

MedBug Sleep & Breathing Report

5–19 July 2026

Adelaide Institute for Sleep Health

Level 2A
Mark Oliphant Building
Laffer Drive, Bedford Park
South Australia 5042

Multi-night sleep quality and breathing summary

Patient Name: Pair-case-6-CASE-6a

DOB: /

Height (cm): /

Weight (kg): /

BMI (kg/m²): /

Study Date Range: 05/07/2026–19/07/2026

Age: /

Gender: /

Insomnia Severity Index: /

Epworth Sleepiness Score: /

Chronotype score: /

Devices and Parameters assessed: MedBug SENSE 1.0 (sleep staging, respiratory events, and arousal detection).

Summary

- 12 in-bed sleep episodes were identified across 12 recording night(s) (gaps >30 min between sessions start a new episode).
- Mean time in bed was 8.7 h (SD 1.6 h); mean total sleep time was 5.9 h (SD 1.0 h).
- Sleep efficiency averaged 69%.
- Sleep onset latency averaged 19 min (episode means).
- Respiratory, arousal, ventilation/drive, vital signs, and snore metrics are summarized in the following sections.
- Heart rate and respiratory rate during time in bed (reliable 15 s windows) had episode medians of 65.1 ± 2.1 bpm and 20.1 ± 0.8 brpm (mean $\pm$ SD across episodes).

Sleep Summary

Sleep architecture & continuity

Table 1: Sleep architecture and continuity by sleep episode (Australia/Adelaide).

Ep.	On-bed time	Off-bed time	TIB (h)	TST (h)	SE (%)	SOL (min)	WASO (min)	Awak.	OOB	Pers. sleep (min)
1	05/07 21:44	06/07 08:27	10.7	7.4	69.1	18.8	155.2	21	0	36.8
2	06/07 22:34	07/07 08:30	9.9	5.8	58.2	44.6	182.8	19	0	44.6
3	08/07 21:46	09/07 07:36	9.8	6.3	64.1	27.8	163.5	11	0	35.8
4	09/07 21:43	10/07 07:23	9.7	6.2	63.7	11.6	178.4	22	0	37.6
5	11/07 22:16	12/07 06:26	8.2	5.7	70.0	18.8	106.7	14	0	18.8
6	12/07 21:13	13/07 05:59	8.8	6.2	70.5	0.5	137.5	20	0	10.5
7	13/07 21:53	14/07 07:17	9.4	6.2	66.4	30.1	142.1	20	0	44.1
8	14/07 22:28	15/07 07:07	8.6	6.3	72.4	19.4	96.8	18	0	25.9
9	15/07 21:51	16/07 07:07	9.3	6.9	74.2	15.2	106.9	16	0	29.7
10	16/07 22:24	17/07 03:05	4.7	3.6	77.6	18.3	25.5	6	0	25.3
11	17/07 23:06	18/07 05:58	6.9	4.7	68.6	9.9	108.7	17	0	9.9
12	18/07 22:23	19/07 07:00	8.6	5.9	68.2	9.9	133	20	0	21.9
Mean	22:07	06:52	8.7	5.9	68.6	18.7	128.1	17	0	28.4
± SD	± 30 min	± 86 min	± 1.6	± 1	± 5.1	± 11.4	± 43.3	± 4.7	± 0	± 11.8

TIB: time in bed; TST: total sleep time; SE: sleep efficiency; SOL: sleep onset latency; WASO: wake after sleep onset; Awak.: awakenings ≥2 min; OOB: out-of-bed periods between in-bed sessions; Pers. sleep: time to first ≥10 min uninterrupted non-Wake sleep. On-bed and off-bed summary times are circular mean clock times (± SD, no date).

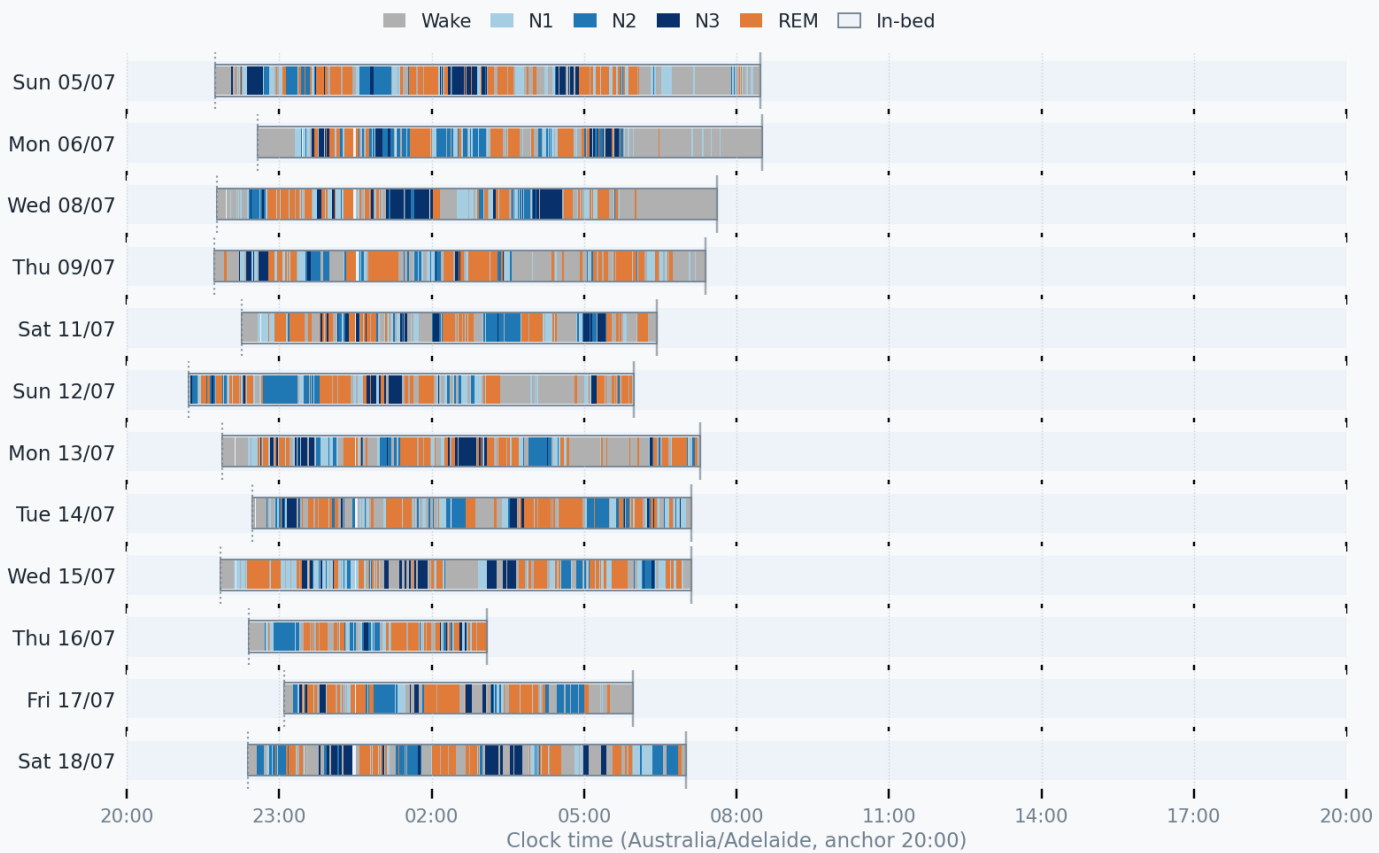
Stage durations & latencies

Table 2: Stage durations and latencies by sleep episode (Australia/Adelaide).

