

**Prevalence, Evolution and Risk Factors
of Insomnia Comorbid with Cancer Over
a 10-Month Period**

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Acknowledgments

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 - Julie Villa, M.Ps.
 - Aude Caplette-Gingras, B.A.
- Research assistants
- Grantors:
 - Canadian Institutes of Health Research
 - Fonds pour la recherche en santé du Québec

Prior Studies

- Prevalence of insomnia symptoms: 30% to 50%
Savard & Morin (2001), *JCO*
- Prevalence of insomnia syndrome: 18% to 19%
 - Sleep onset latency (SOL) > 30 min or wake after sleep onset (WASO) > 30 min
 - At least 3 nights/week
 - Sleep efficiency < 85%
 - Causes marked distress or impaired daytime functioning
 - Duration > 1 monthSavard et al. (2001), *Sleep*
Savard et al. (2005), *Psycho-Oncology*

Limitations of Previous Studies

- Heterogeneous definitions and measures of insomnia
 - Difficult to compare prevalence rates across studies
- Convenient samples
 - Generalization?
- Prevalence rates across cancer sites, stages, and treatments understudied
- Cross-sectional design:
 - Incidence and remission (i.e., natural course) and risk factors during cancer care unknown

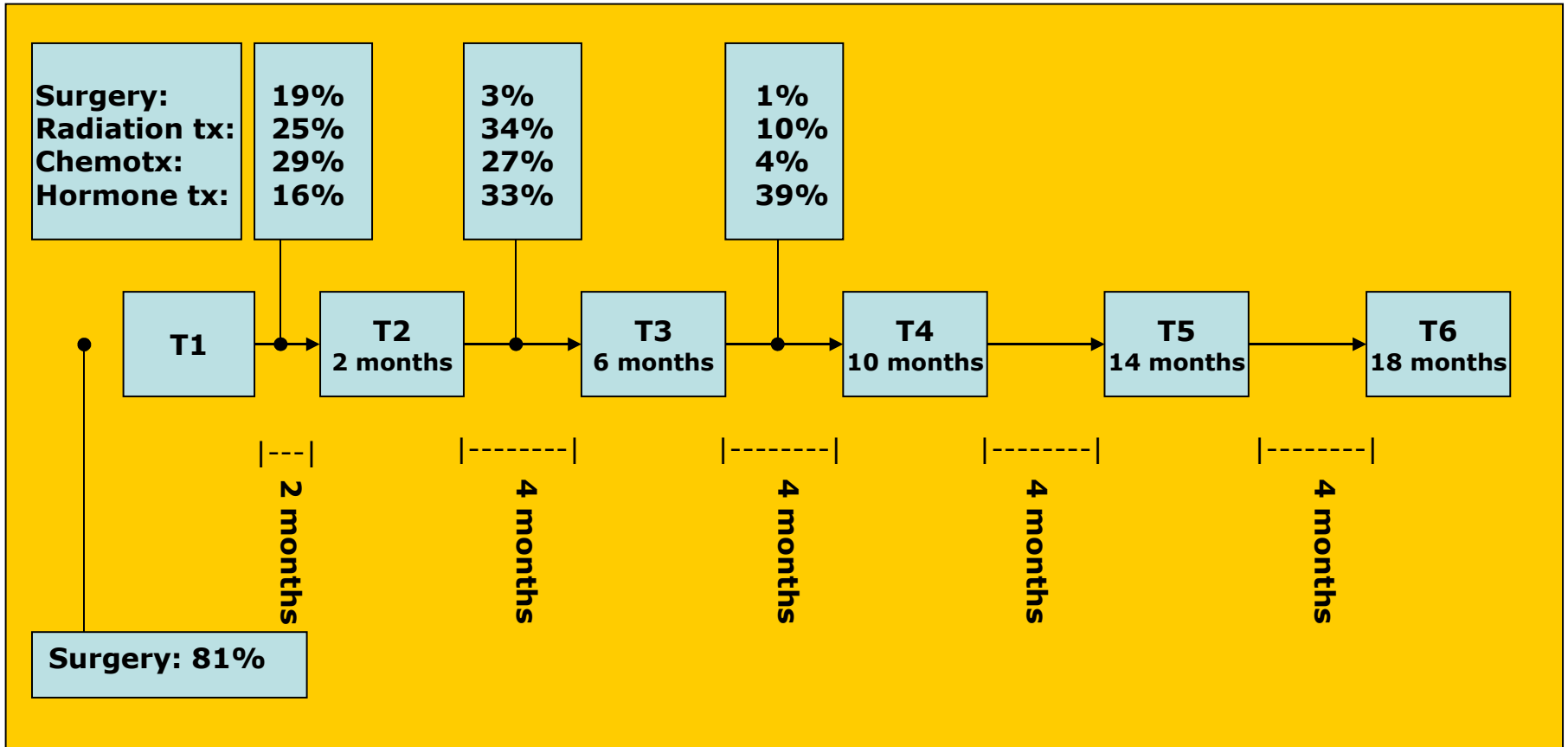
Study Goals

- Assess the prevalence, incidence and natural course of cancer-related insomnia in a large sample of patients with mixed cancer sites
- Identify risk factors of cancer-related insomnia

