

Table 1. Number of patients in each treatment group

	PCOS before diet	PCOS after diet	Control
Normal weight (BMI<25)	7	1	11
Overweight (BMI>25)	13	3	2

Table 2. Summary of measurements from all women.

	PCOS lean	PCOS obese	Control lean	Control obese
BMI	21.38 ± 2.38	29.8 ± 3.87	22.34 ± 2.9	29.93 ± 5.63
LH (IU/L)	8.12 ± 5.67	9 ± 3.5	5.63 ± 2.47	7.2 ± 6.01
FSH (IU/L)	5.15 ± 2.31	6 ± 2.25	6.93 ± 2.1	5.59 ± 0.61
TSH (uIU/ml)	1.56 ± 1.05	2.69 ± 1.69	2.24 ± 0.5	1.61 ± 0.41
Prolactin (ng/ml)	171.21 ± 184	157 ± 191.5	32.35 ± 7.29	18.53 ± 9
DHEA-S	73.1±89	124±73.5	212.3	142.4±16
Progesterone (ng/ml)	1.33 ± 1.43	1.24 ± 0.77	0.98 ± 0.38	0.5 ± 0.16
Estrogen (E2) (pg/ml)	141.98 ± 127.8	135.2 ± 62.7	71.73 ± 69	55.23 ± 3.52
Testosterone (ng/ml)	1.15 ± 1	1.2 ± 1.3	0.54 ± 0.82	0.47 ± 0.11
Insulin (uIU/l)	19.44 ± 18	13.83 ± 10.7	9.55 ± 6.52	12.80
GOT	17.4±3.2	35±39.8	15.5±2.12	24.5±6.3
GPT	16±6	39.4±45.2	15±0	21±5.6
17-OH-Progesterone (ng/ml)	1.91 ± 0.77	2.23 ± 0.93	1.44 ± 1.3	2.17
Glucose (mg/dl)	85.33 ± 4.27	95.5 ± 11.1	90.3 ± 7.89	86 ± 9.54

Table 3. P values for all measurements

	PCOS OBESE VS LEAN	PCOS OBESE VS CONTROL OBESE	PCOS LEAN VS CONTROL LEAN	CONTROL OBESE VS CONTROL LEAN
BMI	0.00	0.96	0.53	0.01
LH	0.71	0.52	0.26	0.51
FSH	0.49	0.76	0.12	0.25
TSH	0.16	0.39	0.19	0.34
Prolactin	0.89	0.24	0.05	0.70
DHEA-S	0.48	0.81	0.19	0.40
Progesterone	0.90	0.13	0.51	0.12
Estrogen (E2)	0.90	0.07	0.20	0.67
Testosterone	0.94	0.47	0.20	0.90
Insulin	0.60	NA	0.21	NA
17-OH-Progesterone	0.53	NA	0.41	NA
GOT	0.31	0.71	0.50	0.20
GPT	0.24	0.58	0.83	0.27
Glucose	0.05	0.22	0.14	0.41

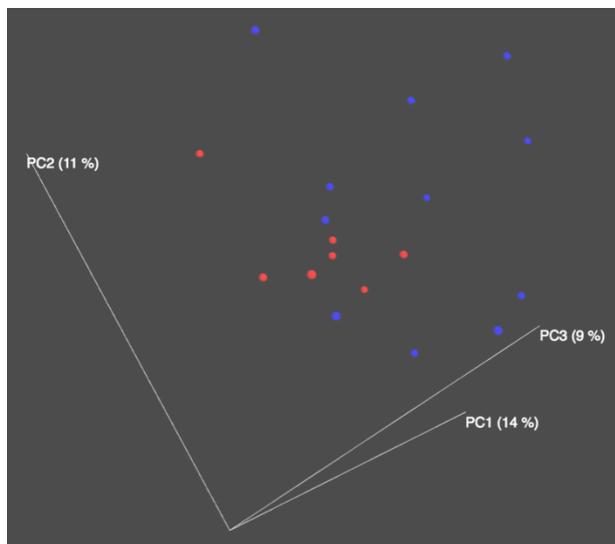


Figure 1: Differences in gut microbiota between lean PCOS and control lean women. Principal coordinate analysis (PCoA) of Unweighted unifrac distance based on 16s rRNA analysis for lean women with PCOS (red) and control (blue).

