ONLINE SUPPLEMENTARY MATERIAL

Supplementary Table 1.

HAZARD RATIOS (95% CI) FOR THE ASSOCIATION BETWEEN COVARIATES AND

RHEUMATOID ARTHRITIS IN NURSES' HEALTH STUDY (NHS, 1986-2014) AND NURSES'

HEALTH STUDY II (NHS II, 1993-2015), ADJUSTED FOR AGE.

Covariate	*HR (95% CI)*
Smoking (pack years)	
0	1.00 (Ref)
>0 to 20	1.21 (0.94, 1.32)
20+	1.67 (1.41, 1.98)
Diet (Alternate Healthy Eating Index score)	
Quartile 1	1.00 (Ref)
Quartile 2	1.08 (0.90, 1.30)
Quartile 3	0.92 (0.76, 1.12)
Quartile 4	0.87 (0.43, 1.55)
Physical activity (metabolic equivalent hours per week)	
Quartile 1	1.00 (Ref)
Quartile 2	0.93 (0.75, 1.14)
Quartile 3	0.90 (0.73, 1.06)
Quartile 4	0.93 (0.34, 2.53)
Menopausal status and hormone use	
Premenopausal	1.00 (Ref)
Postmenopausal with never use	1.16 (0.87, 1.53)
Postmenopausal with current use	1.40 (1.71, 1.83)
Postmenopausal past use	1.39 (1.04, 1.85)

Supplementary Table 2.

HAZARD RATIOS (95% CI) FOR THE ASSOCIATION BETWEEN WAIST CIRCUMFERENCE AND RHEUMATOID ARTHRITIS IN

NURSES' HEALTH STUDY (NHS, 1986-2014) AND NURSES' HEALTH STUDY II (NHS II, 1993-2015), ALL MODELS

FULL COHORT	*Waist circumference category* *HR (95% CI)*						
Models	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Model 1: Age-adjusted	0.82 (0.59, 1.14)	1.00 Ref	0.80 (0.61, 1.05)	1.05 (0.81, 1.35)	1.33 (1.03, 1.72)	1.12 (0.84, 1.72)	1.33 (1.05, 1.67)
Model 2: Model 1 + smoking	0.82 (0.59, 1.13)	1.00 Ref	0.80 (0.61, 1.05)	1.04 (0.80, 1.35)	1.32 (1.02, 1.70)	1.11 (0.83, 1.47)	1.31 (1.03, 1.65)
Model 3: Model 2 + diet	0.82 (0.59, 1.13)	1.00 Ref	0.80 (0.61, 1.04)	1.04 (0.80, 1.34)	1.31 (1.01, 1.69)	1.10 (0.83, 1.46)	1.29 (1.02, 1.63)
Model 4: Model 3 + physical activity	0.82 (0.59, 1.13)	1.00 Ref	0.80 (0.61, 1.05)	1.04 (0.80, 1.34)	1.31 (1.01, 1.69)	1.10 (0.83, 1.46)	1.29 (1.02, 1.63)
Model 5: Model 4 + menopausal status/hormone use	0.82 (0.59, 1.13)	1.00 Ref	0.80 (0.61, 1.05)	1.04 (0.80, 1.35)	1.32 (1.02, 1.70)	1.10 (0.83, 1.47)	1.30 (1.03, 1.65)
Model 6: Model 5 + body mass index	0.83 (0.60, 1.16)	1.00 Ref	0.78 (0.60, 1.03)	0.99 (0.76, 1.29)	1.23 (0.94, 1.60)	1.00 (0.75, 1.35)	1.10 (0.83, 1.47)

Category definitions for each variable: WC <27, 27-<29 (reference), 29-<31, 31-<33, 33-<35, 35-<37, and 37+ inches; smoking pack-years (0, >0-20, 20+ pack years); alternate healthy eating index (diet score quartiles); physical activity (quartiles of metabolic equivalent hours per week); menopausal status and postmenopausal hormone use (premenopausal, PMH with never use, PMH with current use, and PMH past use).

Supplementary Table 3.

HAZARD RATIOS (95% CI) FOR THE ASSOCIATION BETWEEN WAIST CIRCUMFERENCE AND SEROPOSITIVE

RHEUMATOID ARTHRITIS AMONG YOUNGER WOMEN IN NURSES' HEALTH STUDY (NHS, 1986-2014) AND NURSES'

HEALTH STUDY II (NHS II, 1993-2015), ALL MODELS

SEROPOSITIVE / YOUNGER AGE	*Waist circumference category* *HR (95% CI)*						
Models	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Model 1: Age-adjusted	0.66 (0.36, 1.22)	1.00 Ref	0.79 (0.47, 1.34)	0.90 (0.52, 1.56)	0.95 (0.53, 1.72)	1.40 (0.78, 2.51)	1.77 (1.13, 2.79)
Model 2: Model 1 + smoking	0.65 (0.35, 1.20)	1.00 Ref	0.79 (0.47, 1.33)	0.89 (0.52, 1.53)	0.93 (0.52, 1.68)	1.36 (0.76, 2.44)	1.72 (1.09, 2.71)
Model 3: Model 2 + diet	0.66 (0.36, 1.22)	1.00 Ref	0.78 (0.46, 1.32)	0.86 (0.50, 1.48)	0.89 (0.49, 1.62)	1.30 (0.72, 2.33)	1.61 (1.02, 2.55)
Model 4: Model 3 + physical activity	0.66 (0.36, 1.22)	1.00 Ref	0.78 (0.46, 1.32)	0.86 (0.50, 1.49)	0.90 (0.50, 1.63)	1.31 (0.73, 2.35)	1.66 (1.04, 2.63)
Model 5: Model 4 + menopausal status/hormone use	0.66 (0.36, 1.22)	1.00 Ref	0.78 (0.46, 1.32)	0.87 (0.50, 1.50)	0.90 (0.50, 1.63)	1.31 (0.73, 2.35)	1.66 (1.04, 2.63)
Model 6: Model 5 + body mass index	0.69 (0.37, 1.27)	1.00 Ref	0.75 (0.44, 1.27)	0.79 (0.45, 1.37)	0.78 (0.42, 1.43)	1.07 (0.57, 1.97)	1.12 (0.61, 2.04)

Category definitions for each variable: WC <27, 27-<29 (reference), 29-<31, 31-<33, 33-<35, 35-<37, and 37+ inches; smoking pack-years (0, >0-20, 20+ pack years); alternate healthy eating index (diet score quartiles); physical activity (quartiles of metabolic equivalent hours per week); menopausal status and postmenopausal hormone use (premenopausal, PMH with never use, PMH with current use, and PMH past use).