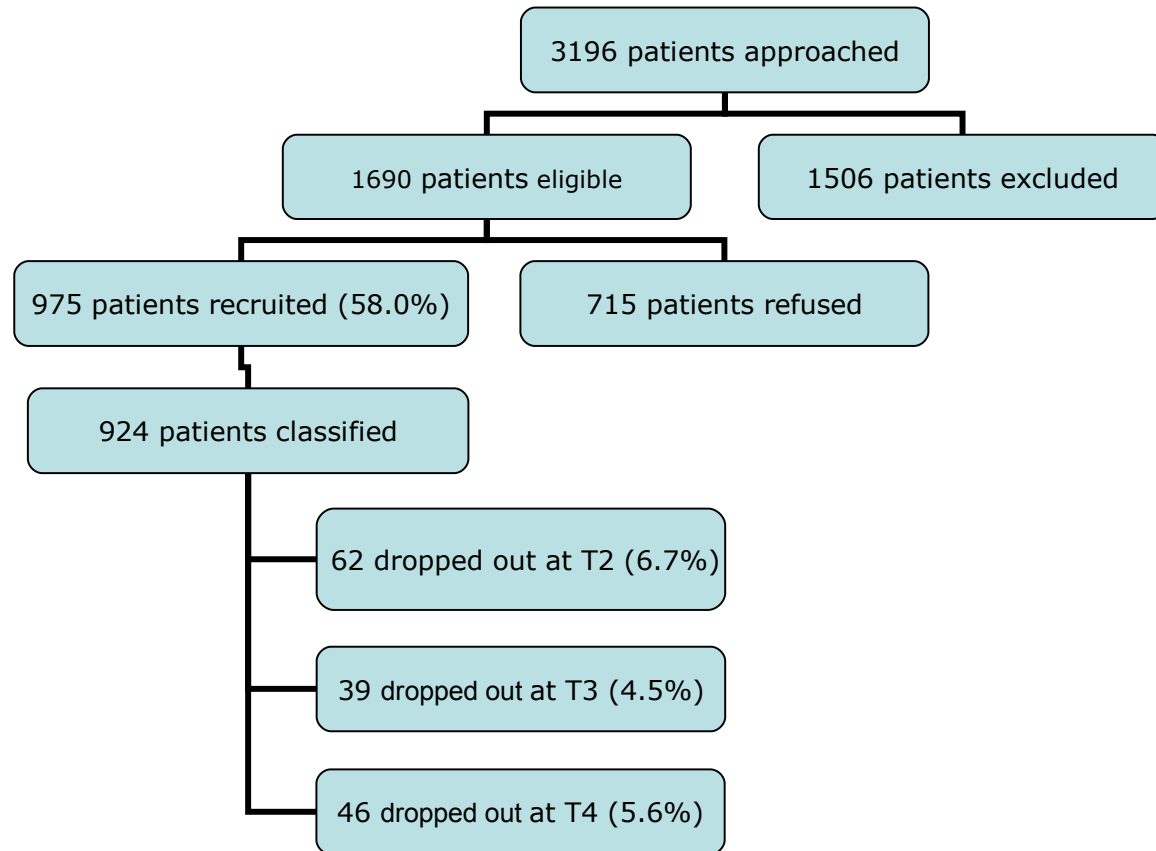
Participants' Recruitment

- All patients (18 to 80 years of age) scheduled to undergo surgery after a first dx of non-metastatic cancer at L'Hôtel-Dieu de Québec were approached at their pre-operative visit
- Exclusion criteria:
 - Life expectancy < 1 year
 - To have received neoadjuvant cancer treatments
 - Severe cognitive impairments or psychiatric disorder

Study Design



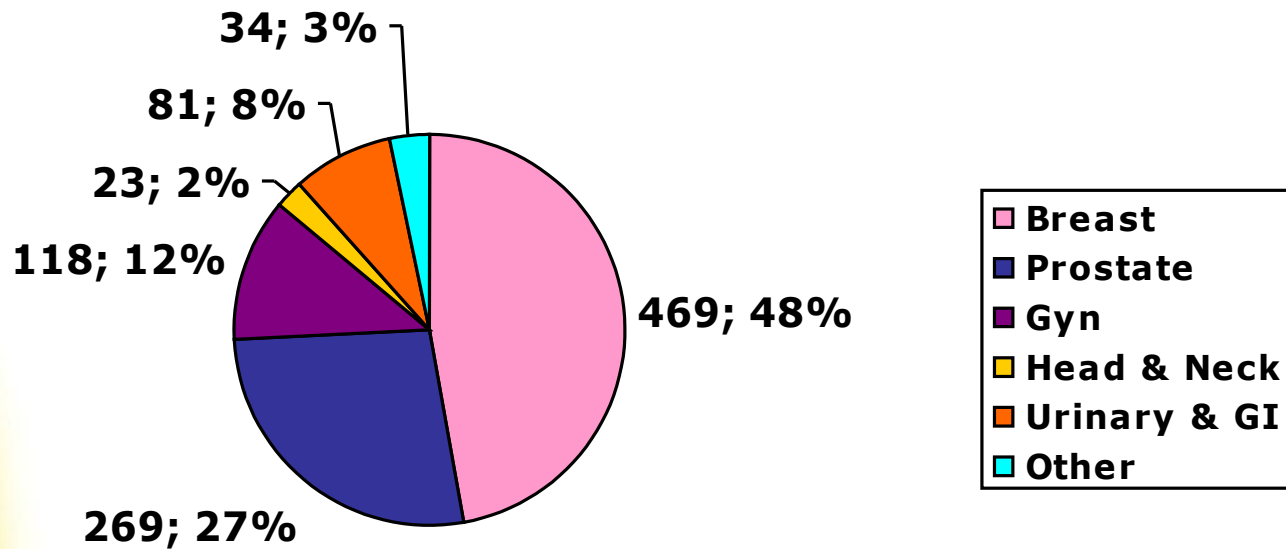
Recruitment Statistics



Demographic Characteristics at Baseline

Variable	<i>M</i>
Age	57.2 yrs (21 to 79)
	%
Female gender	64.1
Married or cohabitating	67.3
Education completed College or higher	50.8
Occupation Work (full or part-time)	39.2

