

## **Supplementary Tables**

Table S1: Distribution and sex-specific cut off points of biomarkers used in creating the Allostatic Load index: UKHLS employees

Table S2: Distribution of reduced hours Flexible Working Arrangements by sociodemographic and socioeconomic characteristics of UKHLS employees with measurement of allostatic load at waves 2 or 3; n=5612

Table S3: Distribution of flextime Flexible Working Arrangements by sociodemographic and socioeconomic characteristics of UKHLS employees with measurement of allostatic load at waves 2 or 3; n=5612

Table S4: Distribution of other Flexible Working Arrangements (FWA) by sociodemographic and socioeconomic characteristics of UKHLS employees with measurement of allostatic load at waves 2 or 3; n=5612

Table S5: Relative risks (95% CI) from survey weighted multinomial logit models predicting availability and use of reduced hours Flexible Working Arrangements (FWA); n=5546

Table S6: Relative risks (95% CI) from survey weighted multinomial logit models predicting availability and use of flextime Flexible Working Arrangements (FWA); n=5546

Table S7: Relative risks (95% CI) from survey weighted multinomial logit models predicting availability and use of other Flexible Working Arrangements (FWA); n=5546

Table S8: Survey weighted negative binomial regression coefficients (95% CI) of allostatic load regressed on Flexible Working Arrangements (FWA) and other covariates; n=5546 (men and women combined in the same model)

Table S9: Survey weighted negative binomial regression coefficients (95% CI) of allostatic load - UKHLS female employees (n=3037)

Table S10: Survey weighted negative binomial regression coefficients (95% CI) of allostatic load - UKHLS female employees working 25+ hours a week (n=2025)

## **Supplementary Analyses: Missing data analysis**

Table S11: Odds ratios (and 95% CI) of predictors of missing an allostatic load biomarker from a logistic regression model; n=16,671

Table S12: Negative binomial regression coefficients (95% CI) of allostatic load regressed on reduced hours Flexible Working Arrangements (FWA): complete case analysis, survey weighted analysis, multiple imputation without survey weights, multiple imputation with survey weights. UKHLS men and women combined.

## **Supplementary Figures**

Figure S1: Derivation of the complete case sample from UKHLS participants at wave 2

Figure S2: Distribution of allostatic load index: UKHLS employees (n=6025)

Figure S3: Distribution of weekly work hours among men

Figure S4: Distribution of weekly work hours among women

**Table S1: Distribution and sex-specific cut off points of biomarkers used in creating the Allostatic Load index: UKHLS employees**

	Mean	SD	n	sex-specific risk quartile cut off for AL index	
				women	men
<b>Neuroendocrine system</b>					
DHEA-S (µmol/l)	5.4	3.2	6,057	<1.9	<3.0
Insulin-like growth factor-1 nmol/l	19.4	6.9	6,029	<14.0	<15.0
<b>Immune system</b>					
C-Reactive Protein (mg/l)	1.9	1.9	5,620	>3.0	>2.5
Fibrinogen (g/l)	2.7	0.6	6,044	>3.2	>3.1
<b>Metabolic system</b>					
Ratio of Total cholesterol to HDL cholesterol	3.8	1.4	6,053	>4.0	>4.9
Triglycerides (mmol/l)	1.8	1.2	6,061	>1.9	>2.5
HbA1c (mmol/mol)	35.7	6.7	5,776	>39.0	>39.0
Creatine Clearance Rate (mL/min)	117.9	32.6	5,995	<78.8	<87.9
<b>Cardiovascular system</b>					
Systolic Blood Pressure (mmHg)	124.1	16.1	7,701	>136.5	>142
Diastolic Blood Pressure (mmHg)	74.4	11.0	7,701	>80.0	>82.0
Pulse rate (bpm)	69.2	10.5	7,701	>76.5	>74.5
<b>Anthropometric system</b>					
Ratio of Waist circumference to Height	0.5	0.1	9,414	>0.61	>0.62
<b>Allostatic load count</b>	2.2	2.0	6,025		

**Table S2: Distribution of reduced hours Flexible Working Arrangements by sociodemographic and socioeconomic characteristics of UKHLS employees with measurement of allostatic load at waves 2 or 3; n=5612**

	Women				Men			
	Reduced hours working not available	Available (not used)	Available and used	N	Reduced hours working not available	Available (not used)	Available and used	N
<b>Age-group</b>								
16-29 years old	23.5%	37.2%	39.3%	430	54.1%	26.1%	19.8%	399
30-39 years old	19.6%	33.6%	46.8%	741	62.1%	33.7%	4.3%	564
40-49 years old	25.1%	30.3%	44.6%	1,044	60.1%	35.1%	4.7%	780
50-59 years old	25.8%	30.7%	43.5%	832	61.4%	30.3%	8.3%	630
60+ years old	20.1%	16.0%	64.0%	294	50.2%	16.7%	33.1%	311
<b>Responsible for child under 15</b>								
Not responsible	27.3%	35.5%	37.2%	2,123	58.7%	30.3%	11.0%	2,654
1 child	18.5%	26.6%	54.9%	612	64.0%	24.0%	12.0%	25
2 or more children	14.7%	18.3%	67.0%	606	60.0%	40.0%	0.0%	5
<b>Married/Civil Partnership/Cohabit</b>								
Never Married/CP	27.5%	37.0%	35.5%	487	53.5%	25.6%	20.9%	402
Married/CP/Cohabit	22.8%	28.3%	48.9%	2,369	60.0%	31.1%	9.0%	2,083
Widowd/Septd/Divrcd	22.3%	36.3%	41.4%	485	57.3%	30.7%	12.1%	199
<b>Ethnicity</b>								
White British	22.9%	30.5%	46.6%	3,068	59.3%	29.9%	10.8%	2,458
Not White British	29.3%	33.0%	37.7%	273	53.1%	34.1%	12.8%	226
<b>Household income</b>								
Lowest quintile	19.5%	19.5%	61.0%	292	54.5%	17.2%	28.3%	145
Quintile 2	22.9%	22.9%	54.2%	506	60.6%	26.8%	12.6%	358
Quintile 3	22.7%	29.3%	48.0%	704	59.9%	30.6%	9.6%	586
Quintile 4	22.5%	33.1%	44.4%	891	60.9%	29.1%	10.1%	764
Highest quintile	26.3%	37.2%	36.5%	948	56.1%	34.8%	9.2%	831
<b>National Statistics Socio-economic class</b>								
Professional social class	24.8%	39.5%	35.8%	1,445	57.1%	36.0%	7.0%	1,279
Intermediate	22.5%	29.8%	47.8%	689	48.5%	40.5%	11.0%	299
Lower suprvsry/tchncl	28.0%	26.2%	45.8%	168	75.3%	19.8%	4.9%	369
Semi/routine/LT unempl	21.4%	20.0%	58.6%	1,039	57.7%	21.3%	21.0%	737
<b>Education Qualifications</b>								
Degree	21.6%	38.2%	40.2%	934	50.7%	39.2%	10.1%	770
Other higher degree	20.3%	34.9%	44.8%	518	62.4%	28.1%	9.6%	324
A-level etc	22.1%	29.8%	48.0%	664	57.8%	30.0%	12.2%	647
GCSE etc	26.0%	25.9%	48.1%	776	64.2%	25.3%	10.5%	569
Other qualification	27.1%	22.3%	50.6%	269	72.0%	21.8%	6.3%	239
No qualification	29.4%	16.7%	53.9%	180	55.6%	20.7%	23.7%	135

**Table S3: Distribution of flexitime Flexible Working Arrangements by sociodemographic and socioeconomic characteristics of UKHLS employees with measurement of allostatic load at waves 2 or 3; n=5612**

