Supplementary Table 1. Estimates of covariate effects in adjusted parallel process model

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| CU & Apathy | ***ß*** | ***p-value*** |
| Sex🡪 i1 | -.26\* | .005 |
| Sex🡪 s1 | .13 | .380 |
| Sex🡪 i2 | -.11\* | .049 |
| Sex🡪 s2 | -.22\* | .012 |
| Baseline age🡪 i1 | -.06 | .537 |
| Baseline age 🡪 s1 | -.15 | .270 |
| Baseline age 🡪 i2 | .24\*\* | <.001 |
| Baseline age 🡪 s2 | -.04 | .681 |
| Alcohol T1🡪 Apathy T1 | -.05 | .290 |
| Alcohol T3🡪 Apathy T3 | -.12\* | .029 |
| Alcohol T5🡪 Apathy T5 | -.05 | .199 |
| Nicotine T1🡪 Apathy T1 | .04 | .661 |
| Nicotine T3🡪 Apathy T3 | .09 | .289 |
| Nicotine T5🡪 Apathy T5 | -.06 | .149 |
| Depression T1 🡪 Apathy T1 | .35\*\* | <.001 |
| Depression T3 🡪 Apathy T3 | .34\*\* | <.001 |
| Depression T5 🡪 Apathy T5 | .37\*\* | <.001 |
| CU & Disengagement | ***ß*** | ***p-value*** |
| Sex🡪 i1 | .001 | .993 |
| Sex🡪 s1 | -.29\* | .018 |
| Sex🡪 i2 | -.11\* | .047 |
| Sex🡪 s2 | -.16\* | .032 |
| Baseline age🡪 i1 | .12 | .139 |
| Baseline age 🡪 s1 | .00 | .997 |
| Baseline age 🡪 i2 | .24\*\* | <.001 |
| Baseline age 🡪 s2 | -.02 | .840 |
| Alcohol T1🡪 Disengagement T1 | .04 | .465 |
| Alcohol T3🡪 Disengagement T3 | .05 | .455 |
| Alcohol T5🡪 Disengagement T5 | .003 | .945 |
| Nicotine T1🡪 Disengagement T1 | .17 | .054 |
| Nicotine T3🡪 Disengagement T3 | .10 | .167 |
| Nicotine T5🡪 Disengagement T5 | -.17\*\* | <.001 |
| Depression T1 🡪 Disengagement T1 | .26\*\* | <.001 |
| Depression T3 🡪 Disengagement T3 | .30\*\* | <.001 |
| Depression T5 🡪 Disengagement T5 | .32\*\* | <.001 |
| CU & Persistence | ***ß*** | ***p-value*** |
| Sex🡪 i1 | .21\* | .019 |
| Sex🡪 s1 | .07 | .647 |
| Sex🡪 i2 | -.11\* | .046 |
| Sex🡪 s2 | -.16 | .057 |
| Baseline age🡪 i1 | -.11 | .218 |
| Baseline age 🡪 s1 | .45\* | .013 |
| Baseline age 🡪 i2 | .24\*\* | <.001 |
| Baseline age 🡪 s2 | -.02 | .830 |
| Alcohol T1🡪 Persistence T1 | .03 | .545 |
| Alcohol T3🡪 Persistence T3 | -.09 | .063 |
| Alcohol T5🡪 Persistence T5 | -.05 | .298 |
| Nicotine T1🡪 Persistence T1 | .09 | .377 |
| Nicotine T3🡪 Persistence T3 | .07 | .062 |
| Nicotine T5🡪 Persistence T5 | .09 | .089 |
| Depression T1 🡪 Persistence T1 | -.18\* | .006 |
| Depression T3 🡪 Persistence T3 | -.18\* | .036 |
| Depression T5 🡪 Persistence T5 | -.18\*\* | <.001 |
| CU & Planning | ***ß*** | ***p-value*** |
| Sex🡪 i1 | .26\* | .004 |