Distribution of Cancer Sites



Dependent Variables

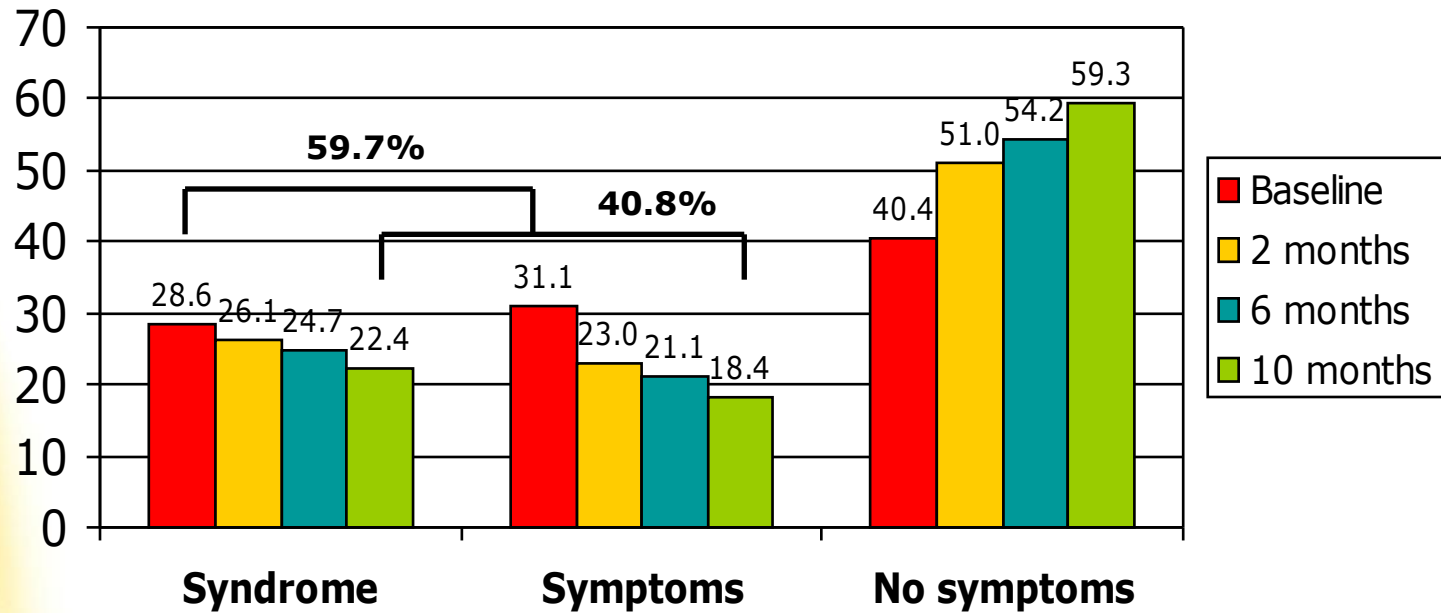
- Insomnia Interview Schedule (Morin, 1993)
 - 3 groups:

No symptoms	Insomnia symptoms	Insomnia syndrome
<ul style="list-style-type: none"> •No subjective complaint of sleep difficulties OR Use of hypnotic medication < 1 night/week 	<ul style="list-style-type: none"> •Subjective complaint of sleep difficulties but not meeting criteria for an insomnia syndrome OR Use of hypnotic medication < 3 and ≥ 1 nights/week 	<ul style="list-style-type: none"> •Subjective complaint of sleep difficulties •SOL or WASO > 30 min. •≥ 3 nights/week •≥ 1 month •Functioning impaired or psychological distress OR •Use of hypnotic medication ≥ 3 nights/week

Independent Variables (precipitating factors)

- Medical variables (e.g., cancer treatments)
- Adaptation of the Memorial Symptom Assessment Scale (Portenoy et al., 1994)
- Inventory of Recent Life Experiences for Cancer Patients (Fillion, 2001)
- List of Threatening Experiences (Brugha et al., 1985)
- Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983)
- Fear of Cancer Recurrence Inventory (Simard, Savard et al., 2009)
- Coping with Health Injuries and Problems (Endler et al., 1998)
- Multidimensional Fatigue Inventory (Smets et al., 1995)

