

Supplemental Table S1. Full summary of moderators of medication treatment effect (extended-release naltrexone vs buprenorphine-naloxone) on Relapse (vs No Relapse) across the 24-week Trial for the All Randomized sample (N=570, left side) and for the Per Protocol sample (N = 474, right side) who successfully initiated study medication.

Moderator Variable ^a	All Randomized Sample (N=570)					Per Protocol Sample (N=474)				
	Treatment by Moderator Interaction			Treatment Effect		Treatment by Moderator Interaction			Treatment Effect	
	F	DF	P	Odds Ratio ^b	95% CI	F	DF	p	Odds Ratio ^b	95% CI
Demographics										
Gender	0.05	1, 559	0.824			<.01	1, 463	0.941		
Male				1.48	0.98, 2.23				0.87	0.56, 1.35
Female				1.36	0.73, 2.54				0.89	0.46, 1.73
Age (continuous) (Mean (SD)=33.9 (9.6))	1.11	1, 559	0.292			0.10	1, 463	0.752		
at 24.2				1.21	0.74, 1.98				0.83	0.49, 1.39
at 33.9				1.45	1.03, 2.05				0.88	0.60, 1.27
at 43.5				1.75	1.08, 2.83				0.93	0.55, 1.59
Age	2.29	1, 559	0.131			0.67	1, 463	0.414		
≤25				0.83	0.36, 1.89				0.64	0.27, 1.50
>25				1.67	1.14, 2.44				0.95	0.63, 1.43
Hispanic	3.27	1, 559	0.071			1.03	1, 463	0.311		
Not Hispanic				1.25	0.86, 1.82				0.81	0.54, 1.21
Hispanic				3.07	1.25, 7.49				1.38	0.53, 3.60
Race	0.53	2, 557	0.592			0.24	2, 461	0.783		
White Only				1.36	0.92, 2.02				0.91	0.60, 1.39
Black Only				1.16	0.38, 3.55				0.58	0.17, 1.93
Other				2.17	0.90, 5.25				0.89	0.33, 2.39

Moderator Variable ^a	All Randomized Sample (N=570)					Per Protocol Sample (N=474)				
	Treatment by Moderator Interaction			Treatment Effect		Treatment by Moderator Interaction			Treatment Effect	
	F	DF	P	Odds Ratio ^b	95% CI	F	DF	p	Odds Ratio ^b	95% CI
Education	0.24	2, 557	0.785			0.54	2, 461	0.582		
<HS				1.78	0.86, 3.68				1.26	0.59, 2.69
HS/GED				1.30	0.78, 2.17				0.79	0.45, 1.38
>HS				1.49	0.81, 2.74				0.80	0.41, 1.53
Employment	0.90	1, 559	0.343			2.24	1, 463	0.135		
Not Employed				1.27	0.82, 1.96				0.70	0.44, 1.12
Other				1.79	1.02, 3.13				1.25	0.69, 2.28
Opioid Use										
Primary Opioid	0.13	1, 542	0.722			<.01	1, 448	0.961		
Heroin				1.40	0.96, 2.05				0.81	0.54, 1.23
Opioid Analgesics				1.19	0.52, 2.73				0.83	0.34, 2.01
Any current heroin use	2.35	1, 559	0.126			3.15	1, 463	0.076		
No				2.94	1.11, 7.80				2.05	0.74, 5.65
Yes				1.30	0.90, 1.88				0.76	0.51, 1.14
Any current intravenous use	2.78	1, 559	0.096			1.74	1, 463	0.188		
No				2.20	1.20, 4.04				1.25	0.65, 2.40
Yes				1.18	0.78, 1.79				0.74	0.47, 1.15
Any current methadone use	0.60	1, 559	0.440			0.49	1, 463	0.486		
No				1.37	0.95, 1.99				0.83	0.56, 1.24
Yes				2.01	0.82, 4.92				1.21	0.46, 3.19