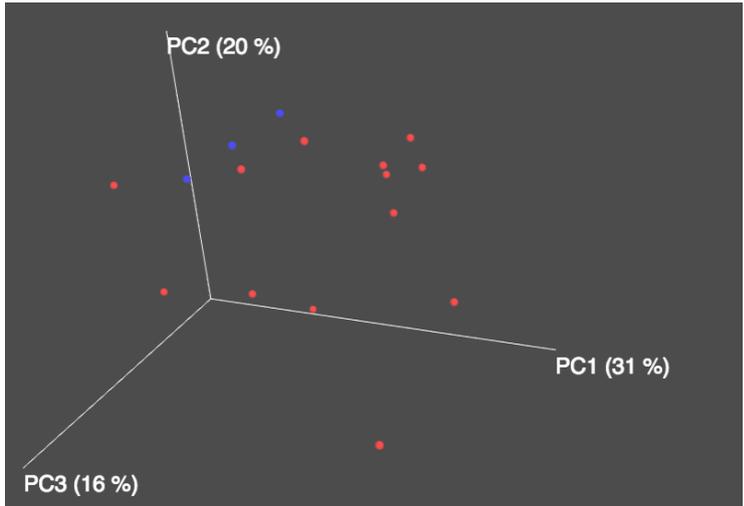


Figure 2: Differences in gut microbiota between obese PCOS and control women. Principal coordinate analysis (PCoA) of weighted unifrac distance based on 16S rRNA analysis for obese women with PCOS (red) and obese control (blue).

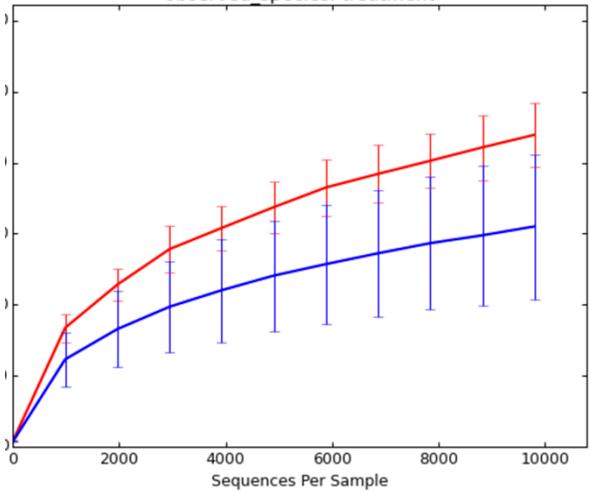


Figure 3: Differences in species richness (alpha diversity) between obese women with PCOS (blue) and control women (red). $P=0.056$

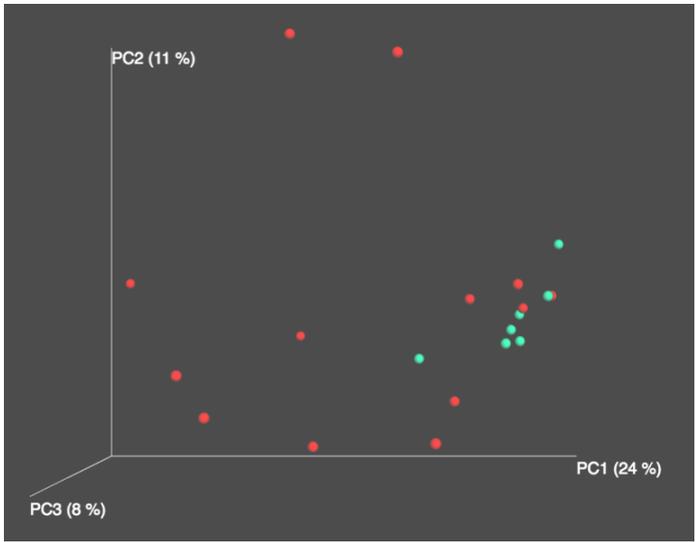


Figure 4: Differences in gut microbiota between obese PCOS and lean PCOS women. Principal coordinate analysis (PCoA) of Unweighted unifrac distances based on 16S rRNA analysis for obese women with PCOS (red) and lean women with PCOS (green).

