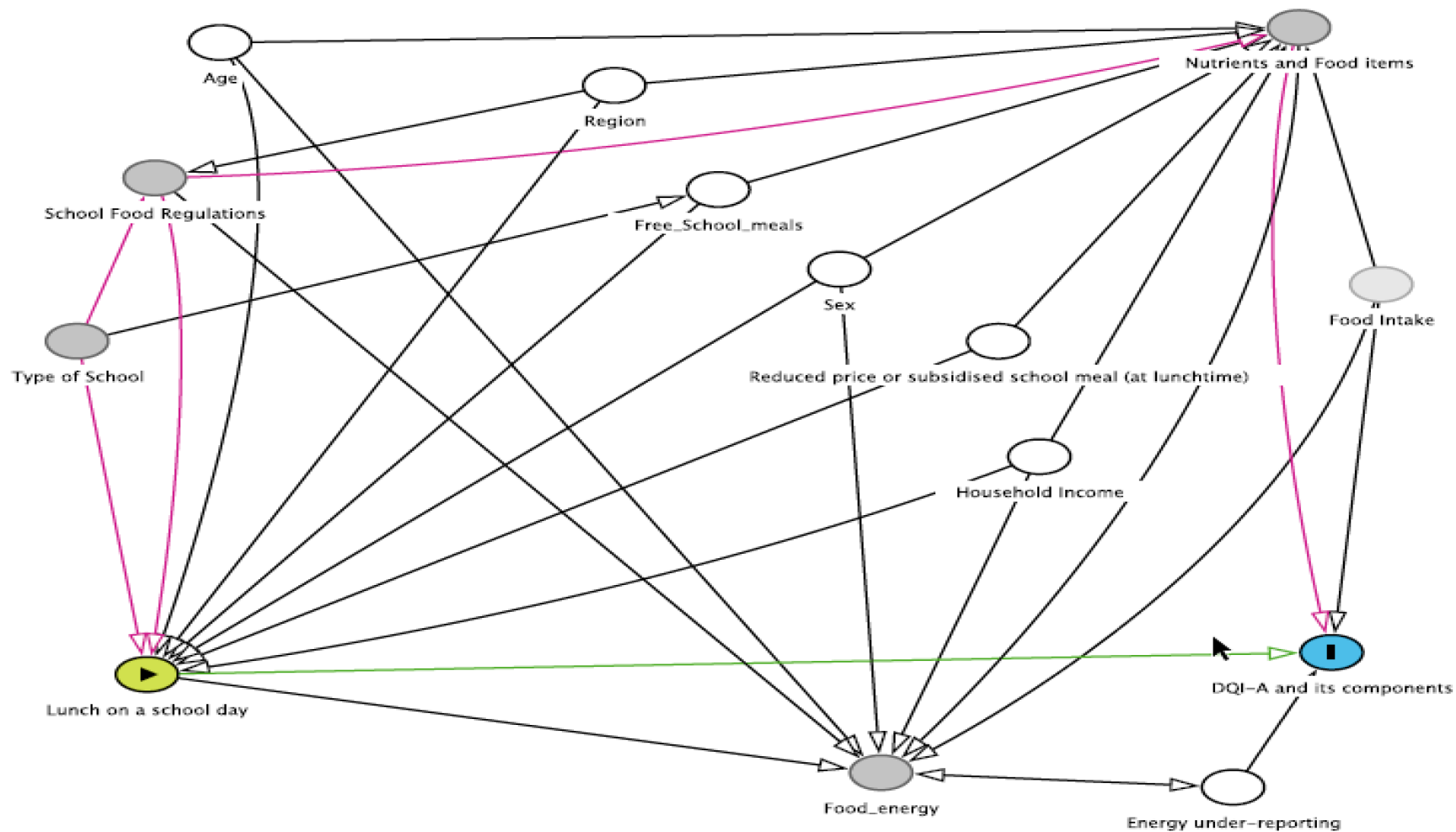**Supplemental figure 1 A Directed Acyclic Graph (DAG) with type of lunch consumed on a school day as the main exposure and Diet quality index and its components and sub-components as the outcome with prediction of potential confounding variables.**

