

## MEDICAL NEWSLETTER



## SPECIALTY SPOTLIGHT: DERMATOLOGY

**page 2**

- 3 - Case Report of Primary Spinal Melanoma
- 4 - The Rise of Telemedicine in Millennials
- 5 - COVID-19: How Many Vaccine Doses Do We Need?
- 6 - Could Sewage be the Key to Predicting COVID-19 Hotspots?

# Dermatology

## *What is a Dermatologist?*

A dermatologist is a doctor that specializes in conditions of the skin, hair, and nails. The skin is the largest organ, as it defends diseases, protects organs, regulates body temperature, and more. Dermatologists ensure that the skin receives the best care possible!

## *Education and Training*

As with other healthcare professions, the road to becoming a dermatologist requires an extensive amount of education and training. Typically, it takes at least 12 years to become a dermatologist.

- 4 years to earn a bachelor's degree
- 4 years of medical school to become a medical doctor
- 1 year-long internship
- Minimum of 3 years of residency
- Fellowship training (optional)

Then, dermatologists become licensed and board-certified. Board certification is attained by taking a cumulative exam from the American Board of Dermatology or American Osteopathic Board of Dermatology.

## *Specialties*

These are three notable specialties of dermatology:

**Dermatopathology**- Dermatopathologists specialize in dermatology and pathology. Their duties entail examining skin samples taken by dermatologists and providing them with biopsies. Doctors in this specialty must undergo an additional year of training and become board certified in dermatopathology.

**Mohs Surgery**- Mohs surgeons specialize in surgery for skin cancer treatment. The surgery involves removing thin layers of skin to examine under a microscope. Doctors in this specialty must undergo one year of formal fellowship training in Mohs surgery and surgical reconstruction.

**Pediatric Dermatology**- Pediatric dermatologists treat conditions that are either more common or only seen in children and infants. Doctors in this specialty can choose to undergo two years of pediatrics residency in addition to three years of dermatology residency.

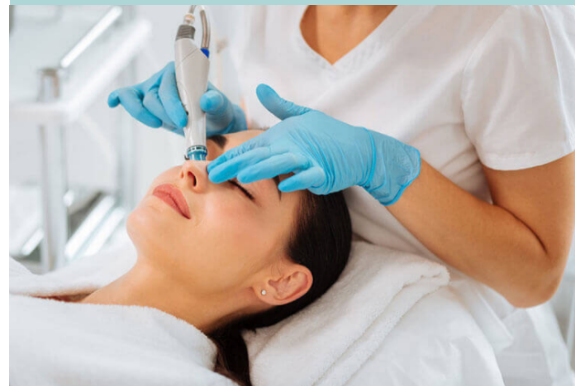
## *Salary*

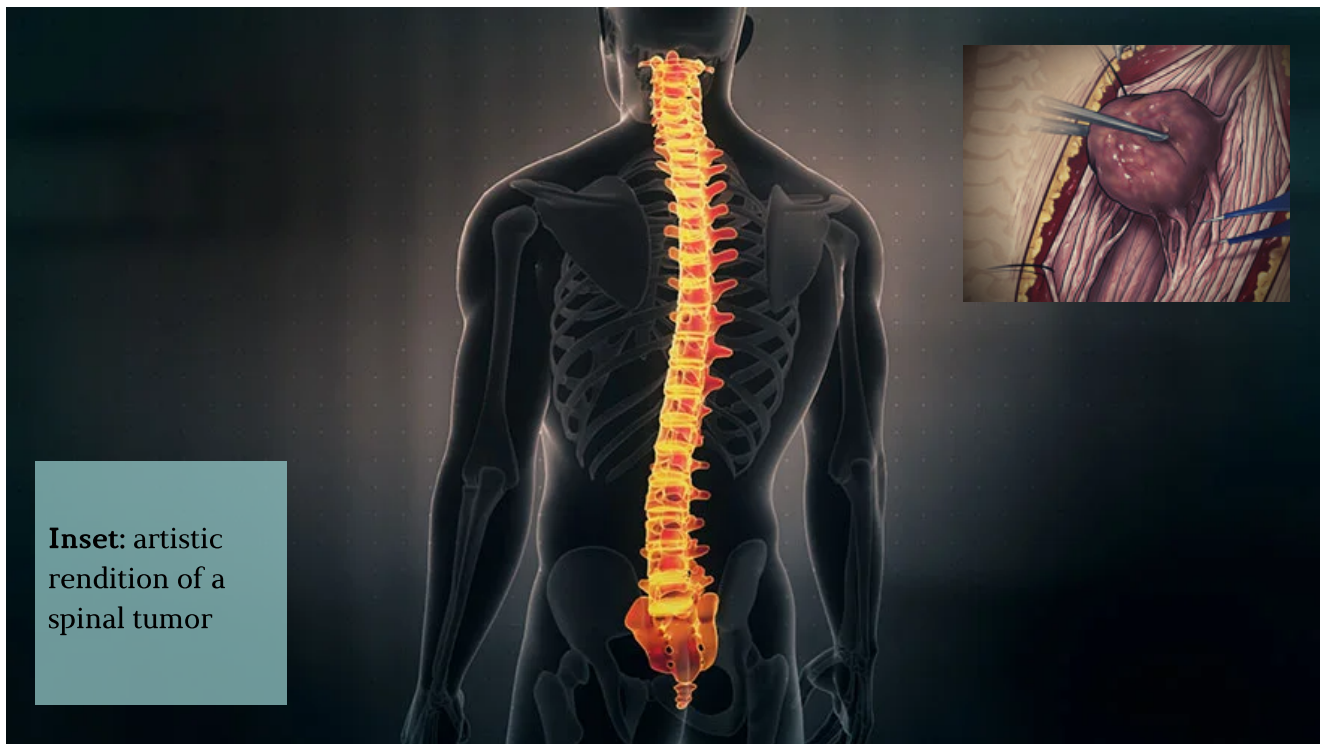
The average salary is between \$302,900 and \$411,500- this varies depending on location, specialty, and experience.



