Supplementary

Table S1 Network switching rates at global, network, and node level among HCs, NMHE, and MHE with head motion parameters as covariate, different γ/ω, and window/step length

Network switching rate	P value			
	FD as covariate	γ=0.9, ω=0.5	γ=0.9, ω=1	Window length =30 TR, step length =1 TR
Global	0.954	0.006‡	0.006‡	0.004‡
Subnetwork				
VIS	0.306	0.064	0.035‡	0.441
SMN	0.582	0.057	0.056	0.017†
DAN	0.253	0.089	0.143	<0.001‡
VAN	0.690	0.003†,§	0.047	0.215
LIB	0.709	0.021‡	0.002‡	0.014†
FPN	0.843	0.242	0.383	0.128
DMN	0.882	0.329	0.742	0.006‡
SUB	0.010	0.009‡	<0.001‡	0.001†
Node				
PrG_R_6_5 (label ID 62)	0.896	0.691	0.272	0.257
FuG_L_3_1 (label ID 103)	0.457	0.155	0.021‡	0.026‡
IPL_L_6_4 (label ID 141)	0.361	0.355	0.253	0.189
Hipp_R_2_1 (label ID 216)	0.875	0.106	0.015†	0.824

Bonferroni was conducted for post-hoc tests of one-way ANOVA, and P<0.05 (corrected) was set as significance level. The markers †, ‡, and § are used to indicate significant differences in network or node switching rate between HCs and NMHE, HCs and MHE, as well as NMHE and MHE, respectively. ANOVA, analysis of variance; DAN, dorsal attention network; DMN, default mode network; FD, framewise-displacement; FPN, frontoparietal network; FuG, fusiform gyrus; HBC, hepatitis B cirrhosis; HCs, healthy controls; Hipp, hippocampus; IPL, inferior parietal lobule; L, left; LIB, limbic network; MHE, minimal hepatic encephalopathy; NMHE, non-MHE (HBC patients without MHE); PrG, right precentral gyrus; R, right; SMN, somatomotor network; SUB, subcortical network; TR, repetition time; VAN, ventral attention network; VIS, visual network.

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Table S2 Modular organization of static functional networks

Modular metrics	P value
Intramodular connectivity	
Module I	0.044
Module II	0.553
Module III	0.709
Module IV	0.025†
Module V	0.043
Module VI	0.072
Module VII	0.045
Module VIII	0.060
Inter-modular connection	
Modules I–II	0.253
Modules I–III	0.018
Modules I–IV	0.164
Modules I–V	0.193
Modules I–VI	0.026
Modules I–VII	0.121
Modules I–VIII	0.257
Modules II–III	0.050
Modules II–IV	0.432
Modules II–V	0.643
Modules II–VI	0.043
Modules II–VII	0.100
Modules II–VIII	0.633
Modules III–IV	0.528
Modules III–V	0.559
Modules III–VI	0.248
Modules III–VII	0.066
Modules III–VIII	0.284
Modules IV–V	0.070
Modules IV–VI	0.036
Modules IV–VII	0.075
Modules IV–VIII	0.126
Modules V–VI	0.090
Modules V–VII	0.098
Modules V–VIII	0.561
Modules VI–VII	0.238
Modules VI–VIII	0.095
Modules VII–VIII	0.195

Except for the intramodular connection in module IV, this table shows the original P values, which are not corrected by false discovery rate. The marker † is used to indicate significant differences in static functional network connection between HCs and MHE. Key to modules: I, VIS; II, SMN; III, DAN; IV, VAN; V, LIB; VI, FPN; VII, DMN; VIII, SUB. DAN, dorsal attention network; DMN, default mode network; FPN, frontoparietal network; HCs, healthy controls; LIB, limbic network; MHE, minimal hepatic encephalopathy; SMN, somatomotor network; SUB, subcortical network; VAN, ventral attention network; VIS, visual network.

