**Supplementary material to:**

*Baldissera S, Minardi V, Masocco M, Ferrante G. Cardiovascular risk and protective factors in adults with and without diabetes mellitus (Italy, 2016–19). European Journal of Public Health*

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## Box 1. Socioeconomic status and health

People of low SES are exposed to disadvantaged physical and social environments (neighborhoods, families, jobs) that exert negative influences on their health, and have decreased access to health services. Low SES has consistent associations with individual psychological characteristics, such as negative emotional and cognitive states (hopelessness, depression, hostility and anger), that are associated with poor health outcomes, in particular CV morbidity and mortality. Health-relevant behaviors that contribute the most to morbidity and mortality (smoking, sedentary lifestyle, unhealthy diet) also increase as SES decreases. [1,2]

## Definition of indicators

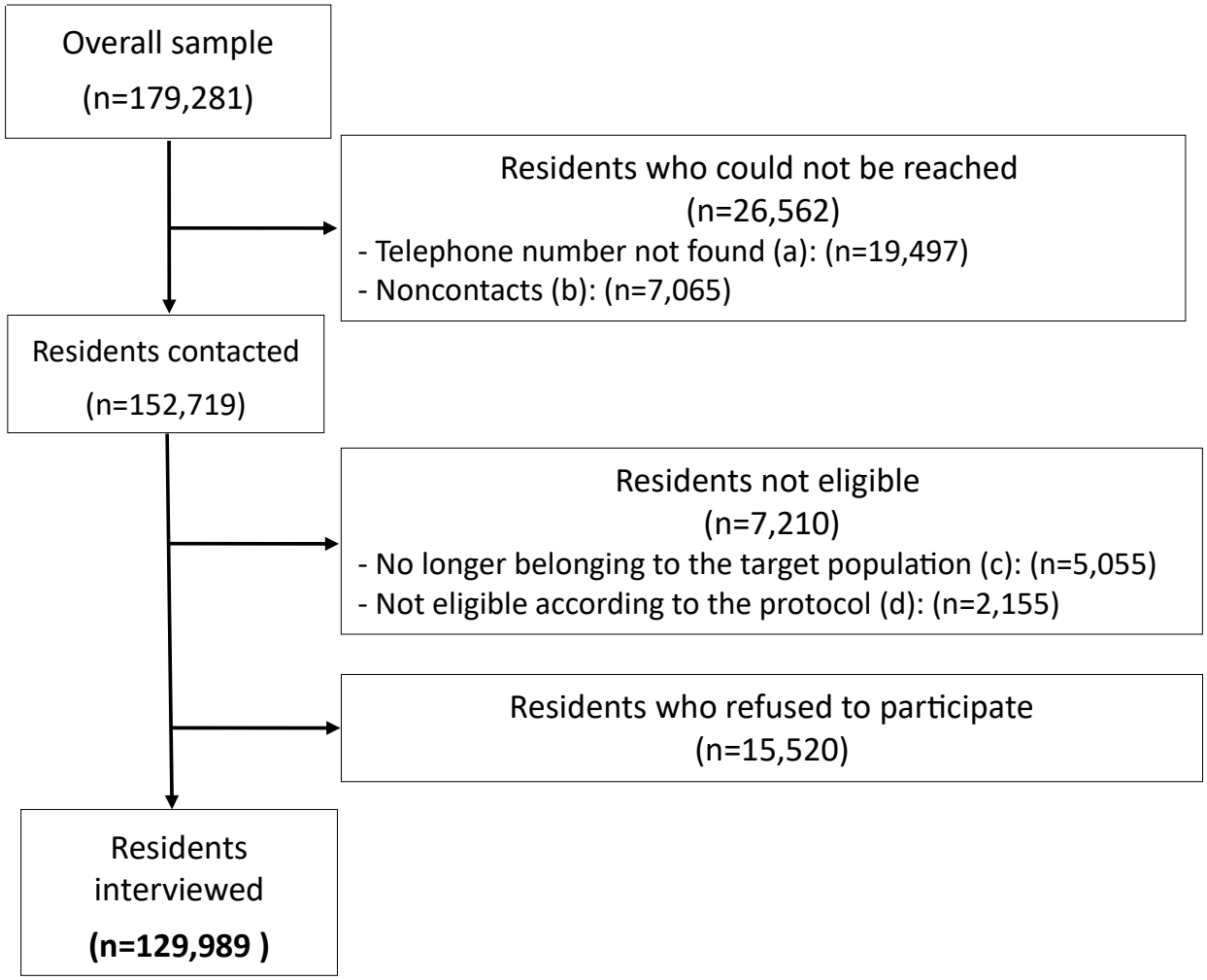
| **CARDIOVASCULAR RISK/AGGRAVATING FACTORS** | | | |
|---|---|---|---|
| **Indicator** | **Question** | **Answers** | **Recoding** |
| Current smoking | Have you smoked at least 100 cigarettes in your lifetime and now you smoke on at least some days? | yes | current smoker |
| | | no | no current smoker |
| Overweight/obesity | What is your current body weight? How tall are you without shoes on? | | *Body Mass Index (BMI) = kg/m2* |
| | | BMI <25 | normal weight/underweight |
| | | BMI ≥25 | overweight/obese |
| No leisure time physical activity | How many minutes of moderate **[a]** and high **[b]** intensity physical activity (PA) have you accumulated in the last week, without considering the working time? | *mins of moderate PA + (mins of intense PA*2) = total weekly mins of PA* **[c]** | |
| | | total weekly mins of PA <10 | physically inactive in the leisure time |
| | | total weekly mins of PA ≥10 | physically active in the leisure time |
| Less than 5 portions/day of fruit and vegetables | How many portions **[d]** of fruit/vegetables do you usually eat in a day? | none, 1-2, 3-4 | less than 5 portions/day of fruit/vegetables |
| | | >=5 | 5 or more portions/day of fruit/vegetables |
| Hypertension | Has a doctor ever told you that your blood pressure is high? **[e]** | yes | physician-diagnosed hypertension |
| | | no | no physician-diagnosed hypertension |
| Hypercholesterolemia | Has a doctor ever told you that cholesterol in your blood is high? **[f]** | yes | physician-diagnosed hypercholesterolemia |
| | | no | no physician-diagnosed hypercholesterolemia |

