

# Life After BMT

Updates from the Blood or Marrow Transplant Survivor Study

## BMTSS Progress

**UAB** INSTITUTE FOR CANCER  
OUTCOMES & SURVIVORSHIP

The University of Alabama at Birmingham

We hope this Fall 2023 newsletter finds you well and that you and your families are staying safe and healthy. BMTSS is the Blood or Marrow Transplant Survivor Study. The BMTSS is currently ongoing at the University of Minnesota, the University of Alabama at Birmingham, and City of Hope. You are receiving this newsletter because you are a BMTSS participant.

This newsletter will give you an update on the study's progress and let you know how your information is helping us to make further progress in understanding life after BMT. We do not require any action in response to this newsletter unless you have moved or changed your phone number. **We encourage you to update your contact information by sending us an email at [bmtstudy@uabmc.edu](mailto:bmtstudy@uabmc.edu) or calling us at 855-903-2136.** Thank you so much for participating in BMTSS and helping us with this important research!

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## Recent BMTSS Publications

Blood or marrow transplantation (BMT) is used to treat blood cancers and other life-threatening illnesses. Long-term BMT survivors may be at risk for the development of health problems after transplantation. Some of these health problems can possibly place the survivors at risk for premature mortality. Some post-transplant health issues may be more common in survivors who are involved in risky behaviors, such as smoking, heavy drinking, and lack of exercise. A recently published research paper, which used data collected from the BMT Survivor Study (BMTSS), looked at the impact of risky behaviors on the health and overall lifespan of BMT survivors.

The study included 3,866 BMT survivors. About half (50.3%) had an autologous (self) transplant, while the other half (49.7%) had an allogeneic (donor) transplant. The majority of the survivors had either Hodgkin or non-Hodgkin lymphoma (32.4%) or acute lymphoblastic leukemia/acute myeloid leukemia/myelodysplastic syndrome (31.6%). Other survivors were treated for plasma cell dyscrasias (17.8%), chronic myeloid leukemia (10.2%), or other diagnoses (8.0%). Overall, just over one-third (36.8%) of BMT survivors had ever smoked, and 14.1% were current smokers. Compared to non-smokers, current smokers were found to have a 60% higher risk of premature death from causes such as cardiovascular disease, late infections, or second cancers. Additionally, over half of the survivors (56.3%) reported drinking alcohol, and 9% of those drinking alcohol reported that they were heavy drinkers. Heavy drinking is associated with the development of high blood pressure, heart disease, and stroke in the general population. In the BMT cohort, those engaging in heavy drinking were at a 40% higher risk of premature death when compared with those who did not engage in heavy drinking. Half of the survivors (51.4%) reported not engaging in vigorous physical activity (defined as less than 20 minutes of vigorous exercise per week). Physical inactivity is related to diabetes, heart disease, and breast and colon cancers in the general population. BMT survivors who did not engage in vigorous exercise were more likely to report cancer-related pain, to have more serious chronic health conditions, and were at a 30% higher risk of premature death compared to those who exercised 20-60 minutes a week.

These findings show that risky health behaviors are associated with a greater likelihood of premature death. Overall, the findings from this study may encourage survivors to continue limiting risky behaviors such as smoking and heavy drinking, while increasing healthy behaviors such as regular exercise.

For more information: Balas N, Richman J, Landier W, Shrestha S, Bruxvoort K, Hageman L, Meng Q, Ross ES, Bosworth AK, Te HS, Wong FL, Bhatia R, Forman SJ, Armenian SH, Weisdorf DJ, Bhatia S. Risky Health Behaviors and Subsequent Late Mortality after Blood or Marrow Transplantation: a BMTSS Report. *Blood Adv.* 2023 Sep 8;bloodadvances.2023010633. doi: 10.1182/bloodadvances.2023010633. Epub ahead of print. PMID: 37682779.



## Ask the Researchers

We received several great questions since our last newsletter. Here we share some answers with you. Please send your questions to the BMTSS Study Staff by emailing [bmtstudy@uabmc.edu](mailto:bmtstudy@uabmc.edu). Although the study is still collecting data, we will do a preliminary analysis regarding 1 to 2 topics or questions that we receive, and publish the results in the next newsletter.

### Question: What are Risky Health Behaviors for Long-Term BMT and Cancer Survivors?

Behaviors that influence health include tobacco use, alcohol consumption, physical activity and diet (<https://www.ncbi.nlm.nih.gov/books/NBK43744/>). It is important for BMT survivors to be aware of health behaviors and steps they can take to remain as healthy as possible.

