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Supplementary Materials

The Relationship between Organophosphate Pesticide Exposure and Anthropometric Outcomes among a Cohort of Children from Four Informal Settlements in the Western Cape

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Table S1. Association between anthropometric outcomes and covariates among schoolchildren at baseline using bivariate linear regression models.

	Age (years)	Sex	LBW (<2.5kg)	Prenatal Maternal Smoking	Pesticide Use in Home	Smokers in the Home	Pet Ownership	Fuel for Cooking	DEP	DMP	DMTP	∑DAP
Outcomes	Coefficient (95% CI)											
Weight (kg)	**2.28 (1.63–2.93)**	−0.9 (−1.46–1.26)	0.64 (−1.91–3.19)	−1.89 (−3.64−0.15)	1.4 (−0.89–3.69)	−1.26 (−2.76–0.24)	−1.02 (−2.73–0.69)	−1.66 (−3.04−0.27)	−0.9 (−1.58−0.23)	0.02 (−0.66–0.7)	−0.34 (−1.02–0.34)	−0.27 (−0.95–0.41)
Height (cm)	**3.14 (2.52–3.76)**	1.15 (−0.21–2.5)	0.24 (−2.31–2.79)	−0.98 (−2.73–0.77)	−0.79 (−3.08–1.5)	−1.6 (−3.1−0.1)	−1.02 (−2.72–0.69)	−1.64 (−3.03−0.26)	**−1.22 (−1.89−0.55)**	−0.08 (−0.76–0.6)	−0.18 (−0.86–0.5)	−0.24 (−0.91–0.44)
BMI (kg/m^2)	0.36 (0.06–0.67)	−0.32 (−0.93–0.29)	0.21 (−0.94–1.35)	−0.79 (−1.57–0.0)	0.95 (−0.08–1.98)	−0.13 (−0.8–0.55)	−0.24 (−1.02–0.53)	−0.47 (−1.1–0.16)	−0.16 (−0.47–0.15)	0.04 (−0.26–0.35)	−0.13 (−0.43–0.18)	−0.08 (−0.38–0.23)

Bold text symbolizes statistically significant at $p < 0.1$.

Table S2. Association between anthropometric outcomes and study area among schoolchildren at baseline using bivariate linear regression with Masiphumulele as a reference.

	Khayelitsha	Oudtshoorn	Milnerton
Outcomes	Coefficient (95% CI)		
Weight (kg)	−2.86 (−4.80−0.92)	**−6.26 (−8.17−4.35)**	−0.43 (−2.40–1.54)
Height (cm)	**−5.52 (−7.45−3.60)**	**−5.34 (−7.23−3.45)**	0.02 (−1.93–1.98)
BMI (kg/m^2)	0.13 (−0.77–1.02)	**−2.01 (−2.89−1.13)**	−0.23 (−1.14–0.68)

Study area 1: Khayelitsha, Study area 2: Oudtshoorn, Study area 3: Milnerton, Study area 4: Masiphumulele. Bold text symbolizes statistically significant at $p < 0.1$.

Table S3. Association between anthropometric outcomes and covariates among schoolchildren at follow-up using bivariate linear regression models.

	Age (years)	Sex	Pesticide Use in Home	Smokers in the Home	Pet Ownership	Fuel for Cooking	DEP	DMP	∑[DEP + DMP]
Outcomes	Coefficient (95% CI)								
Weight (kg)	**2.34 (1.5–3.19)**	−1.56 (−3.29–0.18)	0.48 (−1.77–2.74)	0.08 (−2.22–2.38)	−1.72 (−4.98–1.54)	−2.17 (−4.06−0.27)	−0.91 (−1.78−0.04)	−1.06 (−1.92−0.19)	−0.95 (−1.82−0.09)
Height (cm)	**2.31 (1.69–2.94)**	−0.6 (−1.92–0.72)	0.56 (−1.16–2.27)	0.91 (−0.84–2.65)	−1.37 (−3.86–1.11)	−0.25 (−1.7–1.2)	−0.25 (−0.91–0.41)	−0.16 (−0.82–0.5)	−0.09 (−0.75–0.57)
BMI (kg/m^2)	**0.55 (0.22–0.89)**	−0.59 (−1.26–0.08)	0.1 (−0.77–0.97)	−0.17 (−1.06–0.72)	−0.66 (−1.93–0.6)	−0.96 (−1.69−0.23)	−0.37 (−0.7−0.03)	−0.43 (−0.76−0.09)	−0.4 (−0.73−0.06)

Bold text symbolizes statistically significant at $p < 0.1$.

