 13,734 |

*Standard errors in parentheses*
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

### 4.3 Results of multinomial logit models: Analysis of preference heterogeneity and their determinants

**Table 3** presents the results from the mixed multinomial logit model (MIXL) restricted to opt-in observations, examining how programme attributes shape respondents' choice. Model fit improves between the two specifications. The log-likelihood increases from −5136.3 in Model 1 to −5021.4 in Model 2, indicating a better fit to the data. Similarly, both the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) decrease when cost is specified as a continuous variable, with the AIC decreasing from 10336.61 to 10094.78 and BIC from 10586.97 to 10298.2, suggesting that Model 2 provides the preferred specification The mixed logit specification allows us to consider both the average utility associated with each attribute and the variation in preference across individuals (*preference heterogeneity*) to be estimated through the standard deviation. The table also reports marginal willingness-to-pay (mWTP) estimates in Model 2, where cost is specified as a continuous variable. These values translate utility coefficients into monetary terms by indicating how much respondents are willing to pay (or require as compensation) for a given programme attribute relative to the reference category. Positive mWTP values indicate that individuals would be willing to pay more for a given attribute, while negative values suggest that respondents would require a reduction in programme cost to accept that attribute.

Across both specifications, five out of six programme attributes significantly influence programme choice. *Programme duration* significantly affects respondents' utility. Relative to the *3-month programme* reference, a 12-month programme significantly reduces the probability of choosing the programme in both specifications, by 24 pp in Model 1 and by 21. 8 in Model 2.. The corresponding mWTP of -2.20 € indicates that respondents would require a reduction of about €2.20 per month to accept a 12-month programme instead of a 3-month one, highlighting a clear preference for shorter programmes. The 6-month programme shows a small positive effect in Model 2, with a corresponding mWTP of €1.14, suggesting that respondents are willing to pay slightly more for a moderate programme duration compared with the shortest programme of 3 months. Additionally, preference heterogeneity is observed for the 6-month duration in Model 1 (sd = −31 pp), indicating that respondents differ in how they value intermediate programme duration. By contrast, the 9-month programme duration shows no significant effect in either specification.

*Programme modality* strongly influences respondents' preferences. Individual programmes are highly preferred over the reference category, notably *group programmes with sports & nutrition workshops*, with a large positive and highly significant coefficients in both specifications: 62 pp in Model 1 and 64 pp in Model 2. The corresponding mWTP of approximately €6.49 suggests that respondents are willing to pay a substantial amount for an individual programme rather than a group-based one, highlighting the strong preference of personalised interventions. By contrast, group programmes provided with a mobile app have no significant effects. Yet, they significant standard deviation (55.9 pp in Model 1 and −53 in Model 2) indicate significant heterogeneity in preferences for this modality, suggesting that while some individuals prefer app-based group programmes, others strongly dislike them.

For the type of *follow-up,* with teleconsultations as the reference, average part-worth utility coefficients are small and not statistically significant. Neither *in-person consultations* nor *digital-only follow-up* do significantly affect average utility. However, digital-only follow-up option through a mobile app reveals significant preference heterogeneity, with standard deviation at −30 pp in Model 1

and 41.7 pp in Model 2. This indicates that respondents differ considerably in how they value app-based monitoring: some individuals may strongly prefer fully digital follow-up, while others clearly prefer more direct interaction and in-person consultations.

*Physical activity* affects programme choice. Using +1 session per week as the reference category, increasing physical activity to +3 sessions per week reduces programme utility by -17.3 in Model 1 and -17.8 pp Model 2. The corresponding mWTP of −1.80 indicates that participants require compensation or a reduction of approximately €1.80 per month to accept a higher level of physical activity. The positive and significant standard deviations, 35.9 pp in Model 1 and 44 pp in Model 2, reveal preference heterogeneity for physical activity: while some respondents appear to dislike higher intensity programme, other appear to prefer them. The intermediate level, +2 sessions per week, is not statistically significant.

*Dietary changes* also affect programme choice. Relative to the reference category (+1 portion/day of fruits and vegetables and −1 fatty food serving/week), the combination of +1 portion of fruits/vegetables and -2 servings of fat foods significantly reduces utility by -8.6 in Model 1 and -9.7 in Model 2, with a corresponding mWTP of −0.98€. This indicates that respondents would require nearly €1 per month in cost reduction to accept this stricter dietary constraint. Additionally, the significant standard deviation of −26 pp in Model 1 indicates heterogeneity in how individuals value dietary changes. The alternative dietary change, respectively +2 portions/day of fruits/vegetables and −1 serving/week of fatty foods, has a smaller negative effect (−8.2 pp, not significant at the 5% level) and a corresponding mWTP of −0.83€, globally showing a weaker heterogeneity.

*Monthly cost* strongly influences programme choice. In Model 2, where cost is treated as a continuous variable, the coefficient for monthly cost is negative and highly significant (−9.9 pp), indicating that a higher programme cost systematically reduces utility. Additionally, the significant standard deviation reveals that respondents differ in their sensitivity to programme cost. Model 1, which includes categorical cost variables, confirms this trend: compared with the reference cost (€0/month), higher

programme costs reduce utility. Additionally, the negative effect becomes progressively stronger as price increases: a €30/month programme has a higher negative effect on utility (-241.9 pp) then the €5/month (-55.2). The large and significant standard deviation (105.3 pp) further indicates great heterogeneity in price sensitivity. Intermediate costs (€5, €10, €20) also reduce choice probability significantly, though with smaller coefficients and varying degrees of heterogeneity. Overall, the cost impact is monotonous and in the expected direction.

The MIXL results demonstrate that most programme attributes significantly influence respondents' choices and that preferences vary considerably across individuals. The mWTP estimates provide a concrete interpretation of the trade-offs participants are willing to make, which can inform the design of prevention programmes that better align with participants' preferences and willingness to pay. Respondents place the highest value on individual programme formats and shorter durations, while they require financial compensation to accept longer programmes, higher physical activity requirements, and stricter dietary changes.

**Table 3. Results of mixed logit model (categorical and continuous price)**

| | Model 1 | | Model 2 | | |
|---|---|---|---|---|---|
| VARIABLES | Coefficient (Std. Err) | SD (Std. Err) | Coefficient (Std. Err) | SD (Std. Err) | mWTP (Std. Err) |
| *Ref. Programme duration: 3 months* | | | | | |
| 6 months | 0.045 | -0.310** | 0.112** | -0.072 | 1.135** |
| | (0.055) | (0.127) | (0.056) | (0.175) | (0.565) |
| 9 months | -0.032 | 0.028 | -0.013 | 0.029 | -0.127 |
| | (0.057) | (0.154) | (0.058) | (0.174) | (0.589) |
| 12 months | -0.240*** | -0.057 | -0.218*** | 0.064 | -2.202*** |
| | (0.051) | (0.129) | (0.051) | (0.185) | (0.526) |
| *Ref. Programme modality: Group with sports & nutrition workshops* | | | | | |
| Group programme (mobile app) | 0.005 | 0.559*** | 0.016 | -0.530*** | 0.160 |
| | (0.044) | (0.075) | (0.046) | (0.084) | (0.460) |
| Individual programme | 0.622*** | 0.998*** | 0.641*** | 1.026*** | 6.488*** |
| | (0.052) | (0.065) | (0.054) | (0.069) | (0.570) |
| *Ref. Type of follow-up: Teleconsultations* | | | | | |
| In-person consultations | 0.036 | 0.043 | 0.049 | 0.040 | 0.492 |
| | (0.044) | (0.095) | (0.044) | (0.109) | (0.441) |
| Digital-only (mobile app) | 0.036 | -0.300*** | -0.001 | 0.417*** | -0.007 |
| | (0.044) | (0.110) | (0.047) | (0.088) | (0.475) |
| *Ref. Physical activity (sessions/week): +1 session* | | | | | |
| +2 sessions | -0.059 | 0.063 | -0.009 | -0.079 | -0.091 |
| | (0.045) | (0.139) | (0.047) | (0.101) | (0.478) |
| +3 sessions | -0.173*** | 0.440*** | -0.178*** | 0.359*** | -1.802*** |
| | (0.043) | (0.091) | (0.044) | (0.096) | (0.452) |
| *Ref. diet change: +1 portion/day FV; -1 time/week FFS* | | | | | |
| +1 portion/day FV; -2 time/week FFS | -0.086** | -0.260*** | -0.097** | -0.079 | -0.981** |
| | (0.043) | (0.092) | (0.046) | (0.093) | (0.468) |
| +2 portions/day FV; -1 time/week FFS | -0.033 | -0.096 | -0.082* | -0.022 | -0.833* |
| | (0.044) | (0.080) | (0.045) | (0.075) | (0.456) |
| *Ref. monthly cost: €0* | | | | | |
| 5 € | -0.552*** | -0.198 | | | |
| | (0.057) | (0.123) | | | |
| 10 € | -0.895*** | -0.121 | | | |
| | (0.058) | (0.111) | | | |
| 20 € | -1.882*** | -0.504*** | | | |
| | (0.076) | (0.115) | | | |
| 30 € | -2.419*** | 1.053*** | | | |
| | (0.092) | (0.106) | | | |
| Monthly cost | | | -0.099*** | 0.078*** | |
| | | | (0.004) | (0.004) | |
| Constant | 0.033 | 0.243*** | 0.019 | 0.126 | |
| | (0.036) | (0.086) | (0.035) | (0.085) | |
| Observations | 18,468 | | 18,468 | | |