"Each patient case is like a piece of art. You first notice the overall feel of the picture. Then, you analyze the individual elements"

*Dr. Eliot Mostow, MD, MPH, dermatologist*





**Inset:** artistic rendition of a spinal tumor

## Case Report and Review of Primary Spinal Melanoma

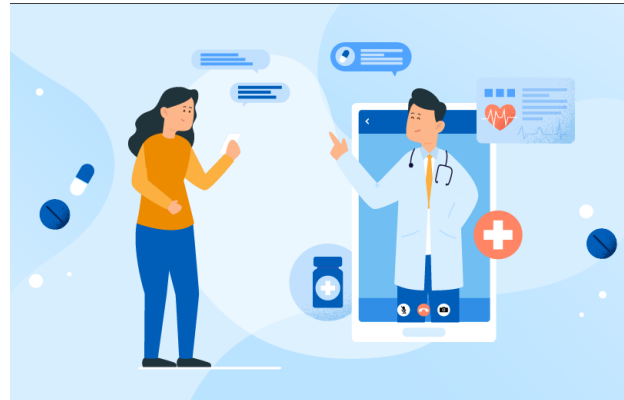
Ryen Belle Harran

The **American Cancer Society** estimates that in 2021, about **24,530 malignant tumors** of the brain or spinal cord will be diagnosed. Nearly 20,000 people are predicted to die from brain and spinal cord tumors. Yet, a large majority of tumors located in the central nervous system (CNS) are **secondary tumors**. Spinal tumors are classified as "**primary**" and "**secondary**" tumors, the latter referring to tumors that have metastasized from a different location of the body to the spinal cord.

This month, the **Journal of Clinical Neurology and Neurosurgery** published an article with a case report on two individuals with primary spinal melanoma (PSM) and a review of **51 different PSM cases** (66 patients total). Patients with **primary CNS melanomas** were shown to have a **superior prognosis** than patients with metastatic tumors. Additionally, depending on the type of tumor and other factors (including **post-surgical medicinal and/or radiation treatment**), **survival rates** for CNS tumors were observed to **vary greatly**.

Case studies on diseases such as **primary spinal melanoma** (PSM) are both **rare** and incredibly **valuable** to the scientific community. PSMs account for **less than 1% of all melanomas** occurring in the CNS. To put this into perspective, one of the two case reports published in this article involved a **sacral melanoma** - the **second published case of sacral PSM** in **English medical literature**.

Although there are a few published cases of PSM, these rare cases **must be** systematically and comprehensively **reviewed for clinical use**. As with most surgically-removable cancers, **early surgical intervention** (preferably gross **total resection**) is **key** to managing primary malignant melanomas of the spine.



Telemedicine has become more prevalent among millennials- WHY?

## The Rise of Telemedicine in Millennials

Alisha Khodabocus

- Almost half of millennials surveyed preferred seeing their doctors virtually because of the convenience of telemedicine
- The survey also found that patients were more likely to follow up and reschedule with the same provider because of the comforting environment fostered online
- Doctors proclaim that virtual appointments can make in-person appointments more efficient because much of the “groundwork” can be done ahead of time (e.g. reviewing the patient’s issues, scheduling a follow up with both parties present)
- 43 percent of millennials said that they avoided going to the doctor because of COVID-19 safety or cost concerns- telemedicine was a solution to both groups because telemedicine is more widely covered by insurance than in-person appointments

During the pandemic, millennials have turned to technology for their healthcare needs: this is seen through the increased use of telemedicine, found through a new survey of 2040 millennials (ages 23 to 39) by Harmony Healthcare IT. Over the past year, the amount of millennials who have a primary care provider increased to 79 percent, while the amount of millennials who have received a physical exam remained stagnant at 65 percent- many believe that these can be correlated with the increased use of telemedicine.