Ep.	Time in stage (h)					% of TST				Latency (min)			
	Wake	N1	N2	N3	REM	N1	N2	N3	REM	N1	N2	N3	REM
1	3.3	1.8	1.2	1.4	3	24.1	16.6	19.1	40.2	32.2	57.8	18.8	61
2	4.1	1.3	1.7	0.8	2.1	22.5	28.8	13.0	35.8	44.6	98	64.5	22.4
3	3.5	1.6	0.7	1.7	2.3	25.2	11.4	26.6	36.9	27.8	37.8	53.3	32
4	3.4	1.6	0.9	0.5	3.2	25.3	14.6	8.8	51.3	30.6	108.1	37.6	0
5	2.4	1.2	1.2	0.8	2.6	20.5	20.8	13.6	45.1	18.8	53.8	92.3	22
6	2.6	1.3	1.4	0.7	2.7	21.2	23.1	11.6	44.1	10.5	3.5	1.5	14
7	3.1	1.3	1.2	1	2.7	21.1	18.9	16.6	43.4	30.1	110.2	56.1	11.5
8	2.3	1.4	1.4	0.6	2.8	23.0	22.5	9.1	45.4	19.4	94.5	35	46.5
9	2.4	2.3	0.8	1.2	2.6	33.2	11.4	17.0	38.4	15.2	150.2	95.7	16
10	1	0.7	0.9	0.2	1.8	18.7	25.5	5.8	50.0	20.8	29.3	135.3	46
11	2.1	0.7	1.3	0.5	2.3	13.8	27.0	11.3	48.0	14.9	9.9	17.9	16.5
12	2.7	1.1	1.5	1.2	2.1	17.9	25.9	21.0	35.3	21.9	9.9	82.9	38
Mean	2.7	1.3	1.2	0.9	2.5	22.2	20.5	14.5	42.8	23.9	63.6	57.6	27.2
± SD	± 0.8	± 0.5	± 0.3	± 0.4	± 0.4	± 4.8	± 6.0	± 5.9	± 5.5	± 9.5	± 47.8	± 38.8	± 17.7

Time in stage (h) = total duration spent in each stage during the episode. %TST = percentage of total sleep time in N1/N2/N3/REM. Latency (min) = time until first ≥ 2 min sustained stage (N1/N2/N3 from on-bed; REM from sleep onset).

Sleep schedule



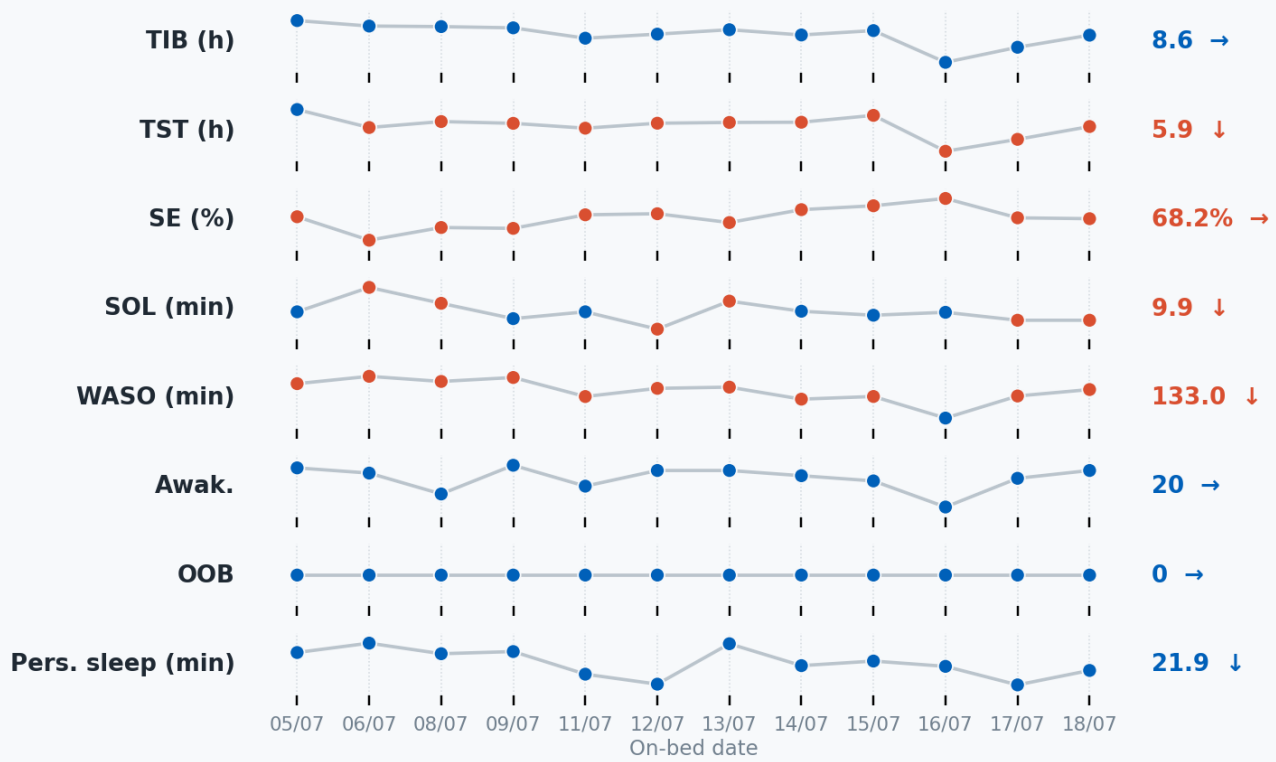
In-bed and out-of-bed periods across the recording window. Each row is one sleep night (anchor SleepNightAnchor). Coloured bars show 5-stage sleep within in-bed sessions; gaps between bars are out-of-bed intervals. Dotted vertical lines mark episode on-bed times; solid lines mark session off-bed times. Row height scales down automatically for longer recordings.

Recommended reference range



Comparison of episode metrics against general adult recommended reference ranges. Green bands show typical healthy-sleep targets; grey markers are individual episodes; the diamond is the episode mean (blue = within range, red = outside range). Stage proportions are expressed as % of total sleep time (TST). Recommended ranges reflect general adult reference values from healthy-sleep literature; individual variation is expected.

Night-to-Night Variability



Night-to-night variability in sleep architecture and continuity (Table 1). Each row tracks one metric across in-bed episodes in chronological order; the horizontal axis shows the on-bed date. Markers are blue when within the recommended adult reference range and red when outside; episodes are joined by a grey line. The right-hand column reports the most recent episode value and a trend arrow comparing the first and last episode.

