AIR POLLUTION

Area level: Address-level (Dis-aggregated to PC4-level and PC6-level)

Period: 2009

Files: Air Pollution (Address level in 2009)
Air Pollution (PC4 level in 2009)
Air Pollution (PC6 level in 2009)

Data

In the European Study of Cohorts for Air Pollution Effects (ESCAPE; www.escapeproject.eu), residential exposure to air pollutants was assessed in Europe. Residential exposure to air pollutants was assessed as annual average concentrations of particulate matter (PM) with diameters of less than 2.5µm ($PM_{2.5}$), less than 10.0µm (PM_{10}), and between 2.5µm and 10.0µm (PM_{coarse}), $PM_{2.5}$ absorbance, and annual average concentrations of nitrogen oxides (NO_2 and NO_x) by using a standardized procedure and Land Use Regression Models. The development of these Land Use Regression Models are described in detail elsewhere [1,2]. The data file includes estimated data on air pollution for 9.004.680 addresses in the Netherlands in 2009. These data are dis-aggregated to the level of 4-digits post codes and 6-digits post codes.

Variables

Table 1 provides an overview of air pollution variables that are available.

Table 1: Overview of data on air pollution

Variable name	Description
Adres	Address
WoonplaatsNaam	Place of residence
PC4	4-digits post code
PC6	6-digits post code
PC6_with_space	6-digits post code
NO2_t_new_mean	Mean Mass concentration of NO2 (in µg/m3)
NOx_t_new_mean	Mean Mass concentration of NOx (in µg/m3)
PM25abs_t_new_mean	Mean measurement of the blackness of PM2.5 filters; a proxy for carbon which is the dominant light absorbing substance (in 10-5 m-1)
PM10_t_new_mean	Mean Mass concentration of particules less than 10.0µm in size (in µg/m3)
PM25_t_new_mean	Mean Mass concentration of particules less than 2.5µm in size (in µg/m3)
PMcoarse_t_new_mean	Mean Mass concentration particles between 2.5 and 10.0µm in size (in µg/m3)
NO2_t_new_min	Minimum Mass concentration of NO2 (in µg/m3)
NOx_t_new_min	Minimum Mass concentration of NOx (in µg/m3)
PM25abs_t_new_min	Measurement of the minimum blackness of PM2.5 filters; a proxy for carbon which is the dominant light absorbing substance (in 10-5 m-1)
PM10_t_new_min	Minimum Mass concentration of particules less than 10.0µm in size (in µg/m3)
PM25_t_new_min	Minimum Mass concentration of particules less than 2.5µm in size (in µg/m3)
PMcoarse_t_new_min	Minimum Mass concentration particles between 2.5 and 10.0µm in size (in µg/m3)
NO2_t_new_max	Maximum Mass concentration of NO2 (in µg/m3)
NOx_t_new_max	Maximum Mass concentration of NOx (in µg/m3)
PM25abs_t_new_max	Measurement of the maximum blackness of PM2.5 filters; a proxy for carbon which is the dominant light absorbing substance (in 10-5 m-1)
PM10_t_new_max	Maximum Mass concentration of particules less than 10.0µm in size (in µg/m3)
PM25_t_new_max	Maximum Mass concentration of particules less than 2.5µm in size (in µg/m3)
PMcoarse_t_new_max	Maximum Mass concentration particles between 2.5 and 10.0µm in size (in µg/m3)

Source

The European Study of Cohorts for Air Pollution Effects (ESCAPE; www.escapeproject.eu) was designed to study the effects of long-term air pollution exposure on health. The coordinating center of the ESCAPE study is the Institute for Risk Assessment Sciences of the Utrecht University in Utrecht, the Netherlands.

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Terms and conditions

These data are available for use for specific research questions provided that an agreement is made up with the original source holder (see file: Form for ESCAPE exposure data.doc).

List of references

[1] Beelen R, Hoek G, Vienneau D, Eeftens M, Dimakopoulou K, Pedeli X, Tsai M, Künzli N, Schikowski T, Marcon A, Eriksen KT, Raaschou-Nielsen O, Stephanou E, Patelarou E, Lanki T, Yli-Tuomi T, Declercq C, Falq G, Stempfelet M, Birk M, Cyrys C, Von Klot S, Nádor G, Varró MJ, Dédelé A, Gražulevičiené R, Mölter A, Lindley S, Madsen C, Cesaroni G, Ranzi A, Badaloni C, Hoffmann B, Nonnemacher M, Krämer U, Kuhlbusch T, Cirach M, De Nazelle A, Nieuwenhuijsen M, Bellander T, Korek M, Olsson D, Strömgren M, Dons E, Jerrett M, Fischer P, Wang M, Brunekreef B, De Hoogh K. Development of NO_2 and NO_x land use regression models for estimating air pollution exposure in 36 study areas in Europe – The ESCAPE project. Atmos Environ 2013;72:10-23.

[2] Eeftens M, Beelen R, De Hoogh K, Bellander T, Cesaroni G, Cirach M, Declercq C, Dédelé A, Dons E, De Nazelle A, Dimakopoulou, Eriksen K, Falq G, Fischer P, Galassi C, Gražulevičiené R, Heinrich J, Hoffmann B, Jerrett M, Keidel D, Korek M, Lanki T, Lindley S, Madsen C, Mölter A, Nádor G, Nieuwenhuijsen M, Nonnemacher M, Pedeli X, Raaschou-Nielsen O, Patelarou E, Quass, U, Ranzi A, Schindler C, Stempfelet M, Stephanou E, Sugiri D, Tsai M, Yli-Tuomi T, Varró MJ, Vienneau D, Von Klot S, Wolf K, Brunekreef B, Hoek G. Development of Land Use Regression Models for $PM_{2.5}$, $PM_{2.5}$, Absorbance, PM_{10} and PM_{coarse} in 20 European Study Areas; Results of the ESCAPE Project. Environ Sci Technol 2012;46:11195-11205.