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INCREASING FRUIT AND VEGETABLE CONSUMPTION: A COST-EFFICIENCY ANALYSIS OF PUBLIC POLICIES

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In many countries, consumption of fruits and vegetables (F&V) is below recommended levels, particularly in the lowest income categories of population. In this paper, we quantify the economic and health effects of alternative policy scenarios aiming at increasing the F&V consumption of the whole or of some segments of the population.

An economic model of the F&V market is used to assess the effect of different policies on F&V consumption. Then, we assess the number of deaths avoided (DA) and life-years saved (LYS) induced by variation in F&V consumption. We hypothesize a log linear dose effect relationship linking the number of DA and the increase in F&V intake. We compare the cost per statistical LYS taking into account the public costs of alternative policies. We simulate the impact of a 3% reduction in VAT (policy 1), a F&V stamp policy designed for the first income decile of the population (policy 2), and an information campaign (policy 3). Confidence Intervals (CI95%) are estimated by Monte Carlo simulation. This analysis is applied to the French case.

The relative risks of death for one additional portion of F&V vary from 0.84 to 0.99 depending on the disease. Policy 1 generates a 5.36g/day CI95% [4.18-6.75] increase in per-capita consumption of F&V, allowing 397 [241-578] DA and 5493 [3250-8096] LYS. The cost per LYS is k€89 [57-143]. Policy 2 leads to a small increase of the mean consumption (0.41 g/day [0.31-0.52]) resulting from an increase in the lowest income decile (7.99 g/day [7.36-8.79]) and a small decrease in the other deciles. This allows 86 [56-119] DA and 1150 [738-1589] LYS. The cost per LYS is k€ 420 [292-630]. Policy 3 induces a mean increase in the F&V consumption of 3.58 g/day [2.21-5.44], allowing 255 [135-422] DA and 3540 [1837-5912] LYS. The cost per LYS is k€ 3 [2-5].

The variations in F&V consumption levels and health effects obtained in this paper are modest whatever the studied policy. However, their implementation costs are not so high and the costs per LYS are compatible with many other public policies at least for policies 1 and 3.