

Table S1. Meta-regression of age and IR biomarkers exposure to air pollutants.

Pollutants and IR biomarkers	% change	95%CI	SE	z-value	p-value
PM _{2.5} and HOMA-IR	0.0378	(-0.6293, 0.7048)	0.3403	0.1110	0.9116
PM _{2.5} and glucose	0.0088	(-0.0259, 0.0435)	0.0177	0.4957	0.6201
PM _{2.5} and insulin	0.3130	(-0.5472, 1.1733)	0.4389	0.7132	0.4757
PM _{2.5} and HbA1c	0.1069	(-0.1006, 0.3145)	0.1059	1.0097	0.3126
PM _{2.5} and leptin	1.8871	(-1.6166, 5.3908)	1.7876	1.0556	0.2911
NO ₂ and HOMA-IR	0.5132	(-0.6013, 1.6277)	0.5686	0.9026	0.3668
NO ₂ and glucose	0.0356	(-0.0084, 0.0795)	0.0224	1.5864	0.1126
NO ₂ and insulin	0.6673	(-0.8950, 2.2296)	0.7971	0.8371	0.4025
PM ₁₀ and HOMA-IR	0.1624	(-0.6078, 0.9326)	0.3930	0.4133	0.6794

SE (Standard error): The standard error of a statistic (usually an estimate of a parameter) is the standard deviation of its sampling distribution or an estimate of that standard deviation.

Table S2. Specifics of quality score of the included studies.

	Thiering et al. (2013)	Wolf et al. (2016)	Thiering et al. (2016)	Madhlouma et al. (2017)	Alderete et al. (2017)	Li et al. (2018)
NOS quality score	7	7	6	7	6	8
Selection						
1) Representativeness of the exposed cohort						
a) truly representative of the average _____ (describe) in the community						
b) somewhat representative of the average _____ in the community	b	b	c	c	c	b
c) selected group of users eg nurses, volunteers						
d) no description of the derivation of the cohort						
2) Selection of the non-exposed cohort						
a) drawn from the same community as the exposed cohort	b	a	b	a	a	a

- b) drawn from a different source
- c) no description of the derivation of the non-exposed cohort

- a) secure record (eg surgical records)
- b) structured interview
- c) written self-report
- d) no description

4) **Demonstration that outcome of interest was not present at start of study**

- a) yes
b) no

1) Comparability of cohorts on the basis of the design or analysis

- study controls for _____ (select the most important factor)
- study controls for any additional factor (This criteria could be modified to indicate specific control for a second important factor.)

Outcome

- a) independent blind assessment
- b) record linkage
- c) self-report
- d) no description

2) Was follow-up long enough for outcomes to occur

- a) yes (select an adequate follow up period for outcome of interest)
b) no

3) Adequacy of follow up of cohorts

a) complete follow up - all subjects accounted for

b) subjects lost to follow up unlikely to introduce bias - small number
lost - > ____ % (select an adequate %) follow up, or description
provided of those lost)

b

b

b

b

d

b

c) follow up rate < ____% (select an adequate %) and no description of
those lost

d) no statement