Table S4. Association between anthropometric outcomes and study area among schoolchildren at follow-up using bivariate linear regression with Masiphumulele as a reference.

	Khayelitsha	Oudtshoorn	Milnerton
Outcomes	Coefficient (95% CI)		
Weight (kg)	2.79 (−5.34−0.25)	**−5.86 (−8.33−3.39)**	0.45 (−2.08–2.98)
Height (cm)	**−3.34 (−5.31−1.37)**	−2.13 (−4.04−0.22)	0.20 (−1.76–2.16)
BMI (kg/m^2)	−0.46 (−1.44–0.52)	**−2.37 (−3.32−1.42)**	0.14 (−0.83–1.12)

Study area 1: Khayelitsha, Study area 2: Oudtshoorn, Study area 3: Milnerton, Study area 4: Masiphumulele. Bold text symbolizes statistically significant at $p < 0.1$.

Table S5. Association between covariates and change in anthropometric outcomes at baseline among schoolchildren using linear regression models.

	Age (Years)	Sex	LBW (<2.5 kg)	Prenatal Maternal Smoking	Pesticide Use in Home	Smokers in the Home	Pet Ownership	Fuel for Cooking	DEP	DMP	DMTP	∑DAP
Outcomes	Coefficient (95% CI)											
Weight change (kg)	−0.11 (−0.44–0.22)	**−1.33 (−1.99–0.68)**	0.49 (−0.79–1.77)	−0.89 (−1.72–0.06)	−0.21 (−1.42–1.0)	−0.3 (−1.05–0.44)	−0.08 (−0.92–0.76)	−0.64 (−1.32–0.04)	−0.05 (−0.38–0.29)	−0.06 (−0.4–0.27)	−0.05 (−0.38–0.28)	−0.08 (−0.41–0.25)
Height change (cm)	**−0.69 (−1.05–0.32)**	**−1.45 (−2.18–0.72)**	−0.14 (−1.57–1.3)	0.23 (−0.7–1.16)	−0.65 (−2.0–0.69)	0.75 (−0.08–1.58)	0.45 (−0.49–1.39)	0.23 (−0.53–0.99)	0.19 (−0.18–0.57)	−0.13 (−0.5–0.24)	−0.11 (−0.48–0.26)	−0.1 (−0.48–0.27)
BMI change(kg/m^2)	0.06 (−0.12–0.25)	−0.27 (−0.63–0.1)	0.27 (−0.43–0.98)	−0.42 (−0.88–0.03)	−0.17 (−0.83–0.49)	−0.38 (−0.79–0.02)	−0.12 (−0.58–0.34)	−0.26 (−0.63–0.12)	−0.04 (−0.22–0.15)	0.01 (−0.17–0.19)	0.05 (−0.13–0.23)	0.02 (−0.16–0.2)

Bold text symbolizes statistical significance at $p < 0.1$.

Table S6. Association between study area and change anthropometric outcomes among schoolchildren at baseline using bivariate linear regression with Masiphumulele as a reference.

	Khayelitsha	Oudtshoorn	Milnerton
Outcomes	Coefficient (95% CI)		
Weight change (kg)	0.53 (−0.48–1.54)	0.19 (−0.79–1.17)	1.02 (0.02–2.03)
Height change (cm)	**2.01 (0.92–3.09)**	**2.74 (1.7–3.79)**	0.31 (−0.77–1.39)
BMI change (kg/m^2)	−0.3 (−0.85–0.25)	−0.33 (−0.86–0.2)	0.41 (−0.14–0.96)

Study area 1: Khayelitsha, Study area 2: Oudtshoorn, Study area 3: Milnerton, Study area 4: Masiphumulele. Bold text symbolizes statistically significant at $p < 0.1$.