| | | |
|---|---|---|
| Log-likelihood | -5136.3 | -5021.4 |
| AIC | 10336.61 | 10094.78 |
| BIC | 10586.97 | 10298.2 |

*Standard errors in parentheses ;*
**** p<0.01, ** p<0.05, * p<0.1*

### 4.4 Results of multinomial logit interactions

Table 4 presents the results of the mixed multinomial logit model including interaction terms between programme attributes and selected individual characteristics. Overall, the main effects of programme attributes remain largely consistent with the main mixed logit results reported in Table 3, confirming the robustness of the findings. In particular, a 12-month programme continues to significantly reduce utility across most specifications, by around −23.4 pp to 24.4, showing a clear preference for shorter programmes. Similarly, individual programmes remain strongly preferred over group-based workshops, with positive and highly significant effects across models, around 62.1 pp. Programme cost also consistently reduces utility, with increasingly negative coefficients as price rises from €5 to €30 per month, confirming respondents' strong sensitivity to programme cost. In addition, higher physical activity requirements (+3 sessions per week) systematically reduce programme utility by around 17.3 pp, while stricter dietary changes (+1 portion of fruits and vegetables and −2 servings of fatty foods per week) show smaller but significant negative effects in several specifications (around -8.3 pp to -8.7 pp).

The interaction terms provide additional intuition into how individual characteristics shape preferences for programme attributes. Price sensitivity varies significantly with income level. The interaction between cost and income is positive and significant (+0.4 pp), indicating that individuals with higher income are less sensitive to the programme cost. This implies that, while higher programme cost reduces respondent's utility, this negative effect is attenuated among higher-income individuals. Cost, or its affordability, may represent a stronger barrier to participation for lower income-groups.

The interaction between *physical effort requirement* and *low physical activity* is negative and

significant (-34.3 pp) indicating that respondents who report lower levels of physical activity experience a larger reducation in utility when programmes require additional physical activity sessions per week. This seems to suggest that programmes requiring higher behavioural effort may discourage respondents who are already less physically active.

The *digital literacy* shape both preferences for programme follow-up and modalities. The positive and significant interaction between *follow-up* and *digital literacy* (6.4 pp) indicates that individuals with greater digital literacy have a greater utility from programmes involving digital follow-up. Similarly, the positive interaction between *programme modality* and the usage of digital devices for health tracking (8.1 pp) suggests that individuals already familiar with digital health tracking are more likely to prefer a programme provided through an app.

The interaction between *follow-up* and *programme duration* is negative and significant (−1.8 pp), suggesting that preference for follow-up decreases as programme duration increases. Respondents appear less willing to accept an "intensive" follow-up, notably 2 in-person appointments with a healthcare professional, when programmes extend over longer periods.

Finally, the interaction between *programme modality* and *education* is negative and significant (−2.3 pp, ), indicating that as education increases, the utility associated with the programme modality decreases slightly. Less educated respondents show a strong preference for individual programmes, compared with the reference group workshops.

Additional interaction models are reported in Appendix C (Table C2). These results provide no evidence of meaningful interaction effects. None of the additional interaction coefficients are statistically significant at the 5% level. Moreover, the inclusion of these interactions does not meaningfully improve model fit: the log-likelihood values remain very close to those of the baseline model, with only marginal variations across specifications. Taken together, these findings suggest that the main effects specification adequately captures respondents' preferences, and that the additional interaction terms do not significantly contribute to explaining heterogeneity in programme choices.

**Table 4. Mixed multinomial logit model including interaction terms between programme attributes and selected individual characteristics (only significant results)**

| VARIABLES | (1) Choice | (2) Choice | (3) Choice | (4) Choice | (5) Choice | (6) Choice |
|---|---|---|---|---|---|---|
| *Ref. Programme duration: 3 months* | | | | | | |
| 6 months | 0.057 | 0.044 | 0.048 | 0.046 | 0.184** | 0.054 |
| | (0.055) | (0.055) | (0.055) | (0.055) | (0.074) | (0.055) |
| 9 months | -0.031 | -0.034 | -0.030 | -0.029 | 0.179* | -0.032 |
| | (0.057) | (0.057) | (0.057) | (0.057) | (0.095) | (0.057) |
| 12 months | -0.234*** | -0.244*** | -0.238*** | -0.239*** | 0.114 | -0.234*** |
| | (0.051) | (0.051) | (0.051) | (0.051) | (0.138) | (0.051) |
| *Ref. Programme modality: Group with sports & nutrition workshops* | | | | | | |
| Group programme (mobile app) | 0.004 | 0.003 | -0.001 | -0.227** | -0.016 | 0.272** |
| | (0.044) | (0.044) | (0.044) | (0.098) | (0.045) | (0.110) |
| Individual programme | 0.621*** | 0.623*** | 0.624*** | 0.275* | 0.634*** | 1.022*** |
| | (0.052) | (0.053) | (0.052) | (0.141) | (0.053) | (0.159) |
| *Ref. Type of follow-up: Teleconsultations* | | | | | | |
| In-person consultations | 0.036 | 0.033 | -0.073 | 0.035 | 0.149** | 0.037 |
| | (0.044) | (0.044) | (0.059) | (0.044) | (0.060) | (0.044) |
| Digital-only (mobile app) | 0.044 | 0.037 | -0.288** | 0.035 | 0.456*** | 0.042 |
| | (0.044) | (0.045) | (0.124) | (0.044) | (0.158) | (0.044) |
| *Ref. Physical activity (sessions/week): +1 session* | | | | | | |
| +2 sessions | -0.055 | 0.554*** | -0.057 | -0.062 | -0.046 | -0.053 |
| | (0.045) | (0.102) | (0.045) | (0.045) | (0.046) | (0.045) |
| +3 sessions | -0.173*** | 1.047*** | -0.172*** | -0.174*** | -0.162*** | -0.173*** |
| | (0.043) | (0.186) | (0.044) | (0.043) | (0.044) | (0.043) |
| *Ref. diet change: +1 portion/day FV; -1 time/week FFS* | | | | | | |
| +1 portion/day FV; -2 time/week FFS | -0.084* | -0.087** | -0.083* | -0.087** | -0.065 | -0.086** |
| | (0.043) | (0.044) | (0.043) | (0.043) | (0.044) | (0.043) |
| +2 portions/day FV; -1 time/week FFS | -0.030 | -0.031 | -0.030 | -0.033 | 0.003 | -0.030 |
| | (0.044) | (0.044) | (0.044) | (0.044) | (0.046) | (0.044) |
| *Ref. monthly cost: €0* | | | | | | |
| 5 € | -0.605*** | -0.558*** | -0.553*** | -0.553*** | -0.571*** | -0.551*** |
| | (0.063) | (0.057) | (0.057) | (0.057) | (0.058) | (0.057) |
| 10 € | -1.013*** | -0.902*** | -0.899*** | -0.897*** | -0.919*** | -0.905*** |
| | (0.080) | (0.058) | (0.058) | (0.058) | (0.059) | (0.058) |
| 20 € | -2.092*** | -1.893*** | -1.890*** | -1.884*** | -1.836*** | -1.876*** |
| | (0.133) | (0.077) | (0.077) | (0.077) | (0.078) | (0.075) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 30 € | -2.759*** | -2.442*** | -2.432*** | -2.421*** | -2.419*** | -2.428*** |
| | (0.192) | (0.093) | (0.092) | (0.092) | (0.092) | (0.093) |
| Cost x income | 0.004** | | | | | |
| | (0.002) | | | | | |
| Physical effort x low physical activity | | -0.343*** | | | | |
| | | (0.051) | | | | |
| Follow up x digital literacy | | | 0.064*** | | | |
| | | | (0.023) | | | |
| Modalities x digital objects | | | | 0.081*** | | |
| | | | | (0.031) | | |
| Follow up x duration | | | | | -0.018*** | |
| | | | | | (0.007) | |
| Modalities x education | | | | | | -0.023*** |
| | | | | | | (0.009) |
| Constant | 0.025 | 0.033 | 0.034 | 0.033 | 0.072* | 0.025 |
| | (0.037) | (0.036) | (0.036) | (0.036) | (0.039) | (0.037) |
| Log-likelihood | -5132.28 | -5112.99 | -5132.36 | -5132.80 | -5132.47 | -5130.68 |
| AIC | 10330.56 | 10291.97 | 10330.73 | 10331.6 | 10330.94 | 10327.37 |
| BIC | 10588.75 | 10550.15 | 10588.91 | 10589.78 | 10589.12 | 10585.55 |
| Observations | 18,468 | 18,468 | 18,468 | 18,468 | 18,468 | 18,468 |

