

1 **Supplementary Table 1.** Blood glucose levels of sham vs. VSG rats at each time interval during
 2 solid and liquid meals.

Time after re-fed		Sham	VSG	Significance
<i>Solid meal (ad lib)</i>				
Fasting	Ave. BG	6.4 ± 0.2	6.4 ± 0.2	P=0.991
	Median BG	6.4 ± 0.0	6.3 ± 0.1	P=0.291
0-0.5 h	Peak BG	6.7 ± 0.3	8.0 ± 0.3	P=0.020*
	Ave. BG	6.4 ± 0.2	7.1 ± 0.4	P=0.000***
0.5-1.0 h	Peak BG	6.3 ± 0.2	7.2 ± 0.3	P=0.053
	Ave. BG	6.1 ± 0.2	6.5 ± 0.3	P=0.000***
1.0-1.5 h	Peak BG	6.6 ± 0.3	7.5 ± 0.3	P=0.067
	Ave. BG	6.3 ± 0.2	6.9 ± 0.3	P=0.000***
1.5h-2.0h	Peak BG	6.8 ± 0.3	7.6 ± 0.3	P=0.107
	Ave. BG	6.6 ± 0.3	6.9 ± 0.3	P=0.016*
<i>Solid meal (fixed meal)</i>				
0-0.5 h	Peak BG	7.2 ± 0.4	8.5 ± 0.3	P=0.015*
	Ave. BG	6.4 ± 0.4	7.3 ± 0.4	P=0.000*
0.5-1.0 h	Peak BG	6.6 ± 0.3	7.8 ± 0.6	P=0.170
	Ave. BG	6.3 ± 0.3	6.3 ± 0.5	P=0.875
1.0-1.5 h	Peak BG	6.7 ± 0.3	7.9 ± 0.7	P=0.182
	Ave. BG	6.5 ± 0.3	6.6 ± 0.5	P=0.469
1.5h-2.0h	Peak BG	7.1 ± 0.4	8.4 ± 0.8	P=0.200
	Ave. BG	6.8 ± 0.4	6.8 ± 0.7	P=0.796
<i>Liquid meal (ad lib)</i>				
Fasting	Ave. BG	6.7 ± 0.2	5.6 ± 0.3	P=0.027*
	Median BG	6.8 ± 0.2	5.5 ± 0.4	P=0.016*
0-0.5 h	Peak BG	7.6 ± 0.4	9.1 ± 0.8	P=0.186
	Ave. BG	7.0 ± 0.3	7.3 ± 0.5	P=0.753
0.5-1.0 h	Peak BG	6.7 ± 0.2	6.6 ± 0.5	P=0.866
	Ave. BG	6.5 ± 0.2	5.7 ± 0.5	P=0.180
1.0-1.5 h	Peak BG	7.3 ± 0.3	8.0 ± 0.6	P=0.367
	Ave. BG	6.9 ± 0.3	6.7 ± 0.5	P=0.779
1.5h-2.0h	Peak BG	7.5 ± 0.3	7.6 ± 0.6	P=0.890
	Ave. BG	7.2 ± 0.3	6.4 ± 0.5	P=0.234
<i>Liquid meal (fixed meal)</i>				
0-0.5 h	Peak BG	9.6 ± 0.8	11.5 ± 0.9	P=0.140
	Ave. BG	8.2 ± 0.5	8.6 ± 0.7	P=0.616
0.5-1.0 h	Peak BG	7.9 ± 0.7	8.5 ± 1.0	P=0.691
	Ave. BG	7.3 ± 0.6	4.8 ± 0.8	P=0.044*
1.0-1.5 h	Peak BG	7.4 ± 0.4	5.0 ± 0.6	P=0.012*
	Ave. BG	7.2 ± 0.4	4.5 ± 0.7	P=0.009**
1.5h-2.0h	Peak BG	7.1 ± 0.4	5.4 ± 0.6	P=0.039*
	Ave. BG	6.9 ± 0.3	4.9 ± 0.6	P=0.016*

1 #Abbreviations: Ave. BG, average blood glucose. Blood glucose levels (mmol/L) were
2 represented as Mean \pm SEM. *P<0.05; **P<0.01; ***P<0.001 for Sham vs. VSG.