Table S7. Association between covariates and change in anthropometric outcomes at follow-up among schoolchildren using linear regression models.

	Age (Years)	Sex	Pesticide Use in Home	Smokers in the Home	Pet Ownership	Fuel for Cooking	DEP	DMP	∑[DEP + DMP]
Outcomes	Coefficient (95% CI)								
Weight change (kg)	−0.11 (−0.44–0.22)	**−1.33 (−1.99–0.68)**	0.07 (−0.78–0.92)	−0.18 (−1.05–0.69)	1.27 (−0.02–2.56)	0.12 (−0.60–0.85)	−0.16 (−0.49–0.18)	−0.07 (−0.41–0.26)	−0.06 (−0.39–0.28)
Height change (cm)	**−0.69 (−1.05–0.32)**	**−1.45 (−2.18–0.72)**	−1.24 (−2.18–0.30)	0.48 (−0.49–1.45)	1.28 (−0.17–2.73)	1.31 (0.52–2.11)	0.09 (−0.28–0.46)	0.36 (−0.01–0.73)	0.33 (−0.05–0.70)
BMI change(kg/m^2)	0.06 (−0.12–0.25)	−0.26 (−0.63–0.10)	0.43 (−0.03–0.89)	−0.27 (−0.75–0.20)	0.45 (−0.26–1.17)	−0.17 (−0.57–0.22)	−0.07 (−0.26–0.10)	−0.10 (−0.29–0.08)	−0.09 (−0.27–0.09)

Bold text symbolizes statistical significance at $p < 0.1$.

Table S8. Association between study area and change anthropometric outcomes among schoolchildren at follow-up using bivariate linear regression with Masiphumulele as a reference.

	Khayelitsha	Oudtshoorn	Milnerton
Outcomes	Coefficient (95% CI)		
Weight change (kg)	0.53 (−0.48–1.54)	0.19 (−0.79–1.17)	1.02 (0.02–2.03)
Height change (cm)	**2.01 (0.92–3.09)**	**2.74 (1.70–3.79)**	0.31 (−0.77–1.39)
BMI change (kg/m^2)	−0.30 (−0.85–0.25)	−0.33 (−0.86–0.20)	0.41 (−0.14–0.96)

Study area 1: Khayelitsha, Study area 2: Oudtshoorn, Study area 3: Milnerton, Study area 4: Masiphumulele. Bold text symbolizes statistically significant at $p < 0.1$.

Table S9. Association between covariates and anthropometric outcomes at baseline among schoolchildren using unadjusted logistic regression models.