## Alcohol

Alcohol is distilled or fermented drink that may have adverse effects. These effects vary from person to person, depending on factors such as:

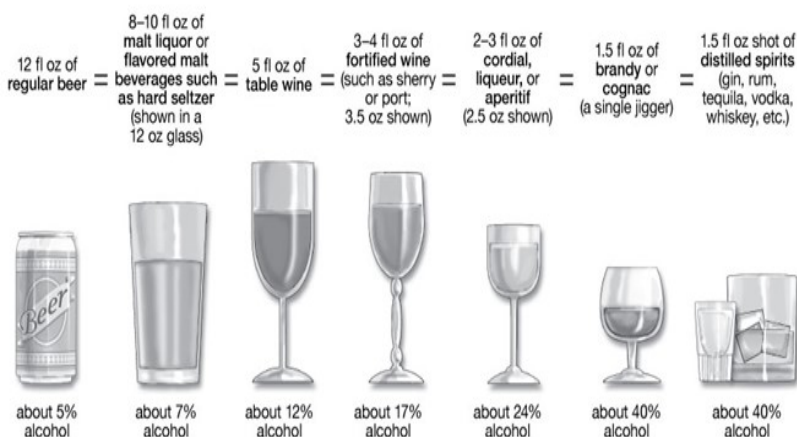
- How much you drink
- How often you drink
- Your age
- Your health status
- Your family history

The effects of drinking alcohol range from short-term problems, such as reduced inhibition, slurred speech, confusion, and memory problems, to longer-term effects such as alcohol use disorder, excess weight gain, inflammation and scarring of the liver, and higher risk of developing several types of cancers. Drinking alcohol has been linked with cancers of the mouth, esophagus, liver, colon, and breast.

For each of these cancers, the more alcohol you drink, the higher your cancer risk. Therefore it is important to define what a “standard” drink is and how drinking levels are defined.

In the United States, one “standard” drink is:

- **12 ounces of regular beer**, which is usually about 5% alcohol
- **5 ounces of wine**, which is typically about 12% alcohol
- **1.5 ounces of distilled spirits**, which is about 40% alcohol





Drinking Level	Daily Drink(s) for Men	Daily Drink(s) for Women**
Drinking in Moderation	2	1
Heavy Alcohol Use	4+	3+
Binge Drinking	5+	4+

\*\* The recommended limit is lower for women because of their smaller body size and because females tend to break down alcohol more slowly.

## Signs of an Alcohol Problem

Many people struggle with controlling their drinking at some time in their lives. More than 14 million adults ages 18 and older have alcohol use disorder. **Alcohol use disorder** is a medical condition that doctors diagnose when a patient's drinking causes distress or harm. The condition can range from mild to severe. **Alcoholism** is defined by alcohol dependence, which is the body's physical inability to stop drinking and the presence of alcohol cravings.

### Signs concerning for an alcohol problem:

- Being unable to limit the amount of alcohol you drink
- Wanting to cut down on how much you drink or making unsuccessful attempts to do so
- Feeling a strong craving or urge to drink alcohol
- Failing to fulfill major obligations at work, school or home due to repeated alcohol use
- Developing a tolerance to alcohol so you need more to feel its effect or you have a reduced effect from the same amount
- Experiencing withdrawal symptoms — such as nausea, sweating and shaking — when you don't drink, or drinking to avoid these symptoms

## Treatment Options for Alcohol Problems

1. Behavioral Treatments such as Cognitive–Behavioral Therapy, Motivational Enhancement Therapy and Family Counseling
2. Mutual-Support Groups (Alcoholics Anonymous [AA] and other 12-step programs)
3. Talking with a Primary Care Physician

### Sources:

- <https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/treatment-alcohol-problems-finding-and-getting-help>
- <https://www.mayoclinic.org/diseases-conditions/alcohol-use-disorder/symptoms-causes/syc-20369243>
- <https://www.cancer.org/cancer/risk-prevention/diet-physical-activity/alcohol-use-and-cancer.html>
- <https://www.niaaa.nih.gov/>





# Physical Activity

A physically active lifestyle has been shown to lower the risk of heart disease, osteoporosis, and several types of cancers, including colon cancer. Being active may also help prevent weight gain and obesity.

## Recommendations:

- **Adults:** Get 150 to 300 minutes of moderate intensity activity, or 75 to 150 minutes of vigorous intensity activity each week (or a combination of these). Getting to or exceeding the upper limit of 300 minutes is ideal.
- **Children and teens:** Get at least 1 hour of moderate or vigorous intensity activity each day.

### Examples of Moderate Intensity and Vigorous Intensity Activities

	Moderate Intensity	Vigorous Intensity
Exercise & Leisure	Hiking, Yoga	Running, Swimming
Sports	Fishing, Badminton	Basketball, Racquetball
Home Activities	Mopping, Gardening	Shoveling, Heavy Lifting
Workplace Activities	Walking and lifting as part of the job	Heavy manual labor

For individuals who are not active or just becoming active, activity levels below the recommended levels can still help your health, especially your heart. The amount and intensity of activity can then be increased slowly over time.