Overall Prevalence (%) of Insomnia Across Time

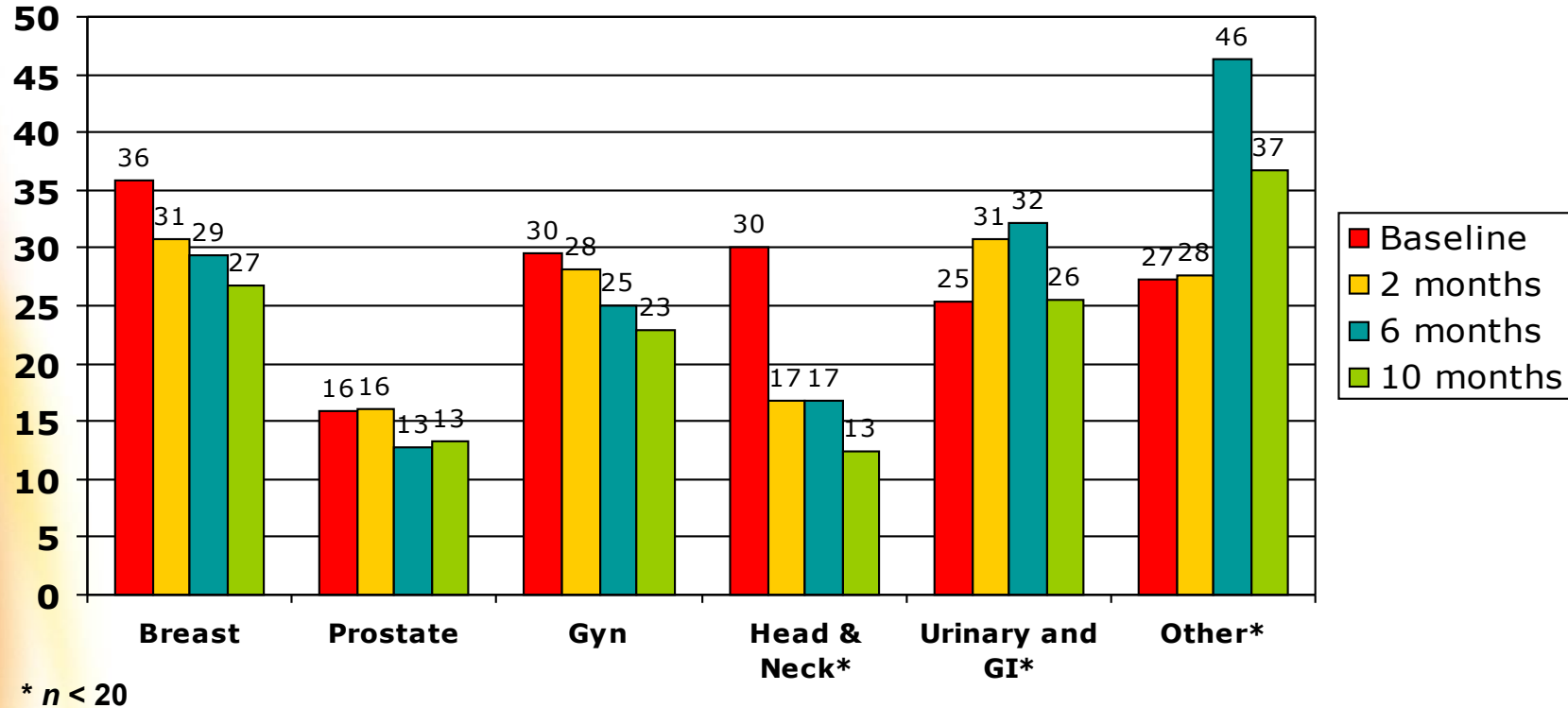


Time effect
 $F(3,2315) = 6.30, p < .01$

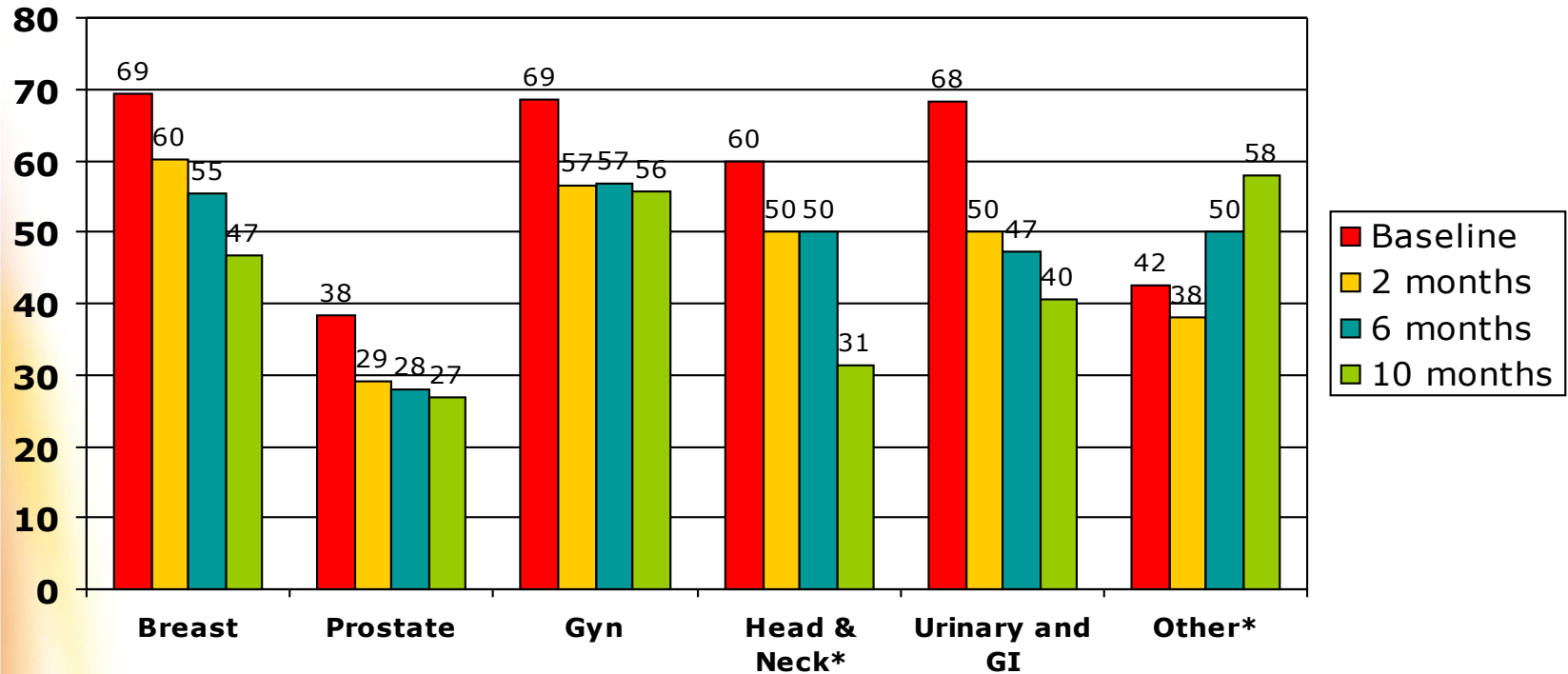
Time effect
 $F(3,2315) = 18.06, p < .001$