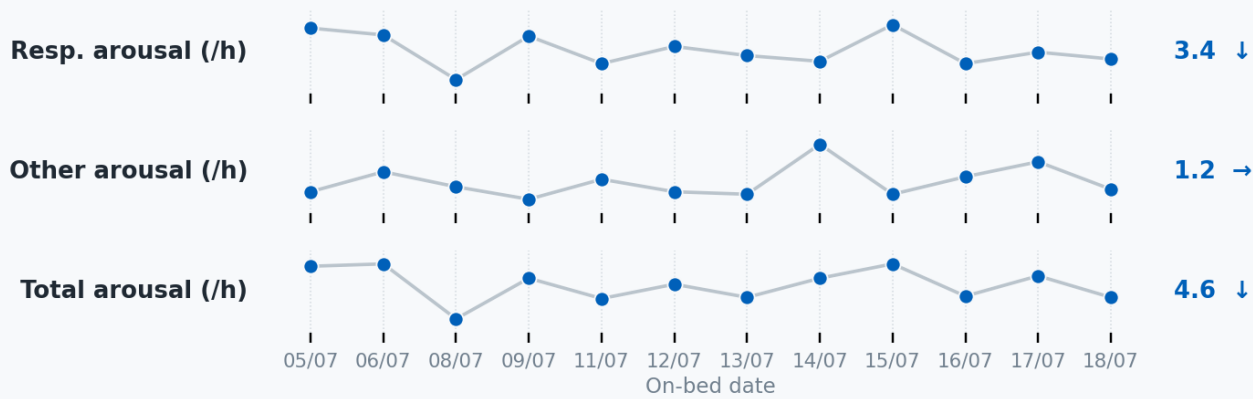
Arousal Statistics

Table 3: Arousal statistics by sleep episode.

Ep.	TST (h)	Resp. arousal		Other arousal		Total arousal	
		<i>n</i>	(/h)	<i>n</i>	(/h)	<i>n</i>	(/h)
1	7.4	45	6.1	8	1.1	53	7.2
2	5.8	32	5.5	11	1.9	43	7.4
3	6.3	10	1.6	8	1.3	18	2.8
4	6.2	33	5.4	5	0.8	38	6.2
5	5.7	17	3.0	9	1.6	26	4.5
6	6.2	28	4.5	7	1.1	35	5.7
7	6.2	23	3.7	6	1.0	29	4.6
8	6.3	20	3.2	19	3.0	39	6.2
9	6.9	44	6.4	7	1.0	51	7.4
10	3.6	11	3.0	6	1.7	17	4.7
11	4.7	19	4.0	11	2.3	30	6.4
12	5.9	20	3.4	7	1.2	27	4.6
Mean	5.9	25	4.1	9	1.5	34	5.6
± SD	± 1	± 12	± 1.5	± 4	± 0.6	± 12	± 1.4

Arousal events are counted during total sleep time (TST; non-Wake epochs) within each in-bed sleep episode. Resp. arousal = respiratory-related arousal; Other arousal = all non-respiratory arousals detected by the model (limb-movement, PLM, and spontaneous arousals are not scored separately). Index = events per hour of TST.

Night-to-night variability



Night-to-night variability in arousal indices (Table 3). Each row tracks one arousal index across in-bed episodes in chronological order by on-bed date. The right-hand column shows the most recent episode value and a trend arrow comparing the first and last episode.

Respiratory Events Summary

By sleep episode

Table 4: Respiratory events by sleep episode.

Ep.	TST (h)	CA		OA		MA		HYP		A+H	
		<i>n</i>	(/h)	<i>n</i>	(/h)	<i>n</i>	(/h)	<i>n</i>	(/h)	<i>n</i>	AHI
1	7.4	15	2.0	7	0.9	0	0.0	119	16.1	141	19.0
2	5.8	3	0.5	0	0.0	0	0.0	104	18.0	107	18.5
3	6.3	6	0.9	2	0.3	0	0.0	31	4.9	39	6.2
4	6.2	4	0.6	2	0.3	0	0.0	88	14.3	94	15.3
5	5.7	7	1.2	2	0.3	0	0.0	52	9.1	61	10.7
6	6.2	5	0.8	4	0.6	0	0.0	80	13.0	89	14.4
7	6.2	5	0.8	3	0.5	0	0.0	78	12.5	86	13.8
8	6.3	8	1.3	0	0.0	0	0.0	48	7.7	56	8.9
9	6.9	4	0.6	8	1.2	0	0.0	107	15.6	119	17.3
10	3.6	7	1.9	2	0.6	0	0.0	45	12.4	54	14.9
11	4.7	1	0.2	1	0.2	0	0.0	47	10.0	49	10.4
12	5.9	10	1.7	4	0.7	0	0.0	82	14.0	96	16.4
Mean	5.9	6	1.0	3	0.5	0	0.0	73	12.3	83	13.8
± SD	± 1	± 4	± 0.6	± 3	± 0.4	± 0	± 0.0	± 28	± 3.8	± 31	± 4.0

Respiratory events are counted during total sleep time (TST; non-Wake epochs) within each in-bed sleep episode. CA = central apnoea; OA = obstructive apnoea; MA = mixed apnoea; HYP = hypopnoea; A+H = sum of all four event types; AHI = A+H per hour of TST.

Monitoring period summary

Table 5: Respiratory events summary for the monitoring period (total sleep time).

	CA	OA	MA	HYP	A+H
Number	75	35	0	881	991
Mean (s)	15.6	18.7	—	26.2	25.2
Total duration (min)	19.4	10.9	0.0	385.3	415.7
Index (/h TST)	1.1	0.5	0.0	12.4	13.9

Pooled across all in-bed sleep episodes in the monitoring period (total TST = 71.2 h). Mean (s) is the mean duration of qualifying events; % of TST is the proportion of total sleep time occupied by events of each type. AHI = A+H index per hour of TST.

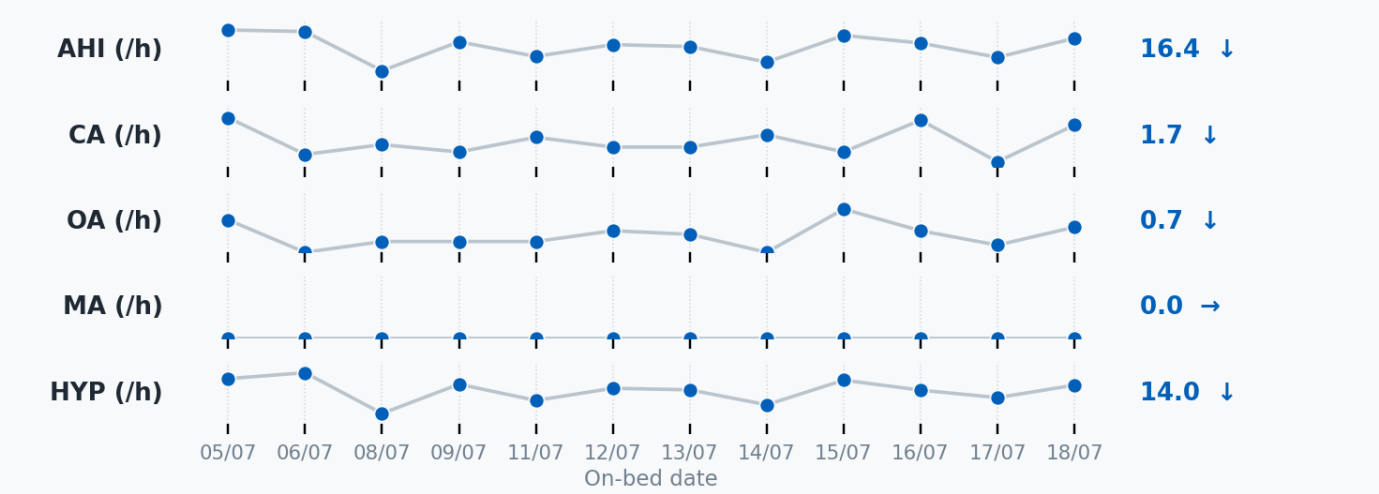
REM vs NREM

Table 6: Respiratory events by sleep stage (REM = 30.2 h; NREM = 41 h).