*Standard errors in parentheses*

**** p<0.01, ** p<0.05, * p<0.1*

## 2. Discussion

This study is the first to investigate the preferences of French adults aged 40 to 59 regarding prevention programmes, based on a nationally representative survey of 1,526 participants. Our findings show that factors such as cost, modality, duration, and lifestyle requirements, like diet and physical activity, significantly influenced adults' preferences for prevention programs. Additionally, there is evidence of considerable preference heterogeneity among individuals within this population.

Our findings align with previous research, indicating that cost is the most significant determinant influencing programme uptake. Higher monthly fees substantially decrease the likelihood of individuals selecting a programme (*opting-in*), supporting earlier studies that demonstrated how financial barriers can hinder participation in chronic disease prevention and health promotion, deterring a portion of potential respondents (Dhaliwal et al, 2017). The duration of the programmes also played a crucial role: longer programmes discourage participation rates, likely reflecting concerns about the long-term commitment required or the burden of adhering to an extended schedule. However, our mixed logit results reveal that preferences are not uniform; while the 12-month programme duration was generally unpopular, there was considerable variation in preferences for the six-month commitment.

The modality of programs is also important. The strong preference for individual programs over group ones aligns with research highlighting concerns about privacy, comfort, and stigma associated with group interventions (Mcvay et al., 2023). Remote modalities, particularly teleconsultation, consistently increased opt-in probabilities, reinforcing recent findings that digital and hybrid health services may reduce logistical barriers to participation (Anawade et al., 2024). However, there was considerable variation in preferences for mobile app-based follow-ups, indicating that while digital tools may appeal to some, they could also be seen as burdensome by others, possibly due to differing levels of digital literacy or trust in technology.

Lifestyle requirements, in terms of diet and physical activity, are also influential in program selection. Higher physical activity and stricter dietary change reduce programme utility, with respondents demanding monetary compensation to accept these constraints. This seems to highlight a need for greater flexibility in the programme intensity to encourage participation, particularly among less active individuals.

Beyond programme attributes, our study also reveals that socioeconomic characteristics have important and expected impact on decisions to engage in preventative programmes. Income emerged

as the most consistent determinant: higher-income individuals are significantly more likely to opt into prevention programmes and less sensitive to programme cost. By contrast, occupational status and age contributed to lower participation among employees, inactive individuals, and older respondents. These socioeconomic gradients align with broader social patterns and inequalities in preventive care uptake, pointing to persistent structural barriers, and identify the need to incorporate targeted financial support for more vulnerable groups. In contrast, education, household composition (having children or not), relationship status, city size and general health status have minimal impact on participation. This suggests that structural factors, such as income, are more critical determinants of participation than traditional demographic characteristics.

Individual motivation, health beliefs, and prior behaviour strongly predict participation. Respondents reporting motivation crowding-in, confidence in changing unhealthy habits, and belief in the shared responsibility for disease prevention are significantly more likely to join programmes. Similarly, previous engagement in digital health tracking and in preventive check-ups is positively associate with opt-in probability, consistent with recent studies (Arias López et al., 2023). This reflects a broader pattern wherein individuals already engaged in monitoring their health are more inclined or attracted to structured preventive programmes. In general, stated preferences are informative. Individuals who felt encouraged by health recommendations were far more likely to join. These patterns align with consistent with behavioural economic theories of time preferences and perceived effort.

Interestingly, pre-frail individuals were slightly more likely to participate, whereas frailty itself did not show a distinct effect. This suggests that the perception of perceived vulnerability may be a moment when individuals become more receptive to preventive programmes.

Mixed logit and interaction analyses highlight that preferences are far from uniform across participants. Respondents with lower levels of physical activity are more discouraged by programmes requiring higher exercise intensity, whereas individuals with greater digital literacy or prior experience with health apps tend to favour digital follow-ups. Income shapes sensitivity to cost, with higher

income group less affected by programme fees. Interestingly, higher education appears to slightly reduce the prefence for individualized programmes, suggesting that participants with lower education may favour individualised/personalised formats more. Overall, these results emphasise the need for prevention programmes that account for both behavioural habits and socio-economic conditions.

Our research found that traditional factors often thought to influence health behaviour, such as education, relationship status, city size, and overall lifestyle habits, did not have a significant effect on program choice. This suggests that participation decisions are shaped more by the design of the programmes and individual behavioural tendencies than by demographic characteristics alone. These findings highlight the importance of developing prevention programmes that are financially accessible, flexible in duration, and tailored to fit a range of behavioural profiles and technology preferences. Therefore, policies aimed at increasing participation may benefit from reducing financial barriers, offering shorter or more flexible programme formats, and providing options that accommodate both digital and in-person modalities, allowing individuals to engage in ways that best fit their lifestyle and capabilities.

