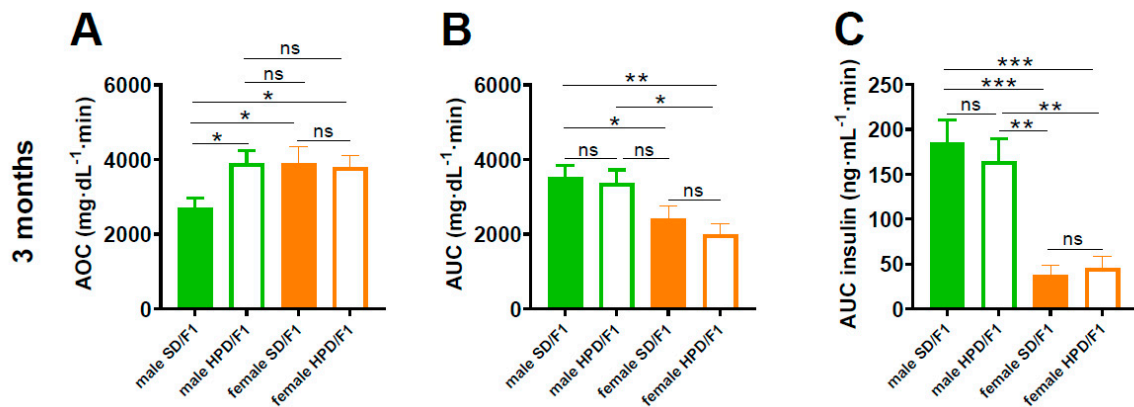


Figure S1. Evolution of body weight and glycemia of male and female F1 from HPD and SD fathers from weaning to 24 weeks of age. (A) Body weight, (B) glycemia of male F1, (C) body weight, (D) glycemia of female F1 from SD and HPD fathers were monitored monthly. SD/F1: offspring from SD father; HPD/F1: offspring from HPD father. n= 15-21 (A, C); n= 7-10 (B, D).



