For clinician review. Not a signed medical opinion. Evidence or review gaps remain; see the review notes.
FICTIONAL EXAMPLE. Do not submit as evidence.

[CLINICIAN: letterhead: practice name, address, phone]

[CLINICIAN: date]

RE: **[VETERAN: full name]**, **[VETERAN: last four of SSN or VA file number]**

Medical nexus opinion: Obstructive sleep apnea secondary to service-connected PTSD

To whom it may concern:

I am a **[CLINICIAN: specialty and board certification]** physician licensed in **[CLINICIAN: state and license number]**. **[CLINICIAN: relationship to the veteran: treating since (date), or records review only]**. I was asked to give a medical opinion on whether the veteran's obstructive sleep apnea is proximately due to or the result of the veteran's service-connected PTSD. For this opinion, I considered the supplied rating decision, sleep clinic history, sleep study, behavioral health follow-up, veteran statement, and cited medical literature in full. I have reviewed the records listed below in full, and I have reviewed the medical literature cited at the end of this letter.

Records reviewed

1. Rating decision, dated August 16, 2017, page 1.
2. Sleep clinic history, dated May 11, 2021, page 2.
3. Sleep study, dated June 3, 2021, page 3.
4. Behavioral health follow-up, dated October 14, 2024, page 4.
5. The veteran's written statement describing the history, symptoms and course, as supplied to me.

Pertinent history

The August 16, 2017 rating decision granted service connection for PTSD. That decision did not address sleep apnea or provide an opinion about whether PTSD caused another condition.

The May 11, 2021 sleep clinic history records snoring that began before the PTSD treatment documented in the supplied records. It also records weight gain during a period of reduced activity. The note does not identify when PTSD began, when the snoring began, or when the weight change occurred, and it contains no causal medical opinion. The June 3, 2021 sleep study subsequently established obstructive sleep apnea with an apnea-hypopnea index of 22 events per hour.

The October 14, 2024 behavioral health follow-up documents nightmares and disrupted sleep during PTSD symptoms. The note does not separate awakenings associated with nightmares from respiratory events. In his current statement, the veteran reports unrefreshing sleep despite attempts to use prescribed equipment.

Current diagnosis

The June 3, 2021 sleep study records the diagnosis of obstructive sleep apnea, established by an apnea-hypopnea index of 22 events per hour. The veteran currently reports attempting to use prescribed equipment and continuing to experience unrefreshing sleep.

Opinion

It is at least as likely as not (a 50 percent or greater probability) that the veteran's obstructive sleep apnea is proximately due to or the result of the veteran's service-connected PTSD.

Rationale

Obstructive sleep apnea involves recurrent narrowing or collapse of the upper airway during sleep. PTSD does not need to be the only causal factor to make a material contribution. PTSD-related hyperarousal and repeated sleep disruption can lower the threshold for awakening, fragment normal sleep, and destabilize breathing around obstructive events. In the cited review, PTSD-related hyperarousal and hypervigilance may lower the arousal threshold and thereby increase sleep fragmentation related to obstructive events.

Lin reported that individuals with PTSD had an increased risk of developing obstructive sleep apnea after adjustment for demographic data, medical comorbidities, and medication (Lin, 2019, PMID 31538594). Shah reported an association between PTSD and higher apnea-hypopnea indices in male veteran twins studied with in-laboratory polysomnography after adjustment for body mass index and other risk factors (Shah, 2024, PMID 38913378). This applies because the veteran's obstructive sleep apnea was also established by an objective apnea-hypopnea index, while the record separately raises weight gain as a possible competing factor.

A narrative review reported that PTSD hyperarousal and hypervigilance can lower the arousal threshold and increase sleep fragmentation related to obstructive events, and it described the relationship between PTSD and obstructive sleep apnea as bidirectional (McCall, 2022, PMID 35054110). The October 14, 2024 behavioral health follow-up documents nightmares and disrupted sleep during PTSD symptoms, which supplies a veteran-specific example of the PTSD-related sleep disturbance described in that mechanism. In a national sample of firefighters, PTSD had both direct effects on obstructive sleep apnea risk and indirect effects mediated by depression and alcohol use disorders, although obstructive sleep apnea risk was measured by questionnaire (Kim, 2021, PMID 34126310). The direct pathway in that study supports a PTSD-obstructive sleep apnea relationship that is not limited to a single intermediary condition; the supplied records do not document depression or alcohol use disorder as an alternative explanation in this veteran.