Parameter	REM		NREM	
	Number	Index	Number	Index
CA	44	1.5	28	0.7
OA	24	0.8	11	0.3
MA	0	0.0	0	0.0
HYP	609	20.2	280	6.8
Total (A+H)	677	22.4	319	7.8
AHI		22.4		7.8

REM index uses REM sleep time as the denominator; NREM index uses NREM sleep time (N1+N2+N3). Monitoring-period TST AHI = 14.0/h (total TST = 71.1 h; REM = 30.2 h; NREM = 41 h).

Night-to-night variability



Night-to-night variability in respiratory indices (Table 4). Each row tracks one index across in-bed episodes in chronological order by on-bed date. The right-hand column shows the most recent episode value and a trend arrow comparing the first and last episode.

Ventilation & Respiratory Drive

By sleep episode

Table 7: Ventilation and respiratory drive by sleep episode.

Ep.	TST (h)	Mean vent	Mean drive	Vent burden (%)	Unstable drive (%)
1	7.4	5.7	5.9	14.3	0.0
2	5.8	6.0	5.9	11.3	0.0
3	6.3	6.4	6.2	6.5	0.0
4	6.2	6.1	5.3	11.8	0.0
5	5.7	6.1	5.3	12.8	0.0
6	6.2	6.0	5.5	12.5	0.0
7	6.2	6.2	5.7	11.2	0.0
8	6.3	6.1	5.7	10.8	0.0
9	6.9	5.9	5.5	13.4	0.0
10	3.6	6.2	5.0	10.2	0.0
11	4.7	6.1	5.6	11.2	0.0
12	5.9	5.8	5.8	13.4	0.0
Mean	5.9	6.0	5.6	11.6	0.0
± SD	± 1	± 0.2	± 0.3	± 2.0	± 0.0

Ventilation and drive are model ordinal classes (0–15) during total sleep time (TST) within each in-bed sleep episode. Vent burden = % of TST with ventilation below 50% of mean wake ventilation in the same episode. Unstable drive = % of TST in 3-min epochs where drive spread (P90–P10) exceeds 6. See Methods & Definitions for full scoring rules.

Monitoring period summary

Table 8: Ventilation and respiratory drive summary for the monitoring period (total sleep time).

	Mean vent	Mean drive	Vent burden (%)	Unstable drive (%)
Monitoring period	6.0	5.7	11.7	0.0

Pooled across all in-bed sleep episodes (total TST = 71.2 h). Episode-specific wake references are applied before pooling burden metrics. Ventilation and drive are raw model classes (0–15).

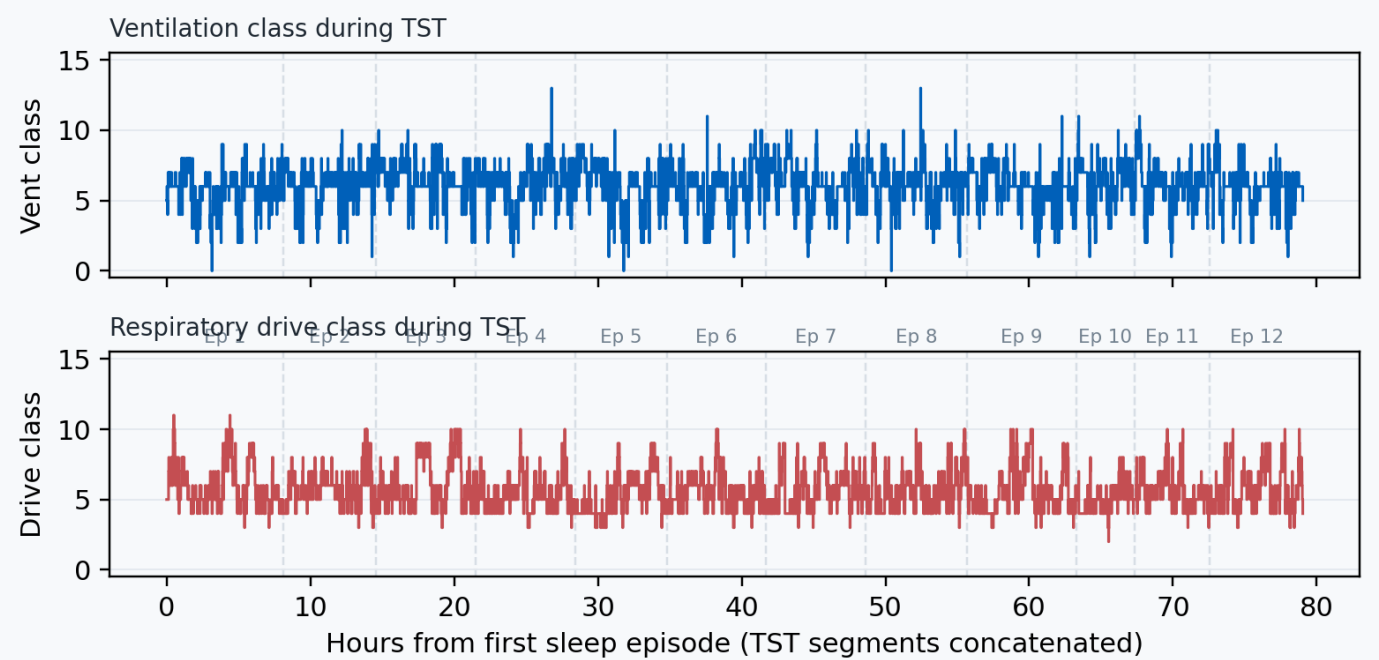
During respiratory events

Table 9: Ventilation and respiratory drive during respiratory events (monitoring period).

Context	<i>n</i> (s)	% TST	Mean vent	Mean drive
CA	1167	0.5	1.7	3.3
OA	654	0.3	2.1	5.1
MA	0	0.0	—	—
HYP	23120	9.0	3.0	5.5
Any respiratory event	24941	9.7	2.9	5.4
No respiratory event	231158	90.3	6.4	5.7

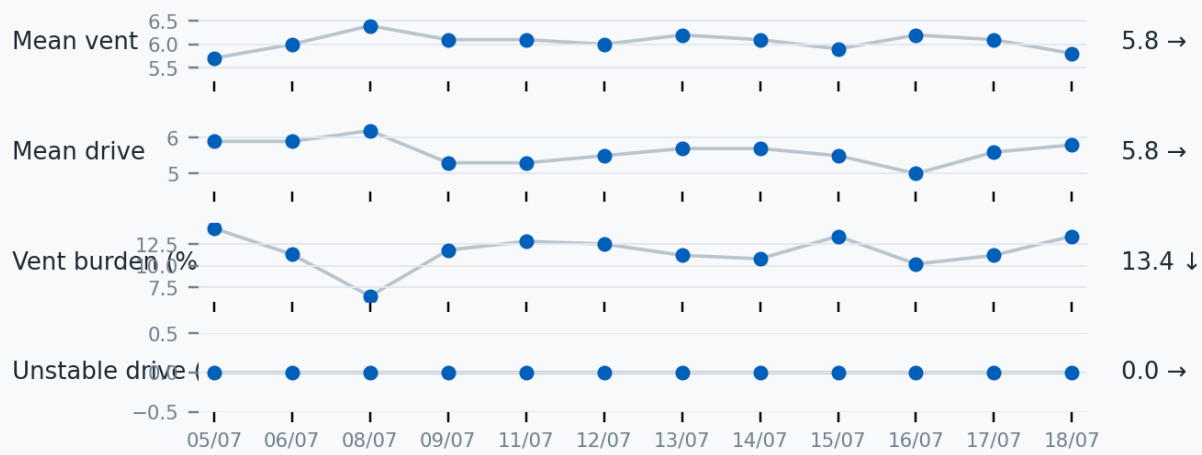
Pooled across all in-bed sleep episodes (total TST = 71.2 h). Means are arithmetic averages of model classes (0–15) during TST seconds in each context. Respiratory contexts use qualifying events (≥ 10 s contiguous flagged seconds) with the same rules as the Respiratory Events section; shorter flagged periods are classified as “No respiratory event”. When multiple event types overlap at the same second, priority is CA > OA > MA > HYP.