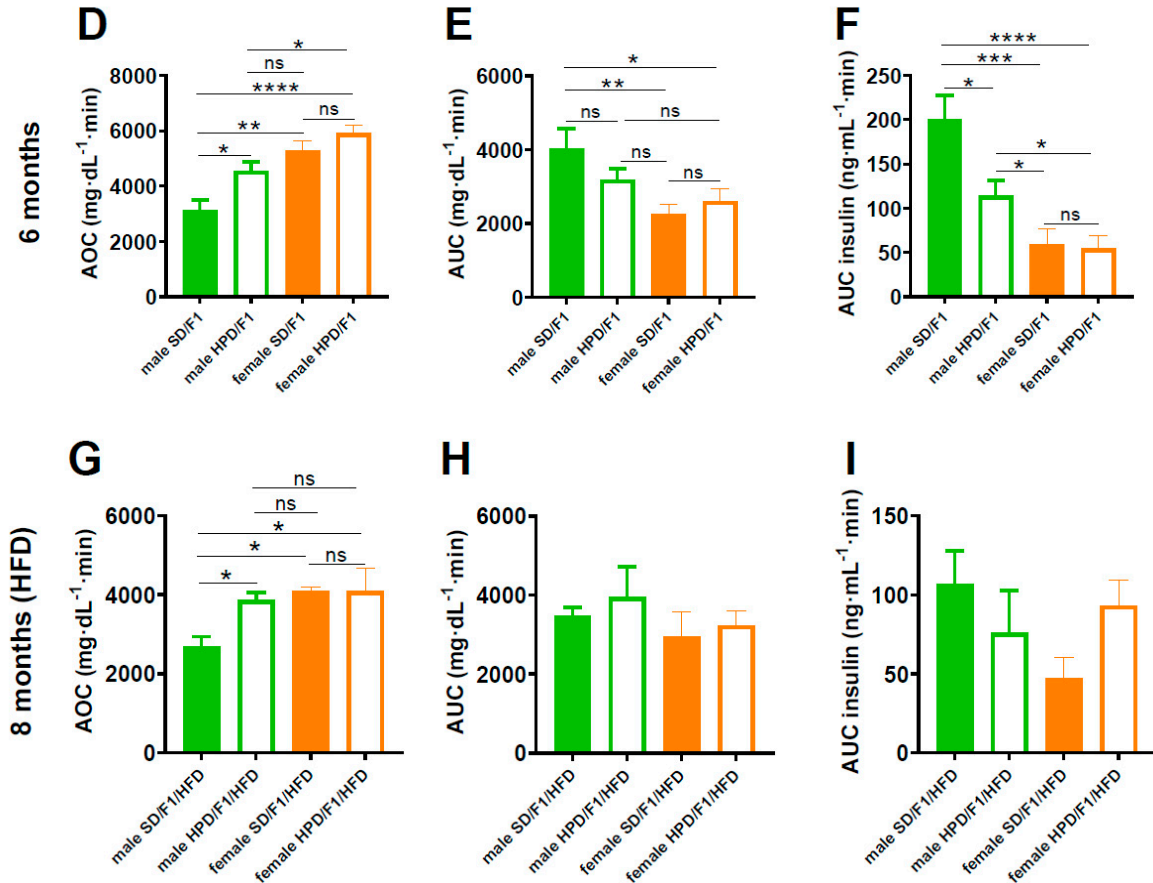
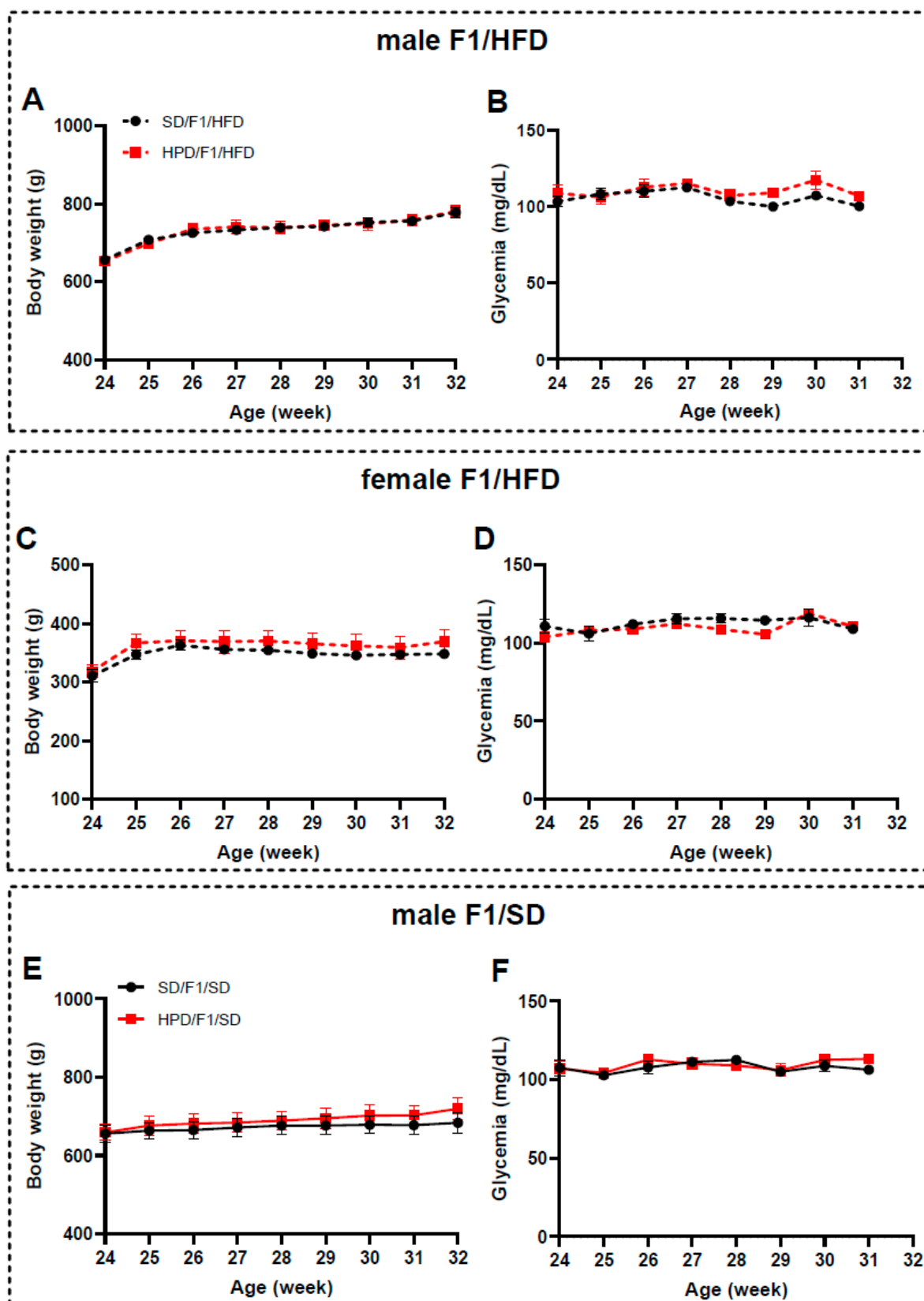


