SUPPLEMENTARY DATA

Supplementary Table 1: Comparison of lipids, adipokines and C-reactive protein (CRP) between non-decliners and decliners at 3-months postpartum

	Non-decliners	**Decliners**	
	n=74	**N=92**	**p**
At 3-months postpartum			
LDL (mmol/L)	3.68 [2.97-4.34]	3.85 [3.22-4.66]	0.1262
HDL (mmol/L)	1.29 [1.07-1.51]	1.35 [1.18-1.59]	0.1963
Triglycerides (mmol/L)	0.96 [0.73-1.53]	1.12 [0.75-1.63]	0.2645
ApoB (g/L)	0.93 [0.78-1.07]	0.96 [0.78-1.13]	0.2639
ApoB:apoA1	0.62 [0.48-0.76]	0.62 [0.51-0.73]	0.8533
CRP (mg/L)	2.21 [0.98-5.09]	2.74 [1.58-4.61]	0.1213
Leptin (ng/ml)	22.4 [11.7-38.8]	27.2 [14.5-36.9]	0.2977
Adiponectin (ug/ml)	7.7 [5.8-10.8]	8.1 [6.1-9.8]	0.9624

Data are shown as median followed by interquartile range in parentheses.
P-values refer to differences between the two groups as determined by Kruskal-Wallis test

SUPPLEMENTARY DATA

Supplementary Table 2: Spearman univariate correlations with the baseline-adjusted change in ISSI-2 between 3- and 12-months postpartum

	r	p
Measures at 3-months postpartum		
Sport index	0.08	0.35
Leisure-time index	0.01	0.91
Waist circumference	**-0.17**	**0.04**
Weight	**-0.19**	**0.02**
BMI	**-0.21**	**0.01**
LDL	-0.11	0.19
HDL	-0.06	0.45
Triglycerides	-0.12	0.14
ApoB	-0.10	0.23
ApoB:apoA1	0	0.98
CRP	**-0.24**	**0.0031**
Leptin	**-0.21**	**0.01**
Adiponectin	0.08	0.35
Matsuda index	0.11	0.21
1/HOMA-IR	-0.03	0.68
Fasting C-peptide:insulin	-0.04	0.62
Changes between 3- and 12-months postpartum		
Change in sport index	0	0.98
Change in leisure-time index	0.04	0.63
Change in waist	-0.09	0.30
Change in weight	-0.15	0.08
Change in BMI	-0.15	0.08
Change in Matsuda index	0.15	0.08
Change in 1/HOMA-IR	**0.45**	**<0.0001**
Change in fasting C-peptide:insulin	**0.22**	**0.0082**

Bold indicates $p<0.05$

SUPPLEMENTARY DATA

Supplementary Table 3: Multiple linear regression analyses of (dependent variable) change in ISSI-2 between 3- and 12-months postpartum

Model	Predictor	Estimate	SE	t	p
A	CRP at 3-months postpartum	-3.17730	7.03	-0.45	0.6522
B	Leptin at 3-months postpartum	-0.03131	2.14	-0.01	0.9883
C	Change in weight between 3- and 12-months	-8.22970	5.19	-1.58	0.1150
D	Change in Matsuda index between 3- and 12-months	0.21063	4.017	0.05	0.9582
E	Change in 1/HOMA-IR between 3- and 12-months	227.77	41.45	5.5	<0.0001
F	Change in fasting C-peptide:insulin between 3- and 12-months	6.38085	1.968	3.24	0.0015

Each model shows the regression of the indicated variable on (dependent variable) change in ISSI-2 between 3- and 12-months postpartum, after adjustment for age, ethnicity, family history of diabetes, breastfeeding, BMI, and ISSI-2 at 3-months postpartum.

Sensitivity Analysis:

To attenuate any effect of extreme observations comprising the upper tail of the distribution of ISSI-2 in the decliners group at 3-months postpartum, we also repeated the multiple linear regression analyses after winsorization, a statistical technique wherein outliers are moved to the 95th percentile to limit any excessive effect that they may impose on the results. With the winsorized data, the only significant independent predictors of the change in beta-cell function were again the changes in 1/HOMA-IR (beta=254, t=6.23, p<0.0001) and fasting C-peptide:insulin (beta=7.33, t=3.76, p=0.0002), respectively.

SUPPLEMENTARY DATA

Supplementary Table 4: Logistic regression analyses of (dependent variable) decline in ISSI-2 between 3- and 12-months postpartum

Model	Predictor	Odds Ratio	95% CI	p
A	Change in waist between 3- and 12-months	1.02	[0.97 - 1.06]	0.5326
B	Change in weight between 3- and 12-months	1.07	[0.99 - 1.15]	0.0764
C	Change in Matsuda index between 3- and 12-months	0.98	[0.93 - 1.03]	0.3476
D	Change in 1/HOMA-IR between 3- and 12-months	0.13	[0.06 - 0.29]	<0.0001
E	Change in fasting C-peptide:insulin between 3- and 12-months	0.95	[0.91 - 0.98]	0.0018

Each model shows the regression of the indicated variable on (dependent variable) decline in ISSI-2 between 3- and 12-months postpartum, after adjustment for age, ethnicity, family history of diabetes, breastfeeding, and BMI at 3-months postpartum.

Sensitivity Analysis:

A series of sensitivity analyses were performed to evaluate the robustness of these findings:

(i) First, to eliminate the effect of small changes in ISSI-2 between 3- and 12-months postpartum that may not reflect true physiologic decline or increase, we repeated the logistic regression analyses after limiting the dataset to the 133 women in whom ISSI-2 either decreased or increased by >10%. In this subgroup, the changes in 1/HOMA-IR (OR=0.10, 95%CI 0.04-0.26, p<0.0001) and fasting C-peptide:insulin (OR=0.95, 95%CI 0.92-0.99, p=0.0057) remained as significant independent predictors of declining beta-cell function.

(ii) Second, when the logistic regression analyses were restricted to the 100 women with GDM, these two measures again emerged as the only significant independent predictors (1/HOMA-IR: OR=0.14, 95%CI 0.05-0.37, p<0.0001; fasting C-peptide:insulin: OR=0.93, 95%CI 0.89-0.97, p=0.0024).

(iii) Third, the analyses were repeated in only the 124 women with normal glucose tolerance at 3-months postpartum. Once again, the significant independent predictors of declining beta-cell function were the changes in 1/HOMA-IR (OR=0.09, 95%CI 0.03-0.26, p<0.0001) and fasting C-peptide:insulin (OR=0.94, 95%CI 0.90-0.98, p=0.0044), respectively.

SUPPLEMENTARY DATA

Supplementary Figure 1: Flow chart describing study population