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**Appendix A**

**Table A.1.** Checklist for reporting discrete choice experiments in health

| **Section**<br><br>**Item** | | **Page and paragraph** |
|---|---|---|
| Purpose and rationale | | |
| 1 | Describe the real-world context and decision-maker that the hypothetical choice context seeks to replicate or inform | Main text, Page 6 -7; Section 2.1- Study design |
| 2 | Provide a rationale for using a DCE to answer the research question | Main text, Page 4 ; Section - 1. Introduction, Paragraph 4 |
| Attributes and levels[a] | | |
| 3 | Describe how attributes and levels were derived (e.g. literature review, interviews, focus groups, expert input) | Main text, Page 7-8; Section 2.2. Attributes and levels, Paragraphs 1-2 |
| 4 | Provide the final list of attributes and levels | Appendix B, Page 5<br><br>Table B1. Discrete choice experiment attributes and levels |
| Experimental design | | |
| 5 | Report the number of alternatives per choice set and whether they were labelled or unlabelled | Main text, page 8, Section 2.3 Choice task, Paragraph 2<br><br>Appendix B, Page 7, Figure B2. Example of choice task |
| 6 | Describe response options (e.g. forced choice, opt-out, status quo) | Main text, page 8, Section 2.3 Choice task, Paragraph 2 |
| 7 | Describe the type of experimental design (e.g. orthogonal, D-efficient, Bayesian efficient, partial profile) | Main text; Page 9; 2.4 Experimental design |
| 8 | Describe which effects are identified in the design (e.g. main effects, higher order interactions, functional form) | - |

| Section<br><br>Item | | Page and paragraph |
|---|---|---|
| 9 | Describe the number of choice sets, blocks and choice sets per block | Main text, page 8, Section 2.3 Choice task, Paragraph 2<br><br>Appendix B - Figure B2. Example of choice task |
| 10 | Indicate how the experimental design was obtained (software, catalogue, other) | Main text, Page 10, Section 3 – Statistical Analysis, Paragraph 2 |
| Survey design | | |
| 11 | Provide a sample choice set and the instructions and background information given to respondents (e.g. providing the survey as an appendix) | Appendix B - Figure B1. Prevention messages "Do you know?" randomly presented to some respondents<br><br>Appendix B - Figure B2. Example of choice task<br><br>Appendix B - Table B2. Experimental design: the 72 profiles (36 choice sets, 4 blocs) – Original (French) version |
| 12 | Report any randomisation (e.g. choice set order, attribute order, alternative order, framing effects) | Main text, page 8, Section 2.3 Choice task, Paragraph 1 |
| 13 | Describe what was checked in piloting (e.g. understanding, respondent burden, timing, wording) | - |
| 14 | Report whether information from the pilot was used to update the experimental design (e.g. priors, functional form of attributes) or survey design | - |
| Sample and data collection | | |
| 15 | Report respondent inclusion/exclusion criteria | Main text, Page 6-7, Section. 2.1 Study design, Paragraph 2-3 |
| 16 | Describe how data were collected (e.g. mail, personal interview, web survey) | Main text, Page 9, Section 2.5 Data |

| Section<br><br>Item | | Page and paragraph |
|---|---|---|
| | | Collection, whole paragraph |
| 17 | Report the response rate or cooperation rate, if possible | - |
| 18 | Report the final sample size and how the sample size was determined | Main text, page 9, Section 2.5, Data Collection, whole paragraph |
| 19 | Describe respondent characteristics and representativeness of target population, if known | Main text, Pages 13-15, Section 4.1 Descriptive statistics,<br><br>Paragraphs 1-5 |
| Econometric analysis | | |
| 20 | Indicate coding of data (e.g. effects, dummy, continuous) including definitions | Main text, page 10, Section 3.1. - Modelling opt-in vs. opt-out behaviours (Step 1); Paragraph 3 |
| 21 | Report whether any respondents were removed and why (e.g. suspected fraudulent responses, rationality tests) | N.A. (not our case) |
| 22 | Provide the rationale for model choice (e.g. conditional logit, mixed logit, latent class) and assumptions (e.g. error variance) | Main text, pages 10-12, Section 3.1. - Modelling opt-in vs. opt-out behaviours (Step 1); Paragraphs 1-5<br><br>Main text, pages 12-13, Modelling preference heterogeneity for prevention programmes (Step 2 and Step 3), Paragraphs 1-6 |
| 23 | Report model specification | - |
| Reporting of results | | |
| 24 | Report the model performance, goodness of fit (if comparing models) | Main text, pages 17-18; Section 4.2 Results of conditional logit model with random effects: Individual characteristic |

| Section<br><br>Item | | Page and paragraph |
|---|---|---|
| | | and attributes', Paragraph 1<br><br>AIC, BIC, ICC reported in Table 2, Table 3 and Table 4 |
| 25 | Describe methods used for analysis of model results (e.g. calculation of marginal rate of substitution, attribute relative importance, welfare gain) | Main text, pages 12-13, Section Modelling preference heterogeneity for prevention programmes (Step 2 and Step 3), Paragraph 5<br><br>Main text, page 22-25, Section 4.3. Results of multinomial logit models: Analysis of preference heterogeneity and their determinants |
| 26 | Report measures of precision for the output(s) of interest (e.g. confidence intervals) and how these were derived | - |

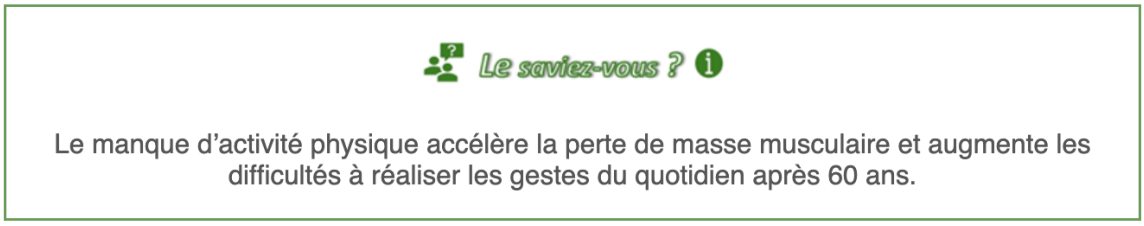
## Appendix B – Study design

**Table B1. Discrete choice experiment attributes and levels**

| **Attribute** | **Levels** |
|---|---|
| Programme duration | 1. **3** months<br>2. **6** months<br>3. **9** months<br>4. 12 months |
| Programme modality | 1. **Individual**<br>2. **Group** with sports & nutrition **workshops**<br>3. **Group** with **mobile app** to interact with others |
| Type of follow-up | 1. **Digital-only** (app with automated tips)<br>2. **Teleconsultations** (beginning & mid-point)<br>3. **In-person consultations** (beginning & mid-point) |
| Physical activity<br>(30-min dynamic sessions per week) | 1. I add **1** extra session per week<br>2. I add **2** extra sessions per week<br>3. I add **3** extra sessions per week |
| Dietary change<br>(fruit/vegetables and fatty/salty/sugary products) | 1. I eat **1** more portion of **fruit/vegetables** per day and reduce **fatty/salty/sugary** products **once/week**<br>2. I eat **2** more portions of **fruit/vegetables** per day and reduce **fatty/salty/sugary** products once/week<br>3. I eat **1** more portion of fruit/vegetables per day and reduce **fatty/salty/sugary** products **twice/week** |

| | |
|---|---|
| Monthly cost | 1. €**0**<br>2. €**5**<br>3. €**10**<br>4. €**20**<br>5. €**30** |

**Figure B1. Prevention messages "Do you know?" randomly presented to some respondents**



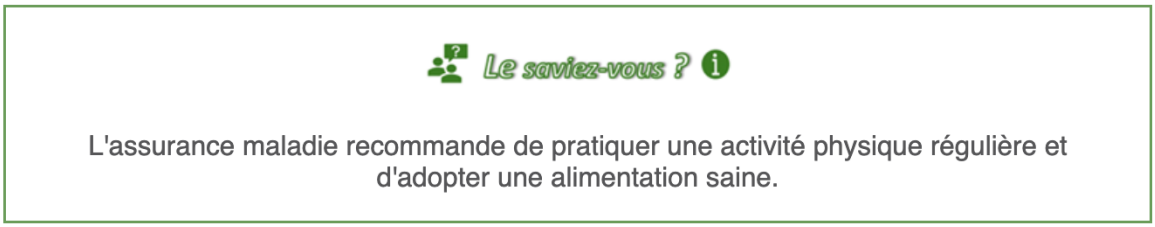

**Message 1: Negative framing of health risk**

*"Lack of physical activity accelerates muscle loss and increases difficulties in performing everyday tasks after the age of 60."*



