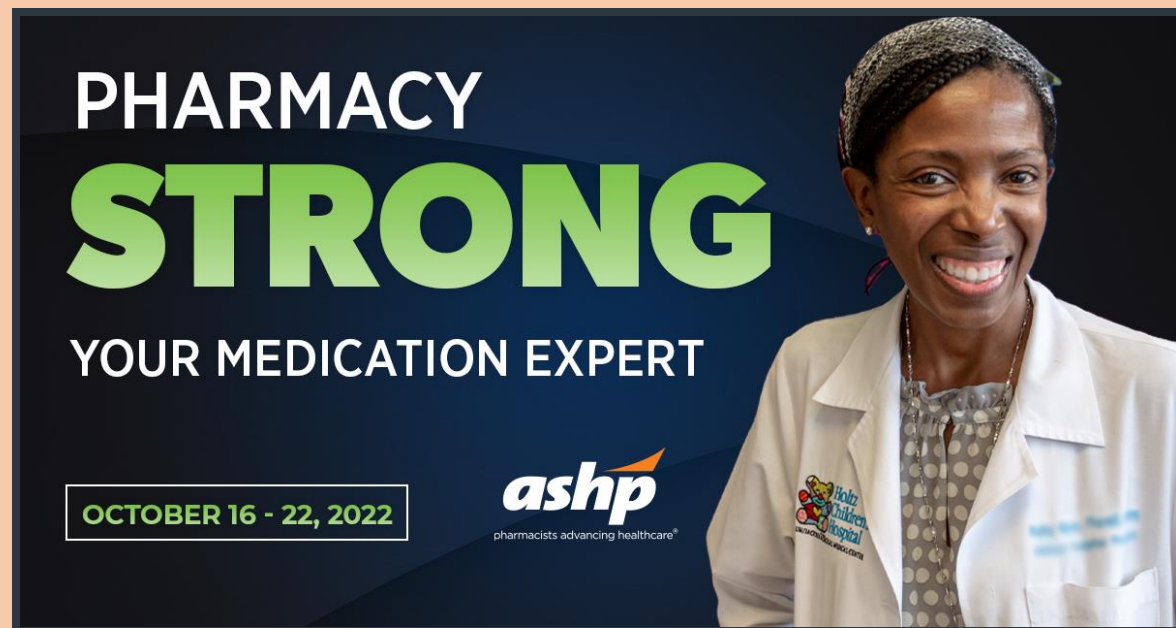


National Pharmacy Week  
October 16 – 22, 2022

National Pharmacy Week – October 16-22, 2022 – is an annual observance that acknowledges the invaluable contributions that pharmacists, pharmacy technicians, and support staff make to patient care in hospitals, ambulatory care clinics, retail pharmacies, and other healthcare settings.

To learn more, visit [ashp.org/pharmacyweek](https://ashp.org/pharmacyweek)



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## Formulary Update

None.



# Drug Info Corner

Cynthia Mohabeer  
FDU PharmD Candidate 2023



**Question: Is there any added benefit for a 22 yo F to take additional melatonin to help with her sleeplessness? Is there a risk of overdosing?**

**Response:** Melatonin is a **hormone that is produced by the brain** in response to lack of light to help with an individual's **circadian rhythm and sleep cycle**. Melatonin is also available as an over-the-counter supplement that comes in various forms such as capsules, tablets, liquids, and soft chewable gelatins.

Strengths of melatonin can range anywhere between 1 mg and 10 mg. **Recommended dosing is 3 mg to 10 mg** by mouth daily, one to two hours prior to bedtime as needed.

#### Consequences of higher than recommended doses:

- Hypotension
- Drowsiness
- Dizziness
- Blurry vision
- Confusion
- Gastrointestinal upset
- Fatigue
- Headaches
- Disruption of circadian rhythm and difficulty sleeping
- Feeling groggy and sleepy during the day
- Nightmares or extremely vivid dreams at night

#### Summary

- It is recommended to not exceed maximum recommended doses.
- Higher doses can lead to unwanted effects such as headache, dizziness, fatigue, nausea or could possibly lead to severe hypotension.
- Too much melatonin in the body can lead to disruption in an individual's sleep cycle and cause more severe sleeplessness.
- Sleep hygiene is an important component to be added to any drug therapy.
- If there is trouble sleeping with maximum doses, referral to a physician may be warranted.

