Factor Rating Interpretation Guide
Alcohol Impairing Memory

What is Alcohol Impairing Memory?

Alcohol Impairing Memory measures how often, during the last 12 months, one was unable to remember what happened the night before due to drinking alcohol. This occurs when an individual drinks enough alcohol to temporarily block the transfer of memories from short-term to long-term storage—known as memory consolidation—in a brain area called the hippocampus.[15,16]

The following item is used to assess *Alcohol Impairing Memory* on the DEOCS using a five-point response scale from *Never* to *Daily or Almost Daily*:

- During the past year, how often have you been unable to remember what happened the night before because you had been drinking?

Why is it important?

Research has consistently shown the detrimental impact that alcohol misuse can have on an individual's work and personal life. More specifically, higher incidences of alcohol misuse and abuse among military members has been identified as a risk factor for sexual assault and sexual harassment victimization and perpetration as well as suicidal ideation.[1,2,3,4,5] The DoD's gender relations surveys of military personnel consistently demonstrate that approximately half or more of sexual assaults involving Service member and Academy student victims, including both male and female victims, involve alcohol at the time of the assault.[6,7,8] More specifically, the 2018 Workplace and Gender Relations (WGR) survey of active duty members identified alcohol use, defined as the frequency that men and women drink to the point of blacking out, as an important risk factor associated with an installation or ship's estimated sexual assault and sexual harassment rates. In fact, *Alcohol Impairing Memory* was more predictive of installation-level risk for sexual assault than all other climate or location-based factors examined in this study.[9]

Several studies have also linked alcohol misuse with suicidal ideation.[10,11,12] Specifically, a 2018 study of U.S. active duty soldiers found that substance abuse, including alcohol misuse, was linked to an increase in suicidal behaviors and less mental health resiliency.[13] Additionally, the 2018 North Atlantic Treaty Organization report[14] demonstrated that military members' use of alcohol represents a significant risk for both suicidal behavior and ideation.
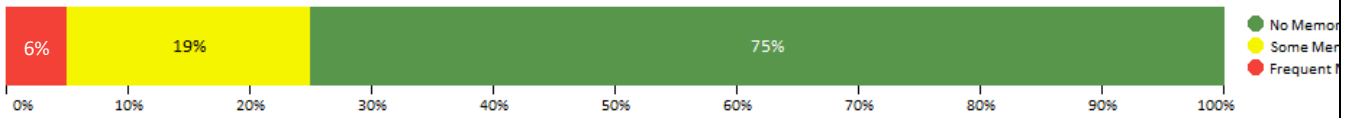
For more information on how to review your DEOCS results with these key outcomes in mind, please see the "Strategic Target Outcome Guide" in the Quick Links menu of the DEOCS dashboard.

How do I read my factor ratings?

The DEOCS dashboard displays results for *Alcohol Impairing Memory* in a stacked bar graph showing ratings for **Frequent Memory Loss due to Alcohol**, **Some Memory Loss due to Alcohol**, and **No Memory Loss due to Alcohol.** Because *Alcohol Impairing Memory* is a factor measured by a single question, you should interpret results as "X% of participants." An example is shown below:

Alcohol Impairing Memory

Alcohol impairing memory measures how often, during the last 12 months, one was unable to remember what happened the night before due to drinking alcohol. Frequent memory loss due to alcohol is linked to a higher likelihood of sexual harassment, sexual assault, and suicide.

6%	19%	75%

Legend:
● No Memor[y]
● Some Mer[mory]
● Frequent [Memory]

Unfavorable rating: 6% of participants reported **frequent memory loss due to alcohol.**

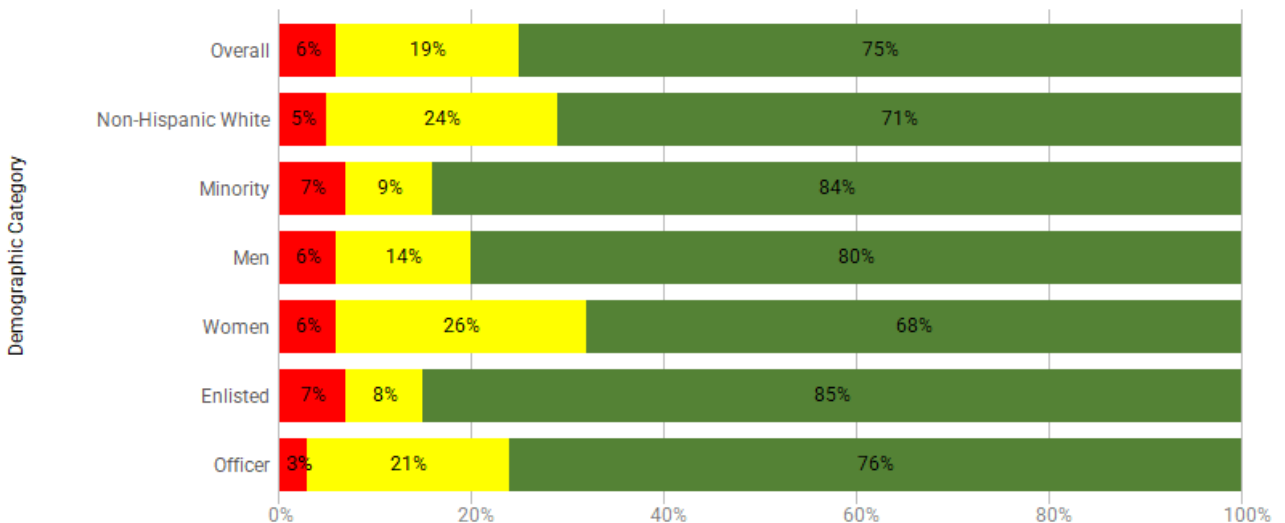**Middle rating: 19% of participants** reported **some memory loss due to alcohol.**