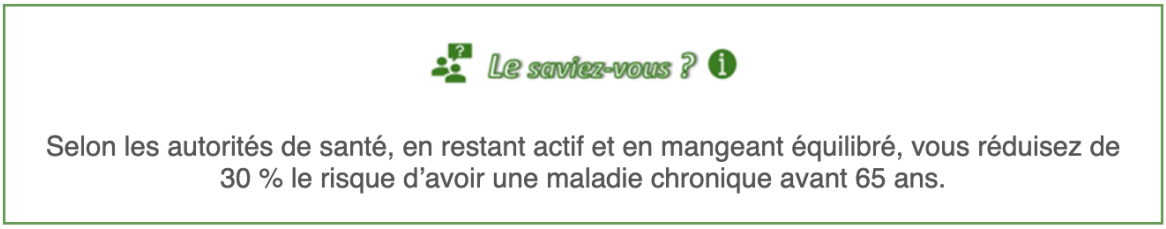

**Message 2: Positive framing promoting healthy behavior**

*"Regular physical activity and a healthy diet can increase healthy life expectancy by several years."*




**Message 3: Source-specific recommendation (NHI)**

*"The National Health Insurance recommends regular physical activity and a healthy diet."*




**Message 4: Emphasizes statistical content**

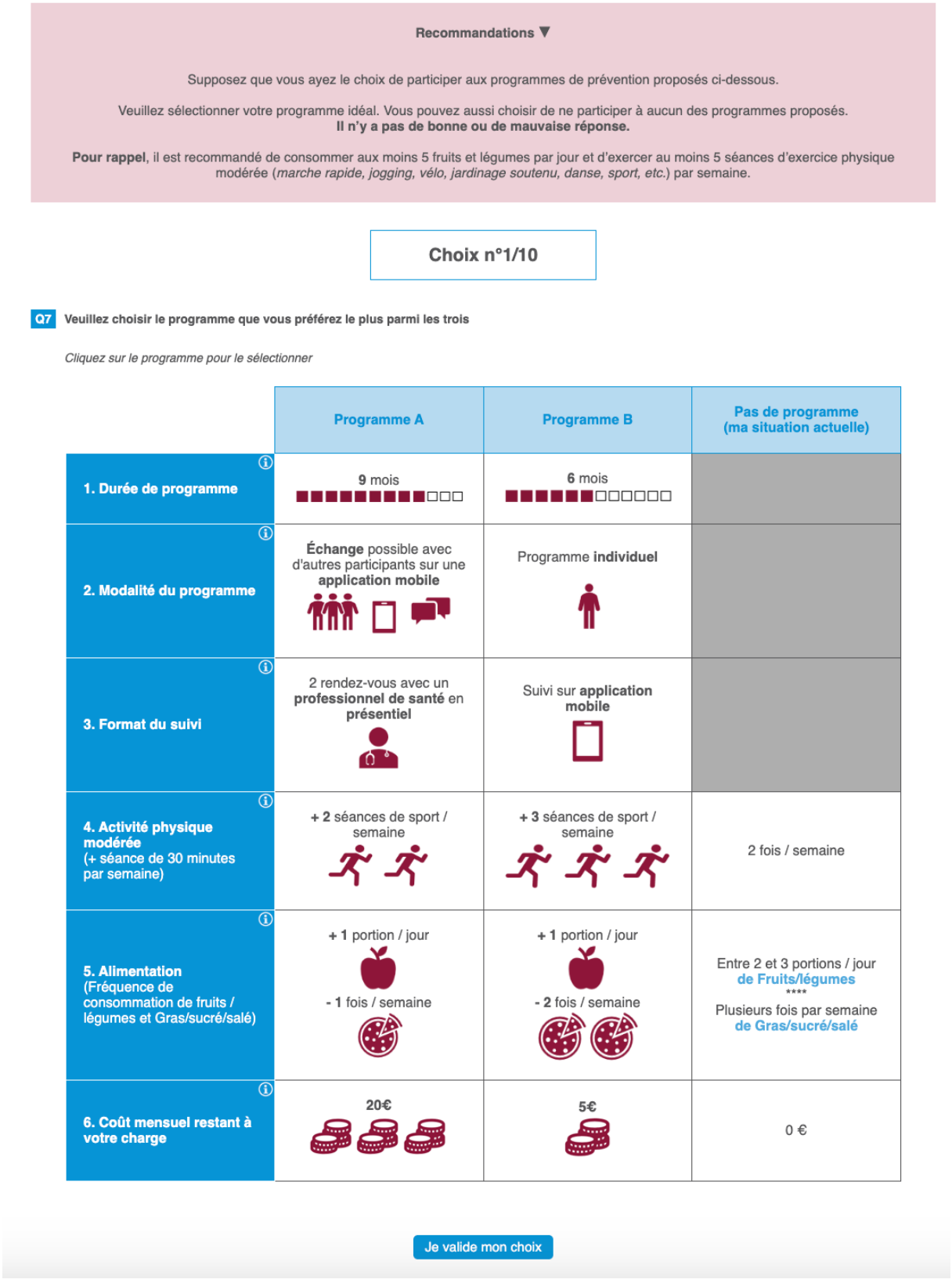
*"According to health authorities, staying active and eating a balanced diet can reduce the risk of chronic disease before the age of 65 by 30%."*




**Message 5: Combines recommendation + data**

*"Studies show that regular physical activity is associated with a 29% to 41% reduction in early mortality. It has been calculated that just 15 minutes of daily exercise could reduce the risk by 14%.*