	Women				Men			
	Flexitime working not available	Available (not used)	Available and used	N	Flexitime working not available	Available (not used)	Available and used	N
<b>Age-group</b>								
16-29 years old	59.8%	26.3%	14.0%	430	65.4%	19.6%	15.0%	399
30-39 years old	58.4%	22.8%	18.8%	741	62.8%	21.8%	15.4%	564
40-49 years old	60.9%	24.0%	15.1%	1,044	62.3%	20.6%	17.1%	780
50-59 years old	65.1%	20.4%	14.4%	832	63.7%	21.1%	15.2%	630
60+ years old	74.5%	18.0%	7.5%	294	75.2%	12.2%	12.5%	311
<b>Responsible for child under 15</b>								
Not responsible	27.3%	35.5%	37.2%	2123	58.7%	30.3%	11.0%	2654
1 child	18.5%	26.6%	54.9%	612	64.0%	24.0%	12.0%	25
2 or more children	14.7%	18.3%	67.0%	606	60.0%	40.0%	0.0%	5
<b>Married/Civil Partnership/Cohabit</b>								
Never Married/CP	27.5%	37.0%	35.5%	487	53.5%	25.6%	20.9%	402
Married/CP/Cohabit	22.8%	28.3%	48.9%	2369	60.0%	31.1%	9.0%	2083
Widowd/Seprtd/Divrcd	22.3%	36.3%	41.4%	485	57.3%	30.7%	12.1%	199
<b>Ethnicity</b>								
White British	22.9%	30.5%	46.6%	3068	59.3%	29.9%	10.8%	2458
Not White British	29.3%	33.0%	37.7%	273	53.1%	34.1%	12.8%	226
<b>Household income</b>								
Lowest quintile	19.5%	19.5%	61.0%	292	54.5%	17.2%	28.3%	145
Quintile 2	22.9%	22.9%	54.2%	506	60.6%	26.8%	12.6%	358
Quintile 3	22.7%	29.3%	48.0%	704	59.9%	30.6%	9.6%	586
Quintile 4	22.5%	33.1%	44.4%	891	60.9%	29.1%	10.1%	764
Highest quintile	26.3%	37.2%	36.5%	948	56.1%	34.8%	9.2%	831
<b>National Statistics Socio-economic class</b>								
Professional social class	24.8%	39.5%	35.8%	1445	57.1%	36.0%	7.0%	1279
Intermediate	22.5%	29.8%	47.8%	689	48.5%	40.5%	11.0%	299
Lower suprvsry/tchncl	28.0%	26.2%	45.8%	168	75.3%	19.8%	4.9%	369
Semi/routine/LT unempl	21.4%	20.0%	58.6%	1039	57.7%	21.3%	21.0%	737
<b>Education Qualifications</b>								
Degree	21.6%	38.2%	40.2%	934	50.7%	39.2%	10.1%	770
Other higher degree	20.3%	34.9%	44.8%	518	62.4%	28.1%	9.6%	324
A-level etc	22.1%	29.8%	48.0%	664	57.8%	30.0%	12.2%	647
GCSE etc	26.0%	25.9%	48.1%	776	64.2%	25.3%	10.5%	569
Other qualification	27.1%	22.3%	50.6%	269	72.0%	21.8%	6.3%	239
No qualification	29.4%	16.7%	53.9%	180	55.6%	20.7%	23.7%	135

**Table S4: Distribution of other Flexible Working Arrangements (FWA) by sociodemographic and socioeconomic characteristics of UKHLS employees with measurement of allostatic load at waves 2 or 3; n=5612**

	Women				Men			
	Other FWA working not available	Available (not used)	Available and used	N	Other FWA working not available	Available (not used)	Available and used	N
<b>Age-group</b>								
16-29 years old	73.3%	22.8%	4.0%	430	73.7%	17.5%	8.8%	399
30-39 years old	65.6%	21.7%	12.7%	741	67.4%	21.5%	11.2%	564
40-49 years old	70.7%	21.0%	8.3%	1,044	64.6%	23.6%	11.8%	780
50-59 years old	77.0%	16.1%	6.9%	832	71.3%	16.5%	12.2%	630
60+ years old	79.9%	12.6%	7.5%	294	81.4%	9.3%	9.3%	311
<b>Responsible for child under 15</b>								
Not responsible	74.3%	18.9%	6.7%	2123	70.1%	18.8%	11.0%	2654
1 child	71.2%	20.3%	8.5%	612	68.0%	24.0%	8.0%	25
2 or more children	66.2%	20.3%	13.5%	606	40.0%	40.0%	20.0%	5
<b>Married/Civil Partnership/Cohabit</b>								
Never Married/CP	72.5%	21.6%	6.0%	487	78.1%	15.4%	6.5%	402
Married/CP/Cohabit	71.1%	19.6%	9.2%	2369	68.2%	19.7%	12.1%	2083
Widowd/Septd/Divrcd	77.7%	16.3%	6.0%	485	72.9%	17.6%	9.6%	199
<b>Ethnicity</b>								
White British	72.2%	19.3%	8.5%	3068	70.1%	19.0%	10.9%	2458
Not White British	72.9%	21.3%	5.9%	273	69.5%	18.1%	12.4%	226
<b>Household income</b>								
Lowest quintile	86.0%	11.0%	3.1%	292	84.8%	9.7%	5.5%	145
Quintile 2	78.3%	15.2%	6.5%	506	79.1%	13.4%	7.5%	358
Quintile 3	75.7%	18.0%	6.3%	704	74.7%	18.3%	7.0%	586
Quintile 4	69.1%	20.4%	10.4%	891	68.9%	19.9%	11.3%	764
Highest quintile	65.3%	24.4%	10.3%	948	61.4%	22.5%	16.1%	831
<b>National Statistics Socio-economic class</b>								
Professional social class	65.3%	23.3%	11.5%	1445	57.9%	24.2%	17.9%	1279
Intermediate	68.7%	22.4%	9.0%	689	69.6%	23.1%	7.4%	299
Lower suprvsry/tchncl	75.6%	17.3%	7.1%	168	81.0%	13.0%	6.0%	369
Semi/routine/LT unempl	83.9%	12.5%	3.6%	1039	85.9%	11.0%	3.1%	737
<b>Education Qualifications</b>								
Degree	65.0%	23.7%	11.4%	934	53.8%	24.9%	21.3%	770
Other higher degree	69.5%	21.4%	9.1%	518	69.8%	19.4%	10.8%	324
A-level etc	69.6%	21.7%	8.7%	664	73.7%	18.2%	8.0%	647
GCSE etc	77.6%	16.0%	6.4%	776	75.6%	17.4%	7.0%	569
Other qualification	84.8%	11.9%	3.4%	269	88.3%	10.9%	0.8%	239
No qualification	86.7%	9.4%	3.9%	180	90.4%	7.4%	2.2%	135

**Table S5: Relative risks (95% CI) from survey weighted multinomial logit models predicting availability and use of reduced hours Flexible Working Arrangements (FWA); n=5546**

Women (Ref: FWA not available)

Men (Ref: FWA not available)