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## Meditech Oncology Module

Carlo Lupano, RPh, MBA, FASHP  
Pharmacy Manager

With the introduction of the Meditech Oncology Module, providers are now able to order chemotherapy treatment plans for outpatients directly through Meditech, bypassing the need for paper oncology orders. However, the diagnosis and indication information received from Meditech as standard content was expansive and complicated. When providers enter a diagnosis for a patient, Meditech should first display only the relevant treatment plans offered for that diagnosis. This would ensure the providers are selecting the correct medication and doses. However, the providers were seeing multiple pages of many indications and multiple diagnosis.

David Turberville, PharmD, BCOP, Pharmacy Clinical Coordinator Oncology and John Heeren, RPh, Application Analyst, streamlined the diagnosis and indications naming and mapping. After months of work and collaboration, the result was a well-organized, easy to read list of appropriate treatment plans relevant to the patient's diagnosis. This provided easier and safer treatment plan selection for our providers.

John Heeren and David Turberville were invited to speak at the annual Meditech Users Software Exchange in Grapevine, Texas, on May 17, 2022, to present their work. The presentation was very well-received, and the duo was invited by the International Education Exchange to present their ideas to Meditech international users in the United Kingdom. They presented their work again in Liverpool, UK which led to a very informative and productive 90-minute discussion afterwards.

Congratulations to John Heeren and David Turberville for advancing patient safety and end-user satisfaction.





## ***Meet our NEW Post-Doctoral Pharmacy Residents***

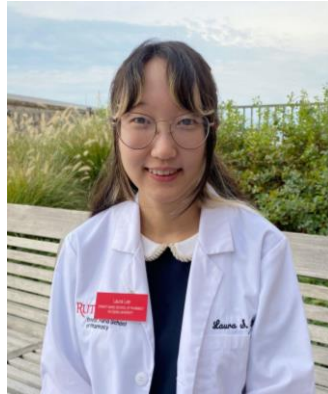
The Valley Hospital Pharmacy Residency Program is nationally accredited by the American Society of Health-System Pharmacists. Upon graduation from schools of pharmacy, pharmacists may choose to further their education through a one-year long post-doctoral residency. This additional training exposes new practitioners to the different aspects of the practice of pharmacy, offers the opportunity to manage special patient populations, and allows application of knowledge and skills in participating as an interprofessional team member. We are proud to announce the three residents for our July 2022 – June 2023 residency class.



**Gabrielle Sanza, Pharm.D.**  
PGY1 Community-Based  
Pharmacy Resident

Gabby Sanza grew up in Slingerlands, New York, and earned a Doctor of Pharmacy from Albany College of Pharmacy and Health Sciences in May 2022.

Gabby is very excited to be a part of The Valley Hospital team! She is very passionate about the profession of pharmacy and strives to always provide the best possible patient care and improve quality of life. Her clinical areas of interest include women's health, diabetes, and cardiology. Gabrielle hopes that throughout her residency and her career as a pharmacist, she can help to advance the profession of pharmacy and expand the scope of practice for pharmacists, so they are utilized effectively as direct patient care providers in both community and institutional settings. Outside of pharmacy, Gabrielle enjoys traveling, working out, and spending time with her family and friends.



**Laura Lee, Pharm.D.**  
PGY1 Pharmacy Resident

Laura Lee grew up in East Brunswick, New Jersey, and earned a Doctor of Pharmacy degree from Rutgers University in May 2022.

Laura is very excited to join The Valley Hospital team as one of the PGY1 residents. She is passionate about gaining new experiences and believes Valley is a great place to make that happen. Laura always does what she can to advocate for her patients to promote optimal and personalized care. Her areas of interest include emergency medicine and ambulatory care; however, she looks forward to exploring other areas of pharmacy throughout her residency. Outside of pharmacy, Laura enjoys playing with her cats and testing her tolerance for spicy foods.



**Melissa Rock, Pharm.D., MHS**  
PGY1 Pharmacy Resident

Melissa Rock grew up in Emerson, New Jersey, and earned a Doctor of Pharmacy from Fairleigh Dickinson University in May 2022, along with a Master's in Clinical Research Administration. She also earned a Bachelor's in Biochemistry from the university.