**Figure B2. Example of choice task – Original (French) version**



## Table B2. Experimental design: the 72 profiles (36 choice sets, 4 blocs) – Original (French) version

| Bloc | Alternative | choice_set | Durée du programme | Modalités du programme | Suivi du programme | Activité physiques | Alimentation-Ligne 1 | Alimenntation-Ligne 2 | Coût |
|---|---|---|---|---|---|---|---|---|---|
| **1** | 1 | 1 | 6 mois | Cours collectif de sport, Ateliers nutrition | Suivi sur application mobile | 1 séance de sport / semaine | 2 portions / jour | 1 fois / semaine | 30€ |
| **1** | 2 | 1 | 9 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en téléconsultation | 2 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 10€ |
| **1** | 1 | 2 | 6 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en présentiel | 1 séance de sport / semaine | 1 portion / jour | 2 fois / semaine | 20€ |
| **1** | 2 | 2 | 12 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en téléconsultation | 3 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 0€ |
| **1** | 1 | 3 | 3 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en téléconsultation | 1 séance de sport / semaine | 1 portion / jour | 1 fois / semaine | 5€ |
| **1** | 2 | 3 | 6 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en présentiel | 2 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 10€ |
| **1** | 1 | 4 | 12 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en présentiel | 2 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 0€ |
| **1** | 2 | 4 | 9 mois | Programme individuel | Suivi sur application mobile | 3 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 20€ |
| **1** | 1 | 5 | 9 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en téléconsultation | 1 séance de sport / semaine | 2 portions / jour | 1 fois / semaine | 0€ |
| **1** | 2 | 5 | 12 mois | Programme en groupe, Application mobile | Suivi sur application mobile | 3 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 10€ |
| **1** | 1 | 6 | 3 mois | Programme en groupe, Application mobile | Suivi sur application mobile | 3 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 5€ |
| **1** | 2 | 6 | 6 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en téléconsultation | 1 séance de sport / semaine | 1 portion / jour | 2 fois / semaine | 10€ |
| **1** | 1 | 7 | 12 mois | Programme en groupe, Application mobile | Suivi sur application mobile | 1 séance de sport / semaine | 2 portions / jour | 1 fois / semaine | 20€ |
| **1** | 2 | 7 | 9 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en présentiel | 3 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 5€ |
| **1** | 1 | 8 | 9 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en téléconsultation | 1 séance de sport / semaine | 1 portion / jour | 1 fois / semaine | 20€ |
| **1** | 2 | 8 | 3 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en présentiel | 2 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 10€ |
| **1** | 1 | 9 | 12 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en téléconsultation | 2 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 30€ |
| **1** | 2 | 9 | 3 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en présentiel | 1 séance de sport / semaine | 1 portion / jour | 1 fois / semaine | 20€ |
| **2** | 1 | 1 | 12 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en présentiel | 1 séance de sport / semaine | 1 portion / jour | 2 fois / semaine | 5€ |
| **2** | 2 | 1 | 6 mois | Programme individuel | Suivi sur application mobile | 2 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 30€ |
| **2** | 1 | 2 | 6 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en présentiel | 3 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 5€ |
| **2** | 2 | 2 | 9 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en téléconsultation | 2 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 0€ |
| **2** | 1 | 3 | 3 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en présentiel | 2 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 0€ |
| **2** | 2 | 3 | 12 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en téléconsultation | 3 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 5€ |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **2** | 1 | 4 | 3 mois | Programme individuel | Suivi sur application mobile | 3 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 10€ |
| **2** | 2 | 4 | 6 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en téléconsultation | 1 séance de sport / semaine | 1 portion / jour | 1 fois / semaine | 30€ |
| **2** | 1 | 5 | 9 mois | Cours collectif de sport, Ateliers nutrition | Suivi sur application mobile | 1 séance de sport / semaine | 2 portions / jour | 1 fois / semaine | 5€ |
| **2** | 2 | 5 | 12 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en téléconsultation | 3 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 0€ |
| **2** | 1 | 6 | 12 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en présentiel | 2 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 20€ |
| **2** | 2 | 6 | 6 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en téléconsultation | 3 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 10€ |
| **2** | 1 | 7 | 3 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en présentiel | 2 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 30€ |
| **2** | 2 | 7 | 9 mois | Cours collectif de sport, Ateliers nutrition | Suivi sur application mobile | 1 séance de sport / semaine | 1 portion / jour | 1 fois / semaine | 10€ |
| **2** | 1 | 8 | 12 mois | Programme individuel | Suivi sur application mobile | 3 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 0€ |
| **2** | 2 | 8 | 9 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en téléconsultation | 1 séance de sport / semaine | 2 portions / jour | 1 fois / semaine | 10€ |
| **2** | 1 | 9 | 9 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en présentiel | 3 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 30€ |
| **2** | 2 | 9 | 6 mois | Programme individuel | Suivi sur application mobile | 2 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 20€ |
| **3** | 1 | 1 | 9 mois | Programme individuel | Suivi sur application mobile | 2 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 0€ |
| **3** | 2 | 1 | 3 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en téléconsultation | 3 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 30€ |
| **3** | 1 | 2 | 9 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en présentiel | 3 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 30€ |
| **3** | 2 | 2 | 6 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en téléconsultation | 2 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 0€ |
| **3** | 1 | 3 | 3 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en présentiel | 1 séance de sport / semaine | 1 portion / jour | 1 fois / semaine | 0€ |
| **3** | 2 | 3 | 9 mois | Cours collectif de sport, Ateliers nutrition | Suivi sur application mobile | 2 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 30€ |
| **3** | 1 | 4 | 12 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en présentiel | 3 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 10€ |
| **3** | 2 | 4 | 3 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en téléconsultation | 2 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 5€ |
| **3** | 1 | 5 | 12 mois | Cours collectif de sport, Ateliers nutrition | Suivi sur application mobile | 1 séance de sport / semaine | 2 portions / jour | 1 fois / semaine | 30€ |
| **3** | 2 | 5 | 6 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en téléconsultation | 2 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 5€ |
| **3** | 1 | 6 | 6 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en présentiel | 3 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 20€ |
| **3** | 2 | 6 | 12 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en téléconsultation | 1 séance de sport / semaine | 2 portions / jour | 1 fois / semaine | 10€ |
| **3** | 1 | 7 | 6 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en téléconsultation | 3 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 20€ |
| **3** | 2 | 7 | 3 mois | Cours collectif de sport, Ateliers nutrition | Suivi sur application mobile | 1 séance de sport / semaine | 1 portion / jour | 2 fois / semaine | 5€ |
| **3** | 1 | 8 | 9 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en présentiel | 2 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 20€ |
| **3** | 2 | 8 | 6 mois | Programme individuel | Suivi sur application mobile | 3 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 5€ |
| **3** | 1 | 9 | 12 mois | Cours collectif de sport, Ateliers nutrition | Suivi sur application mobile | 3 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 20€ |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **3** | 2 | 9 | 3 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en présentiel | 1 séance de sport / semaine | 1 portion / jour | 1 fois / semaine | 30€ |
| **4** | 1 | 1 | 3 mois | Programme en groupe, Application mobile | Suivi sur application mobile | 1 séance de sport / semaine | 1 portion / jour | 1 fois / semaine | 30€ |
| **4** | 2 | 1 | 6 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en présentiel | 2 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 5€ |
| **4** | 1 | 2 | 3 mois | Cours collectif de sport, Ateliers nutrition | Suivi sur application mobile | 2 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 10€ |
| **4** | 2 | 2 | 12 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en présentiel | 1 séance de sport / semaine | 2 portions / jour | 1 fois / semaine | 0€ |
| **4** | 1 | 3 | 12 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en téléconsultation | 1 séance de sport / semaine | 1 portion / jour | 2 fois / semaine | 5€ |
| **4** | 2 | 3 | 9 mois | Programme en groupe, Application mobile | Suivi sur application mobile | 3 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 0€ |
| **4** | 1 | 4 | 3 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en téléconsultation | 2 séances de sport / semaine | 2 portions / jour | 1 fois / semaine | 20€ |
| **4** | 2 | 4 | 6 mois | Programme en groupe, Application mobile | Suivi sur application mobile | 1 séance de sport / semaine | 1 portion / jour | 2 fois / semaine | 0€ |
| **4** | 1 | 5 | 12 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en présentiel | 2 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 10€ |
| **4** | 2 | 5 | 3 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en téléconsultation | 3 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 0€ |
| **4** | 1 | 6 | 6 mois | Programme en groupe, Application mobile | 2 rendez-vous avec un professionnel de santé en présentiel | 1 séance de sport / semaine | 2 portions / jour | 1 fois / semaine | 10€ |
| **4** | 2 | 6 | 12 mois | Cours collectif de sport, Ateliers nutrition | Suivi sur application mobile | 2 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 20€ |
| **4** | 1 | 7 | 3 mois | Programme en groupe, Application mobile | Suivi sur application mobile | 1 séance de sport / semaine | 1 portion / jour | 1 fois / semaine | 10€ |
| **4** | 2 | 7 | 9 mois | Programme individuel | 2 rendez-vous avec un professionnel de santé en présentiel | 3 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 30€ |
| **4** | 1 | 8 | 6 mois | Programme individuel | Suivi sur application mobile | 2 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 30€ |
| **4** | 2 | 8 | 9 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en présentiel | 3 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 20€ |
| **4** | 1 | 9 | 3 mois | Cours collectif de sport, Ateliers nutrition | 2 rendez-vous avec un professionnel de santé en téléconsultation | 3 séances de sport / semaine | 1 portion / jour | 2 fois / semaine | 20€ |
| **4** | 2 | 9 | 9 mois | Programme en groupe, Application mobile | Suivi sur application mobile | 2 séances de sport / semaine | 1 portion / jour | 1 fois / semaine | 5€ |