	Not used	Used	Not used	Used
<b>Age-group (ref: up to 29)</b>				
30-39 years old	0.99 (0.61, 1.60)	0.76 (0.48, 1.21)	1.06 (0.71, 1.60)	0.32 (0.17, 0.59)
40-49 years old	<b>0.61 (0.39, 0.97)</b>	0.73 (0.48, 1.11)	1.13 (0.76, 1.69)	0.44 (0.25, 0.79)
50-59 years old	<b>0.50 (0.31, 0.80)</b>	1.25 (0.80, 1.94)	0.95 (0.63, 1.44)	0.80 (0.45, 1.43)
60+ years old	<b>0.36 (0.19, 0.67)</b>	<b>2.03 (1.20, 3.44)</b>	0.65 (0.39, 1.10)	<b>2.88 (1.60, 5.19)</b>
<b>Responsible for child under 15 (ref: not responsible for any children)</b>				
1 child	0.84 (0.59, 1.20)	<b>3.31 (2.35, 4.66)</b>	1.07 (0.35, 3.22)	2.19 (0.41, 11.64)
2 or more children	0.59 (0.38, 0.90)	<b>4.01 (2.66, 6.06)</b>	0.84 (0.13, 5.47)	NA
<b>Marital status (ref: Never married)</b>				
Married/cohabiting	1.36 (0.93, 2.00)	1.24 (0.86, 1.80)	1.05 (0.73, 1.52)	0.56 (0.36, 0.86)
Sprtd/Divrcd/Widwd	<b>1.94 (1.21, 3.10)</b>	0.94 (0.59, 1.49)	1.40 (0.82, 2.39)	0.79 (0.37, 1.69)
<b>Ethnicity (ref: White British)</b>				
Not White British	0.83 (0.54, 1.27)	<b>0.55 (0.35, 0.85)</b>	0.98 (0.64, 1.50)	0.80 (0.40, 1.60)
<b>HH net income quintiles (ref: lowest quintile)</b>				
Quintile 2	0.90 (0.50, 1.64)	0.69 (0.41, 1.17)	1.74 (0.92, 3.29)	0.73 (0.33, 1.61)
Quintile 3	0.86 (0.49, 1.51)	0.66 (0.40, 1.08)	<b>1.94 (1.05, 3.56)</b>	0.53 (0.24, 1.17)
Quintile 4	1.01 (0.56, 1.82)	0.67 (0.40, 1.14)	1.63 (0.89, 3.01)	0.58 (0.28, 1.24)
Highest Quintile	0.72 (0.40, 1.31)	<b>0.43 (0.26, 0.73)</b>	1.71 (0.92, 3.15)	0.74 (0.34, 1.63)
<b>Social class(ref: profsnl)</b>				
Intermediate	0.97 (0.69, 1.36)	<b>1.66 (1.20, 2.30)</b>	1.21 (0.83, 1.75)	1.52 (0.82, 2.82)
Lower suprsvry/tchncl	1.01 (0.58, 1.78)	1.45 (0.84, 2.49)	0.63 (0.42, 0.95)	1.32 (0.69, 2.52)
Semi/routine/LT unempl	1.16 (0.81, 1.66)	<b>2.77 (2.03, 3.79)</b>	0.91 (0.63, 1.32)	<b>4.48 (2.69, 7.46)</b>
<b>Educ quals (ref: degree)</b>				
Other higher degree	1.08 (0.73, 1.59)	1.00 (0.68, 1.47)	0.71 (0.49, 1.05)	0.95 (0.45, 2.01)
A-level etc	0.96 (0.64, 1.43)	0.99 (0.67, 1.48)	1.10 (0.76, 1.58)	0.72 (0.40, 1.28)
GCSE etc	0.73 (0.50, 1.07)	0.73 (0.50, 1.06)	<b>0.67 (0.46, 0.96)</b>	0.55 (0.30, 1.03)
Other qualification	0.59 (0.34, 1.02)	0.68 (0.42, 1.12)	0.65 (0.40, 1.06)	<b>0.36 (0.14, 0.97)</b>
No qualification	0.36 (0.19, 0.68)	<b>0.50 (0.29, 0.85)</b>	1.21 (0.63, 2.29)	1.35 (0.61, 3.02)
<b>Duration in the job (ref: less than a year)</b>				
1-5 years	1.78 (0.92, 3.46)	1.30 (0.68, 2.51)	0.95 (0.48, 1.91)	1.61 (0.36, 7.21)
5-10 years	2.10 (1.06, 4.17)	1.85 (0.94, 3.63)	1.17 (0.58, 2.37)	1.60 (0.33, 7.71)
10+ years	<b>2.18 (1.11, 4.30)</b>	1.80 (0.91, 3.55)	1.12 (0.56, 2.26)	1.17 (0.24, 5.56)
Missing	1.20 (0.55, 2.61)	1.71 (0.83, 3.55)	0.65 (0.29, 1.48)	4.52 (0.89, 22.86)
<b>Industrial sector (ref: primary/manufacturing)</b>				
Service	1.28 (0.84, 1.96)	<b>2.69 (1.79, 4.04)</b>	<b>2.70 (2.02, 3.6)</b>	<b>10.98 (5.81, 20.78)</b>
<b>Business type (ref: private)</b>				
Non-private orgn	<b>1.86 (1.43, 2.43)</b>	<b>1.65 (1.28, 2.13)</b>	<b>1.68 (1.31, 2.14)</b>	<b>2.48 (1.67, 3.66)</b>
<b>Number of employees (ref: less than 25)</b>				
25-99 employees	<b>2.05 (1.48, 2.83)</b>	<b>1.68 (1.25, 2.26)</b>	1.29 (0.92, 1.82)	0.99 (0.63, 1.55)
100+ employees	<b>2.65 (1.99, 3.52)</b>	<b>1.39 (1.05, 1.83)</b>	<b>2.76 (2.07, 3.69)</b>	0.88 (0.57, 1.37)
<b>Intercept</b>	<b>0.37 (0.13, 0.99)</b>	<b>0.20 (0.08, 0.51)</b>	<b>0.08 (0.03, 0.22)</b>	<b>0.02 (0.003, 0.15)</b>

Significantly different coefficients (p<0.05) (from reference category) are in **bold**.

**Table S6: Relative risks (95% CI) from survey weighted multinomial logit models predicting availability and use of flexitime Flexible Working Arrangements (FWA); n=5546**

<b>Women (Ref: FWA not available)</b>		<b>Men (Ref: FWA not available)</b>	
Not used	Used	Not used	Used

<b>Age-group (ref: up to 29)</b>				
30-39 years old	0.75 (0.50, 1.12)	0.92 (0.56, 1.50)	1.00 (0.66, 1.52)	0.67 (0.40, 1.12)
40-49 years old	0.75 (0.51, 1.11)	0.75 (0.47, 1.20)	0.99 (0.65, 1.50)	0.69 (0.43, 1.11)
50-59 years old	0.62 (0.41, 0.95)	0.73 (0.44, 1.20)	0.87 (0.56, 1.37)	<b>0.59 (0.36, 0.98)</b>
60+ years old	0.56 (0.34, 0.93)	<b>0.43 (0.21, 0.86)</b>	<b>0.47 (0.27, 0.82)</b>	<b>0.43 (0.23, 0.79)</b>
<b>Responsible for child under 15 (ref: not responsible for any children)</b>				
1 child	0.87 (0.64, 1.19)	0.89 (0.63, 1.26)	0.99 (0.27, 3.68)	0.52 (0.14, 1.91)
2 or more children	0.94 (0.67, 1.30)	1.26 (0.84, 1.88)	1.10 (0.09, 12.77)	3.31 (0.35, 31.34)
<b>Marital status (ref: Never married)</b>				
Married/cohabiting	1.29 (0.92, 1.81)	1.27 (0.83, 1.95)	1.05 (0.72, 1.52)	1.18 (0.74, 1.90)
Sprtd/Divrcd/Widwd	1.18 (0.77, 1.81)	1.09 (0.66, 1.82)	1.08 (0.59, 1.97)	1.41 (0.70, 2.84)
<b>Ethnicity (ref: White British)</b>				
Not White British	<b>1.71 (1.19, 2.46)</b>	1.28 (0.79, 2.10)	0.99 (0.63, 1.54)	0.76 (0.43, 1.35)
<b>HH net income quintiles (ref: lowest quintile)</b>				
Quintile 2	1.21 (0.73, 2.02)	1.28 (0.60, 2.71)	0.79 (0.40, 1.55)	1.44 (0.62, 3.36)
Quintile 3	1.00 (0.61, 1.61)	0.94 (0.44, 1.97)	0.81 (0.42, 1.56)	1.34 (0.59, 3.03)
Quintile 4	1.25 (0.78, 2.01)	1.40 (0.69, 2.83)	0.94 (0.49, 1.79)	1.14 (0.50, 2.56)
Highest Quintile	1.33 (0.83, 2.14)	1.17 (0.57, 2.40)	0.86 (0.46, 1.63)	1.11 (0.49, 2.55)
<b>Social class(ref: profsnl)</b>				
Intermediate	1.13 (0.86, 1.50)	1.04 (0.76, 1.43)	0.97 (0.62, 1.51)	0.91 (0.59, 1.41)
Lower suprvsry/tchncl	<b>0.55 (0.30, 0.99)</b>	0.54 (0.28, 1.02)	0.88 (0.59, 1.31)	0.49 (0.30, 0.81)
Semi/routine/LT unempl	<b>0.59 (0.43, 0.80)</b>	<b>0.52 (0.36, 0.74)</b>	<b>0.52 (0.36, 0.78)</b>	<b>0.44 (0.28, 0.69)</b>
<b>Educ quals(ref: degree)</b>				
Other higher degree	1.00 (0.71, 1.39)	1.01 (0.69, 1.48)	0.76 (0.50, 1.16)	1.02 (0.66, 1.58)
A-level etc	0.92 (0.67, 1.28)	1.29 (0.88, 1.91)	0.95 (0.66, 1.37)	0.93 (0.60, 1.43)
GCSE etc	0.83 (0.59, 1.16)	1.00 (0.66, 1.50)	0.57 (0.38, 0.86)	<b>0.55 (0.34, 0.90)</b>
Other qualification	0.86 (0.54, 1.38)	1.27 (0.68, 2.40)	0.61 (0.35, 1.07)	<b>0.46 (0.26, 0.84)</b>
No qualification	1.06 (0.60, 1.85)	0.52 (0.21, 1.29)	0.62 (0.30, 1.28)	1.31 (0.52, 3.29)
<b>Duration in the job (ref: less than a year)</b>				
1-5 years	0.81 (0.43, 1.52)	<b>2.73 (1.01, 7.39)</b>	1.61 (0.63, 4.11)	1.33 (0.61, 2.91)
5-10 years	0.97 (0.51, 1.84)	<b>2.99 (1.10, 8.11)</b>	1.22 (0.47, 3.17)	1.15 (0.52, 2.57)
10+ years	1.02 (0.54, 1.92)	2.68 (0.97, 7.41)	1.69 (0.65, 4.40)	1.30 (0.57, 2.96)
Missing	0.86 (0.42, 1.76)	1.51 (0.50, 4.57)	1.09 (0.37, 3.19)	1.32 (0.52, 3.38)
<b>Industrial sector (ref: primary/manufacturing)</b>				
Service	0.97 (0.63, 1.47)	0.71 (0.44, 1.16)	<b>1.38 (1.03, 1.86)</b>	1.13 (0.79, 1.62)
<b>Business type (ref: private)</b>				
Non-private orgn	1.03 (0.82, 1.29)	<b>1.62 (1.21, 2.17)</b>	1.11 (0.83, 1.50)	<b>2.34 (1.73, 3.16)</b>
<b>Number of employees (ref: less than 25)</b>				
25-99 employees	1.21 (0.89, 1.64)	0.91 (0.61, 1.35)	1.35 (0.95, 1.92)	0.98 (0.62, 1.54)
100+ employees	<b>1.99 (1.54, 2.57)</b>	<b>2.04 (1.50, 2.79)</b>	<b>1.78 (1.31, 2.42)</b>	<b>1.60 (1.12, 2.28)</b>
<b>Intercept</b>	0.33 (0.13, 0.84)	0.07 (0.02, 0.27)	0.22 (0.06, 0.73)	0.19 (0.05, 0.64)