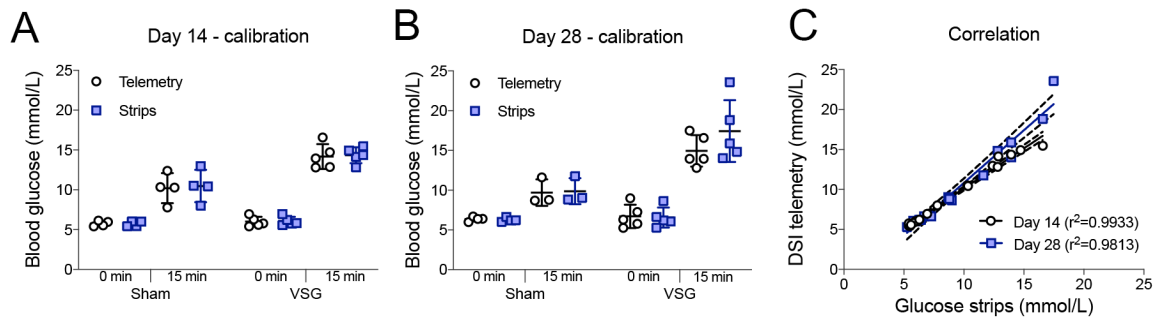
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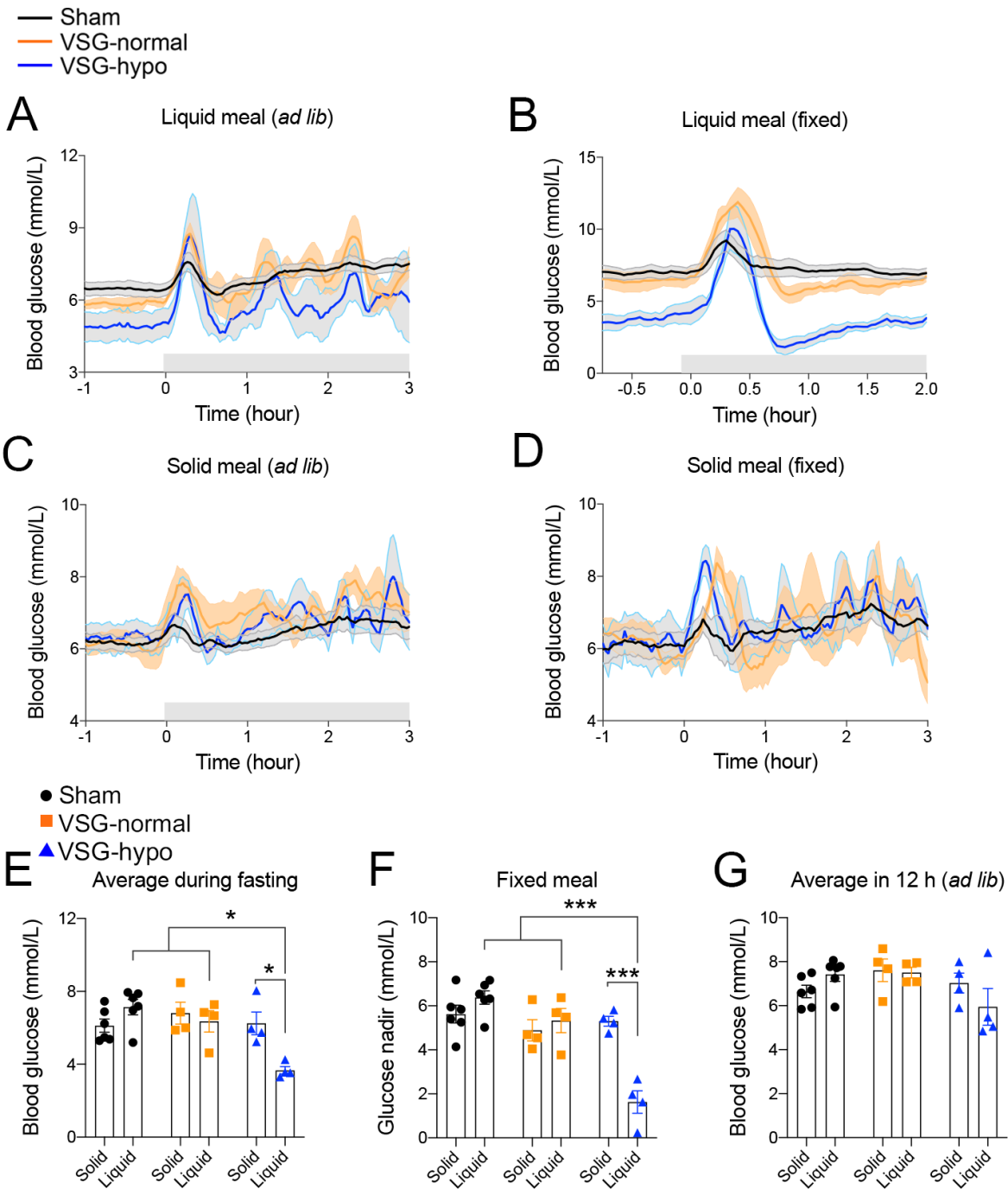
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3 **Figure S1. Telemetry calibration.** (A-B) Blood glucose measured from the rat aorta (telemetry)
4 vs. from tail vein (glucose strip) at 14 days (A) and 28 days (B) after surgery. Glucose was orally
5 administered to overnight fasted rats. (C) Correlation between the blood glucose measured by
6 telemetry and glucose strips.

