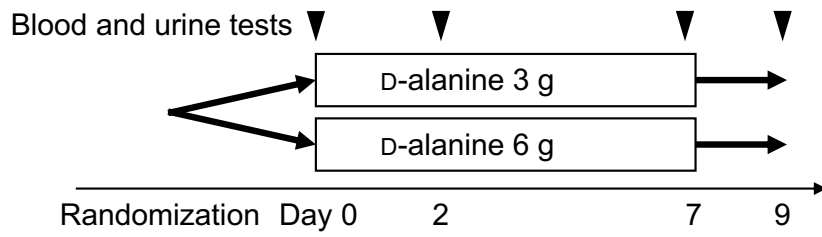
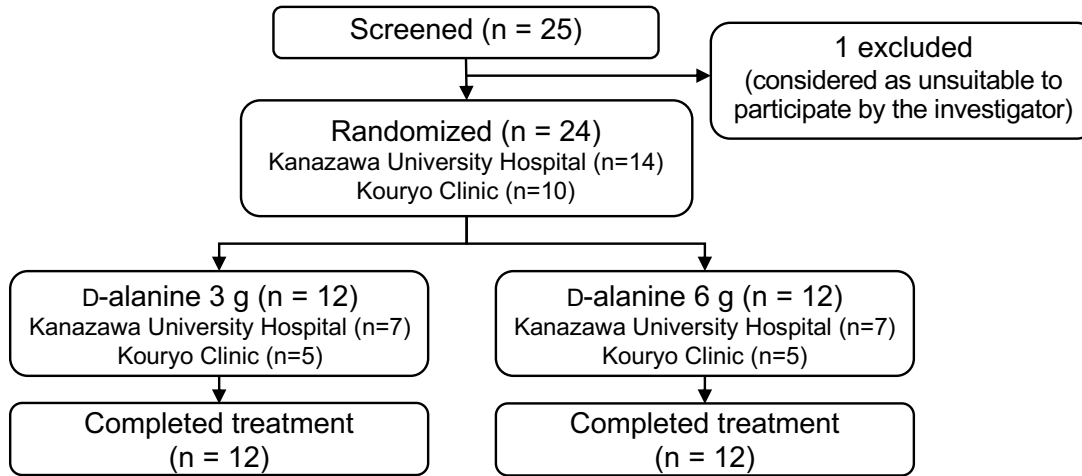