Supplemental figure 2 The mean score of overall DQI-A%, and percentage of consumption for each type of lunch consumed on a school day over smoothed survey years (Year 1-8).
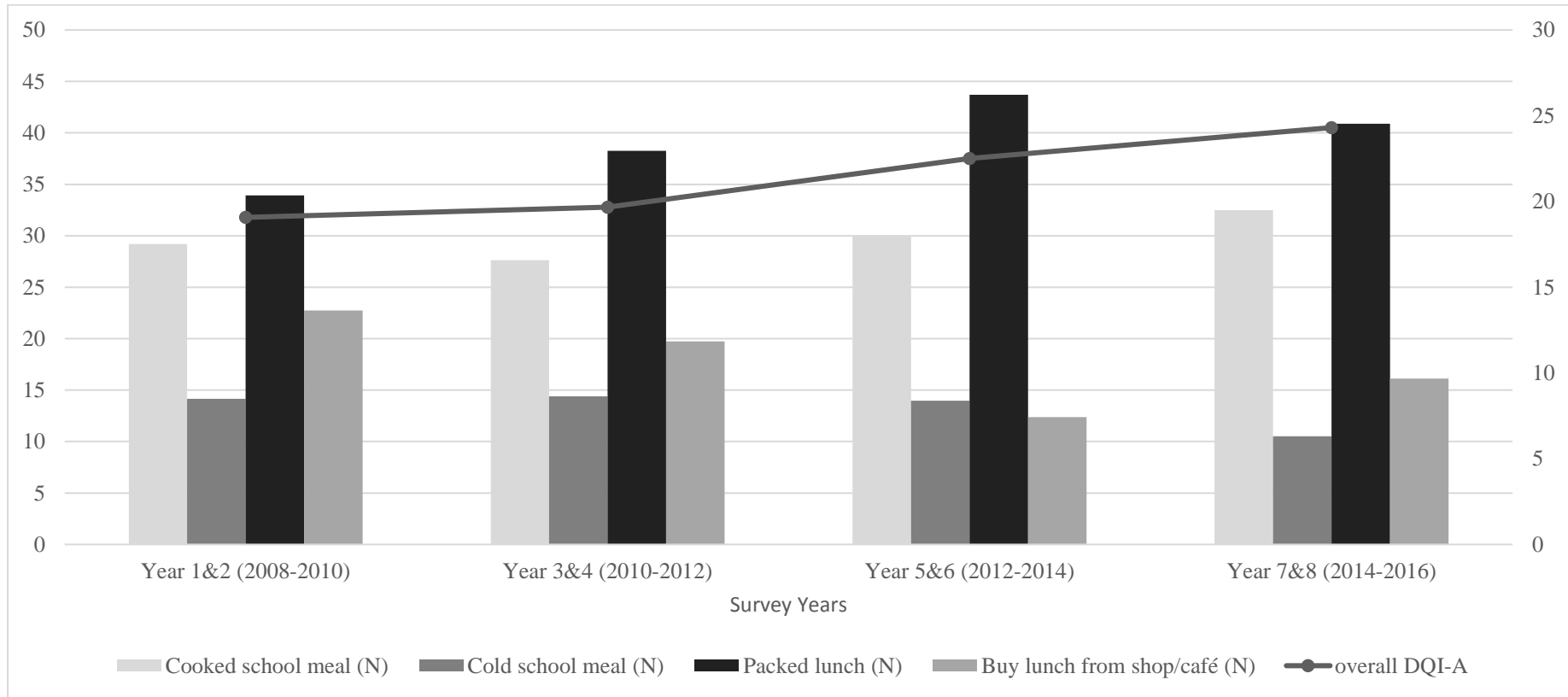
Supplemental Table 1 Regression (clustered) analysis between Diet quality index and its components and subcomponents and type of lunch consumed on a school day for younger adolescents aged 11-14 years from the NDNS rolling programme.