**[a]** vacuuming, gardening, brisk walking, or bicycling; **[b]** running, aerobics, or heavy yard work; **[c]** 1 minute of vigorous physical activity is assumed to be equivalent to 2 minutes of moderate physical activity; **[d]** one portion is equivalent to 80 g of edible food, and corresponds to the amount that can be contained in the palm of a hand or half dish of cooked vegetables. Starchy tubers and cereals are excluded. **[e]** among those who ever had their blood pressure measured. **[f]** among those who ever had their blood cholesterol checked.

**[continued on next page]**

| PROTECTIVE BEHAVIORS AND PREVENTIVE CARE PRACTICES | | | |
|---|---|---|---|
| **Indicator** | **Question** | **Answers** | **Recoding** |
| Attempt to quit smoking | In the last 12 months, have you ever stopped smoking for at least one day, in an attempt to quit permanently? | yes | attempt to quit smoking |
| | | no | no attempt to quit smoking |
| Diet to lose weight | Are you currently on a diet to lose weight? | yes | diet to lose weight |
| | | no | no diet to lose weight |
| Advice from a doctor to quit smoking (among smokers) | In the last 12 months, has a doctor ever told you to stop smoking? | yes | advice from a doctor to quit smoking |
| | | no | no advice from a doctor to quit smoking |
| Advice from a doctor to do regular physical activity (among inactive people) | In the last 12 months, has a doctor ever told you to do regular physical activity? | yes | advice from a doctor to do regular PA |
| | | no | no advice from a doctor to do regular PA |
| Advice from a doctor to lose weight (among overweight and obese) | In the last 12 months, has a doctor ever told you to lose weight? | yes | advice from a doctor to lose weight |
| | | no | no advice from a doctor to lose weight |
| Drug treatment for hypertension (among people with hypertension) | Do you take drugs to keep your blood pressure low? | yes | pharmacotherapy for hypertension |
| | | no | no pharmacotherapy for hypertension |
| Drug treatment for hypercholesterolemia (among people with hypercholesterolemia) | Do you take drugs to keep cholesterol in your blood low? | yes | pharmacotherapy for hypercholesterolemia |
| | | no | no pharmacotherapy for hypercholesterolemia |
| At least one glycated haemoglobin test in the past 12 months | Have you ever done a glycated haemoglobin test? When? | yes, in the last 4 months or 12 months | glycated haemoglobin test/ past 12 months |
| | | yes, > 12 months ago/ no, never/ do not know | no glycated haemoglobin test/ past 12 months |

## Participants flow diagram




**(a)** Those for whom a telephone number was not found despite an exhaustive search, following the protocol procedures

**(b)** Sampled people who had a telephone number available but who could not be contacted, despite repeated attempts, following the protocol procedures

**(c)** People who moved away (n=4.642), died (n=216) or were not comprised in the defined age range (n=197)

**(d)** Those who did not understand Italian (n=969), who could not participate in the interview (eg, because of serious handicaps, n= 811), or who were hospitalized or institutionalized (n=375)