Significantly different coefficients (p<0.05) (from reference category) are in **bold**.

**Table S7: Relative risks (95% CI) from survey weighted multinomial logit models predicting availability and use of other Flexible Working Arrangements (FWA); n=5546**

	Women (Ref: FWA not available)		Men (Ref: FWA not available)	
	Not used	Used	Not used	Used
<b>Age-group (ref: up to 29)</b>				

30-39 years old	1.04 (0.68, 1.60)	1.96 (0.88, 4.38)	0.83 (0.53, 1.29)	1.10 (0.60, 2.03)
40-49 years old	1.07 (0.71, 1.59)	1.84 (0.87, 3.91)	1.23 (0.80, 1.88)	1.26 (0.68, 2.32)
50-59 years old	0.84 (0.55, 1.27)	1.82 (0.77, 4.28)	0.81 (0.51, 1.29)	1.70 (0.90, 3.19)
60+ years old	0.86 (0.49, 1.52)	<b>2.72 (1.10, 6.72)</b>	0.43 (0.24, 0.77)	1.15 (0.57, 2.31)
<b>Responsible for child under 15 (ref: not responsible for any children)</b>				
1 child	0.90 (0.66, 1.21)	0.99 (0.62, 1.56)	1.22 (0.38, 3.92)	0.36 (0.04, 3.25)
2 or more children	1.03 (0.76, 1.41)	<b>1.80 (1.14, 2.85)</b>	2.52 (0.34, 18.48)	2.28 (0.28, 18.88)
<b>Marital status (ref: Never married)</b>				
Married/cohabiting	1.00 (0.70, 1.43)	1.12 (0.62, 2.04)	1.14 (0.77, 1.69)	1.47 (0.84, 2.54)
Sprtd/Divrcd/Widwd	0.90 (0.58, 1.40)	0.65 (0.32, 1.30)	1.14 (0.63, 2.06)	1.65 (0.73, 3.74)
<b>Ethnicity (ref: White British)</b>				
Not White British	0.88 (0.60, 1.31)	0.59 (0.28, 1.21)	0.77 (0.5, 1.19)	0.77 (0.44, 1.34)
<b>HH net income quintiles (ref: lowest quintile)</b>				
Quintile 2	1.55 (0.88, 2.73)	1.73 (0.68, 4.43)	1.55 (0.67, 3.60)	1.74 (0.56, 5.43)
Quintile 3	1.40 (0.82, 2.39)	1.10 (0.46, 2.67)	1.75 (0.79, 3.86)	2.09 (0.69, 6.32)
Quintile 4	<b>1.73 (1.01, 2.95)</b>	1.93 (0.83, 4.46)	1.91 (0.87, 4.20)	2.28 (0.76, 6.82)
Highest Quintile	<b>1.83 (1.08, 3.13)</b>	1.69 (0.72, 3.97)	1.63 (0.75, 3.57)	2.05 (0.70, 6.02)
<b>Social class(ref: profsnl)</b>				
Intermediate	0.91 (0.69, 1.21)	0.75 (0.48, 1.16)	0.88 (0.59, 1.30)	<b>0.46 (0.26, 0.81)</b>
Lower suprsvry/tchncl	0.64 (0.35, 1.18)	1.07 (0.45, 2.52)	<b>0.64 (0.42, 0.97)</b>	<b>0.45 (0.27, 0.75)</b>
Semi/routine/LT unempl	<b>0.64 (0.47, 0.88)</b>	<b>0.36 (0.23, 0.57)</b>	<b>0.45 (0.32, 0.64)</b>	<b>0.21 (0.12, 0.39)</b>
<b>Educ quals(ref: degree)</b>				
Other higher degree	1.07 (0.75, 1.52)	0.89 (0.58, 1.37)	0.71 (0.47, 1.07)	<b>0.40 (0.24, 0.66)</b>
A-level etc	1.07 (0.76, 1.50)	0.88 (0.56, 1.39)	0.86 (0.59, 1.24)	<b>0.36 (0.23, 0.55)</b>
GCSE etc	0.74 (0.52, 1.04)	<b>0.48 (0.30, 0.78)</b>	<b>0.56 (0.38, 0.81)</b>	<b>0.36 (0.22, 0.58)</b>
Other qualification	<b>0.53 (0.32, 0.89)</b>	0.60 (0.20, 1.78)	<b>0.51 (0.29, 0.91)</b>	<b>0.04 (0.01, 0.19)</b>
No qualification	0.54 (0.28, 1.03)	<b>0.26 (0.09, 0.73)</b>	<b>0.32 (0.15, 0.69)</b>	<b>0.11 (0.03, 0.40)</b>
<b>Duration in the job (ref: less than a year)</b>				
1-5 years	1.13 (0.61, 2.07)	2.88 (0.63, 13.10)	0.68 (0.31, 1.50)	0.57 (0.16, 2.03)
5-10 years	1.19 (0.63, 2.22)	2.97 (0.65, 13.62)	0.68 (0.31, 1.53)	0.53 (0.15, 1.85)
10+ years	0.98 (0.52, 1.84)	2.49 (0.54, 11.55)	0.82 (0.37, 1.85)	0.42 (0.12, 1.47)
Missing	0.92 (0.44, 1.91)	2.87 (0.57, 14.40)	0.60 (0.24, 1.53)	0.48 (0.12, 1.91)
<b>Industrial sector (ref: primary/manufacturing)</b>				
Service	1.04 (0.69, 1.58)	0.87 (0.51, 1.47)	<b>1.46 (1.08, 1.97)</b>	<b>1.62 (1.09, 2.40)</b>
<b>Business type (ref: private)</b>				
Non-private orgn	0.91 (0.72, 1.16)	0.78 (0.55, 1.11)	0.91 (0.68, 1.23)	<b>0.61 (0.42, 0.89)</b>
<b>Number of employees (ref: less than 25)</b>				
25-99 employees	0.87 (0.64, 1.19)	<b>0.57 (0.36, 0.91)</b>	1.25 (0.88, 1.78)	0.67 (0.45, 1.02)
100+ employees	1.61 (1.25, 2.08)	1.06 (0.71, 1.59)	1.74 (1.27, 2.38)	0.71 (0.49, 1.02)
<b>Intercept</b>	<b>0.17 (0.07, 0.43)</b>	<b>0.03 (0.01, 0.20)</b>	<b>0.22 (0.07, 0.72)</b>	0.26 (0.04, 1.53)

Significantly different coefficients ( $p < 0.05$ ) (from reference category) are in **bold**.



