



Body composition, Smoking and Dizygotic Twinning



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BACKGROUND: As the prevalence of dizygotic (DZ) twinning increases, interest in the association with fertility related lifestyle factors also increases.

METHODS: We compared body composition and smoking during pregnancy of mothers of natural DZ twins and monozygotic (MZ) twins in two cohorts; 1) mothers of young twins and 2) mothers of adult twins. Differences in age, parity and educational attainment (EA) were taken into account. We also compared the fathers on these traits, to distinguish between possible causation and association.

Young NTR (twins born after 1986)

	MZ (3874)	DZ (5813)	
Height	169.3 (6.4)	169.9 (6.3)	**
Weight	66.9 (10.7)	67.9 (11.4)	**
BMI	23.3 (3.3)	23.5 (3.6)	*
Age	29.9 (3.9)	30.6 (3.8)	**
Parity	0.70 (0.87)	0.80 (0.90)	**
Smoking	21.0%	28.3%	**
Low EA	36.7%	38.8%	*

* significant difference $p < .05$,
** significant difference $p < .001$

Adult NTR (twins born before 1986)

	MZ (1263)	DZ (1741)	
Height	167.0 (6.1)	167.9 (6.1)	**
Weight	67.1 (10.5)	68.9 (10.9)	**
BMI	24.1 (3.5)	24.4 (3.7)	*
Age	27.5 (4.2)	28.4 (4.3)	**
Parity	0.72 (0.85)	0.82 (0.82)	**
Smoking	28.1 %	34.8 %	**
Low EA	63.7%	68.7%	*

* significant difference $p < .05$,
** significant difference $p < .001$

RESULTS: In both samples, DZ twin mothers were taller, heavier and had a higher BMI than MZ mothers. DZ twin mothers more often smoked during pregnancy and had lower education than mothers of MZ twins. Effects of height and weight remained after taking into account age, parity, educational attainment and smoking. Fathers did not differ in weight and BMI, but in the young sample fathers of DZ twins were taller and smoked more often.

CONCLUSION: Increased body composition and smoking favor DZ twinning. The small but consistent increased height and weight of DZ twin mothers is likely to reflect an innate maternal characteristic.