**Table S1. Composition of the study population (adults, 18-69 years, resident in Italy) overall and according to socioeconomic level (SEL). Percentages and absolute frequencies. PASSI 2016-19 (n=129,989).**

| **Characteristics** | | | **Adults resident in Italy** | | **SEL 1 [a]** | | **SEL 2** | | **SEL 3** | | **SEL 4** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mean age, years (95%CI)** | | | **44.8 (44.8-44.9)** | | **50.1 (50.0-50.2)** | | **50.1 (50.0-50.3)** | | **41.1 (41.0-41.2)** | | **42.9 (42.8-42.9)** | |
| | | | % | N. | % | N. | % | N. | % | N. | % | N. |
| **Gender/age** | Men | 18-49 | **30.0** | *38,170* | **23.3** | *6,225* | **24.4** | *3,975* | **33.1** | 10,983 | **33.4** | *16,818* |
| | | 50-69 | **19.5** | *25,317* | **25.1** | *6,831* | **30.8** | *5,072* | **13.2** | 4,562 | **17.5** | *8,720* |
| | Women | 18-49 | **29.6** | *39,123* | **20.8** | *5,647* | **16.0** | *2,679* | **38.3** | 13,545 | **32.4** | *17,083* |
| | | 50-69 | **20.9** | *27,379* | **30.8** | *8,439* | **28.8** | *4,738* | **15.4** | 5,424 | **16.7** | *8,616* |
| **Geographic area of residence [b]** | North | | **36.0** | *55,706* | **26.0** | *9,205* | **53.8** | *9,697* | **25.7** | *11,095* | **44.7** | *25,504* |
| | Centre | | **23.2** | *33,455* | **18.5** | *5,992* | **20.9** | *3,658* | **23.1** | *9,108* | **26.5** | *14,324* |
| | South/major islands | | **40.8** | *40,828* | **55.5** | *11,945* | **25.3** | *3,109* | **51.2** | *14,311* | **28.8** | *11,409* |

**[a]** SEL 1: low educational attainment (primary/middle school) & some/many economic difficulties; SEL 2: low educational attainment (primary/middle school) & no economic difficulties; SEL 3: high educational attainment (high school/university) & some/many economic difficulties; SEL 4: high educational attainment (high school/university) & no economic difficulties. **[b]** Defined according to the census criteria of the Italian National Institute of Statistics; Southern Italy comprises the two Italian major islands (Sardinia and Sicily).

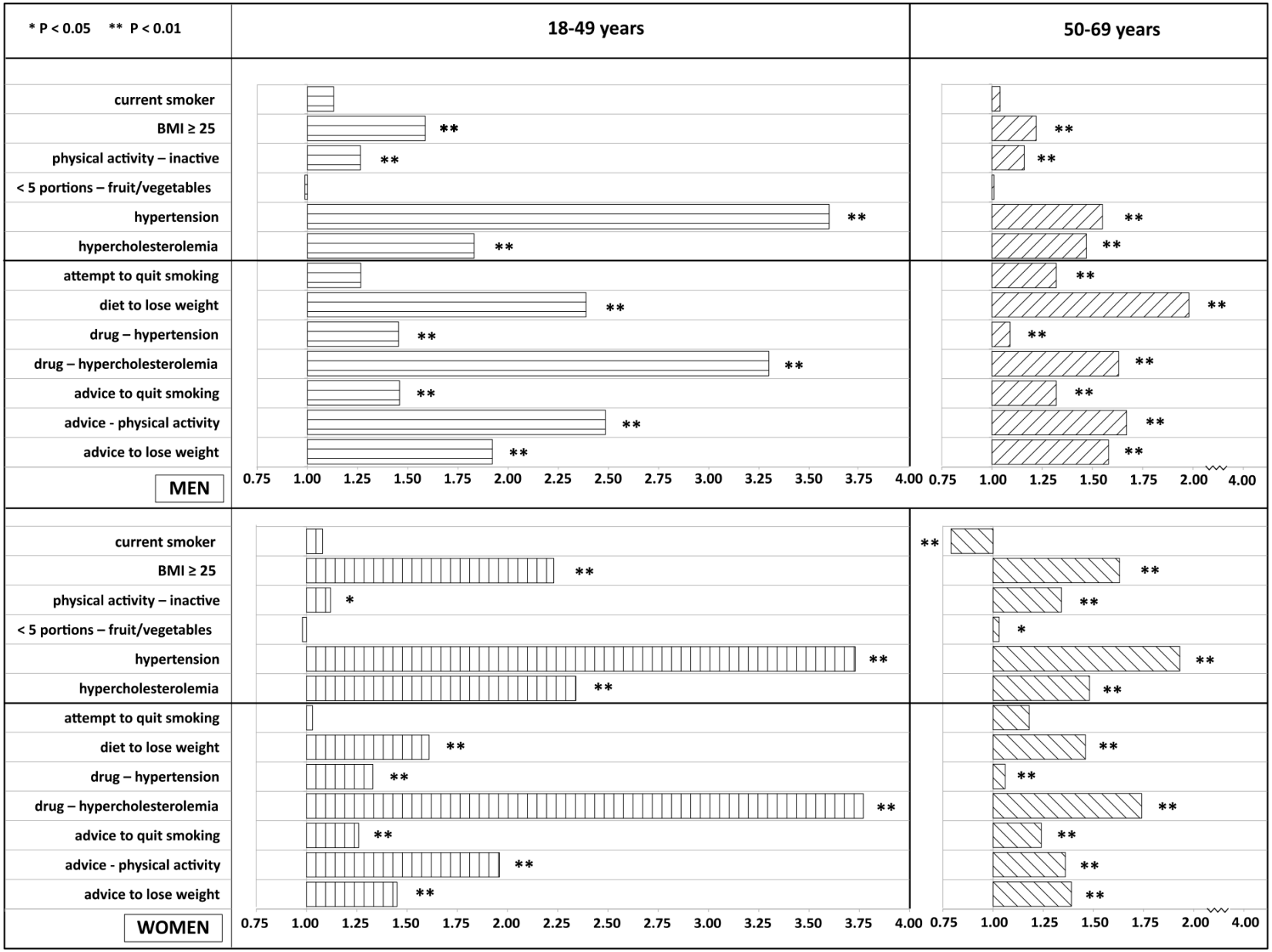
The estimates are weighted. For each stratifying variable, the percentages of the different categories -both for the whole sample and for the socio-economic groups- sum up to 100%, while for the SEL groups, the sum of the absolute frequencies is lower than the total number of the interviewees, due to missing values.

