

**Birth weight, body silhouette over the life course, and incident diabetes in 91,453 middle-aged women from the French Etude Epidemiologique de Femmes de la Mutuelle Generale de l'Education Nationale (E3N) Cohort.**

Blandine de Lauzon-Guillain, Beverley Balkau, Marie-Aline Charles, Isabelle Romieu, Marie-Christine Boutron-Ruault, Françoise Clavel-Chapelon

► **To cite this version:**

Blandine de Lauzon-Guillain, Beverley Balkau, Marie-Aline Charles, Isabelle Romieu, Marie-Christine Boutron-Ruault, et al.. Birth weight, body silhouette over the life course, and incident diabetes in 91,453 middle-aged women from the French Etude Epidemiologique de Femmes de la Mutuelle Generale de l'Education Nationale (E3N) Cohort.: Body silhouette history and incident diabetes. Diabetes Care, American Diabetes Association, 2010, 33 (2), pp.298-303. 10.2337/dc09-1304 . inserm-00433469

**HAL Id: inserm-00433469**

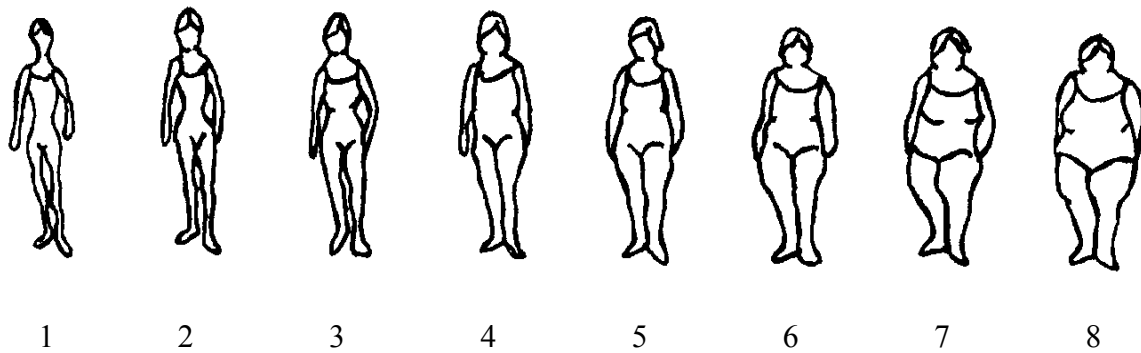
**<https://www.hal.inserm.fr/inserm-00433469>**

Submitted on 19 Nov 2009

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

**Online Appendix Figure 1.** Body Silhouettes used in baseline questionnaire (as first proposed by Sørensen et al, 1983).



The silhouettes are represented by drawings of figures which are ranked from 1 to 8, corresponding to increasing body size (from the leanest to the largest). Women reported the drawing that reflected their perceived body size at specific ages (at approximately age 8 years, at menarche, at age 20–25 years, at age 35–40 years, and at the time of completion of the questionnaire).

**Online Appendix Table 1.** Hazards ratio [95% CI] for incident diabetes in relation to body silhouette history in the E3N cohort (1990-2007, n=91,453) according to baseline overweight.

	BMI < 25 kg/m <sup>2</sup> at baseline			BMI ≥ 25 kg/m <sup>2</sup> at baseline		
	Cases / total person-years	Model 2*	Model 3†	Cases / total person-years	Model 2*	Model 3†
<b>Birth weight</b>						
- Low	98 / 91,222	1.29 [1.02 - 1.62]	1.31 [1.04 - 1.65]	144 / 15,362	1.38 [1.13 - 1.68]	1.41 [1.16 - 1.72]
- Medium	631 / 806,447	1	1	838 / 139,445	1	1
- High	56 / 94,407	0.76 [0.58 - 0.99]	0.71 [0.54 - 0.94]	104 / 23,626	0.70 [0.57 - 0.86]	0.66 [0.54 - 0.81]
- Missing	229 / 165,899	1.23 [0.97 - 1.57]	1.28 [1.01 - 1.63]	434 / 44,902	1.13 [0.92 - 1.38]	1.12 [0.91 - 1.38]
		P <sub>trend</sub> = 0.0008	P <sub>trend</sub> = 0.0002		P <sub>trend</sub> < 0.0001	P <sub>trend</sub> < 0.0001
<b>Body silhouette</b>						
<b>- at 8 years</b>						
1	669 / 615,982	1.89 [1.49 - 2.40]	2.04 [1.61 - 2.60]	771 / 95,459	1.54 [1.31 - 1.81]	1.66 [1.41 - 1.95]
2	156 / 232,916	1.27 [0.96 - 1.67]	1.32 [1.00 - 1.74]	267 / 43,374	1.24 [1.03 - 1.50]	1.31 [1.08 - 1.58]
3	75 / 141,760	1	1	185 / 37,160	1	1
≥ 4	59 / 109,817	0.97 [0.69 - 1.36]	0.91 [0.65 - 1.28]	196 / 34,439	1.15 [0.94 - 1.40]	1.11 [0.91 - 1.36]
Missing	55 / 57,501	1.48 [1.04 - 2.10]	1.55 [1.09 - 2.20]	101 / 12,904	1.41 [1.10 - 1.80]	1.50 [1.17 - 1.92]
		P <sub>trend</sub> < 0.0001	P <sub>trend</sub> < 0.0001		P <sub>trend</sub> < 0.0001	P <sub>trend</sub> < 0.0001
<b>- at puberty</b>						
1	315 / 266,020	1.44 [1.20 - 1.72]	1.60 [1.33 - 1.91]	284 / 29,989	1.53 [1.31 - 1.80]	1.70 [1.45 - 2.00]
2	350 / 366,606	1.21 [1.02 - 1.44]	1.27 [1.07 - 1.51]	458 / 63,558	1.22 [1.06 - 1.40]	1.29 [1.12 - 1.48]
3	199 / 260,272	1	1	346 / 60,115	1	1
≥ 4	109 / 225,759	0.62 [0.49 - 0.79]	0.58 [0.46 - 0.74]	340 / 59,849	0.98 [0.84 - 1.14]	0.92 [0.79 - 1.07]
Missing	41 / 39,318	1.07 [0.76 - 1.50]	1.07 [0.76 - 1.50]	92 / 9,824	1.44 [1.14 - 1.82]	1.46 [1.15 - 1.84]
		P <sub>trend</sub> < 0.0001	P <sub>trend</sub> < 0.0001		P <sub>trend</sub> < 0.0001	P <sub>trend</sub> < 0.0001