Table S3 Node labels

Abbreviations	Full name
lFuG	left fusiform gyrus
lIPL	left inferior parietal lobule
rPrG	right precentral gyrus
rHipp	right hippocampus

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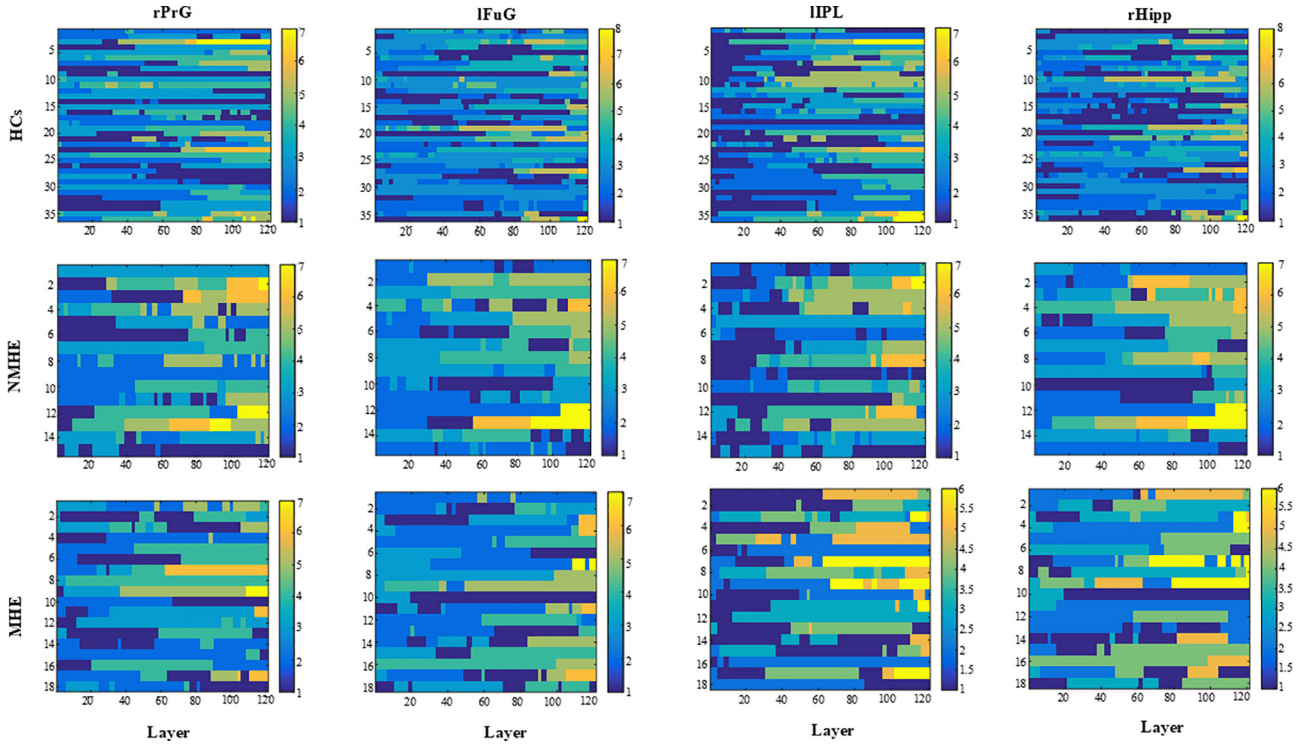

Figure S1 Community assignments of PrG_R_6_5, FuG_L_3_1, IPL_L_6_4, and Hipp_R_2_1 at different network layers for each participant in HCs, NMHE, and MHE groups. FuG, fusiform gyrus; HBC, hepatitis B cirrhosis; HCs, healthy controls; Hipp, hippocampus; IPL, inferior parietal lobule; L, left; lFuG, left fusiform gyrus; lIPL, left inferior parietal lobule; MHE, minimal hepatic encephalopathy; NMHE, non-MHE (HBC patients without MHE); PrG, precentral gyrus; R, right; rHipp, right hippocampus; rPrG, right precentral gyrus.

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