Favorable rating: 75% of participants reported **no memory loss due to alcohol**.

For the graph showing results by demographic categories, the percentages represent the percentage of participants from each demographic category who reported unfavorable, midpoint, or favorable responses.

Alcohol Impairing Memory Ratings by Demographic Category

This graph displays Alcohol Impairing Memory ratings by demographic category. No data are displayed if fewer than five people from a demographic category responded to this set of questions.

Demographic Category	Frequent	Some	No Memory Loss
Overall	6%	19%	75%
Non-Hispanic White	5%	24%	71%
Minority	7%	9%	84%
Men	6%	14%	80%
Women	6%	26%	68%
Enlisted	7%	8%	85%
Officer	3%	21%	76%

The first bar will always show the overall results and will be the same percentages that are shown in the stacked bar graph. The next bars will represent various demographic categories for your organization. These results can help determine whether some groups of people in your organization have particularly high or low perceptions of climate factors. In addition, you may have different categories than in the example above. If your organization did not have any participants from a particular demographic category or had fewer than five participants from a particular category, you would not see those categories in your graph. For more information on how the demographic groups are created, please see the "Data Overview" in the Quick Links menu of the DEOCS dashboard.

In this example, the unfavorable ratings (marked in red) can be interpreted as:
- 5% of non-Hispanic White participants reported frequent memory loss due to alcohol, while 7% of minority participants reported frequent memory loss due to alcohol;
- 6% of male participants reported frequent memory loss due to alcohol, and 6% of female participants reported frequent memory loss due to alcohol;
- 7% of enlisted participants reported frequent memory loss due to alcohol, while 3% of officers reported frequent memory loss due to alcohol.

The middle ratings (marked in yellow) can be interpreted as:
- 24% of non-Hispanic White participants reported some memory loss due to alcohol, while 9% of minority participants reported some memory loss due to alcohol;
- 14% of male participants reported some memory loss due to alcohol, while 26% of female participants reported some memory loss due to alcohol;
- 8% of enlisted participants reported some memory loss due to alcohol, while 21% of officers reported some memory loss due to alcohol.

The favorable ratings (marked in green) can be interpreted as:
- 71% of non-Hispanic White participants reported no memory loss due to alcohol, while 84% of minority participants reported no memory loss due to alcohol;
- 80% of male participants reported no memory loss due to alcohol, while 68% of female participants reported no memory loss due to alcohol;
- 85% of enlisted participants reported no memory loss due to alcohol, while 76% of officers reported no memory loss due to alcohol.

You may also see trends over time for your *Alcohol Impairing Memory* unfavorable rating if there are previous 5.0 surveys with the same unit identification code (UIC) and the same commander/leader.

When applicable, trends over time are available in the dashboard by clicking on this icon: . They also appear in the PDF reports as a table. Even if your report includes trends over time, the results may not be comparable in certain circumstances. It is important to understand differences in roster size and roster composition at different time points as these items may impact comparability of trend results. Take a close look at the number of participants registered, surveys returned, and the response rate for any surveys for which trends are available to report; use caution when comparing trends over time if there are big differences in these numbers between surveys. Other things, such as deployments or changes in policy, may also make trends less comparable. For more information on factor rating trends, please see the "Data Overview" in the Quick Links menu of the DEOCS dashboard.