Time series



Model-predicted ventilation and respiratory drive classes (0–15) during total sleep time (TST). Sleep episodes are concatenated in chronological order; dashed vertical lines mark episode boundaries.

Night-to-night variability



Night-to-night variability in ventilation and drive indices (Table 7). Each row tracks one metric across in-bed sleep episodes in chronological order by on-bed date. The right-hand column shows the most recent episode value and a trend arrow comparing the first and last episode.

Snoring Summary

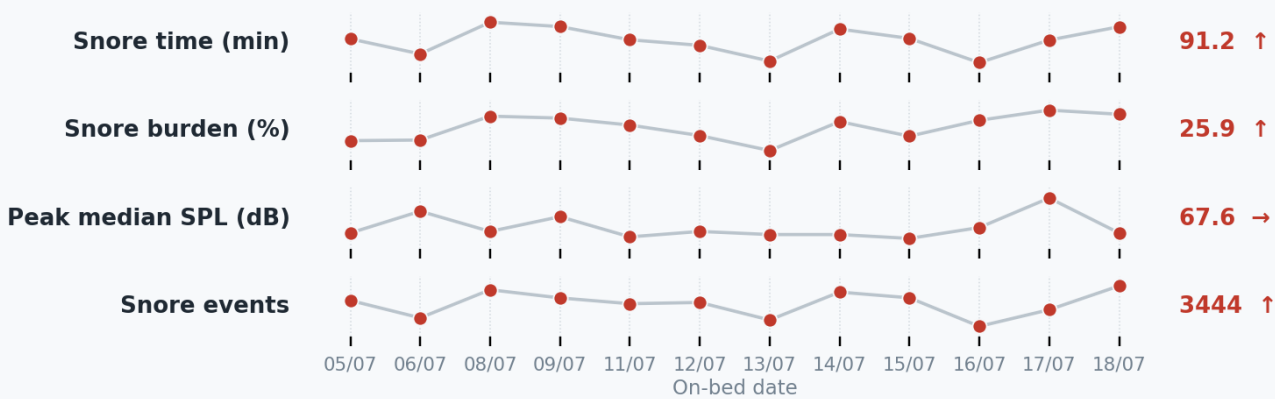
By sleep episode

Table 10: Snoring by sleep episode.

Ep.	Snore time (min)	Snore burden (%)	Events	Peak median (dB)	Peak p95 (dB)
1	78.1	17.6	2869	67.6	72.2
2	61.8	17.8	2182	70.4	77.4
3	96.1	25.3	3293	67.8	74.4
4	91.4	24.7	2970	69.7	75.2
5	77.1	22.5	2741	67.1	74.0
6	71.1	19.2	2791	67.8	72.6
7	54.1	14.5	2098	67.4	73.8
8	88.7	23.6	3200	67.4	73.7
9	78.6	19.0	2974	66.9	74.4
10	52.4	24.0	1847	68.3	76.1
11	76.8	27.2	2503	72.1	76.7
12	91.2	25.9	3444	67.6	73.2
Mean	76.5	21.8	2743	68.3	74.5
± SD	± 14.5	± 4.0	± 497	± 1.6	± 1.6

See Methods & Definitions (Section 14) for snore detection, episode assignment, and burden calculation.

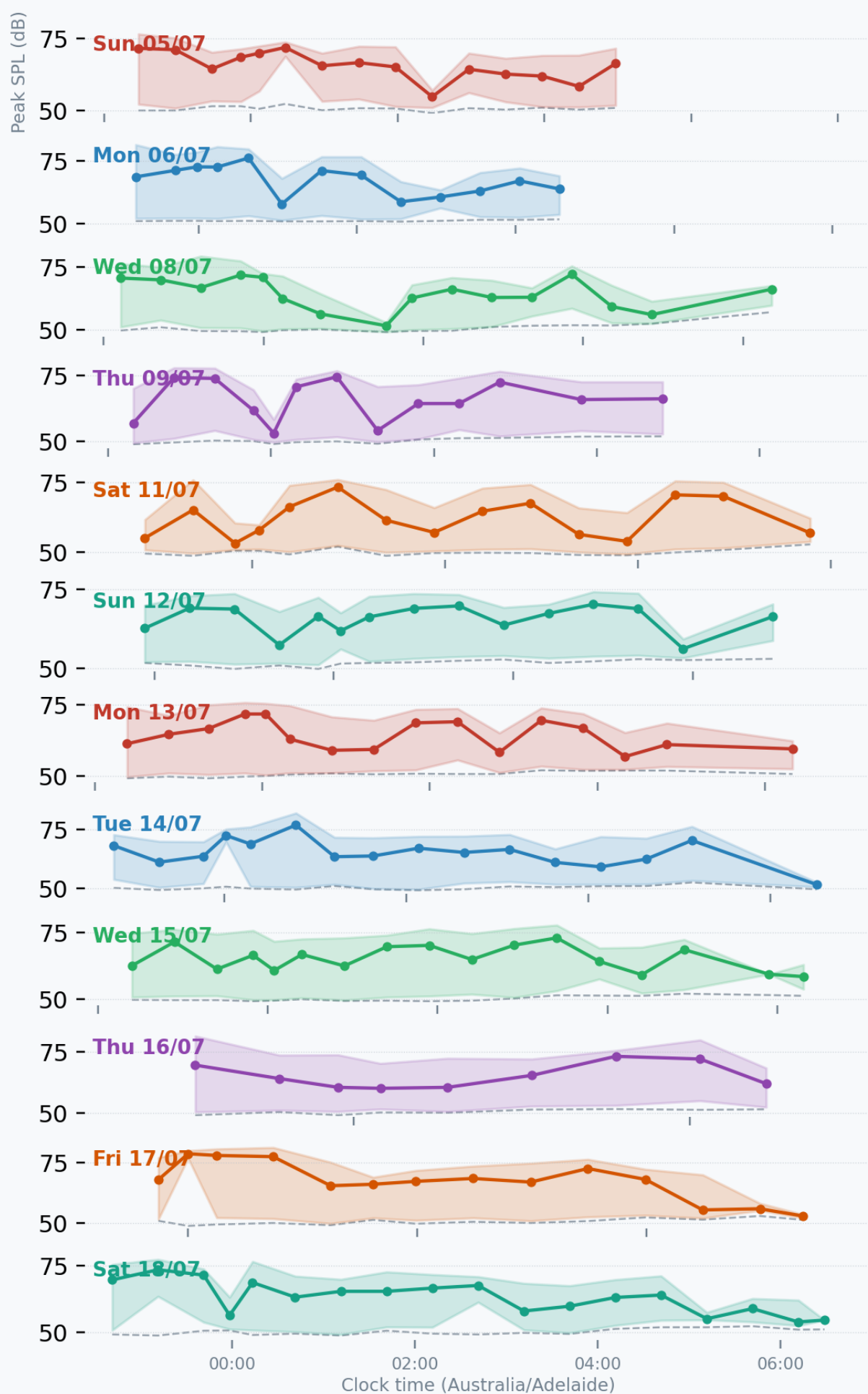
Episode-to-episode variability



Episode-to-episode variability in snore metrics (Table 10). Each row tracks one metric across sleep episodes in chronological order by on-bed date. The right-hand column shows the most recent episode value and a trend arrow.

