

**Purpose** Designed to screen for symptoms of obstructive sleep apnea (OSA) in surgical patients in particular and in all individuals in general, the questionnaire consists of four yes/no and four fill-in-the-blank questions primed by the mnemonic “STOP-Bang:” S – “Do you Snore loudly (louder than talking or loud enough to be heard through closed doors)?” T – “Do you often feel Tired, fatigued, or sleepy during daytime?” O – “Has anyone Observed you stop breathing during your sleep?” P – “Do you have or are you being treated for high blood Pressure?” In order to improve the accuracy of the scale B – BMI, A – Age, N – Neck circumference, and G – Gender are recorded. The scale was specifically developed for use in a preoperative setting, where untreated OSA is associated with increased post-operative complications and longer hospital stays [1]. The purpose was also to provide a short, easy to use scale that could be used in the clinical setting.

**Population for Testing** The scale has been validated with a population of surgical patients with a mean age of  $57 \pm 16$ .

**Administration** The STOP-Bang is a paper-and-pencil measure requiring approximately 1 min for completion.

**Reliability and Validity** To create the questionnaire, developers Chung and colleagues [1] analyzed a preexisting apnea scale – the Berlin

questionnaire – and found that it consisted of four separate factors. Using these factors, the first four yes/no questions of the STOP-Bang were created. Developers also found that the inclusion of factors like BMI, Age, Neck circumference, and Gender greatly increased the sensitivity of the measure and these were then added. The STOP-Bang possesses both sensitivity and specificity greater than 90% in patients with moderate-to-severe OSA.

**Obtaining a Copy** A copy can be found in the original article published by developers [1].

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**Scoring** For the first four yes/no questions, a response of “yes” is given one point. An additional one point is awarded for each of the following conditions: a BMI of more than  $35 \text{ kg/m}^2$ , an age of 50 years or greater, a neck circumference greater than 40 cm, and a final point for patients who are male. If only the first four items are being scored, a total score of two or more is considered high risk of OSA. When using the complete STOP-Bang, a total score of three or more places the individual at high risk.

**STOP-BANG****STOP**

- Do you **S**nore? Yes  No
- Do you feel **T**ired, fatigued or sleepy during the day? Yes  No
- Has anyone **O**bserved you stop breathing in your sleep? Yes  No
- Do you have high blood **P**ressure ? Yes  No
- Please count the number of “Yes” responses and put the number in this box

<b>B</b>			<b>A</b>		<b>N</b>				<b>G</b>		
BMI			Age	Neck Size				Gender			
>35			>50 y	> 40cm > 15.7”				- Male			
If height is	ft.in.	4’10”	5’0”	5’2”	5’4”	5’6”	5’8”	5’10”	6’0”	6’2”	6’4”
& weight is >	lbs	167	179	191	204	216	230	250	258	272	287

Then **BMI** is > 35

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- S - האם את/ה נוחרת/ת?  
 T - האם את/ה עייף/ה או ישנונית במשך היום?  
 O - האם מישוהו ראה אותך מפסיק/ה לנשום בלילה?  
 P - האם יש לך לחץ דם גבוה?
- BMI > 35 - B  
 A - גיל מעל 50  
 N - היקף צוואר מעל 40 ס"מ  
 G - גבר

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## References

1. Chung, F., Yegneswaran, B., Liao, P., Vairavanathan, S., Islam, S., Khajehdehi, A., & Shapiro, C. M. (2008). STOP questionnaire – a tool to screen patients for obstructive sleep apnea. *Anesthesiology*, *108*(5), 812–821.
- apnea: relation to polysomnographic measurements of the apnea/hypopnea index. *Journal of clinical Sleep Medicine*, *7*(5), 459–465.
- Gay, P. C. (2010). Sleep and sleep-disordered breathing in the hospitalized patient. *Respiratory Care*, *55*(9), 1240–1254.
- Senthilvel, E., Auckley, D., & Dasarathy, J. (2011). Evaluation of sleep disorders in the primary care setting: history taking compared to questionnaires. *Journal of Clinicial Sleep Medicine*, *7*(1), 41–48.

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## Representative Studies Using Scale

- Farney, R. J., Walker, B. S., Ramey, R. M., Snow, G. L., & Walker, J. M. (2011). The STOP-Bang equivalent model and prediction of severity of obstructive sleep

Note: It should be noted that this is one of two scales that are used in the title of this book (see Chap. 96 for THAT).