

Figure S1. Relationship between Bad Effects (E_{max}) and Disliking at the Moment (E_{min}) over first 12 h after dosing ($n=37$). E_{max} : peak effect; E_{min} : lowest effect; PTN: phentermine.

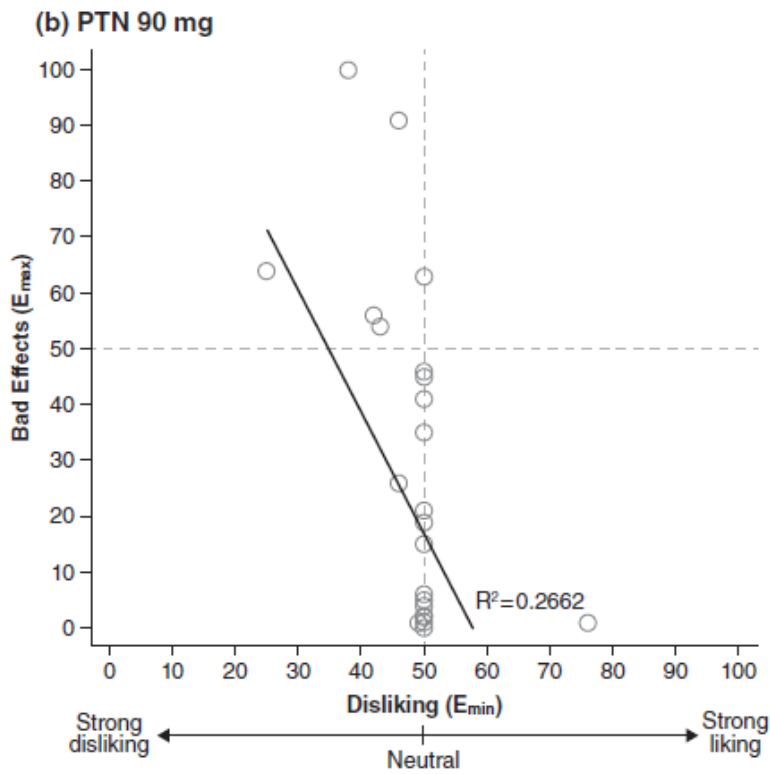
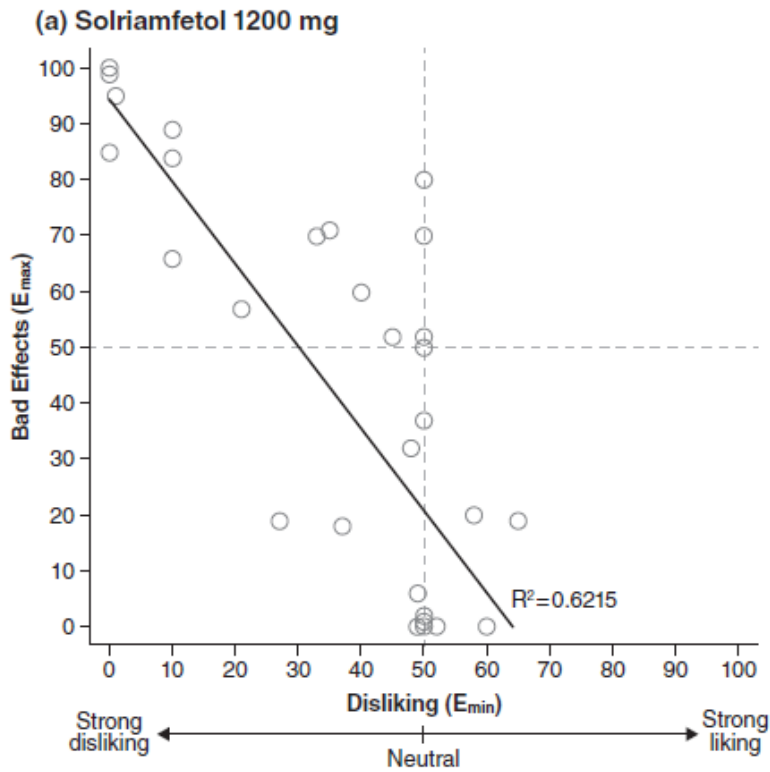


Table S1. Summary of pairwise comparisons of pharmacodynamics measures in the per protocol population ($n=37$).

Measure	Phentermine vs Placebo ¹	Solriamfetol vs Placebo ¹	Solriamfetol 1200 mg vs Phentermine 90 mg
Positive Drug Effects			
Drug Liking at the Moment E_{max}	+	+	Solriamfetol < phentermine
Overall Drug Liking at 24 h	+	+	Solriamfetol < phentermine
Take Drug Again at 24 h ²	+	+	Solriamfetol < phentermine
Good Effects E_{max}	+	+	Solriamfetol < phentermine
High E_{max}	+	+	NS
Agitation/Relaxation E_{max} ² (100 = very relaxed)	+	+	Solriamfetol < phentermine
ARCI MBG scale at 2 h ²	+	+	Solriamfetol < phentermine
ARCI MBG scale at 6 h ²	+	+	NS
Subjective Drug Value	+	+	NS
Negative Drug Effects			
Drug Disliking at the Moment E_{min}	NS	+	Solriamfetol > phentermine
Bad Effects E_{max}	+	+	Solriamfetol > phentermine
Anxious E_{max} ²	+	+	Solriamfetol > phentermine
Agitation/Relaxation E_{min} (0 = very agitated)	+	+	Solriamfetol > phentermine
ARCI LSD scale at 2 h	+	+	Solriamfetol > phentermine
ARCI LSD scale at 6 h	+	+	Solriamfetol > phentermine