Figure S2. Comparative of insulin tolerance test (ITT) and intraperitoneal glucose tolerance test (IPGTT) between male F1 and female F1. Comparison of (A) Area over curve (AOC) of ITT, (B) area under the curve (AUC) of IPGTT and (C) AUC of glucose-induced insulin secretion during IPGTT among male SD/F1, male HPD/F1, female SD/F1 and female HPD/F1, at the age of 3 months. Comparison of (D) AOC of ITT, (E) AUC of IPGTT and (F) AUC of glucose-induced insulin secretion during IPGTT among male SD/F1, male HPD/F1, female SD/F1 and female HPD/F1, at the age of 6 months. Comparison of (G) AOC of ITT, (H) AUC of IPGTT and (I) AUC of glucose-induced insulin secretion during IPGTT among male SD/F1/HFD, male HPD/F1/HFD, female SD/F1/HFD and female HPD/F1/HFD, at the age of 8 months. SD/F1: offspring from SD fathers; HPD/F1: offspring from HPD fathers; SD/F1/HFD: offspring from SD father fed with HFD; HPD/F1/HFD: offspring from HPD father fed with HFD. An ordinary one-way ANOVA followed by Fisher's LSD test was used for the comparisons. Results are expressed as means \pm SEM. * p <0.05, ** p <0.01, *** p <0.001 and **** p <0.0001.