**Table S2. Prevalence (percent with 95% C.I.) of diabetes in adults (18-69 years) resident in Italy, according to socioeconomic level (SEL), overall and stratified by demographic characteristics. PASSI 2016-19 (n=129,989).**

| | | Whole population | SEL 1 [a] | SEL 2 | SEL 3 | SEL 4 |
|---|---|---|---|---|---|---|
| **Overall** | | **4.7 (4.5-4.8)** | **9.0 (8.5-9.4)** | **6.3 (5.8-6.7)** | **3.4 (3.2-3.7)** | **2.6 (2.4-2.7)** |
| **Age group** | **Gender** | | | | | |
| **18-49** | **Men** | **1.5 (1.3-1.6)** | **2.5 (2.1-3.1)** | **1.8 (1.3-2.5)** | **1.5 (1.2-1.9)** | **0.9 (0.7-1.1)** |
| | **Women** | **1.6 (1.4-1.7)** | **3.0 (2.5-3.5)** | **1.8 (1.4-2.5)** | **1.6 (1.4-1.9)** | **1.0 (0.8-1.1)** |
| **50-69** | **Men** | **11.2 (10.8-11.7)** | **16.2 (15.1-17.3)** | **10.7 (9.8-11.8)** | **10.7 (9.7-11.9)** | **7.5 (6.9-8.3)** |
| | **Women** | **7.5 (7.2-8.0)** | **12.0 (11.1-12.9)** | **7.7 (6.8-8.7)** | **5.8 (5.1-6.7)** | **3.7 (3.3-4.2)** |

[a] SEL 1: low educational attainment (primary/middle school) & some/many economic difficulties; SEL 2: low educational attainment (primary/middle school) & no economic difficulties; SEL 3: high educational attainment (high school/university) & some/many economic difficulties; SEL 4: high educational attainment (high school/university) & no economic difficulties. Weighted estimates.

**Fig. S1. Prevalence Ratios of CVD risk/protective factors between people resident in Italy with and without diabetes, stratified by age and gender. PASSI 2016-19 (n=129,989).**




* = P < 0.05, ** = P < 0.01 for the difference between people with and without diabetes (Referent). Unadjusted Poisson regression.

**Table S3. Prevalence (percent with 95% C.I.) of behaviour-related cardiovascular risk factors, protective behaviours and preventive-care practices in adults (18-69 years) resident in Italy with and without diabetes, according to socioeconomic level (SEL). PASSI 2016-19 (n=129,989).**