Measure	Phentermine vs Placebo¹	Solriamfetol vs Placebo¹	Solriamfetol 1200 mg vs Phentermine 90 mg
Other Drug Effects			
Strength E _{max}	+	+	NS
Detached E _{max}	+	+	NS
Alertness/Drowsiness E _{max} ² (100 = very alert)	+	+	NS
Alertness/Drowsiness E _{min} (0 = very drowsy)	NS	NS	NS
Colors Brighter E _{max} (100 = brighter than usual)	+	+	NS
Sounds Louder E _{max} (100 = louder than usual)	+	+	NS
ARCI amphetamine scale at 2 h ²	+	+	NS
ARCI amphetamine scale at 6 h ²	+	+	NS
ARCI benzedrine scale at 2 h ²	+	+	Solriamfetol < phentermine
ARCI benzedrine scale at 6 h ²	+	+	Solriamfetol < phentermine
ARCI PCAG scale at 2 h	-	-	NS
ARCI PCAG scale at 6 h	NS	NS	Solriamfetol > phentermine

Note: Analysis was non-parametric unless otherwise specified. Measures for which the overall treatment effect was not statistically significant are not included in the table.

¹“+” indicates that ratings for any dose were statistically higher than placebo, and “-” indicates that ratings for any dose were statistically lower than placebo.

²Parametric mixed-model analysis.

ARCI: Addiction Research Center Inventory; E_{\max} : peak effect; E_{\min} : lowest effect; LSD:

Lysergic Acid Diethylamide; MBG: Morphine-Benzedrine Group; NS: not statistically significant; PCAG: Pentobarbital Chlorpromazine Alcohol Group.

Table S2. Mean scores on the ARCI scales at the 2-h time point ($n=37$).

ARCI Scale	Mean Score (Standard Error)					
	Placebo	Solriamfetol 300 mg	Solriamfetol 600 mg	Solriamfetol 1200 mg	Phentermine 45 mg	Phentermine 90 mg
MBG	2.8 (0.6)	6.1 (0.8)*‡	7.2 (0.8)*‡	8.2 (0.8)*§	7.0 (0.8)*	10.2 (0.7)*
LSD	2.7 (0.2)	4.2 (0.3)*§	5.4 (0.5)*§	5.9 (0.5)*§	3.6 (0.3)†	4.9 (0.4)*
Amphetamine	2.6 (0.4)	4.3 (0.5)*‡	5.3 (0.4)*‡	5.9 (0.5)*	5.1 (0.5)*	6.8 (0.4)*
Benzedrine	5.7 (0.3)	6.6 (0.4)‡	7.4 (0.5)†§	7.6 (0.5)†§	7.4 (0.4)*	8.8 (0.5)†
PCAG	4.2 (0.5)	3.1 (0.4)§	3.4 (0.5)	2.8 (0.5)*	3.8 (0.5)	2.2 (0.5)*

* $p<0.001$ and † $p<0.05$ vs placebo.

‡ $p<0.001$ and § $p<0.05$ vs phentermine 90 mg.

|| $p<0.001$ vs phentermine 45 mg.

ARCI: Addiction Research Center Inventory; LSD: Lysergic Acid Diethylamide; MBG:

Morphine-Benzedrine Group; PCAG: Pentobarbital Chlorpromazine Alcohol Group.

Table S3. Median drug similarity ratings on a visual analog scale (VAS; 0 = “not at all similar,” 100 = “very similar”) at 2 (momentary similarity) and 24 hours (retrospective similarity) after dosing (n = 37).

Similarity comparison	Similarity VAS score, median (25%, 75% quartiles)				
	Phentermine			Solriamfetol	
	45 mg (n = 37)	90 mg (n = 37)	300 mg (n = 37)	600 mg (n = 37)	1200 mg (n = 37)
Momentarily similarity (2 hours)					
Placebo	0 (0, 1)	0 (0, 0)	0 (0, 100)	0 (0, 0)	0 (0, 0)
Caffeine	5 (0, 52)	51 (12, 81)	7 (0, 39)	12 (0, 78)	29 (0, 77)
Stimulant	33 (0, 76)	92 (57, 98)	8, (0, 71)	63 (0, 89)	79 (39, 96)
Retrospective similarity (24 hours)					
Placebo	0 (0, 0)	0 (0, 0)	1 (0, 100)	0 (0, 0)	0 (0, 0)
Caffeine	4 (0, 49)	40 (6, 73)	1 (0, 71)	19 (1, 66)	29 (0, 66)
Stimulant	54 (0, 85)	91 (54, 100)	10 (0, 74)	63 (8, 96)	89 (71, 100)