- at 20-25 years

1	148 / 129,329	1.28 [1.05 - 1.56]	1.61 [1.32 - 1.96]	102 / 9,734	1.56 [1.26 - 1.93]	1.75 [1.41 - 2.16]
2	453 / 506,214	1.04 [0.90 - 1.21]	1.19 [1.03 - 1.38]	441 / 58,688	1.24 [1.09 - 1.41]	1.33 [1.17 - 1.51]
3	303 / 365,299	1	1	537 / 89,638	1	1
≥4	79 / 129,580	0.70 [0.54 - 0.89]	0.61 [0.48 - 0.79]	375 / 59,085	1.05 [0.92 - 1.20]	0.90 [0.79 - 1.03]
<i>Missing</i>	<i>31 / 27,555</i>	<i>1.00 [0.69 - 1.46]</i>	<i>0.97 [0.67 - 1.41]</i>	<i>65 / 6,191</i>	<i>1.53 [1.18 - 2.00]</i>	<i>1.49 [1.15 - 1.95]</i>
		$P_{\text{trend}} < 0.0001$	$P_{\text{trend}} < 0.0001$		$P_{\text{trend}} = 0.0014$	$P_{\text{trend}} < 0.0001$

- at 35-40 years

≤2	270 / 426,578	0.70 [0.61 - 0.82]	0.99 [0.85 - 1.16]	82 / 12,753	1.02 [0.80 - 1.29]	1.08 [0.85 - 1.37]
3	464 / 507,983	1	1	397 / 64,554	1	1
4	196 / 165,379	1.23 [1.04 - 1.45]	0.91 [0.77 - 1.08]	510 / 85,623	0.98 [0.86 - 1.12]	0.92 [0.81 - 1.05]
≥5	49 / 29,007	1.55 [1.15 - 2.08]	0.89 [0.66 - 1.20]	467 / 53,567	1.35 [1.17 - 1.55]	0.95 [0.82 - 1.10]
<i>Missing</i>	<i>35 / 29,029</i>	<i>1.04 [0.73 - 1.47]</i>	<i>1.06 [0.75 - 1.51]</i>	<i>64 / 6,839</i>	<i>1.3 [0.99 - 1.70]</i>	<i>1.11 [0.85 - 1.45]</i>
		$P_{\text{trend}} < 0.0001$	$P_{\text{trend}} = 0.2747$		$P_{\text{trend}} = 0.0021$	$P_{\text{trend}} = 0.2414$

---

\* Model 2: Includes physical activity (<34 / 34-47 / 47-62 / ≥ 62 MET-h/week), education (≤ 9 / 10-11 / 12-14 / 15-16 / ≥ 17 y), prematurity (no / yes), family history of diabetes (none / only one parent / both parents), smoking (never / former / current smoker, time-dependent variable), high cholesterol level (no / yes), hypertension (no / yes, time-dependant variable), menopausal status (no / yes, time-dependent variable), hormone replacement therapy (never / ever, time-dependent variable), oral contraceptive pills (never / ever), parity and age at 1<sup>st</sup> child (nulliparous / 1st child before 30 y, 1-2 children / 1<sup>st</sup> child before 30 y, 3+ children / 1<sup>st</sup> child at 30 y or more), age at menarche (≤12 / 13 / ≥14 years old), according to birth cohort (1925–1930 / 1930–1935 / 1935–1940 / 1940–1945 / 1945–1950).

† Model 3: Confounders as above and further adjustment for adult BMI as a time-dependent variable