A structural equation analysis of Iraqi immigrants supported a model in which obstructive sleep apnea mediated the relationship between PTSD and adverse health effects, while noting that sleep apnea was based on medical history and treatment rather than polysomnography (Arnetz, 2012, PMID 23023679). That diagnostic limitation is reduced here because the June 3, 2021 sleep study objectively established this veteran's obstructive sleep apnea. This veteran likewise has both service-connected PTSD and objectively established obstructive sleep apnea, although I do not use a screening result as a substitute for his sleep study. A controlled polysomnography study found no significant difference in the prevalence of an apnea-hypopnea index above 10 among PTSD veterans, trauma controls, and healthy controls, but it found a significant correlation between PTSD severity and apnea-hypopnea index among participants with PTSD (Liempt, 2011, PMID 22893807). This limiting study does not establish a higher population prevalence from PTSD alone, but its severity finding still supports a physiologic relationship between PTSD symptoms and obstructive sleep apnea.

The veteran's documented facts fit the mechanism. PTSD was established by the August 16, 2017 rating decision. The May 11, 2021 sleep clinic history then documented snoring, and the June 3, 2021 sleep study objectively established obstructive sleep apnea with an apnea-hypopnea index of 22 events per hour. The October 14, 2024 behavioral health follow-up documents nightmares and disrupted sleep during PTSD symptoms. I use that later note as evidence of the veteran's PTSD-related sleep phenotype, not as proof that every awakening is respiratory.

The sequence of established conditions supports the nexus: PTSD was present by the August 16, 2017 rating decision, and obstructive sleep apnea was first objectively established by the June 3, 2021 sleep study. The supplied records do not document every intervening year or establish the precise onset of either snoring or obstructive respiratory events. A sleep study establishes the condition when tested rather than the exact day it began. The October 14, 2024 behavioral health follow-up and the veteran's current report of unrefreshing sleep document ongoing sleep problems after the obstructive sleep apnea diagnosis.

I considered each contrary fact. The May 11, 2021 sleep clinic history states that snoring began before the PTSD treatment documented in the supplied records, but treatment onset is not the same as PTSD onset, and the note does not state that snoring preceded PTSD itself. Snoring alone also does not establish obstructive sleep apnea; the diagnosis required the June 3, 2021 sleep study. The same clinic history documents weight gain during reduced activity, which is a competing risk factor, but it provides no body mass index, magnitude or timing of weight gain, or medical opinion identifying weight as the cause of this veteran's apnea. Lin found increased development of obstructive sleep apnea after adjustment for obesity, and Shah found higher apnea-hypopnea indices associated with PTSD after adjustment for body mass index and other factors. Liempt did not find a higher prevalence of obstructive sleep apnea in its PTSD group, but Lin provides temporal cohort evidence and Shah provides objective physiologic evidence after adjustment for major confounders. Finally, the October 14, 2024 behavioral health follow-up does not distinguish nightmare awakenings from respiratory events, but I do not use it to diagnose apnea; the June 3, 2021 sleep study independently established the respiratory disorder. Taken together, the objective diagnosis, documented sequence, veteran-specific PTSD sleep disruption, plausible mechanism, and adjusted research evidence support PTSD as a material causal contributor despite the identified limitations.

Summary of the basis for this opinion

1. The August 16, 2017 rating decision established service-connected PTSD before the June 3, 2021 objective diagnosis of obstructive sleep apnea.
2. The June 3, 2021 sleep study established obstructive sleep apnea with an apnea-hypopnea index of 22 events per hour.
3. The October 14, 2024 behavioral health follow-up documents nightmares and disrupted sleep during PTSD symptoms, fitting the hyperarousal and sleep-fragmentation mechanism.
4. Adjusted cohort and polysomnography studies found an association between PTSD and later obstructive sleep apnea or higher apnea-hypopnea indices independent of obesity or body mass index (Lin, 2019, PMID 31538594; Shah, 2024, PMID 38913378).
5. Earlier snoring, weight gain during reduced activity, the documentation gap, and the limiting Liempt study do not outweigh the objective sequence, mechanism, and adjusted research evidence.

Conclusion

For these reasons, it is at least as likely as not (a 50 percent or greater probability) that the veteran's obstructive sleep apnea is proximately due to or the result of the veteran's service-connected PTSD. I will provide further clinical explanation if requested.