**Appendix C – Data analysis**

**Table C1. Random-effect logit model of opt-in vs. opt-out behaviours (marginal effects)**

| Variables | **Model 4** (1) | **Model 5** (2) | **Model 6** (3) |
|---|---|---|---|
| Programme duration (mean) | -0.003** | -0.002 | -0.002 |
| | (0.002) | (0.002) | (0.002) |
| *Ref.: individual programme* | | | |
| Programme with a group | -0.066*** | -0.070*** | -0.070*** |
| | (0.007) | (0.007) | (0.007) |
| *Ref. digital Technology–Based Follow-Up (application/teleconsultation)* | | | |
| *Not In-person consultation* | 0.027*** | 0.026*** | 0.026*** |
| | (0.006) | (0.006) | (0.006) |
| *Ref. less than 3 more sessions/week of moderate physical activity* | | | |
| 3 more sessions/week | -0.002 | -0.002 | -0.002 |
| | (0.006) | (0.006) | (0.006) |
| *Ref. moderate dietary change* | | | |
| High dietary change | -0.009 | -0.008 | -0.008 |
| | (0.007) | (0.007) | (0.007) |
| Monthly cost (mean) | -0.012*** | -0.012*** | -0.012*** |
| | (0.001) | (0.001) | (0.001) |
| *Ref. sex: male* | | | |
| Female | -0.032* | -0.009 | -0.008 |
| | (0.017) | (0.019) | (0.019) |
| *Ref. age: 40-44 years old* | | | |
| 45-49 years old | -0.026 | -0.020 | -0.019 |
| | (0.022) | (0.024) | (0.024) |
| 50-54 years old | -0.030 | -0.018 | -0.017 |
| | (0.021) | (0.024) | (0.024) |
| 55-59 years old | -0.092*** | -0.068*** | -0.068*** |
| | (0.024) | (0.026) | (0.026) |
| *Ref. profession: self-employed* | | | |
| Employees | -0.088*** | -0.102*** | -0.101*** |
| | (0.029) | (0.030) | (0.031) |
| Inactive | -0.146*** | -0.156*** | -0.154*** |
| | (0.038) | (0.041) | (0.041) |
| *Ref. individual income: <1200€* | | | |
| 1 200 € - 2 199 € | 0.041 | 0.066* | 0.063* |
| | (0.033) | (0.039) | (0.038) |
| 2 200 € - 2999 € | 0.075** | 0.118*** | 0.115*** |

| | | | |
|---|---|---|---|
| | (0.035) | (0.041) | (0.040) |
| ≥ 3 000 € | 0.117*** | 0.150*** | 0.146*** |
| | (0.037) | (0.042) | (0.042) |
| Don’t know/Don’t want to answer | 0.048 | 0.117** | 0.112** |
| | (0.044) | (0.050) | (0.050) |
| *Ref. education: No diploma/CAP-BEP level* | | | |
| High school diploma (*baccalauréat*) | -0.024 | -0.018 | -0.019 |
| | (0.024) | (0.026) | (0.026) |
| Bachelor’s level | -0.032 | -0.034 | -0.035 |
| | (0.023) | (0.025) | (0.025) |
| Master’s level or higher | -0.043 | -0.041 | -0.041 |
| | (0.029) | (0.033) | (0.032) |
| *Ref. size of citiy residence: 2,000 to 49,999 inhabitants* | | | |
| < 2,000 inhabitants | 0.008 | -0.018 | -0.019 |
| | (0.025) | (0.026) | (0.026) |
| 50,000 to 1,999,999 inhabitants | -0.004 | -0.026 | -0.027 |
| | (0.021) | (0.022) | (0.022) |
| Urban unit of Paris | 0.032 | 0.020 | 0.021 |
| | (0.025) | (0.028) | (0.028) |
| *Ref. in a couple: yes* | | | |
| No | 0.015 | 0.024 | 0.025 |
| | (0.019) | (0.020) | (0.020) |
| *Ref. having children: yes* | | | |
| No | -0.023 | -0.019 | -0.019 |
| | (0.020) | (0.022) | (0.022) |
| *Ref. complementary health insurance: individual or collective* | | | |
| Solidarity Scheme (CSS) | -0.041 | -0.028 | -0.031 |
| | (0.036) | (0.041) | (0.042) |
| None | 0.002 | 0.034 | 0.034 |
| | (0.040) | (0.047) | (0.047) |
| *Ref. self-reported health: good/very good* | | | |
| Fair/poor/very poor | 0.007 | -0.001 | 0.001 |
| | (0.020) | (0.022) | (0.021) |
| *Ref. Chronic disease reported: no* | | | |
| Yes | 0.005 | -0.008 | -0.009 |
| | (0.019) | (0.022) | (0.022) |
| *Ref. Frailty status: robust* | | | |
| Pre-frail | 0.039* | 0.047** | 0.046** |
| | (0.021) | (0.023) | (0.023) |
| Frail | 0.040 | 0.031 | 0.029 |
| | (0.042) | (0.049) | (0.049) |
| *Ref. trust in health authorities to provide reliable and appropriate information on prevention: disagree* | | | |
| Neither disagree nor agree | -0.016 | -0.011 | -0.012 |

| | | | |
|---|---|---|---|
| | (0.025) | (0.027) | (0.027) |
| Agree | -0.021 | -0.013 | -0.015 |
| | (0.025) | (0.028) | (0.027) |
| *Ref. reaction to NHI healthy lifestyle recommendation: motivation crowding-out* | | | |
| Motivation crowding-in | 0.117*** | 0.120*** | 0.121*** |
| | (0.017) | (0.018) | (0.018) |
| *Ref. belief that by adopting healthier habits, it is possible to delay age-related diseases: disagree* | | | |
| Agree | 0.040* | 0.014 | 0.014 |
| | (0.023) | (0.025) | (0.025) |
| *Ref. Self-confidence in changing unhealthy lifestyle habits: somewhat confident* | | | |
| Not confident | -0.010 | -0.022 | -0.023 |
| | (0.024) | (0.026) | (0.026) |
| Confident/ strongly confident | 0.051*** | 0.025 | 0.025 |
| | (0.019) | (0.021) | (0.021) |
| *Ref. adopting a healthy lifestyle is primarily a matter of personal responsibility: somewhat agree* | | | |
| Disagree | -0.028 | 0.017 | 0.017 |
| | (0.032) | (0.034) | (0.034) |
| Strongly agree | -0.009 | -0.005 | -0.004 |
| | (0.018) | (0.020) | (0.019) |
| *Ref. preventing age-related diseases is a responsibility that should be shared between individuals and society: somewhat agree* | | | |
| Disagree | -0.037 | -0.042* | -0.041* |
| | (0.023) | (0.025) | (0.025) |
| Strongly agree | 0.035* | 0.035 | 0.035 |
| | (0.020) | (0.022) | (0.022) |
| *Ref. Prevention message: none* | | | |
| Negative framing of health risk | -0.003 | -0.023 | |
| | (0.027) | (0.029) | |
| Positive framing promoting healthy behavior | -0.004 | -0.025 | |
| | (0.028) | (0.030) | |
| Source-specific recommendation (NHI) | -0.021 | -0.028 | |
| | (0.027) | (0.030) | |
| Emphasizes statistical content | -0.049* | -0.052* | |
| | (0.027) | (0.030) | |
| Combines recommendation + data | -0.020 | -0.012 | |
| | (0.027) | (0.030) | |
| *Ref. use of electronic device for health monitoring: no* | | | |
| Yes | | 0.038** | 0.038** |
| | | (0.019) | (0.018) |
| *Ref. moderate physical activity (nb. of 30 min. session/week): ≥3 sessions* | | | |
| < 3 sessions | | -0.007 | -0.007 |
| | | (0.023) | (0.023) |
| *Ref. consumption of vegetables/fruits (portions/day): 3-4 portions* | | | |