Loudness & burden

Snore loudness within episode (median peak, p5-p95 band)



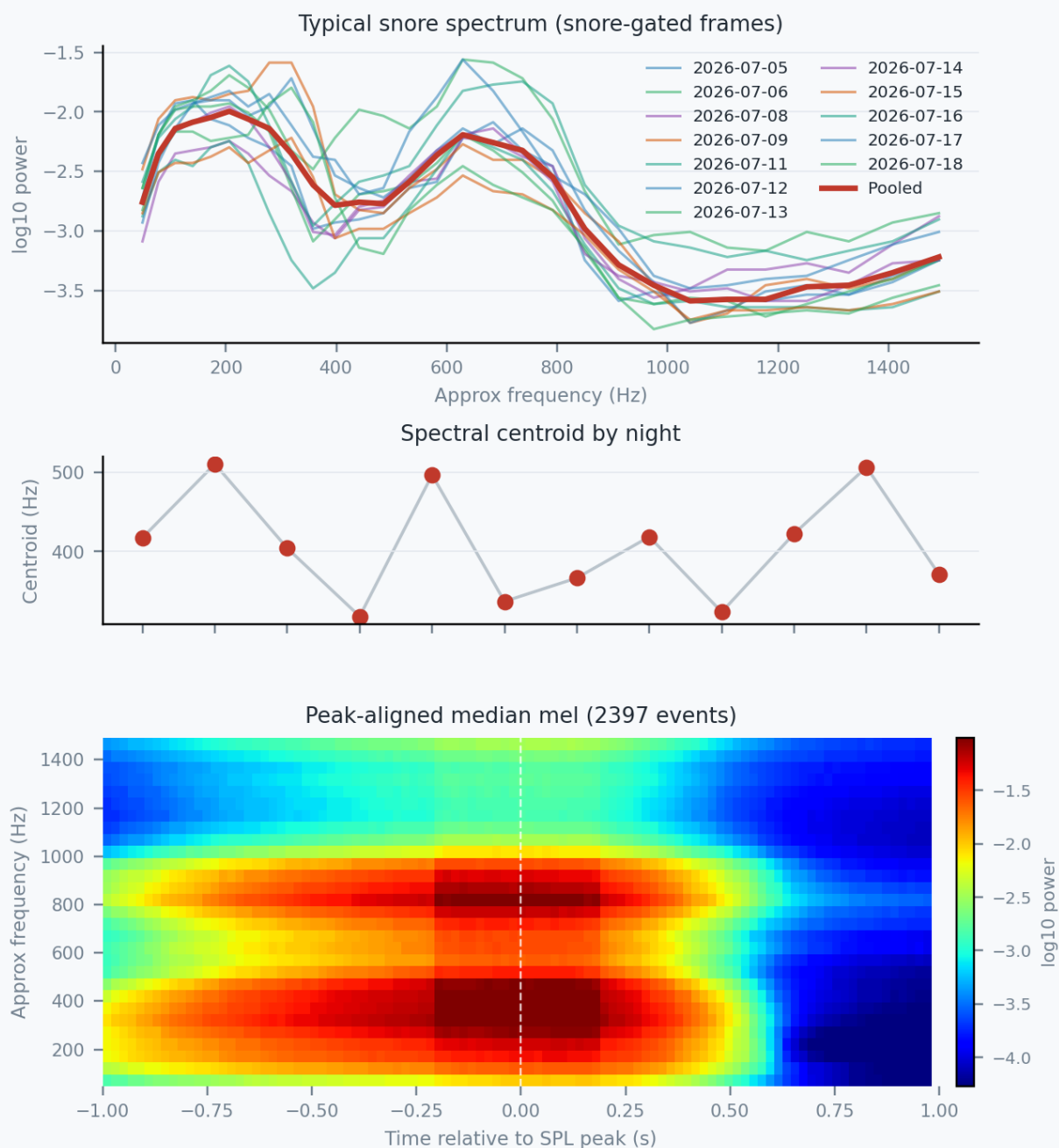
Snore peak SPL (median with p5-p95 band) along each sleep episode, on the Adelaide sleep-night clock (same axis convention as Sleep Schedule).

Spectral characteristics

Table 11: Snore spectral summary by sleep night.

Night	Events	Centroid (Hz)	Centroid IQR (Hz)
05/07	200	417.5	364–446
06/07	199	510.6	434–568
08/07	200	404.2	335–795
09/07	200	318.2	305–337
11/07	200	496.8	334–553
12/07	200	337.1	300–421
13/07	200	366.7	333–427
14/07	199	418.7	379–503
15/07	200	323.7	310–389
16/07	200	422.6	363–520
17/07	200	506.6	470–555
18/07	199	371.3	310–623
Mean	200	407.8	—
± SD	± 0	± 68.6	—

Spectral metrics from representative SPL-timed snore events per sleep night (peak-aligned cache). Centroid IQR = 25th–75th percentile across events.