"Previous COVID-19 mRNA vaccine studies on vaccinated individuals have focused on antibodies more than memory B cells. Memory B cells are a strong predictor of future antibody responses, which is why it's vital to measure B cell responses to these vaccines...This effort to examine memory B cells is important for understanding long-term protection and the ability to respond to variants"

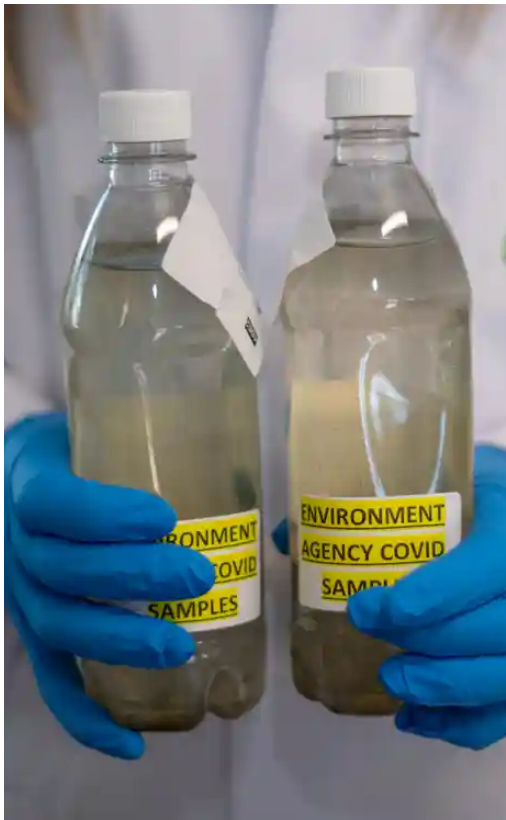
## COVID-19: How Many Vaccine Doses Do we Need?

Srusti Chandra

The immune body responds to viruses by producing antibodies and creating B cells to achieve short-term and long-term immunity, respectively. Antibodies are produced by a body's immune system when harmful substances are detected and memory B cells produce antibodies for long-term protection. A study published in *Science Immunology* compares antibody and memory B cell responses after vaccination in people who previously had COVID-19 (known as COVID-19 recovered) to those who did not (known as COVID-19 naïve).

The blood samples of 44 healthy individuals, who received Pfizer or Moderna vaccines, were analyzed for differences in antibody and memory B cell responses. 11 of these individuals had a prior COVID-19 infection. A single vaccine dose in COVID-19 naïve individuals may not be sufficient to induce optimal immune response while two doses seem to be sufficient. In contrast, those who recovered from COVID-19 had a strong immune response after one dose.

Side effects of the vaccines were also examined in relation to immune responses. Side effects such as fever, chills, headache, and fatigue experienced by COVID-19 naïve individuals were associated with stronger post-vaccination antibodies but not memory B cells. However, all subjects developed immunity. This study only consisted of 44 individuals so a larger scale study is needed to understand the optimal number of doses for immunity against COVID-19.



## Could Sewage be the Key to Predicting COVID-19 Hotspots?

Sejal Kaushik

Epidemiologists have been researching a new approach to predicting COVID-19 hotspots: testing sewage for COVID-19. This idea stems from the observation that the coronavirus is present in the feces of those infected. The Centers for Disease Control and Prevention (CDC) state that sewage can be tested for the RNA present in the coronavirus. Although this may sound dangerous, as public restrooms and waste facilities could be a threat to spreading the coronavirus, the CDC assures the public that the threat is minimal- there have not been any confirmed cases of COVID-19 from sewage exposure.

This information can be used to our advantage; sewage testing has been used as a method to detect early cases of infectious diseases in the past. Dutch scientists used this information to test sewage for the coronavirus, and in one study, they discovered the presence of the coronavirus nearly five days before the first confirmed cases began to appear. The published [study](#), written by members of the KWR Water Research Institute, describes that "The detection of the virus in sewage, even when the COVID-19 prevalence is low, indicates that sewage surveillance could be used to monitor the circulation of the virus in the population and as early warning tool for increased circulation in the coming winter or unaffected populations". This approach has much potential, and in the future, sewage testing could help to inform areas of COVID presence and help prepare them for a possible rise in cases.

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