**Table S8: Survey weighted negative binomial regression coefficients (95% CI) of allostatic load regressed on Flexible Working Arrangements (FWA) and other covariates: n=5546 (men and women combined in the same model)**

	Reduced hours FWA	Flexitime FWA	Other FWA
<b>FWA (ref: not available)</b>			
Available, not used	0.05 (-0.04, 0.14)	0.08 (-0.03, 0.18)	0.07 (-0.03, 0.18)
Available and used	<b>-0.21 (-0.35, -0.07)</b>	<b>0.13 (0.02, 0.25)</b>	0.06 (-0.07, 0.2)
<b>Gender (ref: male)</b>			
Female	-0.08 (-0.18, 0.01)	-0.08 (-0.18, 0.02)	<b>-0.12 (-0.22, -0.03)</b>
<b>Reduced hours FWA*Gender Interaction (ref: not available &amp; male)</b>			
Available, not used * Female	-0.03 (-0.16, 0.11)	<b>-0.16 (-0.30, -0.02)</b>	-0.09 (-0.23, 0.05)
Available and used * Female	0.10 (-0.06, 0.27)	<b>-0.20 (-0.36, -0.04)</b>	-0.05 (-0.23, 0.13)
<b>Age-group (ref: up to 29)</b>			
30-39 years old	<b>0.31 (0.18, 0.44)</b>	<b>0.31 (0.19, 0.44)</b>	<b>0.31 (0.19, 0.44)</b>
40-49 years old	<b>0.68 (0.57, 0.80)</b>	<b>0.68 (0.57, 0.80)</b>	<b>0.68 (0.57, 0.80)</b>
50-59 years old	<b>0.95 (0.83, 1.07)</b>	<b>0.94 (0.82, 1.06)</b>	<b>0.94 (0.82, 1.06)</b>
60+ years old	<b>1.12 (0.99, 1.25)</b>	<b>1.10 (0.97, 1.22)</b>	<b>1.09 (0.97, 1.22)</b>
<b>Longstanding illness/disability (ref: yes)</b>			
no lstdng illness/disability	<b>-0.09 (-0.16, -0.03)</b>	<b>-0.10 (-0.16, -0.04)</b>	<b>-0.10 (-0.16, -0.04)</b>
<b>Responsible for child under 15 (ref: not responsible for any children)</b>			
1 child	-0.10 (-0.21, 0.01)	-0.12 (-0.23, -0.01)	<b>-0.12 (-0.23, -0.02)</b>
2 or more children	-0.05 (-0.16, 0.07)	-0.07 (-0.18, 0.05)	-0.07 (-0.18, 0.04)
<b>Weekly work hours (ref: less than 37 hrs)</b>			
37-40 hours	-0.04 (-0.12, 0.05)	0.03 (-0.06, 0.11)	0.01 (-0.07, 0.10)
40+ hours	-0.02 (-0.12, 0.09)	0.06 (-0.05, 0.16)	0.04 (-0.07, 0.14)
<b>Weekly work hours*Gender interaction (ref: Men working less than 37 hrs)</b>			
Women working 25-30 hrs	0.07 (-0.05, 0.19)	0.06 (-0.06, 0.17)	0.07 (-0.05, 0.18)
Women working 30+ hrs	-0.02 (-0.18, 0.14)	-0.01 (-0.15, 0.14)	0.01 (-0.14, 0.15)
<b>Marital status (ref: Never married)</b>			
Married/cohabiting	0.08 (-0.02, 0.17)	0.08 (-0.02, 0.18)	0.08 (-0.02, 0.17)
Separated/Divorced/Widowd	0.06 (-0.05, 0.16)	0.06 (-0.04, 0.17)	0.07 (-0.04, 0.17)
<b>Ethnicity (ref: White British)</b>			
Not White British	<b>0.11 (0.001, 0.21)</b>	<b>0.12 (0.01, 0.22)</b>	<b>0.11 (0.01, 0.22)</b>
<b>HH net income quintiles (ref: lowest quintile)</b>			
Quintile 2	0.02 (-0.09, 0.13)	0.03 (-0.08, 0.14)	0.03 (-0.08, 0.14)
Quintile 3	-0.06 (-0.17, 0.06)	-0.05 (-0.16, 0.07)	-0.05 (-0.16, 0.07)
Quintile 4	<b>-0.12 (-0.23, -0.005)</b>	-0.11 (-0.22, 0.01)	-0.11 (-0.23, 0.00?)
Highest Quintile	<b>-0.21 (-0.32, -0.09)</b>	<b>-0.20 (-0.31, -0.08)</b>	<b>-0.20 (-0.32, -0.08)</b>
<b>Social class(ref: profsnl)</b>			
Intermediate	-0.04 (-0.11, 0.04)	-0.04 (-0.12, 0.04)	-0.04 (-0.12, 0.04)
Lower suprvsry/tchncl	-0.02 (-0.12, 0.08)	-0.03 (-0.13, 0.07)	-0.03 (-0.13, 0.07)
Semi/routine/LT unempl	0.006 (-0.07, 0.08)	-0.01 (-0.08, 0.06)	-0.01 (-0.08, 0.06)
<b>Duration in the job (less than a year)</b>			
1-5 years	0.03 (-0.14, 0.21)	0.02 (-0.15, 0.19)	0.02 (-0.15, 0.2)
5-10 years	0.02 (-0.15, 0.20)	0.02 (-0.16, 0.19)	0.02 (-0.16, 0.19)
10+ years	0.04 (-0.14, 0.21)	0.03 (-0.14, 0.21)	0.04 (-0.14, 0.21)
Missing	-0.03 (-0.24, 0.17)	-0.05 (-0.25, 0.16)	-0.05 (-0.26, 0.16)

Table S8 contd:

	Reduced hours FWA	Flextime FWA	Other FWA
<b><i>Educ quals(ref: degree)</i></b>			
Other higher degree	<b>0.11 (0.02, 0.21)</b>	<b>0.11 (0.02, 0.21)</b>	<b>0.11 (0.02, 0.21)</b>
A-level etc	0.004 (-0.08, 0.09)	0.01 (-0.07, 0.10)	0.01 (-0.08, 0.09)
GCSE etc	<b>0.09 (0.001, 0.18)</b>	<b>0.10 (0.01, 0.18)</b>	<b>0.09 (0.01, 0.18)</b>
Other qualification	0.004 (-0.09, 0.10)	0.02 (-0.08, 0.11)	0.01 (-0.08, 0.11)
No qualification	0.11 (-0.01, 0.22)	<b>0.11 (0.001, 0.23)</b>	<b>0.11 (0.001, 0.23)</b>
<b><i>Smoking status (ref: Never smoker)</i></b>			
Current smoker	<b>0.12 (0.05, 0.19)</b>	<b>0.12 (0.05, 0.19)</b>	<b>0.12 (0.05, 0.19)</b>
Ex-smoker	-0.01 (-0.07, 0.05)	-0.01 (-0.07, 0.05)	-0.01 (-0.07, 0.04)
<b><i>Walking at least 10 minutes/day (ref: no walking)</i></b>			
Slow to average pace	-0.01 (-0.09, 0.07)	-0.01 (-0.09, 0.07)	-0.01 (-0.09, 0.07)
Brisk to fast pace	<b>-0.25 (-0.34, -0.17)</b>	<b>-0.26 (-0.34, -0.17)</b>	<b>-0.26 (-0.34, -0.17)</b>
<b><i>No. of prescribed medicines taken (ref: none)</i></b>			
1 medication	<b>0.13 (0.06, 0.20)</b>	<b>0.14 (0.06, 0.21)</b>	<b>0.13 (0.06, 0.21)</b>
2 or more medications	<b>0.36 (0.29, 0.42)</b>	<b>0.36 (0.29, 0.42)</b>	<b>0.36 (0.29, 0.42)</b>
<b><i>Moderate sports activity (ref: no activity)</i></b>			
Some activity	<b>-0.14 (-0.21, -0.07)</b>	<b>-0.14 (-0.21, -0.08)</b>	<b>-0.15 (-0.22, -0.08)</b>
Intercept	0.18 (-0.08, 0.44)	0.12 (-0.14, 0.37)	0.15 (-0.11, 0.41)
Dispersion parameter (alpha)	<b>0.17 (0.14, 0.20)</b>	<b>0.17 (0.14, 0.20)</b>	<b>0.17 (0.14, 0.20)</b>

Significantly different coefficients ( $p < 0.05$ ) (from reference category) are in **bold**.