Savard et al. (unpublished)

Prevalence of Insomnia (%) Syndrome Across Cancer Sites and Time

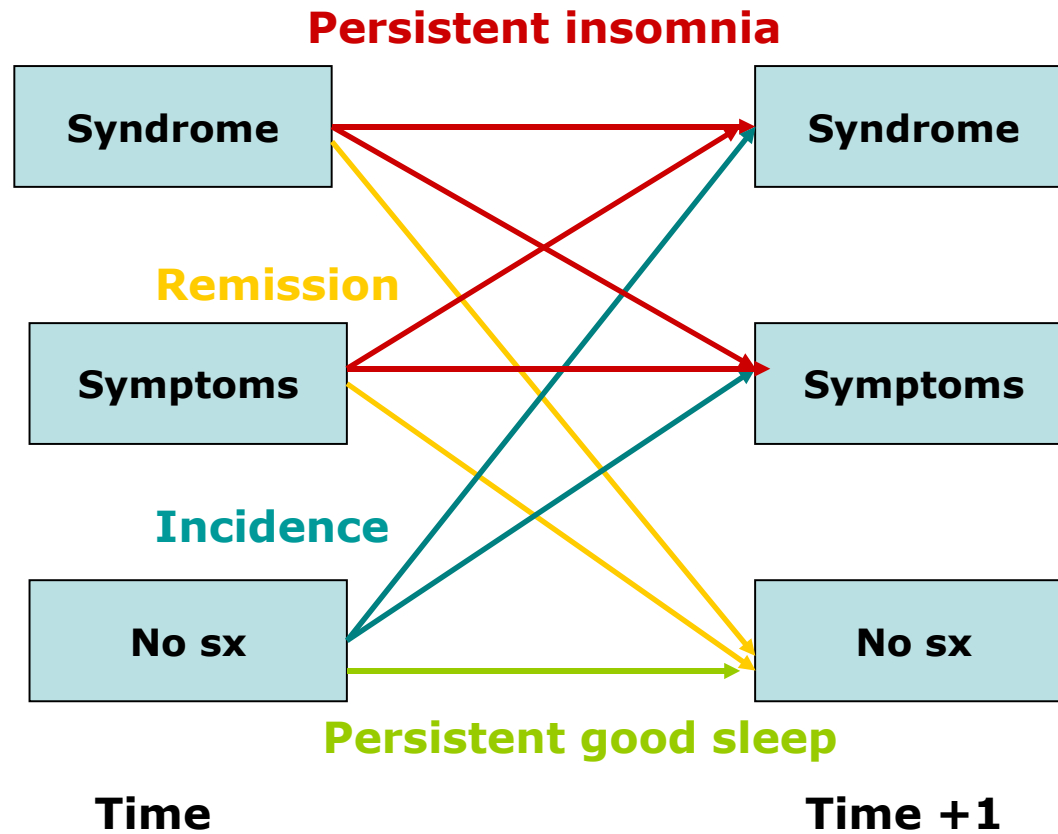


Prevalence of Insomnia (%; syndrome and sx) Across Cancer Sites and Time