	Sex	**LBW (<2.5 kg)**	**Prenatal Maternal Smoking**	**Pesticide Use in Home**	**Smokers in the Home**	**Pet Ownership**	**Study Area**	**Fuel for Cooking**	**∑DAP**	**DEP**	**DMP**	**DMTP**
Outcomes	OR (95% CI)											
SD2neg height	1.42 (0.81–2.50)	0.98 (0.33–2.94)	1.40 (0.73–2.70)	0.93 (0.35–2.51)	1.34 (0.74–2.45)	1.14 (0.58–2.29)	**0.74 (0.56–1.00)**	1.25 (0.70–2.25)	0.99(0.75–1.32)	1.21 (0.92–1.62)	1.00 (0.76–1.33)	0.98 (0.75–1.30)
P(25)height	0.75 (0.53–1.16)	0.76 (0.36–1.60)	0.76 (0.47–1.23)	1.59 (0.78–3.23)	0.73 (0.48–1.13)	0.86 (0.53–1.42)	1.06(0.88–1.30)	1.08 (0.73–1.62)	0.94 (0.78–1.15)	1.06 (0.88–1.29)	0.96 (0.79–1.17)	0.94 (0.78–1.15)
P(50) height	1.04 (0.65–1.68)	0.65 (0.28–1.54)	0.67 (0.38–1.18)	0.80 (0.37–1.78)	0.95 (0.56–1.63)	0.91 (0.5–1.67)	0.97 (0.77–1.23)	1.17 (0.72–1.91)	1.00 (0.79–1.28)	1.01 (0.80–1.29)	0.98 (0.77–1.25)	1.02 (0.81–1.30)
SD2neg BMI	2.53 (0.65–9.93)	3.43 (0.7–16.96)	1.02 (0.21–4.92)	**4.48 (1.11–18.11)**	0.28 (0.04–2.24)	1.05 (0.22–5.07)	1.27 (0.68–2.38)	0.43 (0.12–1.55)	1.36 (0.7–2.66)	0.70 (0.4–1.26)	1.40 (0.7–2.81)	1.49 (0.75–2.98)
P(25) BMI	1.27 (0.81–2.00)	1.46 (0.65–3.31)	0.90 (0.50–1.61)	0.84 (0.37–1.90)	0.79 (0.47–1.34)	**1.64 (0.96–2.82)**	0.87 (0.69–1.1)	1.48 (0.92–2.39)	0.96 (0.77–1.21)	0.92 (0.74–1.16)	0.96 (0.77–1.2)	1.01 (0.81–1.27)
P(50) BMI	1.18 (0.81–1.74)	0.98 (0.47–2.07)	1.43 (0.88–2.32)	0.67 (0.35–1.33)	1.17 (0.77–1.8)	1.34 (0.83–2.19)	**0.79 (0.66–0.97)**	1.37 (0.93–2.04)	0.99 (0.82–1.2)	0.90 (0.74–1.09)	0.95 (0.79–1.16)	1.04 (0.86–1.27)
SD2pos BMI	0.83 (0.42–1.67)	0.35 (0.05–2.67)	0.48 (0.17–1.42)	**2.67 (1.09–6.59)**	1.15 (0.55–2.42)	0.83 (0.33–2.07)	0.95 (0.68–1.35)	**0.56 (0.28–1.11)**	1.01 (0.72–1.43)	1.18 (0.84–1.67)	0.98 (0.7–1.39)	1.00 (0.72–1.42)

Bold text symbolizes statistical significance at $p < 0.1$. OR, odds ratio; each OR is a separate unadjusted regression model. P(25) and P(50) it indicates the 25th and 50th percentile respectively.

Table S10. Association between covariates and anthropometric outcomes at follow-up among schoolchildren using unadjusted logistic regression models.

	Sex	**Pesticide Use in Home**	**Pet Ownership**	**Smokers in the Home**	**Study Area**	**Fuel for Cooking**	**∑[DEP + DMP]**	**DEP**	**DMP**
Outcomes	OR (95% CI)								
SD2neg height	1.79 (0.81–1.84)	0.89 (0.53–1.51)	1.99 (0.6–3.2)	1.28 (0.37–1.01)	0.98 (1.03–1.55)	1.51 (0.84–2.01)	1.09 (0.99–1.49)	1.12 (1.16–1.84)	1.06 (0.93–1.4)
P(25) height	1.22 (0.78–1.98)	0.89 (0.5–1.61)	1.37 (0.78–8.91)	0.60 (0.4–1.24)	1.26 (0.7–1.11)	1.29 (1.0–2.64)	1.21 (0.73–1.17)	1.46 (0.88–1.43)	1.14 (0.71–1.13)
P(50) height	1.24 (1.02–3.14)	0.89 (0.43–1.85)	2.63 (0.81–4.91)	0.70 (0.65–2.51)	0.87 (0.75–1.3)	1.62 (0.8–2.87)	0.92 (0.83–1.44)	1.12 (0.86–1.46)	0.89 (0.81–1.41)
SD2neg BMI	1.28 (0.34–4.86)	0.56 (0.07–4.55)	0.00 (0.0-∞)	0.00 (0.0-∞)	0.51 (0.24–1.12)	3.55 (0.44–28.76)	2.14 (1.08–4.27)	1.49 (0.87–2.57)	1.90 (0.93–3.91)
P(25) BMI	0.97 (0.61–1.55)	1.03 (0.57–1.88)	1.36 (0.59–3.2)	1.21 (0.68–2.17)	0.84 (0.66–1.06)	1.75 (1.02–3.04)	1.16 (0.92–1.47)	0.98 (0.78–1.24)	1.15 (0.91–1.46)

P(25) and P(50) it indicates the 25th and 50th percentile respectively.