**Table S9: Survey weighted negative binomial regression coefficients (95% CI) of allostatic load - UKHLS female employees (n=3037)**

<b>Explanatory variables</b>	<b>Estimates (95% CI)</b>	<b>Explanatory variables</b>	<b>Estimates (95% CI)</b>
<b>Resp for child under 15 (ref: not resp for any children)</b>		<b>Duration in the job (less than a year)</b>	
1 child	-0.02 (-0.22, 0.18)	1-5 years	-0.03 (-0.26, 0.20)
2 or more children	0.02 (-0.15, 0.18)	5-10 years	0.01 (-0.22, 0.24)
<b>Weekly work hours (ref: less than 25 hrs)</b>		10+ years	-0.02 (-0.25, 0.21)
25-37 hours	<b>0.15 (0.05, 0.26)</b>	Missing	0.02 (-0.25, 0.29)
37+ hours	0.04 (-0.08, 0.16)	<b>Educ quals (ref: degree)</b>	
<b>Childcare resp*Work hrs (ref: no child &amp; work &lt;25 hrs)</b>		Other higher degree	<b>0.14 (0.01, 0.28)</b>
1 child & work 25-30 hrs	-0.15 (-0.39, 0.08)	A-level etc	0.08 (-0.04, 0.20)
1 child & work 30+ hrs	0.17 (-0.16, 0.49)	GCSE etc	0.11 (-0.01, 0.23)
2+children & work 25-30 hrs	-0.08 (-0.30, 0.15)	Other qualification	0.03 (-0.09, 0.16)
2+children & work 30+ hrs	<b>0.31 (0.03, 0.59)</b>	No qualification	<b>0.18 (0.04, 0.32)</b>
<b>Age-group (ref: up to 29)</b>		<b>Smoking status (ref: Never smoker)</b>	
30-39 years old	<b>0.23 (0.07, 0.4)</b>	Current smoker	0.10 (-0.003, 0.20)
40-49 years old	<b>0.65 (0.49, 0.8)</b>	Ex-smoker	-0.05 (-0.13, 0.03)
50-59 years old	<b>1.00 (0.84, 1.16)</b>	<b>Walking at least 10 minutes/day (ref: no walking)</b>	
60+ years old	<b>1.20 (1.03, 1.37)</b>	Slow to average pace	0.002 (-0.11, 0.11)
<b>Longstanding illness/disability (ref: yes)</b>		Brisk to fast pace	<b>-0.25 (-0.37, -0.13)</b>
no longstanding illness/disability	<b>-0.10 (-0.18, -0.01)</b>	<b>No. of prescribed medicines taken (ref: none)</b>	
<b>Marital status (ref: Never married)</b>		1 medication	<b>0.13 (0.03, 0.22)</b>
Married/cohabiting	0.02 (-0.11, 0.14)	2 or more medications	<b>0.40 (0.31, 0.49)</b>
Separated/Divorced/Widowed	-0.05 (-0.19, 0.08)	<b>Moderate sports activity (ref: no activity)</b>	
<b>Ethnicity (ref: White British)</b>		Some activity	<b>-0.22 (-0.33, -0.11)</b>
Not White British	0.05 (-0.09, 0.19)	<b>Intercept</b>	
<b>HH net income quintiles (ref: lowest quintile)</b>		<b>Dispersion parameter (alpha)</b>	
Quintile 2	0.03 (-0.10, 0.16)	<b>0.17 (0.13, 0.22)</b>	
Quintile 3	-0.05 (-0.20, 0.09)		
Quintile 4	-0.05 (-0.19, 0.10)		
Highest Quintile	<b>-0.22 (-0.36, -0.07)</b>		
<b>Social class(ref: profsnl)</b>			
Intermediate	<b>-0.10 (-0.19, -0.01)</b>		
Lower supervisory/technical	0.03 (-0.15, 0.21)		
Semi/routine/LT unempl	0.03 (-0.07, 0.12)		

**Table S10: Survey weighted negative binomial regression coefficients (95% CI) of allostatic load - UKHLS female employees working 25+ hours a week (n=2025)**

<b>Explanatory variables</b>	<b>Estimates (95% CI)</b>	<b>Explanatory variables</b>	<b>Estimates (95% CI)</b>
<b>Resp for child under 15 (ref: not resp for any children)</b>		<b>Duration in the job (less than a year)</b>	
1 child	0.06 (-0.27, 0.39)	1-5 years	-0.01 (-0.29, 0.26)
2 or more children	<b>0.32 (0.08, 0.56)</b>	5-10 years	0.06 (-0.22, 0.33)
<b>Reduced hours FWA (ref: not available)</b>		10+ years	-0.04 (-0.32, 0.24)
Available, not used	0.06 (-0.06, 0.18)	Missing	0.12 (-0.23, 0.48)
Available and used	-0.04 (-0.19, 0.11)	<b>Educ quals (ref: degree)</b>	
<b>Childcare resp*Redcd hrs (ref: no child &amp; FWA not avail)</b>		Other higher degree	0.14 (-0.02, 0.31)
1 child & Flexhrs avail, not used	-0.07 (-0.45, 0.31)	A-level etc	0.02 (-0.13, 0.17)
1 child & Flexhrs avail & used	-0.27 (-0.66, 0.11)	GCSE etc	0.08 (-0.06, 0.22)
2+children & avail, not used	-0.30 (-0.63, 0.02)	Other qualification	-0.03 (-0.19, 0.14)
2+children & avail & used	<b>-0.42 (-0.75, -0.09)</b>	No qualification	0.09 (-0.10, 0.29)
<b>Age-group (ref: up to 29)</b>		<b>Smoking status (ref: Never smoker)</b>	
30-39 years old	0.19 (-0.01, 0.39)	Current smoker	0.10 (-0.02, 0.22)
40-49 years old	<b>0.61 (0.42, 0.80)</b>	Ex-smoker	-0.01 (-0.11, 0.08)
50-59 years old	<b>0.99 (0.80, 1.17)</b>	<b>Walking at least 10 minutes/day (ref: no walking)</b>	
60+ years old	<b>1.19 (0.97, 1.41)</b>	Slow to average pace	-0.004 (-0.14, 0.13)
<b>Lngstndng illness/disability (ref: yes)</b>		Brisk to fast pace	<b>-0.26 (-0.40, -0.11)</b>
no lstdng illness/disability	-0.08 (-0.18, 0.02)	<b>No. of prescribed medicines taken (ref: none)</b>	
<b>Marital status (ref: Never married)</b>		1 medication	0.05 (-0.07, 0.18)
Married/cohabiting	0.02 (-0.12, 0.16)	2 or more medications	<b>0.40 (0.29, 0.51)</b>
Separated/Divorced/Widowed	-0.06 (-0.22, 0.10)	<b>Moderate sports activity (ref: no activity)</b>	
<b>Ethnicity (ref: White British)</b>		Some activity	<b>-0.24 (-0.37, -0.11)</b>
Not White British	0.03 (-0.13, 0.19)	<b>Weekly work hours (ref: less than 25-37 hrs)</b>	
<b>HH net income quintiles (ref: lowest quintile)</b>		37+ hours	0.04 (-0.08, 0.16)
Quintile 2	0.04 (-0.15, 0.24)	<b>Intercept</b>	
Quintile 3	-0.05 (-0.25, 0.15)	<b>Dispersion parameter (alpha)</b>	
Quintile 4	-0.06 (-0.26, 0.14)	<b>0.19 (0.14, 0.25)</b>	
Highest Quintile	<b>-0.24 (-0.44, -0.05)</b>		
<b>Social class(ref: profsnl)</b>			
Intermediate	<b>-0.11 (-0.22, -0.01)</b>		
Lower suprvsry/tchncl	0.01 (-0.21, 0.24)		
Semi/routine/LT unempl	-0.02 (-0.14, 0.10)		

### **Sensitivity analyses: Missing data analysis**

Figure S1 shows that how the analytical sample size was derived from the wave 2 respondents of UKHLS. From 54,597 participants at wave 2 with full or proxy interviews, only 35,937 were eligible for a nurse visit. Not every participant was eligible primarily because the study only conducted nurse visits on the UKHLS wave 2 General Population Sample, and also excluded participants living in Northern Ireland. This sample reduced further to 17,436 employees once those who were not in paid work or who were self-employed were taken out, and a further 665 participants with missing covariates and missing auxiliary predictors of missing biomarkers (detailed below) were taken out of the analytical sample. This resulted in a sample of 16,771 employees at wave 2 who were eligible for a nurse visit and who had complete data on the covariates and auxiliary variables for the analyses. This sample of 16,771 employees was the sample on whom we investigated the predictors of missing an allostatic load measure, as well as the multiple imputation analyses.

This sample of 16,771 employees reduced to 9,556 largely because of a large number of refusals to the nurse visit at different stages (such as after the main interview, at the appointment booking stage or at the nurse visit), but also because of non-contact with the household or specific individual. This sample further reduced to 6,025 largely because the participant refused to give blood (mainly due to a fear of needles, previous difficulties drawing blood or concerns about how the blood data will be used), problems with drawing blood or participants were ineligible (pregnant or with a blood clotting disorder).

