

# Impact of guselkumab in real life on sleep quality collected by a wearable device in patients with moderate to severe psoriasis: Data from the CASSIOPEE study

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## Background

Moderate-to-severe psoriasis (PsO) impairs patients' quality of life (QoL). Beyond its physical impact, PsO has social and psychological implications <sup>1,2</sup>

- Up to 75% of psoriatic patients experience moderate to severe impairment in their QoL, including sleep disturbances.<sup>3</sup>
- Nearly 50% of participants reported that psoriasis affected their sleep at least once a month. Over 11% of these patients experienced sleep disruptions for more than 15 days per month.<sup>4</sup>

Guselkumab (GUS) selectively targets and binds with high specificity and affinity to IL-23<sup>5</sup>. GUS is indicated for the treatment of adult patients with moderate-to-severe plaque PsO who are candidates for systemic therapy or phototherapy.<sup>6</sup>

## Objective

The objective of this study was to assess the real-world impact of GUS treatment on patients' QoL, specifically sleep quality.




## Methods

Prospective, non-interventional multicenter study conducted in France.

- PsO patients were included after GUS initiation by hospital-based dermatologists according to routine clinical practice.
- Patients were followed for 6 months after GUS initiation.
- PsO severity was clinically evaluated at month (M)0, M3, and M6, and QoL was assessed using self-reported questionnaires (Figure 1).
- Sleep-related parameters, including a composite score evaluating sleep quality (Table 2), were collected using a wearable device worn day and night by patients throughout the study and analyzed over 7 full days within a defined interval for each visit.

## Results

### Baseline characteristics of psoriatic patients who initiated guselkumab

Baseline Characteristics			Effectiveness population (N = 207)
Demographics			
	Age, yrs, mean (SD)		43.9��12.1
	Female		42%
	BMI, kg/m��,mean (SD)		27.9��6.3
Disease Characteristics			
	PsO disease duration, yrs, mean (SD)		20.9��13.2
	PGA score		
	Mild (2)		25.6%
	Moderate (3)		50.7%
	Severe (��4)		23.7%
Prior Treatment for PsO			
	Conventional Systemic treatment <sup>1</sup>		84.1%
	Biologic therapy <sup>2</sup>		26.1%

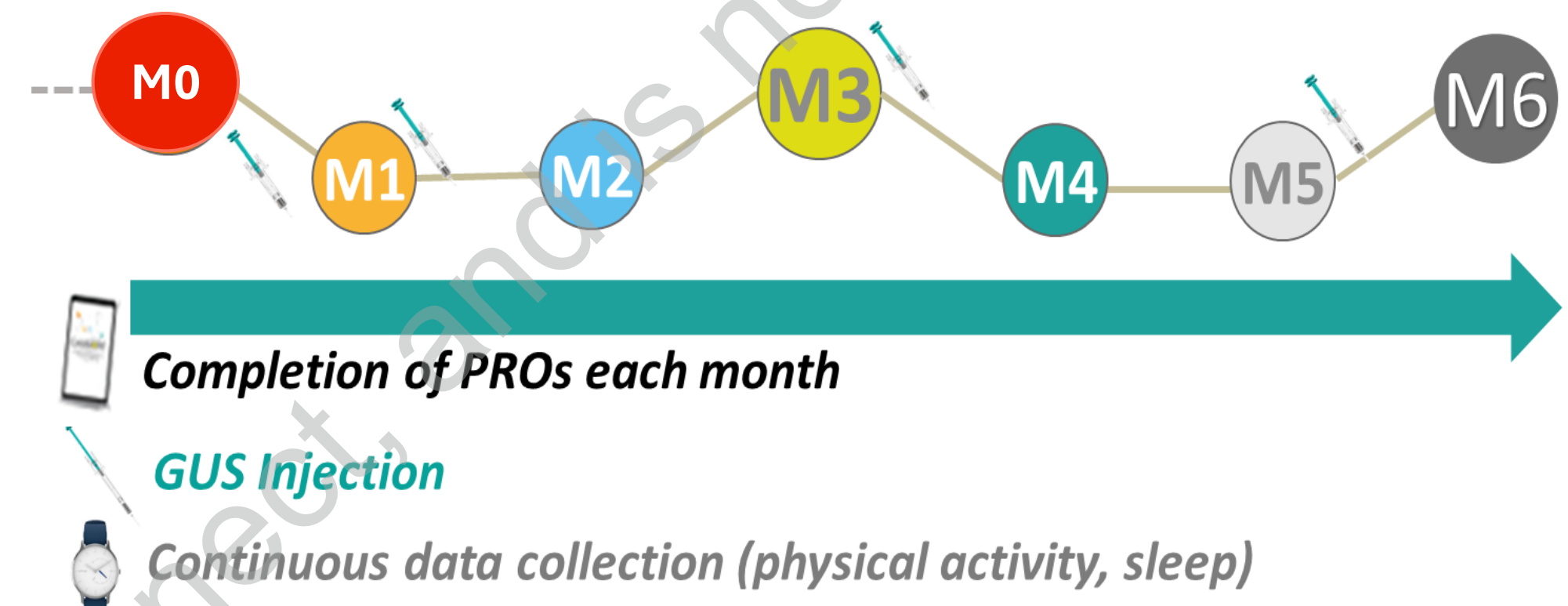
BMI: Body Mass Index; SD: Standard Deviation; PGA: Physician's Global Assessment; 1: including methotrexate, ciclosporin, acitretin, UVB phototherapy, PUVA therapy; 2: including adalimumab, secukinumab, ustekinumab, ixekizumab, etanercept.