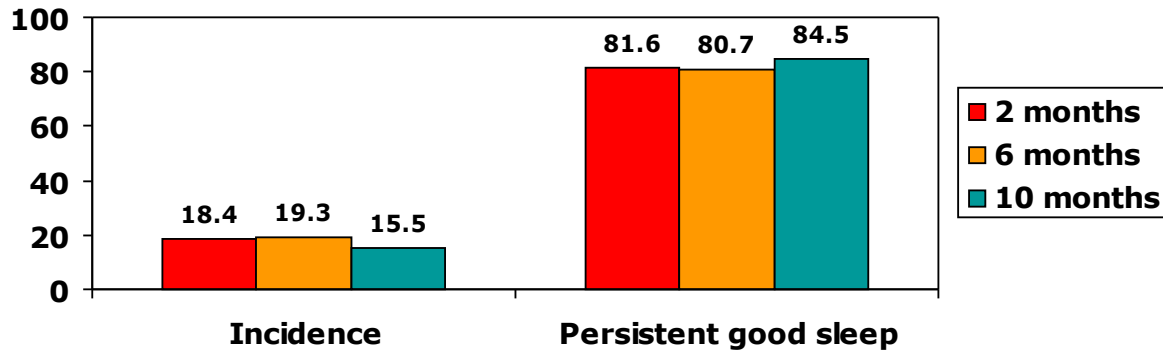
* $n < 20$

Definitions

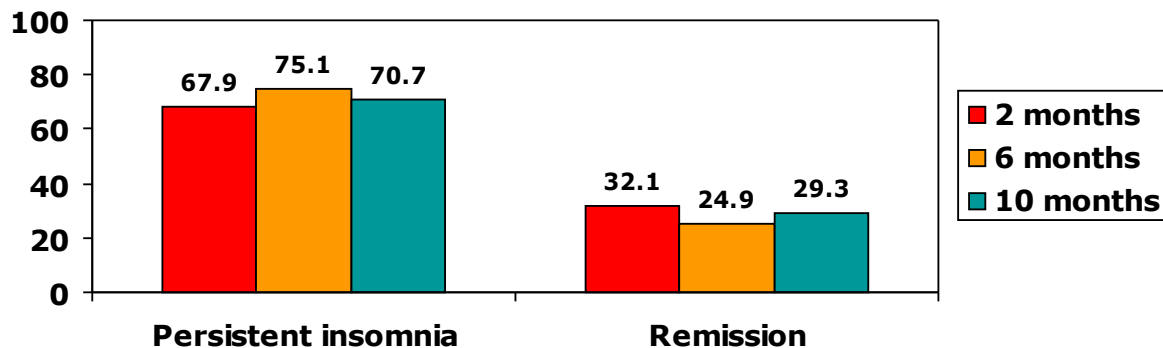


Incidence, Persistence, and Remission Rates

Good Sleepers

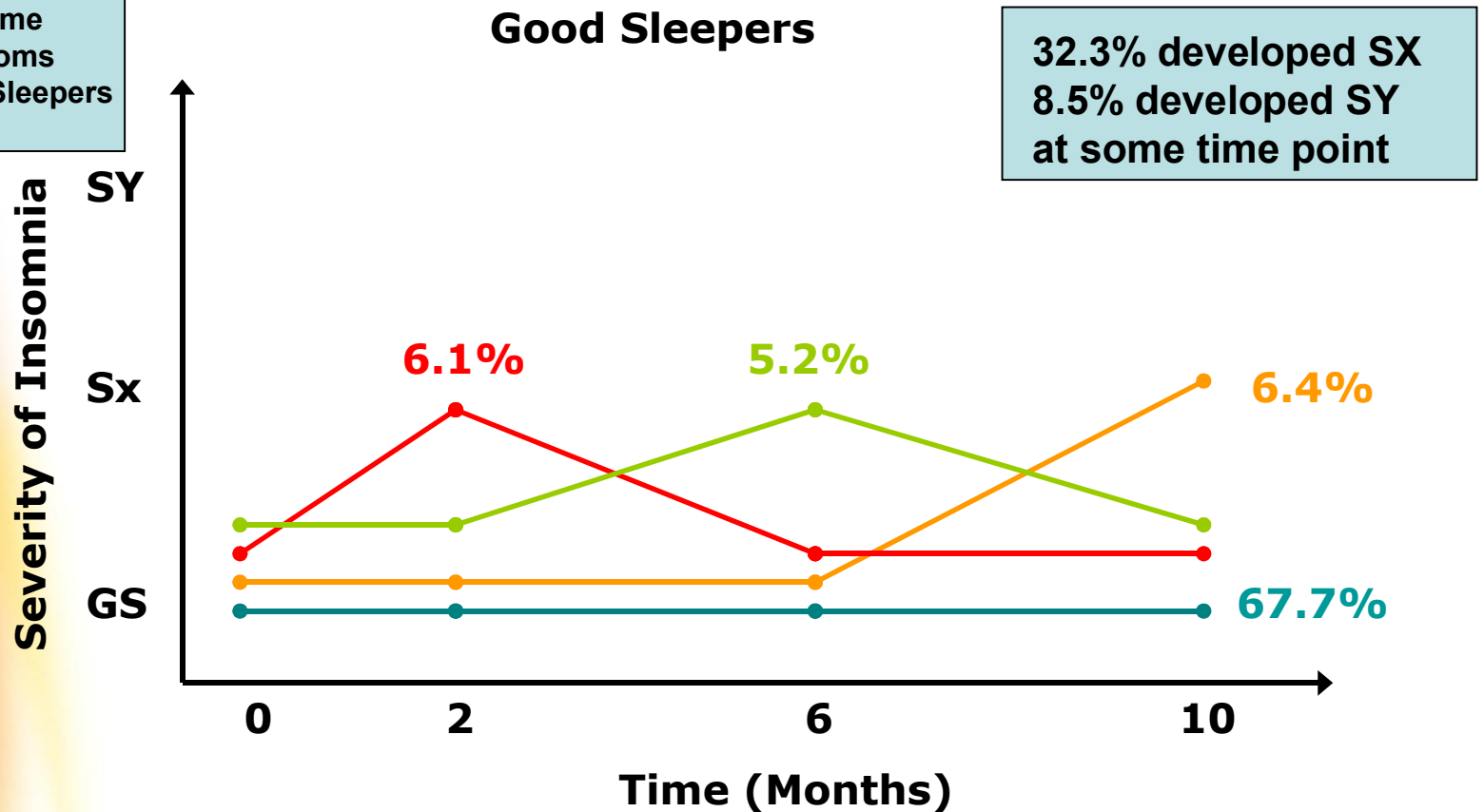


Insomniacs



