**Supplementary Information**

**Slope Check in Measurement of the Contrast Sensitivity Function**

At first, we need to obtain the slopes of the psychometric function before and after alcohol intake. The equation is as follows:

$P\_{i,j}\left(x\right)=γ+\left(1-γ-λ\right)\left(1-exp\left(-10^{s\left(log\_{10}\left(x\right)-log\_{10}\left(τ\_{i,j}\right)\right)}\right)\right)$, Eq. S1

where the unique free parameter is *s*, which denotes the slope of psychometric function; *τ* is the contrast threshold at 80.3% correct performance level; guessing rate (**) is 0.5 and lapse rate (**) is 0.02; *Pi,j*(*x*) is percent correct in the *i*th spatial frequency and *j*th external noise level. A t test was performed on the slopes with time point (before and after alcohol intake) as a within-subject variable. We found that slopes were unchanged after alcohol intake (t(8) = 9.61, *p* = 0.365),.

**Fitting the PTM**

The raw CSF data could derive one psychometric functions with six contrast level, corresponding to 60%, 70%, 78%, 84%, 90%, and 99% correct. Ten spatial frequencies, three external noise levels, and two time-point conditions produced 60 psychometric functions. Thus, a total of 360 data points were included in model fitting.