Finally, you may see an alert for your *Alcohol Impairing Memory* ratings. This means that your unit's/organization's unfavorable rating for *Alcohol Impairing Memory* is **very high** compared to the other unfavorable ratings for this factor in your Service component. When applicable, this alert icon appears in the dashboard inside the "Risk Factors – Unfavorable

Ratings" heading; click on the icon to see if *Alcohol Impairing Memory* is listed in the table. The alert icon may also appear in the *Alcohol Impairing Memory* section of the PDF reports. To identify whether your *Alcohol Impairing Memory* ratings receive an alert, cut-off scores were created by rank-ordering all unfavorable ratings for this factor within a Service component. If your unfavorable rating for *Alcohol Impairing Memory* is above your Service component's cut-off score, this icon will appear in your report. There are unique cut-off scores for each factor within each Service component. Because of this, you may notice that some of the factors for which you have an alert have very different ratings. For more information on how these alerts are created, please see the "Data Overview" in the Quick Links menu of the DEOCS dashboard.

How are my unit's/organization's ratings created?

Alcohol Impairing Memory ratings are created by combining the responses to a single question from a five-point *Never* to *Daily or Almost Daily* scale, as shown in the example below.

Alcohol Impairing Memory Question	Never	Less than Monthly	Monthly	Weekly	Daily or Almost Daily	Total
During the past 12 months, how often have you been unable to remember what happened the night before because you had been drinking?	75% (136)	14% (25)	5% (10)	3% (6)	3% (5)	100% (182)
	No Memory Loss	**Some Memory Loss**		**Frequent Memory Loss**		Total responses **182**
	136 / 182 = **75%**	35 / 182 = **19%**		11 / 182 = **6%**		

The table above displays the percentage of responses (and number of responses in parentheses) for the *Alcohol Impairing Memory* factor across the five response options (*Never*, *Less than Monthly*, *Monthly*, *Weekly*, and *Daily or Almost Daily*). For example, 136 participants selected *Never*; this represents 75% of participants that responded to this question (136 / 182 = .747 or 75%).

Note that percentages are calculated out of the total number of participants responding to that question and not the total number of participants taking the survey. Participants can skip questions, so you may notice that total responses to questions vary. In addition, factor ratings may not always add to 100% due to rounding.

- The **unfavorable** rating, named **Frequent Memory Loss**, is a combination of all responses of *Daily or Almost Daily* and *Weekly* from the question in the *Alcohol Impairing Memory* scale.
  - For this example, five people selected *Daily or Almost Daily* while six selected *Weekly*. In total, 11 responses were either *Daily or Almost Daily* or *Weekly* to this question (6+5 = 11).
  - To produce an overall score for **Frequent Memory Loss** representing unfavorable responses to this question, the total number of responses (11) is divided by the total number of people who responded to this question. **This produces a Frequent Memory Loss rating of 6% (11 / 182 = .0604).**

- The **Some Memory Loss** rating is a combination of all responses of *Less Than Monthly* and *Monthly*.
    - For this example, there are 35 *Less Than Monthly* or *Monthly* responses (25+10 = 35). This total is divided by the total number of responses to the question (35 / 182 = .1923). **.This rounds to a Some Memory Loss rating of 19%.**

- To create the **favorable** rating, **No Memory Loss**, the same process as above is followed, except the score is created from only one response option – *Never*.
    - For this example, there are 136 *Never* responses. This is divided by the total number of responses to the question (136 / 182 = .7473). **This rounds to a No Memory Loss rating of 75%.**

How do I know if my factor ratings are good or bad?

The DEOCS team is working on a data-driven approach that will help you understand what a rating means for an organization's likelihood of positive or negative outcomes. In the meantime, we recommend using the following strategies to help put your *Alcohol Impairing Memory* ratings into context and understand whether actions should be taken to address high unfavorable ratings:

1. If applicable, review the information in the alert icon to see if your *Alcohol Impairing Memory* ratings are called out. This icon would appear in the dashboard and in the PDF reports if your unit's/organization's unfavorable rating for *Alcohol Impairing Memory* is very high compared to others in your same Service component. You should consider taking action to lower this rating.

2. Examine the bar graph showing the overall unfavorable rating for *Alcohol Impairing Memory* and the unfavorable ratings by various demographic groups. Look at each group's rating in relation to the overall unit/organization rating. If any groups have particularly high unfavorable ratings for *Alcohol Impairing Memory*, this could help you plan actions to decrease your unfavorable rating in specific areas of your organization.

3. If applicable, review your *Alcohol Impairing Memory* unfavorable rating trends over time.

    You can view these trends by clicking on this icon in the dashboard; they also appear as a table in the PDF reports. Take note if your ratings are going up over time. You may need to take action to reverse this trend.