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- After GUS initiation, PsO severity decreased, and QoL, itch, and pain scores improved.
- Patients receiving GUS showed rapid improvements in sleep duration and quality.
- Patients with an initial poor sleep patterns experienced more normal sleep duration (6-7 hours/night) with GUS treatment.

Figure 1: Study diagram



Patients receiving GUS showed rapid improvement in sleep duration and quality, with a notable gain (>15 minutes/night) for 74.5% of patients at M6.

### Sleep quality at M0, M3, M6 in the cohort with data collected by a connected watch (N=215)

	M0		M3		M6	
	n	M (�� SD)	n	M (�� SD)	n	M (�� SD)
Daily sleep in hours*	178	5,6 �� 1,3	158	6,7 �� 1,6	117	6,8 �� 1,5
Weekly sleep in hours*	178	39,3 �� 9,2	158	47 �� 11,1	117	47,6 �� 10,2
Weekly light sleep in hours*	178	23,2 �� 6,7	158	28,3 �� 9	117	27,7 �� 7,8
Weekly deep sleep in hours*	178	16 �� 5,9	158	18,7 �� 7	117	19,9 �� 7,6
Median weekly sleep gain in minutes*	-	-	135	55,3	98	60,7
Daily QS score*	192	47,6 �� 15,4	172	55,2 �� 19,7	130	56 �� 18,5
High sleep quality (QS score ��70)	192	4,2%	172	29,1%	130	23,8%
BMI<25 : underweight and normal (n=77)	70	7,1%	60	38,3%	45	37,8%
25��BMI<30 : overweight (n=64)	57	1,8%	52	25,0%	42	23,8%
BMI��30 : obesity (n=70)	61	1,6%	60	23,3%	42	9,5%
Mean gain in QS score*	-	-	156	6,9 �� 19,5	115	5 �� 20,5
(95% CI)				(3,8-10)		(1,2-8,8)
Mean number of nightly awakenings �� SD	192	2 �� 1,5	172	2,1 �� 1,4	130	2,1 �� 1,2

\*Mean    SD (standard deviation); \*compared to M0  
Note: the QS score is a composite score out of 100, specific to the connected device evaluating sleep quality and calculated based on total sleep duration, proportion of deep sleep, interruption (duration of nightly awakenings), and regularity of bedtime and waking times. A score of 70 or higher indicates high sleep quality (<50: low; [50;70]: moderate).

After GUS initiation, PsO severity decreased, and QoL, itch, and pain scores improved.