| | | | |
|---|---|---|---|
| 1-3 portions | | 0.031 | 0.031 |
| | | (0.023) | (0.023) |
| Occasionally or rarely | | 0.005 | 0.005 |
| | | (0.032) | (0.031) |
| *Ref. consumption of fatty/sugary/salty products per week: once a week* | | | |
| Two or more times | | 0.023 | 0.023 |
| | | (0.020) | (0.020) |
| *Ref. drinking status: non-drinker* | | | |
| Occasional drinker (moderate drinking) | | -0.021 | -0.022 |
| | | (0.038) | (0.038) |
| Regular drinker (risky drinking) | | 0.004 | 0.004 |
| | | (0.042) | (0.042) |
| *Ref. smoking status: non-smoker* | | | |
| Smoker | | -0.000 | -0.003 |
| | | (0.021) | (0.021) |
| *Ref. up-to-date vaccination status: no* | | | |
| Yes | | -0.008 | -0.005 |
| | | (0.022) | (0.022) |
| *Ref. health check-up in the last two years: no* | | | |
| Yes | | 0.035* | 0.036* |
| | | (0.019) | (0.019) |
| *Ref. Participation in national smoking or drinking cessation program: yes* | | | |
| No | | -0.104*** | -0.103*** |
| | | (0.023) | (0.023) |
| Non-concerned | | -0.123*** | -0.124*** |
| | | (0.033) | (0.033) |
| ICC | 0.704 | 0.704 | 0.704 |
| Log-likelihood | -5857.96 | -4843.47 | -4845.01 |
| AIC | 11809.94 | 9804.94 | 9798.03 |
| BIC | 12163.74 | 10238.56 | 10194.9 |
| Observations | 13,734 | 11,493 | 11,493 |

*Standard errors in parentheses*

**** p<0.01, ** p<0.05, * p<0.1*

**Table C2. Mixlogit with interactions (non-significant results)**

| VARIABLES | (1) Choice | (2) Choice | (3) Choice | (4) Choice | (5) Choice | (6) Choice | (7) Choice |
|---|---|---|---|---|---|---|---|
| *Ref. Programme duration: 3 months* | | | | | | | |
| 6 months | 0.046 | 0.045 | 0.045 | 0.066 | 0.054 | 0.027 | 0.045 |
| | (0.055) | (0.055) | (0.055) | (0.072) | (0.055) | (0.094) | (0.055) |
| 9 months | -0.032 | -0.032 | -0.033 | 0.009 | -0.033 | -0.086 | -0.032 |
| | (0.057) | (0.057) | (0.057) | (0.109) | (0.057) | (0.164) | (0.057) |
| 12 months | -0.240*** | -0.241*** | -0.240*** | -0.178 | -0.235*** | -0.314 | -0.241*** |
| | (0.051) | (0.051) | (0.051) | (0.149) | (0.051) | (0.236) | (0.051) |
| *Ref. Programme modality: Group with sports & nutrition workshops* | | | | | | | |
| Group programme (mobile app) | 0.005 | 0.005 | -0.021 | 0.005 | 0.002 | 0.002 | 0.005 |
| | (0.044) | (0.044) | (0.092) | (0.044) | (0.044) | (0.044) | (0.044) |
| Individual programme | 0.622*** | 0.622*** | 0.583*** | 0.622*** | 0.620*** | 0.620*** | 0.623*** |
| | (0.052) | (0.052) | (0.132) | (0.052) | (0.052) | (0.052) | (0.052) |
| *Ref. Type of follow-up: Teleconsultations* | | | | | | | |
| In-person consultations | 0.036 | -0.010 | 0.035 | 0.035 | 0.035 | 0.035 | 0.062 |
| | (0.044) | (0.060) | (0.044) | (0.044) | (0.044) | (0.044) | (0.056) |
| Digital-only (mobile app) | 0.035 | -0.102 | 0.036 | 0.036 | 0.041 | 0.041 | 0.116 |
| | (0.044) | (0.131) | (0.045) | (0.045) | (0.044) | (0.044) | (0.114) |
| *Ref. Physical activity (sessions/week): +1 session* | | | | | | | |
| +2 sessions | -0.059 | -0.058 | -0.059 | -0.059 | -0.053 | -0.053 | -0.059 |
| | (0.045) | (0.045) | (0.045) | (0.045) | (0.045) | (0.045) | (0.045) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| +3 sessions | -0.173*** | -0.173*** | -0.173*** | -0.173*** | -0.172*** | -0.172*** | -0.173*** |
| | (0.043) | (0.043) | (0.043) | (0.043) | (0.043) | (0.043) | (0.043) |
| *Ref. diet change: +1 portion/day FV; -1 time/week FFS* | | | | | | | |
| +1 portion/day FV; -2 time/week FFS | -0.047 | -0.085** | -0.086** | -0.086** | -0.087** | -0.087** | -0.086** |
| | (0.083) | (0.043) | (0.043) | (0.043) | (0.043) | (0.043) | (0.043) |
| +2 portions/day FV; -1 time/week FFS | 0.044 | -0.034 | -0.033 | -0.033 | -0.031 | -0.031 | -0.033 |
| | (0.148) | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) |
| *Ref. monthly cost: €0* | | | | | | | |
| 5 € | -0.552*** | -0.552*** | -0.553*** | -0.552*** | -0.566*** | -0.551*** | -0.552*** |
| | (0.057) | (0.057) | (0.057) | (0.057) | (0.133) | (0.057) | (0.057) |
| 10 € | -0.895*** | -0.896*** | -0.896*** | -0.895*** | -0.909*** | -0.905*** | -0.896*** |
| | (0.058) | (0.058) | (0.058) | (0.058) | (0.066) | (0.058) | (0.058) |
| 20 € | -1.882*** | -1.884*** | -1.883*** | -1.882*** | -1.883*** | -1.876*** | -1.882*** |
| | (0.076) | (0.077) | (0.077) | (0.076) | (0.097) | (0.075) | (0.076) |
| 30 € | -2.419*** | -2.419*** | -2.420*** | -2.420*** | -2.440*** | -2.428*** | -2.419*** |
| | (0.092) | (0.092) | (0.092) | (0.092) | (0.131) | (0.093) | (0.092) |
| ascB | 0.033 | 0.033 | 0.033 | 0.033 | 0.025 | 0.025 | 0.033 |
| | (0.036) | (0.036) | (0.036) | (0.036) | (0.037) | (0.037) | (0.036) |
| | -0.020 | | | | | | |
| | (0.036) | | | | | | |
| Dietary effort × fruit and vegetable consumption | -0.020 | | | | | | |
| | (0.036) | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Follow-up x digital objects | | 0.032 | | | | | |
| | | (0.029) | | | | | |
| Modalities x digital literacy | | | 0.008 | | | | |
| | | | (0.024) | | | | |
| Enfants x duration | | | | -0.006 | | | |
| | | | | (0.013) | | | |
| Budget x cout | | | | | 0.003 | | |
| | | | | | (0.020) | | |
| Emploi x duration | | | | | | 0.004 | |
| | | | | | | (0.013) | |
| Follow-up x city size | | | | | | | -0.011 |
| | | | | | | | (0.014) |
| Observations | 18,468 | 18,468 | 18,468 | 18,468 | 18,468 | 18,468 | 18,468 |
| Log-likelihood | -5136.15 | -5135.68 | -5136.25 | -5136.21 | -5134.30 | -5134.25 | -5136.01 |
| AIC | 10338.31 | 10337.36 | 10338.51 | 10338.41 | 10334.6 | 10334.49 | 10338.03 |
| BIC | 10596.49 | 10595.54 | 10596.69 | 10596.6 | 10592.78 | 10334.49 | 10596.22 |

*Standard errors in parentheses*

**** p<0.01, ** p<0.05, * p<0.1*