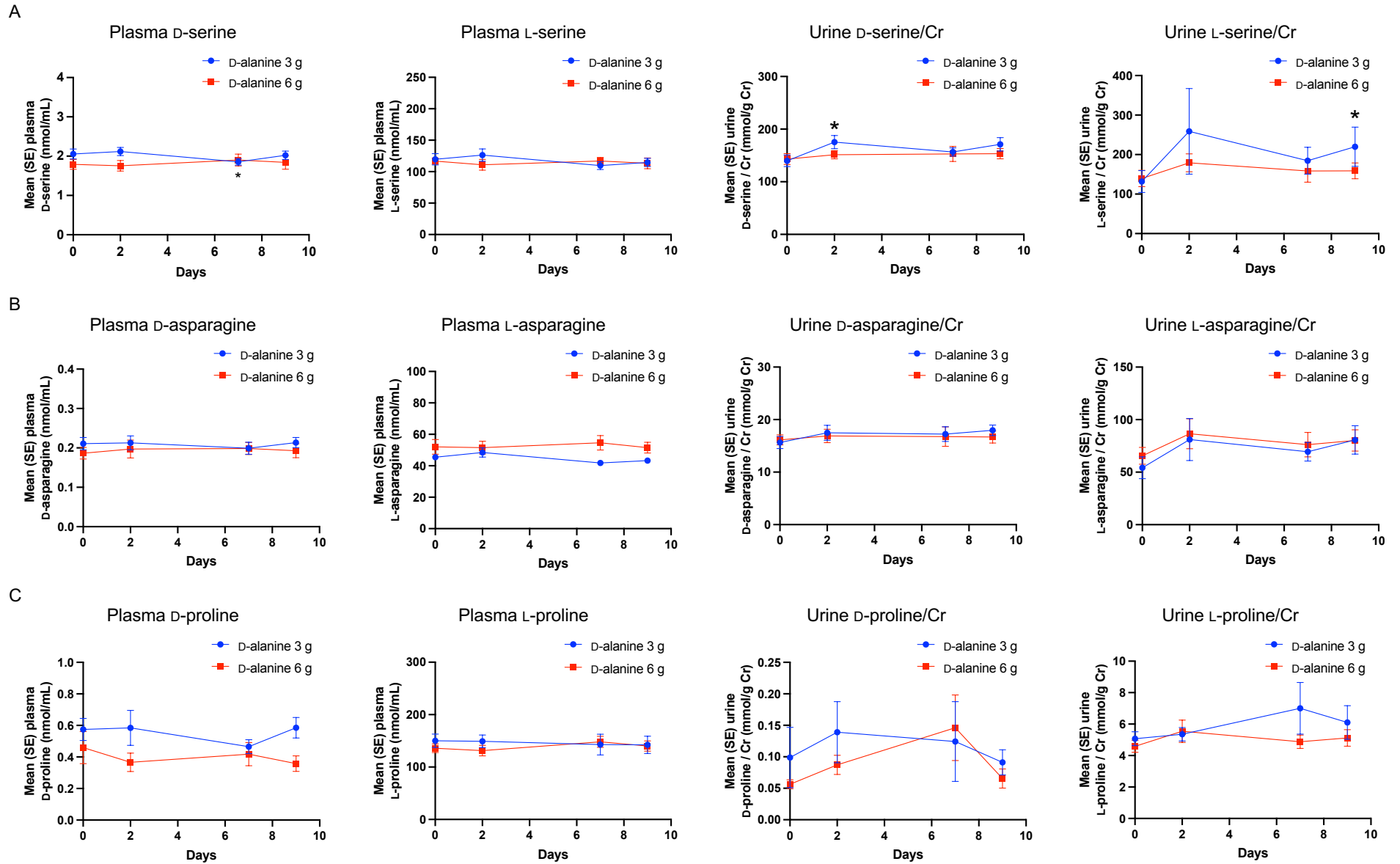
Supplementary Figure 1. Study design



Supplementary Figure 2. Participant disposition



Supplementary Figure 3. Mean plasma and urine DL-serine (A), DL-asparagine (B), and DL-proline (C) levels during follow-up in the 3 g and 6 g D-alanine groups



* P < 0.05 vs. baseline value

Supplementary Table 1. Mean changes in plasma and urine DL-amino acids levels in the 3 g and 6 g D-alanine groups

	Day	Mean (SD) change from baseline			
		D-alanine 3 g (n = 12)	p	D-alanine 6 g (n = 12)	p
Plasma amino acid					
D-alanine (nmol/ml)	2	126.2 (108.1)	0.002	175.2 (82.4)	<0.0001
	7	77.5 (34.3)	<0.0001	192.1 (80.9)	<0.0001
	9	1.8 (1.1)	0.0001	16.1 (39.1)	0.18
L-alanine (nmol/ml)	2	-8.3 (47.5)	0.56	-35.0 (77.4)	0.15
	7	-18.8 (68.7)	0.36	27.8 (78.8)	0.25
	9	-18.4 (72.4)	0.40	2.3 (109.7)	0.94
D-serine (nmol/ml)	2	0.06 (0.28)	0.46	-0.04 (0.12)	0.31
	7	-0.20 (0.25)	0.02	0.11 (0.23)	0.13
	9	-0.03 (0.40)	0.77	0.05 (0.27)	0.53
L-serine (nmol/ml)	2	6.6 (20.3)	0.28	-5.9 (20.4)	0.34
	7	-10.0 (25.1)	0.20	0.3 (15.2)	0.95
	9	-5.0 (27.2)	0.54	-3.6 (24.4)	0.62
D-asparagine (nmol/ml)	2	0.002 (0.043)	0.87	0.011 (0.057)	0.53
	7	-0.012 (0.039)	0.31	0.012 (0.044)	0.37
	9	0.003 (0.040)	0.83	0.006 (0.034)	0.52
L-asparagine (nmol/ml)	2	3.0 (9.0)	0.27	-0.46 (6.2)	0.80
	7	-3.7 (8.1)	0.15	2.6 (7.8)	0.27
	9	-2.1 (9.0)	0.44	-0.45 (8.4)	0.86
D-proline (nmol/ml)	2	0.0096 (0.24)	0.89	-0.094 (0.18)	0.09
	7	-0.11 (0.20)	0.09	-0.042 (0.15)	0.36
	9	0.01 (0.31)	0.90	-0.10 (0.23)	0.15
L-proline (nmol/ml)	2	-1.1 (22.9)	0.87	-4.5 (26.7)	0.57
	7	-7.2 (32.6)	0.46	12.2 (31.8)	0.21
	9	-7.9 (25.2)	0.30	4.2 (29.1)	0.63
Urine amino acid					
D-alanine/Cr (mmol/g Cr)	2	5407.7 (5821.1)	0.008	7451.2 (4749.2)	0.0002
	7	2835.6 (1409.0)	<0.0001	9249.3 (7623.5)	0.002
	9	76.0 (80.5)	0.007	1018.5 (3015.1)	0.27
L-alanine/Cr (mmol/g Cr)	2	60.7 (99.5)	0.06	21.2 (66.9)	0.29
	7	55.1 (83.8)	0.04	41.7 (105.5)	0.20
	9	80.5 (141.0)	0.07	20.1 (86.1)	0.44
D-serine/Cr (mmol/g Cr)	2	35.5 (55.9)	0.04	8.3 (18.3)	0.14
	7	16.8 (53.0)	0.30	9.6 (45.7)	0.48
	9	31.4 (52.9)	0.06	10.1 (29.5)	0.26
L-serine/Cr (mmol/g Cr)	2	127.0 (343.3)	0.23	39.4 (74.1)	0.09
	7	52.8 (94.4)	0.08	18.9 (92.1)	0.49
	9	88.1 (133.8)	0.04	19.1 (102.0)	0.53
D-asparagine/Cr (mmol/g Cr)	2	1.9 (6.4)	0.33	0.73 (5.4)	0.65
	7	1.6 (6.1)	0.38	0.61 (5.8)	0.72
	9	2.3 (6.1)	0.21	0.54 (3.8)	0.63
L-asparagine/Cr (mmol/g Cr)	2	26.7 (70.9)	0.22	20.9 (51.2)	0.18
	7	15.2 (32.6)	0.14	10.6 (32.9)	0.29
	9	26.4 (41.2)	0.05	14.6 (43.5)	0.27
D-proline/Cr (mmol/g Cr)	2	0.04 (0.1)	0.31	0.03 (0.06)	0.09
	7	0.03 (0.06)	0.19	0.09 (0.2)	0.10
	9	-0.008 (0.1)	0.84	0.009 (0.05)	0.51
L-proline/Cr (mmol/g Cr)	2	0.3 (1.1)	0.37	1.0 (2.0)	0.12
	7	1.9 (4.8)	0.19	0.3 (1.9)	0.60
	9	1.0 (2.7)	0.22	0.5 (1.4)	0.22