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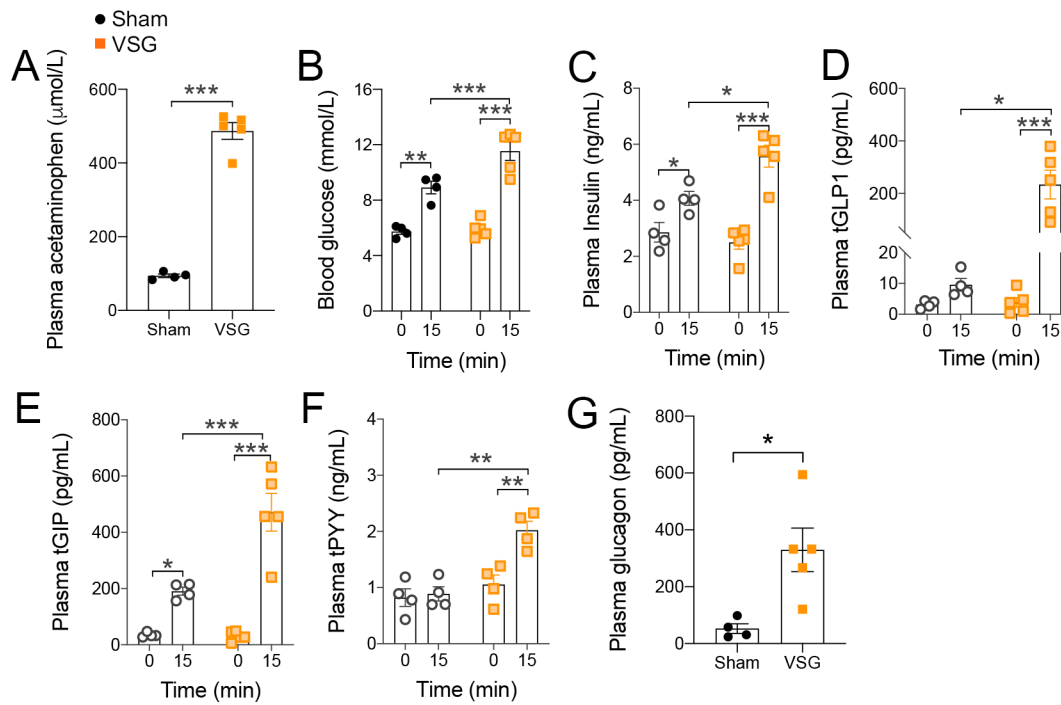
3 **Figure S2. Differential response to the continued fasting and liquid meal re-feeding**

4 **condition in VSG rats. (A-B) Blood glucose levels during *ad lib* (A) or fixed (B, 2 ml single**

5 **gavage, Ensure plus®) liquid meal ingestion. The *ad lib* feeding data represented as the average**