### **Predictors of missing an allostatic load measure**

In order to examine the predictors of missing an allostatic load measure, we analysed a logistic regression model where the dependent variable was missingness on the allostatic load measure (0=6,025 employees with an allostatic load measure, 1= 10,746 employees without an allostatic load measure who were eligible for a nurse visit). All the covariates in the models predicting allostatic load were entered as predictor variables of missingness. In addition, some additional auxiliary variables were considered such as region of residence, interviewer observations on whether the respondent was co-operative during the interview, or was suspicious, as well as additional health variables, such as whether the respondent reported having specific health conditions such as cardiovascular conditions, diabetes or depression.

Only the statistically significant ( $p < 0.05$ ) predictors of missing an allostatic load measure are shown in Table S11. This Table shows that the youngest respondents were most likely to be missing an allostatic load measure, particularly men under the age of 30 years. Respondents who were not White British or who had missing ethnicity data were also more likely to be missing an allostatic load measure. Respondents who did not have any childcare responsibilities were more likely to be missing an allostatic load measure. Those who interviewers rated as suspicious or who were less than very cooperative with the interviewer were more likely to be missing an allostatic load measure. Those living the North East were most likely to have measures of allostatic load. Never married respondents were least likely to have their allostatic load measured as were respondents who did no moderate sports activities. Surprisingly, the health variables or socioeconomic variables were not significant predictors of missing allostatic load.

**Table S11: Odds ratios (and 95% CI) of predictors of missing an allostatic load biomarker from a logistic regression model; n=16,671, Pseudo Rsq=0.06**

<b>Explanatory variables</b>	<b>Odds Ratios (95% CI)</b>
<b>Age-group (ref: up to 29)</b>	
30-39 years old	0.88 (0.75, 1.03)
40-49 years old	<b>0.65 (0.55, 0.76)</b>
50-59 years old	<b>0.60 (0.50, 0.70)</b>
60+ years old	<b>0.51 (0.42, 0.63)</b>
<b>Gender (ref: men)</b>	
Women	<b>1.37 (1.16, 1.61)</b>
<b>Age-group*Gender interaction (ref: men aged under 30)</b>	
30-39 years old women	<b>0.73 (0.59, 0.91)</b>
40-49 years old women	<b>0.75 (0.61, 0.92)</b>
50-59 years old women	<b>0.70 (0.56, 0.86)</b>
60+ years old women	<b>0.76 (0.57, 0.99)</b>
<b>Ethnicity (ref: White British)</b>	
Not White British	<b>1.23 (1.08, 1.39)</b>
Missing ethnicity	<b>4.07 (3.50, 4.74)</b>
<b>Responsible for child under 15 (ref: not responsible for any children)</b>	
1 child	0.90 (0.79, 1.01)
2 or more children	<b>0.87 (0.76, 0.99)</b>
<b>Respondent suspicion (ref: not suspicious)</b>	
Somewhat or very suspicious	<b>1.79 (1.47, 2.17)</b>
<b>Respondent cooperation (ref: Very cooperative)</b>	
Good to very poor cooperation	<b>1.20 (1.10, 1.31)</b>
<b>Region of residence (ref: North East)</b>	
North West	<b>1.27 (1.07, 1.52)</b>
Yorkshire and the Humber	<b>1.23 (1.02, 1.48)</b>
East Midlands	<b>1.24 (1.03, 1.49)</b>
West Midlands	1.16 (0.96, 1.40)
East of England	<b>1.41 (1.18, 1.69)</b>
London	<b>1.30 (1.07, 1.58)</b>
South East	<b>1.18 (1.00, 1.41)</b>
South West	1.14 (0.95, 1.37)
Wales	<b>1.38 (1.14, 1.68)</b>
Scotland	<b>1.26 (1.05, 1.51)</b>
<b>Marital status (ref: Never married)</b>	
Married/cohabiting	<b>0.89 (0.81, 0.99)</b>
Seprted/Divrcd/Widowd	<b>0.80 (0.69, 0.93)</b>
<b>Moderate sports activity (ref: no activity)</b>	
Some activity	<b>0.89 (0.82, 0.96)</b>
<b>Intercept</b>	<b>1.81 (1.48, 2.20)</b>

## **Approaches for handling missing allostatic load data**

Complete case analyses: The approach simply discards all cases with missing allostatic load values, resulting in a sample size of 6,025. This approach yields unbiased estimates only if the missingness is Missing Completely At Random (MCAR). Discarding around 65% of the sample of employees eligible for a nurse visit because of missing allostatic load measure could lead to a significant reduction in statistical precision and power.

Survey weighted analyses: Survey weights are assigned to each respondent of a survey in order to achieve unbiased estimates of parameters from the population of interest. UKHLS sample participants have not been selected through a simple random sampling process and have different probabilities of survey response. The UKHLS team have derived the longitudinal blood survey weights to make the analyses with blood based biomarkers representative of the UK adult population. These survey weights take account of different sources of missingness for blood based biomarkers, such as participants being ineligible for the nurse visit, refusals for the nurse visit and blood collection. A large number of variables from the main interview as well as paradata from the survey are used to produce these survey weights. Some of these additional variables themselves have some degree of missingness, which is why the survey weighted sample is smaller than the complete case sample. Additionally, the survey weighted analyses take account of the clustering of the individuals within primary sampling units and stratified sampling procedures of the survey. Analyses using these survey weights create weighted copies of the complete cases to remove selection bias introduced by missing data processes and are valid so long as the data are Missing At Random (MAR) and model for missingness is appropriate. All the regression analyses presented in the main manuscript have used estimates derived from the survey weighted analyses.

Multiple Imputation (MI): In MI, every missing item is replaced by two or more acceptable values that represent a distribution of possibilities. This method produces valid inferences such as standard errors and p-values mostly because the uncertainty of the missing values has been incorporated, so long as the data are MAR and the model for missingness is appropriate. Survey weights can be incorporated into the multiple imputation process, by including the survey weights as a predictor of missingness, as well as estimating the multiple imputed data using survey weights. As MI is strongly efficient with a small number of imputations, 20 imputed datasets were derived by the multiple imputation chained equation method in STATA 14.0.

Table S12 displays the coefficients of flexible working conditions from the negative binomial regression models of allostatic load, estimated from these four approaches to handling missing data (complete case analysis, survey weighted analysis, multiple imputation without survey weights, multiple imputation with survey weights). All these models control for the same variables as displayed in Tables S8-S10 (age, gender, marital status, ethnicity, number of children, household income, educational qualifications, social class, duration in work, smoking, longstanding illness, walking pace, sports physical activity, medication use). All of the models show that male and female employees who were able to make use of reduced hours flexible working arrangements had significantly lower levels of allostatic load compared to those for whom such flexible working arrangements were not available. The estimates derived from the survey weighted analyses and the multiple imputation with survey weights were considerably larger (in absolute size) than those derived from the complete case or multiple imputation without survey weights; however the 95% confidence intervals for these estimates derived from the different approaches overlapped with each other.

**Table S12: Negative binomial regression coefficients (95% CI) of allostatic load regressed on reduced hours Flexible Working Arrangements (FWA): complete case analysis, survey weighted analysis, multiple imputation without survey weights, multiple imputation with survey weights. UKHLS men and women combined.**

<b><i>Reduced hours Flexible Working Arrangements (ref: not available)</i></b>	complete case (n=6025)	survey weighted (n=5546)	multiple imputation without survey weights (n= 16771)	multiple imputation with survey weights (n=13808)
Available, not used	0.02 (-0.03, 0.07)	0.02 (-0.05, 0.08)	0.03 (-0.02, 0.07)	0.03 (-0.03, 0.10)
Available and used	<b>-0.09 (-0.15, -0.03)</b>	<b>-0.15 (-0.22, -0.08)</b>	<b>-0.09 (-0.15, -0.03)</b>	<b>-0.13 (-0.21, -0.05)</b>

All the models control for age, gender, marital status, ethnicity, number of children, household income, educational qualifications, social class, duration in work, smoking, longstanding illness, walking pace, moderate sports physical activity and medication use.