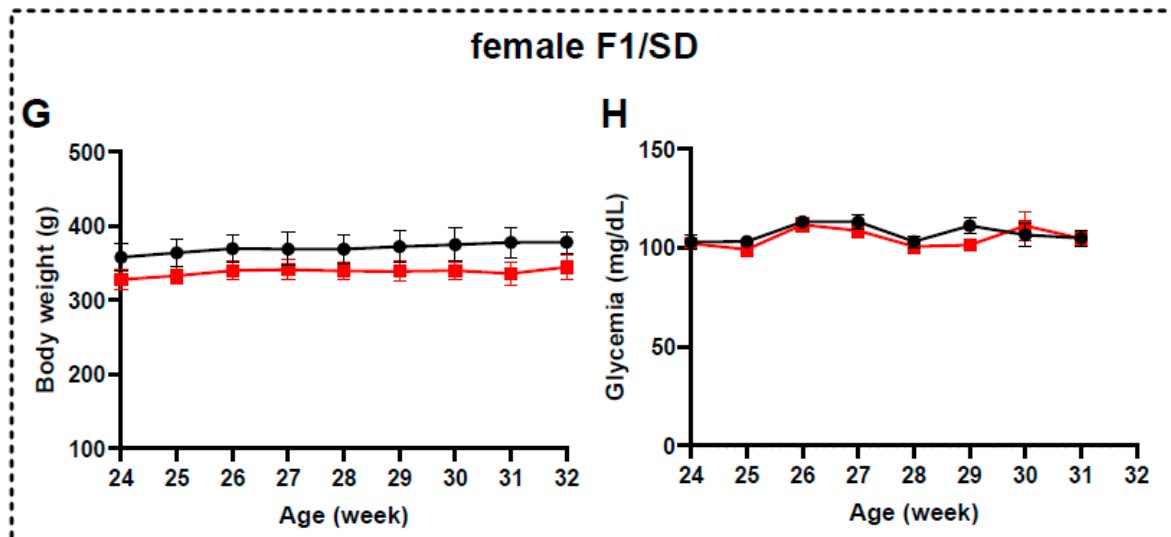


Figure S3. Evolution of body weight evolution and glycemia in male and female offspring fed with high-fat diet. Six months old male and female F1 from HPD and SD fathers were fed with high-fat diet (HFD) or standard diet (SD) for 2 months. (A) body weight, (B) glycemia of male F1 under HFD. (C) Body weight, (D) glycemia of female F1 under HFD. (E) Body weight, (F) glycemia of male F1 under SD. (G) Body weight, (H) glycemia of female F1 under SD. SD/F1/SD: offspring from SD father fed with SD from 6 to 8 months of age; HPD/F1/SD: offspring from HPD father fed with SD from 6 to 8 months of age; SD/F1/HFD: offspring from SD father fed with HFD from 6 to 8 months of age; HPD/F1/HFD: offspring from HPD father fed with HFD from 6 to 8 months of age. Four to six rats were analyzed in each experimental group. Results are expressed as means \pm SEM.

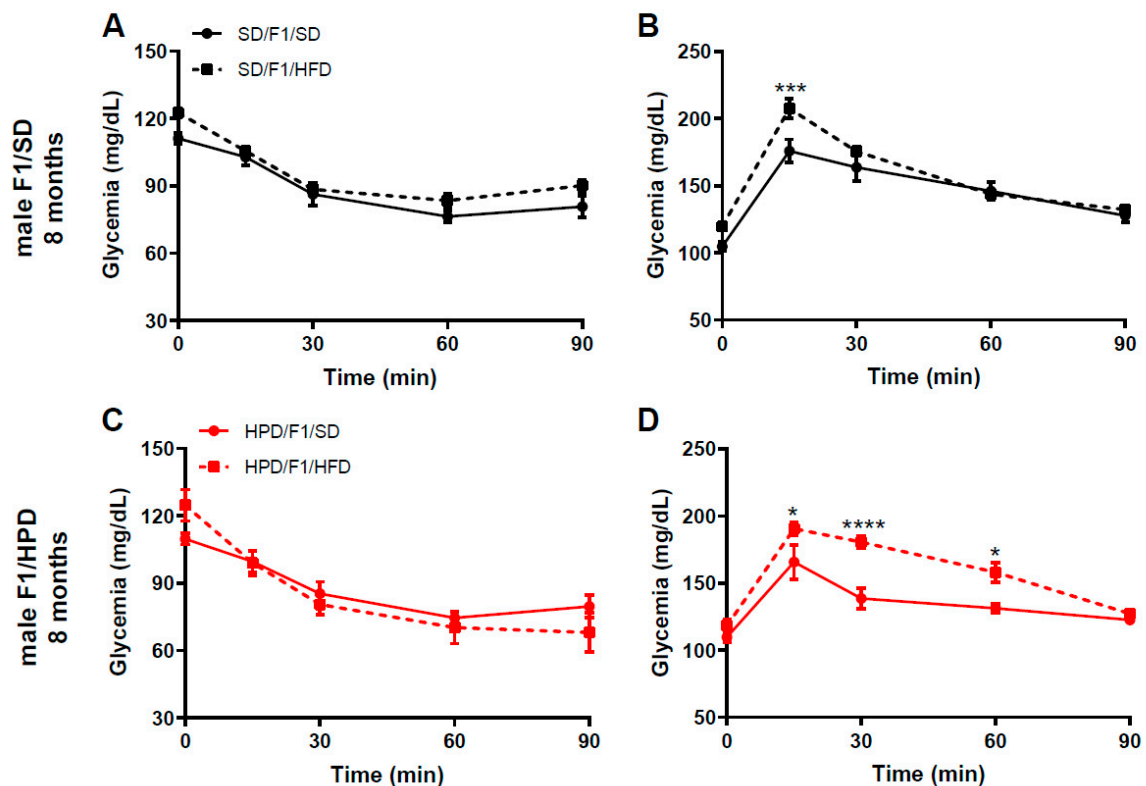


Figure S4. Insulin tolerance test and intraperitoneal glucose tolerance test in 8 months old F1 from HPD and SD fathers fed with standard diet or high-fat diet. (A) Insulin tolerance test (insulin, 0.5 U/kg body weight), (B) intraperitoneal glucose tolerance test (IPGTT, 1 g/kg body weight), in male SD/F1/SD and SD/F1/HFD, at the age of 8 months. (C) Insulin tolerance test (insulin, 0.5 U/kg body