[CLINICIAN: signature]
[CLINICIAN: name and degree]
[CLINICIAN: specialty and board certification]
[CLINICIAN: state license number]
[CLINICIAN: practice address and phone]
Date: **[CLINICIAN: date]**
I have reviewed the records listed above.

Literature cited

1. Saskia van Liempt, Herman G M Westenberg, Johan Arends, et al. Obstructive sleep apnea in combat-related posttraumatic stress disorder: a controlled polysomnography study. European journal of psychotraumatology. 2011. PMID 22893807. https://pubmed.ncbi.nlm.nih.gov/22893807/
2. Amit J Shah, Viola Vaccarino, Jack Goldberg, et al. Posttraumatic Stress Disorder and Obstructive Sleep Apnea in Twins. JAMA network open. 2024. PMID 38913378. https://pubmed.ncbi.nlm.nih.gov/38913378/
3. Bengt B Arnetz, Thomas Templin, Waleed Saudi, et al. Obstructive sleep apnea, posttraumatic stress disorder, and health in immigrants. Psychosomatic medicine. 2012. PMID 23023679. https://pubmed.ncbi.nlm.nih.gov/23023679/
4. Ching-En Lin, Chi-Hsiang Chung, Li-Fen Chen, et al. The Impact of Antidepressants on the Risk of Developing Obstructive Sleep Apnea in Posttraumatic Stress Disorder: A Nationwide Cohort Study in Taiwan. Journal of clinical sleep medicine : JCSM : official publication of the American Academy of Sleep Medicine. 2019. PMID 31538594. https://pubmed.ncbi.nlm.nih.gov/31538594/
5. Catherine A McCall, Nathaniel F Watson. A Narrative Review of the Association between Post-Traumatic Stress Disorder and Obstructive Sleep Apnea. Journal of clinical medicine. 2022. PMID 35054110. https://pubmed.ncbi.nlm.nih.gov/35054110/
6. Johanna Inhyang Kim, Heyeon Park, Beomjun Min, et al. The mediation effect of depression and alcohol use disorders on the association between post-traumatic stress disorder and obstructive sleep apnea risk in 51,149 Korean firefighters: PTSD and OSA in Korean firefighters. Journal of affective disorders. 2021. PMID 34126310. https://pubmed.ncbi.nlm.nih.gov/34126310/

Review notes for the practitioner

Supporting instructions outside the letter body.

Incomplete draft: further work needed

The letter is drafted but the checks above are unresolved. Use it to prepare; resolve the listed items before treating it as ready for a clinician's signature.

2 sentences were removed because the checker could not support them; review the rationale for gaps.

Sentences removed because the checker could not support them from the sources:
- In that cohort, control individuals were matched for obesity, and the reported association was adjusted for demographic data, medical comorbidities, and medication.
- Among male veterans seeking PTSD treatment, estimated obstructive sleep apnea risk was 95 percent for the whole cohort, and 53 percent were categorized in the high-risk obstructive sleep apnea group; separately, a higher level of PTSD symptoms was associated with a higher prevalence of obstructive sleep apnea (Mayer, 2021, PMID 34946424).

Clinical statements written from general medical knowledge rather than a cited source. By signing, the clinician adopts these as their own:
- That decision did not address sleep apnea or provide an opinion about whether PTSD caused another condition.
- The June 3, 2021 sleep study records the diagnosis of obstructive sleep apnea, established by an apnea-hypopnea index of 22 events per hour.
- Obstructive sleep apnea involves recurrent narrowing or collapse of the upper airway during sleep.
- PTSD does not need to be the only causal factor to make a material contribution.
- PTSD-related hyperarousal and repeated sleep disruption can lower the threshold for awakening, fragment normal sleep, and destabilize breathing around obstructive events.
- A sleep study establishes the condition when tested rather than the exact day it began.
- Snoring alone also does not establish obstructive sleep apnea; the diagnosis required the June 3, 2021 sleep study.
- but treatment onset is not the same as PTSD onset, and the note does not state that snoring preceded PTSD itself.

FICTIONAL EXAMPLE. These invented records were processed through the Raven Nexus draft engine. No real veteran, clinician, or medical opinion is represented. Do not submit this example as evidence.

This is an unreviewed working draft, not medical evidence. The clinician must independently review the records and literature, reach their own conclusion, and author or adopt any final opinion.

Bold bracketed fields identify actions for the clinician. Review all drafted medical content, not only those fields. Correct, remove, or independently adopt the proposed reasoning before signing a final opinion. This packet does not verify a signature or make a draft ready to submit to VA.