Scientific Research References on Alcohol Impairing Memory

1. Marquis, J. P., Farris, C., Hall, K. C., Kamarck, K. N., Lim, N., Shontz, D., Steinberg, P. S., Stewart, R., Trail, T. E., Wenger, J. W., Wong, A., & Wong, E. C. (2017). Improving oversight and coordination of department of defense programs that address problematic behaviors among military personnel: Final Report. Santa Monica, CA: RAND Corporation. (No. RR1352; pp. i–156). https://apps.dtic.mil/docs/citations/AD1025364

2. Van Brunt, B., Murphy, A., Pescara-Kovach, L., & Crance, G. (2018). Early Identification of Grooming and Targeting in Predatory Sexual Behavior on College Campuses. Violence and Gender, 6(1), 16–24.

3. Russell, B. L., & Oswald, D. (2016). When Sexism Cuts Both Ways: Predictors of

Tolerance of Sexual Harassment of Men. Men and Masculinities, 19(5), 524–544. https://doi.org/10.1177/1097184X15602745

4. Basile, K. C., DeGue, S., Jones, K., Freire, K., Dills, J., Smith, S. G., & Raiford, J. L. (2016). STOP SV: A Technical Package to Prevent Sexual Violence (p. 48). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

5. Conley, A. H., Overstreet, C. M., Hawn, S. E., Kendler, K. S., Dick, D. M., & Amstadter, A. B. (2017). PREVALENCE AND PREDICTORS OF SEXUAL ASSAULT AMONG A COLLEGE SAMPLE. Journal of American College Health : J of ACH, 65(1), 41–49. https://doi.org/10.1080/07448481.2016.1235578

6. Breslin, R.A., Davis, L., Hylton, K., Hill, A., Klauberg, W. X., Petusky, M., & Klahr, A. (2019) 2018 Workplace and Gender Relations Survey of Active Duty Members: Overview Report. U.S. Department of Defense Office of People Analytics. https://www.sapr.mil/sites/default/files/Annex_1_2018_WGRA_Overview_Report_0.pdf

7. Breslin, R.A., Klahr, A., Hylton, K., Petusky, M., White, A. & Tercha, J., (2020). 2019 Workplace and Gender Relations Survey of Reserve Component Members: Overview Report. U.S. Department of Defense Office of People Analytics.

8. Davis, L., Klauberg, W. X., Namrow, N., Petusky, M., Claros, Y., Hylton, K., Creel, A., & Klahr, A. (2019). 2018 Service Academy Gender Relations Survey: Overview report. (Report No. 2018-075). Office of People Analytics. https://www.airforcemag.com/PDF/Features/Documents/SAGR1801_Report_1.29.2019_FINAL(1).pdf

9. Samuelson, H., Trump-Steele, R., Severance, L., Sieble, M., Luchman, J., Doston, H., Scolese, A., Sampath, S., & Klahr, A. (2021). 2018 Contextual Risk Factors Associated with Sexual Assault and Sexual Harrassment in Active Duty.(Report No. 2021-06). U.S. Department of Defense Office of People Analytics.

10. Stone, D. M., Holland, K., Bartholow, B., Crosby, A., Davis, S., & Wilkins, N. (2017). Preventing Suicide: A Technical Package of Policy, Programs, and Practices (p. 62). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

11. U.S. Department of Health and Human Services (HHS) Office of the Surgeon General and National Action Alliance for Suicide Prevention. (2012). 2012 National Strategy for Suicide Prevention: Goals and Objectives for Action (p. 184). HHS. www.surgeongeneral.gov/library/reports/national-strategy-suicide-prevention/index.html [INTRODUCTION, specifically the graphic on page 15 which is adapted from Dahlberg LL, Krug EG. Violence-a global public health problem. In: Krug,E, Dahlberg LL, Mercy JA, Zwi AB, Lazano R, eds. World report on violence and health. Geneva, Switzerland: World Health Organization; 2002: 1-56]

12. Saxena, S., Krug, E. G., and Chestnov, O. (2014). Preventing suicide: a global imperative. World Health Organization. https://apps.who.int/iris/handle/10665/131056

13. Hourani, L. L., Williams, J., Lattimore, P. K., Morgan, J. K., Hopkinson, S. G., Jenkins, L., & Cartwright, J. (2018). Workplace victimization risk and protective factors for suicidal behavior among active duty military personnel. Journal of Affective Disorders, 236, 45–51. https://doi.org/10.1016/j.jad.2018.04.095

14. North Atlantic Treaty Organization, Science and Technology Organization. (2018).

Military suicide prevention: Report prepared for NATO leadership (TR-HRM-218). https://bit.ly/2rbkOZs

15. National Institute on Alcohol Abuse and Alcoholism. (2019). Interrupted memories: Alcohol induced blackouts. https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/interrupted-memories-alcohol-induced-blackouts

16. Rose, M., & Grant, J. (2010). Alcohol-induced blackout: Phenomenology, biological basis, and gender differences. Journal of Addition Medicine, 4(2), 61-73. https://doi.org/10.1097/ADM.0b013e3181e1299d