Supplementary Figures

Figure S1: Derivation of the complete case sample from UKHLS participants at wave 2

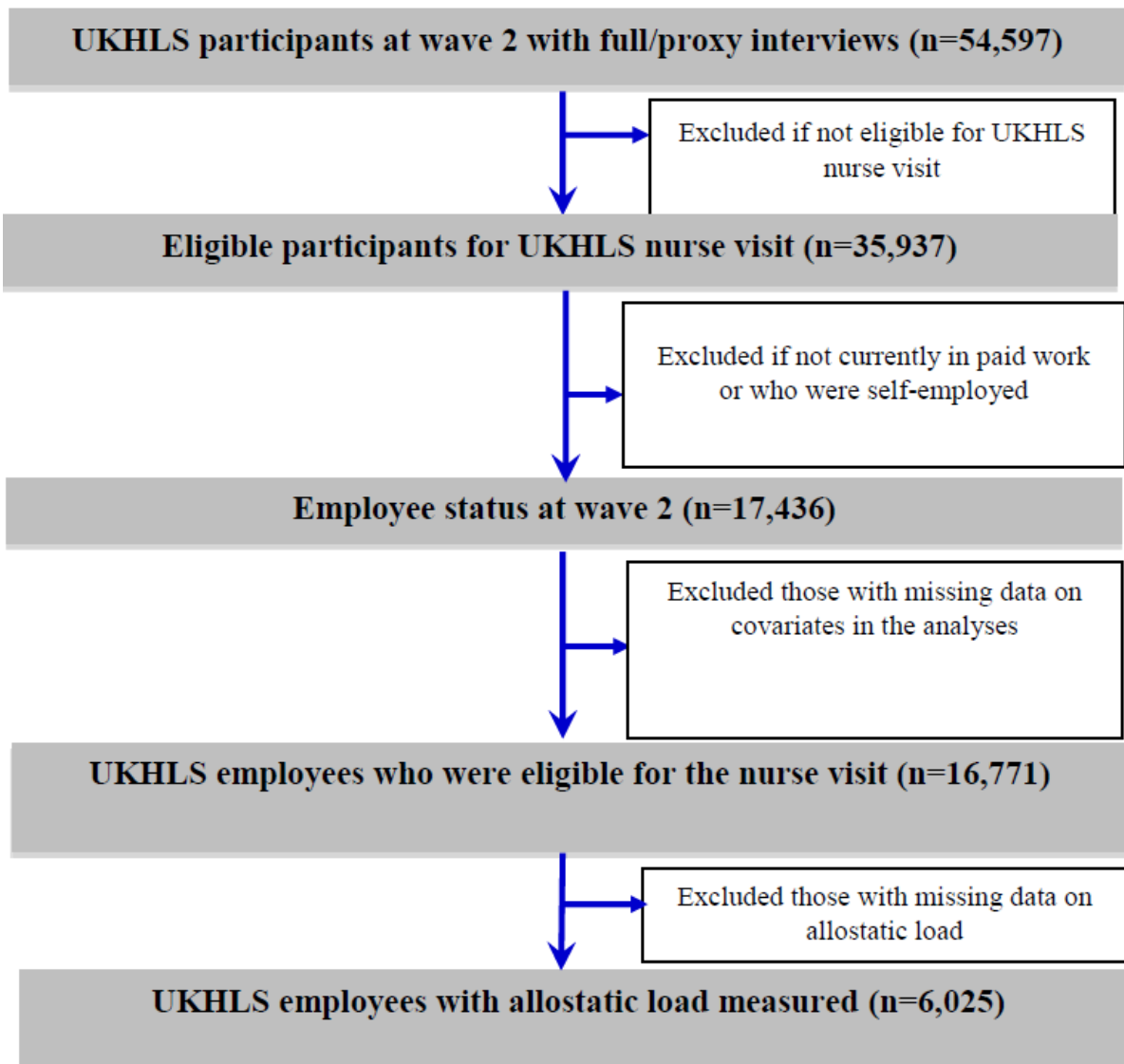
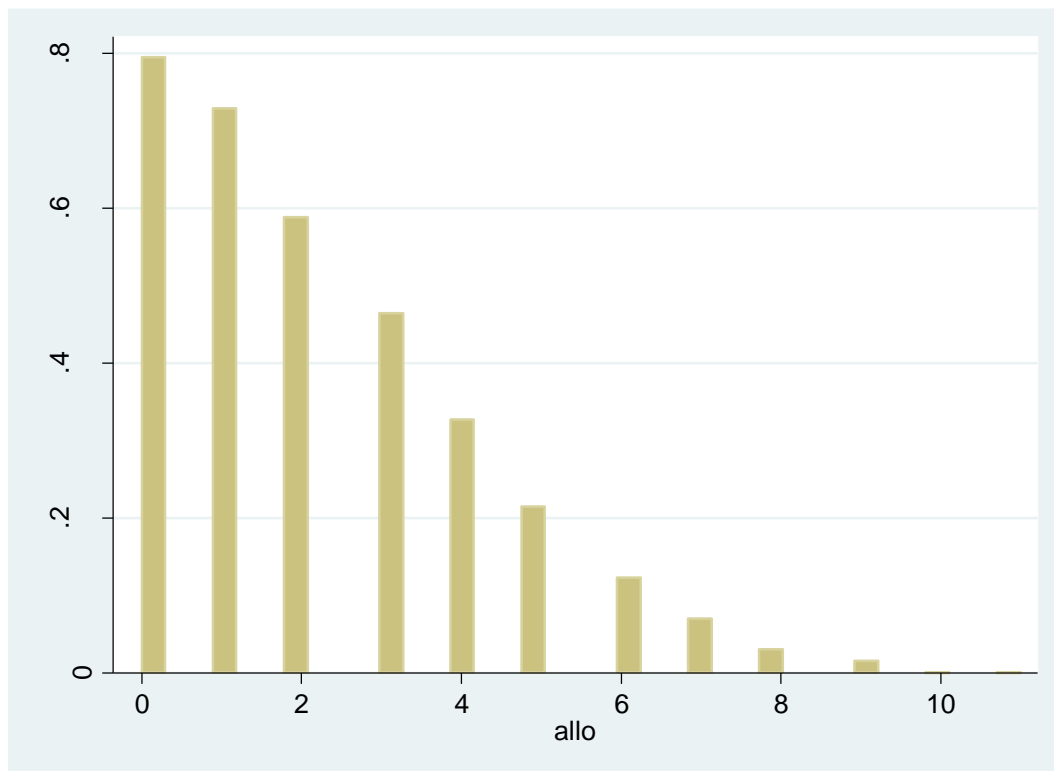
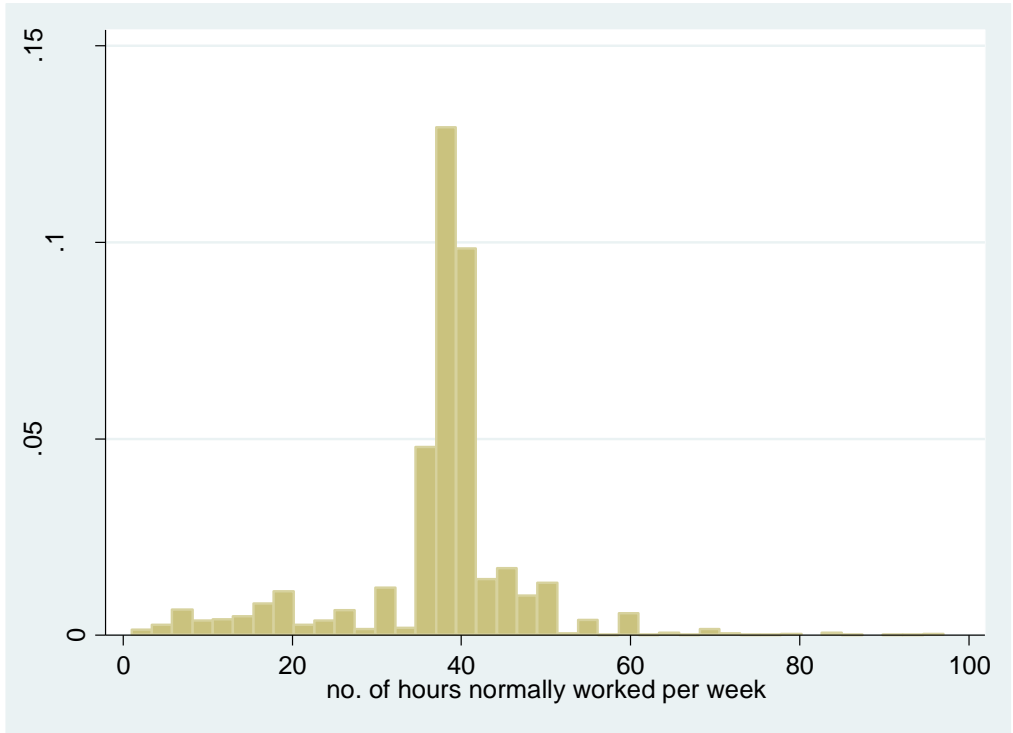


Figure S2: Distribution of allostatic load index: UKHLS employees (n=6025)



**Figure S3: Distribution of weekly work hours among men**



**Figure S4: Distribution of weekly work hours among women**