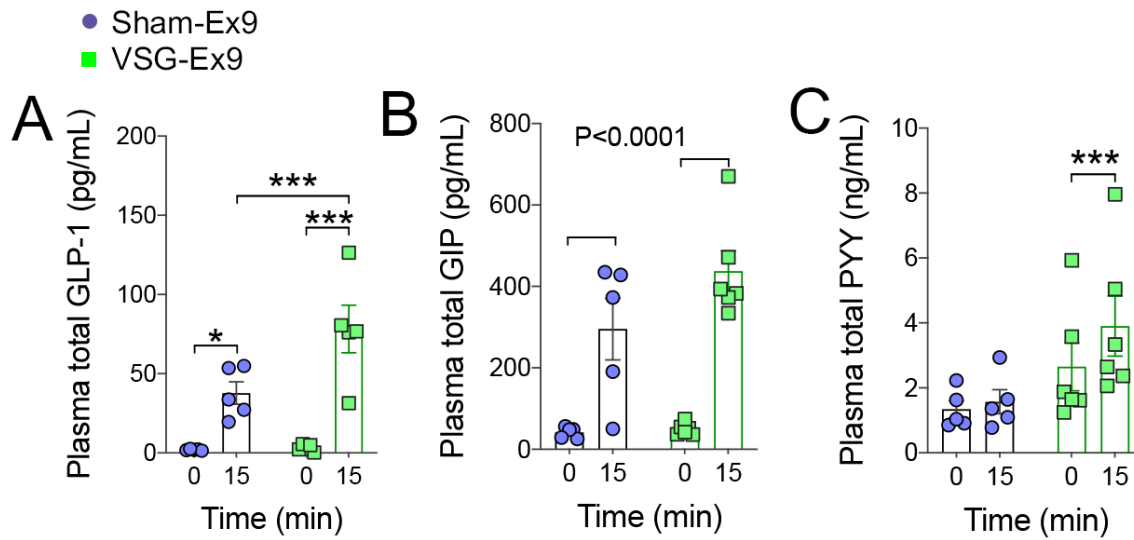
1 of 3-consecutive days of blood glucose measurements. (C-D) Blood glucose levels during ad lib
2 (C) or fixed (D, 1.5 g, 45% HFD) solid meal ingestion. The *ad lib* feeding data represented as the
3 average of 3-consecutive days of blood glucose measurements. (E-F) Fasting glucose levels (E)
4 and glucose nadir (F) after solid vs. liquid fixed meal ingestion. *P<0.05, ***P<0.001 (diet ×
5 surgery). (G) Average blood glucose during 12 h after solid vs. liquid ad lib meal.
6 All data are represented as Mean ± SEM. All rats were fasted for 6 h prior to the food returns.
7 Food was returned at the onset of the dark phase. Sham (n=6), VSG-normal (n=4), VSG-hypo
8 (n=4).

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 2 **Figure S3. Endocrine changes after VSG contributing dynamic blood glucose levels.** (A)
 3 Plasma acetaminophen levels at 15 min after a single mixed-liquid meal ingestion. *** $P < 0.001$.
 4 (B-F) Blood glucose (B), plasma insulin (C), plasma total GLP-1 (D), plasma total GIP (E), and
 5 plasma total PYY (F) levels before and after a single mixed-liquid meal ingestion. * $P < 0.05$,
 6 ** $P < 0.01$, *** $P < 0.001$ (surgery \times time). (G) Plasma glucagon levels at 15 min after a single
 7 mixed-liquid meal ingestion. * $P < 0.001$. All data was obtained from the cohort 2 and represented
 8 as Mean \pm SEM. Sham (n=4), VSG (n=5).

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 2 **Figure S4. Endocrine changes after VSG after blockade of GLP-1 receptor.** (A-C) Plasma
 3 total GLP-1 (A), total GIP (B), glucagon (C), and total PYY (D) levels after a single mixed-meal
 4 ingestion in Sham and VSG rats with an Ex9 pre-injection. All data represented as Mean \pm SEM.
 5 Sham (n=5), VSG (n=6). (A, C) *P<0.05, ***P<0.001 (surgery \times time). (B) Main effect of time
 6 was observed in both drug groups.

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