**Please check with your doctor before starting a vigorous activity program.**

### Ways to reduce sitting time:

- Limit time spent watching TV and using other forms of screen-based entertainment.
- Use stairs rather than an elevator.
- Take an exercise break at work to stretch or take a quick walk.
- Walk to visit coworkers instead of phoning or sending an e-mail.
- Go dancing with your spouse or friends.
- Plan active vacations rather than only sightseeing trips.
- Wear a pedometer every day and increase your number of daily steps.
- Join a sports team.





# Tobacco

According to the American Cancer Society, smoking causes about 20% of all cancers and about 30% of all cancer deaths in the United States. About 80% of lung cancers, as well as about 80% of all lung cancer deaths, are due to smoking. Smoking is also linked to oral cancers, head and neck cancers, and cancers of the esophagus and pancreas. Cigarettes, cigars, and pipes can all cause cancer. Tobacco can also cause heart disease, stroke, problems with circulation and blood vessels, problems with pregnancy, fertility and erectile dysfunction, and problems with teeth and gums. There is no safe form of tobacco.

## Smokeless Tobacco

Smokeless tobacco includes products such as chewing (spit) tobacco, and other tobacco-containing products that are not smoked.

Cancers linked to the use of smokeless tobacco include:

- Mouth, tongue, cheek, and gum cancer
- Cancer of the esophagus (the tube that connects the throat to the stomach)
- Pancreatic cancer

Other harmful health effects of smokeless tobacco include:

- Increased risk of dying from heart disease and stroke
- Increased risk of early delivery and stillbirth when used during pregnancy
- Smokeless tobacco can lead to nicotine poisoning and even death in children who mistake it for candy.

All smokeless tobacco contains nicotine, which can lead to addiction. In teens, using nicotine can also harm the parts of the brain that control attention, learning, mood, and impulse control. It may also increase the risk for future addiction to other drugs.

## Secondhand Smoke

Secondhand smoke is smoke exposure from burning tobacco products that are used by others, such as cigarettes, cigars, hookahs, or pipes . Tobacco smoke contains hundreds of harmful chemicals some of which are toxic and can cause cancer. A few of the chemicals and toxins in tobacco smoke include:

### Chemicals and Toxins in Commercial Tobacco Smoke



**Benzene**  
Found in gasoline



**Toluene**  
Used in paint thinners



**Butane**  
Used in lighter fluid



**Cadmium**  
Used in making batteries



**Ammonia**  
Used in household cleaner



**Hydrogen Cyanide**  
Used in chemical weapons



## Secondhand Smoke Continued...

There is no safe level of exposure to secondhand smoke; even brief exposure can cause serious health problems. Secondhand smoke can cause heart disease, stroke, and lung cancer in adults who do not smoke. Children who are exposed to secondhand smoke are at increased risk for sudden infant death syndrome, acute respiratory infections, middle ear disease, more severe asthma, respiratory symptoms, and slowed lung growth.

People can be exposed to secondhand smoke in their homes, their places of work, or in public places like bars and casinos.

## E-cigarettes

E-cigarettes are a newer form of nicotine delivery in which an aerosol is produced by heating a liquid that usually contains nicotine, flavorings, and other chemicals. Users inhale e-cigarette aerosol into their lungs. Bystanders may also breathe in this aerosol when the user exhales it into the air.

Some e-cigarettes look like regular cigarettes, cigars, or pipes. Some look like USB flash drives, pens, and other everyday items.



Although the long-term safety and dangers of e-cigarettes remain unclear, serious lung disease has been reported in some people using e-cigarettes or other vaping devices, in some cases resulting in death.

Symptoms may include:

- Cough, trouble breathing, or chest pain
- Nausea, vomiting, or diarrhea
- Fatigue, fever, or weight loss

E-cigarettes can also irritate the lungs and can have negative effects on the heart.





## If You Use Tobacco and Want to Quit: Steps to Tobacco Cessation

**1. Make the decision to quit tobacco.** The decision to quit smoking or to quit using smokeless tobacco is one that only you can make. Write down your reasons so you can look at them every time you want to smoke or dip.

**2. Set a date for your Quit Day.** This is a key step. Pick a day within the next month as your Quit Day. Be sure to give yourself enough time to prepare.



**3. Prepare for your Quit Day with these key steps:**

- \* Decide on a plan
- \* Set up a support system
- \* Get rid of all cigarettes, ashtrays or all smokeless tobacco products in your home, car, and at work.
- \* Talk to your doctor about nicotine replacement therapy
- \* Cut down on how much tobacco product you use each day. By doing this, you slowly reduce the amount of nicotine in your body.

**4. Quit Day:** Stick to your plan, get support, stay busy, avoid smoking triggers, and stay positive!

### Sources:

- [https://www.cdc.gov/tobacco/basic\\_information/index.htm](https://www.cdc.gov/tobacco/basic_information/index.htm)
- <https://www.cdc.gov/tobacco/secondhand-smoke/about.html>
- [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html)
- <https://www.cancer.org/cancer/risk-prevention/tobacco/guide-quitting-smoking/deciding-to-quit-smoking-and-making-a-plan.html>