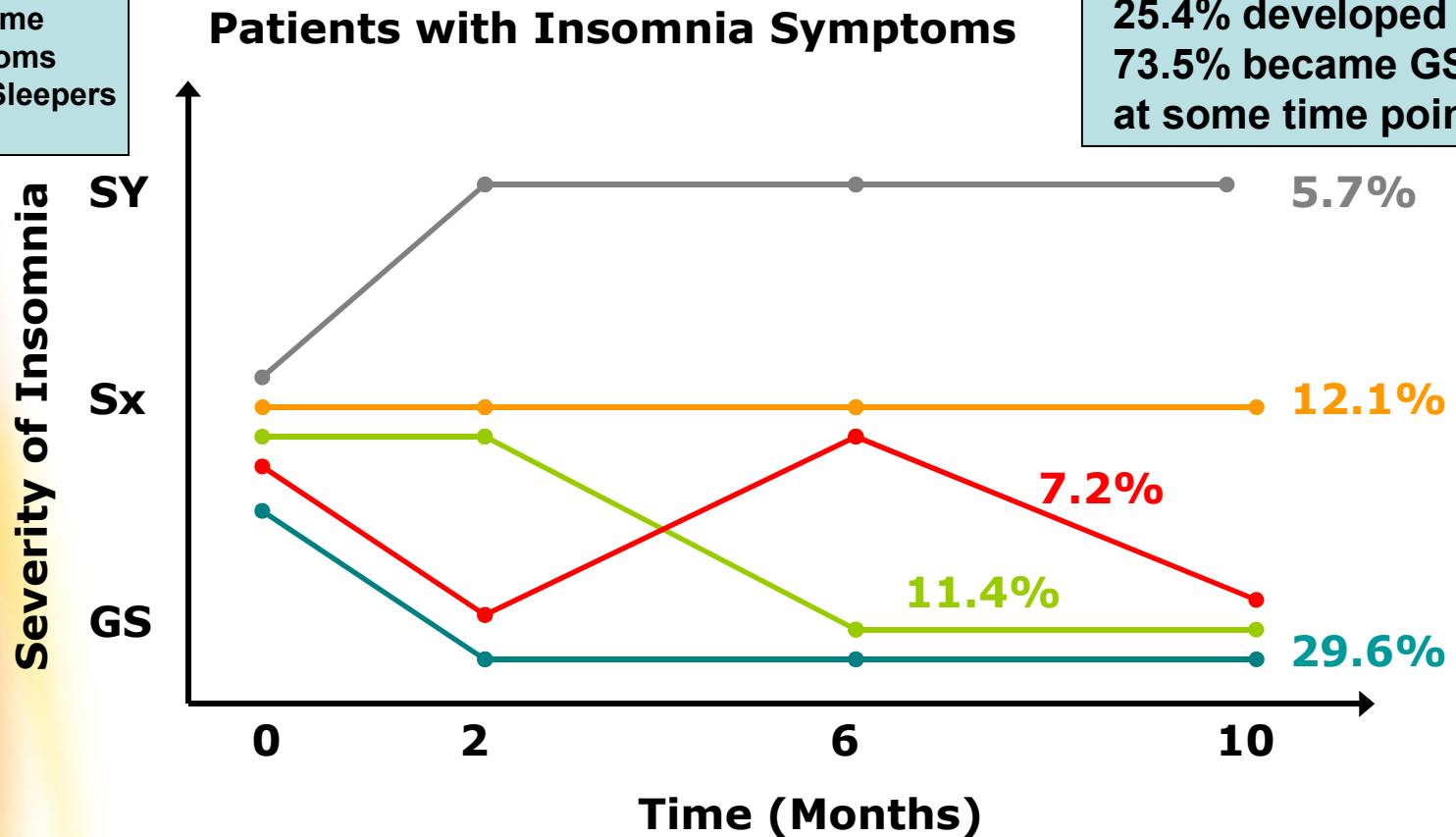
Most Frequent Sleep Trajectories

SY = Syndrome
Sx = Symptoms
GS = Good Sleepers



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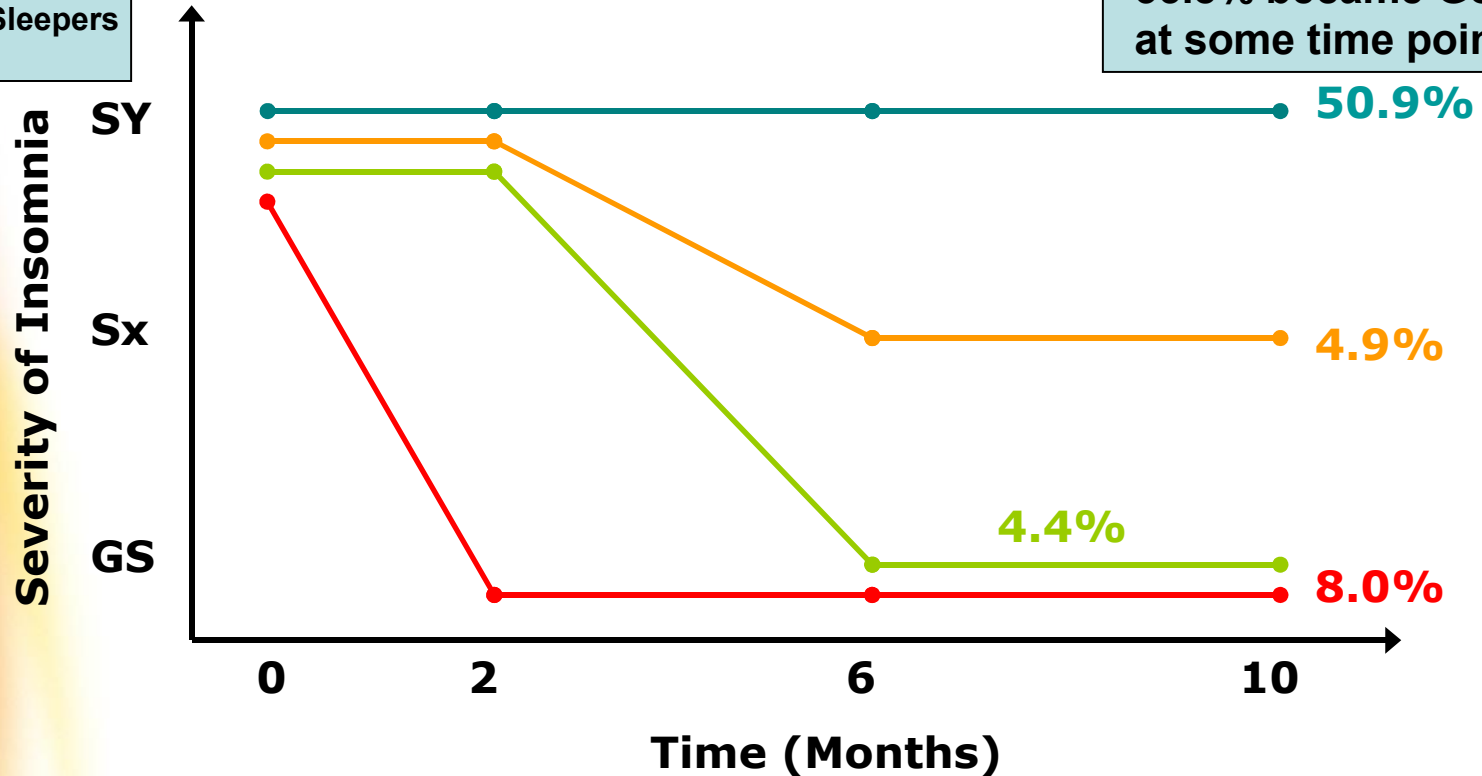