Moderator Variable ^a	All Randomized Sample (N=570)					Per Protocol Sample (N=474)				
	Treatment by Moderator Interaction			Treatment Effect		Treatment by Moderator Interaction			Treatment Effect	
	F	DF	P	Odds Ratio ^b	95% CI	F	DF	p	Odds Ratio ^b	95% CI
Alcohol	1.42	1, 559	0.234			0.82	1, 463	0.366		
Non-user/None				1.62	1.08, 2.44				0.96	0.62, 1.48
Mild/Mod/Severe				1.03	0.54, 1.94				0.66	0.33, 1.32
Amphetamines	0.14	1, 559	0.711			0.05	1, 463	0.816		
Non-user/None				1.48	1.01, 2.16				0.85	0.57, 1.28
Mild/Mod/Severe				1.25	0.56, 2.79				0.95	0.41, 2.23
Benzodiazepine/other sedative	0.31	1, 559	0.580			<.01	1, 463	0.970		
Non-user/None				1.55	1.04, 2.31				0.88	0.57, 1.35
Mild/Mod/Severe				1.24	0.63, 2.43				0.89	0.44, 1.82
Cannabis	0.14	1, 559	0.707			0.64	1, 463	0.424		
Non-user/None				1.38	0.92, 2.07				0.79	0.51, 1.22
Mild/Mod/Severe				1.59	0.84, 3.02				1.10	0.55, 2.17
Cocaine	4.40	1, 559	0.036			2.35	1, 463	0.126		
Non-user/None				1.82	1.20, 2.77				1.05	0.67, 1.64
Mild/Mod/Severe				0.83	0.45, 1.52				0.56	0.29, 1.09
History of Substance Use										
Age at onset nicotine use (years) (Mean (SD)=15.8 (5.1))	<.01	1, 530	0.967			0.35	1, 438	0.556		
at 10.7				1.43	0.87, 2.36				0.97	0.56, 1.67
at 15.8				1.44	1.02, 2.05				0.86	0.59, 1.26
at 20.9				1.45	0.88, 2.41				0.76	0.44, 1.34

Moderator Variable ^a	All Randomized Sample (N=570)					Per Protocol Sample (N=474)				
	Treatment by Moderator Interaction			Treatment Effect		Treatment by Moderator Interaction			Treatment Effect	
	F	DF	P	Odds Ratio ^b	95% CI	F	DF	p	Odds Ratio ^b	95% CI
Age at onset any opioid use (years) (Mean (SD))=21.3 (7.1)	0.26	1, 559	0.611			2.34	1, 463	0.127		
at 14.2				1.58	0.96, 2.58				1.16	0.69, 1.95
at 21.3				1.44	1.02, 2.03				0.86	0.59, 1.24
at 28.5				1.32	0.81, 2.13				0.63	0.37, 1.10
Age at onset heroin use (years) (Mean (SD))=24.6 (7.5)	0.01	1, 505	0.906			0.37	1, 414	0.542		
at 17.2				1.40	0.83, 2.36				0.93	0.53, 1.62
at 24.6				1.37	0.95, 1.97				0.82	0.55, 1.21
at 32.1				1.34	0.80, 2.24				0.73	0.41, 1.27
Duration of opioid use (years) (Mean (SD))=12.5 (9.0)	2.19	1, 559	0.140			2.35	1, 463	0.126		
at 3.5				1.12	0.69, 1.84				0.66	0.39, 1.12
at 12.5				1.46	1.03, 2.06				0.89	0.61, 1.28
at 21.5				1.90	1.17, 3.09				1.18	0.70, 1.99
Past Treatment History										
Current treatment is first treatment in lifetime	2.50	1, 559	0.114			2.35	1, 463	0.126		
No				1.78	1.16, 2.75				1.09	0.69, 1.74
Yes				1.01	0.57, 1.77				0.60	0.33, 1.10
Any past treatment successful	0.56	1, 559	0.454			0.11	1, 463	0.737		
No				1.28	0.83, 1.98				0.82	0.51, 1.32
Yes				1.68	0.96, 2.93				0.94	0.52, 1.69
Past methadone or buprenorphine treatment successful	0.89	1, 559	0.347			0.47	1, 463	0.493		

Moderator Variable ^a	All Randomized Sample (N=570)					Per Protocol Sample (N=474)				
	Treatment by Moderator Interaction			Treatment Effect		Treatment by Moderator Interaction			Treatment Effect	
	F	DF	P	Odds Ratio ^b	95% CI	F	DF	p	Odds Ratio ^b	95% CI
Chronic pain longer than 6 months	0.04	1, 558	0.841			<.01	1, 463	0.951		
No				1.46	1.01, 2.10				0.87	0.59, 1.29
Yes				1.31	0.50, 3.46				0.90	0.32, 2.51
Pain discomfort moderate or extreme (EuroQoL)	0.09	1, 559	0.760			0.16	1, 463	0.690		
None				1.37	0.81, 2.32				0.97	0.55, 1.70
Moderate/Extreme				1.53	0.97, 2.40				0.83	0.51, 1.35
Criminal Justice Status										
Current probation or parole	0.09	1, 558	0.767			1.34	1, 462	0.248		
No				1.43	0.98, 2.07				0.79	0.53, 1.18
Yes				1.65	0.67, 4.09				1.45	0.56, 3.80
Living Situation										
Current homelessness	14.59	1, 559	<.001			9.49	1, 463	0.002		
No				2.15	1.44, 3.21				1.24	0.80, 1.90
Yes				0.45	0.22, 0.90				0.32	0.15, 0.68
Any friends/family with alcohol problems	0.06	1, 554	0.809			0.01	1, 460	0.917		
No				1.50	0.92, 2.45				0.90	0.53, 1.52
Yes				1.38	0.85, 2.23				0.86	0.51, 1.45
Any friends/family with heroin/other opioid problems	2.88	1, 554	0.090			1.23	1, 460	0.269		
No				2.15	1.21, 3.81				1.17	0.63, 2.16
Yes				1.15	0.75, 1.78				0.76	0.48, 1.21
Any friends/family with illicit drug problems	2.95	1, 554	0.086			1.38	1, 460	0.241		

