

Canadian Association of Occupational Therapists  
**Product Recognition Program**

**PropAIRSleeper™**



Available online at [www.caot.ca/prp](http://www.caot.ca/prp)





Report last updated April, 2018

### Disclaimers

The information compiled in this report was designed for informational purposes and to communicate the final conclusions of a documented review process. The decision to award a seal of recognition **does not supersede or replace other codes, requirements or regulations** set by authoritative organizations of a specific jurisdiction. CAOT encourages health professionals to act in a responsible manner and according to best practices for the recommendation, assessment, installation and maintenance of this product. It is critical to **follow the recommendations set by the manufacturer and/or distributor** of this product and, when relevant, engage domain expert for training, use, installation, maintenance and repair.

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**Specific questions** related to this product(s) (including usage, availability, pricing, etc.) should be addressed directly to the manufacturer and/or distributor. Please visit the company website: [www.embraceair.com](http://www.embraceair.com). Concerns or questions related to the content of this report should be addressed to Julie Lapointe, Director of Knowledge Translation Programs, at [jlapointe@caot.ca](mailto:jlapointe@caot.ca) or at 1(800) 434-2268 ext. 260.

The conclusions presented in the current report are derived from the best information available. In the case that new information becomes available and grants a modification to the conclusions, CAOT reserves the right to update and issue a new report of this product at any time.

### Acknowledgement

The generation of this report would not have been possible without the contribution of occupational therapists and members of the Canadian Association of Occupational Therapists (CAOT).



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## Executive Summary

The PropAIRSleeper™ is an inflatable air cushion with an integrated air pump that is placed on the lower back and tied around the waist to support the lower back spine when a user lies on his or her back (i.e. supine position) or lies on his or her side. This product is intended to fill the gap between the lower back and the mattress in order to keep the spine in a neutral alignment, minimize pain and stress to the spine joints, and improve sleep positioning. Reviewers were unanimous and recommended that the PropAIRSleeper™ be accepted for the CAOT Product Recognition Program. Information regarding the performance of the product as well as recommendations on its usage are provided in this report.



PropAIRSleeper™ is recognized by CAOT.



## Review report

### The purpose of this product

The PropAIRSleeper™ is an inflatable air cushion with an integrated air pump that is placed on the lower back and tied around the waist to support the lower back spine when a user lies on his or her back (i.e. supine position) or lies on his or her side. This product is intended to fill the gap between the lower back and the mattress in order to keep the spine in a neutral alignment, minimize pain and stress to the spine joints, and improve sleep positioning.

### Performance of the product (efficacy, usability, safety, reliability, durability)

- The reviewers indicated the product is made from comfortable and washable quality fabric and had no concerns regarding the durability of this product. The padding around the air tube ensures extra comfort.
- Reviewers were unanimous in their review about the uniqueness of this product to support lumbar spine curvature of users in a lying position (i.e. lying on the back or on the side).
- For the average user it would be easy to use. The air inflation can be set at the desired level and adapted to the changing needs of users. One reviewer noted that some users might want to readjust the air inflation level systematically every day to ensure the proper spine alignment is attained.
- The PropAIRSleeper™ has been found to be very portable and small enough to be carried in a suitcase during travel.
- An advantage of this product is that its impact on others is minimal compared to other adaptive sleep aids (i.e. specialized mattresses or pillows). This product is “attached” to the individual using the product, thus it only impacts the person using it.
- Reviewers found that donning this product was simple and easy, and that the instructions on the back of the box were very clear and helpful.
- For sleepers who move a lot, the position of the PropAIRSleeper™ might need to be readjusted regularly. As demonstrated in the instruction sheet, there is also a way to tie the product around the waist to prevent some if not all readjustment needs.
- Some users might require an adjustment period to adapt to the presence of air cushion. Although the length of the adaptation period is not documented in the literature and is a highly personal matter, one of our reviewers suggests that an average of 2 weeks to get use to the PropAIRSleeper™ is normal. Information about trial and return policies can be obtained by contacting the company (see contact information on page 2 of this report).
- It was suggested this product would require regular washing (according to instructions) and regular monitoring to ensure the air cushion is not punctured. This product requires users to have moderately functional fine motor skills for donning the belt and manipulating the air pump. Safety: Reviewers expressed concerns regarding the safety of this product for consumers who have pre-existing skin integrity issues in this area, decreased sensation, and decreased ability to independently tie or reposition this product. It was felt that the integrated air pump could pose a hazard to these users if they were to lie on it for a long period of time.



The company addresses this issue by including warnings in the instruction sheet. There were no predicted safety concerns with the use of the PropAIRSleeper™ with people who can easily adjust and manipulate this product.

### Important recommendations

Users with decreased sensation and/or decreased ability to independently tie or reposition this product should discuss with their occupational therapist or health care provider about proper ways to use the PropAIRSleeper™ safely.

### Economic considerations

All reviewers considered that the cost of this product is reasonable, particularly if it improves sleep quality.

### Scientific evidence

It is widely supported that sleep is an important part of health, providing the body with the opportunity to recover from a day of use and activity. Spinal alignment is one aspect that can contribute to sleep quality and research suggests that a custom sleep system is ideal for positioning during rest (Leilnahari, Fatourae, Khodalotfi, Sadeghein & Kashani, 2011). For some users, the PropAIRSleeper™ could be a part of a custom sleep system. The advertisement for this product claims it is scientifically proven to be effective, based on a 2015 study from Cannon & McGill that found that it “reduced joint stresses and the conditions that lead to pain”. However this study has not yet been accepted for publication and it is not possible to assess the validity of this study until it is published. Of note, one of the authors on this study, Stuart McGill, is an extensively published researcher on the topic of spine health. Further scientific study on a product such as the PropAIRSleeper™ is needed.

### Review committee

Three reviewers completed the full review questionnaire and another one completed an external review of the summary reports. Engaged reviewers are experienced occupational therapists who have garnered experience in recommending products that support and enhanced the posture and comfort of their clients.

### Final recommendation

The final recommendation is that this product should be accepted for the Product Recognition Program. An occupational therapist may recommend this product to clients who have back issues such as musculoskeletal issues, soft tissue injuries or chronic back pain which result in discomfort when in the lying position (i.e. supine or side lying). The occupational therapist should ensure the client’s lower back is flexible enough to allow for a realignment by the PropAIRSleeper™ as some back abnormalities might not lend to spine neutral alignment.



## References

Leilnahari, K., Fatourae, N., Khodalotfi, M., Sadeghein, M.A., & Kashani, Y.A. (2011). Spine alignment in men during lateral sleep position: Experimental study and modeling. *BioMedical Engineering OnLine*, 10(103). <https://doi.org/10.1186/1475-925X-10-103>.