**Supplementary Material**

***Additional Temporal Bisection Task Information***

The bisection task requires participants to classify intermediate tone durations as either “short” or “long” depending on their similarity to previously learned anchor tone durations. The task procedure was comprised of three phases including training, practice, and test phases. To facilitate task comprehension, the training phase was contextualized using a bird classification method adapted from Elvevag and colleagues (Elvevåg *et al.*, 2003). Specifically, participants were visually presented with two different sized bird silhouettes, a small bird (1.84 x 1.92 in) and a large bird (3.60 x 3.78 in), that were accompanied with a short 300 and long 600 ms anchor tone (880 Hz), respectively. Participants were informed that the small bird made a short sound (i.e., 300 ms tone) and the large bird made a long sound (i.e., 600 ms tone). In the practice phase, participants were randomly presented with each anchor tone six times in the absence of the associated small or large bird silhouette. Participants were instructed to press the “short” key for anchor tones belonging to the small bird and the “long” key for anchor tones belonging to the large bird. “Correct” or “Incorrect” feedback was displayed visually on the screen after each response. This practice procedure was repeated up to three times (12-trials per block) until 75% accuracy was achieved. If 75% accuracy was not achieved by the third practice block, participants did not proceed to the test phase.

***Derivation of Temporal Measures***

Using R (Team, 2013), a general linear model with a probit link function was fitted to each participant’s proportional response data. A probit model results in a sigmoidal function that is the integral of the Gaussian probability density function, affording a model of the relationship between the probability of a long response and the linear predictor function of the tone durations. Two temporal parameters for each participant were derived from the fitted models. To calculate the bisection point, intercept and slope coefficients were extracted from the fitted models for each participant and the negative intercept was divided by the slope coefficient of the regression. The difference limenis defined as one-half of the difference between the ms duration values corresponding to the .75 and .25 probabilities of classifying a tone duration as “long” ([p(“Long”) .75 – p(“Long”) .25] /2 ).

***MRI Scanning Procedure***

A turbo spin echo proton density (PD)/T2-weighted acquisition (TSE; axial oblique aligned with anterior commissure-posterior commissure line; TR = 3720 ms; TE = 89 ms; GRAPPA parallel imaging factor of 2; FOV = 240 mm; flip angle: 120°; .9 x .9 mm voxels; 77 interleaved 1.5 mm slices) were acquired to check for incidental pathology. Participants were instructed to relax and close their eyes throughout the resting state scan. A fcMRI scan duration of 5-min 34 s was utilized to reduce subject movement within the scanner. Resting state scans of this duration have been demonstrated to provide equivalent power as longer scans (Van Dijk *et al.*, 2009).

***Motion-related Artifact Control Details***

To account for motion-related artifacts, temporal derivative regressors were calculated with the Artifact Rejection Toolbox (ART;  http://www.nitrc.org/projects/artifact\_detect/). This resulted in three translation and three rotation parameters with additional image specific confound regressors based on brain activation and framewise movement. Brain activation outliers were calculated using both the mean global brain activity and z-normalized mean signal across all voxels as a function of time. Outliers were defined as any frames where the global mean signal exceeded 3 standard deviations. Framewise measures of motion (composite measure of total motion, or maximum voxel displacement, across translation and rotation) were used to identify any motion outliers. Motion outliers were defined as frames where the absolute value of motion exceeded 1 mm.The resultant motion regressors were entered into the model as a temporal derivative nuisance covariate at the subject level.

***Group Comparisons in Mean Signal and Motion Outliers***

Independent *t*-tests were employed to examine group differences in total mean signal and motion outliers. Results indicated there were no significant group differences in the number of signal *t*(97) = -.58, *p* = .56, and motion outliers *t*(97) = -.34, *p* = .74.

***Analyses Controlling for Sex***

When controlling for sex, alcohol consumption, and cannabis use, CHR participants had significantly poorer temporal accuracy (i.e., higher bisection points) compared to HC participants, *F*(1, 99)=4.04,  *p*=.047, ηp2=.04. There was also not a significant group difference in temporal precision, *F*(1, 99)=.19,  *p*=.66, ηp2=.002. Accuracy rates (i.e., percent correct) for the anchor tones were also comparable between CHR (98%) and HC (98%) participants, *F*(1, 99)=.25,  *p*=.62, ηp2=.002.

Using the extracted connectivity weights for the significant anterior cerebellum to right caudate/nucleus accumbens striatal cluster, there was a significant interaction between group and temporal accuracy (*F* (1, 92)=24.79; *p* < .001) when controlling for sex, alcohol consumption, and cannabis use.

When controlling for sex, alcohol consumption, and cannabis use, higher temporal bisection points (i.e., poorer temporal accuracy) accounted for 6% of the variance in worsening of positive symptoms at 12-month follow-up (β=.26, *p*=.11). Higher temporal bisection points accounted for 10% of the variance in worsening of negative symptoms at 12-month follow-up (β=.33, *p*=.04). Notably, the models were improved with the removal of CHR youth receiving antipsychotic treatment (*N* = 5 at follow-up). After removal, higher temporal bisection points accounted for 13% of the variance in worsening of positive symptoms (β=.39, *p*=.02), and 17% of the variance in worsening of negative symptoms (β=.44, *p*=.01).

References

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