| Sex🡪 s1 | -.11 | .560 |
| Sex🡪 i2 | -.11\* | .045 |
| Sex🡪 s2 | -.20\* | .021 |
| Baseline age🡪 i1 | -.12 | .186 |
| Baseline age 🡪 s1 | -.11 | .560 |
| Baseline age 🡪 i2 | .24\*\* | <.001 |
| Baseline age 🡪 s2 | -.003 | .974 |
| Alcohol T1🡪 Planning T1 | .03 | .592 |
| Alcohol T3🡪 Planning T3 | -.11\* | .013 |
| Alcohol T5🡪 Planning T5 | -.05 | .289 |
| Nicotine T1🡪 Planning T1 | -.06 | .619 |
| Nicotine T3🡪 Planning T3 | -.02 | .680 |
| Nicotine T5🡪 Planning T5 | -.02 | .641 |
| Depression T1 🡪 Planning T1 | -.12 | .079 |
| Depression T3 🡪 Planning T3 | -.10 | .089 |
| Depression T5 🡪 Planning T5 | -.12\* | .019 |
| CU & Self-Efficacy | ***ß*** | ***p-value*** |
| Sex🡪 i1 | .21 | .069 |
| Sex🡪 s1 | -.08 | .545 |
| Sex🡪 i2 | -.11\* | .050 |
| Sex🡪 s2 | -.21\* | .008 |
| Baseline age🡪 i1 | .06 | .596 |
| Baseline age 🡪 s1 | -.04 | .676 |
| Baseline age 🡪 i2 | .24\*\* | <.001 |
| Baseline age 🡪 s2 | -.04 | .676 |
| Alcohol T1🡪 Self-Efficacy T1 | -.01 | .909 |
| Alcohol T3🡪 Self-Efficacy T3 | -.003 | .962 |
| Alcohol T5🡪 Self-Efficacy T5 | .04 | .315 |
| Nicotine T1🡪 Self-Efficacy T1 | .08 | .261 |
| Nicotine T3🡪 Self-Efficacy T3 | .02 | .740 |
| Nicotine T5🡪 Self-Efficacy T5 | -.01 | .830 |
| Depression T1 🡪 Self-Efficacy T1 | -.03 | .760 |
| Depression T3 🡪 Self-Efficacy T3 | -.10 | .094 |
| Depression T5 🡪 Self-Efficacy T5 | -.06 | .296 |
| CU & Valuing School | ***ß*** | ***p-value*** |
| Sex🡪 i1 | .15\* | .040 |
| Sex🡪 s1 | .01 | .904 |
| Sex🡪 i2 | -.11\* | .047 |
| Sex🡪 s2 | -.18\* | .025 |
| Baseline age🡪 i1 | -.03 | .664 |
| Baseline age 🡪 s1 | .20 | .105 |
| Baseline age 🡪 i2 | .24\*\* | <.001 |
| Baseline age 🡪 s2 | -.02 | .848 |
| Alcohol T1🡪 Valuing School T1 | .02 | .717 |
| Alcohol T3🡪 Valuing School T3 | .03 | .557 |
| Alcohol T5🡪 Valuing School T5 | -.01 | .794 |
| Nicotine T1🡪 Valuing School T1 | -.07 | .664 |
| Nicotine T3🡪 Valuing School T3 | -.03 | .592 |
| Nicotine T5🡪 Valuing School T5 | .04 | .440 |
| Depression T1 🡪 Valuing School T1 | -.14\* | .020 |
| Depression T3 🡪 Valuing School T3 | -.05 | .293 |
| Depression T5 🡪 Valuing School T5 | -.16\*\* | <.001 |

\*\**p* ≤ .001, \**p* ≤.05. All estimates are presented in standardized metric. Note: CU = cannabis use; ∆ = change in; *i1* = motivation index intercept; *s1* = motivation index slope; *i2* = cannabis use intercept; *s2* = cannabis use slope