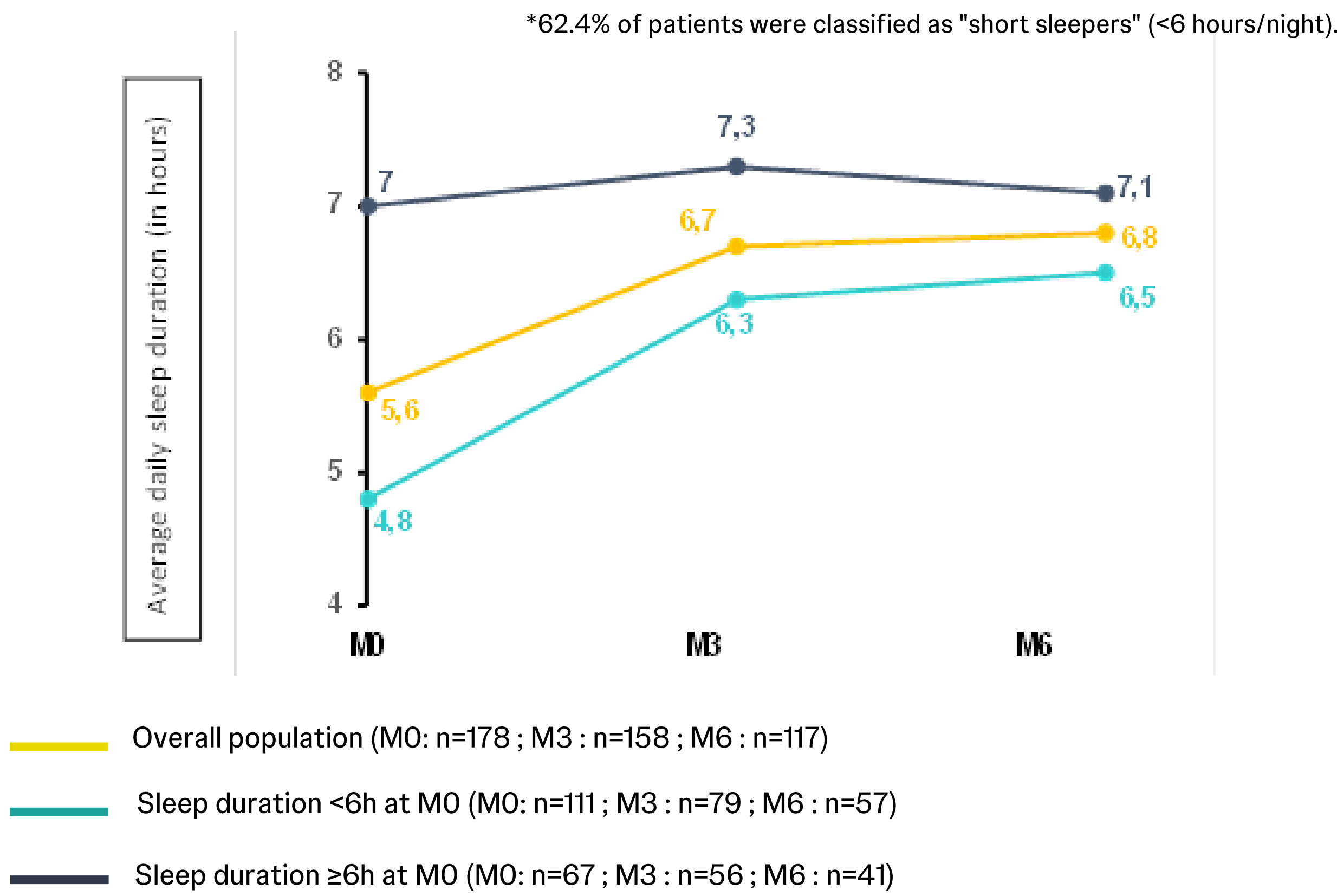
Mean scores (   SD) for psoriasis severity and quality of life measures at M0, M3 and M6 among patients with available data (N=207 at baseline)

	Score	Scale	M0 (N=207)		M3 (N=162)		M6 (N=144)	
			n	M �� SD	n	M �� SD	n	M �� SD
QoL	Dermatology Life Quality Index (DLQI)	0-30*	188	12,8��6,7	160	3,9��5,1	143	2,4��4,1
Psoriasis severity	Physician's Global Assessment (PGA)	0-4*	207	3��0,7	141	0,9��0,9	176	0,6��0,8
Fatigue	Functional Assessment of Chronic Illness Therapy – Fatigue Scale (FACIT-F)	0��52	190	33,7��12	157	35,8��11,6	140	36,6��12,2
Pruritus	Numeric Rating Scales – Itching (NRS)	0-10*	191	6,2��2,8	156	2,8��2,6	137	2,1��2,3
Skin pain	Numeric Rating Scales – Skin Pain (NRS)	0-10*	191	5,1��2,7	156	2,1��2,3	137	1,7��2,2

\*The higher the score, the worse the situation

Short sleepers\* achieved greater gains in sleep duration than patients initially sleeping   6 hours/night (+104.4 minutes vs +23 minutes, respectively, at M6).

### Improvements in average daily sleep duration (in hours) through 6 months



Patients with initial poor sleep patterns experienced more severe itching than long sleepers (NRS   9 vs   3, respectively: OR=5.2 [1.5-17.6], p=0.0077); 81.8% of patients with NRS  9 were short sleepers.