| | | SEL 1 [a] | | SEL 2 | | SEL 3 | | SEL 4 | |
|---|---|---|---|---|---|---|---|---|---|
| | **Indicators** | **D [b]** | **No D [b]** | **D** | **No D** | **D** | **No D** | **D** | **No D** |
| **Cardio-vascular risk factors** | current smoking **[c]** | **24.9 (22.7-27.3)** | **31.2 (30.4-31.9)** | **20.2 (17.3-23.4)** | **23.6 (22.8-24.4)** | **21.0 (18.4-23.9)** | **25.3 (24.7-25.9)** | **19.3 (16.7-22.1)** | **20.1 (19.7-20.5)** |
| | overweight/obesity **[d]** | **77.7 (75.5-79.7)** | **54.8 (54.0-55.6)** | **74.0 (70.6-77.1)** | **48.3 (47.3-49.2)** | **64.5 (60.9-68.0)** | **38.0 (37.4-38.7)** | **63.9 (60.7-67.0)** | **33.3 (32.7-33.8)** |
| | no leisure-time physical activity **[e]** | **61.4 (58.9-63.8)** | **53.8 (53.0-54.5)** | **47.1 (43.3-50.9)** | **39.0 (38.1-39.9)** | **47.5 (44.0-51.1)** | **40.9 (40.2-41.6)** | **39.3 (36.0-42.7)** | **30.4 (29.9-30.9)** |
| | < 5 portions/day of fruit and vegetables | **92.1 (90.7-93.3)** | **91.6 (91.1-92.0)** | **88.1 (85.6-90.3)** | **89.4 (88.8-89.9)** | **87.4 (84.6-89.7)** | **91.0 (90.6-91.4)** | **86.9 (84.6-88.9)** | **89.3 (88.9-89.6)** |
| | hypertension | **57.2 (54.6-59.7)** | **26.2 (25.5-27.0)** | **54.2 (50.5-57.9)** | **25.1 (24.2-26.0)** | **44.5 (41.0-48.1)** | **14.3 (13.8-14.8)** | **48.1 (44.7-51.5)** | **14.4 (14.0-14.8)** |
| | hypercholesterolemia | **47.2 (44.6-49.8)** | **24.6 (23.9-25.4)** | **47.1 (43.3-51.0)** | **28.1 (27.2-29.1)** | **36.5 (33.1-40.1)** | **17.4 (16.8-18.0)** | **38.1 (34.8-41.4)** | **20.2 (19.7-20.6)** |
| **Protective behaviours and preventive-care practices** | attempt to quit smoking in the last year (among cigarette smokers) | **37.5 (32.4-43.0)** | **29.0 (27.7-30.4)** | **34.0 (26.1-42.8)** | **32.0 (30.2-33.9)** | **33.3 (26.8-40.5)** | **30.7 (29.5-32.0)** | **36.6 (29.5-44.2)** | **32.0 (30.9-33.2)** |
| | diet to lose weight (among overweight and obese) | **39.2 (36.4-42.1)** | **21.2 (20.4-22.2)** | **39.3 (35.2-43.5)** | **20.9 (19.8-22.1)** | **48.6 (44.4-52.8)** | **25.8 (24.9-26.8)** | **45.3 (41.1-49.6)** | **26.5 (25.6-27.4)** |
| | drug treatment for hypertension (among people with hypertension) | **92.8 (91.0-94.3)** | **83.3 (82.1-84.5)** | **92.4 (89.5-94.5)** | **82.8 (81.3-84.2)** | **86.6 (82.5-89.8)** | **72.8 (71.0-74.5)** | **89.9 (85.9-92.8)** | **75.3 (74.1-76.5)** |
| | drug treatment for hypercholesterolemia (among people with hypercholesterolemia) | **66.8 (63.0-70.5)** | **42.8 (41.1-44.5)** | **72.6 (67.0-77.5)** | **35.4 (33.5-37.3)** | **63.9 (57.9-69.5)** | **27.2 (25.5-28.8)** | **65.7 (60.3-70.7)** | **27.3 (26.1-28.5)** |
| | advice to quit smoking from a doctor (among cigarette smokers) | **76.3 (71.2-80.7)** | **56.0 (54.4-57.5)** | **72.9 (64.7-79.9)** | **53.0 (50.9-55.1)** | **70.5 (63.4-76.7)** | **48.2 (46.7-49.6)** | **70.3 (63.1-76.7)** | **47.0 (45.7-48.3)** |
| | advice to do regular physical activity from a doctor (among inactive people) | **39.9 (36.6-43.4)** | **23.4 (22.5-24.5)** | **46.2 (40.3-52.2)** | **27.4 (25.9-28.9)** | **49.1 (43.9-54.3)** | **24.0 (23.0-25.1)** | **49.6 (43.8-55.4)** | **26.8 (25.8-27.8)** |
| | advice to lose weight from a doctor (among overweight and obese) | **67.8 (64.9-70.6)** | **44.3 (43.2-45.5)** | **72.1 (68.1-75.7)** | **44.5 (43.1-46.0)** | **71.9 (67.8-75.6)** | **44.3 (43.1-45.4)** | **71.8 (67.5-75.8)** | **45.7 (44.6-46.7)** |
| | at least one HbA1C test in the past 12 months | **55.7 (53.1-58.4)** | - | **63.3 (59.5-67.0)** | - | **70.1 (66.6-73.3)** | - | **76.0 (72.7-79.0)** | - |

**[a]** SEL 1: Low education-economic difficulties - SEL 2: Low education-no economic difficulties - SEL 3: High education-economic difficulties - SEL 4: High education-no economic difficulties. **[b]** D: people with diabetes, No D: people without diabetes. **[c]** Reporting smoking on every day or some days when interviewed. **[d]** Body Mass Index ≥ 25. **[e]** Not engaging in moderate (vacuuming, gardening, brisk walking or bicycling) or vigorous (running, aerobics, heavy yard work) physical activity in leisure time, for at least 10 minutes per week, in the previous 30 days. Daily physical activity bouts of less than 10 minutes duration do not concur to the calculation of the weekly minutes.