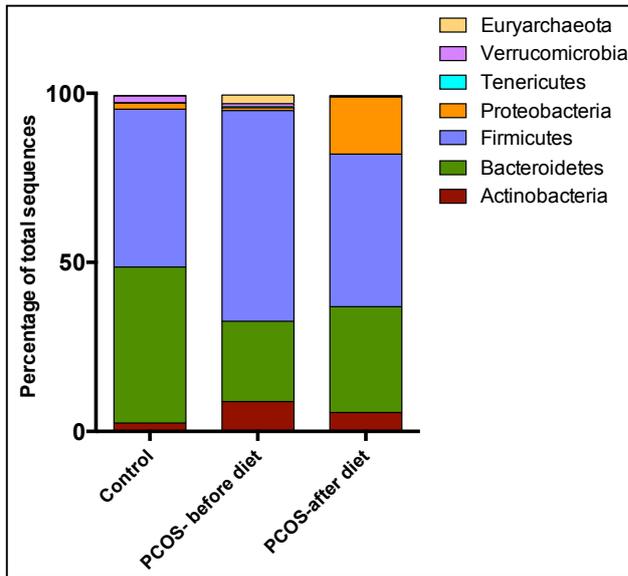


Figure 5. The archaeal and bacterial phyla distributions of gut microbiota from women with PCOS before diet, after an 8-week low carbohydrate dietary intervention, and control healthy women (mean of n=4/group).

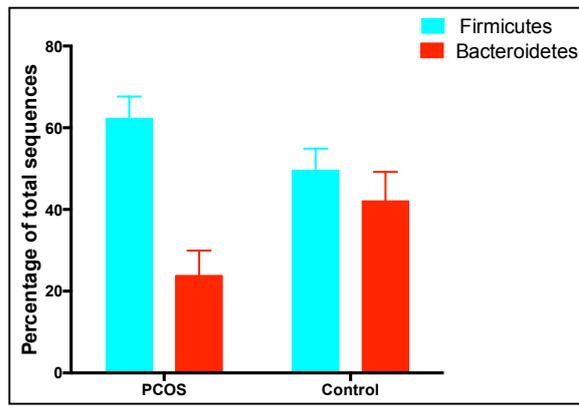


Figure 6. The mean percentages of Firmicutes and Bacteroidetes out of total microbial sequences in fecal samples from PCOS and control women at recruitment.

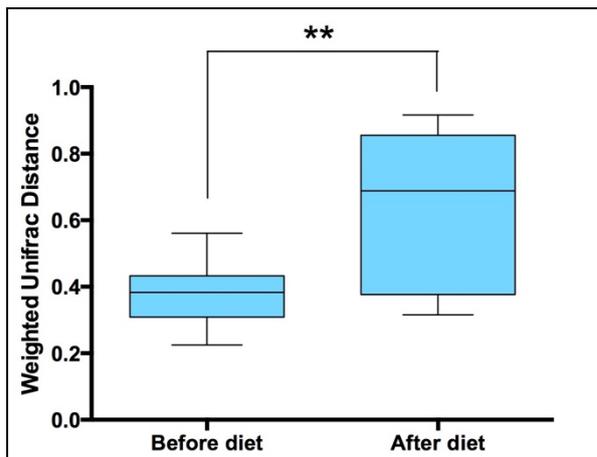


Figure 7. Weighted UniFrac distances reflecting the microbial composition variation between samples of women with PCOS before and after diet, ** p<0.01

Table 4. Weight of recipient mice after FMT.

mice#	From PCOS	BMI (donor)	Weight on day 0 (g)	Weight on day 7 (g)	Weight on day 14 (g)
1	1 before	<25	32.3	31.5	31.2
2	2 before	<25	28.7	29.2	32.2
3	5 before	<25	32.8	32.8	33
4	20 before	<25	28.3	28.3	29.5
22	22 before	<25	28.5	28.8	29.2
23	24 before	<25	30.8	30.8	30.6
7	6 before	>25	31.9	32.6	35.3
8	7 before	>25	31.1	30.3	32.3
9	12 before	>25	31.1	31.6	33.4
10	13 before	>25	29.8	29.6	32
24	19 before	>25	34.4	33.1	33.2
25	23 before	>25	33.4	31.5	32
26	26 before	>25	31.9	31.9	32
14	9 control	<25	35.2	34.3	36.3
15	14 control	<25	33.9	35	37.2
16	25 control	>25	31	31.6	32.7
17	34 control	>25	34.5	35.5	36.1
18	36 control	>25	33.8	32.8	35.2