weight), (D) intraperitoneal glucose tolerance test (IPGTT, 1 g/kg body weight), in male HPD/F1/SD and HPD/F1/HFD, at the age of 8 months. SD/F1/SD: offspring from SD father fed with SD; SD/F1HFD: offspring from SD father fed with high-fat diet; HPD/F1/SD: offspring from HPD father fed with SD. HPD/F1/HFD: offspring from HPD father fed with high-fat diet. Four to six rats were analyzed in each experimental group. Results are expressed as means \pm SEM. * p <0.05, ** p <0.01 and *** p <0.0001.

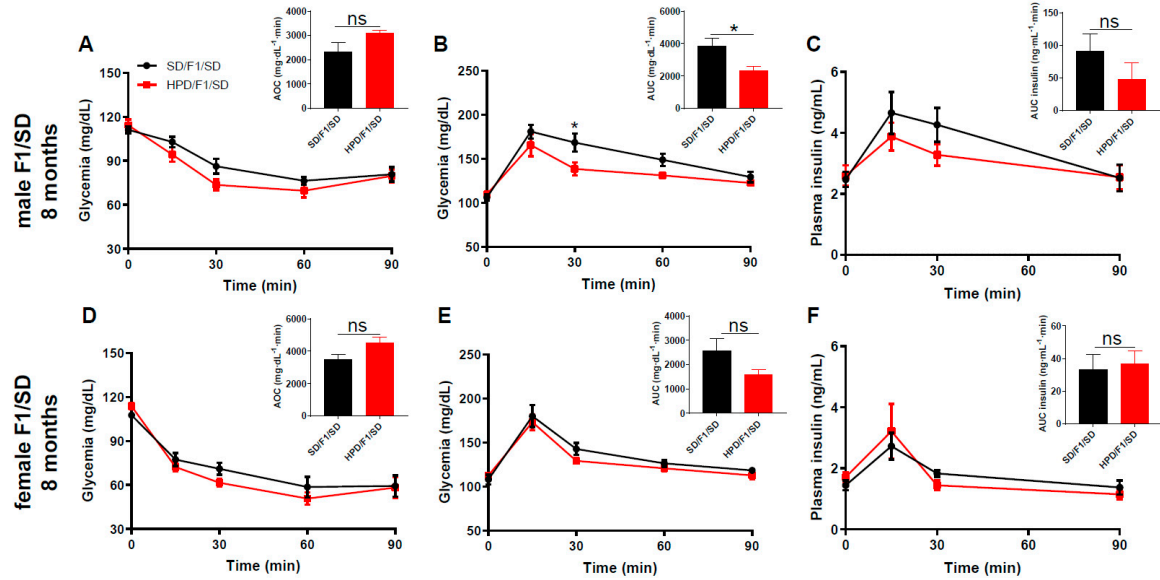


Figure S5. Parameters of glucose homeostasis in 8 months old F1 from HPD and SD fathers fed with standard diet. (A) Insulin tolerance test (insulin, 0.5 U/kg body weight), (B) intraperitoneal glucose tolerance test (IPGTT, 1 g/kg body weight), (C) glucose-induced insulin secretion in male HPD/F1/SD and SD/F1/SD, at the age of 8 months. (D) Insulin tolerance test (insulin, 0.5 U/kg body weight), (E) intraperitoneal glucose tolerance test (IPGTT, 1 g/kg body weight), (F) glucose-induced insulin secretion in female HPD/F1/SD and SD/F1/SD, at the age of 8 months. Area over curve (AOC) (A, D) or area under the curve (AUC) (B, C, E, F) are shown in the insert. SD/F1/SD: offspring from SD father fed with SD; HPD/F1/SD: offspring from HPD father fed with SD. Four to six rats were analyzed in each experimental group. Results are expressed as means \pm SEM. * p <0.05.