Most Frequent Sleep Trajectories

SY = Syndrome
Sx = Symptoms
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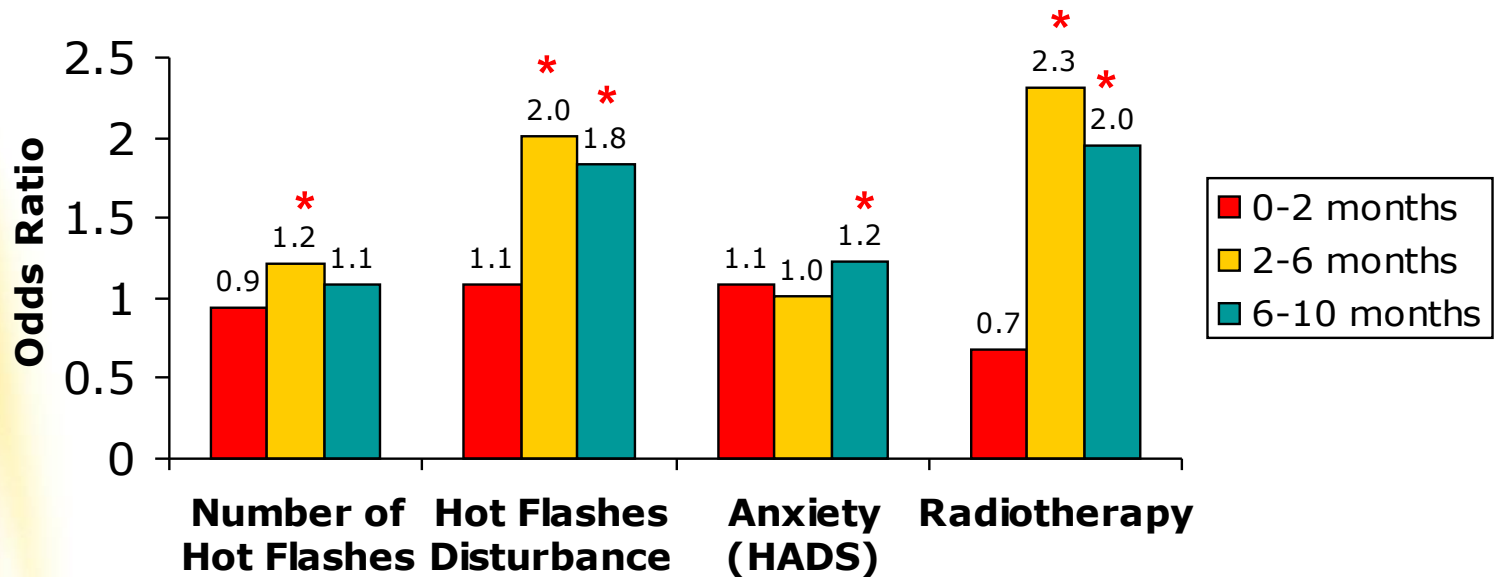
Patients with Insomnia Syndrome

30.1% became SX
35.8% became GS
at some time point



Precipitating Factors for Insomnia Incidence

- Increases of physical symptoms severity, nocturnal hot flashes, anxiety and depressive symptoms, fatigue and administration of adjuvant cancer treatments were all significantly associated with insomnia incidence (main effects).



Conclusion

- The prevalence of insomnia is very high in cancer patients during the peri-operative period and then progressively decreases over the next 10 months.
- Breast and gynecological cancer patients are particularly at risk of developing insomnia, while patients with prostate cancer are less at risk.
- In spite of this general decrease in the prevalence of insomnia over time, the incidence, persistence and remission rates remained fairly stable.

Conclusion (continued)

- The study revealed various sleep trajectories:
 - Most good sleepers at T1 remained good sleepers throughout the study (68%)
 - 25% of the patients with insomnia symptoms at T1 developed an insomnia syndrome at some point; 6% developed a persistent insomnia syndrome
 - In most patients with an insomnia syndrome, the syndrome persisted throughout the study (51%)
- These findings suggest the importance of offering effective sleep management strategies soon following the surgery

Conclusion (continued)

- This study identified several significant risk factors for insomnia incidence (e.g., physical and psychological symptoms, hot flashes, administration of adjuvant treatments).
- The influence of hot flashes, anxiety and radiotherapy varied as a function of time.