

cumulative (over several days of assessment) characteristics of a subject we, instead, inferred the routines on the first 6 h of the days of each subject as if it was one day segment. On the right side of Figure 40 the star plots describe the averages of the routines' activation probabilities across the assessed days of the same two subjects when the inference is performed on the first 6 h after their awakenings. In this case, routines' activation probabilities can also be considered as an estimate of the time spent in each routine during the most active part of the day. The subjects are represented as a star whose each spoke length is proportional to the average time spent in the associated routine over the assessed weekdays. For clarity, only the most active routines over the assessed days are shown. We see that the shapes of the stars are remarkably different. Routines R11 and R2 were the most active for the COPD patient while, in contrast, the healthy subject spent most of his time performing more active routines such as R1, R12, and R14. Differences in the shapes of the star plot (i.e., time spent in different routines) are consistent across healthy and COPD patients and will be discussed in the next section.

Table XIII Routine matrix. The three dominant words for each of the 15 discovered routines.

R1	%	R2	%	R3	%	R4	%	R5	%
MV 1 1 2	0.40	L 1 3 1	0.39	L 1 1 2	0.31	L 1 3 1	0.53	L 1 2 2	0.37
L 1 2 1	0.39	VL 2 2 2	0.31	MV 1 1 2	0.22	MV 1 3 2	0.23	MV 1 2 2	0.23
L 1 3 1	0.07	L 1 2 1	0.10	L 1 2 2	0.16	L 1 4 1	0.11	L 1 3 2	0.12
R6	%	R7	%	R8	%	R9	%	R10	%
L 1 3 2	0.62	VL 1 1 1	0.41	L 1 3 1	0.57	L 1 2 1	0.70	L 1 4 2	0.70
MV 1 3 2	0.14	MV 1 2 1	0.21	L 1 2 1	0.12	VL 1 1 1	0.08	MV 1 3 1	0.09
L 2 3 2	0.06	L 1 2 1	0.15	L 2 3 1	0.07	L 2 2 1	0.08	MV 1 3 2	0.07
R11	%	R12	%	R13	%	R14	%	R15	%
S 1 1 3	0.27	L 1 1 1	0.55	MV 1 3 2	0.81	MV 1 1 2	0.43	L 1 4 1	0.68
S 1 1 2	0.21	MV 1 1 2	0.15	MV 1 3 1	0.13	L 1 1 1	0.19	MV 1 3 1	0.09
S 1 1 1	0.17	MV 1 1 1	0.09	MV 2 3 2	0.02	MV 1 2 2	0.14	MV 1 3 2	0.08

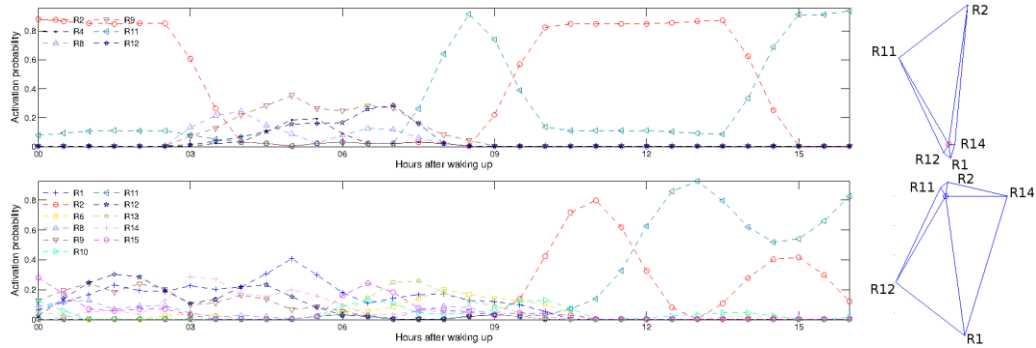


Figure 40 Left: Routine activation probabilities determined from a particular day of a COPD patient (top) and a healthy subject (bottom). Only topics with a maximum activation larger than 0.1 are shown. Right: Star plots illustrating the average time spent on the three most active routines of the same COPD patient and healthy subject during the first 6 h of their assessed days. R2, R11, R12 and R1, R12, R14 are, respectively, the three most active routines for the COPD patient (top) and the healthy subject (bottom).