**Table S4. Prevalence of multiple cardiovascular risk factors in adults (18-69 years) resident in Italy, overall and by reported diagnosis of diabetes, in the general population and in four age/gender strata. PASSI 2016-19 (n=129,989).**

| N. risk factors | Adults resident in Italy | | | Men | | | | | | Women | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 18-49 | | | 50-69 | | | 18-49 | | | 50-69 | | |
| | W [a] | D [b] | No D [b] | W | D | No D | W | D | No D | W | D | No D | W | D | No D |
| 0 | 2.7 (2.6-2.8) | 0.9 (0.6-1.3) | 2.8 (2.7-2.9) | 2.1 (1.9-2.2) | 1.2 (0.5-3.1) | 2.1 (1.9-2.2) | 1.4 (1.2-1.5) | 0.5 (0.3-1.0) | 1.5 (1.3-1.7) | 4.1 (3.9-4.4) | 3.7 (2.2-6.1) | 4.1 (3.9-4.4) | 2.9 (2.7-3.1) | 0.5 (0.2-1.3) | 3.1 (2.8-3.3) |
| 1 | 23.5 (23.2-23.8) | 8.1 (7.3-9.1) | 24.2 (24.0-24.5) | 25.2 (24.7-25.8) | 14.0 (10.3-18.8) | 25.4 (24.9-25.9) | 11.6 (11.1-12.1) | 6.3 (5.2-7.6) | 12.2 (11.7-12.8) | 34.3 (33.7-34.8) | 17.7 (14.6-21.2) | 34.5 (33.9-35.1) | 16.8 (16.3-17.3) | 6.2 (4.9-7.9) | 17.6 (17.1-18.2) |
| 2 | 33.2 (32.9-33.5) | 19.1 (17.9-20.3) | 33.8 (33.6-34.2) | 35.2 (34.6-35.8) | 20.8 (16.7-25.4) | 35.4 (34.8-36.0) | 26.5 (25.9-27.2) | 17.2 (15.6-19.0) | 27.7 (27.0-28.5) | 38.1 (37.5-38.8) | 33.7 (29.5-38.1) | 38.2 (37.6-38.8) | 29.5 (28.8-30.1) | 16.9 (15.0-18.9) | 30.5 (29.8-31.2) |
| 3 | 24.8 (24.5-25.1) | 28.7 (27.3-30.2) | 24.6 (24.3-24.9) | 25.4 (24.9-26.0) | 31.7 (26.8-37.1) | 25.3 (24.8-25.9) | 31.0 (30.2-31.7) | 29.9 (27.8-32.1) | 31.1 (30.3-31.8) | 17.8 (17.4-18.3) | 23.4 (20.0-27.2) | 17.8 (17.3-18.2) | 27.9 (27.3-28.6) | 27.8 (25.4-30.2) | 27.9 (27.3-28.7) |
| 4 | 11.7 (11.6-12.0) | 25.7 (24.3-27.1) | 11.1 (10.9-11.3) | 9.9 (9.5-10.3) | 18.3 (14.6-22.6) | 9.8 (9.4-10.2) | 20.3 (19.7-21.0) | 26.9 (24.8-29.1) | 19.5 (18.8-20.1) | 4.8 (4.5-5.1) | 13.6 (10.9-17.0) | 4.6 (4.4-4.9) | 16.3 (15.8-16.9) | 29.7 (27.3-32.4) | 15.3 (14.7-15.8) |
| 5 | 3.6 (3.5-3.8) | 14.9 (13.7-16.1) | 3.1 (3.0-3.2) | 1.9 (1.7-2.1) | 11.8 (8.2-16.8) | 1.8 (1.6-1.9) | 8.1 (7.7-8.6) | 16.1 (14.4-18.0) | 7.1 (6.7-7.6) | 0.8 (0.7-0.9) | 6.1 (4.2-9.0) | 0.7 (0.6-0.8) | 6.0 (5.6-6.4) | 16.6 (14.6-18.9) | 5.1 (4.7-5.5) |
| 6 | 0.5 (0.4-0.5) | 2.6 (2.0-3.2) | 0.4 (0.3-0.4) | 0.3 (0.2-0.4) | 2.2 (1.1-4.4) | 0.2 (0.2-0.3) | 1.1 (1.0-1.3) | 3.1 (2.3-4.1) | 0.9 (0.7-1.1) | 0.1 (0.0-0.1) | 1.8 (0.7-4.4) | 0.1 (0.0-0.1) | 0.6 (0.5-0.8) | 2.3 (1.4-3.7) | 0.5 (0.4-0.6) |

**a)** W: Whole population/sub-population. **b)** D/No D: people with/without diabetes.

Weighted estimates. Values reported as percentages (CI 95%).