Melissa is excited to join The Valley Hospital. She is enthusiastic to apply her skills and expertise to patients at the hospital. She will be working with a wide range of patients and practitioners in a welcoming, highly ranked community-based hospital. Her areas of interest include cardiology, oncology, clinical research, and teaching. Outside of pharmacy, Melissa is passionate about music production and plays multiple instruments including guitar, piano, ukulele, harmonica, and kalimba. She also enjoys boating, going to the beach, snowboarding, traveling, and spending time with family and friends.

## Understanding the Difference between Somatic and Germline Testing

Lydia Kim, PharmD Candidate 2023 and Sonya Kremenchugsky, PharmD, Specialty Pharmacist

The **human body is made up of about 220 distinct types of somatic cells and 2 types of germline cells.**<sup>1</sup> Somatic cells are all of the body cells, except for germline cells. Therefore, somatic cells cannot pass down genetic material from one generation to another. Examples of **somatic cells are blood cells, fat cells, stem cells, neuron cells, organ tissue cells, and skeletal muscle cells.**<sup>2</sup> **Germline cells are sperm and egg cells** that pass down a complete set of genes from parent to child through sexual reproduction. These cells are smaller in number compared to somatic cells.<sup>3</sup>

It is important to understand the difference between somatic and germline mutations to identify the difference between somatic and germline testing. **Somatic mutations are acquired during a person's lifetime** due to DNA damage of the body cells after exposure to radiation, ultraviolet light, viruses, chemicals, or tobacco. Advanced age could also contribute to the development of such mutations.<sup>4</sup> Somatic mutations cannot be passed down from parent to child since DNA damage occurs after fertilization in cells other than germ cells.<sup>4,5</sup> Therefore, somatic mutations are found only in the somatic tissue. Most cancers are caused by somatic mutations since somatic cells make up most of the cells in the body. These cancers are known as sporadic cancers.<sup>4,6</sup>

In contrast, **germline mutations are alterations in the DNA that occur in sperm and egg cells during fertilization.**<sup>4</sup> These mutations can be inherited from either parent and can affect all the body cells in the child. Germline mutations are present in only 5-10% of cancers, known as hereditary cancer, and is far less common than somatic mutations.<sup>4,6</sup> Signs and symptoms of hereditary cancer include cancer that occurs at early age, cancer that is less common, patients with two or more primary cancers, and multiple family members that have the same cancer.<sup>4</sup> These are further compared in Table 1.

**Table 1. Germline and Somatic Mutations Summary**<sup>4,5,6</sup>

Germline Mutations	Somatic Mutations
Can be inherited by offspring	Cannot be inherited by offspring
DNA alterations occurred during fertilization	DNA alterations are acquired during lifetime
Present in 5-10% of cancers	More commonly present in cancer
Can be found in somatic and germline cells	Can be found in somatic cells

**Somatic and germline testing are used to diagnose cancer and choose appropriate therapy** to manage cancer. Although both tests are used for many cancers, they differ significantly in their purpose and use. Somatic testing, also known as tumor testing, detects genetic alterations in tumor cells. Therefore, **somatic testing is normally done on patients who already have cancer.**<sup>7</sup> Providers can perform a tumor test on the tumor, or conduct a liquid biopsy of the blood to detect for changes in the tumor DNA.<sup>4,6</sup> The purpose of this test is to determine the possibility of cancer reoccurring and the appropriate treatments that could be used to treat the cancer associated with the specific mutation, also known as targeted therapy.<sup>6</sup>

Germline genetic testing identifies alterations in the genes of non-tumor cells, including blood and skin cells, to determine whether the patient is at risk for developing a certain type of hereditary cancer.<sup>7</sup> Providers can obtain a blood test or a cheek swab in patients who have an elevated risk for developing cancer, including patients with personal or family history of cancer. **Germline testing can be used to identify patients and family members who may be at risk for hereditary cancer.**<sup>4,6</sup> Germline testing can also help determine the reason for cancer development and dictate appropriate targeted therapies for treatment. If a mutation is present during somatic testing, patients should also undergo germline testing to assess whether they may be at risk for hereditary cancer.<sup>6</sup> (Table 2)

**Table 2. Germline and Somatic Mutations Testing Summary**<sup>4,6,7</sup>

Germline Mutation Testing	Somatic Mutation Testing
Identify patients who are at risk for developing cancer	Identify genetic alterations in tumor cells
Determine targeted cancer treatment options	Determine targeted cancer treatment options

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