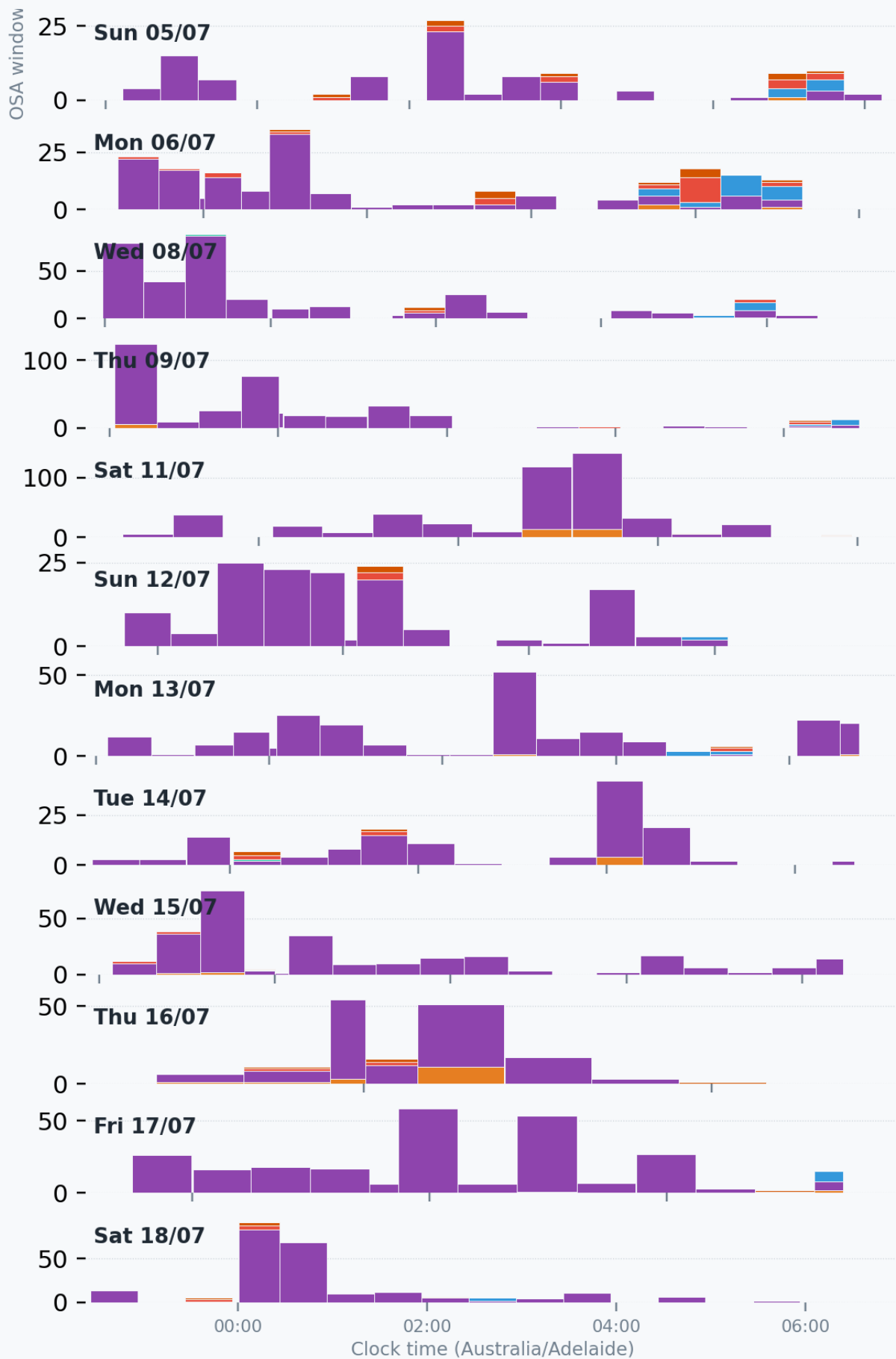
Typical log-power snore spectrum, spectral centroid across nights, and peak-aligned median mel spectrogram (−1 to +1 s relative to SPL peak) from representative segments.

OSA companion sounds

Table 12: OSA companion sounds by sleep episode (% segments).

Ep.	Snort	Gasps	Sigh	Wheeze	Cough	Pant	Groan	Thr. clr	Grunt
1	57.1	4.8	9.5	0.0	23.8	0.0	0.0	23.8	0.0
2	85.0	10.0	20.0	0.0	40.0	0.0	0.0	25.0	0.0
3	81.0	4.8	9.5	4.8	9.5	0.0	0.0	4.8	0.0
4	78.9	15.8	10.5	0.0	10.5	0.0	0.0	5.3	0.0
5	87.5	12.5	6.2	0.0	6.2	0.0	0.0	12.5	0.0
6	76.5	0.0	5.9	0.0	5.9	0.0	0.0	5.9	0.0
7	89.5	10.5	10.5	0.0	5.3	0.0	0.0	5.3	0.0
8	77.8	5.6	0.0	5.6	11.1	0.0	0.0	11.1	0.0
9	89.5	10.5	5.3	0.0	10.5	0.0	0.0	5.3	0.0
10	77.8	44.4	0.0	0.0	22.2	0.0	0.0	33.3	0.0
11	92.9	14.3	7.1	0.0	0.0	0.0	0.0	7.1	0.0
12	83.3	0.0	5.6	0.0	11.1	0.0	0.0	16.7	0.0
Mean	81.4	11.1	7.5	0.9	13.0	0.0	0.0	13.0	0.0
±SD	± 9.4	± 11.7	± 5.3	± 2.0	± 10.8	± 0.0	± 0.0	± 9.6	± 0.0

See Methods & Definitions (Section 14) for OSA companion sound scoring and segment prevalence calculation.



Gasp Snort Sigh Cough Throat clr

Vital Signs

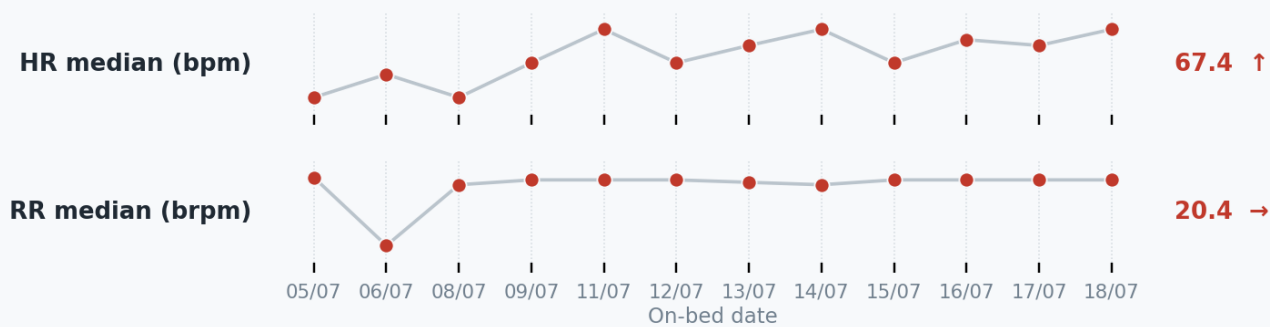
By sleep episode

Table 13: Vital signs by sleep episode.

Ep.	HR median (bpm)	HR IQR	RR median (brpm)	RR IQR
1	61.5	58.6–61.5	20.5	20.3–20.7
2	63.5	61.5–66.0	17.7	17.6–20.4
3	61.5	61.5–65.0	20.2	17.6–20.6
4	64.5	61.5–66.0	20.4	17.8–20.6
5	67.4	66.0–69.3	20.4	20.3–20.6
6	64.5	63.5–67.0	20.4	20.2–20.6
7	66.0	64.5–67.4	20.3	17.8–20.6
8	67.4	65.9–70.3	20.2	17.7–20.5
9	64.5	63.0–66.0	20.4	20.2–20.6
10	66.5	64.5–67.4	20.4	20.2–20.8
11	66.0	64.5–67.4	20.4	20.2–20.6
12	67.4	65.0–68.9	20.4	17.8–20.6
Mean	65.1	—	20.1	—
± SD	± 2.1	—	± 0.8	—