**Table S5. Prevalence (percent, C.I.95%) of multiple (4-6) risk factors according to reported diagnosis of diabetes and to socioeconomic level, and respective Prevalence Ratios, stratified by demographic characteristics. Adults (18-69 years) resident in Italy. PASSI 2016-19 (n=129,989).**

| | | Reported diagnosis of diabetes | | | Socioeconomic level (SEL) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gender** | **Age** | **Diabetes** | **No Diabetes (Ref)** | **PR [b]** | **SEL1 [a]** | **PR** | **SEL2** | **PR** | **SEL3** | **PR** | **SEL4 (Ref)** |
| **Men** | **18-49 years** | **32.3 (27.2-37.8)** | **11.8 (11.4-12.2)** | *2.73 (2.31-3.24)* | **22.5 (21.1-23.9)** | *2.93 (2.68-3.20)* | **15.0 (13.6-16.5)** | *1.96 (1.75-2.19)* | **11.4 (10.7-12.3)** | *1.49 (1.36-1.64)* | **7.7 (7.2-8.2)** |
| | **50-69 years** | **46.0 (43.7-48.4)** | **27.5 (26.7-28.2)** | *1.68 (1.58-1.78)* | **38.0 (36.5-39.4)** | *1.67 (1.56-1.77)* | **28.7 (27.2-30.2)** | *1.26 (1.17-1.35)* | **29.6 (27.9-31.4)** | *1.30 (1.20-1.40)* | **22.8 (21.7-23.9)** |
| **Women** | **18-49 years** | **21.6 (18.0-25.7)** | **5.4 (5.1-5.7)** | *4.00 (3.32-4.82)* | **13.0 (11.9-14.2)** | *4.22 (3.67-4.85)* | **6.3 (5.2-7.5)** | *2.03 (1.64-2.50)* | **5.3 (4.8-5.8)** | *1.71 (1.49-1.97)* | **3.1 (2.8-3.4)** |
| | **50-69 years** | **48.6 (45.9-51.4)** | **20.8 (20.2-21.5)** | *2.33 (2.19-2.49)* | **30.9 (29.6-32.1)** | *1.98 (1.84-2.14)* | **22.7 (21.2-24.2)** | *1.45 (1.33-1.59)* | **21.0 (19.6-22.4)** | *1.35 (1.23-1.48)* | **15.6 (14.6-16.6)** |

**[a]** SEL 1: Low education—economic difficulties; SEL 2: Low education—no economic difficulties; SEL 3: High education—economic difficulties; SEL 4: High education—no economic difficulties. **[b]** PR: Prevalence Ratios (CI 95%), calculated with an unadjusted Poisson regression model. **(Ref)** Referent group of respective Prevalence Ratios. All differences between subgroups are highly significant ($P < 0.01$).

**Table S6. Prevalence of cardiovascular risk factors, protective behaviours and preventive-care practices in people resident in Italy (50-69 years) with diabetes, according to educational level, and respective Prevalence Ratios. PASSI 2016-19 (n=4,601).**

