Climate data

BRHS 20 year follow-up (Q20)

1998 – 2000

Climate data

- Temperature
- Wind speed
- Sunshine
- Snow
- Relative humidity

Climate data were obtained from the UK Meteorological Office (www.metoffice.gov.uk) for the 4252 BRHS participants who attended the 20-year follow-up physical examination. Data was provided for the last 30 days prior to their examination date. Climate data was linked to each participant based on the date he was examined, the nearest weather station and the post code of the participant's residence.

References

[1] Sartini C, Barry SJ, Wannamethee SG, Whincup PH, Lennon L, Ford I, et al. Effect of cold spells and their modifiers on cardiovascular disease events: Evidence from two prospective studies. Int J Cardiol. 2016;218:275-83.

[2] Sartini C, Barry SJ, Whincup PH, Wannamethee SG, Lowe GD, Jefferis BJ, et al. Relationship between outdoor temperature and cardiovascular disease risk factors in older people. Eur J Prev Cardiol. 2017;24(4):349-56.

[3] Sartini C, Morris RW, Whincup PH, Wannamethee SG, Ash S, Lennon L, et al. Association of Maximum Temperature With Sedentary Time in Older British Men. J Phys Act Health. 2017;14(4):265-9.

1. Climate data (source: The UK Meteorological Office)

Description	Units of measurement	BRHS Variable name	Data Access
Date the Q20 physical examination took place		date	Yes
Maximum temperature of the day	degrees Celsius	tmax	Yes
Minimum temperature of the day	degrees Celsius	tmin	Yes
(max temp + min temp)/2	degrees Celsius	tmean	Yes
Average wind speed of the day	metres per second	windspeed	Yes
Total of daily rainfall	mm	rainfall	Yes
Total of daily sunshine hours	count	sunshine	Yes
The total amount of snow that accumulates on the ground from hh 1 to 24	mm	snow	Yes
Relative humidity	percent (0-100)	rh	Yes

2. Derived variables: lag variables

Several variables were derived to investigate the lagged effect of temperature.
The suffix _L1, _L2, _L3, etc. was added to each of the variables' names reported in the above table.

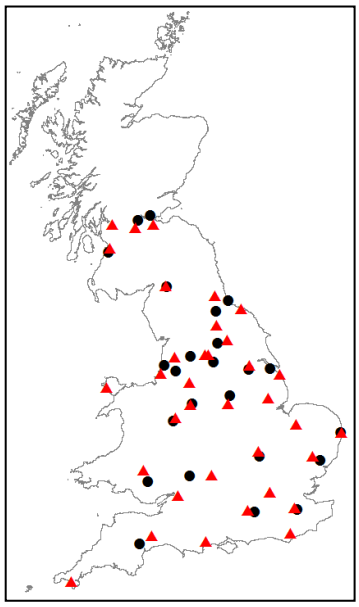
For example:

- tmean Mean temperature
- tmean_L1 Mean temperature at Lag 1 = Mean temperature of the day before
- tmean_L0L1 Mean temperature at Lag 0-1 = (tmean+tmean_L1)/2
- tmean_L0L6 Mean temperature at Lag 0-6 = (tmean+tmean_L1+…+tmean_L6)/7

This procedure was repeated to generate lagged variables up to lag 30
Same approach has been used for sunshine, rainfall, windspeed, and relative humidity (rh)

BRHS towns and Meteorological (MET) stations map

Figure 1 – United Kingdom map which indicates the 24 BRHS town locations (black circles), and 35 MET station locations (red triangles)



Town number	BRHS town name + extra town of examination	Weather Station associated with BRHS town	Postcode1
1	Harrogate	Harrogate	HG1 5JP
2	Shrewsbury	Shawbury	SY3 6DU
3	Lowestoft	Lowestoft	NR339LU
4	Mansfield	Nottingham Watnall	
5	Southport	Crosby	PR9 7EG
6	Merthyr Tydfil	Libanus	CF481YE
7	Guildford	S Farnborough	GU1 3JH
8	Burnley	Bingley	BB114HP
9	Newcastle-under-Lyne	Keele	ST5 6PS
10	Exeter	Dunkeswell	EX4 7BW
11	Dewsbury	Bradford	
12	Falkirk	Salsburgh	FK2 7ES
13	Ipswich	Wattisham	IP4 5PA
14	Gloucester	Little Rissington	GL4 4BL
15	Ayr	Prestwick	KA7 1UL
16	Dunfermline	Edinburgh	KY120BL
17	Darlington	Leeming	DL3 7SQ
18	Carlisle	Carlisle	CA1 1DG
19	Maidstone	East Malling	
20	Grimsby	Donna Nook	DN312AE
21	Bedford	Bedford	MK402TX
22	Wigan	Ringway	WN6 7PD
23	Scunthorpe	Normanby Hall	DN157AN
24	Hartlepool	Loftus	TS268DB
25	London (Hampstead)	Hampstead	NW3 2PF