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	Treatment by Moderator Interaction			Treatment Effect		Treatment by Moderator Interaction			Treatment Effect	
	F	DF	P	Odds Ratio ^b	95% CI	F	DF	p	Odds Ratio ^b	95% CI
No				2.19	1.19, 4.03				1.20	0.63, 2.30
Yes				1.15	0.76, 1.74				0.75	0.48, 1.17
Living with a person with alcohol use disorder	2.22	1, 559	0.137			1.23	1, 463	0.269		
No				1.59	1.10, 2.29				0.95	0.64, 1.41
Yes				0.71	0.27, 1.92				0.51	0.18, 1.43
Living with a person using illicit drugs	0.13	1, 559	0.714			0.07	1, 463	0.786		
No				1.50	1.02, 2.21				0.90	0.59, 1.37
Yes				1.28	0.61, 2.69				0.80	0.36, 1.75
Medication Preference										
No strong medication preference:	2.14	2, 556	0.118			2.34	2, 461	0.097		
Disagree				2.04	1.06, 3.95				1.33	0.66, 2.67
Neutral				1.71	0.97, 3.01				1.02	0.56, 1.86
Agree				0.87	0.48, 1.56				0.49	0.25, 0.94
Prefer to receive buprenorphine-naloxone:	1.05	2, 556	0.351			0.27	2, 461	0.760		
Disagree				1.02	0.52, 2.03				0.79	0.38, 1.67
Neutral				1.36	0.81, 2.29				0.80	0.46, 1.40
Agree				2.01	1.08, 3.74				1.08	0.56, 2.09
Prefer to receive extended-release naltrexone:	0.79	2, 556	0.454			0.60	2, 461	0.549		
Disagree				1.74	0.82, 3.68				1.00	0.46, 2.20
Neutral				1.62	0.99, 2.63				0.99	0.59, 1.66
Agree				1.02	0.54, 1.93				0.63	0.31, 1.27

Moderator Variable ^a	All Randomized Sample (N=570)					Per Protocol Sample (N=474)				
	Treatment by Moderator Interaction			Treatment Effect		Treatment by Moderator Interaction			Treatment Effect	
	F	DF	P	Odds Ratio ^b	95% CI	F	DF	p	Odds Ratio ^b	95% CI
Opioid Withdrawal										
Typical discomfort level during past episodes of opioid withdrawal	2.14	1, 557	0.144			0.08	1, 463	0.782		
0-7 (0="none", 1="little discomfort")				1.15	0.72, 1.83				0.84	0.52, 1.38
8-10 (10="almost unbearable")				1.93	1.15, 3.22				0.94	0.54, 1.64
Subjective Opioid Withdrawal Scale (range: 0-64) (Mean (SD)=15.6 (13.3))	4.71	1, 559	0.030			4.42	1, 463	0.036		
at 2.3				0.98	0.61, 1.60				0.59	0.35, 0.99
at 15.6				1.45	1.03, 2.05				0.87	0.60, 1.26
at 28.8				2.15	1.30, 3.54				1.30	0.77, 2.20
Timing of Randomization	1.11	1, 559	0.291			9.79	1, 463	0.002		
Early (within 3 days of last opioid exposure)				1.14	0.64, 2.01				0.37	0.19, 0.72
Late (>3 days of last opioid exposure)				1.67	1.08, 2.56				1.33	0.85, 2.10
Severity	1.40	1, 559	0.238			1.23	1, 463	0.269		
Low (non-intravenous use or intravenous use at <6 bags/day)				1.71	1.10, 2.65				1.03	0.64, 1.66
High (intravenous use at ≥ 6 bags/day)				1.12	0.65, 1.93				0.68	0.38, 1.21

^aModerator variables with treatment by moderator interaction p<.05 are presented in Table 2 for the All Randomized sample and Table 3 for the Per Protocol sample in the main paper.

^bOdds-ratio > 1.0 favors buprenorphine-naloxone; Odds-ratio < 1.0 favors extended-release naltrexone)