Supplementary Table 2. Mean changes in clinical and laboratory parameters in the 3 g and 6 g D-alanine groups

	Day	Mean (SD) change from baseline			
		D-alanine 3 g (n = 12)	p	D-alanine 6 g (n = 12)	p
Body weight (kg)	2	-0.13 (0.62)	0.49	-0.07 (0.50)	0.63
	7	0.25 (0.57)	0.16	-0.09 (0.41)	0.46
	9	-0.09 (0.73)	0.67	0.03 (0.44)	0.81
AST (U/L)	2	-0.1 (6.2)	0.96	-0.9 (2.0)	0.14
	7	1.5 (13.4)	0.71	0.2 (1.8)	0.75
	9	13.8 (54.0)	0.40	0.5 (3.9)	0.67
ALT (U/L)	2	-0.1 (6.3)	0.96	-0.9 (2.2)	0.18
	7	-2.0 (6.1)	0.28	-0.8 (2.4)	0.30
	9	0.2 (12.6)	0.96	-0.4 (2.6)	0.59
Uric acid (mg/dL)	2	-0.5 (0.5)	0.007	-0.4 (0.6)	0.049
	7	-0.6 (1.0)	0.06	-0.5 (0.7)	0.04
	9	-0.6 (0.7)	0.01	-0.4 (0.4)	0.01
Total cholesterol (mg/dL)	2	-6.3 (14.9)	0.17	0.2 (8.5)	0.95
	7	-12.0 (23.8)	0.11	1.1 (12.5)	0.77
	9	-8.1 (23.5)	0.26	-2.1 (10.8)	0.52
HDL-cholesterol (mg/dL)	2	-2.1 (5.6)	0.22	-0.2 (4.6)	0.90
	7	-2.8 (6.2)	0.16	-1.7 (4.9)	0.27
	9	-2.4 (8.0)	0.32	-2.6 (5.4)	0.13
Triglycerides (mg/dL)	2	-26.8 (30.5)	0.01	17.8 (64.9)	0.36
	7	3.7 (99.8)	0.90	3.0 (18.2)	0.58
	9	10.5 (102.9)	0.73	28.0 (88.2)	0.29

Abbreviations; AST, aspartate aminotransferase; ALT, alanine aminotransferase; HDL, high density lipoprotein.