	Unadjusted analysis														
	Cold school meal			Packed lunch (from home)			Buy lunch from shop/cafe			Lunch at home			Do not eat lunch		
	B	95% CI	P	B	95% CI	P	B	95% CI	P	B	95% CI	P	B	95% CI	P
DQI-A %	-2.0	-4.5 0.6	0.1	-0.4	-2.4 1.7	0.72	-8.4	-11.6 -5.2	<0.01	-6.5	-16.7 3.7	0.2	-3.6	-14.0 6.9	0.5
DQc %	-5.5	-11.1 0.0	0.1	-2.9	-7.2 1.3	0.2	-16.9	-23.8 -10.0	<0.01	-15.0	-33.3 3.4	0.1	-7.9	-27.4 11.6	0.43
DDc %	-0.3	-2.5 1.9	0.8	0.6	-1.1 2.3	0.49	-5.0	-7.7 -2.3	<0.01	-2.7	-11.3 5.8	0.5	-1.8	-10.5 6.8	0.68
DEc %	-0.1	-1.4 1.3	0.9	1.2	0.1 2.3	0.03	-3.3	-5.1 -1.6	<0.01	-1.8	-7.5 4.0	0.5	-0.9	-6.5 4.6	0.7
DAx %	0.6	-1.3 2.5	0.6	1.8	0.3 3.2	0.02	-3.1	-5.4 -0.7	0.01	-2.5	-9.8 4.7	0.5	-0.6	-6.9 5.7	0.86
DEx %	0.5	-0.8 1.9	0.4	0.2	-0.7 1.2	0.6	0.8	-0.7 2.4	0.3	-0.3	-4.6 4.0	0.9	0.5	-2.5 3.4	0.75

CI, Confidence Interval; DQI-A, Diet Quality Index for Adolescents; DQc, Diet quality component; DDc, Diet diversity component; DEc, Diet equilibrium component; DAx, Diet adequacy sub-component; DEx, Diet excess sub-component

Supplemental Table 2 Regression (clustered) analysis between Diet quality index and its components and subcomponents and type of lunch consumed on a school day for older adolescents aged 15-18 years from the NDNS rolling programme.

	Unadjusted analysis														
	Cold school meal			**Packed lunch (from home)**			**Buy lunch from shop/cafe**			**Lunch at home**			**Do not eat lunch**		
	B	95% CI	P	B	95% CI	P	B	95% CI	P	B	95% CI	P	B	95% CI	P
DQI-A %	-0.6	-4.0 2.8	0.7	4.7	2.1 7.2	<0.01	-6.6	-9.2 -3.9	<0.01	1.8	-3.3 6.8	0.5	-2.3	-9.5 4.9	0.5
DQc %	0.6	-6.7 7.8	0.9	8.1	3.0 13.3	<0.01	-11.8	-17.3 -6.2	<0.01	4.6	-7.2 16.3	0.4	1.9	-13.9 17.6	0.82
DDc %	-1.8	-4.5 1.0	0.2	2.7	0.5 4.9	0.02	-4.9	-7.3 -2.6	<0.01	1.2	-2.6 5.0	0.5	-7.9	-13.0 -2.7	<0.01
DEc %	-0.6	-2.3 1.1	0.5	3.2	1.8 4.6	<0.01	-3.0	-4.4 -1.5	<0.01	-0.5	-2.9 1.9	0.7	-0.9	-4.1 2.3	0.6
DAx %	-2.4	-4.7 -0.1	0.04	1.9	0.1 3.7	0.04	-4.5	-6.5 -2.6	<0.01	-1.3	-4.5 1.8	0.4	-7.4	-10.9 -3.9	<0.01
DEx %	-1.4	-3.0 0.3	0.1	-1.6	-2.9 -0.4	<0.01	-0.7	-2.1 0.6	0.3	-0.6	-2.7 1.5	0.6	-5.2	-7.9 -2.4	<0.01

CI, Confidence Interval; DQI-A, Diet Quality Index for Adolescents; DQc, Diet quality component; DDc, Diet diversity component; DEc, Diet equilibrium component; DAx, Diet adequacy sub-component; DEx, Diet excess sub-component