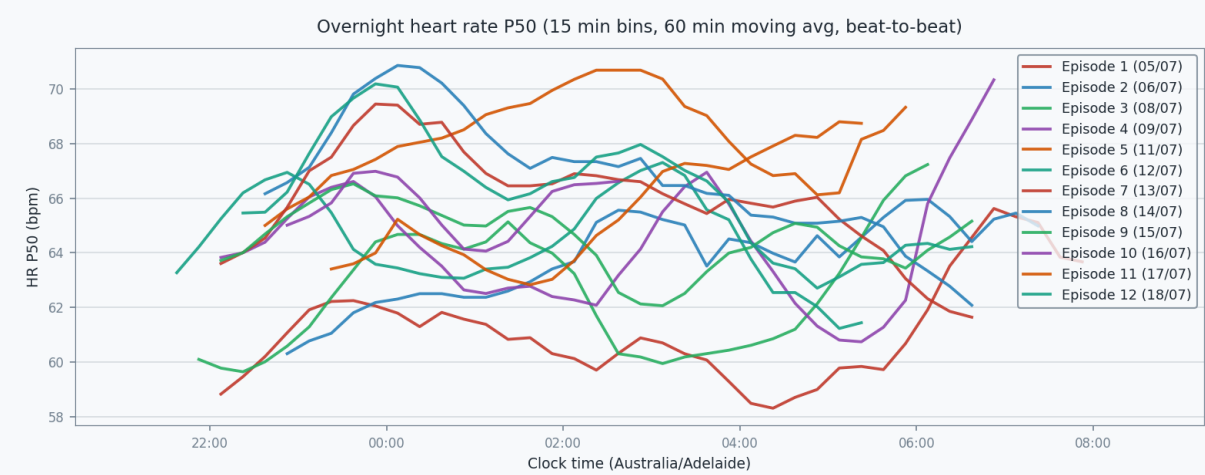
Episode medians and IQR (p25–p75) from reliable 15 s analysis windows during time in bed. Summary row reports mean ± SD of episode medians only. See Methods & Definitions (Section 14) for vital-signs processing.

Night-to-night variability



Episode-to-episode variability in heart rate, respiratory rate, and near-body temperature (Tables 13 and 14). Each row tracks one metric across sleep episodes in chronological order by on-bed date. The right-hand column shows the most recent episode value and a trend arrow.

Heart rate overnight profile



Overnight heart rate profile (P50 from beat-to-beat intervals, 15 min bins with 60 min moving average), overlaid by sleep episode on the Adelaide sleep-night clock. Episode table values use medians from reliable 15 s analysis windows.

Near-body temperature

Table 14: Near-body temperature by sleep episode.

Ep.	Mean (°C)	P5 (°C)	P50 (°C)	P95 (°C)	% win.
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Near-body mattress-contact temperature during in-bed time from 1 h after bed entry to 0.5 h before bed exit, excluding samples below 25 °C. Not core body temperature.

\FigVitalSignsThermistorProfile
(figure placeholder — add asset to compile with real plot)

Overnight near-body (mattress-contact) temperature profile: P50 line with P5–P95 band (15 min bins, 60 min moving average), overlaid by sleep episode on the Adelaide sleep-night clock. Table values use in-bed samples from 1h after bed entry to 0.5 h before bed exit (and $\geq 25^{\circ}\text{C}$).

Methods & Definitions

Recording and analysis scope. Sleep staging and event detection are performed on MedBug SENSE 1.0 recordings. When in-bed filtering is enabled, only periods identified as in-bed are submitted for inference.

Sleep episodes. In-bed sessions are merged into a single sleep episode when the gap between sessions is ≤ 30 minutes. A gap > 30 minutes starts a new episode. Time in bed (TIB) is the sum of in-bed session durations; gaps are excluded.

Sleep onset and continuity. Sleep onset is the first ≥ 4 consecutive non-Wake epochs (2 minutes). Sleep onset latency (SOL) is bed start to sleep onset. Wake after sleep onset (WASO) counts wake bouts ≥ 2 minutes after onset. Awakenings are the number of such wake bouts. Persistent sleep is bed start to the first ≥ 10 minutes of uninterrupted non-Wake sleep.

Stage latencies. N1, N2, and N3 latencies are measured from bed start to the first ≥ 2 minutes sustained epoch of each stage. REM latency is measured from sleep onset to the first ≥ 2 minutes sustained REM.

Sleep efficiency. $SE = TST / TIB \times 100\%$, where TST excludes Wake epochs within analysed periods.

Respiratory and arousal events. Event rates are expressed per hour of total sleep time (TST). Events are counted only during TST (non-Wake epochs) within each in-bed sleep episode. An arousal event is a contiguous period of model-predicted arousal lasting ≥ 5 s (PSG-style minimum duration). Respiratory events (central apnoea, obstructive apnoea, mixed apnoea, hypopnoea) are contiguous flagged seconds lasting ≥ 10 s. Shorter periods are excluded from event counts and duration summaries. Respiratory arousal and other arousal are classified by the MedBug SENSE arousal model; limb-movement, PLM, and spontaneous arousals are not scored separately. Event classification follows the MedBug SENSE respiratory and arousal models configured in the analysis pipeline.

Ventilation and respiratory drive. Ventilation and drive are model-predicted ordinal classes (0–15) from the MedBug SENSE ventilation/drive multitask model. Episode means are arithmetic averages during TST within each in-bed sleep episode. **Ventilation burden** is the percentage of TST with ventilation class below 50% of the mean wake ventilation class in the same sleep episode (wake epochs within that episode only). **Unstable drive** is the percentage of TST spent in consecutive 3-minute epochs where drive spread (90th percentile minus 10th percentile) exceeds 6. Monitoring-period summaries pool all TST seconds across episodes while retaining episode-specific wake references for ventilation burden. **Event-stratified ventilation and drive** use the same qualifying respiratory events as above (≥ 10 s during TST within each sleep episode). Means are computed over TST seconds in each context; shorter flagged periods are treated as no respiratory event. When multiple event types overlap at the same second, priority is CA > OA > MA > HYP.

Snoring acoustics. Snore metrics are derived from MedBug SENSE audio segments within each in-bed sleep episode (same episode definition as Sleep Summary). A 10.24 s analysis window is classified as snoring when the AST Snoring score is ≥ 0.1 . SPL-timed snore events are counted only inside AST-gated snoring regions and must exceed the segment quiet reference (5th-percentile SPL) plus 6 dB. **Snore time** is the sum of SPL-timed snore duration across segments whose start time falls within the episode. **Snore burden** is snore time as a percentage of total sleep time (TST) from Sleep Summary. **OSA companion sounds** (snort, sigh, gasp, wheeze, cough, pant, groan, throat clearing, grunt) are counted as AST windows with class score ≥ 0.1 ; one window equals one episode. **OSA segment prevalence** in the snore summary table is the percentage of in-bed audio segments in each sleep episode with at least one qualifying window for that sound type. Peak SPL summaries use the median and 95th percentile of segment peak levels during snore.

Vital signs. Heart rate (HR) and respiratory rate (RR) are derived from piezo plethysmography during each in-bed sleep episode (same episode definition as Sleep Summary). Signals are band-pass filtered and converted to a respiration-ready waveform; HR and RR are estimated on non-overlapping 15 s windows with reliability gating. **Episode table and sparklines** report the median and interquartile range (IQR) of reliable 15 s chunk values during time in bed (TIB). **Overnight HR profile** uses beat-to-beat instantaneous HR: the 50th percentile in 15 min clock bins, smoothed with a 60 min moving average, overlaid by episode on the Adelaide sleep-night clock. **Near-body temperature** is measured by an NTC thermistor on the mattress surface (1Hz). Episode summaries use in-bed samples from 1 h after bed entry to 0.5 h before bed exit, excluding samples below 25 °C (no thermal contact). Overnight temperature profiles report P5, P50, and P95 in 15 min clock bins with a 60 min moving average; this is mattress-contact temperature, not core body temperature, and is not intended for clinical fever diagnosis.

Timezone. All clock times and sleep-night windows use Australia/Adelaide. Sleep nights are anchored at 20:00–20:00 next day.