| | | Men with diabetes 50-69 years | | | Women with diabetes 50-69 years | | |
|---|---|---|---|---|---|---|---|
| **Indicators** | | **Lower EL [a]** | **Higher EL** | **PR [b]** | **Lower EL** | **Higher EL** | **PR** |
| **Cardiovascular risk factors** | current smoker **[c]** | **27.6 (24.8-30.6)** | **19.6 (16.9-22.7)** | ***1.41 ** (1.17-1.69)*** | **14.8 (12.4-17.5)** | **16.7 (13.6-20.4)** | ***0.88 (0.68-1.15)*** |
| | BMI ≥ 25 **[d]** | **78.2 (75.6-80.6)** | **71.3 (67.9-74.6)** | ***1.10 ** (1.04-1.16)*** | **76.5 (73.5-79.3)** | **62.5 (57.7-67.0)** | ***1.22 ** (1.13-1.33)*** |
| | physical activity – inactive **[e]** | **56.6 (53.5-59.6)** | **45.2 (41.6-48.9)** | ***1.25 ** (1.14-1.38)*** | **60.4 (57.2-63.6)** | **45.9 (41.2-50.7)** | ***1.32 ** (1.17-1.48)*** |
| | < 5 portions – fruit/vegetables | **91.1 (89.4-92.6)** | **89.2 (87.0-91.1)** | ***1.02 (0.99-1.05)*** | **90.4 (88.2-92.2)** | **81.8 (77.4-85.5)** | ***1.10 ** (1.05-1.17)*** |
| | hypertension | **56.6 (53.5-59.7)** | **54.8 (51.1-58.4)** | ***1.03 (0.95-1.13)*** | **62.5 (59.2-65.8)** | **57.5 (52.7-62.1)** | ***1.09 (0.99-1.20)*** |
| | hypercholesterolemia | **46.4 (43.2-49.6)** | **40.8 (37.2-44.5)** | ***1.14 * (1.02-1.27)*** | **51.7 (48.2-55.1)** | **49.4 (44.6-54.3)** | ***1.05 (0.93-1.18)*** |
| **Protective behaviours and preventive-care practices** | attempt to quit smoking in the last year (among cigarette smokers) | **35.8 (29.9-42.3)** | **35.1 (27.9-43.1)** | ***1.02 (0.77-1.35)*** | **34.2 (26.1-43.4)** | **38.2 (28.1-49.5)** | ***0.90 (0.61-1.31)*** |
| | diet to lose weight (among overweight and obese) | **36.7 (33.4-40.2)** | **40.5 (36.4-44.7)** | ***0.91 (0.79-1.04)*** | **42.2 (38.5-46.1)** | **51.5 (45.7-57.3)** | ***0.82 ** (0.71-0.95)*** |
| | drug treatment for hypertension (among people with hypertension) | **94.1 (92.2-95.6)** | **91.9 (88.9-94.1)** | ***1.02 (0.99-1.06)*** | **93.4 (91.0-95.2)** | **89.1 (84.4-92.5)** | ***1.05 (1.00-1.10)*** |
| | drug treatment for hypercholesterolemia (among people with hypercholesterolemia) | **70.4 (65.8-74.6)** | **65.7 (59.7-71.2)** | ***1.07 (0.96-1.19)*** | **68.9 (64.0-73.5)** | **73.0 (66.8-78.4)** | ***0.94 (0.85-1.05)*** |
| | advice to quit smoking from a doctor (among cigarette smokers) | **81.0 (75.7-85.4)** | **77.0 (69.7-82.9)** | ***1.05 (0.95-1.17)*** | **69.6 (60.6-77.4)** | **75.1 (65.0-83.0)** | ***0.93 (0.78-1.10)*** |
| | advice to do regular physical activity from a doctor (among inactive people) | **43.0 (38.7-47.5)** | **49.6 (43.8-55.3)** | ***0.87 (0.74-1.01)*** | **37.4 (33.2-41.8)** | **47.5 (40.4-54.7)** | ***0.79 * (0.65-0.95)*** |
| | advice to lose weight from a doctor (among overweight and obese) | **65.7 (62.1-69.2)** | **68.3 (63.9-72.4)** | ***0.96 (0.89-1.05)*** | **71.5 (67.8-74.9)** | **77.8 (72.5-82.4)** | ***0.92 * (0.85-1.00)*** |
| | at least one HbA1C test in the past 12 months | **58.2 (55.0-61.4)** | **74.7 (71.2-77.9)** | ***0.78 ** (0.73-0.84)*** | **58.8 (55.3-62.2)** | **72.9 (68.1-77.1)** | ***0.81 ** (0.74-0.88)*** |

**[a]** EL: educational level. Lower educational level: SEL 1&2. — Higher educational level: SEL 3&4. SEL: socioeconomic level: SEL 1: Low education—economic difficulties; SEL 2: Low education—no economic difficulties; SEL 3: High education—economic difficulties; SEL 4: High education—no economic difficulties. **[b]** PR: Prevalence Ratios (CI 95%), calculated with an unadjusted Poisson regression model. Referent: Higher EL. * P < 0.05 ** P < 0.01. **[c]** Reporting smoking on every day or some days when interviewed. **[d]** Body Mass Index ≥ 25. **[e]** Not engaging in moderate (vacuuming, gardening, brisk walking or bicycling) or vigorous (running, aerobics, heavy yard work) physical activity in leisure time, for at least 10 minutes per week, in the previous 30 days. Daily physical activity bouts of less than 10 minutes duration do not concur to the calculation of the weekly minutes. The estimates are weighted.

## Box 2. Fruit and vegetable intake

National guidelines for fruit and vegetable intake differ somewhat among countries, both for the quantity and the proportion of the two components. For example: the daily recommended intake in Australia is 2 serves of fruit (150 g each) and 5 serves of vegetables (75 g each), while in Canada between 5 and 10 servings of fruit and vegetables, and in Denmark 600 g overall.[3] The American guidelines have separate recommendations for adult men (fruit 2 cups, vegetables 3.5) and women (respectively 1.5 and 2.5).[4]

Following the WHO suggestions[5] PASSI surveillance adopted as an indicator of sufficient intake of fruit and vegetables a total amount of 400 g (5 portions/day, each corresponding to 80 g of edible food). In the questionnaire the total daily number of portions usually consumed is asked (see Definition of indicators, in this Supplement). Comparisons with other countries is not easy because of differences in units of measure (cups, servings, portions), wording of the questions, survey methodology, etc. Notwithstanding these differences, in general a low intake of fruit and vegetables appears to be present in most countries, ranging from 37% to 99%, and overall involving more than 3/4 of the pooled population, according to a World Health Survey.[6] According to the American BRFSS nine out of ten American adults did not meet US national fruit and vegetable intake recommendations.[4]

PASSI data are in line with these results, with scarce variations between groups (with and without diabetes, of lower and higher SELs). These findings are not unexpected, given the international context. However, for a country in which the first studies of the healthy effects of a Mediterranean diet, rich in fruit and vegetables, were conducted over 50 years ago[7], they appear somehow paradoxical, signalling that relevant social and behavioural changes have occurred in the last few decades.

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